No. 635,305. Patented Oct. 24, 1899.

H. J. DERBYSHIRE.

LINOTYPE CASTING MACHINE.

(Application filed Oct. 29, 1898.)

(No Model.)

FIG. 2.

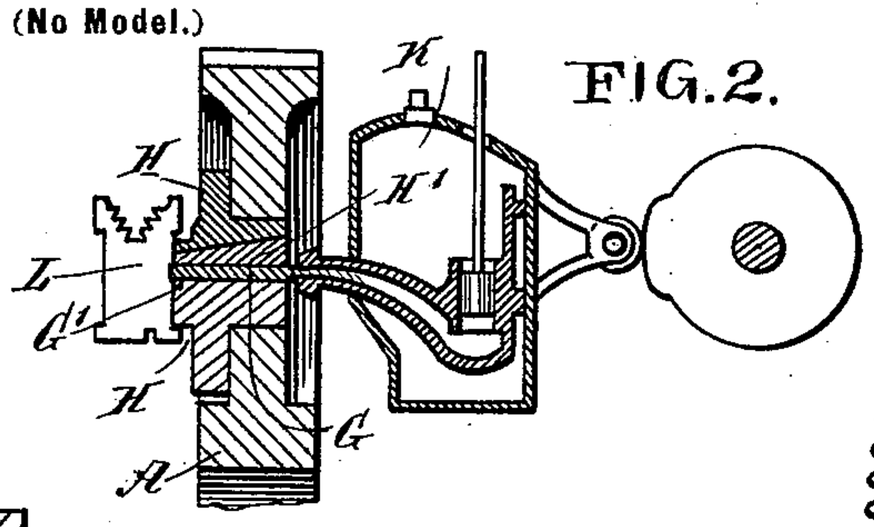


FIG. 1.

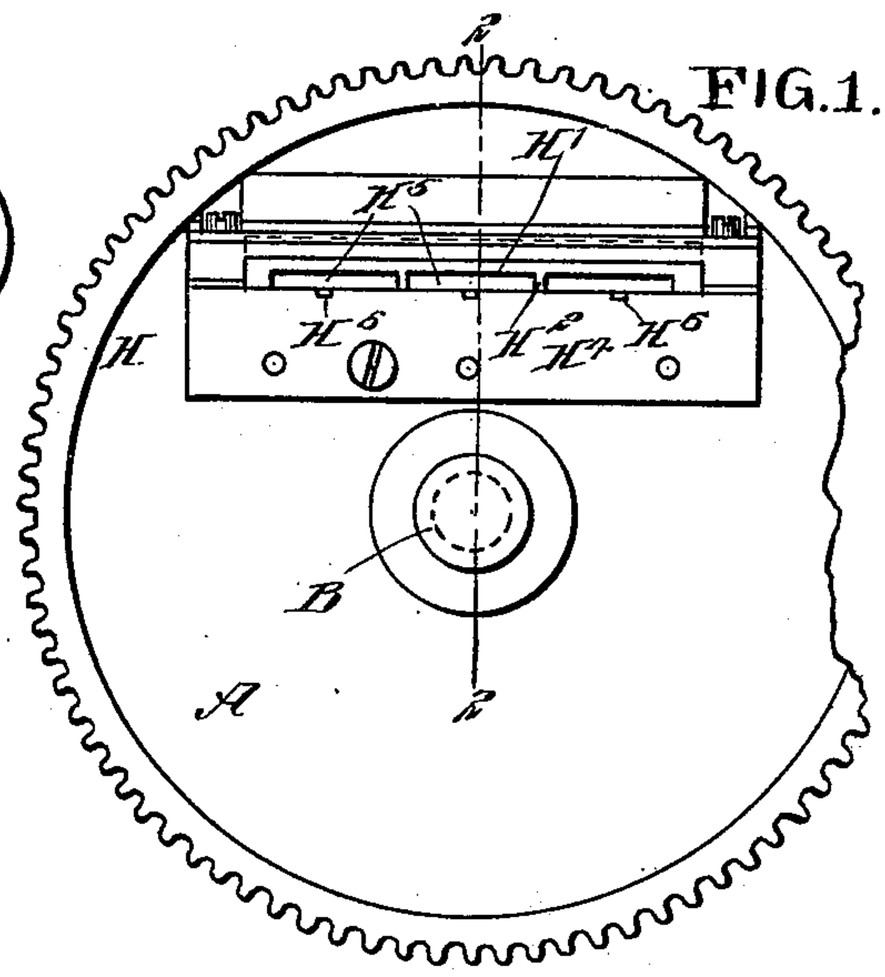


FIG. 3.

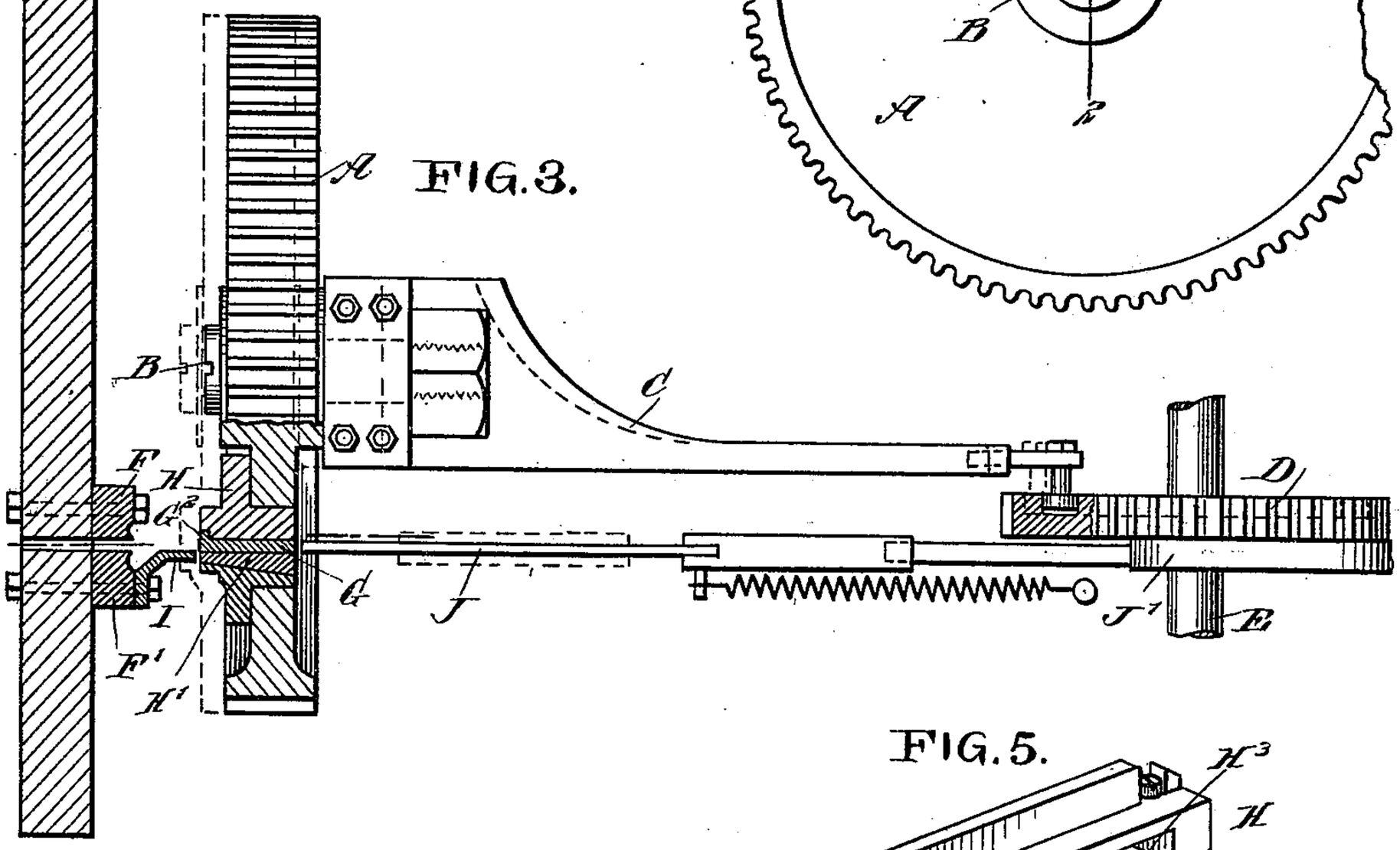


FIG. 4.

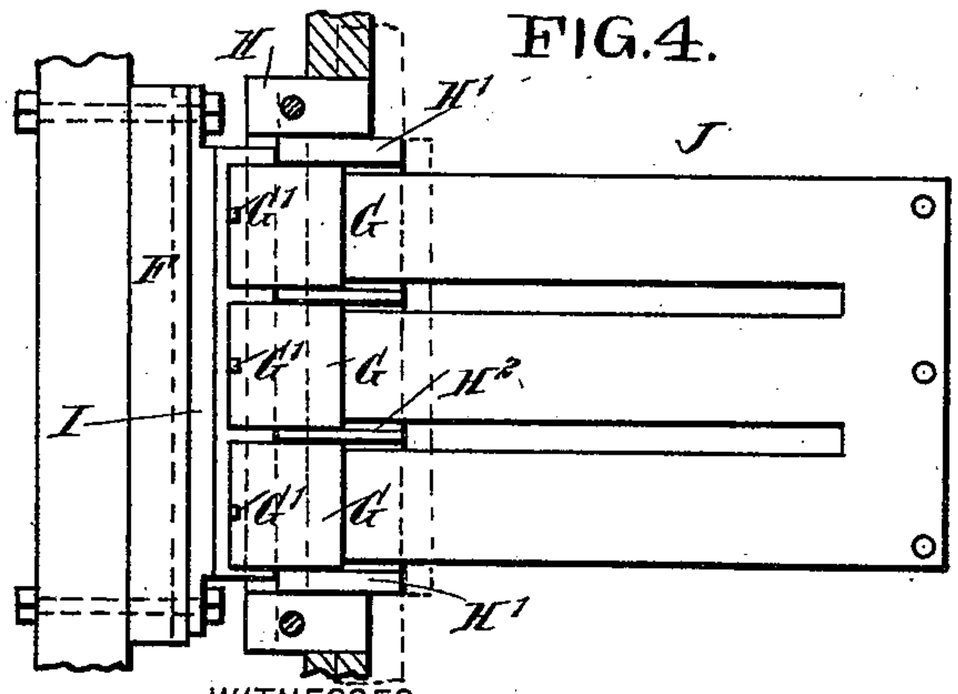
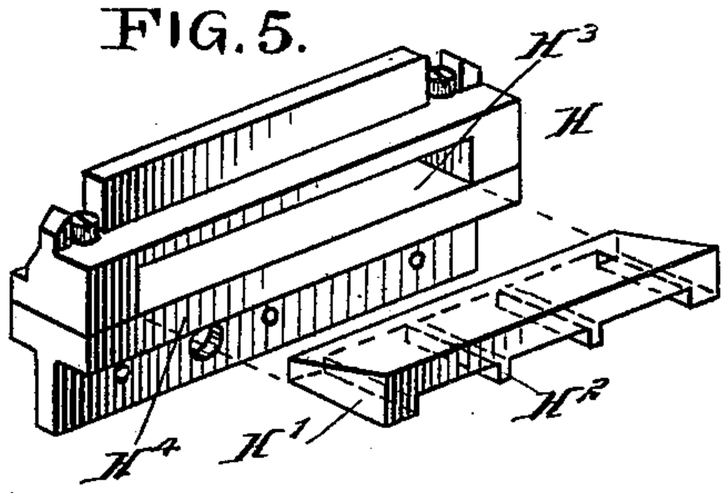


FIG. 5.



WITNESSES:

Donn Twitchell

Rev. J. Hoster

INVENTOR

H. J. Derbyshire

BY Munn & Co

ATTORNEYS.

UNITED STATES PATENT OFFICE.

HENRY JAMES DERBYSHIRE, OF COLUMBUS, OHIO.

LINOTYPE-CASTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 635,305, dated October 24, 1899.

Application filed October 29, 1898. Serial No. 694,897 (No model.)

To all whom it may concern:

Be it known that I, HENRY JAMES DERBYSHIRE, of Columbus, in the county of Franklin and State of Ohio, have invented certain new and useful Improvements in Linotype-Casting Machines, of which the following is a full, clear, and exact description.

The invention relates to casting-machines such as shown and described in the Letters Patent of the United States No. 621,329, granted to me March 21, 1899.

The object of the present invention is to provide improvements in linotype-casting machines, to permit of casting one or a number of lines of type of equal or different lengths at a time and to prevent dislodgement of the cast line or lines by the pot in case the metal has become chilled.

The invention consists of novel features and parts and combinations of the same, as will be fully described hereinafter and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a face view of the mold-wheel and its mold. Fig. 2 is a transverse section of the same on the line 2 2 in Fig. 1, also showing the pot and one of the matrices. Fig. 3 is a sectional side elevation of the improvement with the line or slug cast and ready for ejection. Fig. 4 is a plan view of the same with parts in section, and Fig. 5 is a perspective view of the detached mold with the movable member removed.

The improved casting-machine is provided with a mold-wheel A, mounted in the usual manner on a stud B, carried by a reciprocating slide C, adapted to be actuated from a cam-wheel D, secured on one of the shafts E of the linotype-machine, so that when the machine is in operation the mold-wheel receives the usual intermittent motion and a reciprocating motion for moving it toward and from the knives F and F′, through which the line or lines G are forced after leaving the mold H, carried by the web of the casting-wheel A.

On the knife F′ is secured a pusher I, projecting toward the face of the mold-wheel A and in alinement with the small end of the movable wedge-shaped member H′ of the mold H, so that when the mold-wheel is in the position illustrated in Fig. 3 and is advanced toward the knives F F′, as indicated in dotted lines in said Fig. 3, then the member H′ comes in contact with the stationary pusher I and is thus moved partly out of the slot in the mold to release the line or slug G, which is now pushed out of the slot by a pusher J, actuated in the usual manner from a cam J′, carried by the shaft E, as indicated in Fig. 3.

The foregoing construction is substantially the same as shown and described in the patent above referred to.

In order to cast a number of lines at a time instead of only a single line, I make the length of the mold somewhat in excess of the aggregate length of the desired number of lines to be produced at one single operation. For this purpose I provide the movable member H′ with parallel ribs H^2, spaced an equal or an unequal distance apart, according to the length of the lines desired. The movable member fitting in the slot H^3 of the stationary member of body H^4 of the mold rests with the ribs on one wall of the mold-slot H^3, said ribs thus subdividing said mold-slot H^3 into a number of single-line slots H^5, as is plainly shown in Fig. 1. Now when the machine is in operation and the metal is poured from the pot K into the line-slots H^5 and against the matrices L, (see Fig. 2,) then a number of lines are cast simultaneously, the lines being of the same or of different lengths, according to the distance between adjacent ribs H^2 of the movable member.

The pusher J is formed in a number of sections, as is plainly shown in Fig. 4, each section being adapted to pass into a line-slot H^5 to push the several lines simultaneously out of the line-slots when the wheel is in the position shown in Fig. 3. Thus when the pusher J is advanced it pushes the cast lines or slugs out of the line-slots after the movable member H′ has been released by the stationary pusher I, the lines or slugs then passing between the knives F F′ to be trimmed in the usual manner.

In operating linotype-machines as heretofore constructed it frequently happens that the metal in the casting-pot becomes somewhat chilled, and after the line or slug is cast

and the mold-wheel rotates away from the pot then the chilled metal in the pot has a tendency to pull the line of type and also the movable member of the mold out of the mold. In order to overcome this and to prevent displacement of the line of type and the movable member of the mold after the casting operation is completed, I provide the improvement presently to be described in detail.

The fixed member or body H^4 of the mold H is formed with recesses H^6—one for each of the line-slots H^5, formed by the ribs H^2 in the movable member H′, as is plainly shown in Fig. 1. The recesses H^6 are located at the front face of the fixed member—that is, the face opposite to that on which the casting-pot is arranged—so that when the metal is poured from the casting-pot K into the several slots, as indicated in Fig. 2, and against the matrices L adjacent to the recesses H^6 then each line or slug is formed with a lug or anchorage G′ by the metal passing into the corresponding recess H^6. This anchorage prevents pulling out of the cast line or slug in case the metal in the pot K becomes chilled and at the time the wheel A rotates to bring the mold into the position shown in Fig. 3. When the pusher J pushes out the several cast lines or slugs and forces the same between the knives F F′, then the knife F cuts off the lugs G′ and also trims the cast lines or slugs in the usual manner. From the foregoing it will be seen that the cast line or slug, as well as the movable member of the mold, is not dislodged by the chilled metal in the pot, and the proper cut-off takes place between the cast line and the metal in the spout of the pot.

In molds having movable members without transverse ribs H^2 and used for casting single lines only one or more of such recesses H^6 may be made use of to produce one or more lugs G′ on a single line to hold the latter against dislodgment by the chilled metal in the pot, as above described, it being understood, however, that said lugs G′ are subsequently cut off by the knife F when the line is trimmed by the knives F and F′. It is understood that after the line has been ejected from the mold and the wheel rotates for the next operation and moves into position for receiving the lead from the pot, as shown in Fig. 2, then the pot is advanced toward the movable member H′, which had previously been forced outward by coming in contact with the pusher I, as described, and then the pot pushes said member back into the slot in the mold to its proper place. The small end of the movable member then abuts against the matrices L, which close this end of the mold-slot H^3 to allow of pouring the metal into the line slot or slots, as above described.

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent—

1. A linotype-machine, having a mold-wheel carrying a mold provided with a slot, one wall of which is perpendicular to the plane of the wheel, while the opposite wall is inclined, and a movable mold member wedge-shaped to fit into the said slot and provided on the face opposite to its inclined face with ribs dividing the mold-cavity into a series of line-spaces.

2. A linotype-machine, having a mold-wheel carrying a mold provided with a slot, one wall of which is perpendicular to the plane of the wheel, while the opposite wall is inclined, said perpendicular wall of the slot being provided with a recess at that face of the mold-wheel which is farthest away from the metal-injecting device, and a movable mold member wedge-shaped to correspond to said slot.

HENRY JAMES DERBYSHIRE.

Witnesses:
W. H. RIBLE,
D. EDWARD DAVIES.