

## **CLASS 369, DYNAMIC INFORMATION STORAGE OR RETRIEVAL**

### **SECTION I - CLASS DEFINITION**

A. This is the generic class for processes of and apparatus for the storage or retrieval of arbitrarily variable information (as defined in the glossary below) which is retained in a storage medium by variation of a physical characteristic thereof. The information is stored or retrieved by causing or sensing a variation of a physical characteristic of the storage medium by a transducer having relative motion along a continuous path.

- (1) Note. The record carrier must have continuous physical extent over the path of movement and be able to store a time-varying information signal. Static or discrete systems are classified elsewhere (see References to Other Classes, below).
- (2) Note. The characteristic variation is one which must be retrievable by a transducer. Such variation producing only a directly perceptible indication (e.g., a graph), is classified elsewhere (see References to Other Classes, below).

B. This class includes processes and apparatus for the copying or editing of a storage medium within the above definition limited to such copying or editing including a step of storage or retrieval by relative motion.

C. This class includes the record carrier, per se, having particular information storage structure.

### **SECTION II - LINES WITH OTHER CLASSES AND WITHIN THIS CLASS**

#### **COMBINATIONS OF OTHER APPARATUS WHICH INCLUDE APPARATUS OF THIS CLASS**

Significantly claimed subject matter external to this class, claimed in combination with apparatus under the class definition, is classified in the class appropriate to the external apparatus.

The combination of an audio signal producing device with the subject matter of this class is classified in this class, except the combination with telephone signal devices are classified elsewhere. (See References to Other Classes, below.)

Nominally claimed apparatus external to this class, claimed in combination with apparatus under the class definition, is classified herein. (See Subclass References to the Current Class, below.)

#### **SUBCOMBINATIONS OF DYNAMIC INFORMATION STORAGE AND RETRIEVAL**

This class includes elements and subcombinations peculiar to the subject matter of this class (e.g., a phonographic stylus and cartridge).

- (1) Note. Subcombination devices of general utility such as piezoelectric transducers are classified elsewhere.

Electrical circuitry which may be used in dynamic storage or retrieval, but which is not unique thereto is found in the appropriate class for such circuitry.

Mechanisms forming subcombinations of storage or retrieval devices, are classified in the appropriate mechanical class.

#### **DYNAMIC MAGNETIC INFORMATION STORAGE AND RETRIEVAL**

Class 360 provides for information storage and retrieval by causing or sensing modification of a magnetic condition on a record. Class 360 is to be considered an integral part of Class 369 and follows the schedule hierarchy, retaining all pertinent definitions and class lines, thereof. Classification in Class 360 is evidenced by either explicit recitation or sole disclosure of magnetic structure.

#### **ORGANIZATION OF THIS CLASS**

For the organization of this class, see Subclass References to the Current Class, below.

### **SECTION III - SUBCLASS REFERENCES TO THE CURRENT CLASS**

#### **SEE OR SEARCH THIS CLASS, SUBCLASS:**

- 1 through 12, Combined with Independent Audio System, for a device of this class and an operatively related audio signal source of independent content. These subclasses may include specific magnetic storage or retrieval devices.
- 13.01 through 18, Diverse Types of Storage and Retrieval, for devices having differing intended

- kinds of storage and retrieval. These subclasses may include specific magnetic storage or retrieval devices.
- 19 through 52.1, Control Functions: for devices and processes for modifying or maintaining the storage or retrieval operation, other than for sequential storage medium selection.
- 53.1 through 53.45, Monitoring of Condition: for devices which indicate a condition of a storage or retrieval device or a subcombination thereof.
- 59.1 through 85, Special Purpose Devices: for devices designed for use with or control of diverse type devices, or particular processing of the information signal.
- 69+, for nominally claimed apparatus external to this class, claimed in combination with apparatus under the class definition.
- 99 through 173, General Recording or Reproducing; for methods and devices which are concerned with either the physics of storage or retrieval or processing of the information signal.
- 174 and 175, Signal Modification: for devices which are basically electronic in nature and are used to modify, correct, or insure the efficient storage or retrieval of information signals, and are not limited to any particular type of storage or retrieval.
- 176 through 257, Dynamic Mechanism Subsystems: for mechanism subcombinations peculiar to storage or retrieval absent more than nominal information handling structure.
- 272, through 291, Structure of Storage Medium: for structure of the storage medium element having significant structure for carrying information.
- 292, Miscellaneous: for subject matter under the class definition and not found above.
- 312, Supports: Cabinet Structure, subclasses 9.1+ for phonograph cabinets without storage or retrieval structure.
- 340, Communications: Electrical, subclass 692 for an alarm system having a sound reproducer.
- 346, Recorders, appropriate subclasses for storage of information on a medium in a directly human perceptible form.
- 346, Recorders, for variation producing only a directly perceptible indication (e.g., a graph). (Class Definition, (2) Note, above.)
- 352, Optics: Motion Pictures, subclasses 1+ for subject matter of this class combined with motion picture recording or projection.
- 353, Optics: Image Projectors, subclasses 15+ for image projectors with sound accompaniment.
- 355, Photocopying, subclasses 31 and 98 for copying optical sound records.
- 360, Dynamic Magnetic Information Storage or Retrieval, appropriate subclasses for magnetic storage or retrieval analogs to the subclasses following Class 18. (See Lines With Other Classes and Within This Class, "Dynamic Magnetic Information Storage and Retrieval," above).
- 365, Static Information Storage and Retrieval, for static or discrete systems. (Lines With Other Classes and Within This Class, "Static or Discrete Systems".
- 379, Telephonic Communications, subclasses 67.1+ for similar subject matter combined with a telephone system component; and other appropriate subclasses for electrical audio signal handling, in general. The combination of an audio signal producing device with the subject matter of this class (369) is classified in this class (369), except the combination with telephone signal devices are classified in Class 379, subclasses 67.1+. (Lines With Other Classes and Within This Class, "Combinations of Other Apparatus").
- 381, Electrical Audio Signal Processing and Systems and Devices, appropriate subclasses for electrical audio signal handling in general.
- 386, Motion Video Signal Processing for Recording or Reproducing, appropriate subclasses for recording television or video signal.
- 399, Electrophotography, subclass 10 for storage of data on the operation of an electrophotographic device (i.e., log report) and subclass 83 for job mode selection with memory.
- 455, Telecommunications, appropriate subclasses for radio devices.

#### SECTION IV - REFERENCES TO OTHER CLASSES

##### SEE OR SEARCH CLASS:

- 181, Acoustics, appropriate subclasses for nonelectrical sound wave handling systems and components.
- 235, Registers, for static or discrete systems. (Lines With Other Classes and Within This Class, "Static or Discrete Systems".
- 310, Electrical Generator or Motor Structure, subclasses 300+ for piezoelectric transducers, per se.

- 505, Superconductor Technology: Apparatus, Material, Process, subclasses 150+ for high temperature ( $T_c > 30$  K) superconducting material, particularly subclasses 170+ for dynamic information storage or retrieval.
- 704, Data Processing: Speech Signal Processing, Linguistics, Language Translation, and Audio Compression/Decompression, subclasses 200+ for speech signal processing involving data processing.
- 711, Electrical Computers and Digital Processing Systems: Memory, subclass 4 for addressing dynamic storage devices including address formation or manipulation and subclasses 111+ for data accessing and control techniques for dynamic storage devices in digital data processing systems.
- 850, Scanning-Probe Techniques or Apparatus; Applications of Scanning-Probe Techniques, e.g., Scanning-Probe Microscopy [SPM], subclass 62 for information storage or retrieval using scanning probe microscope.

Retention of information in a permanent or semipermanent form, or establishing such retention.

#### STORAGE MEDIUM

An object having a characteristic which is, or may be, modified at positional increments in accordance with the time variation of information which is stored thereon.

#### TRACK OR STORAGE TRACK

A continuous path of an intelligence varied characteristic on the storage medium.

#### TRACKING

Following a storage track by a transducer assembly or a component thereof.

#### TRANSDUCER ASSEMBLY

The combination of an energy conversion device (transducer) and device coupling the energy conversion device to a storage medium so as to sense or to cause a variation of a characteristic therein.

## SECTION V - GLOSSARY

### INFORMATION OR INFORMATION SIGNAL

A time varying physical quantity representing desired intelligence, often an audible sound or an electrical signal.

### RETRIEVAL

Production or reproduction of a stored information signal from the storage medium characteristics.

### RECORD

(1) (noun) The pattern of modulation by the information signal of the variable storage medium characteristic. (2) (verb) To effect storage of an information signal. As these terms have the same spelling the terms "store", "storage medium", and variants thereof will be preferred usage in the schedule and definitions in order to avoid confusion.

### RECORD CARRIER

A tangible object upon which an information signal is stored, synonymous with storage medium.

### STORAGE

#### SUBCLASSES

#### 1 COMBINED INDEPENDENT AUDIO SYSTEMS:

This subclass is indented under the class definition. Subject matter combined with another audio signal system capable of operating independently of the storage or retrieval device.

- (1) Note. Such distinct apparatus includes public address systems or radios.
- (2) Note. The apparatus may include an additional storage or retrieval device.
- (3) Note. The storage or retrieval device may be of the magnetic type.

#### SEE OR SEARCH CLASS:

379, Telephonic Communications, subclasses 68+ for a dynamic audio signal recorder or reproducer combined with a telephone system or component thereof.

- 2 Changeover between audio systems:**  
This subclass is indented under subclass 1. Subject matter having switching structure to selectively connect the independent audio systems.
- 3 Fading between plural signals:**  
This subclass is indented under subclass 2. Subject matter wherein the switching structure includes a signal handling element which varies continuously over a period of time the ratio of two input signals to form a resultant signal which is composed solely of the first signal prior to the specified period and solely of the second signal subsequent to said period.
- 4 Combining signals to form composite (e.g., mixing):**  
This subclass is indented under subclass 1. Subject matter wherein the independent audio signals are concurrently passed through a common signal handling element to produce a resultant of both signals.
- (1) Note. The signals to be combined may be relatively or separately adjusted, and monitored to produce a desired resultant effect.
- SEE OR SEARCH THIS CLASS, SUBCLASS:  
53+, for monitoring of a storage or retrieval system.  
83, for editing of stored information, in general.
- 5 One of systems having plural concurrent signal (e.g., stereophonic):**  
This subclass is indented under subclass 1. Subject matter wherein one of the systems provides a plurality of signals simultaneously.
- SEE OR SEARCH THIS CLASS, SUBCLASS:  
86+, for storage or retrieval systems for spatially related acoustic signals.
- SEE OR SEARCH CLASS:  
381, Electrical Audio Signal Processing Systems and Devices, subclasses 1+ circuitry, in general.
- 6 Radio:**  
This subclass is indented under subclass 1. Subject matter including a system which converts radio frequency energy to audible energy.
- SEE OR SEARCH CLASS:  
455, Telecommunications, for radio devices, per se.
- 7 Including recording from radio:**  
This subclass is indented under subclass 6. Subject matter wherein an audio signal output of the radio is connected to the storage input.
- (1) Note. The connection is usually part of an overall selection of program sources for the loud speaker output.
- 8 Oscillator modulated by retrieved information signal:**  
This subclass is indented under subclass 6. Subject matter including a source of oscillations controlled or otherwise modulated by the information retrieval device.
- (1) Note. The oscillator is often a local oscillator in the radio circuit.
- SEE OR SEARCH THIS CLASS, SUBCLASS:  
129, for a mechanical retrieval controlled oscillator.
- 9 Mechanical phonograph:**  
This subclass is indented under subclass 6. Subject matter wherein the radio and a mechanical phonograph are coupled by a common acoustical element.
- 10 With common cabinet for cartridge or cassette:**  
This subclass is indented under subclass 6. Subject matter wherein the radio housing includes structure unitary therewith for receiving a housing including a storage medium.
- 11 Including separable assembly:**  
This subclass is indented under subclass 6. Subject matter wherein (a) a radio is converted to a cartridge/cassette player by combining a cartridge/cassette module therewith, or (b) a cartridge/cassette player is converted to a radio by combining a radio module therewith.

- (1) Note. A radio module includes a cartridge or cassette housing with radio circuitry therein.

## 12 Cabinet details:

This subclass is indented under subclass 6. Subject matter including structural details of an enclosure surrounding the components of the radio and signal retrieval system.

- (1) Note. The cabinet structure must include some specific detail of the combined system, or an element thereof, otherwise such structure is classified as a cabinet, per se.

SEE OR SEARCH THIS CLASS, SUBCLASS:

75.11-82, for similar subject matter including only a storage or retrieval device.

SEE OR SEARCH CLASS:

- 174, Electricity: Conductors and Insulators, subclasses 50+ for boxes and housing limited by claimed structure to electrical use but having no characteristic limiting them to particular electrical equipment; and subclasses 250+ for printed circuit arrangements of general utility.
- 181, Acoustics, subclasses 148+ for a diaphragm mounted in a cabinet.
- 312, Supports: Cabinet Structure, subclasses 9.1+ for cabinets or enclosures especially designed to house phonograph instruments or records.
- 361, Electricity: Electrical Systems and Devices, subclasses 600+ for boxes and mountings in combination with electrical apparatus having no significant art limitation, or boxes and mounting in combination with plural diverse electrical apparatus.

## 13.01 STORAGE OR RETRIEVAL BY SIMULTANEOUS APPLICATION OF DIVERSE TYPES OF ELECTROMAGNETIC RADIATION:

This subclass is indented under the class definition. Subject matter for information signal storage or retrieval by concurrent application of a plurality of forms of electromagnetic radi-

ation to effect a storage medium modification or sensing, respectively.

- (1) Note. For classification herein, a single storage or retrieval action (i.e., modification or sensing) must require the simultaneous application of the diverse types of electromagnetic radiation. Concurrent application of diverse types of electromagnetic radiation to effect plural respective storage or retrieval actions is classified elsewhere. See search note below.
- (2) Note. Nominal recitation of a plurality of forms of electro-magnetic radiation (e.g., the mere presence of the phrase “magneto-optic” or “opto-magnetic”) is not sufficient for classification herein.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 14, for concurrent application of diverse types of electromagnetic radiation to effect plural respective storage or retrieval actions.

## 13.02 Magnetic field and light beam:

This subclass is indented under subclass 13.01. Subject matter wherein the simultaneous application of plurality of forms of electromagnetic radiation include a magnetic field and a light beam.

- (1) Note. Nominal recitation of a magnetic field and a light beam (e.g., the mere presence of the phrase “magneto-optic” or “opto-magnetic”) is not sufficient for classification herein.

## 13.03 Initializing:

This subclass is indented under subclass 13.02. Subject matter including modification to return a storage medium to an original unmodified state.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 13.38, for specific detail of a storage medium layer, which may be an initializing layer.

- 13.04 Erasing:**  
This subclass is indented under subclass 13.02. Subject matter including modification to remove a stored information signal.
- 13.05 Reading:**  
This subclass is indented under subclass 13.02. Subject matter wherein information is being retrieved by sensing the storage medium.
- 13.06 By transferring magnetic domain between layers:**  
This subclass is indented under subclass 13.05. Subject matter wherein the storage medium includes segments of defined thickness and a magnetic orientation within a storage location of an information signal is transferred between the storage medium layers.
- 13.07 Three or more magnetic layers:**  
This subclass is indented under subclass 13.06. Subject matter wherein there are three or more segments of defined thickness wherein each one has a magnetic aspect.
- 13.08 Changing size of magnetic domain:**  
This subclass is indented under subclass 13.07. Subject matter wherein the magnetic domain area is modified.
- 13.09 Changing size of magnetic domain:**  
This subclass is indented under subclass 13.06. Subject matter wherein the magnetic domain area is modified.
- 13.1 Three or more magnetic states:**  
This subclass is indented under subclass 13.02. Subject matter wherein three or more magnetic orientations on the storage medium represent the information signal.
- 13.11 Positioning of transducer assembly for storage or retrieval:**  
This subclass is indented under subclass 13.02. Subject matter wherein a transducer assembly is moved to a location where modification or sensing can be performed on a particular region or track of the storage medium.
- SEE OR SEARCH THIS CLASS, SUBCLASS:  
24.01 through 42.01, for locating information on a storage medium, per se.
- 13.12 Relative positioning of transducer assemblies:**  
This subclass is indented under subclass 13.02. Subject matter wherein a magnetic field transducer assembly is moved to a location relative to a light beam transducer assembly.
- 13.13 Integral transducers:**  
This subclass is indented under subclass 13.02. Subject matter wherein the optical and magnetic transducers are mounted integrally.
- 13.14 Magnetic field generation:**  
This subclass is indented under subclass 13.02. Subject matter wherein at least one step or element for producing the magnetic field is particularly described.
- (1) Note. The magnetic field can be modulated by an information signal or controlled to have a particular magnitude.
- 13.15 Leakage magnetic field:**  
This subclass is indented under subclass 13.14. Subject matter wherein the magnetic field generation includes escape of the magnetic field through a breach.
- (1) Note. The generation may include compensation of the leaked magnetic field during storage and the compensation may be during or after magnetic field generation.
- (2) Note. The generation may include utilization of the leaked magnetic field for storage.
- 13.16 Overwriting:**  
This subclass is indented under subclass 13.14. Subject matter wherein the modification includes replacing a stored information signal with another information signal.
- 13.17 Magnetic field transducer assembly:**  
This subclass is indented under subclass 13.14. Subject matter wherein at least one element within a magnetic field transducer assembly is particularly described.
- 13.18 Permanent magnet:**  
This subclass is indented under subclass 13.17. Subject matter wherein the magnetic field is

- generated using a piece of magnetic material that retains its magnetism after it is removed from a magnetic field.
- 13.19 Rotating magnet:**  
This subclass is indented under subclass 13.18. Subject matter wherein the magnet is capable of movement about an axis.
- 13.2 Operative location positioning of transducer assembly:**  
This subclass is indented under subclass 13.17. Subject matter wherein a transducer assembly is moved into or out of a location where modification or sensing can be effected.
- 13.21 During load or unload of the storage medium:**  
This subclass is indented under subclass 13.2. Subject matter wherein the positioning occurs during movement of the storage medium into or out of an operative location.
- SEE OR SEARCH THIS CLASS, SUBCLASS:  
75.21, for loading a storage medium onto a turntable, per se.
- 13.22 Magnetic field generating circuit:**  
This subclass is indented under subclass 13.14. Subject matter wherein the magnetic field is generated using a closed path capable of being followed by an electric current.
- 13.23 Conductor coil:**  
This subclass is indented under subclass 13.22. Subject matter wherein the circuit includes a wound spiral of two or more turns of insulated wire used to introduce inductance into the storage medium.
- 13.24 Light beam generation:**  
This subclass is indented under subclass 13.02. Subject matter wherein at least one step or element for producing the light beam is particularly described.
- (1) Note. The light beam can be modulated by an information signal or controlled to have a particular magnitude.
- 13.25 Overwriting:**  
This subclass is indented under subclass 13.24. Subject matter wherein the modification
- includes replacing a stored information signal with another information signal.
- 13.26 Setting light beam power level:**  
This subclass is indented under subclass 13.24. Subject matter wherein a desired light beam magnitude is generated.
- 13.27 Based on referenced test signal:**  
This subclass is indented under subclass 13.26. Subject matter wherein the magnitude is generated based on a signal that is stored and subsequently retrieved for an evaluating purpose.
- 13.28 Multiple light beams:**  
This subclass is indented under subclass 13.24. Subject matter wherein a plurality of light beams is generated.
- 13.29 Polarized light beam:**  
This subclass is indented under subclass 13.24. Subject matter wherein a direction of the electric field component of the light beam is modified.
- 13.3 Plural polarization:**  
This subclass is indented under subclass 13.29. Subject matter wherein the light beam includes more than one direction of the electric field component.
- (1) Note. The plural polarization can be S and P polarization components of a light beam.
- 13.31 Linear polarization:**  
This subclass is indented under subclass 13.29. Subject matter wherein the electric field component is oriented in one direction.
- 13.32 Light beam transducer assembly:**  
This subclass is indented under subclass 13.24. Subject matter wherein at least one element within a light beam transducer assembly is particularly described.
- 13.33 Near field optic:**  
This subclass is indented under subclass 13.32. Subject matter wherein the light beam transducer is placed at a closest distance to the storage medium.

- (1) Note. The “closest distance” is less than or equal to a half wavelength of the laser beam.

**13.34 In compact size assembly:**

This subclass is indented under subclass 13.02. Subject matter wherein an aspect of an apparatus is reduced in size.

**13.35 Specific detail of recording medium:**

This subclass is indented under subclass 13.02. Subject matter having at least one element of the storage medium particularly described.

- (1) Note. A storage medium, per se (i.e., not claimed in combination with application of a magnetic field and a light beam) is classified elsewhere. See search notes below.

SEE OR SEARCH THIS CLASS, SUBCLASS:

275.2, for magneto-optic storage medium, per se, with specific detail of information bearing track structure.

SEE OR SEARCH CLASS:

428, Stock Material or Miscellaneous Articles, subclasses 817 through 825.1 for magneto-optic storage medium, per se, with specific composition of materials or physical chemistry; and subclass 848.9 for magneto-optic media disk substrate, per se, with specific composition of materials or physical chemistry.

**13.36 In protective jacket:**

This subclass is indented under subclass 13.35. Subject matter wherein the storage medium is surrounded by a protective enclosure.

SEE OR SEARCH THIS CLASS, SUBCLASS:

77.11 and 77.21, for storage medium protective jackets, per se.

**13.37 Tape or card:**

This subclass is indented under subclass 13.35. Subject matter wherein the storage medium is a continuous narrow, flexible strip or of flat geometric form.

- (1) Note. Magnetic storage on or retrieval from a card not involving a light beam is not classified herein. See search note below.

SEE OR SEARCH CLASS:

360, Dynamic Magnetic Information Storage or Retrieval, subclass 2 for magnetic storage on or retrieval from a card having diverse utility.

**13.38 Specific detail of layer (e.g., bias or initializing layers, etc.):**

This subclass is indented under subclass 13.35. Subject matter having an aspect of a segment of defined thickness of the storage medium particularly described.

- (1) Note. The layer can be a bias layer, initializing layer, cut-off layer, heat-sink layer, or shield layer.

**13.39 Plural distinct storage layers:**

This subclass is indented under subclass 13.38. Subject matter including more than one segment of defined thickness for distinct storage of information signals.

- (1) Note. The plural distinct storage layers can be on opposite sides of the storage medium.

**13.4 Plural layers having particular order:**

This subclass is indented under subclass 13.38. Subject matter including more than one segment of defined thickness having particularly described arrangement.

**13.41 Plural magnetic layers (e.g., recording and reproducing layers):**

This subclass is indented under subclass 13.38. Subject matter including more than one segment of defined thickness wherein each one has a magnetic aspect.

SEE OR SEARCH CLASS:

428, Stock Material or Miscellaneous Articles, subclasses 817 through 825.1 for magneto-optic storage medium, per se, with specific chemical composition or physical chemistry.



**13.42 Three or more magnetic layers (e.g., recording, intermediate, and reproducing layers, etc.):**

This subclass is indented under subclass 13.41. Subject matter wherein there are three segments, each having a magnetic aspect.

**SEE OR SEARCH CLASS:**

428, Stock Material or Miscellaneous Articles, subclasses 819 through 819.4 for magneto-optic storage medium having a unit structure of three or more differing magnetic layers in series, per se, having a specific chemical composition or physical chemistry.

**13.43 In-plane magnetization layer:**

This subclass is indented under subclass 13.42. Subject matter wherein a segment has magnetic orientation in a direction parallel to a surface of the storage medium.

**13.44 Exchange-coupling magnetization layer:**

This subclass is indented under subclass 13.42. Subject matter including a segment for interacting with another segment to induce a magnetic orientation.

**13.45 Rare earth or metal alloy:**

This subclass is indented under subclass 13.42. Subject matter wherein the segment includes a metallic element of atomic numbers 57 through 71 or a homogeneous mixture of electropositive elements.

**SEE OR SEARCH CLASS:**

428, Stock Material or Miscellaneous Articles, subclasses 822.3 through 822.5 for magneto-optic storage medium stock, per se, having rare earth in single magneto-optic magnetic layer.

**13.46 Temperature or coercivity:**

This subclass is indented under subclass 13.42. Subject matter wherein the aspect involves the degree of heat or magnetic sensitivity of the segment.

- (1) Note. The temperature can be room temperature, Curie temperature, or a compensated temperature.

**13.47 Magnetic domain wall:**

This subclass is indented under subclass 13.42. Subject matter wherein the aspect involves a boundary between magnetic domains of the segment.

- (1) Note. The aspect may involve a boundary position or energy level.

**13.48 In-plane magnetization layer:**

This subclass is indented under subclass 13.41. Subject matter wherein a segment has magnetic orientation in a direction parallel to a surface of the storage medium.

**13.49 Exchange-coupling magnetization layer:**

This subclass is indented under subclass 13.41. Subject matter including a segment for interacting with another segment to induce a magnetic orientation.

**SEE OR SEARCH CLASS:**

428, Stock Material or Miscellaneous Articles, subclasses 817 through 825.1 for magneto-optic storage medium, per se, having a specific chemical composition or physical chemistry.

**13.5 Rare earth or metal alloy:**

This subclass is indented under subclass 13.41. Subject matter wherein the segment includes a metallic element of atomic numbers 57 through 71 or a homogeneous mixture of electropositive elements.

**SEE OR SEARCH CLASS:**

428, Stock Material or Miscellaneous Articles, subclasses 822.3 through 822.5 for magneto-optic storage medium stock, per se, having rare earth in single magneto-optic magnetic layer.

**13.51 Temperature or coercivity:**

This subclass is indented under subclass 13.41. Subject matter wherein the aspect involves the degree of heat or magnetic sensitivity of the segment.

- (1) Note. The temperature can be room temperature, Curie temperature, or a compensated temperature.

**13.52 Magnetic domain wall:**

This subclass is indented under subclass 13.41. Subject matter wherein the aspect involves a boundary between magnetic domains of the segment.

- (1) Note. The aspect may involve a boundary position or energy level.

**13.53 Thickness of layer:**

This subclass is indented under subclass 13.38. Subject matter wherein the aspect is the width of the segment.

- (1) Note. For example, thickness of substrate, dielectric, reflective, protective, or transmitting layer.

**13.54 Recording mark dimension:**

This subclass is indented under subclass 13.35. Subject matter wherein the element is a distinct storage location of the information signal on the storage medium and the shape and size of the distinct storage location is particularly described.

- (1) Note. The recording mark has a particular dimension (i.e., shape and size) that is caused by application of the magnetic field and light beam.

SEE OR SEARCH THIS CLASS, SUBCLASS:  
275.4, for specific detail of storage medium pit structure, per se.

**13.55 Land or groove track:**

This subclass is indented under subclass 13.35. Subject matter wherein the element is a continuous narrow raised surface or channel on the storage medium.

SEE OR SEARCH THIS CLASS, SUBCLASS:  
275.4, for specific detail of storage medium groove structure, per se.

**13.56 STORAGE DIFFERENT FROM RETRIEVAL (E.G., OPTICAL RECORD-****ING AND MAGNETIC REPRODUCTION):**

This subclass is indented under the class definition. Subject matter wherein storage medium sensing for signal retrieval is diverse from storage medium modification for signal storage.

- (1) Note. The term “diverse” refers to physically different changes (e.g., magnetic, optical, mechanical).
- (2) Note. For classification herein, the diverse types of storage and retrieval must be claimed together. Alternative embodiments of an invention claimed separately are classified elsewhere.

**14 SIMULTANEOUS DIVERSE TYPES OF STORAGE OR RETRIEVAL:**

This subclass is indented under the class definition. Subject matter for information signal storage by concurrent diverse types of storage medium modification, or information signal retrieval by concurrent diverse types of storage medium sensing.

SEE OR SEARCH THIS CLASS, SUBCLASS:

93+, for plural, spatially distinct tracks stored or retrieved by the same type of storage or retrieval.

**15 ALTERNATIVE DIVERSE TYPES OF STORAGE OR RETRIEVAL:**

This subclass is indented under the class definition. Subject matter for information signal storage by selection of one of diverse types of storage medium modification, or for the information signal retrieval by selection of one of diverse types of storage medium sensing.

- (1) Note. Exemplary of such subject matter would be a recording or reproducing device for an elongate web record carrier having both magnetic and radiation transducers which may be alternatively switched into a circuit for use with either a photos:graphic or magnetic tape.

**16 MECHANICAL PRODUCTION OF OPTICAL STORAGE TRACK:**

This subclass is indented under the class definition. Subject matter in which information is mechanically recorded onto a storage medium

to produce variations in the transmissivity or reflectivity of the storage medium.

- (1) Note. This subject matter often includes mechanical cutting of an opaque layer covering the storage medium.
- (2) Note. This subject matter often includes mechanical cutting of an opaque layer covering the storage medium.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 13.02 through 13.56, for this subject matter combined with claimed optical reading of the storage medium.
- 127+, for mechanical information storage, in general.

#### 17 TRACK CONVERSION:

This subclass is indented under the class definition. Subject matter including changing from a first type to a second type of track having the same signal content on the same storage medium.

- (1) Note. Included herein is conversion from an optical track to a magnetic track.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 85, for copying a sound track onto a separate storage medium of a different type.

#### 18 OPTICAL READING OF MECHANICAL RECORD:

This subclass is indented under the class definition. Subject matter including retrieval by optical sensing of a mechanically recorded track.

- (1) Note. Included herein are devices with photosensitive pickups for grooved records.

#### 19 CONTROL BY TIMER OR EXTERNAL EXTRANEIOUS CONDITION:

This subclass is indented under the class definition. Subject matter including modification of an operating condition of the storage or retrieval device by apparatus responsive to time or to a condition other than an information

parameter and external to the storage or retrieval device.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 47+, for control of a storage or retrieval operation by an information related parameter.

#### 20 By diverse art device:

This subclass is indented under subclass 19. Subject matter wherein the operating condition is controlled by apparatus having utility other than to perfect the storage or retrieval of a signal.

- (1) Note. Detailed structure of the diverse art device is classified therewith.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 70, for control of diverse art device by storage or retrieval device.

SEE OR SEARCH CLASS:

- 340, Communications: Electrical, subclass 692 for a sound reproducer controlled by an alarm circuit.
- 434, Education and Demonstration, subclass 366 for abnormal condition simulating devices.

#### 21 In vehicle or elevator:

This subclass is indented under subclass 19. Subject matter wherein the storage or retrieval device is located in a movable passenger carrying compartment.

- (1) Note. The controlling condition may be external to the vehicle.

SEE OR SEARCH CLASS:

- 340, Communications: Electrical, subclasses 139+ and 901+ for a communication device for an elevator or a vehicle, in general.

#### 22 Audible indicator:

This subclass is indented under subclass 20. Subject matter wherein the retrieval device is an audible reproducer, the content of the reproduced sound information being the value, generally numerical, of the time or condition to which the device responds.

**SEE OR SEARCH CLASS:**

379, Telephonic Communications, subclasses 67+ for similar subject matter in a telephone system.

**23 Talking clock:**

This subclass is indented under subclass 22. Subject matter wherein the reproduced sound information is the time.

**SEE OR SEARCH CLASS:**

368, Horology: Time Measuring Systems or Devices, subclass 63 for talking clocks including details of the time determining device.

**24.01 INFORMATION LOCATION OR REMOTE OPERATOR ACTUATED CONTROL:**

This subclass is indented under the class definition. Subject matter including control of a storage or retrieval apparatus associated with physical location of the information on a storage medium or by an operator from a geographically spaced location.

(1) Note. This subclass does not include conventional control of signal processing such as on-off or volume controls.

**SEE OR SEARCH CLASS:**

340, Communications: Electrical, subclasses 1.1 through 16.1 for electrical remote control transmission systems of general utility.

**25.01 Dictation or transcribing:**

This subclass is indented under subclass 24.01. Subject matter particularly adapted to audibly record or reproduce the spoken intended contents of a document.

(1) Note. Examples of such adaptation are facilitating correction of stored audio information subsequent to storage and prior to retrieval or facilitating retrieval and modification thereof (e.g., backspacing).

(2) Note. A storage or retrieval device designated as for dictation or transcription, merely by name and absent structure

therefor, is not classified herein. See search notes below.

**SEE OR SEARCH CLASS:**

379, Telephonic Communications, subclass 75 for remote dictation over a telephone.

704, Data Processing: Speech Signal Processing, Linguistics, Language Translation, and Audio Compression/Decompression, subclasses 270 through 278 for particular application of speech signal processing which may include dictation or transcription.

**26.01 Privacy:**

This subclass is indented under subclass 25.01. Subject matter with provision for preventing access to a dictation circuit or signal, or to the corresponding portions of the storage medium.

(1) Note. Examples include antibackspace tones and busy or in use signals.

**27.01 With access to or marking of specified locations (e.g., indexing):**

This subclass is indented under subclass 25.01. Subject matter having structure to indicate the location of the current, or another designated, positioned increment along the storage medium.

(1) Note. The marking can be indexing.

**SEE OR SEARCH THIS CLASS, SUBCLASS:**

53.1 through 53.45, for condition indication and monitoring of a storage or retrieval device, in general.

**28.01 By stored additional signal (e.g., tone):**

This subclass is indented under subclass 27.01. Subject matter wherein the indication is given by a signal stored in the same manner as the information signal.

(1) Note. Such indicating signals are often reproduced as audible tones.

**29.01 Remote station:**

This subclass is indented under subclass 25.01. Subject matter wherein the source of the audible information to be stored and control equipment is located remotely from and connected

by an audible signal transmitting line to the storage device.

- (1) Note. The source is often a telephone-type handset.
- (2) Note. The connecting line is often similar to a telephone system connecting a plurality of audible information devices or of storage devices. However, classification is herein unless the system is recited to be a telephone system, or conversation is possible over such a system (e.g., between handsets).

**SEE OR SEARCH CLASS:**

379, Telephonic Communications, subclass 75 for remote dictation over a telephone system.

**29.02 Portable device:**

This subclass is indented under subclass 25.01. Subject matter wherein the dictation or transcribing is performed using a device that is operational while being carried or moved.

**30.01 Selective addressing of storage medium (e.g., programmed access):**

This subclass is indented under subclass 24.01. Subject matter wherein the control function includes storage on or retrieval from a designated storage medium element or portion thereof.

- (1) Note. The term "random access" is sometimes used for such device. However, such usage should be carefully distinguished from random selection or indexing, or selection absent prior designation, which is not classified herein. See search notes below.
- (2) Note. The selective addressing can be a programmed access.
- (3) Note. The storage medium can be one of a plurality of storage medium elements (e.g., a jukebox).

**SEE OR SEARCH THIS CLASS, SUBCLASS:**

53.4, for manual tone arm positioning adjuncts.

66 and 98, for random selection or indexing, or selection absent prior designation.

178.01, for selection of storage medium absent designation.

**SEE OR SEARCH CLASS:**

360, Dynamic Magnetic Information Storage or Retrieval, subclasses 78.01 through 78.15 for random access of a magnetic record carrier.

434, Education and Demonstration, appropriate subclasses, particularly subclasses 322 through 364 for nominal audio reproduction combined with recording of or controlling by operator response to instruction, or combined with audible description corresponding to displayed visual matter, other than a display or listing.

**30.02 Novelty device (e.g., talking doll):**

This subclass is indented under subclass 30.01. Subject matter wherein the storage medium is associated with a novelty device.

- (1) Note. Usually the novelty device constitutes the housing for a sound reproducer. Thus, a doll with a pull string by which the reproducer will emit one of several messages as selected by the direction of a pull on the string (e.g., a talking doll).

**SEE OR SEARCH THIS CLASS, SUBCLASS:**

63 through 68, for similar subject matter absent selective addressing.

**SEE OR SEARCH CLASS:**

446, Amusement Devices: Toys, subclasses 299 and 302 for significant structure of an amusement device having sounding means such as phonograph or tape.

**30.03 Of optical storage medium:**

This subclass is indented under subclass 30.01. Subject matter wherein the selective addressing is of a storage medium in which storage or retrieval is performed by using a light beam.

**30.04 Using recorded information indicative of storage medium contents:**

This subclass is indented under subclass 30.03. Subject matter wherein the selective addressing includes using specific recorded information that identifies the information stored on the storage medium.

**30.05 Copying or editing:**

This subclass is indented under subclass 30.04. Subject matter including retrieving information from one storage medium to subsequently store on another distinct storage medium or deleting, adding, or rearranging portions of a stored information signal.

SEE OR SEARCH THIS CLASS, SUBCLASS:

47.12, for copying using a recorded or reproduced control signal and absent selective addressing.

47.13, for editing of stored information using a recorded or reproduced control signal and absent selective addressing.

83, for editing of stored information absent selective addressing.

84, for copying absent selective addressing.

**30.06 Plural storage medium elements (e.g., "juke box"):**

This subclass is indented under subclass 30.04. Subject matter wherein the selective addressing is of one of a plurality of separate storage medium elements.

**30.07 Specified contents information modification processing:**

This subclass is indented under subclass 30.04. Subject matter including detail of handling changing the contents information.

**30.08 Designating particular order of contents (e.g., sequential playing back by playlist):**

This subclass is indented under subclass 30.04. Subject matter including using specific recorded information that identifies the order in which the information is to be selectively addressed.

(1) Note. The designating initiates sequential addressing operations of medium portions.

(2) Note. The order of contents can be in the form of a recorded playlist.

**30.09 Specified order of contents information modification processing:**

This subclass is indented under subclass 30.08. Subject matter including detail of handling changing the order of contents information.

**30.1 Transducer movement control using recorded information indicative of location of information (e.g., track address):**

This subclass is indented under subclass 30.03. Subject matter wherein the selective addressing includes control of a transducer movement using specific recorded information that identifies the position of the designated storage medium portion.

(1) Note. The recorded information can be a track address.

**30.11 Location information correction:**

This subclass is indented under subclass 30.1. Subject matter including eliminating error in the location information.

**30.12 Particular track portion:**

This subclass is indented under subclass 30.1. Subject matter wherein the storage medium portion is a track and the location information identifies a particular part of the track.

(1) Note. The particular part of the track can be a sector and the recorded information can be a sector address.

**30.13 Counting tracks traversed by transducer:**

This subclass is indented under subclass 30.1. Subject matter wherein the storage medium portion is a track and the selective addressing includes indicating a number of tracks crossed by the transducer.

**30.14 Count correction:**

This subclass is indented under subclass 30.13. Subject matter including eliminating error in the track count.

**30.15 Multiple movement control modes:**

This subclass is indented under subclass 30.1. Subject matter including a plurality of distinct

- means or steps for controlling movement to the designated storage medium portion.
- (1) Note. The control modes can be for coarse and fine seeking.
- 30.16 Specific detail of terminating:**  
This subclass is indented under subclass 30.15. Subject matter including specific means or steps performed at the end of controlling movement to the designated storage medium portion.
- 30.17 Transducer velocity control:**  
This subclass is indented under subclass 30.1. Subject matter including control of transducer movement speed to the designated storage medium portion.
- 30.18 Electrical information signal processing:**  
This subclass is indented under subclass 30.03. Subject matter including detail of handling the information signal.
- SEE OR SEARCH THIS CLASS, SUBCLASS:  
99 through 175, for information signal processing absent selective addressing.
- 30.19 Copying or editing:**  
This subclass is indented under subclass 30.18. Subject matter including retrieving information from one storage medium to subsequently store on another distinct storage medium or deleting, adding, or rearranging portions of a stored information signal.
- SEE OR SEARCH THIS CLASS, SUBCLASS:  
47.12, for copying using a recorded or reproduced control signal and absent selective addressing.  
47.13, for editing of stored information using a recorded or reproduced control signal and absent selective addressing.  
83, for editing of stored information absent selective addressing.  
84, for copying absent selective addressing.
- 30.2 Plural storage medium elements:**  
This subclass is indented under subclass 30.18. Subject matter wherein the selective addressing
- is of one of a plurality of separate storage medium elements.
- 30.21 Monitoring signal error or verification:**  
This subclass is indented under subclass 30.18. Subject matter including indicating the correctness or verification state of the information signal.
- 30.22 Correction of error:**  
This subclass is indented under subclass 30.21. Subject matter including means or steps to eliminate an error.
- 30.23 Buffering:**  
This subclass is indented under subclass 30.18. Subject matter including use of supplemental storage means for holding the information signal.
- 30.24 Abnormal condition or changing mode of system:**  
This subclass is indented under subclass 30.18. Subject matter including a system operation condition whereby storage or retrieval is undesirable or a change in an operating mode of the system.
- 30.25 Auxiliary information:**  
This subclass is indented under subclass 30.18. Subject matter wherein supplemental recorded or reproduced information is processed.
- (1) Note. The auxiliary information includes subcode data (e.g., Q-data or N-data, address data, header, TOC, sync, or clock).
- 30.26 Remote operating mode control:**  
This subclass is indented under subclass 30.03. Subject matter including remote actuated control of change of operating mode of the system.
- 30.27 Electrical control signal processing:**  
This subclass is indented under subclass 30.03. Subject matter including detail of handling of an electrical signal which affects the operation of storage medium element or portion selection.
- (1) Note. The electrical control signal is a signal other than a signal recorded on or reproduced from the storage medium.

- SEE OR SEARCH THIS CLASS, SUB-CLASS:  
30.04 through 30.25, for selective addressing using or including processing of a signal recorded on or reproduced from the storage medium.
- SEE OR SEARCH CLASS:  
340, Communications: Electrical, subclasses 4.37 and 4.4 for similar subject matter absent structure detail of signal storage.
- 30.28 Plural storage medium elements:**  
This subclass is indented under subclass 30.27. Subject matter wherein the selective addressing is of one of a plurality of separate storage medium elements.
- 30.29 Matching control signal:**  
This subclass is indented under subclass 30.28. Subject matter wherein the control signal is compared to determine a close counterpart.
- 30.3 Of information indicative of contents or particular order of contents:**  
This subclass is indented under subclass 30.28. Subject matter wherein the control signal includes specific information that identifies the information stored on the storage medium elements or identifies the order in which the information is to be selectively addressed.
- (1) Note. The contents information can be an ID code or reference information (e.g., a bar code) or indicate a type of storage medium.
- 30.31 For operation of storage medium gripper, accessor, or transfer member:**  
This subclass is indented under subclass 30.28. Subject matter wherein the control signal is processed to operate a device that holds or causes movement from one location to another of the storage medium.
- 30.32 For record medium loading or ejecting:**  
This subclass is indented under subclass 30.28. Subject matter wherein the control signal is processed to cause movement of the storage medium from an operative location to an inoperative location.
- 30.33 For radial array positioning of unitary plural storage medium carrier:**  
This subclass is indented under subclass 30.28. Subject matter wherein the control signal is processed to orient an integrated mechanical array which holds the storage medium elements in a nonparallel pattern or spacing, which pattern may have characteristic lines with a common center, such that the storage medium elements are readily accessible for selection.
- (1) Note. The radial array can be a carousel.
- 30.34 For linear array positioning of unitary plural storage medium carrier (e.g., horizontal or vertical positioning):**  
This subclass is indented under subclass 30.28. Subject matter wherein the control signal is processed to orient an integrated mechanical array which holds the storage medium elements in parallel along a common axis, which array is movable along such axis, such that the storage medium elements are readily accessible for selection.
- 30.35 For relative positioning between storage medium elements:**  
This subclass is indented under subclass 30.28. Subject matter wherein the control signal is processed to provide a particular location for a storage medium relative to another storage medium.
- 30.36 Abnormal condition or changing mode of system:**  
This subclass is indented under subclass 30.27. Subject matter including a system operation condition whereby storage or retrieval is undesirable or a change in an operating mode of the system.
- 30.37 Of particular order of contents:**  
This subclass is indented under subclass 30.27. Subject matter wherein the control signal identifies the order in which the information is to be selectively addressed.
- (1) Note. The order of contents is indicative of sequential addressing operations of medium portions.



- (2) Note. The order of contents can be provided by a bar code.
- 30.38 Plural optical storage media in library system:**  
This subclass is indented under subclass 30.03. Subject matter wherein multiple storage mediums are contained within a storage system for recording or reproducing purposes wherein storage medium drives contained therein are easily removed by the user from the storage system and are each encased within individual housing enclosures.
- 30.39 Modular library system:**  
This subclass is indented under subclass 30.38. Subject matter wherein a housing of the storage system is divided into and contains distinct, prefabricated subsections that, when combined, form one or more operational storage systems.
- 30.4 Plural media are discs stored in cartridges:**  
This subclass is indented under subclass 30.38. Subject matter wherein the multiple storage mediums are each a plate-shaped planar recording medium contained within a protective casing or sleeve for covering the recording medium during use.
- 30.41 Having specified disc rack:**  
This subclass is indented under subclass 30.4. Subject matter including specifics of a disc cartridge housing that separates and stores the disc cartridges within the housing of the storage system.
- 30.42 Having particular removable magazine:**  
This subclass is indented under subclass 30.4. Subject matter including specifics of a disc cartridge housing that holds multiple disc cartridges in a single contained unit wherein the disc cartridge housing is easily inserted into and ejected from the storage system by a user.
- 30.43 Having specified picker:**  
This subclass is indented under subclass 30.4. Subject matter including specifics of a gripper assembly for selectively grasping user-selected disc cartridges and moving them within the storage system.
- 30.44 Of carousel library system:**  
This subclass is indented under subclass 30.43. Subject matter wherein the gripper assembly is contained within a storage system which has a radial array of disc cartridges positioned so as to rotate about a central location or point.
- 30.45 Picker support structure (i.e., mechanism for moving picker):**  
This subclass is indented under subclass 30.4. Subject matter including specifics of a mechanism which guides and translates a gripper assembly used to transport the disc cartridges within the storage system.
- 30.46 Having specified disc drive:**  
This subclass is indented under subclass 30.4. Subject matter including specifics of a disc recording/reproducing unit used to mount the disc cartridges during playback or recording of information from the disc cartridge.
- 30.47 Drive moves into alignment with disc:**  
This subclass is indented under subclass 30.46. Subject matter wherein the disc recording/reproducing unit has a mechanism to move the disc recording/reproducing unit into position across from a selected disc cartridge to be recorded/reproduced.
- 30.48 Having particular mechanism or slot for transferring disc into library from outside:**  
This subclass is indented under subclass 30.4. Subject matter including specifics of the transferring structure used to move the disc cartridge from the exterior of the storage system to inside the storage system.
- 30.49 Linear vertical or horizontal array:**  
This subclass is indented under subclass 30.4. Subject matter wherein the storage system has one or more storage racks which store the disc cartridges within the storage system wherein the storage racks must be oriented either horizontally or vertically in a linear fashion.
- 30.5 Carousel array:**  
This subclass is indented under subclass 30.4. Subject matter wherein the storage system has one or more storage racks which store the disc cartridges in a radial array so that the storage racks rotate about a central location or point.

- 30.51 Plural media are unprotected (i.e., discs that are not in cartridges):**  
This subclass is indented under subclass 30.38. Subject matter including specifics of the recording media wherein the recording media are devoid of any protective covering or casing (i.e., a naked disc).
- 30.52 Having specified disc rack:**  
This subclass is indented under subclass 30.51. Subject matter including specifics of a disc storage array that stores and separates the discs inside the storage system.
- 30.53 Having particular removable magazine:**  
This subclass is indented under subclass 30.51. Subject matter including specifics of a disc housing that holds multiple naked discs in a single contained unit wherein the disc housing must be easily inserted into and ejected from the storage system by a user.
- 30.54 Mounting or locking magazine to library system:**  
This subclass is indented under subclass 30.51. Subject matter including specifics of how the removable disc housing is secured or maintained in a fixed position inside the storage system after insertion thereof into the storage system.
- 30.55 Having specified picker:**  
This subclass is indented under subclass 30.51. Subject matter including specifics of a gripper assembly for selectively grasping user-selected naked discs and moving them within the storage system.
- 30.56 Of carousel library system:**  
This subclass is indented under subclass 30.55. Subject matter wherein the gripper assembly is used within a storage system that has one or more storage racks which store the naked discs in a radial array of discs so that the storage racks rotate about a central location or point.
- 30.57 Picker support structure detail (i.e., mechanism for moving picker):**  
This subclass is indented under subclass 30.51. Subject matter including specifics of a mechanism for permitting a gripper assembly to transport the naked discs within the storage system.
- 30.58 Having specified disc drive:**  
This subclass is indented under subclass 30.51. Subject matter including specifics of a disc recording/reproducing unit used to mount the naked discs during playback or recording of information from the naked disc.
- 30.59 Drive moves into alignment with disc:**  
This subclass is indented under subclass 30.58. Subject matter wherein the disc recording/reproducing unit has a mechanism to move the disc recording/reproducing unit into position across from a selected naked disc to be recorded/reproduced.
- 30.6 Having particular mechanism or slot for transferring disc into library from outside:**  
This subclass is indented under subclass 30.51. Subject matter including specifics of a transferring structure used to move the naked discs from the exterior of the storage system to inside the storage system.
- 30.61 Linear vertical or horizontal array:**  
This subclass is indented under subclass 30.51. Subject matter wherein the storage system has one or more storage racks which store the naked discs within the storage system wherein the storage racks must be oriented either horizontally or vertically in a linear fashion.
- 30.62 Carousel array:**  
This subclass is indented under subclass 30.51. Subject matter wherein the storage system has one or more storage racks which store the naked discs in a radial array so that the storage racks rotate about a central location or point.
- 30.63 Having particular cabinet:**  
This subclass is indented under subclass 30.38. Subject matter including specifics of an outer housing that contains the entire storage system therein.
- 30.64 Plural optical storage media in disc changer:**  
This subclass is indented under subclass 30.03. Subject matter wherein multiple storage mediums are contained within a storage system for recording or reproducing purposes wherein storage medium drives contained therein are permanently contained within the storage system and are devoid of individual housings that protect each storage medium drive.

- 30.65 Plural media are discs stored in cartridges:**  
This subclass is indented under subclass 30.64. Subject matter wherein the multiple storage mediums are each a plate-shaped planar recording medium contained within a protective casing or sleeve for covering the recording medium during use.
- 30.66 Having specified stocker or internal magazine:**  
This subclass is indented under subclass 30.65. Subject matter including specifics of a disc cartridge housing that separates and stores the disc cartridges within the housing of the storage system.
- 30.67 Stocker or internal magazine is adjustable or movable:**  
This subclass is indented under subclass 30.65. Subject matter including specifics of a disc cartridge storage rack that is movable within the storage system so as to move the entire storage rack of disc cartridges.
- 30.68 Having particular removable magazine:**  
This subclass is indented under subclass 30.65. Subject matter including specifics of a disc cartridge housing that holds multiple disc cartridges in a single contained unit wherein the disc cartridge housing is easily inserted into and ejected from the storage system by a user.
- 30.69 Mounting or locking magazine to disc changer:**  
This subclass is indented under subclass 30.65. Subject matter including details of how a disc cartridge container for holding a plurality of disc cartridges is secured within the storage system after insertion by the user from the outside.
- 30.7 Having particular internal transfer mechanism for transferring disc while disc is inside of disc changer:**  
This subclass is indented under subclass 30.65. Subject matter including specifics of a transport assembly for selectively engaging user-selected disc cartridges and moving them within the storage system.
- 30.71 Of carousel changer:**  
This subclass is indented under subclass 30.7. Subject matter wherein the transport assembly is contained within a storage system which has a radial array of disc cartridges positioned so as to rotate about a central location or point.
- 30.72 Having particular internal support structure for internal transfer mechanism:**  
This subclass is indented under subclass 30.65. Subject matter including details of a structural support mechanism that enables movement of a transport mechanism that transfers selected disc cartridges within the storage system.
- 30.73 Having specified drive:**  
This subclass is indented under subclass 30.65. Subject matter including specifics of a disc recording/reproducing unit used to mount the disc cartridges during playback or recording of information from the disc cartridge.
- 30.74 Movable drive:**  
This subclass is indented under subclass 30.73. Subject matter wherein the disc recording/reproducing unit has a mechanism to move disc recording/reproducing unit into position across from a selected disc cartridge to be recorded/reproduced.
- 30.75 Having particular mechanism or slot for transferring disc into changer from outside:**  
This subclass is indented under subclass 30.65. Subject matter including specifics of transferring structure used to move the disc cartridge from the exterior of the storage system to inside the storage system.
- 30.76 Plural media are unprotected (i.e., discs that are not in cartridges):**  
This subclass is indented under subclass 30.64. Subject matter including specifics of the recording media wherein each of the recording media are devoid of any protective covering or casing (e.g., a naked disc).
- 30.77 Having specified stocker or internal magazine:**  
This subclass is indented under subclass 30.76. Subject matter including specifics of a naked disc housing that separates and stores multiple naked discs within the housing of the storage system.

- 30.78 Stocker or internal magazine is adjustable or movable:**  
This subclass is indented under subclass 30.76. Subject matter including specifics of a naked disc storage rack that is movable within the storage system so as to move the entire storage rack of naked discs.
- 30.79 In carousel changer:**  
This subclass is indented under subclass 30.78. Subject matter wherein the storage rack is contained within a storage system which has a radial array of naked discs positioned so as to rotate about a central location or point.
- 30.8 Positioning mechanism:**  
This subclass is indented under subclass 30.79. Subject matter including specifics of a mechanism for determining the orientation of the storage rack containing the radial array of naked discs so as to provide feedback on the particular location of the naked discs or the storage rack.
- 30.81 Having disc reproduced while entirely in magazine:**  
This subclass is indented under subclass 30.76. Subject matter wherein the naked disc that is being played back must be maintained entirely with a naked disc housing that holds multiple naked discs in a single contained unit during the playback process.
- 30.82 Having disc reproduced while partially in magazine:**  
This subclass is indented under subclass 30.76. Subject matter wherein the naked disc that is being played back is only fractionally removed from a naked disc housing that holds multiple naked discs in a single contained unit during the playback process.
- 30.83 Having particular removable magazine:**  
This subclass is indented under subclass 30.76. Subject matter including specifics of a naked disc housing that holds multiple naked discs in a single contained unit wherein the naked disc housing is easily inserted into and ejected from the storage system by a user.
- 30.84 Mounting or locking magazine to disc changer:**  
This subclass is indented under subclass 30.76. Subject matter including details of how a naked disc housing for holding a plurality of naked discs is secured within the storage system after insertion by the user from the outside.
- 30.85 Having particular internal transfer mechanism for transferring disc while disc is inside of disc changer:**  
This subclass is indented under subclass 30.76. Subject matter including specifics of a transport assembly for selectively engaging user-selected naked discs and moving them within the storage system.
- 30.86 Of a carousel changer:**  
This subclass is indented under subclass 30.85. Subject matter wherein the transport assembly is contained within a storage system which has a radial array of naked discs positioned so as to rotate about a central location or point.
- 30.87 Having specified internal support structure for internal transfer mechanism:**  
This subclass is indented under subclass 30.76. Subject matter including details of a structural support mechanism that enables movement of a transport mechanism that transfers selected naked discs within the storage system.
- 30.88 Having specified drive:**  
This subclass is indented under subclass 30.76. Subject matter including specifics of a naked disc recording/reproducing unit used to mount the naked discs during playback or recording of information from the disc cartridge.
- 30.89 Movable drive:**  
This subclass is indented under subclass 30.88. Subject matter wherein the disc recording/reproducing unit has a mechanism to move the disc recording/reproducing unit into position across from a selected naked disc to be recorded/reproduced.
- 30.9 Having particular mechanism or slot for transferring disc into changer from outside:**  
This subclass is indented under subclass 30.76. Subject matter including specifics of transferring structure used to move the naked disc from

- the exterior of the storage system to inside the storage system.
- 30.91 Of carousel changer:**  
This subclass is indented under subclass 30.9. Subject matter wherein the transferring structure is contained within a storage system which has a radial array of naked discs positioned so as to rotate about a central location or point.
- 30.92 Plural trays:**  
This subclass is indented under subclass 30.9. Subject matter wherein the transferring structure used to move the naked discs from the exterior of the storage system must have two or more separate tray structures for transferring the naked discs.
- 30.93 One tray for multiple discs:**  
This subclass is indented under subclass 30.9. Subject matter wherein the transferring structure used to move the naked discs from the exterior of the storage system contains only a single unitary tray structure that holds more than one naked disc for transport thereof.
- 30.94 Loading mechanism:**  
This subclass is indented under subclass 30.93. Subject matter including specifics of a system of parts used to move the single tray structure from the exterior of the storage system to inside the storage system.
- 30.95 Chucking mechanism:**  
This subclass is indented under subclass 30.93. Subject matter including specifics of a system of parts used to clamp a selected naked disc onto a recording/reproducing unit for the purpose of recording to or playing back the selected naked disc.
- 30.96 Locking mechanism:**  
This subclass is indented under subclass 30.93. Subject matter including specifics of a system of parts used to firmly hold, secure, or immobilize the single tray structure while inside the storage system.
- 30.97 Positioning mechanism:**  
This subclass is indented under subclass 30.93. Subject matter including specifics of a system of parts used to spatially orient the single tray structure while inside the storage system so as to be able to determine the location of any one of the multiple naked discs.
- 30.98 Having single motor that drives multiple mechanisms:**  
This subclass is indented under subclass 30.93. Subject matter including specifics of an individual motor and its corresponding system of parts used to actuate more than one unit within the storage system (e.g., a single motor for actuating both a disc tray transferring system and a disc clamping system).
- 30.99 One tray for single disc:**  
This subclass is indented under subclass 30.9. Subject matter wherein the transferring structure used to move the naked discs from the exterior of the storage system contains only a single unitary tray structure that holds only one naked disc for transport thereof.
- 31.01 Having particular cabinet:**  
This subclass is indented under subclass 30.64. Subject matter including specifics of an outer housing that contains the entire storage system therein.
- 32.01 Specified electrical information signal processing:**  
This subclass is indented under subclass 30.01. Subject matter including detail of handling the information signal.
- SEE OR SEARCH THIS CLASS, SUBCLASS:  
99 through 175, for information signal processing absent selective addressing.
- 33.01 Specified electrical control signal processing:**  
This subclass is indented under subclass 30.01. Subject matter including detail of handling of an electrical signal which affects the operation of storage medium element or portion selection.
- (1) Note. The electrical control signal is a signal other than a signal recorded on or reproduced from the storage medium.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

32.01, for selective addressing including processing of a signal recorded on or reproduced from the storage medium.

SEE OR SEARCH CLASS:

340, Communications: Electrical, subclasses 4.37 and 4.4 for similar subject matter absent structure detail of signal storage.

**34.01 Plural storage medium elements:**

This subclass is indented under subclass 33.01. Subject matter wherein the selection is of one of a plurality of separate storage medium elements.

**35.01 Plural nontranslating storage elements (e.g., in situ):**

This subclass is indented under subclass 30.01. Subject matter having plural storage elements wherein the transducing assembly produces all storage element selecting motion.

- (1) Note. The transducing assembly may have associated structure for driving the storage element in use.
- (2) Note. The storage elements have no motion other than that used for storage or retrieval.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

39.01, for a scanning turntable which moves the storage element from its nonselected position in a plural disc carrier.

**36.01 Unitary plural record carrier:**

This subclass is indented under subclass 30.01. Subject matter wherein an integrated mechanical array holds the discs in some way that they are readily accessible for selection.

- (1) Note. The array holding the discs may be referred to as a magazine.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

192.1, for this subject matter absent storage medium designation and cross reference thereto should not be made in the

absence of a nonselective embodiment.

SEE OR SEARCH CLASS:

318, Electricity: Motive Power Systems, subclasses 567 through 579 for electric motor positioning systems not limited to the subject of this class as an end element or load.

**37.01 Radial array:**

This subclass is indented under subclass 36.01. Subject matter wherein the mechanical array holds the storage discs in a nonparallel pattern or spacing, which pattern may have characteristic lines with a common center.

- (1) Note. Either the array or retrieval station may move for selective positioning.
- (2) Note. The diameter of each disc in a common plane may be seen to radiate from the same center.
- (3) Note. The array classified here may be merely a segment or a portion, or an entire circumference.
- (4) Note. Arrays of small groups of discs, possibly parallel within each group but spaced radially group to group, are classified here.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

192.1, for this subject matter absent storage medium designation and cross reference thereto should not be made in the absence of a nonselective embodiment.

**38.01 Moving linear array:**

This subclass is indented under subclass 36.01. Subject matter wherein the mechanical array holds the storage discs in parallel along a common axis and which array is movable along such axis for positioning a selected disc adjacent a retrieval station.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

37.01, for arrays of small groups of discs, parallel within each group but spaced radially group to group.

192.1, for this subject matter absent storage medium designation and cross reference thereto should not be made in the absence of a nonselective embodiment.

**39.01 Scanning turntable:**

This subclass is indented under subclass 36.01. Subject matter wherein the storage medium motion producer moves along a stationary array for positioning relative to a selected disc.

- (1) Note. The storage medium motion producer may be a turntable of such small diameter as to permit access to both sides of a disc.

SEE OR SEARCH THIS CLASS, SUBCLASS:

192.1, for this subject matter absent storage medium designation and cross reference thereto should not be made in the absence of a nonselective embodiment.

**40.01 By manually actuated mechanism for movement of tone arm:**

This subclass is indented under subclass 30.01. Subject matter including a hand-actuated linkage coupled to a tone arm for setting to a selected position on a storage disc.

**41.01 Of track on single storage medium:**

This subclass is indented under subclass 30.01. Subject matter wherein the designated portion of the storage medium is a distinct path of information modulated variation on the surface thereof.

**42.01 By mechanical linkage:**

This subclass is indented under subclass 24.01. Subject matter including a device having a plurality of relatively moving parts for transmitting a controlling force or motion from another location to the storage or retrieval location.

- (1) Note. Examples of such devices are Bowden cables or pneumatic actuators.

**43 WITH SERVO POSITIONING OF TRANSDUCER ASSEMBLY OVER**

**TRACK COMBINED WITH INFORMATION SIGNAL PROCESSING:**

This subclass is indented under the class definition. Subject matter having closed-loop control of the alignment between the transducer assembly and the information storage track combined with handling of the information signal.

- (1) Note. The servo corrects alignment error and, if necessary, provides tracking motion for the transducer assembly.

SEE OR SEARCH THIS CLASS, SUBCLASS:

220, for transducer support control of powered support drive having storage or retrieval absent information signal handling.

SEE OR SEARCH CLASS:

360, Dynamic Magnetic Information Storage or Retrieval, subclasses 77.01+ for track centering on a magnetic record carrier.

**44.11 Optical servo system:**

This subclass is indented under subclass 43. Subject matter wherein the servo positioning is controlled by a radiant energy transducer.

- (1) Note. The transducer may be either an information sensing transducer or an auxiliary transducer. Incidental recitation of focusing or tracking, or a servo system therefor, is not enough to permit classification here.

SEE OR SEARCH THIS CLASS, SUBCLASS:

44.27, for recording systems with initialization/startup/changing modes concepts.

44.32, for recording systems with defect/abnormal condition concepts.

44.38, for a recording system claimed in a plural beam system.

47 and 51, for optical information storage or retrieval systems where a pilot signal is used.

93+, for optical systems using plural distinct independent tracks.

100+, for optical systems with specific detail of information handling portion of system.

**SEE OR SEARCH CLASS:**

250, Radiant Energy, subclasses 201.1+ for optical tracking devices in radiant energy systems, per se.

**44.12 Solid state optical element with plural dissimilar optical components (e.g., using i.c. block, etc.):**

This subclass is indented under subclass 44.11. Subject matter including a block of material of an integrated chip, semiconductor or solid state nature with plural dissimilar optical components or at least one optical component with an additional electrical component combined therein.

- (1) Note. Examples are acoustic beam deflector and tracking circuit are on the same block of material, or a diode laser and acoustic lens in the same block of material.
- (2) Note. Plural lasers or lasing points of the same frequency/wavelength on a common substrate are not classified herein since they have similar structure, but may be classified in this Class, subclass 44.37 or 44.38. However, if they are of different structure (i.e. different laser types) combined in a common structure they are classified herein.

**SEE OR SEARCH THIS CLASS, SUBCLASS:**

44.37, or 44.38, for servo systems using plural beams.

**SEE OR SEARCH CLASS:**

257, Active Solid-State Devices (e.g., Transistors, Solid-State Diodes), subclasses 13, 79 through 103 and 918 for incoherent light emitting injection luminescent devices, subclasses 80-85 for semiconductor light emitting sources combined with semiconductor light responsive devices, and subclasses 10, 11, 21, 53-56, 72, 113-118, 184 through 189, 225 through 234, 257, 258, 290 through 294, 414, and

431 through 466 for light responsive active semiconductor devices.

385, Optical Waveguides, subclass 14 for an integrated optical circuit and subclasses 129+ for a planar optical waveguide.

**44.13 Dithering or wobbling the beam or track:**

This subclass is indented under subclass 44.11. Subject matter wherein a beam or track is dithered wobbled, undulated, vibrated, or oscillated along a track center line for tracking or focusing control.

**44.14 Optical head servo system structure:**

This subclass is indented under subclass 44.11. Subject matter including structural detail of the mechanisms for focussing or tracking.

- (1) Note. Optical head is defined as a device for producing a focused beam of light on a medium containing information and detecting the light reflected from the medium to determine the information content of the medium.

**SEE OR SEARCH CLASS:**

359, Optical: Systems and Elements, subclasses 196.1 through 226.3 and 819+ for optical heads in general, with or without servo system combination, when no recording/playback or combination with the recording medium is claimed.

**44.15 Elastic, flexible, pliant or spring support of lens or mirror:**

This subclass is indented under subclass 44.14. Subject matter wherein an optical element is supported by some type of elastic, flexible, pliant, resilient or spring support for allowing or limiting motion in one or more various directions (e.g., elastic support holds lens or mirrors and permits focus motion but limits lateral motion, etc.).

- (1) Note. A piezoelectric bender which supports the lens or mirror meets the definition and its flexible condition.



**44.16 Flat flexible support (e.g., parallel leaf springs, etc.):**

This subclass is indented under subclass 44.15. Subject matter with planar means to limit or provide a limited direction of motion (e.g., support permits only one of focusing or tracking motion to occur, etc.).

**44.17 Optical head element with rotary motion:**

This subclass is indented under subclass 44.14. Subject matter wherein an optical head element such as a lens or mirror pivots/rotates about its own axis or about a support axis in order to scan or focus on the track.

**44.18 Rotary headwheel or scanner (e.g., for use with arcuate, transverse or slant tracks, etc.):**

This subclass is indented under subclass 44.17. Subject matter wherein an optical component rotates through a 360 degree motion to follow a track.

- (1) Note. Slant tracks or tracks transverse to the storage medium motion are found on tape or card medium where the medium moves before or as the beam is directed across the medium.

SEE OR SEARCH THIS CLASS, SUBCLASS:

97, for systems using tracks transverse to a motion component.

SEE OR SEARCH CLASS:

360, Dynamic Magnetic Information Storage or Retrieval, appropriate subclasses for magnetic rotary heads and headwheels and the combination with magnetic tape.

**44.19 Head element pivots on arm (e.g., optical head on disc arm etc.):**

This subclass is indented under subclass 44.17. Subject matter including a support arm which rotates about a pivot point to drive the lens or mirror transverse to the track direction (e.g., optical lens or mirror is pivoted on a phonograph type arm which may provide both track accessing and tracking control, etc.).

**44.21 Lens or mirror pivots off center (e.g., on a shaft, etc.):**

This subclass is indented under subclass 44.17. Subject matter wherein the support may or may not pivot about its own central axis, but the lens or mirror on this support is pivoted off center.

**44.22 Lens or mirror floats (e.g., magnetic field support or lens/mirror can freely float and pivot about its own axis, etc.):**

This subclass is indented under subclass 44.14. Subject matter wherein the lens or mirror has no support and floats with potential freedom of motion in any direction, though a field such as a magnetic field which may limit and control its position and movement.

**44.23 Structure for shaping beam or causing astigmatic condition:**

This subclass is indented under subclass 44.14. Subject matter having means to modify the cross-sectional profile or energy distribution of the beam or cause an astigmatic beam condition.

- (1) Note. The phrase "shaping beam" is intended to include changing the intensity distribution characteristics or cross-sectional profile or size/diameter of the beam (e.g., for beam intensity control etc.) but not for routine focus control which inherently alters the beam size/diameter.
- (2) Note. An "astigmatic" condition may be created by a cylindrical or unidirectional lens.
- (3) Note. Astigmatic is defined as a spherical aberration.

**44.24 Means to mask or shield a portion of the beam:**

This subclass is indented under subclass 44.23. Subject matter wherein a modification is performed by masking or shielding a cross-sectional portion of the beam.

- (1) Note. The masking or shielding can be caused by one photodetector blocking a portion of the beam from falling onto another photodetector.

SEE OR SEARCH THIS CLASS, SUBCLASS:

44.42, where the servo system has arithmetic operations performed on plural detectors outputs and the servo system is responsive to a particular shape of the beam by virtue of the beam or detector being that shape.

**44.25 Servo signal compared to a reference signal:**

This subclass is indented under subclass 44.11. Subject matter wherein a developed servo signal is compared to an external reference signal.

SEE OR SEARCH THIS CLASS, SUBCLASS:

44.27, if in an initialization/start-up or changing modes system.

44.34, if the reference signal is sampled and stored signal of an earlier servo signal.

**44.26 Servo system operation related to disc structure information format:**

This subclass is indented under subclass 44.11. Subject matter wherein the operation of the servo system is in cooperation with an information arrangement, format, layout, pattern or track structure on the record medium.

- (1) Note. The system can be, for example, a preformatted disc where tracking is turned on during preformatted regions and off during nonrecorded regions absent tracking data, or where servo operation is integral with or affected by a constant linear velocity disc format mode of operation, etc.

**44.27 Initialization/start-up or changing modes of system:**

This subclass is indented under subclass 44.11. Subject matter wherein the servo system is affected by a change of mode in operation at the beginning of system operation or a change of mode during system operation.

- (1) Note. "Random accessing" or indexing concepts may be classified herein if no specific "selective addressing" or feedback indication of arriving at a particular track address occurs.

- (2) Note. The action taken by the servo system must be outside or beyond its normal routine ongoing continuous servo operation.

- (3) Note. Varying the servo system control during a change between recording and playback or tracking modes due to the information format of the disc is classified above in subclass 44.26.

- (4) Note. Examples of initialization/start-up are first track recording and track jumping or crossing during a random access type of operation.

- (5) Note. Examples of mode change during operation are: switching between coarse/fine servo control as servo operation begins/changes modes, and the servo system responding to some user initiated operation.

SEE OR SEARCH THIS CLASS, SUBCLASS:

30.01 through 41.01, for random accessing systems with selective addressing.

44.11, for generic recording systems without recitation of plural beams.

44.32, for recording systems with defect/abnormal condition concepts.

44.34, for sampling or digital techniques not associated with the criteria for subclass 44.27.

44.38, for a recording system claimed in a plural beam system.

**44.28 While track jumping or crossing:**

This subclass is indented under subclass 44.27. Subject matter wherein the servo system is operative during a track jumping or track changing operation or as plural tracks are crossed.

SEE OR SEARCH THIS CLASS, SUBCLASS:

44.32, for the concept of "track crossing" when not normally associated with a deliberate action to jump across plural tracks such as during initial addressing or relocating to another track but where track crossing may be accidentally introduced by some abnormal

condition as found in subclasses 44.32+ below.

**44.29 Servo loop gain/switching control:**

This subclass is indented under subclass 44.27. Subject matter wherein the servo system continuously varies the servo gain or discretely switches in/out between servo loops.

- (1) Note. Varying the gain may be some control operation not only to change the gain but to have the ability to vary it to keep it stable and prevent undesired varying, and varying the gain may be implemented with either active or passive (e.g., notch filter, etc.) elements.
- (2) Note. Gain is defined as the ratio of output power to input power for a system or component.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

44.35, servo loop gain/switching control not associated with criteria for subclass 44.27.

**44.31 Recording:**

This subclass is indented under subclass 44.29. Subject matter wherein an optical system is capable of a writing/recording operation.

- (1) Note. An example is recording of a first track on a disc which is then used for tracking control for further tracks being recorded.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

44.33, for recording systems with a defect/abnormal condition.  
 44.38, for a recording system claimed in a plural beam system.  
 44.39, for generic recording systems without recitation of plural beams.

**44.32 Means to compensate for defect or abnormal condition:**

This subclass is indented under subclass 44.11. Subject matter wherein the servo system structure or operation has means to avoid the servo system being affected by, or so that it is responsive to and corrects for an adverse situation.

- (1) Note. Examples of conditions being corrected are disc defects, tilt, vibrations, shocks, impacts, skew to normal direction to the disc surface, vertical warp, jitter, eccentricity, beam variations or some condition outside of the ordinary servo operation condition, etc.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

44.11, for generic recording systems.  
 44.27, for recording systems with initialization/start-up/changing modes concepts.  
 44.38, for a recording system claimed in a plural beam system.

**44.33 Recording (e.g., inhibit recording upon defect, etc.):**

This subclass is indented under subclass 44.32. Subject matter comprising a writing/recording system in combination with compensation means.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

44.31, for recording systems including initialization/start-up.  
 44.38, for a recording system claimed in a plural beam system.  
 44.39, for generic recording systems without recitation of plural beams.

**44.34 Sampling servo system:**

This subclass is indented under subclass 44.11. Subject matter wherein an instantaneous value of a variable is obtained at regular intervals (e.g., sample and hold, be it analog or digital storage, etc.).

**44.35 Servo loop gain/switching control:**

This subclass is indented under subclass 44.11. Subject matter wherein the servo system varies the servo gain or switches in/out or between servo loops.

- (1) Note. Varying the gain also includes techniques for stabilization.
- (2) Note. Varying the gain may be implemented with either active or passive (e.g., notch filter etc.) elements.

- (3) Note. Gain is defined as the ratio of output power to input power of a system or component.
- 44.36 Variable gain:**  
This subclass is indented under subclass 44.35. Subject matter wherein the servo gain is variable in a continuous manner as opposed to being switched between values, but may be combined with switching operations.
- 44.37 Plural incident beams:**  
This subclass is indented under subclass 44.11. Subject matter wherein plural beams incident upon the recording medium are used, which may be one or more focusing, tracking, playback or recording beams.
- (1) Note. Plurals beams created by splitting a single beam from the recording medium (e.g., etc., reflected beam is split and directed to plural detectors) is not classified here.
- 44.38 Recording:**  
This subclass is indented under subclass 44.37. Subject matter wherein one of the beams is for writing/recording operations.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
- 44.31, for recording systems with initialization/start-up/changing modes concepts.
- 44.33, for recording systems with defect/abnormal condition concepts.
- 44.39, for generic recording systems without recitation of plural beams.
- 44.39 Recording:**  
This subclass is indented under subclass 44.11. Subject matter comprising an optical system capable of a writing/recording operation.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
- 44.31, for recording systems with initialization/start-up.
- 44.33, for recording systems with defect/abnormal condition.
- 44.38, for a recording system claimed in a plural beam system.
- 44.41 Arithmetic operation using plural photo-detectors:**  
This subclass is indented under subclass 44.11. Subject matter where more than one of addition, subtraction, multiplication, division is performed upon an output signals of plural photodetectors for the purpose of deriving one or more servo signals.
- 44.42 Beam or detector is not rectangular or circular:**  
This subclass is indented under subclass 44.41. Subject matter wherein either the beam or the detector has a shape other than rectangular or circular.
- 47.1 CONTROL OF STORAGE OR RETRIEVAL OPERATION BY A CONTROL SIGNAL TO BE RECORDED OR REPRODUCED:**  
This subclass is indented under the class definition. Subject matter wherein a control signal to be stored or retrieved acts upon a dynamic information storage and retrieval apparatus for modifying, adjusting, or maintaining an operating condition of the apparatus.
- (1) Note. The control signal may be either an information signal or a distinct signal used for control purpose only.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
- 19 through 23, for control by timer or external extraneous condition.
- 24.01 through 42.01, for control of a storage or retrieval apparatus by location of an information on a storage medium or by an operator-actuated remote control.
- 43 through 44.42, for servo system combined with information signal processing.
- SEE OR SEARCH CLASS:
- 360, Dynamic Magnetic Information Storage or Retrieval, appropriate subclasses for similar subject matter limited to magnetic storage or retrieval, particularly subclass 27 for recording or reproducing an information signal and a control signal for controlling electronics of reproducer, subclasses

- 55-68 for general recording or reproducing, subclasses 69-78.15 for automatic control of a recorder mechanism, subclasses 79-80 for recorder control of an external device.
- 386, Motion Video Signal Processing for Recording or Reproducing, appropriate subclasses for recording and reproduction of television or video signal.
- 700, Data Processing: Generic Control Systems or Specific Applications, appropriate subclasses for digital data processing control systems, particularly subclass 94 for digital audio data processing system.
- 711, Electrical Computers and Digital Processing Systems: Memory, subclass 4 for addressing dynamic storage devices including address formation or manipulation, and subclasses 111-114 for data accessing and control techniques for dynamic storage device in a digital data processing system.

**47.11 Control of initiation of pause mode:**

This subclass is indented under subclass 47.1. Subject matter wherein the control signal acts upon the apparatus to terminate a storage or retrieval operation and to place the apparatus in a temporarily inactive condition.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 24.01 through 42.01, for control of a storage or retrieval apparatus by location of an information on a storage medium or by an operator-actuated remote control.

**47.12 For copying:**

This subclass is indented under subclass 47.1. Subject matter wherein the control signal acts upon the apparatus to retrieve information from one storage medium to subsequently store the information on another distinct storage medium.

- (1) Note. Copying without a control signal is excluded from this subclass.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 53.21, for indication of copying or editing protection.
- 84, for copying or duplication without a control signal.

SEE OR SEARCH CLASS:

- 360, Dynamic Magnetic Information Storage or Retrieval, subclass 15 for record copying, subclass 60 for recording or erasing prevention.
- 386, Motion Video Signal Processing for Recording or Reproducing, subclasses 252 through 260 for video copy identification protection, and subclass 279 for video copying or dubbing.

**47.13 For editing:**

This subclass is indented under subclass 47.1. Subject matter wherein the control signal acts upon the apparatus to delete, add, or rearrange portions of a stored information signal.

- (1) Note. Editing without a control signal is excluded from this subclass.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 53.21, for indication of copying or editing protection.
- 83, for editing of stored information without a control signal.

SEE OR SEARCH CLASS:

- 360, Dynamic Magnetic Information Storage or Retrieval, subclass 13 for record editing, subclass 60 for recording or erasing prevention.
- 386, Motion Video Signal Processing for Recording or Reproducing, subclasses 278 through 290 for video editing in a recording and reproduction device.

**47.14 By medium defect indicative control signal:**

This subclass is indented under subclass 47.1. Subject matter wherein the dynamic information storage and retrieval apparatus is acted upon by a control signal that indicates a presence of an unrecordable region due to abnor-

mality within a recordable region of a record medium.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 53.17, for defect location indication.
- 53.24, for indication of an unrecorded location within a recordable region without a control signal.
- 53.35, for signal error correction or detecting.

SEE OR SEARCH CLASS:

- 714, Error Detection/Correction and Fault Detection /Recovery, subclass 769 for digital error correction in a dynamic data storage.

**47.15 Control of information signal processing channel:**

This subclass is indented under subclass 47.1. Subject matter wherein an information signal processing circuitry is affected by the control signal for determining a parameter of an information signal.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 53.31, for monitoring or testing of a stored or a retrieved information signal in a dynamic radiation information storage or retrieval system.
- 53.34, for monitoring or testing of a time related parameter, such as example, duty cycle, jitter, sync, etc., of an information signal.
- 53.44, for monitoring or testing of a stored or a retrieved information signal in a dynamic information storage or retrieval system.
- 59.1 through 59.27, for dynamic storage or retrieval of a binary pulse train information signal.
- 124.01 through 124.15, for specific information signal processing without a control signal.
- 174, for specific detail of information handling portion of system, including detail of signal modification.

**47.16 Of plural interrelated channels:**

This subclass is indented under subclass 47.15. Subject matter wherein the information signal processing circuitry includes distinct paths for

several signal components of the information signal and determined parameters of such components have a definite relationship to each other.

**47.17 For removal of unwanted signal component:**

This subclass is indented under subclass 47.15. Subject matter wherein the information signal processing circuitry is affected by the control signal for removing a signal component that does not represent information from the information signal.

- (1) Note. Such signal component includes, for example, distortion, noise, crosstalk, or intersymbol interference signal component.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 53.33, for a dynamic information storage or retrieval system having unwanted signal component indication.

SEE OR SEARCH CLASS:

- 386, Motion Video Signal Processing for Recording or Reproducing, subclasses 263 through 277 for error or fault detection and/or correction during video recording or reproduction.
- 714, Error Detection/Correction and Fault Detection /Recovery, appropriate subclasses.

**47.18 For interpolating or drop-out correcting:**

This subclass is indented under subclass 47.15. Subject matter wherein the information signal processing circuitry is affected by the control signal for generating additional or missing signal component and inserting such signal component into the information signal.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 53.32, for drop-out indication of an information signal in a dynamic radiation information storage or retrieval system.

## SEE OR SEARCH CLASS:

386, Motion Video Signal Processing for Recording or Reproducing, subclasses 270 through 272 for video drop-out detection and correction during video recording or reproduction.

**47.19 For modulating or demodulating:**

This subclass is indented under subclass 47.15. Subject matter wherein the information signal processing circuitry is affected by the control signal for a) converting an input signal into a recording signal by varying amplitude, frequency, or phase thereof using a carrier signal or b) extracting an input information signal from retrieved modulated signal.

## SEE OR SEARCH THIS CLASS, SUB-CLASS:

124.04, for modulating or demodulating without a control signal.

## SEE OR SEARCH CLASS:

329, Demodulators, appropriate subclasses for demodulators per se.  
 332, Modulators, appropriate subclasses for modulators per se.  
 340, Communications: Electrical, subclasses 13.1 through 13.36 for a phase and frequency responsive selective system and subclasses 870.18-870.24 for a frequency or phase modulated telemetry system.  
 348, Television, subclass 724 for a modulator of a television transmitter circuitry.  
 360, Dynamic Magnetic Information Storage or Retrieval, subclasses 29 through 30 for modulating and demodulating circuitry or techniques.  
 370, Multiplex Communications, subclasses 212, 213 and 215 for pulse duration, pulse position, and phase modulation, respectively.  
 375, Pulse or Digital Communications, appropriate subclasses for pulse, amplitude or angle modulation in a receiver or transmitter of a digital communication system.  
 386, Motion Video Signal Processing for Recording or Reproducing, subclasses 307 through 312 for frequency or phase modulation of color

video signal during video recording or reproduction.

**47.2 For multiplexing or demultiplexing:**

This subclass is indented under subclass 47.15. Subject matter wherein the information signal processing circuitry is affected by the control signal for a) combining plural input signals into a recording signal such that at any instance of time one signal is presented at an output channel for recording or b) separating a retrieved multiplexed signal into plural output signals for reproducing.

## SEE OR SEARCH THIS CLASS, SUB-CLASS:

59.27, for binary signal multiplexing or demultiplexing.  
 124.09, for multiplexing or demultiplexing without a control signal.

## SEE OR SEARCH CLASS:

370, Multiplex Communications, subclasses 437+ for channel assignment techniques.

**47.21 Of sub-code information:**

This subclass is indented under subclass 47.2. Subject matter wherein a supplemental information signal associated with a main information signal is multiplexed or demultiplexed.

## SEE OR SEARCH THIS CLASS, SUB-CLASS:

124.07, for auxiliary information arrangement processing without a control signal.

**47.22 Having location identification information:**

This subclass is indented under subclass 47.21. Subject matter wherein the supplemental information signal includes header or address information for identifying specific location on a record medium.

## SEE OR SEARCH THIS CLASS, SUB-CLASS:

47.27, for control of the amplitude of an information signal using information retrieved from a designated medium location such as preformat, header, or reference region.  
 47.31, for phase, time or rate processing using a program or address signal.

- 47.47, for control of relative motion producing mechanism using a program or address signal.
- 47.54, for control of transducer assembly mechanism using a program or address signal.
- 53.17, for indication of a defect location on the record medium.
- 59.25, for format arrangement processing for an auxiliary information such as sub-code information, headers of a binary pulse train information signal.
- 47.23 For sequencing or switching:**  
This subclass is indented under subclass 47.15. Subject matter wherein the information signal processing circuitry is affected by the control signal for a) producing a specific order of occurrence of portions of the information signal or b) selectively passing or routing of the information signal.
- SEE OR SEARCH CLASS:  
360, Dynamic Magnetic Information Storage or Retrieval, subclass 22 for splitting an information signal for reproducing or for recording on plural distinct tracks.  
386, Motion Video Signal Processing for Recording or Reproducing, subclass 333 for still mode recording, and subclass 341 for simultaneous recording of plural video signals.
- 47.24 Between alternative processing channels:**  
This subclass is indented under subclass 47.23. Subject matter including means for selecting one among a plurality of alternative processing operations to be performed on the information signal.
- SEE OR SEARCH THIS CLASS, SUBCLASS:  
59.13, for dynamic recording or reproducing of a binary pulse train information signal including a selection of one among a plurality of processing operations.
- SEE OR SEARCH CLASS:  
386, Motion Video Signal Processing for Recording or Reproducing, subclass 225 for a motion camera recording device having a still mode function.
- 47.25 For gain processing:**  
This subclass is indented under subclass 47.15. Subject matter wherein the information signal processing circuitry is affected by the control signal for varying an amplitude of the information signal.
- SEE OR SEARCH THIS CLASS, SUBCLASS:  
59.15, for binary signal gain processing.  
124.1 through 124.13, for gain processing without a control signal.  
134, for particular amplification characteristic or signal control circuitry.
- SEE OR SEARCH CLASS:  
330, Amplifiers, for amplifiers per se.  
360, Dynamic Magnetic Information Storage or Retrieval, subclass 46 for a head amplifier circuit, subclass 67 for specifics of an amplifier and subclass 68 for a recording amplifier.  
386, Motion Video Signal Processing for Recording or Reproducing, subclasses 304 through 305 for amplitude level control of a color video signal, and subclass 311 for amplitude modulation of luminance or chrominance of a color video signal during video recording or reproduction.
- 47.26 Within a frequency band:**  
This subclass is indented under subclass 47.25. Subject matter wherein the gain processing is within a specified frequency range.
- SEE OR SEARCH THIS CLASS, SUBCLASS:  
124.13, for a specific frequency range gain processing without a control signal.
- 47.27 Using a reproduced information of specified preformat, header, or reference area:**  
This subclass is indented under subclass 47.25. Subject matter wherein the amplitude of the information signal is controlled using a readout signal from a designated medium location such as preformat, header, or reference region.
- SEE OR SEARCH THIS CLASS, SUBCLASS:  
47.22, for control of information signal processing channel for multiplexing or



demultiplexing of information signal including location identification information.

47.31, for phase, time or rate processing using a program or address signal.

47.47, for control of relative motion producing mechanism using a program or address signal.

47.54, for control of transducer assembly mechanism using a program.

59.25, for format arrangement processing for an auxiliary information, such as block header or subcode information, of a binary pulse train information signal.

**47.28 For phase, timing, or rate processing:**

This subclass is indented under subclass 47.15. Subject matter wherein the information signal processing circuit is affected by the control signal for adjusting a time related parameter of the information signal such as phase, timing or rate.

SEE OR SEARCH THIS CLASS, SUBCLASS:

53.34, for monitoring or testing of a time related parameter of the information signal.

59.2, for phase processing of a binary signal.

124.14, for phase processing without a control signal.

SEE OR SEARCH CLASS:

386, Motion Video Signal Processing for Recording or Reproducing, subclass 207 for synchronization correction, subclass 221 for controlling speed of tape, subclass 222 for controlling speed of disk during video recording or reproduction, and subclass 274 for phase-crosstalk detection and/or correction.

**47.29 During retrieval at a dynamic retrieval rate different from storage rate:**

This subclass is indented under subclass 47.28. Subject matter wherein the time related parameter is adjusted during retrieval at a relative head-to-medium reproducing speed that is faster or slower than a relative head-to-medium recording speed.

(1) Note. Included herein is CAV vs CLV dynamic recording or reproducing apparatus.

SEE OR SEARCH CLASS:

386, Motion Video Signal Processing for Recording or Reproducing, subclasses 343 through 352 for trick play processing in a video recording and reproduction device.

**47.3 While changing of system mode or dynamic retrieval rate:**

This subclass is indented under subclass 47.28. Subject matter wherein the time related parameter is adjusted during a change in an operating mode of the apparatus or during a change in a relative head-to-medium reproducing speed.

SEE OR SEARCH CLASS:

386, Motion Video Signal Processing for Recording or Reproducing, subclasses 201 through 222 for synchronization or timing detection and/or correction in a recording and reproduction device.

**47.31 Using program or address signal:**

This subclass is indented under subclass 47.28. Subject matter wherein the time related parameter is adjusted using a signal indicative of a type or a specific location of stored information.

SEE OR SEARCH THIS CLASS, SUBCLASS:

47.22, for control of information signal processing channel for multiplexing or demultiplexing of an information signal including location identification information.

47.27, for control of an amplitude of the information signal using read out signal from a designated medium location such as preformat, header, or reference region.

47.47, for control of a relative motion producing mechanism using a program or address signal.

47.54, for control of a transducer assembly mechanism using a program or address signal.

59.25, for format arrangement processing for an auxiliary information of a binary pulse train information signal.

**47.32 Including static memory accessing:**

This subclass is indented under subclass 47.28. Subject matter comprising a static memory access control operation for writing or reading the information signal.

**SEE OR SEARCH CLASS:**

- 345, Computer Graphics Processing, Operator Interface Processing, and Selective Visual Display Systems, subclass 507 for memory organization and structure for storing images to be displayed, and subclass 521 for interfacing between a graphics processor and a memory.
- 353, Optics: Image Projectors, subclass 25 for selective data retrieval of stored information viewed by a projection means.
- 365, Static Information Storage and Retrieval, appropriate subclasses for a type of static memory, particularly subclasses 189.011 through 225.7 for read or write circuitry.
- 386, Motion Video Signal Processing for Recording or Reproducing, subclass 247 for utilizing a static memory as an auxiliary memory.
- 711, Electrical Computers and Digital Processing Systems: Memory, subclass 4 for addressing a dynamic storage device including address formation or manipulation, subclasses 111-114 for accessing a dynamic storage device of a digital data processing system.

**47.33 Including static memory fill level monitoring or controlling:**

This subclass is indented under subclass 47.32. Subject matter wherein the access control operation includes a) means for monitoring an amount of stored information in a static memory to control writing or reading of the information signal, or b) means for maintaining a stored or vacant static memory space at a predetermined value.

**SEE OR SEARCH CLASS:**

- 386, Motion Video Signal Processing for Recording or Reproducing, subclass 295 for memory space management during recording or reproduction operations.
- 707, Data Processing: Database, Data Mining, and File Management or Data Structures, subclasses 609 through 686 for file or database maintenance; subclasses 813 through 820 for garbage collection; and, subclasses 821 through 831 for file management.
- 711, Electrical Computers and Digital Processing Systems: Memory, subclasses 170 through 173 for memory configuration.

**47.34 Including static memory write address controlling:**

This subclass is indented under subclass 47.32. Subject matter wherein the access control operation includes means for controlling addressing of the static memory such that written information are positioned in the static memory according to a predetermined relationship.

**SEE OR SEARCH THIS CLASS, SUBCLASS:**

- 30.01 through 41.01, for subject matter related to designation or selection of storage medium to be used for storage and retrieval.
- 178.01, for dynamic mechanism subsystems for accessing multiple storage elements.

**SEE OR SEARCH CLASS:**

- 365, Static Information Storage and Retrieval, subclasses 189.01 through 225.7 for read or write circuitry.
- 707, Data Processing: Database, Data Mining, and File Management or Data Structures, subclasses 609 through 686 for file or database maintenance; subclasses 813 through 820 for garbage collection; and, subclasses 821 through 831 for file management
- 710, Electrical Computers and Digital Data Processing Systems: Input/Output, subclasses 22 through 28 for Direct Memory Access (DMA).

711, Electrical Computers and Digital processing Systems: Memory, subclass 4 for addressing dynamic storage devices including address formation or manipulation and subclasses 111-114 for data accessing and control techniques for dynamic storage device in a digital data processing system.

**47.35 For sampling, digital to analog or analog to digital converting:**

This subclass is indented under subclass 47.15. Subject matter wherein the information signal processing circuit is affected by the control signal for a) obtaining instantaneous values of an information signal or b) transforming a succession of discrete digital values of an information signal into an analog signal of corresponding amplitude values or transforming a continuous information signal into discrete digital values.

SEE OR SEARCH THIS CLASS, SUBCLASS:

124.05, for sampling without a control signal.  
59.21, for sampling or analog to digital converting of a binary information signal.

SEE OR SEARCH CLASS:

341, Coded Data Generation or Conversion, subclasses 122+ for sample or hold, subclasses 126-172 for analog to or from digital conversion.  
386, Motion Video Signal Processing for Recording or Reproducing, subclass 327 for using an A/D or D/A converter for video processing during recording operation.

**47.36 Mechanism control by the control signal:**

This subclass is indented under subclass 47.1. Subject matter wherein a mechanical operating condition is controlled by the control signal.

SEE OR SEARCH THIS CLASS, SUBCLASS:

19 through 23, for control by timer or external extraneous condition.  
24.01 through 42.01, for control of a storage or retrieval apparatus by physical location of an information on a storage medium or by an operator-actuated remote control.  
70, for control of a diverse art device.

176 through 271, for dynamic mechanism subsystem, particularly subclasses 231-233 for mechanism responsive to a control structure on a storage medium sensed by transducer assembly support, and subclasses 233-243 for mechanism condition or storage medium responsive control.

SEE OR SEARCH CLASS:

226, Advancing Material of Indeterminate Length, subclass 9 for control means responsive to indicia carried by auxiliary record (e.g., tape or card), and subclasses 10-45 for material responsive control means.  
242, Winding, Tensioning, or Guiding, subclasses 324 through 358.1 for means for unwinding and rewinding a machine convertible information carrier; e.g., a magnetic tape, particularly subclasses 333-333.7 for automated stop or reversal control for the carrier, and subclasses 334-334.6 for a carrier speed or tension control.  
318, Electricity: Motive Power Systems, appropriate subclasses, particularly subclasses 560 through 688 for positional servo systems.  
360, Dynamic Magnetic Information Storage or Retrieval, subclasses 69 through 78.15 for automatic control of a recorder mechanism, and subclasses 79-80 for recorder control of an external device such as slide or movie projectors.

**47.37 Control of spiral track spacing (e.g., signal variable pitch):**

This subclass is indented under subclass 47.36. Subject matter wherein the mechanical operating condition is controlled to adjust a displacement between adjacent tracks during storage of an information signal.

(1) Note. Such adjustment is often necessary for high values of signal amplitude when recording lateral groove.

SEE OR SEARCH THIS CLASS, SUBCLASS:

47.38 through 47.48, for controlling of relative motion producing mechanism.

47.49 through 47.54, for controlling of transducer assembly mechanism.

**SEE OR SEARCH CLASS:**

360, Dynamic Magnetic Information Storage or Retrieval, subclasses 71 through 74.7 for controlling the record.

**47.38 Control of relative motion producing mechanism:**

This subclass is indented under subclass 47.36. Subject matter wherein relative motion between a transducer assembly and a record medium is controlled.

**SEE OR SEARCH THIS CLASS, SUBCLASS:**

47.37, for controlling of spiral track spacing.  
47.49 through 47.54, for controlling of transducer assembly mechanism.

53.3, for indicating, monitoring, or testing of a relative motion producing mechanism of a dynamic radiation storage or retrieval system.

53.43, for indicating, monitoring, or testing of a relative motion producing mechanism of a dynamic storage or retrieval system.

**SEE OR SEARCH CLASS:**

360, Dynamic Magnetic Information Storage or Retrieval, subclasses 71 through 74.7 for controlling the record, and subclasses 75-78.15 for controlling the head.

**47.39 During initialization or start-up:**

This subclass is indented under subclass 47.38. Subject matter wherein the relative motion is controlled while starting system operation.

**SEE OR SEARCH THIS CLASS, SUBCLASS:**

44.27, for optical servo positioning system affected by a start-up mode or a change of mode during system operation.

47.55, for mechanism control during a start-up mode or a change of mode during system operation.

53.37, for condition indicating, monitoring or testing of a dynamic radiation storage or retrieval system during a start-

up mode or a change of mode during system operation.

53.45, for condition indicating, monitoring or testing of a dynamic storage or retrieval system during a start-up mode or a change of mode during system operation.

**47.4 Responsive to change in transduced location:**

This subclass is indented under subclass 47.38. Subject matter wherein the relative motion is controlled as a recording or reproducing head is moved from one track to another or from one zone to another.

(1) Note. The zone can include one or more tracks.

(2) Note. The relative motion control must have a predetermined, non-arbitrary relationship to the transduced location.

(3) Note. For the relative motion control that is due to a change in a type of transduced information and having an arbitrary relationship to the transduced location, see search notes below.

**SEE OR SEARCH THIS CLASS, SUBCLASS:**

47.41, for relative motion control that is due to a change in a type of transduced information and having an arbitrary relationship to transduced location.

53.29, for monitoring of a transducer assembly mechanism of a dynamic radiation storage or retrieval system to indicate a transduced location.

53.39, for monitoring of a transducer assembly mechanism of a dynamic storage or retrieval system to indicate a transduced location.

**47.41 Responsive to change in transduced information characteristic:**

This subclass is indented under subclass 47.38. Subject matter wherein the relative motion is controlled in response to a change in a type of a transduced information among a plurality of information types.

(1) Note. The plurality of information types includes for example, address or header

information, TOC, audio, video, CAV, CLV.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 47.4, for relative motion control in response to a change in transduced location.
- 53.29, for monitoring of a transducer assembly mechanism of a dynamic radiation storage or retrieval system to indicate a transduced location.
- 53.39, for monitoring of a transducer assembly mechanism of a dynamic storage or retrieval system to indicate a transduced location.

**47.42 Responsive to stand-by or pause mode operation:**

This subclass is indented under subclass 47.38. Subject matter wherein the relative motion is controlled in response to the apparatus being placed in an inactive condition.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 53.37, for condition indicating, monitoring, or testing of start up mode or changing system mode of a dynamic radiation storage or retrieval system.
- 53.45, for condition indicating, monitoring, or testing of start up mode or changing system mode of a dynamic storage or retrieval system.

**47.43 Having different storage and retrieval relative motion:**

This subclass is indented under subclass 47.38. Subject matter wherein the relative motion control is affected during storage at a head to medium relative speed different from a head to medium relative speed during retrieval.

**47.44 Responsive to abnormal condition:**

This subclass is indented under subclass 47.38. Subject matter wherein the relative motion is controlled upon a detection of an undesirable operating condition.

- (1) Note. The undesirable operating condition includes, for example, out-of-focus, loss of tracking, power down, disturbance, servo unlocked conditions.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 53.12, for abnormal condition indicating of a dynamic radiation storage or retrieval system.
- 53.42, for abnormal condition indicating of a dynamic storage or retrieval system.

**47.45 By a selected relative motion error signal:**

This subclass is indented under subclass 47.38. Subject matter wherein the relative motion is controlled using a designated signal representing a deviation from a desired relative motion between the transducer assembly and the record medium.

**47.46 By information signal characteristic:**

This subclass is indented under subclass 47.38. Subject matter wherein the relative motion is controlled using a parameter characterizing the information signal.

- (1) Note. Such parameter includes, for example, signal level or inversion interval.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 53.31, for condition indicating, monitoring or testing of a storage or retrieval information signal.

**47.47 By program or address signal:**

This subclass is indented under subclass 47.38. Subject matter wherein the relative motion is controlled using a signal indicative of a type or a specific location of stored information.

- (1) Note. The type or a specific location of stored information includes, for example, address mark, header, TOC.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 47.22, for control of an information signal processing channel for multiplexing or demultiplexing of an information signal having location identification information.
- 47.27, for control of amplitude of an information signal read out signal from a designated medium location such as

preformat, header, or reference region.

- 47.31, for phase, timing or rate processing using a program or address signal.
- 47.54, for control of a transducer assembly mechanism using a program or address signal.
- 59.25, for format arrangement processing for an auxiliary information, such as block header or subcode information, of a binary pulse train information signal.

**47.48 By synchronous signal:**

This subclass is indented under subclass 47.38. Subject matter wherein the relative motion is controlled using a substantially continuously repetitive clock or sync signal having constant frequency.

**47.49 Control of transducer assembly mechanism:**

This subclass is indented under subclass 47.36. Subject matter wherein the mechanical operating condition of a transducing means or a device coupling the transducing means to a storage medium so as to record or to reproduce an information signal is controlled.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 24.01 through 42.01, for control of a dynamic storage or retrieval apparatus by physical location of an information on a storage medium or by an operator-actuated remote control.
- 47.37, for controlling of a spiral track spacing.
- 47.38 through 47.48, for controlling of a relative motion producing mechanism.

SEE OR SEARCH CLASS:

- 360, Dynamic Magnetic Information Storage or Retrieval, subclasses 71 through 74.7 for controlling the record, and subclasses 75-78.15 for controlling the head.

**47.5 Power control for energy producing device:**

This subclass is indented under subclass 47.49. Subject matter wherein an energy level of a component of the transducing means that produces energy for reading or writing is controlled.

- (1) Note. This subclass includes, for example, means for adjusting power level of a write or read beam, means for controlling duration of laser beam.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 53.26, for indicating, monitoring or testing of an energy producing device.
- 116, for specific detail of information handling portion or system having light intensity adjustment or maintenance.

SEE OR SEARCH CLASS:

- 347, Incremental Printing of Symbolic Information, subclasses 236 and 246 for feed back of light for intensity control in a plural beam scanning apparatus and a scan of light apparatus, respectively; subclasses 237 and 247 for driving circuitry in a plural beam scanning apparatus and a scan of light apparatus, respectively.
- 372, Coherent Light Generators, subclasses 9 through 32 for particular beam control device.

**47.51 For storage:**

This subclass is indented under subclass 47.5. Subject matter wherein the power control is affected for writing information signal.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 53.36, for signal error correcting or detecting during dynamic radiation storage.
- 59.24, for specific code or form generation or regeneration processing during storage.

**47.52 During multiple system modes:**

This subclass is indented under subclass 47.51. Subject matter wherein the power control is affected during a plurality of system operations.

- (1) Note. The plurality of system operations includes, for example, a) plural storage operations or b) a storage operation and one of a retrieval, erasing, or transitional operation.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 53.26, for indicating, monitoring or testing of an energy producing device.
- 59.11, for binary signal processing for controlling recording light characteristic.
- 116, for specific detail of information handling portion or system having light intensity adjustment or maintenance.

SEE OR SEARCH CLASS:

- 347, Incremental Printing of Symbolic Information, subclasses 236 and 246 for feed back of light for intensity control in a plural beam scanning apparatus and a scan of light apparatus, respectively; subclasses 237 and 247 for driving circuitry in a plural beam scanning apparatus and a scan of light apparatus, respectively.
- 372, Coherent Light Generators, subclasses 9 through 32 for particular beam control device.

**47.53 Stored and retrieved testing signal:**

This subclass is indented under subclass 47.51. Subject matter including a signal that is stored and subsequently retrieved for an evaluating purpose.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 53.31, for monitoring or testing of a stored and retrieved information signal in a dynamic radiation storage or retrieval system.
- 53.44, for monitoring or testing of a stored and retrieved information signal in a dynamic storage or retrieval system.

**47.54 By program or address signal:**

This subclass is indented under subclass 47.49. Subject matter wherein the transducer assembly mechanism is controlled using a signal indicative of a type or a specific location of stored information.

- (1) Note. The type or a specific location of stored information includes, for example, address mark, header, TOC.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 47.22, for control of information signal processing channel for multiplexing or demultiplexing of an information signal including location identification information.
- 47.27, for control of the amplitude of an information signal read out signal from a designated medium location such as preformat, header, or reference region.
- 47.31, for phase, timing or rate processing using a program or address signal.
- 47.47, for control of relative motion producing mechanism using a program or address signal.
- 59.25, for format arrangement processing for an auxiliary information, such as block header or subcode information, of a binary pulse train information signal.

**47.55 During initialization or start-up or changing system mode:**

This subclass is indented under subclass 47.36. Subject matter wherein the mechanical operating condition is controlled while starting or changing system operation.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 44.27, for optical servo positioning system affected by a start-up mode or a change of mode during system operation.
- 47.39, for control of a relative motion producing mechanism during initialization or start up.
- 53.37, for indicating, monitoring or testing of a dynamic radiation storage or retrieval system during a start-up mode or a change of mode during system operation.
- 53.45, for indicating, monitoring or testing of a dynamic storage or retrieval system during a start-up mode or a change of mode during system operation.

**52.1 CONTROL STRUCTURE ON STORAGE MEDIUM SENSED BY OTHER THAN TRANSDUCER SUPPORT (E.G., CON-**

**DUCTIVE STRIP, NOTCHED EDGE SENSOR):**

This subclass is indented under the class definition. Subject matter wherein the storage medium has an element thereon which is sensed by an electrical detector distinct from a transducer support mechanism for controlling an operating condition of the storage or retrieval apparatus.

**SEE OR SEARCH THIS CLASS, SUBCLASS:**

- 47.1 through 47.55, for control by a recorded or reproduced control signal.  
231 through 232, for mechanism control structure sensed by transducer support mechanism.

**SEE OR SEARCH CLASS:**

- 360, Dynamic Magnetic Information Storage or Retrieval, subclasses 77.03 and 78.11 for nonmagnetic sensing to produce a control signal for magnetic transducer track centering and selecting, respectively.

**53.1 CONDITION INDICATING, MONITORING, OR TESTING:**

This subclass is indented under the class definition. Subject matter including means for providing a perceptible indication of, for inspecting, or for evaluating an operating condition of a dynamic information storage or retrieval apparatus or component thereof.

- (1) Note. The indication may be given continuously or upon initiation by an operator to indicate the operating condition, such as an abnormal condition.
- (2) Note. Condition indicating, monitoring, or testing without the dynamic information storage or retrieval apparatus is classified elsewhere. See search notes below.

**SEE OR SEARCH CLASS:**

- 73, Measuring and Testing, subclass 152.45 for recording during drilling, subclass 153.53 for pressure measurement with a recorder, and subclass 152.62 for testing and recording a characteristic of a pump for use in a borehole or drilling apparatus.

- 116, Signals and Indicators, appropriate subclasses.  
324, Electricity: Measuring and Testing, subclasses 210 through 212 for magnetic information storage element testing, particularly subclass 212 for dynamic information element testing.  
340, Communications: Electrical, subclasses 3.1 through 3.9 for selective monitoring and control, subclasses 514-525 for condition responsive indicating system having means for determining the operativeness of the system, and subclass 853.9 for detail of subsurface signal storage such as memory, recorder, and register.  
356, Optics: Measuring and Testing, appropriate subclasses.  
360, Dynamic Magnetic Information Storage or Retrieval, subclass 31 for monitoring or testing the progress of recording.  
702, Data Processing: Measuring, Calibrating, or Testing, appropriate subclasses for digital data processing systems for measuring, calibrating or testing, subclasses 108 through 126 for testing, particularly subclass 115 for testing of electromechanical or magnetic system.  
710, Electrical Computers and Digital Data Processing Systems: Input /Output, subclasses 15 through 19 for detecting or observing operating characteristics or conditions of a peripheral device.  
714, Error Detection/Correction and Fault Detection /Recovery, appropriate subclasses for digital data processing systems for detecting, correcting or recovering an error or fault.

**53.11 Including radiation storage or retrieval:**

This subclass is indented under subclass 53.1. Subject matter wherein an information signal is stored onto or retrieved from a record medium by information signal modulation of a scanning beam of radiant energy.

**SEE OR SEARCH THIS CLASS, SUBCLASS:**

- 18, for optical reading of a mechanical record.



## SEE OR SEARCH CLASS:

- 178, Telegraphy, subclass 15 for an automatic photographic recorder and subclass 90 for photographic code recorder.
- 250, Radiant Energy, subclass 271 for coded record and reader, invisible radiant energy type; and subclasses 580-591 for system having a recording detector generally responsive to an invisible radiation source.
- 346, Recorders, subclasses 107.1 through 107.6 for light or beam recording.
- 347, Incremental Printing of Symbolic Information, subclasses 224 through 264 for light or beam marking apparatus or processes.
- 352, Optics: Motion Pictures, appropriate subclasses for motion picture recording apparatus employing photosensitive recording material.
- 355, Photocopying, appropriate subclasses.
- 356, Optics: Measuring and Testing, appropriate subclasses.
- 359, Optical: Systems and Elements, appropriate subclasses for optical elements used in a recorder, particularly subclasses 1 through 35 for holographic system or element.
- 378, X-Ray or Gamma Ray Systems or Devices, appropriate subclasses for X-Ray or Gamma Ray systems, particularly subclass 36 for holography or interferometry system.
- 399, Electrophotography, subclasses 1 through 7 for electrophotography system combined with diverse subject matter.

**53.12 Having abnormal condition indicating:**

This subclass is indented under subclass 53.11. Subject matter including means for indicating a system operation condition whereby storage or retrieval is inhibited.

- (1) Note. Such operation condition includes, for example, power down, system disturbance, contamination, record carrier defect.

## SEE OR SEARCH THIS CLASS, SUBCLASS:

- 44.32 through 44.33, for optical servo positioning system including means for inhibiting recording upon detecting of a defect or abnormal condition.
- 53.42, for a dynamic storage or retrieval system including means for indicating abnormal condition.

## SEE OR SEARCH CLASS:

- 353, Optics: Image Projectors, subclasses 69 through 70 for distortion compensation.
- 386, Motion Video Signal Processing for Recording or Reproducing, subclasses 263 through 277 for video error or fault detection and/or correction during recording or reproduction operations.

**53.13 Due to unwanted operational condition of record carrier:**

This subclass is indented under subclass 53.12. Subject matter wherein the abnormal condition is due to an undesirable operational condition of the record medium.

- (1) Note. The undesirable operational condition of the record medium includes, for example, defect, warp, eccentricity on the record medium.

## SEE OR SEARCH THIS CLASS, SUBCLASS:

- 272 through 291, for structure of a storage medium.
- 53.2, for indicating, monitoring or testing of an operating condition of a record medium in a dynamic information recording or reproducing apparatus.

## SEE OR SEARCH CLASS:

- 360, Dynamic Magnetic Information Storage or Retrieval, subclass 25 for checking record characteristics or modifying recording signal for characteristic compensation.
- 365, Static Information Storage and Retrieval, subclasses 200 and 201 for bad bit and testing of static storage.

711, Electrical Computers and Digital Processing Systems: Memory, subclasses 133 through 136 for entry replacement strategies and page fault recovery, and subclasses 161-162 for data archiving.

714, Error Detection/Correction and Fault Detection/Recovery, subclasses 5.1 through 6.32 for recovery from a fault of memory or peripheral device, subclass 42 for fault locating specific to a fault in a memory, subclass 54 for detection or notification of error of storage state, subclasses 710-711 for fault recovery of memory system, subclasses 718-723 for diagnostic testing of an information signal storage device, and subclasses 769-771 for forward error correction of encoded data stored or retrieved from a dynamic storage device.

**53.14 Eccentricity or warp:**

This subclass is indented under subclass 53.13. Subject matter wherein the underivable operational condition of the record medium is due to an off-centered recording track or an undesired flatness recording surface.

**53.15 Defect:**

This subclass is indented under subclass 53.13. Subject matter wherein the undesirable operational condition of the record medium is due to an unrecordable area within a recordable region.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

44.27, for defect compensation.  
47.14, for control of a dynamic storage or retrieval system by a medium defect indicative control signal.

SEE OR SEARCH CLASS:

365, Static Information Storage And Retrieval, subclasses 200 and 201 for bad bit and testing of static storage.

**53.16 Including storage or retrieval of auxiliary signal:**

This subclass is indented under subclass 53.15. Subject matter including means for recording or reproducing a secondary information from the record medium.

**53.17 Defect location indicating:**

This subclass is indented under subclass 53.16. Subject matter including means for providing a perceptible indication of a location of the unrecordable area.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

47.14, for control of a dynamic recording or reproducing system using medium defect indicative control signal.  
47.22, for control of information signal processing channel for multiplexing or demultiplexing of an information signal including location identification information.  
47.31, for phase, timing or rate processing using a program or address signal.  
47.47, for control of a relative motion producing mechanism using a program or address signal.  
47.54, for control of a transducer assembly mechanism using a program or address signal.  
53.24, for indication of an unrecorded location within a recordable region.  
53.35, for signal error correction or detecting.

SEE OR SEARCH CLASS:

714, Error Detection/Correction and Fault Detection /Recovery, subclass 769 for digital error correction in a dynamic data storage.

**53.18 System disturbance:**

This subclass is indented under subclass 53.12. Subject matter wherein the abnormal condition is a destabilization of the apparatus or the component due to power failure, vibration, shock, or impact.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

53.42, for indicating of a failure operating condition such as power down, system disturbance in a dynamic information storage or retrieval system.

## SEE OR SEARCH CLASS:

- 365, Static Information Storage And Retrieval, subclasses 226 through 229 for static memory powering including power conservation and data preservation.
- 713, Electrical Computers And Digital Processing Systems: Support, subclasses 310 through 340 for computer power control, particularly subclass 340 for power source monitoring.
- 714, Error Detection/Correction and Fault Detection/Recovery, appropriate subclasses for power supply related reliability and availability fault recovery and fault locating.

**53.19 Relative transducer to medium misalignment (e.g., relative tilt):**

This subclass is indented under subclass 53.12. Subject matter wherein the abnormal condition is due to a lack of proper operational axial orientation between a transducer and the record medium.

**53.2 Of record carrier:**

This subclass is indented under subclass 53.11. Subject matter wherein the component thereof is the record medium.

## SEE OR SEARCH THIS CLASS, SUBCLASS:

- 272 through 291, for structure of a storage medium.
- 53.41, for indicating, monitoring or testing of an operating condition of a record medium in a dynamic information recording or reproducing apparatus.

## SEE OR SEARCH CLASS:

- 360, Dynamic Magnetic Information Storage Or Retrieval, subclass 25 for checking record characteristics or modifying recording signal for characteristic compensation.
- 365, Static Information Storage and Retrieval, subclass 201 for testing of a static memory for defect or erroneous information.
- 711, Electrical Computers and Digital Processing Systems: Memory, subclasses 133 through 136 for entry replacement strategies and page fault

recovery, and subclasses 161-162 for data archiving.

- 714, Error Detection/Correction and Fault Detection/Recovery, subclasses 5.1 through 6.32 for recovery from a fault of a memory or peripheral device, subclass 42 for fault locating specific to a fault in a memory, subclass 54 for detection or notification of an error of storage state, subclasses 710-711 for fault recovery of memory system, subclasses 718-723 for diagnostic testing of an information signal storage device, and subclasses 769-771 for forward error correction of encoded data stored or retrieved from a dynamic storage device.

**53.21 For protection:**

This subclass is indented under subclass 53.2. Subject matter including a record carrier restriction means for indicating whether a system operation on the record medium is permitted.

- (1) Note. The system operation includes, for example, accessing, deleting, adding, rearranging, recording, or duplicating of signal.
- (2) Note. The restriction means can be applied to a selected area of the record medium.

## SEE OR SEARCH THIS CLASS, SUBCLASS:

- 44.32 through 44.33, for optical servo positioning system including means for inhibiting recording upon detecting of a defect or abnormal condition.
- 47.12, for copying by control signal.
- 83, for editing of stored information without a control signal.
- 84, for copying or duplication without a control signal.

## SEE OR SEARCH CLASS:

- 360, Dynamic Magnetic Information Storage or Retrieval, subclass 15 for record copying, subclass 60 for recording or erasing prevention.

386, Motion Video Signal Processing for Recording or Reproducing, subclasses 252 through 260 for video copy identification protection, subclass 261 for parental control, and subclass 262 for playback based on user profile in a recording and reproduction device.

**53.22 By detection of storage medium incident radiation:**

This subclass is indented under subclass 53.2. Subject matter wherein the operating condition of the record medium is indicated, monitored, or tested by detecting radiation after the record medium is scanned by a radiant energy beam.

SEE OR SEARCH THIS CLASS, SUBCLASS:

53.27, for energy producing device indicating, monitoring or testing including means for detecting storage medium incident radiation.

**53.23 Derived focusing or tracking related signal:**

This subclass is indented under subclass 53.22. Subject matter wherein the detected radiation is converted into a signal indicative of a) a light beam focal point or a focusing error, or b) a crossing of a track by a transducing light beam or a light beam tracking error.

**53.24 Having unrecorded location indicating:**

This subclass is indented under subclass 53.2. Subject matter including means for indicating a presence of an unrecorded area within a recorded region of the record medium.

SEE OR SEARCH THIS CLASS, SUBCLASS:

47.14, for control of a recording or reproducing system using medium defect indicative control signal.

53.17, for defect location indication.

53.35, for signal error correction or detecting.

SEE OR SEARCH CLASS:

714, Error Detection/Correction and Fault Detection/Recovery, subclass 769 for digital error correction in a dynamic data storage.

**53.25 Of transducer assembly mechanism:**

This subclass is indented under subclass 53.11. Subject matter wherein the component thereof is a transducing means or a device coupling the transducing means to a storage medium so as to record or reproduce an information signal.

SEE OR SEARCH THIS CLASS, SUBCLASS:

53.38, for indicating, monitoring or testing of an operating condition of a transducer assembly mechanism in a dynamic information recording or reproducing apparatus.

**53.26 Energy producing device:**

This subclass is indented under subclass 53.25. Subject matter wherein the operating condition of a component of the transducer assembly mechanism that produces energy for reading or writing is indicated, monitored or tested.

SEE OR SEARCH THIS CLASS, SUBCLASS:

18, for optical reading of mechanical record.

47.5, for control of energy producing device of a transducer assembly mechanism.

47.52, for energy level control during multiple system modes.

116, for specific detail of information handling portion or system having light intensity adjustment or maintenance.

SEE OR SEARCH CLASS:

347, Incremental Printing of Symbolic Information, subclass 238 for specific light source, subclasses 239 and 255 for specific light modulator in a plural and singular beam scanning apparatus, respectively.

372, Coherent Light Generators, subclasses 9 through 32 for particular beam control device.

**53.27 By detection of storage medium incident radiation:**

This subclass is indented under subclass 53.26. Subject matter wherein the operating condition of the energy producing device is indicated, monitored or tested by detecting radiation after

the record medium is scanned by the radiant energy beam.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

53.22, for record carrier indicating, monitoring or testing including means for detecting storage medium incident radiation.

**53.28 Focusing or tracking servo:**

This subclass is indented under subclass 53.25. Subject matter wherein the operating condition of a mechanism for positioning a focal point on a desired surface position of the record medium or for causing the focal point to follow a track on record medium is indicated, monitored or tested.

**53.29 Transduced location indicating:**

This subclass is indented under subclass 53.25. Subject matter wherein the transducer assembly mechanism is monitored to indicate transduced position as the beam incident the record medium.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

53.39, for indicating of a transduced position on the record medium in a dynamic information recording or reproducing apparatus.

**53.3 Of relative motion producing mechanism:**

This subclass is indented under subclass 53.11. Subject matter wherein the component thereof is a structure which provides relative motion between a transducer and the record medium.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

53.43, for indicating, monitoring or testing of an operating condition of a relative motion producing mechanism in a dynamic information recording or reproducing apparatus.

**53.31 Of storage or retrieval information signal:**

This subclass is indented under subclass 53.11. Subject matter wherein an information signal to be stored or a retrieved information signal is monitored or tested.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

47.15 through 47.35, for control of information signal processing channel.

47.53, for a signal that is stored and subsequently retrieved for an evaluating purpose.

53.34, for monitoring or testing of a time related parameter, such as, duty cycle, jitter, sync, etc., of an information signal.

53.44, for monitoring or testing of a stored or a retrieved information signal in a dynamic storage or retrieval system.

59.1 through 59.27, for dynamic storage or retrieval of a binary pulse train information signal.

124.01 through 124.15, for specific information signal processing without a control signal.

174, for specific detail of information handling portion of system, including detail of signal modification.

SEE OR SEARCH CLASS:

360, Dynamic Magnetic Information Storage or Retrieval, subclass 53 for data verification.

**53.32 Dropout indicating:**

This subclass is indented under subclass 53.31. Subject matter including means for indicating a presence of a missing signal component of the storage or retrieval information signal.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

47.18, for interpolation or dropout correcting in an information signal processing channel affected by a control signal.

SEE OR SEARCH CLASS:

386, Motion Video Signal Processing for Recording or Reproducing, subclasses 270 through 271 for video drop-out detection in a recording and reproduction device.

**53.33 Unwanted signal component indicating:**

This subclass is indented under subclass 53.31. Subject matter including means for indicating a presence of an undesired signal component that

does not represent information within the storage or retrieval information signal.

- (1) Note. The undesired signal component that does not represent information includes, for example, distortion, noise, crosstalk, or intersymbol interference signal.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 47.17, for removal of unwanted signal component in an information processing channel affected by a control signal.

SEE OR SEARCH CLASS:

- 386, Motion Video Signal Processing for Recording or Reproducing, subclass 269 for utilizing equalizer or filter for reducing noise in video signal, and subclasses 273-274 for correcting tape tracking crosstalk in a recording and reproduction device.

- 714, Error Detection/Correction and Fault Detection/Recovery, appropriate subclasses.

#### **53.34 Time based parameter:**

This subclass is indented under subclass 53.31. Subject matter wherein a time related parameter of the storage or retrieval information signal is monitored or tested.

- (1) Note. The time related parameter includes, for example, duty cycle, jitter, phase, sync.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 47.15 through 47.35, for control of information signal processing channel.
- 53.31, for monitoring or testing of a storage or retrieval information signal in a dynamic radiation storage or retrieval system.
- 53.44, for monitoring or testing of a storage or retrieval information signal in a dynamic storage or retrieval system.
- 59.1 through 59.27, for dynamic storage or retrieval of a binary pulse train information signal.
- 124.01 through 124.15, for specific information signal processing without a control signal.

- 174, for specific detail of information handling portion of system including detail of signal modification.

SEE OR SEARCH CLASS:

- 386, Motion Video Signal Processing for Recording or Reproducing, subclass 207 for synchronization or timing correction in a recording and reproduction device.

#### **53.35 Signal error correcting or detecting:**

This subclass is indented under subclass 53.31. Subject matter including error correcting or detecting means for correcting an error in the storage or retrieval information signal or for identifying the presence of an error therein.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 47.14, for control of a dynamic storage or retrieval apparatus by a medium defective indicative control signal.
- 53.17, for defect location indication.
- 53.24, for indication of an unrecorded location within a recordable region.

SEE OR SEARCH CLASS:

- 386, Motion Video Signal Processing for Recording or Reproducing, subclasses 263 through 277 for video error or fault detection and/or correction during recording or reproduction operation.
- 714, Error Detection/Correction and Fault Detection/Recovery, subclass 769 for forward correction of encoded data stored or retrieved from a dynamic storage medium.

#### **53.36 During storage:**

This subclass is indented under subclass 53.35. Subject matter wherein error correcting or detecting is performed while information signal is being recorded.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 47.51, for control of energy producing device for storage.
- 59.24, for specific code or form generation or regeneration during storage.

**53.37 Initialization or start-up mode or changing system mode:**

This subclass is indented under subclass 53.11. Subject matter wherein the operating condition associated with a starting process or a process for changing system operation is monitored or tested.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 44.27, for optical servo positioning system affected by a start-up mode or a change of mode during system operation.
- 47.39, for control of relative motion producing mechanism during initialization or start up.
- 47.55, for mechanism control during a start-up mode or a change of mode during system operation.
- 53.45, for indicating, monitoring or testing of a dynamic storage or retrieval system during a start-up mode or a change of mode during system operation.

**53.38 Of transducer assembly mechanism:**

This subclass is indented under subclass 53.1. Subject matter wherein the component thereof is a transducing means or a device coupling the transducing means to a storage medium so as to record or reproduce an information signal.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 53.25, for indicating, monitoring or testing of an operating condition of an transducer assembly mechanism in a dynamic radiation information recording or reproducing apparatus.

**53.39 Transduced location indicating:**

This subclass is indented under subclass 53.38. Subject matter wherein the transducer assembly mechanism is monitored to indicate a transduced position on the record medium.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 53.29, for indication of a transduced position on the record medium in a dynamic radiation information recording or reproducing apparatus.

**53.4 Positioning adjunct:**

This subclass is indented under subclass 53.38. Subject matter including means for indexing a movable marking means of the transducing assembly mechanism to set it in a proper starting position with respect to the record medium.

- (1) Note. The movable marking means includes, for example, head or stylus.

**53.41 Of record carrier:**

This subclass is indented under subclass 53.1. Subject matter wherein the component thereof is the record medium.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 272 through 291, for structure of a storage medium.
- 53.2, for indicating, monitoring or testing of an operating condition of a record medium in a dynamic radiation information recording or reproducing apparatus.

SEE OR SEARCH CLASS:

- 360, Dynamic Magnetic Information Storage or Retrieval, subclass 25 for checking record characteristics or modifying recording signal for characteristic compensation.
- 365, Static Information Storage and Retrieval, subclass 201 for testing of a static memory for defect or erroneous information.
- 711, Electrical Computers and Digital Processing Systems: Memory, subclasses 133 through 136 for entry replacement strategies and page fault recovery, and subclasses 161-162 for data archiving.
- 714, Error Detection/Correction and Fault Detection/Recovery, subclasses 5.1 through 6.32 for recovery from a fault of a memory or peripheral device, subclass 42 for fault locating specific to a fault in a memory, subclass 54 for detection or notification of an error of storage state, subclasses 710-711 for fault recovery of memory system, subclasses 718-723 for diagnostic testing of an information signal storage device, and subclasses 746-797

for forward error correction of encoded data stored or retrieved from a dynamic storage device.

**53.42 Having abnormality condition indicating:**

This subclass is indented under subclass 53.1. Subject matter including means for indicating a system operation condition whereby storage or retrieval is inhibited.

- (1) Note. Such operation condition includes, for example, power down, system disturbance, contamination, record carrier defect.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 44.32 through 44.33, for optical servo positioning system including means to compensate for defect or abnormal condition such as inhibiting recording upon defects.
- 53.12, for a dynamic radiation information storage or retrieval system having means for indicating abnormal condition.
- 53.18, for indicating, monitoring or testing of a system disturbance in a dynamic radiation information storage or retrieval system.

SEE OR SEARCH CLASS:

- 353, Optics: Image Projectors, subclasses 69 through 70 for distortion compensation.
- 360, Dynamic Magnetic Information Storage or Retrieval, subclass 25 for checking record characteristics or modifying recording signal for characteristic compensation.
- 365, Static Information Storage and Retrieval, subclass 201 for testing of a static memory for defect or erroneous information.
- 386, Motion Video Signal Processing for Recording or Reproducing, subclasses 263 through 277 for video error or fault detection and/or correction during recording or reproduction operation.
- 711, Electrical Computers and Digital Processing Systems: Memory, subclasses 133 through 136 for entry replacement strategies and page fault

recovery, and subclasses 161-162 for data archiving.

- 714, Error Detection/Correction and Fault Detection/Recovery, subclasses 5.1 through 6.32 for recovery from a fault of memory or peripheral device, subclass 42 for fault locating specific to a fault in a memory, subclass 54 for detection or notification of error of storage state, subclasses 710-711 for fault recovery of memory system, subclasses 718-723 for diagnostic testing of an information signal storage device, and subclasses 746-797 for generic data error correction.

**53.43 Of relative motion producing mechanism:**

This subclass is indented under subclass 53.1. Subject matter wherein the component thereof is a structure which provides relative motion between a transducer and the record medium.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 47.14, for control of storage or retrieval operation by a medium defect indicative control signal.
- 53.3, for indicating, monitoring or testing of an operating condition of a relative motion producing mechanism in a dynamic radiation information recording or reproducing apparatus.

**53.44 Of storage or retrieval information signal:**

This subclass is indented under subclass 53.1. Subject matter wherein an information signal to be stored or a retrieved information signal is monitored or tested.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 47.15 through 47.35, for control of information signal processing channel.
- 47.53, for a signal that is stored and subsequently retrieved for an evaluating purpose.
- 53.31, for monitoring or testing of a stored or a retrieved information signal in a dynamic radiation storage or retrieval system.
- 53.34, for monitoring or testing of a time related parameter (e.g., duty cycle, jitter, sync) of an information signal.



59.1 through 59.27, for dynamic storage or retrieval of a binary pulse train information signal.

124.01 through 124.15, for specific information signal processing without a control signal.

174, for specific detail of information handling portion of system including detail of signal modification.

**SEE OR SEARCH CLASS:**

360, Dynamic Magnetic Information Storage or Retrieval, subclass 53 for data verification.

**53.45 Initialization or start-up mode or changing system mode:**

This subclass is indented under subclass 53.1. Subject matter wherein the operating condition associated with a starting process or a process for changing system operation is monitored or tested.

**SEE OR SEARCH THIS CLASS, SUBCLASS:**

44.27, for optical servo positioning system affected by a start-up mode or a change of mode during system operation.

47.39, for control of relative motion producing mechanism during initialization or start up.

47.55, for mechanism control during a start-up mode or a change of mode during system operation.

53.37, for indicating, monitoring or testing of dynamic radiation storage or retrieval system during a start-up mode or a change of mode during system operation.

**59.1 BINARY PULSE TRAIN INFORMATION SIGNAL:**

This subclass is indented under the class definition. Subject matter under subclass the including handling of an information signal composed of a series or pattern of identical pulse bits characterized solely by their presence or absence.

(1) Note. The term "identical pulse bits" refers to a signal limited to one of two predetermined values for an integer multiple of a predetermined period of time.

(2) Note. Pulse characteristic modulation is not classified herein.

**SEE OR SEARCH THIS CLASS, SUBCLASS:**

47.15 through 47.35, for control of information signal processing channel.

53.31, for monitoring or testing of a stored or a retrieved information signal in a dynamic radiation storage or retrieval system.

53.34, for monitoring or testing of a time related parameter (e.g., duty cycle, jitter, sync) of an information signal.

53.44, for monitoring or testing of a stored or a retrieved information signal in a dynamic storage or retrieval system.

124.01 through 124.15, for specific information signal processing without a control signal.

174, for specific details of information handling portion of system, including details of signal modification.

**SEE OR SEARCH CLASS:**

341, Coded Data Generation or Conversion, subclasses 1 through 17 for pattern reading type analog to digital converters.

**59.11 Binary signal processing for controlling recording light characteristic:**

This subclass is indented under subclass 59.1. Subject matter including means for processing the binary signal during recording to obtain a specific characteristic for a parameter of a recording light.

(1) Note. The specific characteristic includes, for example, light bias, power, or pulse characteristic.

**SEE OR SEARCH THIS CLASS, SUBCLASS:**

47.52, for energy level control during multiple system modes.

53.26, for indicating, monitoring or testing of an energy producing device.

**SEE OR SEARCH CLASS:**

347, Incremental Printing of Symbolic Information, subclasses 236 and 246 for feed back of light for intensity

- control in a plural beam scanning apparatus and a scan of light apparatus, respectively; subclasses 237 and 247 for driving circuitry in a plural beam scanning apparatus and a scan of light apparatus, respectively.
- 372, Coherent Light Generators, subclasses 9 through 32 for particular beam control device.
- 59.12 Pulse forming by adjusting binary signal phase or shifting binary signal pulse:**  
This subclass is indented under subclass 59.11. Subject matter wherein means for processing includes means for generating recording pulse by an adjustment of phase or a shift of pulse of the binary signal in a time domain.
- 59.13 Selecting from a plurality of binary processing types:**  
This subclass is indented under subclass 59.1. Subject matter including means for selecting one among a plurality of processing operations to be performed on the binary signal.
- SEE OR SEARCH THIS CLASS, SUBCLASS:  
47.24, for sequencing or switching between processing channels.
- 59.14 Changing a system mode:**  
This subclass is indented under subclass 59.1. Subject matter wherein the binary signal handling occurs in conjunction with a change of an operating mode during system operation.
- (1) Note. The operating mode includes for example, lock-in, pull-in, search, normal playback, special playback, backward recording, forward recording.
- SEE OR SEARCH THIS CLASS, SUBCLASS:  
44.27, for optical servo positioning system affected by a start-up mode or a change of mode during system operation.  
47.55, for mechanism control during a start-up mode or a change of mode during system operation.  
53.37, for indicating, monitoring or testing of dynamic radiation storage or retrieval system during a start-up mode or a change of mode during system operation.
- 53.45, for indicating, monitoring or testing of a dynamic storage or retrieval system during a start-up mode or a change of mode during system operation.
- 59.15 Binary signal gain processing:**  
This subclass is indented under subclass 59.1. Subject matter including means for varying an amplitude of the binary signal.
- SEE OR SEARCH THIS CLASS, SUBCLASS:  
47.25, for control of a dynamic storage or retrieval system for amplification of an information signal.  
124.1 through 124.13, for gain processing without a control signal.  
134, for specific detail of electrical signal processing having particular amplification characteristic.
- SEE OR SEARCH CLASS:  
330, Amplifiers, for amplifiers per se.  
360, Dynamic Magnetic Information Storage or Retrieval, subclass 46 for a head amplifier circuit, subclass 67 and 68 for specific of an amplifier and for a recording amplifier, respectively.  
386, Motion Video Signal Processing for Recording or Reproducing, subclass 304 for controlling amplitude level of a color video signal in a recording and reproduction device.
- 59.16 Within a frequency band:**  
This subclass is indented under subclass 59.1. Subject matter wherein the gain processing is within a specified frequency range.
- SEE OR SEARCH THIS CLASS, SUBCLASS:  
47.26, for control of a dynamic storage or retrieval system for amplification of an information signal within a frequency band.
- 59.17 Binary signal level detecting using a reference signal:**  
This subclass is indented under subclass 59.1. Subject matter including means for detecting

an amplitude of the binary signal by comparison with a threshold.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

59.15 through 16, for binary signal gain processing.

**59.18 Plural reference signals:**

This subclass is indented under subclass 59.17. Subject matter wherein the amplitude is detected using more than one threshold value.

**59.19 Binary signal detecting using a clock signal:**

This subclass is indented under subclass 59.1. Subject matter including means for detecting a presence of the binary signal using a timing signal having synchronous characteristic.

**59.2 Binary signal phase processing:**

This subclass is indented under subclass 59.1. Subject matter including means for adjusting a phase of the binary signal.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

53.34, for monitoring or testing of a time related parameter of an information signal.

124.14, for phase processing without a control signal.

SEE OR SEARCH CLASS:

386, Motion Video Signal Processing for Recording or Reproducing, subclass 310 for phase shifting or adjusting of a color video signal in a recording and reproduction device.

**59.21 Including sampling or A/D converting:**

This subclass is indented under subclass 59.1. Subject matter including a) means for obtaining an instantaneous value of a read signal or b) means for performing a conversion of a read signal from an analog form into a digital form.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

47.35, for control of a dynamic storage or retrieval system for sampling, or converting of an analog or a digital information signal.

124.05, for sampling without a control signal.

SEE OR SEARCH CLASS:

341, Coded Data Generation or Conversion, subclasses 122 through 125 for sample or hold, subclasses 126-172 for analog to or from digital conversion.

**59.22 By interpolating or maximum likelihood detecting:**

This subclass is indented under subclass 59.21. Subject matter including means for generating a missing, an additional, or a probability evaluated binary signal component and to insert such component into the binary signal.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

47.18, for control of information signal processing channel for interpolating or dropout correcting.

SEE OR SEARCH CLASS:

386, Motion Video Signal Processing for Recording or Reproducing, subclass 271 for utilizing interpolation for compensating video drop-out in a recording and reproduction device.

**59.23 Having specific code or form generation or regeneration processing:**

This subclass is indented under subclass 59.1. Subject matter including detail of a procedure for generating a binary coded signal having a coded relationship with an original input information or for recovering an original input information from a binary coded signal.

**59.24 During storage:**

This subclass is indented under subclass 59.23. Subject matter the procedure is performed while information signal is being stored.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

47.51, for control of energy producing device for storage.

53.36, for signal error correcting or detecting during storage.

**59.25 Format arrangement processing for auxiliary information:**

This subclass is indented under subclass 59.1. Subject matter including means for forming a

particular distribution order of a supplemental information.

- (1) Note. The supplemental information includes, for example, block headers, subcode information, directory or indexing information, control data area information.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 47.22, for control of information signal processing channel for multiplexing or demultiplexing of an information signal including location identification information.
- 47.27, for control of an amplitude of a read out information signal from a designated medium location such as preformat, header, or reference region.
- 47.31, for phase, timing or rate processing using a program or address signal.
- 47.47, for control of relative motion producing mechanism using a program or address signal.
- 47.54, for control of a transducer assembly mechanism using program or address signal.

**59.26 Binary signal processing of sectioned information:**

This subclass is indented under subclass 59.1. Subject matter including means for subdividing the binary signal into portions of similar repetitive characteristic for storage, or for eliminating subdivisions of the binary signal during retrieval.

- (1) Notes. The sectioned information includes, for example, sectors, lengths, frames, or blocks.

**59.27 Binary signal multiplexing or demultiplexing:**

This subclass is indented under subclass 59.1. Subject matter including means for a) combining plural input signals into a binary recording signal such that at any instance of time one signal is outputted for storage or b) separating a retrieved multiplexed binary signal into plural output signals for reproducing.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 47.2 through 47.22, for control of a dynamic storage or retrieval system for multiplexing or demultiplexing.
- 124.09, for multiplexing or demultiplexing without a control signal.

SEE OR SEARCH CLASS:

- 370, Multiplex Communications, subclasses 431 through 463 for channel assignment techniques.

**60.01 SIGNAL PROCESSING BY STORAGE AND SUBSEQUENT RETRIEVAL (E.G., FREQUENCY SHIFT, DELAY, ETC.):**

This subclass is indented under the class definition. Subject matter wherein a time-dependent characteristic of a signal is modified by storing the signal on a storage medium and subsequently reproducing the signal from the storage medium.

- (1) Note. The term "characteristic" includes the time of occurrence of the signal.
- (2) Note. The term "storage medium" is synonymous with a "record carrier" under the class definition and does not refer to a static memory.

**61 STORAGE OF DIRECTLY RETRIEVABLE MODULATED R.F. OR SUPER-AUDIBLE CARRIER SIGNAL:**

This subclass is indented under the class definition. Subject matter wherein the information is stored in the form of a wave modulated by the information signal, which upon retrieval forms the stored modulated signal.

**62 STORAGE OF SIGNAL MODULATING COMPONENT:**

This subclass is indented under the class definition. Subject matter wherein the information signal to be stored is presented in the form of a carrier wave modulated by a lower frequency component, and the higher frequency wave is partially or completely suppressed prior to storage and is reinserted subsequent to retrieval.

- (1) Note. The term "suppressed" refers to removal of the carrier wave as by demodulation.

**63 SOUND REPRODUCTION FOR TOY OR NOVELTY DEVICE (E.G., TALKING DOLL):**

This subclass is indented under the class definition. Subject matter specifically designed for sound reproduction and mounting within a device otherwise used for novelty or amusement.

- (1) Note. Such devices are often of the direct mechanical conversion to sound type reproducers.
- (2) Note. If the sole disclosure is of a sound reproducer in a toy or novelty device, classification is in this subclass even in the absence of claimed limitations thereto.
- (3) Note. Note classification is in Class 446, Amusement Devices: Toys, for sounding toys with structural details of the toy.

**64 With electrical information signal processing:**

This subclass is indented under subclass 63. Subject matter having electrical circuitry for handling the intelligence signal.

- (1) Note. Subclasses 63 and 65-68 are intended to include, at most, nominal recitation of an electrical information signal.

**65 Indexing to track (e.g., consecutive):**

This subclass is indented under subclass 63. Subject matter having selection of one of a plurality of storage medium tracks by successive operations of the sound reproducer.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 30.02, for similar subject matter having operator-controlled designation of a track.  
98, for similar subject matter of general utility.

**66 By chance:**

This subclass is indented under subclass 65. Subject matter wherein the selection of one of plural sound tracks is made without any control of which track is chosen.

- (1) Note. The term "random indexing" is sometimes used for these devices, and should be distinguished from random access or selective addressing.

- (2) Note. The plural tracks may be on a single or on distinct storage elements.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 98, for indexing by chance to plural tracks on a single surface.  
178.01, for indexing by chance to plural storage elements.

**67 With beginning or end of cycle stylus return:**

This subclass is indented under subclass 63. Subject matter including a mechanical pickup which is returned to an initial position prior to beginning or subsequent to completion of the reproduction.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 225+, for pickup restoring not limited to toys or novelty devices.

**68 Manual motion application (e.g., novelty card, hand-held stylus):**

This subclass is indented under subclass 63. Subject matter wherein relative motion between the storage medium element and transducer assembly is provided by a force concurrently applied by an operator's hand.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 177, for a mechanism subsystem having a stationary storage medium, in general.

**69 SYSTEMS OR SUBSYSTEMS COMBINED WITH DIVERSE ART DEVICE:**

This subclass is indented under the class definition. Subject matter including structure peculiar to this class for either information signal processing or storage medium element handling, and having specified cooperation with structure otherwise classifiable elsewhere and not provided for therein.

- SEE OR SEARCH THIS CLASS, SUB-CLASS:  
1+, for such subject matter combined with a distinct audio signal source.
- 70 For control of diverse art device:**  
This subclass is indented under subclass 69. Subject matter including controlling the operation of the diverse art device by the storage or retrieval operation.
- 71 WITH STYLUS CLEANING OR TREATMENT (E.G., GRINDING):**  
This subclass is indented under the class definition. Subject matter having removal of debris from, or modification of, a stylus.
- 72 WITH STORAGE MEDIUM CLEANING OR ELECTROSTATIC CHARGE NEUTRALIZATION:**  
This subclass is indented under the class definition. Subject matter having structure or method for removing undesired material or electrostatic charge from the storage medium combined with storage or retrieval.
- SEE OR SEARCH CLASS:  
15, Brushing, Scrubbing, and General Cleaning, appropriate subclasses for mechanical cleaning of storage medium not combined with storage or retrieval.  
361, Electricity: Electrical Systems and Devices, subclasses 212+ for discharging of an electrostatic charge, in general.
- 73 By charge leakage (e.g., ionized particles):**  
This subclass is indented under subclass 72. Subject matter wherein the cleaning or charge neutralization has structure to conduct undesired charge away from the storage medium.
- (1) Note. The structure may include a source of air ionizing radiation.
- 74 By tone arm attachment:**  
This subclass is indented under subclass 72. Subject matter wherein the cleaning structure is mounted on the transducer assembly support.
- 75.11 WITH PARTICULAR CABINET STRUCTURE:**  
This subclass is indented under the class definition. Subject matter including structural details of an enclosure surrounding the components of the dynamic information storage or retrieval system.
- (1) Note. The cabinet structures in this and the indented subclasses must include some specific structure of a dynamic information storage or retrieval system or an element thereof, otherwise such structures classified as a cabinet, per se.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:  
12, for cabinet structure for a radiophonograph combination.
- SEE OR SEARCH CLASS:  
174, Electricity: Conductors and Insulators, subclasses 50 through 65 G for boxes and housings limited by claimed structure to electrical use but having no characteristic limiting them to particular electrical equipment; and subclasses 250-268 for printed circuit arrangements of general utility.  
181, Acoustics, subclasses 148 through 156 for a diaphragm mounted in a cabinet.  
312, Supports: Cabinet Structure, subclasses 9.1-9.64 for cabinets or enclosures especially designed to house phonograph instruments or records.  
361, Electricity: Electrical Systems and Devices, subclasses 600 through 837 for boxes and mountings in combination with electrical apparatus having no significant art limitation, or boxes and mounting in combination with plural diverse electrical apparatus.  
720, Dynamic Optical Information Storage or Retrieval, subclasses 600 through 657 for a particular cabinet structure in a dynamic optical information storage or retrieval device.

**75.21 With mechanism to place disc on a turntable:**

This subclass is indented under subclass 75.11. Subject matter including a mechanical arrangement normally inside the cabinet which moves to the cabinet exterior to position the record medium element onto a turntable within the cabinet.

**SEE OR SEARCH CLASS:**

720, Dynamic Optical Information Storage or Retrieval, subclasses 601 through 616 for tray loading or ejecting in a dynamic optical information storage or retrieval device.

**76 With electrical information signal processing:**

This subclass is indented under subclasses 75.11. Subject matter including electrical handling of the information signal.

- (1) Note. Subclasses 75.11 and 77.11 include at most nominal recitation of an electrical signal.

**SEE OR SEARCH THIS CLASS, SUBCLASS:**

128+, for electrical information signal processing with mechanical storage or retrieval, absent particular cabinet structure.

**77.11 Slotted for edgewise insertion of storage disc:**

This subclass is indented under subclass 75.11. Subject matter where there is a long narrow opening in the cabinet structure which is used to insert or remove a disc shaped storage medium.

**SEE OR SEARCH CLASS:**

720, Dynamic Optical Information Storage or Retrieval, subclasses 617 through 644 for insertion of optical storage medium in a dynamic optical information storage or retrieval device.

**77.21 Having disc stored in protective jacket:**

This subclass is indented under subclass 77.11. Subject matter wherein the disc is surrounded by a protective enclosure when in other than

the location at which the information storage or retrieval is performed.

- (1) Note. The protective jacket is often removed from the cabinet with the disc remaining therein.

**SEE OR SEARCH CLASS:**

360, Dynamic Magnetic Information Storage or Retrieval, subclasses 99.02-99.03 for a floppy disk loading or ejecting mechanism in a magnetic recorder or reproducer.

**78 With lid-mounted transducer assembly carrier:**

This subclass is indented under subclass 75.11. Subject matter wherein the enclosure has a lid with structure to carry the transducer assembly of the enclosed storage or retrieval equipment.

**79 With closure-operated interlock or braking actuator:**

This subclass is indented under subclass 75.11. Subject matter wherein the enclosure has a lid or door with structure to prevent or stop the operation of the enclosed equipment when the cabinet lid or door is in other than a closed position.

**80 Particular acoustical structure (e.g., baffle):**

This subclass is indented under subclass 75.11. Subject matter including structure which mechanically modifies sound waves.

- (1) Note. This is primarily a collection of old style mechanical phonographs with sound amplifying or modifying structure (e.g., trumpets, baffles, etc.).

**81 Having collapsible or expandable acoustic path:**

This subclass is indented under subclass 80. Subject matter in which a portion of the acoustic structure defining the acoustic path is movable so as to vary a dimension of the acoustic path.

- (1) Note. Typical structure include lid controlled folding horn, and telescoping horn sections for making compact.

## SEE OR SEARCH CLASS:

181, Acoustics, subclasses 178, 186, and 197 for similar subject matter of general utility.

**82 Having parallel acoustic paths:**

This subclass is indented under subclass 80. Subject matter including structure having a plurality of acoustical energy conducting passages through which such energy may travel simultaneously.

- (1) Note. A baffle in a horn may define several such paths.
- (2) Note. The combinations including shutters are classified in this subclass.

## SEE OR SEARCH CLASS:

181, Acoustics, subclasses 184 and 185 for similar subject matter of general utility.

**83 EDITING OF STORED INFORMATION:**

This subclass is indented under the class definition. Subject matter for deleting, adding, or rearranging portions of a stored information signal on a storage medium element.

- (1) Note. The change to the information signal may be effected either by physical rearrangement of portions of the storage medium element (e.g., cutting and splicing), or by rerecording the information signal onto the same or another storage medium element.

## SEE OR SEARCH THIS CLASS, SUBCLASS:

84+, for rerecording of a signal without modification.

## SEE OR SEARCH CLASS:

360, Dynamic Magnetic Information Storage or Retrieval, subclasses 13+ for similar subject matter limited to magnetic storage and retrieval.

**84 DUPLICATION OR COPYING (E.G., RERECORDING):**

This subclass is indented under the class definition. Subject matter wherein information is retrieved from one storage medium and subse-

quently stored on another distinct storage medium.

- (1) Note. It is necessary that the retrieval and storage be effected by a dynamic transformation.

## SEE OR SEARCH CLASS:

264, Plastic and Nonmetallic Article Shaping or Treating: Processes, subclasses 106+ for the method of stamping duplicate records.

360, Dynamic Magnetic Information Storage or Retrieval, subclasses 15+ for copying a magnetic record.

425, Plastic Article or Earthenware Shaping or Treating: Apparatus, appropriate subclasses for apparatus for stamping duplicate record.

**85 To diverse type of storage medium:**

This subclass is indented under subclass 84. Subject matter wherein the storage medium element onto which the information is stored has a different configuration than the storage medium from which the information is retrieved.

- (1) Note. Included herein are devices for recording phonograph records from magnetic tape.

## SEE OR SEARCH THIS CLASS, SUBCLASS:

17, for converting the varied characteristic on the same storage medium element.

**86 STORAGE OR RETRIEVAL OF SPATIALLY RELATED ACOUSTIC SIGNALS (E.G., STEREO):**

This subclass is indented under the class definition. Subject matter in which the signal to be stored is responsive to, or the retrieved signal produces, plural audible vibrations which have a common time base and a spatial relationship to produce the effect of position or depth.

- (1) Note. The plural signals are usually stored and received separately and concurrently.
- (2) Note. The signals are often combined (e.g., as sum or difference signals)



- before storage and separated after retrieval.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:  
5, for a radio combined with a storage or retrieval device in which either may be stereophonic.
- SEE OR SEARCH CLASS:  
381, Electrical Audio Signal Processing Systems and Devices, subclass 2.
- 87 Simulated spatial effect (e.g., pseudo-stereo):**  
This subclass is indented under subclass 86. Subject matter in which a single reproduced signal is processed to give a stereo effect.
- SEE OR SEARCH CLASS:  
381, Electrical Audio Signal Processing Systems and Devices, subclasses 17+ for Pseudo Stereo Systems in general.
- 88 With transformation or intentional distortion of information signal (e.g., preemphasis):**  
This subclass is indented under subclass 86. Subject matter having signal processing prior to storage which includes an intentional change to the information signal.
- (1) Note. Such changes are often frequency dependent signal magnitude control to compensate apparatus characteristic differences between the storage and the retrieval device.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:  
133, for similar subject matter for electro-mechanical recording, not restricted to plural audio signals.  
174+, for signal modification not restricted to plural audio signals, nor any particular type of storage or retrieval.
- 89 Quadraphonic:**  
This subclass is indented under subclass 86. Subject matter in which four or more channels are stored or retrieved.
- 90 Including modulated subchannel signal:**  
This subclass is indented under subclass 89. Subject matter wherein at least one channel or combined signal modulates an A.C. wave prior to storage, or demodulation of such wave after retrieval.
- (1) Note. Frequently, both a direct wave and a modulated wave are stored upon the same track to permit storage of four channels on two tracks.
- 91 Having distinct electrical channels:**  
This subclass is indented under subclass 86. Subject matter having a separate electrical circuit for each channel, each of said circuits having no common electrical elements other than for power supply.
- 92 Including distinct storage tracks on record medium:**  
This subclass is indented under subclass 86. Subject matter wherein the paths of the transducer over the record medium for each channel are physically separated.
- 93 SYSTEMS HAVING PLURAL PHYSICALLY DISTINCT INDEPENDENT TRACKS ON A SINGLE STORAGE MEDIUM SURFACE:**  
This subclass is indented under the class definition. Subject matter having a storage medium element with plural spaced apart information modulated tracks.
- (1) Note. Adjacent sections of a single continuous spiral track are not plural tracks; however, distinct interleaved spirals are plural tracks for purposes of this subclass.
- 94 Having layered storage medium:**  
This subclass is indented under subclass 93. Subject matter wherein the storage medium element has plural coextensive surfaces, a plurality of which have storage tracks thereon, and which tracks are each accessible for storage or retrieval from the same side of the storage element.

- 95 Common time base (i.e., simultaneous):**  
This subclass is indented under subclass 93. Subject matter wherein the plural tracks are either stored or intended to be retrieved concurrently.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:  
14, for simultaneous storage or retrieval of diverse types.  
47+, for similar subject matter in which one track stores a control signal.  
92, for plural tracks producing binaural effects.
- 96 Continuous consecutive storage or retrieval of interrupted track for single signal (e.g., automatic reversal):**  
This subclass is indented under subclass 93. Subject matter wherein the plural tracks are consecutively utilized for storage or retrieval of a continuing signal.
- (1) Note. The tracks may be connected at distinct points.  
(2) Note. The term "continuing signal" indicates time continuity of the signal being stored or retrieved.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:  
41.01, for selective addressing of one of a plurality of signals on a record medium.  
98, for consecutive indexing of signal tracks not limited to use for a time-continuous signal.
- 97 Tracks transverse to a motion component:**  
This subclass is indented under subclass 96. Subject matter wherein the tracks have a component of motion transverse to the microscopic movement of the storage medium element.
- (1) Note. The transducer assembly is often movable to obtain a higher velocity of relative motion than that of the storage medium.
- 98 Indexing to discrete signal tracks (e.g., consecutive, by chance):**  
This subclass is indented under subclass 93. Subject matter wherein selection of the information modulated track is made by starting a storage or retrieval operation.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:  
41.01, for such subject matter with designation of track.  
65+, for similar subject matter utilized in a toy or novelty device.
- 99 SPECIFIC DETAIL OF INFORMATION HANDLING PORTION OF SYSTEM:**  
This subclass is indented under the class definition. Subject matter having at least one step or element of information signal processing particularly described.
- (1) Note. Nominal recitation of a signal processing step or element to show relationship to mechanical structure will be classified with such mechanical structure.  
(2) Note. Information processing methods, structure, and circuitry, not limited to information storage and retrieval, are each classified in the appropriate class therefor.
- 100 Radiation beam modification of or by storage medium:**  
This subclass is indented under subclass 99. Subject matter wherein the information signal is stored on or retrieved from the storage medium by a beam of radiant energy which is modulated by the information signal either (a) to store the information on a radiant energy sensitive storage medium, or (b) by a radiant energy controlling storage medium for subsequent retrieval by sensing of the radiant energy.
- 101 Invisible radiation (e.g., electron beam or X-ray):**  
This subclass is indented under subclass 100. Subject matter wherein the radiant energy is either (a) radiation outside the visible spectrum (4000-7000A5), or (b) a subatomic particle (e.g., electron) beam.

- (1) Note. A charged particle (e.g., electron) beam may be considered either invisible radiation or a particular electrical current depending upon the manner in which such a beam interacts with the storage medium.
- SEE OR SEARCH THIS CLASS, SUBCLASS:  
126, for storage or retrieval by an electron beam modifying or being controlled by storage medium element charge.
- SEE OR SEARCH CLASS:  
250, Radiant Energy, appropriate subclasses for invisible radiant energy devices or systems, in general.
- 102 Multiplex:**  
This subclass is indented under subclass 100. Subject matter wherein a single radiation beam simultaneously stores or retrieves a plurality of independent signals on a single track of the storage medium element.
- (1) Note. Each signal may modulate different ranges of value of a property (e.g., frequency, polarization) of the radiation beam; or each signal may modulate the radiation beam in distinct discrete time intervals.
- SEE OR SEARCH CLASS:  
398, Optical Communications, subclasses 43 through 103 for a multiplex arrangement for optical communications.
- 103 Holographic:**  
This subclass is indented under subclass 100. Subject matter wherein the storage medium is a three-dimensional coherent image.
- SEE OR SEARCH CLASS:  
359, Optical: Systems and Elements, subclasses 1+ for holographic systems and elements, in general.  
365, Static Information Storage and Retrieval, subclasses 125, 216, and 235 for holographic static storage or retrieval of information.
- 104 Ribbon light modulator:**  
This subclass is indented under subclass 100. Subject matter including a flat flexible electrical conductor variably blocking the optical path in accordance with an information current flowing therethrough.
- 105 Penumbra or push-pull optical system:**  
This subclass is indented under subclass 100. Subject matter wherein the optical path has either (a) variably superimposed shadows, or (b) complementarily varying beams.
- 106 Optical feedback:**  
This subclass is indented under subclass 100. Subject matter having intelligence signal processing circuitry which includes a radiation beam link from a later point in such circuitry to a preceding point in such circuitry.
- 107 Ground noise suppression, signal envelope, or plural optical modulation:**  
This subclass is indented under subclass 100. Subject matter wherein provision is made to suppress spurious signals caused by graininess of the film and emulsion; or the storage medium has an additional signal representative of the average signal level, or has a plurality of characteristics varied.
- 108 Color:**  
This subclass is indented under subclass 100. Subject matter in which the radiant energy beam modifies, or is modified by the storage medium in a selectively variable frequency dependent manner within the visible spectrum (i.e., 4000-7000Å).
- 109.01 Diffractive storage medium information element:**  
This subclass is indented under subclass 100. Subject matter wherein the radiant energy beam is deflected by the edge of an object on the storage medium by other than reflection or refraction, which object being indicative of the information signal, or the radiant energy beam causes the modification of the storage medium to store the information signal as an object whose edge is capable of deflecting a radiant energy beam by other than reflection or refraction.

- (1) Note. Diffraction grating elements that are not storage medium objects are not classified herein.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

112.03 through 112.15, for diffraction grating elements that are not storage medium objects and that are in the information handling portion of the dynamic information storage or retrieval system.

SEE OR SEARCH CLASS:

359, Optical: Systems and Elements, subclasses 558 through 576 for diffraction gratings, per se.

**109.02 Plural elements with distinct diffractive characteristics:**

This subclass is indented under subclass 109.01. Subject matter wherein the radiant energy beam is diffracted by a multiplicity of elements each having a different diffractive attribute, or the radiant energy beam causes the modification of the storage medium to store plurality of elements each having a different diffractive attribute.

**110.01 Polarization of or by storage medium information element:**

This subclass is indented under subclass 100. Subject matter wherein the direction of the electric field component of the radiant energy beam is restricted by an object indicative of the information signal on the storage medium, or the radiant energy beam causes polarization of the object to store the information signal.

- (1) Note. Polarized optical elements, e.g., polarized beam splitters and polarized lenses, that are not storage medium objects are not classified herein.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

112.16 through 112.21, for polarized or polarizing optical elements that are not storage medium objects and that are in the information handling portion of the dynamic information storage or retrieval system.

SEE OR SEARCH CLASS:

359, Optical: Systems and Elements, subclasses 483.01 through 494.01 for polarized or polarizing optical elements, per se.

**110.02 Separation into plural polarization component beams:**

This subclass is indented under subclass 110.01. Subject matter wherein the radiant energy beam is divided into a multiplicity of radiant energy beams, each having a restricted electric field component.

- (1) Note. For example, dividing using a beam splitter is classified herein.

**110.03 By diffraction:**

This subclass is indented under subclass 110.02. Subject matter wherein the separation is performed by deflection other than reflection or refraction of the radiant energy beam by the edge of a portion of an object into the plurality of radiant energy beams.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

112.03 through 112.15, for diffractive optical elements in the information handling portion of the dynamic information storage or retrieval system.

**110.04 Using plural polarized or polarizing optical elements:**

This subclass is indented under subclass 110.02. Subject matter wherein the separation is performed using two or more objects, each of which either utilize the direction of the electric field component of the radiant energy beam to perform the separation, or modify the direction of the electric field component of the radiant energy beam.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

112.17, for plural polarized or polarizing optical elements in the information handling portion of the dynamic information storage or retrieval system.

**111 Spiral or helical track:**

This subclass is indented under subclass 100. Subject matter wherein the path along which the information is stored or retrieved has plural, curved turns about an axis of rotation of the storage medium.

**112.01 Having particular optical element or particular placement thereof in radiation beam path to or from storage medium:**

This subclass is indented under subclass 100. Subject matter including an element of specified characteristic or location within a space traversed by the radiant energy beam for modifying the radiant energy beam.

- (1) Note. For example, modification by reflecting, diffracting, focusing, defocusing, refracting, or redirecting the radiation beam is classified herein.
- (2) Note. Elements for blocking or stopping the beam or elements having a slit or an aperture which do no more than block a portion of the beam are not classified herein.

SEE OR SEARCH THIS CLASS, SUBCLASS:

118, for elements for blocking or stopping the beam or having a slit or an aperture which block a portion of the beam.

**112.02 Crystal (e.g., liquid, elasto-optic, photo-refractive, etc.):**

This subclass is indented under subclass 112.01. Subject matter wherein the optical element includes an object in which atoms or molecules are arranged in a regular three-dimensional lattice array.

- (1) Note. The order of the array provides radiant energy modifying properties; for example, anisotropic scattering is the property of a crystal that exhibits different magnetic, electrical, optical, and other physical properties when measured along axes in different directions.

SEE OR SEARCH CLASS:

359, Optical: Systems and Elements, subclasses 237 through 324 for optical modulator optics, e.g., crystal optical elements, per se.

**112.03 Diffractive:**

This subclass is indented under subclass 112.01. Subject matter wherein upon striking the edge of an optical element, the radiant energy direction is deflected by other than reflection or refraction.

- (1) Note. Diffractive objects indicative of an information signal on the storage medium are not classified herein.

SEE OR SEARCH THIS CLASS, SUBCLASS:

109.01 through 109.02, for diffractive objects indicative of an information signal on the storage medium.

SEE OR SEARCH CLASS:

359, Optical: Systems and Elements, subclasses 558 through 576, for diffractive optical elements, per se.

**112.04 Plural distinct diffractive optical elements:**

This subclass is indented under subclass 112.03. Subject matter including a multiplicity of separate diffractive optical elements.

**112.05 In radiation beam path to storage medium:**

This subclass is indented under subclass 112.03. Subject matter wherein the diffractive optical element is located to provide diffraction in the radiant energy beam path to the storage medium.

**112.06 Sectioned optical element:**

This subclass is indented under subclass 112.05. Subject matter wherein the diffractive optical element is divided into a multiplicity of portions, at least one portion of which is diffractive.

**112.07 Plural diffractive sections:**

This subclass is indented under subclass 112.06. Subject matter wherein the sectioned diffractive optical element includes two or more diffractive portions.

**112.08 Lens section:**

This subclass is indented under subclass 112.06. Subject matter wherein the sectioned diffractive optical element includes a portion of transparent material with opposite surfaces, at least one of which is curved, whereby the radiant energy beam is refracted to converge or diverge.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

112.23 through 112.26, for optical lens elements not having a diffractive portion in the information handling portion of the dynamic information storage or retrieval system.

**112.09 Prism, mirror, or waveguide section:**

This subclass is indented under subclass 112.06. Subject matter wherein the sectioned diffractive optical element includes a portion having a transparent means for refracting the radiant energy beam passed therethrough, a means for reflecting the radiant energy beam, or a system of material boundaries in the form of a solid dielectric rod or dielectric-filled tubular conductor for guiding high-frequency electromagnetic waves, i.e., a radiant energy beam.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

112.27 through 112.29, for optical prism, mirror, or waveguide elements not having a diffractive portion in the information handling portion of the dynamic information storage or retrieval system.

**112.1 Holographic:**

This subclass is indented under subclass 112.05. Subject matter wherein the diffractive optical element is a three-dimensional coherent image.

- (1) Note. Holographic storage of an information signal on the storage medium is not classified herein.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

103, for holographic storage of an information signal on the storage medium.

SEE OR SEARCH CLASS:

359, Optical: Systems and Elements, subclasses 1 through 35 for holographic optical elements, per se.

**112.11 Sectioned optical element:**

This subclass is indented under subclass 112.03. Subject matter wherein the diffractive optical element is divided into a multiplicity of portions, at least one portion of which is diffractive.

**112.12 Plural diffractive sections:**

This subclass is indented under subclass 112.11. Subject matter wherein the sectioned diffractive optical element includes two or more diffractive portions.

**112.13 Lens section:**

This subclass is indented under subclass 112.11. Subject matter wherein the sectioned diffractive optical element includes a portion of transparent material with opposite surfaces, at least one of which is curved, whereby the radiant energy beam is refracted to converge or diverge.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

112.23 through 112.26, for optical lens elements not having a diffractive portion in the information handling portion of the dynamic information storage or retrieval system.

**112.14 Prism, mirror, or waveguide section:**

This subclass is indented under subclass 112.11. Subject matter wherein the sectioned diffractive optical element includes a portion having a transparent means for refracting the radiant energy beam passed therethrough, a means for reflecting the radiant energy beam, or a system of material boundaries in the form of a solid dielectric rod or dielectric-filled tubular conductor for guiding high-frequency electromagnetic waves, i.e., a radiant energy beam.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

112.27 through 112.29, for optical prism, mirror, or waveguide elements not having a diffractive portion in the

information handling portion of the dynamic information storage or retrieval system.

**112.15 Holographic:**

This subclass is indented under subclass 112.03. Subject matter wherein the diffractive optical element is a three-dimensional coherent image.

- (1) Note. Holographic storage of an information signal on the storage medium is not classified herein.

SEE OR SEARCH THIS CLASS, SUBCLASS:

103, for holographic storage of an information signal on the storage medium.

SEE OR SEARCH CLASS:

359, Optical: Systems and Elements, subclasses 1 through 35 for holographic optical elements, per se.

**112.16 Polarized or polarizing:**

This subclass is indented under subclass 112.01. Subject matter wherein the optical element utilizes the direction of the electric field component of the radiant energy beam for selectively redirecting the beam, or the optical element modifies the direction of the electric field component of the radiant energy beam.

SEE OR SEARCH CLASS:

359, Optical: Systems and Elements, subclasses 483.01 through 494.01 for polarized or polarizing optical elements, per se.

**112.17 Plural distinct polarized or polarizing optical elements:**

This subclass is indented under subclass 112.16. Subject matter wherein there is a multiplicity of separate polarized or polarizing optical elements.

**112.18 Sectioned optical element:**

This subclass is indented under subclass 112.16. Subject matter wherein the polarized or polarizing optical element is divided into a multiplicity of portions, at least one portion of which has polarized or polarizing property.

**112.19 Plural polarized or polarizing sections:**

This subclass is indented under subclass 112.18. Subject matter wherein the sectioned polarized or polarizing optical element includes two or more polarized or polarizing portions.

**112.2 Lens section:**

This subclass is indented under subclass 112.18. Subject matter wherein the sectioned polarized or polarizing optical element includes a portion of transparent material with opposite surfaces, at least one of which is curved, whereby the radiant energy beam is refracted to converge or diverge.

SEE OR SEARCH THIS CLASS, SUBCLASS:

112.23 through 112.26, for optical lens elements not having a polarized or polarizing portion in the information handling portion of the dynamic information storage or retrieval system.

**112.21 Prism, mirror, or waveguide section:**

This subclass is indented under subclass 112.18. Subject matter wherein the sectioned polarized or polarizing optical element includes a portion having a transparent means for refracting the radiant energy beam passed therethrough, a means for reflecting the radiant energy beam, or a system of material boundaries in the form of a solid dielectric rod or dielectric-filled tubular conductor for guiding high-frequency electromagnetic waves, i.e., a radiant energy beam.

SEE OR SEARCH THIS CLASS, SUBCLASS:

112.27 through 112.29, for optical prism, mirror, or waveguide elements not having a polarized or polarizing portion in the information handling portion of the dynamic information storage or retrieval system.

**112.22 Particular optical filter:**

This subclass is indented under subclass 112.01. Subject matter wherein the optical element includes an optical device used to reject radiation at a certain frequency while passing radiation at another frequency of the radiant energy beam.

**SEE OR SEARCH CLASS:**

359, Optical: Systems and Elements, subclasses 577 through 590 and subclasses 885-892 for light interference optics and absorption filters, e.g. optical filtering elements, per se.

**112.23 Particular lens:**

This subclass is indented under subclass 112.01. Subject matter wherein the optical element includes a transparent material with opposite surfaces, at least one of which is curved, whereby the radiant energy beam is refracted to converge or diverge in a specified manner.

**SEE OR SEARCH CLASS:**

359, Optical: Systems and Elements, subclasses 362 through 435 and subclasses 642-830 for optical lens elements, per se.

**112.24 Plural distinct lenses:**

This subclass is indented under subclass 112.23. Subject matter wherein there is a multiplicity of separate lens elements.

**112.25 Sectioned element:**

This subclass is indented under subclass 112.23. Subject matter wherein the optical element is divided into a multiplicity of portions, at least one of which is a lens portion.

**112.26 Plural lens sections:**

This subclass is indented under subclass 112.25. Subject matter wherein the sectioned lens element includes two or more lens portions.

**112.27 Waveguide:**

This subclass is indented under subclass 112.01. Subject matter wherein the optical element includes a system of material boundaries in the form of a solid dielectric rod or dielectric-filled tubular conductor for guiding high-frequency electromagnetic waves, i.e., a radiant energy beam.

**SEE OR SEARCH CLASS:**

385, Optical Waveguides, subclasses 1 through 147 for optical waveguide elements, per se.

**112.28 Prism:**

This subclass is indented under subclass 112.01. Subject matter wherein the optical element includes a transparent means for refracting the radiant energy beam passed therethrough.

**SEE OR SEARCH CLASS:**

359, Optical: Systems and Elements, subclasses 831 through 837 for optical prism elements, per se.

**112.29 Mirror:**

This subclass is indented under subclass 112.01. Subject matter wherein the optical element includes means for reflecting the radiant energy beam.

**SEE OR SEARCH CLASS:**

359, Optical: Systems and Elements, subclasses 838 through 884 for optical mirror elements, per se.

**113 With medium contacting drum or gate in optical system (e.g., sound head):**

This subclass is indented under subclass 100. Subject matter including an element in or adjacent to the beam path which positions the storage medium and has either a linear or cylindrical contacting surface.

**114 Movable roller support for optical path:**

This subclass is indented under subclass 113. Subject matter in which the element for positioning the storage medium is a rotatably mounted drum or roller.

**115 With driving or stabilizing mechanism:**

This subclass is indented under subclass 113. Subject matter further including driving, movable, or other elements for controlling or smoothing the motion of the storage medium.

**116 Light intensity adjustment or maintenance:**

This subclass is indented under subclass 100. Subject matter including modification of the beam source to obtain a desired or constant intensity.



**117 Having movable shutter or light gate:**

This subclass is indented under subclass 100. Subject matter having a variably positioned radiation blocking element in the radiation beam path.

- (1) Note. The position is generally varied by the information signal.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

104, for a ribbon type light modulator.

**118 With detail, configuration, or adjunct of element having slit or aperture in radiation path:**

This subclass is indented under subclass 100. Subject matter having the structure, shape, or cooperating device of an element blocking all but a limited area of the radiant energy beam.

**119 With movement of optical beam (e.g., galvanometer):**

This subclass is indented under subclass 118. Subject matter further including periodic variation of the beam position.

**120 Having particular radiation sensor:**

This subclass is indented under subclass 100. Subject matter wherein structural detail of the beam responsive element is particularly described.

**121 With particular light source (e.g., laser, CRT wit phosphor):**

This subclass is indented under subclass 100. Subject matter including either structural detail of a light source, or a light source characterized by a function or relationship additional to conventional light emission.

- (1) Note. An additional function or relationship would include light coherence or light position control.
- (2) Note. The CRT with phosphor herein has position control other than for generating or following plural tracks in the storage medium.

SEE OR SEARCH CLASS:

257, Active Solid-State Devices (e.g., Transistors, Solid-State Diodes), subclasses 13, 79 through 103 and 918 for incoherent light emitting injection luminescent devices, and subclasses 80-85 for semiconductor light emitting sources combined with semiconductor light responsive devices.

**122 Solid state:**

This subclass is indented under subclass 121. Subject matter wherein the light source is a solid element emitting light when excited by an electric signal.

- (1) Note. Such device are often semiconductive.

**123 Glow lamps:**

This subclass is indented under subclass 121. Subject matter wherein the light source is a gas discharge device for electric current.

**124.01 With details of electrical signal processing:**

This subclass is indented under 100. Subject matter further including a particularly described step or structure of electrical modification of the information signal.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

48, for information signal processing responsive to a control signal that determines a parameter of the information signal.

59, for information signal processing wherein the signal is a binary signal.

**124.02 With transducing multiple tracks:**

This subclass is indented under 124.01. Subject matter wherein the information signal is processed during information signal storage on or retrieval from a plurality of tracks on a storage medium element.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

95, For information signal processing wherein the information signal are either stored or intended to be retrieved concurrently from plural tracks.

**124.03 With transducing using plural beams:**

This subclass is indented under 124.01. wherein the information signal is processed during information signal storage or retrieval using a plurality of light beams.

**124.04 Modulating or demodulating:**

This subclass is indented under 124.01. Subject matter including step or structure to perform transformation of an input signal into a recording signal by varying amplitude, frequency, or phase using a carrier signal for storage or reverse transformation of a signal reproduced from a storage medium.

## SEE OR SEARCH CLASS:

- 329, Demodulators, appropriate subclasses for frequency, phase, and amplitude demodulation, per se.
- 332, Modulators, appropriate subclasses for frequency, phase, and amplitude modulation, per se.
- 348, Television, subclass 724 for modulating television signal.
- 375, Pulse or Digital Communication, subclasses 271 through 284, 302-308, and 322-337 for frequency or phase modulated carrier wave pulse, and subclasses 268, 320, and 353 for pulse amplitude modulation in communication systems, per se.

**124.05 Integrating or sampling:**

This subclass is indented under 124.01. Subject matter including step or structure to obtain an integral value over time or an instantaneous value of an information signal.

**124.06 Compressing or decompressing:**

This subclass is indented under 124.01. Subject matter including step or structure to perform transformation of an input signal into a recording signal by reducing an amount thereof for storage or reverse transformation of a signal reproduced from a storage medium.

## SEE OR SEARCH CLASS:

- 386, Motion Video Signal Processing for Recording or Reproducing, subclasses 353 through 357 for compressing or decompressing of video signal during recording or reproduction operations.

**124.07 Auxiliary information arrangement processing (e.g., block headers, subcode, or interpolated information, etc.):**

This subclass is indented under 124.01. Subject matter whereas the information signal is ordered with a particular distribution on a medium to include supplemental information (e.g., block headers, subcode, or interpolated information, etc.).

**124.08 Sectioned information processing (e.g., lengths, frames, or blocks, etc.):**

This subclass is indented under 124.01. Subject matter including step or structure to subdivide an information signal into portions of similar repetitive characteristic (e.g., lengths, frames, blocks, etc.) for storage or to eliminate the subdivisions of the information signal during retrieval.

**124.09 Multiplexing or demultiplexing:**

This subclass is indented under 124.01. Subject matter including step or structure to perform transformation of plural input signals into a recording signal by combining for storage or reverse transformation of a signal reproduced from a storage medium.

## SEE OR SEARCH CLASS:

- 370, Multiplex Communications, appropriate subclasses for multiplexing and demultiplexing of communications in general.

**124.1 Gain processing:**

This subclass is indented under 124.01. Subject matter including step or structure to vary the amplification of an information signal.

**124.11 Of retrieved signal:**

This subclass is indented under 124.1. Subject matter wherein the information signal is a signal reproduced from a storage medium.

**124.12 Of signals obtained from photo-detector components:**

This subclass is indented under 124.11. Subject matter wherein the retrieved signal is obtained from output signals from a plurality of segments of a photo-detector.

**124.13 With specific frequency or frequency range:**  
This subclass is indented under 124.11. Subject matter including gain processing of the retrieved signal at a distinct frequency or within a distinct frequency domain.

**124.14 Rate, phase, or transient processing:**  
This subclass is indented under 124.01. Subject matter including step or structure to adjust the frequency, phase, or oscillation characteristic of the information signal.

**124.15 Level detecting using reference signal:**  
This subclass is indented under 124.01. Subject matter including step or structure to detect an amplitude of an information signal by comparison with a signal that provides a measuring standard.

**125 Having photographic storage medium (e.g., variable density or area):**  
This subclass is indented under subclass 100. Subject matter wherein the storage medium contains a component subject to a radiation induced chemical change, and not classified in a preceding subclass.

- (1) Note. The resultant change may take the form of a variation in optical transmissivity or optical track width.

**SEE OR SEARCH CLASS:**

399, Electrophotography, subclass 10 for storage of data on the operation of an electrophotographic device (i.e., log report) and subclass 83 for job mode selection with memory.

**126 Electrical modification or sensing of storage medium (e.g., capacitive, resistive, electrostatic charge):**  
This subclass is indented under subclass 99. Subject matter wherein the information signal is stored or retrieved by either (a) modulating an electrical property of the storage medium by an electrical transducer, or (b) sensing an electrical property of the storage medium by a transducer electrically related thereto.

- (1) Note. Electrical properties may include charge, capacitance, etc.

- (2) Note. A charged particle (e.g., electron) beam may be considered either invisible radiation or electrical current depending upon the manner in which such a beam interacts with the storage medium.

**127 Mechanical modification or sensing of storage medium:**

This subclass is indented under subclass 99. Subject matter wherein the information signal is stored or retrieved by either (a) modulating a mechanical property of the storage medium by a mechanical effect produced by the transducing assembly, or (b) sensing a mechanical property of the storage medium by a transducing assembly mechanically related thereto.

**128 With electrical information signal processing:**

This subclass is indented under subclass 127. Subject matter including some detail of handling or control of the electrical signal input to or output of the transducing assembly.

- (1) Note. Mere mention of connecting means, or wires along the tone arm is not classifiable here.

**129 From information modulated oscillator:**

This subclass is indented under subclass 128. Subject matter including a source of oscillations controlled or otherwise modulated by the transducing assembly to produce an A.C. signal with an information related parameter.

**SEE OR SEARCH THIS CLASS, SUBCLASS:**

8, for similar subject matter combined with a radio.

**130 Sensing of elastic deformation or relaxation of storage medium (e.g., skid type):**

This subclass is indented under subclass 128. Subject matter including a probe which couples the transducer assembly to the storage medium to cause deformation and to sense the restoring force thereto.

**131 Bidirectional information flow (e.g., record/replay switching):**

This subclass is indented under subclass 128. Subject matter wherein the signal processing is switchable between a storage and a retrieval mode of information handling.

- (1) Note. Typical systems classified here may have an amplifier which is switched between recording and playback modes.

**132 Recording:**

This subclass is indented under subclass 128. Subject matter limited to signal processing for storing information.

**133 With transformation or intentional distortion of information signal (e.g., compensation for velocity variation with diameter):**

This subclass is indented under subclass 132. Subject matter wherein the processing includes some intended change in a characteristic of the information signal.

- (1) Note. The magnitude control of high frequencies in the information signal (e.g., Dolby) is classified here.

SEE OR SEARCH THIS CLASS, SUBCLASS:

88, for similar subject matter for stereophonic systems.

**134 With particular amplification characteristic or signal control circuitry (e.g., muting):**

This subclass is indented under subclass 128. Subject matter having either (a) an amplifier with a particular characteristic (e.g., band-pass), or (b) circuitry for control of a characteristic of the electrical information signal.

- (1) Note. A nominally recited amplifier, of itself, is insufficient for classification herein.
- (2) Note. Particular control circuitry may be by a switch or a circuitry subsystem, such as muting.

**135 Specified structure of electrical transducing assembly:**

This subclass is indented under subclass 127. Subject matter including some structural detail of the storage element modifying or sensing device which includes the combination of a complete electricity-force conversion element and a storage medium coupling element.

- (1) Note. This may include the subcombination of such a modulating or sensing device, of itself.
- (2) Note. Where the modulating or sensing device is described only by name, e.g., "a stylus driving a pickup", without any detail thereof, classification is determined by the combination of such a nominally recited device with the other elements recited.
- (3) Note. Where a tone arm is recited with details of the modulating or sensing device, classification is in this or one of the indented subclasses; however, such recitation in further combination with storage medium support or motion production, or with particular circuitry will be classified in the appropriate preceding subclass.

SEE OR SEARCH THIS CLASS, SUBCLASS:

170+, for stylus coupling devices, in general.

215.1 through 230 and 244.1-257, for tone arm devices absent detail of the modifying or sensing device.

**136 Multichannel (stereo cartridge):**

This subclass is indented under subclass 135. Subject matter wherein one or more transducing assemblies provide a plurality of independent outputs.

- (1) Note. The subject matter of this subclass, as a "stereophonic transducer", is a subcombination of the stereo of subclasses 86+ above.

- 137 By stress application to solid transducing element (e.g., piezoelectric):**  
This subclass is indented under subclass 136. Subject matter wherein a stylus is coupled to a relatively static transducer element which responds to pressure or other force.
- (1) Note. Typical transducer elements will be piezoelectric, electrostrictive, solid state pressure responsive devices, or the like. The term "relatively static" refers to the absence of translatory motion of the transducer element, as a whole.
- 138 With adjustable or replaceable stylus coupling structure:**  
This subclass is indented under subclass 137. Subject matter wherein the linkage between stylus and transducer permits selectable change between styli, or facilitates removal and replacement of a stylus assembly.
- (1) Note. Typical selectable change is a lever control of either of two differently sized styli.
- SEE OR SEARCH THIS CLASS, SUBCLASS:  
171+, for a stylus holder with stylus interchanging structure.
- 139 With details of damping or compliance:**  
This subclass is indented under subclass 136. Subject matter wherein an element of the transducing assembly is specified to have either a desired rigidity or stiffness, or elasticity, or absorption as to a dynamic characteristic.
- (1) Note. The element having a desired elasticity or absorption may be anywhere in the transducing assembly or support structure, with a control of vibration or resonance.
- (2) Note. The stiffness or compliance is usually formed in the stylus lever.
- SEE OR SEARCH THIS CLASS, SUBCLASS:  
170, for damping or compliance details of a stylus holder or linkage thereof.
- 140 Plural styli:**  
This subclass is indented under subclass 135. Subject matter wherein the mechanical force applying structure includes more than one stylus.
- (1) Note. A typical device classified here may have styli of different sizes coupling the storage medium to a monaural cartridge or pickup, with a lever to selectively engage one stylus with the storage medium.
- 141 Plural alternative or with signal handling adjunct:**  
This subclass is indented under subclass 135. Subject matter including several transducers only one of which is operative at any time; or an additional device directly cooperating with the transducer for processing either an information signal, or another signal in its place.
- SEE OR SEARCH THIS CLASS, SUBCLASS:  
1+, for a system having an alternative signal.  
129, for an electromechanical system having switching between a storage and a retrieval mode of operation.  
136+, for plural concurrently operative transducers.
- 142 Stylus controlled optical element:**  
This subclass is indented under subclass 135. Subject matter wherein the stylus is coupled to an element which controls or affects light.
- (1) Note. Typical optical elements may be a vane or mask, or a mirror, in a beam of light.
- SEE OR SEARCH CLASS:  
359, Optical: Systems and Elements, appropriate subclasses for particular optical elements.
- 143 Electron tube:**  
This subclass is indented under subclass 135. Subject matter wherein the stylus is coupled to an element which affects operation of an electron tube.

- (1) Note. The operation of the electron tube may be affected by either external (e.g., magnet) or internal (e.g., grid) elements.
- 144 Electret or piezoelectric:**  
This subclass is indented under subclass 135. Subject matter wherein the transducer element has a bound electrostatic charge or is otherwise an electrostatic generator.
- SEE OR SEARCH CLASS:  
307, Electrical Transmission or Interconnection Systems, subclass 400 for electret systems in general.  
310, Electrical Generator or Motor Structure, subclasses 311+ for piezoelectric generators.
- 145 Semiconductive:**  
This subclass is indented under subclass 135. Subject matter including a force responsive element having an electrical conductivity intermediate that of a conductor and of an insulator.
- (1) Note. The element may have a potential barrier layer therein.
- SEE OR SEARCH THIS CLASS, SUBCLASS:  
128, for such subject matter with additional information processing circuitry.  
144, for piezoelectric semiconductive transducer assemblies.
- SEE OR SEARCH CLASS:  
257, Active Solid-State Devices (e.g., Transistors, Solid-State Diodes), subclasses 108 and 414-420 for devices responsive to nonelectrical signals, including pressure.  
327, Miscellaneous Active Electrical Non-linear Devices, Circuits, and Systems, subclasses 509+ for miscellaneous externally effected circuits.
- 146 Magnetic field variation (e.g., magnetostrictive):**  
This subclass is indented under subclass 135. Subject matter wherein the electrical transducer has magnetic field variation related to the information signal.
- SEE OR SEARCH CLASS:  
310, Electrical Generator or Motor Structure, appropriate subclasses for generator structure of general utility.
- 147 Moving signal coil:**  
This subclass is indented under subclass 146. Subject matter wherein the information signal is generated by, or causes movement of, a coil rigidly connected to the stylus within a magnetic field.
- 148 Variable reluctance:**  
This subclass is indented under subclass 146. Subject matter wherein the magnetic field variation is caused by a stylus-linked portion of the magnetic field circuit.
- 149 Fixed coil surrounding fixed part of magnetic path:**  
This subclass is indented under subclass 148. Subject matter wherein the information signal is generated in a winding about a stationary portion of the magnetic field circuit.
- 150 Capacitive or electrolytic liquid:**  
This subclass is indented under subclass 135. Subject matter wherein the transducer includes a liquid which is specified as having dielectric or conductive properties.
- SEE OR SEARCH CLASS:  
338, Electrical Resistors, subclasses 80+ for mechanically variable resistors, in general.  
361, Electricity: Electrical Systems and Devices, subclasses 280+ for externally variable capacitors, in general.
- 151 Electrostatic or capacitive:**  
This subclass is indented under subclass 135. Subject matter wherein the transducer includes an electric field and electrodes related thereto.
- SEE OR SEARCH CLASS:  
361, Electricity: Electrical Systems and Devices, subclasses 277+ for variable capacitors, in general.

**152 Variable resistance:**

This subclass is indented under subclass 135. Subject matter wherein the transducer has an electric circuit element, the resistance of which is varied in accordance with the information.

**SEE OR SEARCH CLASS:**

- 323, Electricity: Power Supply or Regulation Systems, subclasses 291+ and especially 298+ for variable resistance controlled circuits not limited to stylus control of the resistance.
- 338, Electrical Resistors, subclasses 68+ for mechanically variable resistors, in general.

**153 Including treatment to facilitate storage (e.g., storage medium softening):**

This subclass is indented under subclass 127. Subject matter including treatment of the storage medium surface to produce a modification in a physical characteristic thereof.

- (1) Note. Examples of such treatment include softening of the storage medium and erasure of a previous track by scraping or abrading.

**SEE OR SEARCH CLASS:**

- 82, Turning, subclass 1.12 for record disc erasing not combined with mechanical storage thereon.
- 264, Plastic and Nonmetallic Article Shaping or Treating: Processes, subclass 36.13 for a process of record disc erasing by shaping, not combined with mechanical storage thereon.

**154 Heating (e.g., heated stylus):**

This subclass is indented under subclass 153. Subject matter including the application of heat to the storage medium.

- (1) Note. The heat may be applied indirectly, e.g., through the stylus.

**SEE OR SEARCH CLASS:**

- 219, Electric Heating, appropriate subclasses for electric heating of general utility.

**155 Mechanical conversion to or from sound:**

This subclass is indented under subclass 127. Subject matter wherein the storage medium sensing or modulating element is mechanically coupled to a sound transmitting or responsive solid element (e.g., diaphragm), so as to directly couple the elements.

- (1) Note. The sensing or modulating element is usually in physical contact with the storage element.
- (2) Note. The term "mechanical" includes a fluidic coupling.
- (3) Note. Such devices with sound boxes or acoustical tone arms are classified here, however, the subcombination limited thereto are classified in the indented subclasses 157-169.

**156 Including fluid coupling in force linkage:**

This subclass is indented under subclass 155. Subject matter including two diaphragms coupled by an enclosed fluid.

**157 Sound box with mounting structure:**

This subclass is indented under subclass 155. Subject matter limited to a stylus coupled acoustical resonator and mounting means therefor.

**SEE OR SEARCH THIS CLASS, SUBCLASS:**

- 155, for similar structure combined with storage medium support or movement device.

**158 Acoustical tone arm:**

This subclass is indented under subclass 155. Subject matter limited to a tone arm with acoustical coupling structure.

**SEE OR SEARCH THIS CLASS, SUBCLASS:**

- 155, for such structure combined with storage medium support or movement devices.
- 244.1 through 257, for tone arms, in general.

- 159 Having plural acoustical paths:**  
This subclass is indented under subclass 158. Subject matter in which the acoustical coupling structure includes a plurality of acoustical energy conducting passages through which such energy may travel simultaneously.
- (1) Note. Such structure may include two acoustical conduits driven in a mechanical push-pull relationship by a single stylus.
- 160 Sound box:**  
This subclass is indented under subclass 155. Subject matter limited in extent to a stylus coupled acoustical resonator, a casing therefor, or a mechanical linkage used therein.
- SEE OR SEARCH THIS CLASS, SUBCLASS:  
155, for such structure combined with storage medium support or movement devices.
- 161 With interchangeable styli:**  
This subclass is indented under subclass 160. Subject matter having plural styli selectively coupled in cooperative relationship with the acoustical resonator.
- SEE OR SEARCH THIS CLASS, SUBCLASS:  
171+, for stylus holders with interchangeable styli, in general.
- 162 Including stylus pivoted from fixed casing:**  
This subclass is indented under subclass 160. Subject matter having a stylus having a tracking motion limited to an angular displacement about its support from an immovable casing.
- 163 With sound modification:**  
This subclass is indented under subclass 160. Subject matter having acoustical structure for amplifying, muffling or filtering the incident or reproduce sound.
- SEE OR SEARCH THIS CLASS, SUBCLASS:  
167, for mechanical amplification of sound box vibration.
- SEE OR SEARCH CLASS:  
181, Acoustics, for structure to handle sound, in general.
- 164 Convertible between lateral and perpendicular modulation modes:**  
This subclass is indented under subclass 160. Subject matter including structure to cause or respond to stylus vibrations in two planes, one being normal and the other parallel to the record medium surface.
- (1) Note. Such structure in a reproducer may be unitary or alternative.
- 165 Perpendicular mechanical modulation:**  
This subclass is indented under subclass 160. Subject matter wherein the sound box causes or is responsive to stylus vibration in a plane normal to the surface of the storage medium.
- 166 Recording:**  
This subclass is indented under subclass 165. Subject matter wherein the stylus modulates the storage medium by cutting its surface.
- 167 With mechanical amplification (e.g., friction coupling):**  
This subclass is indented under subclass 165. Subject matter having structure to increase the amplitude of the mechanical vibrations of the elements coupling the stylus and acoustical resonator.
- (1) Note. Such structure is often a frictional linkage to an auxiliary vibrating structure.
- SEE OR SEARCH THIS CLASS, SUBCLASS:  
163, for sound boxes having acoustical, rather than mechanical, amplification.
- 168 Floating weight:**  
This subclass is indented under subclass 165. Subject matter having a stylus supporting lever with counterbalancing weight structure to minimize or eliminate the weight applied by the stylus.



- SEE OR SEARCH THIS CLASS, SUB-CLASS:  
254, for tone arm counterbalancing weight structure, in general.
- 169 Lateral mechanical modulation:**  
This subclass is indented under subclass 160. Subject matter wherein the sound box causes or is responsive to stylus vibration in a plane tangent, or parallel the surface of the storage medium.
- 170 Stylus holder or shield:**  
This subclass is indented under subclass 127. Subject matter limited in extent to a support or a protecting device for the storage medium engaging element with or without such element.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:  
135+, for such holders combined with electrical transducing structure.
- 171 With structure to interchange styli:**  
This subclass is indented under subclass 170. Subject matter having structure to select one of a plurality of styli for engagement with the storage medium.
- 172 By replacement:**  
This subclass is indented under subclass 171. Subject matter wherein each one of the plurality of styli successively engage the storage medium.
- (1) Note. These are generally single use type needles and are often in cartridge or magazine type containers.
- 173 Stylus:**  
This subclass is indented under subclass 127. Subject matter limited in extent to the storage medium engaging element.
- 174 Including signal modification:**  
This subclass is indented under subclass 99. Subject matter including significant detail of changing some parameter of the information signal.
- (1) Note. The parameter change must modify the relationship among plural signal parameters, other than a multiplication of the magnitude. Therefore simple amplification is not classified in this or its indented subclasses, but a change in degree of amplification (e.g., automatic volume control, compression) would be so classified.
- (2) Note. Circuitry for changing signal parameters, in general, is classified in the class containing the particular circuitry structure.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:  
88, for similar subject matter in a stereophonic retrieval system.  
124, for similar subject matter in a radiation beam retrieval system.  
134, for similar subject matter in an electrically actuated mechanical recording system.
- 175 Frequency dependent (e.g., separation):**  
This subclass is indented under subclass 174. Subject matter wherein the signal parameter is varied as a function of the signal frequency.
- (1) Note. Variation of distribution of differing frequency components of the information signal to different ones of a plurality of channels (e.g., crossover networks) are classified herein.
- SEE OR SEARCH CLASS:  
379, Telephonic Communications, appropriate subclasses for similar subject matter not restricted to storage or retrieval.
- 176 DYNAMIC MECHANISM SUBSYSTEM:**  
This subclass is indented under the class definition. Subject matter including a support for either a transducer assembly or a storage medium, or driving means for such a support.
- (1) Note. Nominal recitation of a signal processing step or structure to show relationship to mechanical structure will be classified in this or indented subclasses.
- (2) Note. Subcombinations and elements of such structure peculiar thereto and not

elsewhere classified are also in this or indented subclasses.

- 177 Having stationary storage medium:**  
This subclass is indented under subclass 176. Subject matter wherein all of the relative motion for storage or retrieval is produced by the transducer assembly.

SEE OR SEARCH THIS CLASS, SUBCLASS:  
63+, for such reproducers used for a toy or novelty device.

**178.01 Access of multiple storage elements (e.g., record changer):**

This subclass is indented under subclass 176. Subject matter having production of additional motion of the transducer or storage medium to change the storage medium used for storage or retrieval.

- (1) Note. Movement of the transducer mounting (e.g., tone arm) is so interrelated with multiple storage access that documents classified herein will not ordinarily be cross referenced to subclasses designated to dynamic mechanical subsystem having power-driven transducer assembly.

SEE OR SEARCH THIS CLASS, SUBCLASS:  
30.01 through 41.01, for similar subject matter having designation or selection of storage medium to be used for storage or retrieval.  
215.1 through 230, for dynamic mechanical subsystem having power-driven transducer assembly, per se.

- 179 Cylindrical storage element:**  
This subclass is indented under subclass 178.01. Subject matter wherein the storage medium has an elongate axially symmetric tubular configuration with a closed curved surface and an axis of rotation coincident with its axis or symmetry.

- 180 Flexible disc:**  
This subclass is indented under subclass 178.01. Subject matter wherein the accessed storage medium is a disc subject to extensive

deformation without any permanent effect thereto.

SEE OR SEARCH CLASS:  
360, Dynamic Magnetic Information Storage or Retrieval, subclasses 99.02+ for a floppy disk loading or ejecting mechanism in a magnetic recorder or reproducer.

**181 Stack height adjustment for tone arm or turntable:**

This subclass is indented under subclass 178.01. Subject matter for storage discs and having a tone arm and a turntable having a spindle, and having structure to modify the position of the tone arm or the turntable along the spindle axis to compensate for changes in the height of stacks or discs on the turntable.

- (1) Note. The stack height need not be sensed directly, but may be inferred by the number of disc changes.

- 182 Numerical count shut-off:**  
This subclass is indented under subclass 178.01. Subject matter including termination of operation in response to completion of a settable number of storage or retrieval operations.

- 183 Cam shaft transverse to turntable spindle axis of record changer:**  
This subclass is indented under subclass 178.01. Subject matter having a tone arm and a turntable for storage discs with a spindle and rotatable shaft with mechanical actuating surfaces positioned below the turntable with an axis intersecting the spindle and a support for the tone arm such that the actuating surfaces are below and proximate both the spindle and tone arm support.

- 184 Tone arm position control by sensing of disc (e.g., disc or hole size):**  
This subclass is indented under subclass 178.01. Subject matter including moving a tone arm away from the path of storage disc movement during disc changing and moving the tone arm to the starting position on the disc to be placed in use after changing in accordance with a sensed dimension indicative of the starting position.

- (1) Note. Such dimension may be the diameter of the disc or of a spindle aperture therein.
- SEE OR SEARCH THIS CLASS, SUBCLASS:  
217, for tone arm set down control responsive to disc sensing, in general.
- 185 Disc size sensor on or using tone arm:**  
This subclass is indented under subclass 184. Subject matter wherein the size of the disc to be placed in use is determined by a sensing element mounted on, or by direct disc contact with, the tone arm.
- 186 Stepped tone arm stop element:**  
This subclass is indented under subclass 184. Subject matter in which the tone arm starting position is determined by a stop element with a surface having a stair-step configuration.
- SEE OR SEARCH CLASS:  
192, Clutches and Power-Stop Control, subclasses 138+ for limit stop devices of general utility.
- 187 Disc size sensor in feed path:**  
This subclass is indented under subclass 184. Subject matter in which a portion of the sensor is in the path of storage disc movement.
- (1) Note. By contact with the disc, the disc size then sets the tone arm starting position.
- 188 Disc size sensor at turntable position:**  
This subclass is indented under subclass 184. Subject matter in which a portion of the sensor is adjacent the operative location of the disc.
- (1) Note. The sensor is usually adjacent the turntable and active in the plane of the disc as it is normally used.
- 189 Turntable speed control:**  
This subclass is indented under subclass 178.01. Subject matter having adjustment or change of motion of a rotating horizontal surface which supports and imparts motion to a storage medium disc.
- 190 By sensing of disc (e.g., disc or hole size):**  
This subclass is indented under subclass 189. Subject matter wherein the nominal rotational speed of the turntable is selected in accordance with a sensed parameter (e.g., dimension) of the disc.
- 191.1 Storage disc fed to and removed from turntable:**  
This subclass is indented under subclass 178.01. Subject matter having a turntable and a supply of storage discs in which each of the discs is consecutively moved from the supply to the turntable prior to storage or retrieval and subsequently removed from the turntable to another location.
- (1) Note. The disc may be turned to the original supply to another group of discs, or to some indeterminate location.
- 192.1 Plural disc holder having unitary separating structure:**  
This subclass is indented under subclass 191. . Subject matter wherein the disc supply includes a casing having distinct sections in which each disc is mounted, the sections being separated by material structurally integral with said casing.
- SEE OR SEARCH THIS CLASS, SUBCLASS:  
30.38 through 31.01 and 36.01-39.01, for this subject matter combined with optical or nonoptical storage element designation, respectively.
- 193 Grouped removal with sequential feed:**  
This subclass is indented under subclass 191.1. Subject matter wherein the discs are individually moved to the turntable, and a plurality of discs in the form of a stack are removed from the turntable together.
- 194 Coplanar storage:**  
This subclass is indented under subclass 191.1. Subject matter wherein the disc position in the supply, before movement, is in the same plane as the turntable surface position after movement.

- 195 Both side of disc used:**  
This subclass is indented under subclass 191.1. Subject matter wherein both sides of a storage disc are accessed for information storage and retrieval without operator intervention.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:  
199, for this subject matter with other types of record changers.
- 196 Separate motors operate turntable and disc change mechanism:**  
This subclass is indented under subclass 178.01. Subject matter having a turntable for storage discs, the turntable and structure to change the storage discs being powered by separate motors.
- 197 Plural turntables:**  
This subclass is indented under subclass 178.01. Subject matter having a plurality of turntables, each being consecutively utilized for storage or retrieval.
- 198 Plural tone arms:**  
This subclass is indented under subclass 197. Subject matter having separate transducer assembly support arms for different turntables or groups thereof.
- 199 Both sides of disc used:**  
This subclass is indented under subclass 178.01. Subject matter wherein both sides of a storage disc are accessed for information storage and retrieval without operator intervention.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:  
195, for similar subject matter with both feed and removal of disc from turntable.
- 200 By inverting disc:**  
This subclass is indented under subclass 199. Subject matter wherein the disc surface used is changed by turning over the disc element.
- 201 Discs sequentially removed from turntable:**  
This subclass is indented under subclass 178.01. Subject matter wherein storage discs are stacked on a turntable and are individually removed subsequent to the storage or retrieval operation.
- 202 Discs sequentially fed to turntable:**  
This subclass is indented under subclass 178.01. Subject matter wherein the storage discs are individually fed to the turntable prior to the storage or retrieval operation so as to be stacked upon discs which have previously been used.
- 203 Tone arm set down adjustment:**  
This subclass is indented under subclass 202. Subject matter including controllable placement of the transducer assembly on the storage disc.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:  
184+, for such adjustment controlled by disc sensing.  
216+, for similar subject matter not restricted to multiple element access devices.
- 204 By edge controlled feeding of disc:**  
This subclass is indented under subclass 202. Subject matter including moving the disc to the turntable by applying force to the perimeter of the disc.
- 205 With feed cooperating structure on spindle:**  
This subclass is indented under subclass 204. Subject matter wherein the spindle has structure or configuration cooperating with the disc force application to assist in disc feeding.
- 206 By center hold feeding of disc (e.g., spindle drop):**  
This subclass is indented under subclass 202. Subject matter including moving the disc to the turntable by applying or releasing force adjacent center holes in such discs.
- (1) Note. The discs are often stacked on a portion of the spindle prior to storage or retrieval.
- 207 Support mechanism adapter for large hole records on small hole spindles:**  
This subclass is indented under subclass 206. Subject matter having an element extending radially, in at least one direction, from the spin-

- dle to engage disc apertures larger than the spindle diameter.
- (1) Note. The adapters, per se, are also classified herein.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:  
290.1, for disc hole size adapters, in general.
- 208 Having specified spindle structure:**  
This subclass is indented under subclass 206. Subject matter including detail of the spindle mechanism structure.
- 209 Umbrella type:**  
This subclass is indented under subclass 208. Subject matter including plural, laterally extendable elements mounted on and disposed angularly about the spindle, which elements control and support the disc stack.
- 210 Having shoulder and ejector lever:**  
This subclass is indented under subclass 208. Subject matter wherein the disc is positioned by a ledge formed on the spindle and a lever element is used to feed the disc to the turntable.
- 211 With edge stabilizer:**  
This subclass is indented under subclass 210. Subject matter wherein the disc is held adjacent the edge by an element to steady the disc to be fed.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:  
205, for an edge controlled disc feed with cooperating spindle support structure.
- 212 Auxiliary structure (e.g., shut-off preventer, disc spacer):**  
This subclass is indented under subclass 178.01. Subject matter having or limited to an element added to modify the operation of the record changer or mechanism.
- (1) Note. Examples of such elements are discs for spacing, a clip or other device for defeating last-record shut-off.
- (2) Note. Subcombination of this nature peculiar to record changers are classified here.
- 213 Additional motion or storage element support to effect tracking:**  
This subclass is indented under subclass 176. Subject matter wherein the structure supporting the storage medium has a motion component additional to the relative motion along the path of motion, which additional motion component maintains each instantaneous position of the storage medium having its characteristic sensed at the location of a substantially stationary transducer.
- 214 Cylindrical storage element:**  
This subclass is indented under subclass 213. Subject matter wherein the storage medium has an elongate axially symmetric tubular configuration with a closed curved surface and an axis of rotation coincident with its axis of symmetry.
- 215.1 Having power driven transducer assembly:**  
This subclass is indented under subclass 176. . Subject matter having a source of power which applies a force to drive the transducer assembly along a desired path.
- (1) Note. The driving force is often applied to the tone arm.
- (2) Note. The incidental driving force resulting from stylus engagement with an information carrying groove is not classified herein.
- SEE OR SEARCH CLASS:  
720, Dynamic Optical Information Storage or Retrieval, subclasses 659 through 670 for power driven transducer assembly in a dynamic optical information storage or retrieval device.
- 216 Having tone arm set-down control:**  
This subclass is indented under subclass 215. Subject matter wherein the driving force places the transducer assembly on a storage disc.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:  
184+, for similar subject matter in an automatic record changer.

**217 By disc sensing (e.g., by sensed disc or hole size):**

This subclass is indented under subclass 216. Subject matter wherein the position of the placement is determined by a sensed characteristic of the disc, such as disc or hole size.

SEE OR SEARCH THIS CLASS, SUBCLASS:

184+, for similar subject matter in an automatic record changer.

**218 Having groove engaging driving element:**

This subclass is indented under subclass 215. Subject matter wherein a groove engaging element, distinct from any information coupling element, provides all tracking force to the transducer assembly.

- (1) Note. Examples of the subject matter classified in this subclass include unmodulated grooves and groove coupling elements transmitting only tracking motion.

**219.1 With drive transverse to storage track:**

This subclass is indented under subclass 215.1. Subject matter wherein the driving force is applied during storage or retrieval to provide or modify the motion necessary thereto.

**220 Controlled by transducer assembly support:**

This subclass is indented under subclass 219. Subject matter wherein the driving force is determined by a condition (e.g., position, movement) of the transducer supporting structure.

- (1) Note. The supporting structure is often a tone arm.

**221 With additional drive (e.g., scanning, restoring, or return):**

This subclass is indented under subclass 219. Subject matter having a second source of driving force which produces a different rate or direction of motion and is selectively applied to the transducer support.

**222 Having pivoted tone arm:**

This subclass is indented under subclass 219. Subject matter having a tone arm which supports the transducer assembly and which tone

arm is subject only to angular displacement at the end opposite the transducer assembly so as to cause the assembly to travel in a substantially arcuate path.

**223 By lead screw:**

This subclass is indented under subclass 219. Subject matter wherein the driving force is applied to the transducer assembly, or support therefor, by a rotating tubular element having an externally extending element of helical configuration.

**224 With passive linear tracking:**

This subclass is indented under subclass 215.1. Subject matter including constraining the path of the transducer assembly due to incidental motion from stylus engagement to a straight line, the driving force being applied other than during storage or retrieval.

- (1) Note. This driving force is generally a restoring force.

SEE OR SEARCH THIS CLASS, SUBCLASS:

249.1, for linear tracking absent application of driving force.

**225 Restoring after passive tracking:**

This subclass is indented under subclass 215. Subject matter wherein the driving force is applied after storage or retrieval to place the transducer support at a predetermined location.

**226 Responsive to transducer support condition (e.g., movement or position):**

This subclass is indented under subclass 225. Subject matter where the driving force is initiated or controlled by a condition of the transducer assembly support (e.g., movement or position).

- (1) Note. Included herein are devices which restore a tone arm to an initial position upon reaching lead-out groove.

SEE OR SEARCH THIS CLASS, SUBCLASS:

231+, for tone arm operated trip devices, in general.

- 227 Numerical count replay:**  
This subclass is indented under subclass 226. Subject matter including termination of storage or retrieval in response to completion of a settable number of repetitions of the restoring operation.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:  
182, for numerical count shut-off in a record changer.
- 228 Controllable position:**  
This subclass is indented under subclass 226. Subject matter in which either a restoring initiating or ending location of the transducer assembly may be adjusted.
- 229 Turntable mounted template:**  
This subclass is indented under subclass 225. Subject matter wherein the driving force is derived from an adjunct to the turntable which moves the transducer support by guiding the stylus to a restored position.
- 230 Power cueing (i.e., engage/disengage):**  
This subclass is indented under subclass 215. Subject matter wherein the driving force places the transducer assembly into or out of a storage or retrieval relationship with the storage medium (e.g., engagement or disengagement between a stylus and record).
- SEE OR SEARCH THIS CLASS, SUB-CLASS:  
224, for such subject matter combined with linear constraint of passive tracking.
- 231 Mechanism responsive to control structure on storage medium sensed by transducer support (e.g., trip device):**  
This subclass is indented under subclass 176. Subject matter wherein the storage medium has control structure thereon which is sensed by the transducer assembly support to modify the operation of the dynamic mechanism subsystem.
- (1) Note. This control structure is often a lead-out groove.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:  
47+, for control by an information signal.  
52, for storage medium control structure sensed by other than the transducer assembly support.  
178.01 through 212, for record changing devices which may be controlled by a transducer support sensed control structure.  
226+, for tone arm restoring controlled by similar structure.
- 232 With turntable braking (e.g., velocity or reverse responsive):**  
This subclass is indented under subclass 231. Subject matter wherein the storage medium control structure is sensed to control a braking device to stop turntable motion.
- (1) Note. The motion of the transducer support may be either increased, or reciprocatory, speed (velocity) for energizing the brake control.
- 233 Mechanism condition or storage medium responsive control:**  
This subclass is indented under subclass 176. Subject matter wherein the mechanism subsystem is controlled by a condition of an element thereof, or by a characteristic of the storage medium.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:  
178.01, for such subject matter in a record-changing device.  
220, for a tone arm controlled lateral drive mechanism.  
226, for a tone arm controlled restoring mechanism.  
231+, for a tone arm motion controlled mechanism.
- 234 With turntable braking (e.g., tone arm position responsive):**  
This subclass is indented under subclass 233. Subject matter wherein the controlled mechanism subsystem is a brake to stop turntable motion.
- (1) Note. Braking systems responsive to control structure, such as the lead-out

groove or the eccentric circle at the end of play (center) of the disc record, are classified in 232 above.

SEE OR SEARCH THIS CLASS, SUBCLASS:

79, for braking controlled by a phonograph cabinet closure.

**235 With stopping of motor:**

This subclass is indented under subclass 234. Subject matter wherein the motive power is controlled.

(1) Note. This includes electric circuit control of the motor in addition to braking.

(2) Note. Systems using a governor controlled motor with braking (such as a fly-weight disc) are classified here.

SEE OR SEARCH THIS CLASS, SUBCLASS:

243, for motive power control absent braking.

SEE OR SEARCH CLASS:

318, Electricity: Motive Power Systems, subclasses 362+ for motor systems having braking; and subclass 626 for motor systems with a limit or end-stop device.

**236 Adjustable:**

This subclass is indented under subclass 234. Subject matter wherein the mechanism is controlled by a linkage which is changeable to suit some desired variation (e.g., tone arm position at which braking occurs).

**237 With electrical control of brake:**

This subclass is indented under subclass 234. Subject matter wherein the mechanism is controlled by an electrical subsystem to control the brake.

SEE OR SEARCH CLASS:

200, Electricity: Circuit Makers and Breakers, subclasses 52+ and specifically subclasses 61.4, 61.41, 61.45+ for switches used for special applications.

361, Electricity: Electrical Systems and Devices, subclasses 139+ for control circuits for electromagnetic devices.

**238 End limit sensor coupled with tone arm:**

This subclass is indented under subclass 234. Subject matter wherein the mechanism is controlled by a feeler or other element which is contacted by the tone arm or a projection therefrom at a position at the end of play.

SEE OR SEARCH THIS CLASS, SUBCLASS:

236, for similar subject matter which is adjustable and which is not cross-referenced to this subclass.

**239 Speed:**

This subclass is indented under subclass 233. Subject matter wherein the relative motion used for producing storage or retrieval is controlled.

SEE OR SEARCH THIS CLASS, SUBCLASS:

189+, for similar subject matter in a record changing mechanism.

267, for turntable speed changing, in general.

**240 Variable radius compensation (e.g., constant interaction speed):**

This subclass is indented under subclass 239. Subject matter wherein the speed controlling condition is the radial position of the transducing assembly.

(1) Note. Such control may be used to establish and maintain a constant linear velocity between a storage disc and transducing assembly.

**241 Self-responsive (e.g., governor):**

This subclass is indented under subclass 239. Subject matter wherein the relative motion is both the controlled and controlling condition.

(1) Note. Such control may be used to maintain or limit relative motion.

**242 Antiskating:**

This subclass is indented under subclass 233. Subject matter wherein a controllable lateral force is applied to prevent skidding in a direc-



tion transverse to the information track and on the storage medium surface.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

252, for antiskating devices absent control.

**243 Energizing circuit:**

This subclass is indented under subclass 233. Subject matter having an electrical circuit to supply power to at least the subsystem and which circuit is controlled to obtain the desired effect from the subsystem.

(1) Note. The control is often making or breaking of the circuit.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

235, for such subject matter to stop the motor combined with braking of an element driven thereby (e.g., a turntable).

**244.1 Specified detail of transducer assembly support structure:**

This subclass is indented under subclass 176. Subject matter having particular detail of structure to maintain the transducer assembly at one or more desired locations.

(1) Note. The holding structure may allow motion of the transducer assembly.

(2) Note. This and indented subclasses may include nominal recitation of information handling structure. However, details of such structure with or without support structure will be classified with the particular information handling structure.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

158, for an acoustical tone arm.

SEE OR SEARCH CLASS:

720, Dynamic Optical Information Storage or Retrieval, subclasses 672 through 688 for details of transducer carriage or actuator.

**245 With manual tone arm displacement adjunct (e.g., cueing):**

This subclass is indented under subclass 244. Subject matter including a tone arm and structure to manually change the location of tone arm.

(1) Note. The location change may be engagement or disengagement with, or position change on, the storage medium element.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

40.01, for a manually actuated mechanism to place the tone arm at a designated location on the storage medium.

**246 With viscous limiting of motion (e.g., rate damping):**

This subclass is indented under subclass 245. Subject matter further including loading of the displacement motion by the internal friction of a liquid.

**247.1 Vibration or resonance suppression(e.g., damping):**

This subclass is indented under subclass 244.1. Subject matter including suppression of undesired mechanical energy incident upon a tone arm.

SEE OR SEARCH CLASS:

720, Dynamic Optical Information Storage or Retrieval, subclasses 679, 684, 687 and 692-694 for various types of vibration or resonance suppression devices.

**248 By viscous damping:**

This subclass is indented under subclass 247.1. Subject matter wherein the suppression of vibration is caused by transmission of vibration through a velocity dependent frictional force structure, which is usually a liquid.

**249.1 Having linear guide:**

This subclass is indented under subclass 244.1. Subject matter having a structure restricting transducer travel to a path along a straight element.

- SEE OR SEARCH CLASS:  
720, Dynamic Optical Information Storage or Retrieval, subclasses 676 through 680 for guide rail or rod for supporting a transducer carriage or actuator.
- 250 Pivoted arm with tracking path compensation:**  
This subclass is indented under subclass 244.1. Subject matter wherein the transducer support structure is an arm rotatably mounted upon pivoting structure and has structure to modify the tracking path (e.g., pivot motion or supplemental pivot).
- (1) Note. The tracking path modification is generally to convert the path from an arc to a straight line.
- 251 Having application of counterbalancing force:**  
This subclass is indented under subclass 244.1. Subject matter further including application of a force to modify the motion of the transducer assembly supporting structure.
- SEE OR SEARCH THIS CLASS, SUBCLASS:  
215+, for causing motion of transducer supporting structure.
- 252 Lateral (e.g., antiskating):**  
This subclass is indented under subclass 251. Subject matter wherein the additional force balances forces parallel to the storage medium surface.
- (1) Note. Such balancing of forces is often used to prevent skidding of a storage medium contacting stylus over the surface.
- 253 By resilient force element (e.g., spring):**  
This subclass is indented under subclass 251. Subject matter wherein the counterbalancing force is a displacement dependent restoring force applied by a highly elastic mechanical device or element.
- (1) Note. Examples of such mechanical devices include a hydraulic or pneumatic device, a coiled spring, or a block of rubber.
- 254 Specified weight mounting:**  
This subclass is indented under subclass 251. Subject matter wherein the force applying structure includes details of a gravitational force applying structure.
- 255 Having specified bearing structure:**  
This subclass is indented under subclass 244. Subject matter including structural detail of an element permitting motion of the transducer assembly support.
- 256 Mechanical details of cartridge mounting:**  
This subclass is indented under subclass 244. Subject matter having detail of structure for holding a cartridge containing a stylus and transducer on a support.
- SEE OR SEARCH THIS CLASS, SUBCLASS:  
135+, for such subject matter with structural detail of the transducer or of the stylus coupling.
- 257 Rest:**  
This subclass is indented under subclass 244. Subject matter having or limited to structure to support a portion of the transducer assembly support in an inoperative position.
- (1) Note. The support portion of the transducer assembly support is often support by the storage medium element during operation.
- 258.1 Specific detail of storage medium support or motion production:**  
This subclass is indented under subclass 176. Subject matter having particular detail for maintaining the storage medium at a desired location or condition of motion.
- SEE OR SEARCH CLASS:  
720, Dynamic Optical Information Storage or Retrieval, subclasses 695 through 717 for optical storage medium support.

**259 For endless web looped about plural rotatable mounts (e.g., belt):**

This subclass is indented under subclass 258.1. Subject matter having a plurality of rotatable elements about which a continuous, flexible, flat storage medium element is mounted.

**SEE OR SEARCH CLASS:**

242, Winding, Tensioning, or Guiding, subclasses 324+ for a machine convertible information carrier; e.g., a magnetic tape or image film formed in an endless loop.

**260 For cylinder:**

This subclass is indented under subclass 258.1. Subject matter having a mounting element (e.g., mandrel) for a cylindrical storage medium.

**261 For pliable (e.g., floppy) disc:**

This subclass is indented under subclass 258.1. Subject matter wherein the support is particularly designed for use with a disc subject to extensive deformation without any permanent effect.

- (1) Note. Incidental use of a support of general utility (e.g., turntable) for a floppy disc is not classified herein.

**SEE OR SEARCH THIS CLASS, SUBCLASS:**

180, for record changer for such discs.

**SEE OR SEARCH CLASS:**

360, Dynamic Magnetic Information Storage or Retrieval, subclasses 99.01+ for a floppy disk drive mechanism in a magnetic recorder or reproducer.

**262 With storage medium removal adjunct:**

This subclass is indented under subclass 258.1. Subject matter further including means to remove the storage medium element from the support or motion producing structure.

**SEE OR SEARCH THIS CLASS, SUBCLASS:**

77.11, for similar subject matter in a slotted cabinet.

191.1 through 195 and 201, for removing storage medium elements in a multiple element access devices.

**263.1 Mounting structure for support or motion producing assembly (e.g., vibration damping):**

This subclass is indented under subclass 258.1. Subject matter with structure for keeping either of (a) the support, or (b) the motion producing assembly, at a particular location.

**SEE OR SEARCH CLASS:**

720, Dynamic Optical Information Storage or Retrieval, subclasses 698 and 716 for vibration dampening in a dynamic optical information storage or retrieval device.

**264 Turntable:**

This subclass is indented under subclass 258.1. Subject matter having a rotating platform upon which a storage medium disc is placed.

**265 With auxiliary turntable:**

This subclass is indented under subclass 264. Subject matter having an additional turntable and driving mechanism therefor.

- (1) Note. Speed conversion assemblies placed on a turntable to drive another turntable at a different speed are classified in this subclass.

**SEE OR SEARCH THIS CLASS, SUBCLASS:**

197+, for plural turntables for consecutive access to storage medium elements.

**266 Driving mechanism:**

This subclass is indented under subclass 264. Subject matter including features of an element causing or coupling motion of the turntable.

**SEE OR SEARCH CLASS:**

310, Electrical Generator or Motor Structure, appropriate subclasses for motor structure not limited to the specific turntable load.

**267 Speed changing:**

This subclass is indented under subclass 266. Subject matter including an element for changing the rotational speed of the turntable.

SEE OR SEARCH THIS CLASS, SUB-CLASS:  
189+, for similar subject matter in a record changer.

SEE OR SEARCH CLASS:  
477, Interrelated Power Delivery Controls, Including Engine Control, for interrelated control between a motor and a transmission, clutch, or brake.

**268 Braking:**  
This subclass is indented under subclass 264. Subject matter including structure to prevent further rotation of the turntable.

SEE OR SEARCH THIS CLASS, SUB-CLASS:  
232, for similar subject matter in which the braking is initiated by a trip device.  
234+, for similar subject matter in which the braking is initiated by the tone arm position.

**269 Bearing structure:**  
This subclass is indented under subclass 264. Subject matter having particular contact structure associating the rotating assembly with surrounding stationary support structure.

SEE OR SEARCH CLASS:  
384, Bearings, appropriate subclasses for bearing structure of general utility.

**270.1 Disc holding or locating (e.g., spindle structure):**  
This subclass is indented under subclass 264. Subject matter including structure to maintain the position of the disc with respect to the turntable.

SEE OR SEARCH CLASS:  
720, Dynamic Optical Information Storage or Retrieval, subclasses 696 through 699 for spindle motor exterior structure support.

**271.1 With detail of storage medium contact structure on turntable surface:**  
This subclass is indented under subclass 270.1. Subject matter including detail of turntable surface which contacts and supports the disc.

SEE OR SEARCH CLASS:  
720, Dynamic Optical Information Storage or Retrieval, subclass 703 for optical storage disc holding structure.

**272.1 STORAGE MEDIUM STRUCTURE:**  
This subclass is indented under the class definition. Subject matter wherein the specific structure of the information bearing storage medium is recited.

(1) Note. A blank or starting piece not limited to storage or retrieval is classified elsewhere, appropriate to the actual blank. See search notes below.

(2) Note. Mention of intended use such as in the preamble of the claim is not enough for classification in this subclass.

SEE OR SEARCH CLASS:  
206, Special Receptacle or Package, subclasses 307-387.15 for holding a machine readable recording medium, particularly subclass 308.1 for receptacles holding an optical disc.  
252, Compositions, appropriate subclasses for surface lubricants.,  
346, Recorders, appropriate subclasses for a perceptible record blank without grooves.,  
352, Optics: Motion Pictures, subclasses 92, 102 103 and 232-241 for structure of storage medium structure limited to motion pictures.  
360, Dynamic Magnetic Information Storage or Retrieval, subclasses 131-136 for structure of record medium limited to magnetic storage.  
428, Stock Material or Miscellaneous Articles, subclasses 817 through 825.1 for magneto-optic storage medium, per se, with specific chemical composition or physical chemistry.  
720, Dynamic Optical Information Storage or retrieval, subclass 718 for optical storage medium structure.

**273 Combined with diverse art structure:**  
This subclass is indented under subclass 272.1. Subject matter wherein a storage medium is combined with an element or structure of another utility.

- (1) Note. The combination is classified elsewhere when provided for in the class for such art structure.
- (2) Note. Typical diverse art structure is a page of a book with a clear laminate carrying a phonograph recording.

**274 Composite (e.g., package with preview record):**

This subclass is indented under subclass 272.1. Subject matter wherein several storage medium structures are related in some particular way.

- (1) Note. One form is of several annular rings snapped together to form a large disc with chosen recorded bands.

**275.1 Optical track structure (e.g., phase or diffracting structure, etc.):**

This subclass is indented under subclass 272.1. Subject matter wherein an information track is in the form of a variation of light modifying structure on the storage medium element.

- (1) Note. The term "light modifying structure" refers to modification such as bending, diffraction, phase variation, but does not include simple changes in transmissivity or reflectivity.

SEE OR SEARCH THIS CLASS, SUBCLASS:

44.11+, 93+ and 100+, for devices and systems utilizing such storage medium elements.

284+, for a layered storage medium having information modulation of transmissivity or reflectivity.

SEE OR SEARCH CLASS:

235, Registers, subclass 454 for optically coded record sensors; subclass 487 for optical records, per se.

359, Optical: Systems and Elements, appropriate subclasses for light modifying structure, in general.

**275.2 Erasable, reversible or re-recordable:**

This subclass is indented under subclass 275.1. Subject matter wherein the recording layer permits information therein to be erased, reversibly recorded over or re-recorded over.

- (1) Note. The term "re-recorded over is intended to include those conditions where the "old" data may still exist after the "new" data is recorded onto or over the "old" data, such as where the "new" data may be of a different nature such as a different playback frequency or different pit size.

SEE OR SEARCH THIS CLASS, SUBCLASS:

13.01 through 13.55, for storage or retrieval by simultaneous application of diverse types of electromagnetic radiation, subclass 13.56 for storage using different technique than retrieval (e.g., optical recording and magnetic reproduction), and subclasses 14 and 15 for simultaneous or alternative types of storage or retrieval occur, etc.

SEE OR SEARCH CLASS:

359, Optical: Systems and Elements, subclasses 280+ and subclasses 484.01 through 484.1 for magneto-optical polarization.

360, Dynamic Magnetic Information Storage or Retrieval, subclasses 114.01 through 114.1 for magnetic storage reproducing using light, wherein the intensity of the flux emanating from a record is determined by directing a beam of polarized light at the record and detecting the rotation of polarization caused by the flux.

365, Static Information Storage and Retrieval, subclass 122 for information masking systems which use magneto-optical polarization; subclasses 185.01+ for floating gate memory storage (e.g., flash memory).

**275.3 Track data format/layout:**

This subclass is indented under subclass 275.1. Subject matter wherein a recurrent or repeated data arrangement, pattern, sectors, or data blocks occur on the information medium.

- (1) Note. An organized pattern interrelates with an information arrangement pattern.
- (2) Note. Examples are: Pre-formatted subject matter wherein data or certain track

structure (e.g., guide grooves, etc.) has been pre-recorded, pre-etched or pre-formatted on the storage medium, having servo, index or address sectors or segments or tracks set forth as to their location with respect to other data on the storage medium; radial dependent parameter on disc medium subject matter wherein the data or information on a disc type storage medium has some parameter of the signal or track structure which varies as a function of the disc radius (e.g., pit size in some dimension varies dependent as a function of disc radius, or CLV/constant linear velocity format of recorded data, etc.).

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 44.26, for servo system operation related to disc structure information format.
- 94 and 95, for systems using a storage medium element with more than one plane of distinct tracks of recording information.
- 111, for systems using a spiral or helical track.
- 280, where the disc thickness varies as a function of the radius.

**275.4 Pit/bubble/groove structure specifics:**

This subclass is indented under subclass 275.1. Subject matter wherein data is stored in the form of pits (indentations), bubbles (protuberances) or modulation of a groove and specifics of the pit/bubble/groove are set forth such as its wall angles, dimensions, or phase depth.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 109.01 through 109.02, for systems using a diffraction storage medium such as those with pits or grating.

**275.5 Protection (e.g., preventing damage to medium, etc.):**

This subclass is indented under subclass 275.1. Subject matter wherein some means of guarding is provided to prevent some undesired effect.

- (1) Note. Examples include a protective cover or structure to prevent scratches, a protective layer to prevent undesired

thermal effect or chemical reaction or unwanted optical or recording effects, or an adhesive layer to prevent peeling.

**276 Electrical track structure:**

This subclass is indented under subclass 272.1. Subject matter wherein the storage medium has a track in the form of a variation in an electrical property.

- (1) Note. The term "variation in an electrical property" refers to modification of an electric field or current, for example, variable depth capacitive layers or variable thickness resistive layers.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 126, for devices utilizing such storage medium elements.

SEE OR SEARCH CLASS:

- 338, Electrical Resistors, subclasses 204+ for resistive elements piled between terminals; and subclass 211 for a resistive element coated on a flexible base.
- 361, Electricity: Electrical Systems and Devices, subclasses 271+ for electrostatic capacitor structure.

**277 Special groove (e.g., particular groove shape):**

This subclass is indented under subclass 272.1. Subject matter wherein the storage medium has a groove of specified form.

**278 Groove acts as control system signal:**

This subclass is indented under subclass 277. Subject matter wherein the position of the groove is modified for a predetermined control signal.

- (1) Note. Distinction should be noted between position changes related to only storage (lateral recording) and changes intended to control a sensor (eccentric groove for actuating tone arm trip switch).

**279 Guide during storage or retrieval:**

This subclass is indented under subclass 277. Subject matter wherein a groove is used to position or track the interaction element for

engagement adjacent the information bearing area of the storage medium.

- (1) Note. The guide groove of this subclass is usually unmodulated. The information area may be at the bottom of the guide, or to one side, and may be of any of the types of interaction classifiable in subclasses 99+.
- (2) Note. Subcombinations with magnetic storage are excluded from this class and are classified in Class 360, subclass 128.

**280 Specific disc profile:**

This subclass is indented under subclass 272.1. Subject matter including a disc, the thickness of which varies as a function of the radius.

- (1) Note. A typical profile will have ridges at the circumference to space the modulated grooves from one disc to another to avoid scratching.

**281 With interdisc coupling:**

This subclass is indented under subclass 280. Subject matter wherein the disc includes an element which couples with a similar element of another disc placed thereon so as to prevent slippage between the two discs.

- (1) Note. The term "element" in this subclass is intended to include configuration of the disc, such as ridges or serrated teeth, as well as elements additional to the disc structure.

**282 Specified center-hole or locating structure:**

This subclass is indented under subclass 272.1. Subject matter wherein the locating element, whether centrally positioned or not, is constructed in a particular way.

SEE OR SEARCH CLASS:

- 16, Miscellaneous Hardware (e.g., Bushing, Carpet Fastener, Caster, Door Closer, Panel Hanger, Attachable or Adjunct Handle, Hinge, Window Sash Balance, etc.), subclasses 2.1+ for bushings, in general.
- 249, Static Molds, subclasses 83+ for non-metallic composite casting.
- 384, Bearings, subclasses 276+ for a bearing sleeve, or liner.

**283 Layered (e.g., permanent protective layer):**

This subclass is indented under subclass 272.1. Subject matter wherein the storage medium has an adjacent layer.

- (1) Note. This layer may be a base, or substrate, or a loose cover layer. The loose cover layer will have a permanent relation to the storage medium. The cover layer which is completely removable, such as a paper sleeve for a disc record, is classifiable in subclass 291.

**284 Radiation beam modified or controlling (e.g., photosensitive, optical track):**

This subclass is indented under subclass 283. Subject matter wherein at least one layer is either (a) responsive to incident radiation to vary a characteristic of such layer, or (b) has an information varied radiation characteristic to control a beam of radiation.

- (1) Note. The characteristics referred to above are transmissivity or reflectivity.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 100+, for a device utilizing such storage medium elements.
- 275.1, for a storage medium element with light modifying structure.

**285 With mask:**

This subclass is indented under subclass 284. Subject matter having a mask placed upon the storage medium surface to merge between stored signals.

**286 Laminated or unified discrete layers:**

This subclass is indented under subclass 283. Subject matter wherein the layers are fused, joined, glued, or otherwise made into a unitary structure.

SEE OR SEARCH CLASS:

- 156, Adhesive Bonding and Miscellaneous Chemical Manufacture, appropriate subclasses for methods and apparatus for assembling or making elements not limited to information storage.

- 425, Plastic Article or Earthenware Shaping or Treating: Apparatus, appropriate subclasses for such subject matter absent information storage.
- 427, Coating Processes, appropriate subclasses for article and process making where not limited to a blank with an information track.
- 428, Stock Material or Miscellaneous Articles, subclasses 817 through 825.1 for magneto-optic storage media, per se, with specific composition or physical chemistry; subclass 848.9 for magneto-optic media disk substrate of specific composition or physical chemistry.
- 287 Flexible:**  
This subclass is indented under subclass 272.1. Subject matter wherein the storage medium taken as an entirety is flexible or bendable without breaking in normal use.
- 288 Specified material:**  
This subclass is indented under subclass 272.1. Subject matter wherein the material of which the storage medium is made is specifically stated.
- (1) Note. Where not limited to structure of the storage medium as classified here, the specific material is classified either in blank or starting material, or in the chemical class relating to such composition or material.
- SEE OR SEARCH CLASS:
- 252, Compositions, appropriate subclasses for starting materials not limited to structure of the stock or starter article.
- 346, Recorders, subclasses 200+ for a record blank without grooves.
- 352, Optics: Motion Pictures, subclasses 92, 102+, and 232+ for structure of storage medium structure limited to motion picture.
- 360, Dynamic Magnetic Information Storage or Retrieval, subclasses 131+ for structure of record medium limited to magnetic storage.
- 425, Plastic Article or Earthenware Shaping or Treating: Apparatus, appropriate subclasses for subject matter not including storing of information.
- 427, Coating Processes, appropriate subclasses for article and process of making where not limited to a blank with an information track.
- 428, Stock Material or Miscellaneous Articles, subclasses 44+ for stock material without an information bearing track.
- 289.1 Adjuncts or adapters:**  
This subclass is indented under subclass 272.1. Subject matter having or limited to a separable device for use with a storage medium.
- 290.1 For central area of disc (e.g., hole size or drive sticker):**  
This subclass is indented under subclass 289. Subject matter wherein an element is added to the portion of a disc storage medium adjacent the center.
- (1) Note. An adapter for making small holes from a large hole is classified here.
- (2) Note. Another form classified here is an adhesive device with ridges or bumps for reasons related to a disc storage medium.
- SEE OR SEARCH CLASS:
- 16, Miscellaneous Hardware (e.g., Bushing, Carpet Fastener, Caster, Door Closer, Panel Hanger, Attachable or Adjunct Handle, Hinge, Window Sash Balance, etc.), subclasses 2.1-2.5 for bushings, in general.
- 384, Bearings, subclasses 276-301 for a bearing sleeve, or liner.
- 720, Dynamic Optical Information Storage or Retrieval, subclass 721 for a disk hub.
- 291.1 Protectors:**  
This subclass is indented under subclass 289. Subject matter wherein an element is formed for covering or enclosing a storage medium unit for preventing an undesirable harm.
- SEE OR SEARCH CLASS:
- 206, Special Receptacle or Package, subclasses 307 through 387.15 for a container under the class definition for removably containing an article which includes machine readable information registered thereon.



- 220, Receptacles, various subclasses and especially subclasses 200 through 380 for cans or other casings without the storage medium unit.
- 229, Envelopes, Wrappers, and Paperboard Boxes, subclasses 68.1 through 84 for envelopes.
- 242, Winding, Tensioning, or Guiding, subclasses 324.2, 326-326.4, 335-348.4 for a machine convertible information carrier on or within a housing typically termed cartridge, cassette, or magazine, and subclass 601 for a spool provided with a cover.
- 720, Dynamic Optical Information Storage or Retrieval, subclasses 725 through 744 for specific details of an optical disk cartridge.
- 292 MISCELLANEOUS:**  
This subclass is indented under the class definition. Subject matter not provided for in any of the preceding subclasses of this class.
- 300 DETAIL OF OPTICAL SLIDER PER SE:**  
This subclass is indented under the class definition. Subject matter wherein specific slider structure is provided on a slider containing an optical head.
- (1) Note. The specific structure allows the slider to follow the topography of an optical disc.
- SEE OR SEARCH THIS CLASS, SUBCLASS:  
13.01 through 13.56, for magnetic sliders in magneto-optical drives.
- SEE OR SEARCH CLASS:  
360, Dynamic Magnetic Information Storage or Retrieval, subclasses 234.3 through 237.1 for a flying magnetic slider in a magnetic disk drive and subclass 246.2 for a full contact magnetic slider in a magnetic disk drive.

#### FOREIGN ART COLLECTIONS

The definitions below correspond to abolished subclasses from which these collections were formed. See the Foreign Art Collection schedule of this Class for specific correspondences. [Note: the titles and defini-

tions for *indented* art collections include all the details of the one(s) that are hierarchically superior.]

**FOR 100 SIGNAL PROCESSING BY STORAGE AND SUBSEQUENT RETRIEVAL (E.G., FREQUENCY SHIFT, DELAY, ETC):**

Foreign art collections including subject matter wherein a time-dependent characteristic of a signal is modified by storing and subsequently reproducing the signal.

**FOR 101 With details of electrical signal processing:**

Foreign art collections including subject matter further including a particularly described step or structure of electrical modification of the information signal.

**FOR 102 CONTROL OF STORAGE OR RETRIEVAL BY A SIGNAL TO BE RECORDED OR REPRODUCED (369/47):**

Foreign art collection under the class definition wherein a signal to be stored or retrieved acts upon apparatus for modifying, adjusting, or maintaining some operating condition of the storage or retrieval apparatus.

**FOR 103 Control of information signal channel (369/48):**

Foreign art collection under collection FOR 102 wherein information signal processing circuitry is affected by the control signal to determine a parameter of the information signal.

**FOR 104 Of plural interrelated channels (369/49):**

Foreign art collection under collection FOR 103 wherein the information signal processing circuitry includes distinct paths for several signal components, and the controlled parameters in each path have a definite relationship to each other.

**FOR 105 Mechanism control by information signal (e.g., voice responsive) (369/50):**

Foreign art collection under collection FOR 102 wherein a mechanical operating condition is controlled by a parameter of the information signal.

**FOR 106 Control of spiral track spacing (e.g., signal variable pitch) (369/51):**

Foreign art collection under collection FOR 105 wherein the information signal adjusts the displacement between adjacent record tracks during storage of the signal.

**FOR 107 CONTROL STRUCTURE ON STORAGE MEDIUM SENSED BY OTHER THAN TRANSDUCER SUPPORT (E.G., CONDUCTIVE STRIP, NOTCHED EDGE SENSOR) (369/52):**

Foreign art collection under the class definition wherein the storage medium has an element thereon which is sensed by an electrical detector distinct from the intelligence transducer support wherein the detector controls an operating condition of the storage or retrieval apparatus.

**FOR 108 WITH CONDITION INDICATING (E.G., MONITORING) OR TESTING (369/53):**

Foreign art collection under the class definition with apparatus including a perceptible indication of some condition of a part of the storage or retrieval system.

**FOR 109 With radiation storage or retrieval (369/54):**

Foreign art collection under collection FOR 108 wherein the information signal is stored on or retrieved from the storage medium by information signal modulation of a beam of radiant energy.

**FOR 110 Of transducer (369/55):**

Foreign art collection under collection FOR 108 wherein the component being tested or monitored is the transducer assembly.

**FOR 111 Location on storage medium (369/56):**

Foreign art collection under collection FOR 110 wherein the indicated condition of the transducer is its position on the storage medium element.

**FOR 112 Positioning adjunct (e.g., indexing) (369/57):**

Foreign art collection under collection FOR 110 which indicates the position to which the transducing assembly is set.

**FOR 113 Of record carrier (369/58):**

Foreign art collection under collection FOR 108 wherein the storage medium is monitored or tested.

**FOR 114 WITH BINARY PULSE TRAIN INFORMATION SIGNAL (369/59):**

Foreign art collection under the class definition including handling of an information signal composed of a series or pattern of identical pulse bits characterized solely by their presence or absence.

**FOR 115 With diffraction (e.g., pits, grating):**

Foreign art collections including subject matter wherein the radiant energy beam is deflected by the edge of an object by other than reflection or refraction.

**FOR 116 By polarization:**

Foreign art collections including subject matter wherein the direction of the electric field component of the radiant energy beam is restricted.

**FOR 117 With particular imaging element:**

Foreign art collections including subject matter including an element modifying the direction of the radiant energy beam and capable of focusing the beam to form an image.

(1) Note. The image is generally of the beam source or of the storage medium.

(2) Note. Planar mirrors are not classifiable herein.

**FOR 118 STORAGE DIFFERENT FROM RETRIEVAL (E.G., OPTICAL RECORDING AND MAGNETIC REPRODUCTION):**

Foreign art collection wherein storage medium sensing for signal retrieval is diverse from storage medium modification for signal storage.

(1) Note. The term "diverse" refers to physically different changes, e.g., magnetic, optical, mechanical.

(2) Note. For classification herein the diverse types of storage and retrieval must be claimed together. Alternative

embodiments of an invention claimed separately are classified elsewhere.

**FOR 119 OPERATOR ACTUATED REMOTE CONTROL OR INFORMATION LOCATION:**

Foreign art collection including control of a storage or retrieval apparatus by an operator either (a) from a geographically spaced location, or (b) of physical location of the information on a storage medium.

- (1) Note. This subclass does not include conventional control of signal processing such as on-off or volume controls.

**FOR 120 Dictation or transcribing:**

Foreign art collection particularly adapted to audibly record or reproduce the spoken intended contents of a document.

- (1) Note. Examples of such adaptation are facilitating correction of stored audio information subsequent to storage and prior to retrieval, or facilitating retrieval and modification thereof (e.g., backspacing).
- (2) Note. A storage or retrieval device designated as for dictation or transcription, merely by name and absent structure therefor, is not classified herein.

**FOR 121 Privacy:**

Foreign art collection with provision for preventing access to a dictation circuit or signal, or to the corresponding portions of the storage medium.

- (1) Note. Examples include antibackspace tones, and busy or in use signals.

**FOR 122 With access to or marking of specified locations (e.g., indexing):**

Foreign art collection having structure to indicate the location of the current, or another designated, positioned increment along the storage medium.

**FOR 123 By stored additional signal (e.g., tone):**

Foreign art collection wherein the indication is given by a signal stored in the same manner as the information signal.

- (1) Note. Such indicating signals are often reproduced as audible tones.

**FOR 124 Remote station (e.g., multiple stations or recording devices):**

Foreign art collection wherein the source of the audible information to be stored and control equipment is located remotely from, and connected by an audible signal transmitting line to the storage device.

- (1) Note. The source is often a telephontype handset.
- (2) Note. The connecting line is often similar to a telephone system connecting a plurality of audible information devices, or of storage devices. However, classification is herein unless the system is recited to be a telephone system, or conversation is possible over such a system (e.g., between handsets).

**FOR 125 Selective addressing or storage medium (e.g., programmed access, "juke box"):**

Foreign art collection wherein the control function includes storage on or retrieval from a designated storage medium element or portion thereof.

- (1) Note. The term "random access" is sometimes used for such device. However, such usage should be carefully distinguished from random selection or indexing which refers to selection absent prior designation.
- (2) Note. Positive recitation of steps or apparatus for designation is necessary for classification herein.

**FOR 126 Novelty device (e.g., talking doll):**

Foreign art collection wherein the storage medium is associated with a novelty device.

- (1) Note. Usually the novelty device constitutes the housing for a sound reproducer. Thus, a doll with a pull string by which the reproducer will emit one of several messages as selected by the direction of a pull on the string.

**FOR 127 With specified electrical information signal processing:**

Foreign art collection including detail of handling the information signal.

**FOR 128 With specified electrical control signal processing:**

Foreign art collection including detail of handling of an electrical signal which affects the operation of storage medium element or portion selection.

**FOR 129 Plural storage medium elements:**

Foreign art collection wherein the selection is of one of a plurality of separate storage medium elements.

**FOR 130 Plural nontranslating storage elements (e.g., in situ):**

Foreign art collection having plural storage elements wherein the transducing assembly produces all storage element selecting motion.

- (1) Note. The transducing assembly may have associated structure for driving the storage element in use.
- (2) Note. The storage elements have no motion other than that used for storage or retrieval.

**FOR 131 With unitary plural disc carrier:**

Foreign art collection wherein an integrated mechanical array holds the discs in some way that they are readily accessible for selection.

- (1) Note. The array holding the discs may be referred to as a magazine.
- (2) Note. This subject matter absent storage medium designation is classified in another subclass of this class and cross reference is not necessary between this and the other subclass.

**FOR 132 Radial array:**

Foreign art collection wherein the mechanical array holds the storage discs in a nonparallel pattern or spacing, which pattern may have characteristic lines with a common center.

- (1) Note. Either the array or retrieval station may move for selective positioning.
- (2) Note. The diameter of each disc in a common plane may be seen to radiate from the same center.
- (3) Note. The array classified here may be merely a segment or a portion, or an entire circumference.
- (4) Note. Arrays of small groups of discs, possibly parallel within each group but spaced radially group to group are classified here.
- (5) Note. This subject matter absent storage medium designation is classified in another subclass of this class and cross reference is not necessary between this and the other subclass.

**FOR 133 Moving linear array:**

Foreign art collection wherein the mechanical array holds the storage discs in parallel along a common axis, and which array is movable along such axis for positioning a selected disc adjacent a retrieval station.

- (1) Note. Arrays of small groups of discs, parallel within each group but spaced radially group to group are classified in subclass 37 above.
- (2) Note. This subject matter absent storage medium designation is classified in another subclass of this class and cross reference is not necessary between this and the other subclass.

**FOR 134 Scanning turntable:**

Foreign art collection wherein the storage medium motion producer moves along a stationary array for positioning relative to a selected disc.

- (1) Note. The storage medium motion producer may be a turntable of such small diameter as to permit access to both sides of a disc.
- (2) Note. This subject matter absent storage medium designation is classified in

another subclass of this class and cross reference is not necessary between this and the other subclass.

**FOR 135 By manually actuated mechanism for movement of tone arm:**

Foreign art collection including a hand actuated linkage coupled to a tone arm for setting to a selected position on a storage disc.

**FOR 136 Of track on single storage medium:**

Foreign art collection wherein the designated portion of the storage medium is a distinct path of information modulated variation on the surface thereof.

**FOR 137 By mechanical linkage:**

Foreign art collection including a device having a plurality of relatively moving parts for transmitting a controlling force or motion from another location to the storage or retrieval location.

- (1) Note. Examples of such devices are Bowden cables or pneumatic actuators.

**FOR 138 Access of multiple storage elements (e.g., record changer):**

Foreign art collection having production of additional motion of the transducer or storage medium to change the storage medium used for storage or retrieval.

- (1) Note. Movement of the transducer mounting (e.g., tone arm) is so interrelated with multiple storage access, that documents classified herein will not ordinarily be cross referenced to powered transducer drive in some subclasses further below in this class.

**FOR 139 WITH PARTICULAR CABINET STRUCTURE:**

Foreign art collection including structural details of an enclosure surrounding the components of the dynamic information storage or retrieval system.

- (1) Note. The cabinet structures in this and the indented subclasses must include some specific structure of a dynamic information storage or retrieval system or an element thereof, otherwise such structures classified as a cabinet, per se.

**FOR 140 With mechanism to place disc on a turntable:**

Foreign art collection including a mechanical arrangement normally inside the cabinet which moves to the cabinet exterior to position the record medium element onto a turntable within the cabinet.

**FOR 141 Slotted for edgewise insertion of storage disc:**

Foreign art collection where there is a long narrow opening in the cabinet structure which is used to insert or remove a disc shaped storage medium.

**FOR 142 Having disc stored in protective jacket:**

Foreign art collection wherein the disc is surrounded by a protective enclosure when in other than the location at which the information storage or retrieval is performed.

- (1) Note. The protective jacket is often removed from the cabinet with the disc remaining therein.

**FOR 143 Storage disc fed to and removed from turntable:**

Foreign art collection having a turntable and a supply of storage discs in which each of the discs is consecutively moved from the supply to the turntable prior to storage or retrieval and subsequently removed from the turntable to another location.

- (1) Note. The disc may be turned to the original supply to another group of discs, or to some indeterminate location.

**FOR 144 Plural disc holder having unitary separating structure:**

Foreign art collection wherein the disc supply includes a casing having distinct sections in which each disc is mounted, the sections being separated by material structurally integral with said casing.

**FOR 145 Having power driven transducer assembly:**

Foreign art collection having a source of power which applies a force to drive the transducer assembly along a desired path.

- (1) Note. The driving force is often applied to the tone arm.
- (2) Note. The incidental driving force resulting from stylus engagement with an information carrying groove is not classified herein.

**FOR 146 With drive transverse to storage track during storage or retrieval:**

Foreign art collection wherein the driving force is applied during storage or retrieval to provide or modify the motion necessary thereto.

**FOR 147 Specific detail of transducer assembly support structure (e.g., tone arm):**

Foreign art collection having particular detail of structure to maintain the transducer assembly at one or more desired locations.

- (1) Note. The holding structure may allow motion of the transducer assembly.
- (2) Note. This and indented subclasses may include nominal recitation of information handling structure. However, details of such structure with or without support structure will be classified with the particular information handling structure.

**FOR 148 Vibration or resonance suppression (e.g., damping):**

Foreign art collection including suppression of undesired mechanical energy incident upon a tone arm.

**FOR 149 Having linear guide:**

Foreign art collection having a structure restricting transducer travel to a path along a straight element.

**FOR 150 Specific detail of storage medium support or motion production:**

Foreign art collection having particular detail for maintaining the storage medium at a desired location or condition of motion.

**FOR 151 Mounting structure for support or motion producing assembly (e.g., vibration damping):**

Foreign art collection with structure for keeping either of (a) the support, or (b) the motion producing assembly, at a particular location.

**FOR 152 Disc holding or locating (e.g., spindle structure):**

Foreign art collection including structure to maintain the position of the disc with respect to the turntable.

**FOR 153 With detail of storage medium contact structure on turntable surface:**

Foreign art collection including detail of turntable surface which contacts and supports the disc.

**FOR 154 STORAGE MEDIUM STRUCTURE:**

Foreign art collection wherein the specific structure of the information bearing storage medium is recited.

- (1) Note. A blank or starting piece not limited to storage or retrieval is classified elsewhere, appropriate to the actual blank. See search notes below.
- (2) Note. Mention of intended use such as in the preamble of the claim is not enough for classification in this subclass.

**FOR 155 Adjuncts or adapters:**

Foreign art collection having or limited to a separable device for use with a storage medium.

**FOR 156 For central area of disc (e.g., hole size or drive sticker):**

Foreign art collection wherein an element is added to the portion of a disc storage medium adjacent the center.

- (1) Note. An adapter for making small holes from a large hole is classified here.
- (2) Note. Another form classified here is an adhesive device with ridges or bumps for reasons related to a disc storage medium.

**FOR 157 Protectors:**

Foreign art collection wherein an element is formed for covering or enclosing a storage medium unit for preventing an undesirable harm.

END