

**CLASS 199, TYPE CASTING****SECTION I - CLASS DEFINITION**

Means for forming from material while in a fluid state the elements, either separately or in the form of a bar or line, that are adapted to be set up to constitute a printing-form.

Note. Does not include the casting of stereotype-plates nor forging or molding type from plastic material by pressure. By "fluid" is meant a condition wherein the cohering particles of the mass seek a level under gravity, implying adaptability to be poured.

**SUBCLASSES****1 INTEGRAL LINE:**

This subclass is indented under the class definition. Subject matter having means for casting in single operations printing elements in the form of integral lines or bars bearing words or several characters, as distinguished from means for casting each character separately.

**2 Nonreleasing matrix machines:**

This subclass is indented under subclass 1. Subject matter drawn to machines having selectable matrices in which each matrix is confined to its individual guide or conveyer during the entire operation.

**3 Wire guide:**

This subclass is indented under subclass 2. Subject matter, wherein the matrices traveling along wires or the like.

**4 Matrix-manipulating mechanisms:**

This subclass is indented under subclass 3. Subject matter, having means limited in function to handling the matrices, there being no improvement in the casting part of the machine.

**5 Rotary matrix carrier:**

This subclass is indented under subclass 2. Subject matter, having a series of members, each carrying a complete set of matrix characters, having a movement of rotation to assemble in line before the mold the desired characters of the different sets.

(1) Note. Compare this class, subclass 73, and indented subclass.

**6 Slidable matrix carrier:**

This subclass is indented under subclass 2. Subject matter, having a series of long-bars, each carrying a complete set of matrix characters, having a sliding movement to assemble in line before the mold the desired characters of the different sets.

(1) Note. Compare this class, subclass 75.

**7 Matrix-manipulating mechanisms:**

This subclass is indented under subclass 6. Subject matter, having means limited in function to handling the matrices, there being no improvement in the casting part of the machine.

**8 Multiple-character-bar machines:**

This subclass is indented under subclass 1. Subject matter, drawn to machines in which bars of variable length carrying a plurality of different matrix characters are released from their individual compartments and assembled together before the mold, each bar being stopped at a point to bring the desired characters into line, the same mechanism which releases the bar operating to determine its stopping-point and the bars after casting being returned to their respective compartments.

(1) Note. These are known as "circulating machines". (See definition of this class, subclass 11).

**9 Assembling, casting and distributing:**

This subclass is indented under subclass 8. Subject matter comprising means for both assembling and distributing the matrices and also casting the line.

**10 Assembling and distributing:**

This subclass is indented under subclass 8. Subject matter comprising means for both assembling and distributing the matrices, but including no casting mechanism.

**11 Assembling, casting and distributing:**

This subclass is indented under subclass 1. Subject matter wherein the matrices are released from their individual channels,

- brought into line-casting position before the mold, and thereafter restored to their respective channels.
- (1) Note. Machines of this subclass are known as “circulating machines”. A circulating machine comprises three zones, each having a different function, as follows:
- (1) Assembling, including means for releasing the matrices from the storage-magazines and delivering them in a composed line to a holder which is designed to present them to the mold.
- (2) Casting, including means for presenting the composed matrices to the mold and withdrawing them therefrom and such casting mechanism as is peculiarly adapted to these machines.
- (3) Distributing, including means for withdrawing the matrices from the holder which presented them to the mold and for restoring them to their respective magazine channels.  
Improvements in the storage-magazines not involving any assembling or distributing features are provided for in separate subclasses.  
This subclass includes means for performing all three operations.
- (1) Note. Compare this class, subclass 72.
- (2) Note. For means for setting and distributing type in a manner analogous to the matrix assembling and distributing mechanism of these machines, see Class 276, Typesetting.
- 12 Nonscrew-feed distributor machines:**  
This subclass is indented under subclass 11. Subject matter comprising means other than a screw to feed the matrices in the sorting mechanism.
- 13 Assembling and casting:**  
This subclass is indented under subclass 1. Subject matter having means for both assembling the matrices and casting the line, but including no distributing mechanism.
- 14 Assembling and distributing:**  
This subclass is indented under subclass 1. Subject matter having means for both assembling and distributing the matrices, but including no casting mechanism.
- 15 Multiple-magazine machines:**  
This subclass is indented under subclass 14. Subject matter employing a plurality of magazines, each magazine consisting of a group of channels adapted to hold matrices of the different characters.
- 16 Movable magazine:**  
This subclass is indented under subclass 15. Subject matter wherein magazines moved to bring any one into operative position.
- 17 Collector mechanism:**  
This subclass is indented under subclass 15. Subject matter having improvements in the means for bringing the matrices together into line after being discharged from their individual channels and passages.
- 18 Assembling:**  
This subclass is indented under subclass 1. Subject matter limited to the means for releasing the matrices from the storage-magazines and delivering them in a composed line to a holder which is designed to present them to the mold.
- 19 Multiple-magazine machines:**  
This subclass is indented under subclass 18. Subject matter employing a plurality of magazines, each magazine comprising a group of channels adapted to hold the matrices of the different characters.  
  
SEE OR SEARCH THIS CLASS, SUBCLASS:  
15,
- 20 Movable magazine:**  
This subclass is indented under subclass 19. Subject matter wherein magazines are moved to bring any one into operative position.  
  
SEE OR SEARCH THIS CLASS, SUBCLASS:  
16,

- 21 Collector mechanism:**  
This subclass is indented under subclass 19. Subject matter having improvements in the means for bringing the matrices together into line after discharge from their individual channels and passages.
- 22 Space-band mechanisms:**  
This subclass is indented under subclass 18. Subject matter having means peculiarly adapted for placing blanks between or after words in composing the line.
- 23 Escapement and collector mechanisms:**  
This subclass is indented under subclass 18. Subject matter having means for both releasing the matrices from their individual channels and bringing them together into a composed line.
- 24 Multiple-channel automatic-shift mechanisms:**  
This subclass is indented under subclass 18. Subject matter having means for automatically changing the delivery of matrices from one channel to another where matrices of the same character are stored in a plurality of channels.
- 25 Power-operating mechanisms:**  
This subclass is indented under subclass 18. Subject matter having means for releasing matrices actuated by a motor controlled by the operator or by pattern.
- 26 Collector and transfer mechanisms:**  
This subclass is indented under subclass 18. Subject matter having means both for bringing the matrices together into line after having been discharged from their individual channels and passages and for conveying the composed line to the holder for presenting the line to the mold.
- 27 Collector mechanisms:**  
This subclass is indented under subclass 18. Subject matter limited to means for bringing the matrices together into line after having been discharged from their individual channels and passages.  
  
SEE OR SEARCH THIS CLASS, SUBCLASS:  
17, 21, 23, and 26.
- 28 Chute springs:**  
This subclass is indented under subclass 27. Subject matter having spring structures adapted to guide and control the matrices as they are delivered into the matrix-receiver.
- 29 Matrix receivers:**  
This subclass is indented under subclass 27. Subject matter having composing sticks or channels into which the matrices are delivered as they are assembled in line.
- 30 Slide attachments:**  
This subclass is indented under subclass 29. Subject matter having various devices connected to a sliding member which is advanced by the matrices as they are delivered into the receiver.
- 31 Shifting mechanisms:**  
This subclass is indented under subclass 29. Subject matter having means for shifting the matrix-receiver.
- 32 Transfer mechanisms:**  
This subclass is indented under subclass 18. Subject matter having means for moving and guiding the assembled line from the matrix-receiver to the matrix-holder of the casting mechanism.  
  
SEE OR SEARCH THIS CLASS, SUBCLASS:  
26, and 36.
- 33 Distributing:**  
This subclass is indented under subclass 1. Subject matter limited to means for withdrawing the matrices from the holder, which presented them to the mold, and for restoring them to their respective magazine-channels.
- 34 Special matrix:**  
This subclass is indented under subclass 33. Subject matter having means peculiarly adapted for distributing matrices of other than the normal font.
- 35 Nonscrew-feed distributor:**  
This subclass is indented under subclass 33. Subject matter having distributing means other than those employing a screw to feed the matrices in the sorting mechanism.

- SEE OR SEARCH THIS CLASS, SUB-CLASS:  
12,
- 36 Transfer mechanisms:**  
This subclass is indented under subclass 33. Subject matter having means for moving or guiding the line of matrices from the holder, which presented it to the mold, to a receiver, which is to carry it to a distributing position.
- 37 Matrix carriers:**  
This subclass is indented under subclass 33. Subject matter having means for conveying the matrices after discharge from the holder of the casting mechanism to position for sorting them into their individual channels.
- 38 Odd font-detecting mechanisms:**  
This subclass is indented under subclass 33. Subject matter having means for detecting matrices other than of a given font or fonts in order that they may be rejected.
- 39 To multiple magazines:**  
This subclass is indented under subclass 33. Subject matter employing a plurality of magazines, each magazine consisting of a group of channels adapted to hold matrices of the different characters.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:  
15, and indented subclasses.
- 40 Font-sorting:**  
This subclass is indented under subclass 39. Subject matter having means for separating the different fonts.
- 41 Matrix separator:**  
This subclass is indented under subclass 40. Subject matter with means for separating each matrix in turn from the undistributed line.
- 42 Matrix separator:**  
This subclass is indented under subclass 33. Subject matter having means for separating each matrix in turn from the undistributed line.
- 43 Automatic stops:**  
This subclass is indented under subclass 33. Subject matter having means for stopping the operation when improper conditions arise in the distributing mechanism.
- 44 Magazines:**  
This subclass is indented under subclass 1. Subject matter having magazine structure, per se, and supports therefor not involving any assembling or distributing means.
- 45 Movable multiple magazine:**  
This subclass is indented under subclass 44. Subject matter having means for moving multiple magazines into and out of operative position, including registering and locking means or other construction peculiar to multiple magazines.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:  
16, 20 and 39, and indented subclasses.
- 46 Removing attachments:**  
This subclass is indented under subclass 44. Subject matter having attachments to facilitate the removal of the magazine from operative position.
- 47 Casting mechanisms:**  
This subclass is indented under subclass 1. Subject matter having means for casting a type-bar or integral line of type and essential accessories, including the presentation of a composed line of matrices to the mold and the withdrawal of the same therefrom, but not selective manipulation of the matrices.
- 48 Multiple mold:**  
This subclass is indented under subclass 47. Subject matter employing a plurality of molds.
- 49 Matrix holders:**  
This subclass is indented under subclass 47. Subject matter having means for receiving the matrices as they are transferred from the assembling mechanism, presenting them to the mold, and withdrawing them therefrom to a position from which they may be transferred to the distributing mechanism.

- 50 Vises:**  
This subclass is indented under subclass 47. Subject matter having means for clamping the ends of the composed line of matrices while in position before the mold.
- (2) Note. Compare this class, subclass 91, and indented subclasses.
- SEE OR SEARCH CLASS:  
249, Static Molds, appropriate subclasses for molds, per se.
- 51 Justifying mechanisms:**  
This subclass is indented under subclass 47. Subject matter having means for modifying the spaces between the words, so as to bring the line of matrices to standard length, including modifications of the machine peculiarly adapted for facilitating the operation.
- (1) Note. Compare Class 276, Typesetting, subclass 28.
- 52 Automatic stops:**  
This subclass is indented under subclass 47. Subject matter having mechanism for automatically preventing casting if the matrix-line is not properly presented to the mold or other improper conditions exist.
- 53 Squirt preventers:**  
This subclass is indented under subclass 52. Subject matter limited to means for automatically preventing the discharge of molten material from the melting pot.
- (1) Note. Compare this class, subclass 90.
- 54 Molds and cutters:**  
This subclass is indented under subclass 47. Subject matter having chambers for receiving the molten material for solidification and means for trimming the type-bar.
- 55 Molds:**  
This subclass is indented under subclass 47. Subject matter having chambers for receiving molten material for solidification, including modifications in the throat, through which the material is received, and means for causing accurate registration of the matrix-line with the chamber.
- (1) Note. See this class, subclass 48 for means within the definition of subclass 47 in which a plurality of molds is employed.
- 56 Cooling devices:**  
This subclass is indented under subclass 55. Subject matter having means peculiarly adapted for cooling the type-bar mold.
- 57 Modified liner:**  
This subclass is indented under subclass 55. Subject matter wherein the invention alleged includes specific structure of the pieces to be inserted between the cap and body of the mold to form its end wall, as well as other parts of the mold.
- 58 Liners:**  
This subclass is indented under subclass 55. Subject matter limited to pieces to be inserted between the cap and body of the mold to constitute its end walls, including parts of the mold immediately cooperating with these pieces.
- 59 Cutters:**  
This subclass is indented under subclass 47. Subject matter having attachments for trimming the cast type-bars.
- SEE OR SEARCH THIS CLASS, SUBCLASS:  
54,
- 60 Ejectors:**  
This subclass is indented under subclass 47. Subject matter having means for forcing the type-bar out of the mold.
- SEE OR SEARCH CLASS:  
249, Static Molds, subclasses 66.1+ for means permanently combined with a mold to eject the molded product.
- 61 Deliveries:**  
This subclass is indented under subclass 47. Subject matter having means for handling completed type-bars.
- (1) Note. Compare this class, subclass 95.

- 62 Cleaning attachments:**  
This subclass is indented under subclass 47. Subject matter having attachments for removing accumulations of waste material from various parts of the casting apparatus.
- 63 Matrices:**  
This subclass is indented under subclass 47. Subject matter wherein counterparts of the characters to be cast are adapted to be presented to the mold and form the characters in the casting operation.
- (1) Note. Modifications of the construction of the matrices to cooperate with space-bands are classifiable in this class, subclass 68.
- (2) Note. Compare this class, subclass 96 and Class 164, Metal Founding, subclasses 139+.
- 64 Distributer features:**  
This subclass is indented under subclass 63. Subject matter having those parts that characterize and distinguish by the distributing mechanism different matrices for selection and engagement.
- 65 Multiple character:**  
This subclass is indented under subclass 63. Subject matter wherein the matrices having a plurality of characters.
- 66 Special design face:**  
This subclass is indented under subclass 63. Subject matter having matrices modified so as to produce particular printed characters.
- 67 Space bands:**  
This subclass is indented under subclass 47. Subject matter having members adapted to be assembled between the words of matrices to facilitate bringing the line to standard length.
- 68 Wedge:**  
This subclass is indented under subclass 67. Subject matter having portions of increasing thickness adapted to be inserted different distances within the line.
- 69 SEPARATE TYPE:**  
This subclass is indented under the class definition. Subject matter having means for casting each printing character, with its supporting-body separately, as distinguished from casting a plurality of characters integrally united to form a type-bar.
- (1) Note. For mechanism for manipulating printing-type in a manner analogous to the means for moving the matrices in this group see Class 400, Typewriting Machines.
- 70 Surplus-type supply machines:**  
This subclass is indented under subclass 69. Subject matter having wherein the type is stored in magazines prior to composition.
- 71 Individually movable matrix machines:**  
This subclass is indented under subclass 69. Subject matter drawn to machines employing matrices adapted to move individually into position for casting without moving the remaining characters of the font.
- 72 Releasing matrix:**  
This subclass is indented under subclass 71. Subject matter wherein the matrices being released from their individual channels, brought into casting position before the mold, and thereafter restored to their respective channels.
- (1) Note. Compare this class, subclass 11, and indented subclass.
- 73 Rotary matrix-carrier machines:**  
This subclass is indented under subclass 69. Subject matter drawn to machines employing a carrier for a plurality of matrix characters and capable of rotation for bringing a desired character to casting position with or without additional sliding movement.
- (1) Note. Compare this class, subclass 5.
- 74 Pattern control:**  
This subclass is indented under subclass 73. Subject matter having a previously-prepared member adapted to govern the operation of the means to select the desired matrices.

- (1) Note. Compare this class, subclass 77.
- 75 Slidable matrix-carrier machines:**  
This subclass is indented under subclass 69. Subject matter drawn to machines employing a carrier for a plurality of matrix characters and capable of bringing the desired character to casting position by rectilinear movement only.
- (1) Note. Compare this class, subclasses 6 and 7.
- 76 Two-way movement:**  
This subclass is indented under subclass 75. Subject matter wherein the matrix-carrier is slidable in two directions.
- 77 Pattern control:**  
This subclass is indented under subclass 76. Subject matter having a previously prepared member adapted to govern the operation of the means to select the desired matrices.
- (1) Note. Compare this class, subclass 74.
- 78 Keyboard control:**  
This subclass is indented under subclass 76. Subject matter having a plurality of manually operable members for selecting the desired matrix-characters.
- 79 Matrix cases:**  
This subclass is indented under subclass 76. Subject matter limited to the holder structure for matrices.
- 80 Casting mechanisms:**  
This subclass is indented under subclass 69. Subject matter having means for casting individual types and essential accessories, but not involving selective manipulation of the matrices.
- (1) Note. Compare Class 164, Metal Founding, subclass 139 for apparatus for casting printing plates and subclass 303 for metal injecting apparatus of general utility.
- SEE OR SEARCH THIS CLASS, SUBCLASS:  
47,
- 81 With finishing mechanisms:**  
This subclass is indented under subclass 80. Subject matter having also means for removing surplus material and completing the type.
- (1) Note. Compare this class, subclasses 54 and 59, and Class 29, Metal Working, subclass 24. Also Class 164, Metal Founding, subclass 140.
- 82 Mold-side-ejector mold:**  
This subclass is indented under subclass 81. Subject matter with molds in which one side thereof is moved into the chamber for forcing the type out through the opposite side.
- SEE OR SEARCH THIS CLASS, SUBCLASS:  
84, and indented subclasses, 92 and 93.
- 83 Two-part mold:**  
This subclass is indented under subclass 81. Subject matter with molds composed of two sections which open and close at every operation, each section containing part of the chamber.
- 84 Mold-side-ejector mold:**  
This subclass is indented under subclass 81. Subject matter having molds in which one side thereof is moved into the chamber for forcing the type out through the opposite side.
- SEE OR SEARCH THIS CLASS, SUBCLASS:  
82, 92, and 93.
- 85 Low quad:**  
This subclass is indented under subclass 84. Subject matter adapted to produce nonprinting filling members of less than normal height.
- SEE OR SEARCH THIS CLASS, SUBCLASS:  
93,
- 86 Moving mold:**  
This subclass is indented under subclass 84. Subject matter wherein the entire mold travels from one position to another.

- 87 Two-part mold:**  
This subclass is indented under subclass 80. Subject matter having molds composed of two sections which open and close at every operation, each section containing a part of the chamber.
- SEE OR SEARCH THIS CLASS, SUBCLASS:  
83, and 94.
- 88 Moving mold:**  
This subclass is indented under subclass 87. Subject matter wherein the entire mold traveling from one position to another.
- 89 Moving mold:**  
This subclass is indented under subclass 80. Subject matter wherein the entire mold travels from one position to another.
- (1) Note. Compare Class 164, Metal Founding, subclasses 323+.
- SEE OR SEARCH THIS CLASS, SUBCLASS:  
86, and 88.
- 90 Squirt preventers:**  
This subclass is indented under subclass 80. Subject matter having means for automatically preventing the discharge of molten material from the melting-pot.
- (1) Note. Compare this class, subclass 53.
- 91 Molds:**  
This subclass is indented under subclass 80. Subject matter limited to the receptacles or molds only for receiving the molten material for solidification.
- (1) Note. Compare this class, subclasses 54 and 55, and indented subclasses.
- SEE OR SEARCH CLASS:  
249, Static Molds, appropriate subclasses for molds, per se.
- 92 Mold-side ejector:**  
This subclass is indented under subclass 91. Subject matter having one side being movable into the chamber for forcing the type out through the opposite side.
- SEE OR SEARCH THIS CLASS, SUBCLASS:  
82, and 84, and indented subclasses.
- 93 Low quad:**  
This subclass is indented under subclass 92. Subject matter for producing non-printing filling members of less than normal height.
- SEE OR SEARCH THIS CLASS, SUBCLASS:  
85,
- 94 Two-part:**  
This subclass is indented under subclass 91. Subject matter composed of two sections which open and close at every operation each section containing a part of the chamber.
- SEE OR SEARCH THIS CLASS, SUBCLASS:  
83, 87 and 88, for similar subject matter.
- SEE OR SEARCH CLASS:  
249, Static Molds, subclasses 160+ for molds, per se, having plural sections.
- 95 Deliveries:**  
This subclass is indented under subclass 80. Subject matter having means for handling the completed type.
- (1) Note. Compare this class, subclasses 61 and 81, indented subclasses.
- 96 Matrices:**  
This subclass is indented under subclass 80. Subject matter wherein the counterparts of the characters to be cast, are adapted to be presented to the mold and form the characters in the casting operation.
- (1) Note. Compare this class, subclass 63, and indented subclasses.

END