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256	.Well testing apparatus and methods	294	.Static field-type ion path- bending selecting means
257	..With casing collar detection	295	..With variable beam shifting field means
258	..By interface of fluids	296	..Plural diverse-type static path-bending fields
259	..With placement of tracer in or about well	297	...For causing complex ion path
260	...Tracer being or including radioactive material	298	..Magnetic field path-bending means
261	..With detector or detector circuit control	299	...With detector
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283	..With collection of ions	317.1	.Thermal copying of documents
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285	.With plural, simultaneous ion generators		

319	..With conveying means	339.09With calibration steps in measurement process
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325	.Charging of moving object	339.11Measuring infrared radiation reflected from sample
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585	...Including stimulation	341.2Including probe
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587With adjustment of conditions	341.4With semiconductor sample
588	..With erasure	341.5With calibration
589	..With conveyance	341.6Heating of object or material
590	...With a recirculation path	341.7With multiple sources
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328	AUTOMATIC/SERIAL DETECTION OF SIMILAR SOURCES	342	...Locating infrared emissive objects
329	RECORD PROJECTORS	343	..With means to transmission-test contained fluent material
330	INFRARED-TO-VISIBLE IMAGING	344	...Plural series signalling means
331	.Including liquid crystal detector	345	...Plural beam/detector pairs
332	.Including detector array	346	....Plural temperature sensitive signalling means
333	.Including image tube-type detector	347	..With movable beam deflector or focussing means
334	.Including means for scanning field of view	348	...Controlled by signalling means
335	CLOUD OR BUBBLE CHAMBERS	349	..Plural signalling means
336.1	INVISIBLE RADIANT ENERGY RESPONSIVE ELECTRIC SIGNALLING	350	...With periodic beam varying means
336.2	.Superconducting type	351	..With periodic beam varying means
337	.With heating of luminophors	352	..With temperature modifying means
338.1	.Infrared responsive	353	..With beam deflector or focussing means
338.2	..Ferroelectric, ferromagnetic, photomagnetic types	354.1	.Signalling means controls incident radiation
338.3	..Pyroelectric type	356.1	.Flow metering
338.4	..Semiconducting type	356.2	..Using radioactive tracer
338.5	..With means to analyze uncontained fluent material	357.1	.Fluent material level signalling
339.01	..With selection of plural discrete wavelengths or bands	358.1	.With means to inspect passive solid objects
339.02	...Including detector array	359.1	..Rectilinearly moving object
339.03	...Including temperature control means	360.1	..With relative movement means
339.04	...Including temperature determining means	361 R	.With or including a luminophor
339.05	..With additional noninfrared wavelengths	362	..Methods
339.06	...With radiation source		
339.07	....Including spectrometer or spectrophotometer		
339.08	....Including Fourier transform infrared spectrometry		

363.01	..With radiant energy source	381	...With radioactive source
363.02	...Body scanner or camera	382	..With means to ionize the gas
363.03	....With positron source	383	...Emissive fluent type, or with transmissive fluent material
363.04	....Emission tomography	384	...Radioactive
363.05	.....With detector support	385.1	..Plural chambers or three or more electrodes
363.06	....Using coded aperture	385.2	...Spark chambers
363.07	....With distortion correction	386	..With a periodic electrode bias varying means
363.08	....With detector support	387	..With periodic electrode bias supply
363.09	...With calibration	388	..With indicator
363.1	....With a collimator	389	.Including ionization means
364	..With fluent source handling or collecting means	390.01	.Neutron responsive means
365	...Ultraviolet light source	390.02	..Radiographic analysis
366	..Plural electric signalling means	390.03	..With dose measurement
367	..Plural or composite luminophor	390.04	..Composition analysis
368	..With optics	390.05	...For moisture content
369	..With output system	390.06	..Density/thickness/consistency analysis
361 C	..Chemiluminescent detection	390.07	..Spectrum analysis
370.01	..Semiconductor system	390.08	...Using time-of-flight spectrometers
370.02	..Alpha particle detection system	390.09	...Using diffractometers
370.03	..Fission fragment/fissionable isotope detection system	390.1	..Including beam control
370.04	..Self-powered system	390.11	..Including a scintillator
370.05	..Neutron detection system	390.12	..Position-sensitive
370.06	..Discrimination-type system	391	..Methods
370.07	..Dose or dose rate measurement	392	..With indicating or recording means
370.08	..Imaging system	393	.With radiant energy source
370.09	...X-ray or gamma-ray system	394	.Plural signalling means
370.1	..Position sensitive detection system	395	.Methods
370.11	..Scintillation system	200	PHOTOCELLS; CIRCUITS AND APPARATUS
370.12	..Of material other than germanium, diamond, or silicon	201.1	.Photocell controls its own optical systems
370.13	...Containing cadmium telluride	201.2	..Automatic focus control
370.14	..Particular detection structure (e.g., MOS, PIN)	201.3	...Of a microscope
370.15	..Temperature control or compensation system	201.4	...Active autofocus
371	..Methods	201.5	...With optical storage medium; e.g., optical disc, etc.
372	..Ultraviolet light responsive means	201.6	...Based on triangulation
373	..With means to transmission-test contained fluent material	201.7	...Based on contrast
374	..Including a radiant energy responsive gas discharge device	201.8	...Based on image shift
375	..Methods	201.9	..Light beam wavefront phase adaptation
376	..With electroscopic indicators	203.1	..Following a target (e.g., a star or instrument pointer or other object) other than a pattern
377	...With charge generator	203.2	...Target illuminated by artificial light source
378	...With charge storage means		
379	..With means to supply the gas		
380	...Radioactive gas, or with gas-borne radioactive material		

- 203.3 ...Self-luminous target
- 203.4Sun
- 203.5Cathode-ray tube scanning
- 203.6Airborne target, or
spaceborne target other than
the sun (e.g., star or
missile)
- 203.7 ...With moving reticle in
optical path
- 202 ..Following a pattern (e.g., line
or edge)
- 548 ..Controlling web, strand, strip,
or sheet
- 549 ..Cathode-ray tube
- 204 ..Adjusting optical system to
balance brightness in plural
paths
- 205 ..Controlling light source
intensity
- 550 ..Interference pattern analysis
(e.g., spatial filtering or
holography)
- 551 ..Signal isolator
- 552 ..Solid state light source
- 553 ..Array or matrix
- 554 ..Flame light source
- 559.01 ..With circuit for evaluating a
web, strand, strip, or sheet
- 559.02 ..Evaluation of photographic film
- 559.03 ..Sequential detector arrangement
- 559.04 ..Evaluation by regions, zones,
or pixels
- 559.05 ...With imaging
- 559.06 ...With scanning
- 559.07 ..With imaging
- 559.08 ..With camera
- 559.09 ..With polarization
- 559.1 ..With calibration
- 559.11 ..Detection of both reflected and
transmitted light
- 559.12 ..Beam interruption or shadow
- 559.13 ...With laser source
- 559.14 ...With rotation of material
- 559.15 ...With plural detectors
- 559.16 ..Detection of diffuse light
- 559.17 ...With diffusion optics
- 559.18 ...With discrimination of
discrete light diffusing
region
- 559.19 ..Measuring dimensions
- 559.2 ..With comparison to reference
or standard
- 559.21 ...Volume
- 559.22 ...Profile
- 559.23With triangulation
- 559.24 ...Transversal measurement (e.g.,
width, diameter, cross-
sectional area)
- 559.25Lumber
- 559.26 ...Longitudinal measurement
(e.g., length or spacing)
- 559.27 ...Thickness
- 559.28 ...With translucent material
- 559.29 ..Measuring position
- 559.3 ...With alignment detection
- 559.31 ...With triangulation
- 559.32 ...Measuring rate of motion or
flow (change of position)
- 559.33 ...With robotics
- 559.34 ...Lead or wire bond inspection
- 559.35 ...Centroid
- 559.36 ...Edge
- 559.37 ...Angular orientation (e.g.,
skew)
- 559.38 ...Determining range from
detector
- 559.39 ..With comparison to reference or
standard
- 559.4 ..With indication of presence of
material or feature
- 559.41 ...With foreign particle
discrimination circuitry
- 559.42 ...Discontinuity detection (e.g.,
hole, crack)
- 559.43 ...Break detection
- 559.44 ...Identifying marking, pattern,
or indicia
- 559.45 ...With defect discrimination
circuitry
- 559.46 ...With camera or plural
detectors
- 559.47 ...With counting means
- 559.48 ...With transversal scan
- 559.49With moving reflector
- 206 ..Photocell controlled circuit
- 206.1 ..Having means to generate
positional information in at
least one plane of a target
moving relative to one or more
photodetectors
- 206.2 ...Detection of positional
information in two or more
planes (e.g., azimuth and
elevation; hour angle and
declination)
- 206.3 ...With moving reticle in
optical path
- 555 ..Including coded record
- 556 ...Document verification or graph
reader

- 557 ...With means to position, direct, or detect record
- 558 ..Stereoplotters
- 564 ..With circuit for evaluating a fluent material
- 565 ...With comparison
- 207 ..Electron multiplier
- 208.1 ..Plural photosensitive image detecting element arrays
- 208.2 ..Plural photosensitive nonimage detecting elements
- 208.3 ...With electronic scanning
- 208.4 ...Used to switch an electrical circuit or device on or off
- 208.5 ...With photodetector output ratioing other than by bridge or push-pull circuits
- 208.6 ...With specific relative positional geometry of photosensitive elements (e.g., an annular photosensitive element surrounding a coaxially mounted photosensitive element)
- 210 ..Bridge and push-pull circuits
- 214 R ..Special photocell or electron tube circuits
- 214 P ...Photographic control
- 214 D ...Light dimmers
- 214 A ...Amplifier type
- 214 LALight amplifier type
- 214 LSSwitching type
- 214 VTVacuum tube type
- 214 PR ...Photosensitive rheostat type
- 214 SG ...Self-generating type
- 214.1 ...Special photocell
- 214 AG ...Automatic gain control
- 214 AL ...Ambient light responsive
- 214 B ...Ambient light desensitizing means
- 214 C ...Compensation
- 214 DC ...Digital circuitry
- 214 L ...Logarithmic/linear signal
- 214 RC ...Rate of change
- 214 SF ...Slave flash
- 214 SW ...Electronic switch
- 215 .Combined with diverse-type device
- 216 .Optical or pre-photocell system
- 227.11 ..Light conductor
- 227.12 ...Optical delay line
- 227.13 ...Light pen
- 227.14 ...Condition responsive light guide (e.g., light guide is physically affected by parameter sensed which results in light conveyed to the photocell)
- 227.15 ...With detection of macroscopic break in fiber
- 227.16 ...With detection of fiber microbend caused by parameter affecting fiber
- 227.17 ...Causing polarization change in fiber
- 227.18 ...Causing light spectral frequency/wavelength change
- 227.19 ...With coherent interferometric light
- 227.2 ...With imaging
- 227.21 ...With light chopping or modulation
- 227.22Keyboard or other manual switch controlled
- 227.23 ...With spectral frequency/wavelength discrimination
- 227.24 ...With coupling enhancement means
- 227.25Fluid coupling
- 227.26 ...With scanning
- 227.27 ...With coherent interferometric light
- 227.28 ...With specific configuration of light conductor components with respect to each other
- 227.29 ...With specific illumination or viewing orientation of light conductor relative to viewed object (e.g., light normal to, and detector at 45 degree angle to, viewed object)
- 227.3 ...With variable orientation of light conductor relative to viewed object (e.g., goniometer)
- 227.31 ...Side or edge illuminated light conductor or collector
- 227.32 ...End illuminated light conductor with noncircular geometric cross section
- 566 ..Including coded record
- 568 ...Digital information
- 569Card type
- 570Tape, drum, or disc types
- 573 ..Fluent material in optical path
- 574 ...Scattered or reflected light
- 575 ...Plural paths

576	...Sample holder or supply	239	.Housings (in addition to cell casing)
577	...Volume or level		
221	..Controlled by article, person, or animal	396 R	WITH CHARGED PARTICLE BEAM DEFLECTION OR FOCUSING
222.1	...Inanimate article	397	.With detector
222.2	...Particle detection	398	.With target means
223 R	...Conveyor or chute	399	..Secondary emissive type
223 B	....Bottles	400	..With means to convey or guide the target
224	....Article and light ray relatively moved during sensing	396 ML	.Magnetic lens
225	..Polarizing	423 R	ION GENERATION
226	..Color (e.g., filter or spectroscope)	424	.Methods
228	..Integrating sphere	425	.With sample vaporizing means
229	..Light valve (e.g., iris diaphragm)	426	.Arc type
231.1	...Actuated by dynamic external physical quantity	427	.Electron bombardment type
231.11	...Actuated by gauge element deflection	423 P	.Photoionization type
231.12	....Gyroscopes	423 F	.Field ionization type
231.13	....Shaft angle transducers	428	FLUENT MATERIAL CONTAINMENT, SUPPORT OR TRANSFER MEANS
231.14	....Incremental shaft readers; i.e., with means to generate increments of angular shaft rotation	429	.With temperature control
231.15	.....With plural gear driven discs	430	.With valve or pump actuator
231.16	.....Using phase difference of output signals from plural photodetectors	431	.With cleaning means
231.17	.....With means to indicate a complete shaft rotation	432 R	.With irradiating source or radiating fluent material
231.18	.....Position indicating shaft encoders with means to generate a unique signal for each specific angular shaft position	433	..Including a movable surface transfer means
231.19	....Pressure-responsive light valves	434	..Including a gravity-type transfer means
230	..Reflection type(e.g., mirror galvanometer)	435	..Including a flowthrough transfer means
232	...Light chopper type	436	...Flow-enclosed radiation source
233	....Rotary	437	...Tortuous path type
578.1	..Plural light sources or optical paths	438	...With a flow-modifying surface
234	..Means for moving optical system	432 PD	..Parent-daughter isotope separators
235	...Repetitious path	453.11	SUPPORTED FOR NONSIGNALLING OBJECTS OF IRRADIATION (E.G., WITH CONVEYOR MEANS)
236	....Rotary motion	454.11	.With source support
237 R	..Hoods, grating, baffles, diaphragms, masks	455.11	..Source and object encasement (e.g., sterilizers)
237 G	...Gratings (moire fringes)	458.1	LUMINOFLUORESCENCE IRRADIATION
238	.Temperature control of photocell	459.1	.Methods
		461.1	.With ultraviolet source
		461.2	..Biological cell identification
		462.1	.Self-luminous article
		463.1	..Dials, pointers, gauges, and bands
		464.1	..Pendants
		465.1	..Manual operators or luminous attachments therefor
		466.1	..Covers, keys, or luminous attachments therefor

467.1 ..Reticles, gun sights or with optical element

472.1 **INVISIBLE RADIATION RESPONSIVE NONELECTRIC SIGNALLING**

473.1 ..Methods

474.1 ..Optical change type

475.2 ..Photographic type

482.1 ..With radiation filter, modifier, or shield (e.g., dosimeter badges)

483.1 ..Luminescent device

484.2 ..Requiring an additional energy source to cause luminescence

484.3 ..With thermally-stimulated phosphor

484.4 ..With optically-stimulated phosphor

484.5 ...Dosimeter

485.1 ..With light excluding casing having an aperture

486.1 ..With plural luminescent material or plural luminescent containing layers or areas

487.1 ..With optical member of material to directly modify luminous energy

488.1 ...Plural planar layer type

489 **ION COLLECTORS**

491.1 **MEANS TO ALIGN OR POSITION AN OBJECT RELATIVE TO A SOURCE OR DETECTOR**

492.1 **IRRADIATION OF OBJECTS OR MATERIAL**

492.2 ..Irradiation of semiconductor devices

492.21 ..Ion bombardment

492.22 ..Pattern control

492.23 ..Variable beam

492.24 ..Photocathode projection

492.3 ..Ion or electron beam irradiation

493.1 **RADIANT ENERGY GENERATION AND SOURCES**

494.1 ..Plural radiation sources

495.1 ..Including an infrared source

496.1 ..With container for radioactive source and radiation directing or selectable shielding

497.1 ..With means to move source between shielded and unshielded position

498.1 ..With pivoted or rotatable radiation shield

503.1 ..With radiation modifying member

504 R ..Ultraviolet or infrared source

504 H ...Hand-held

505.1 **RADIATION CONTROLLING MEANS**

506.1 ..Shielded receptacles for radioactive sources

507.1 ..Having plural storage compartments or plural nested receptacles

515.1 ..Shields

516.1 ..Garments

517.1 ..Construction elements or building parts

518.1 ..With neutron absorption material

519.1 ..Flexible

522.1 **SOURCE SUPPORTS**

526 **MISCELLANEOUS**

CROSS-REFERENCE ART COLLECTIONS

900 **OPTICAL LIQUID LEVEL SENSORS**

901 ..With gap between light guide elements (includes open light path preset)

902 ..With closed light path preset

903 ...With prism contacting liquid

904 ..With single light guide element to guide light in a continuous path

905 ..With longitudinal irregularity

906 ...With large scale longitudinal bend

907 ...With portions of light guide coating or cladding removed

908 ...With waveguide twisted about its longitudinal axis

909 **METHODS AND APPARATUS ANCILLARY TO STIMULABLE PHOSPHOR SYSTEMS**

910 **FOOD SAMPLE ANALYSIS USING INVISIBLE RADIANT ENERGY SOURCE**

FOREIGN ART COLLECTIONSFOR 000 **CLASS-RELATED FOREIGN DOCUMENTS****DIGESTS**

DIG 1 **PASSIVE INTRUSION DETECTORS**

DIG 2 **RADON DETECTION**