A. E. MARKWELL.

LINOTYPE MACHINE.

APPLICATION FILED NOV. 15, 1909.

968,064. Patented Aug. 23, 1910.

2 SHEETS—SHEET 1.

Fig. 1

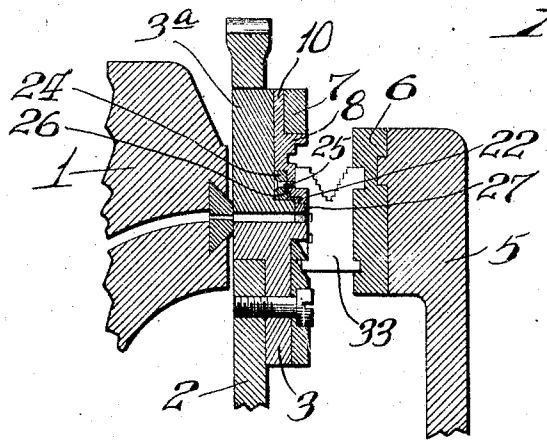


Fig. 2.

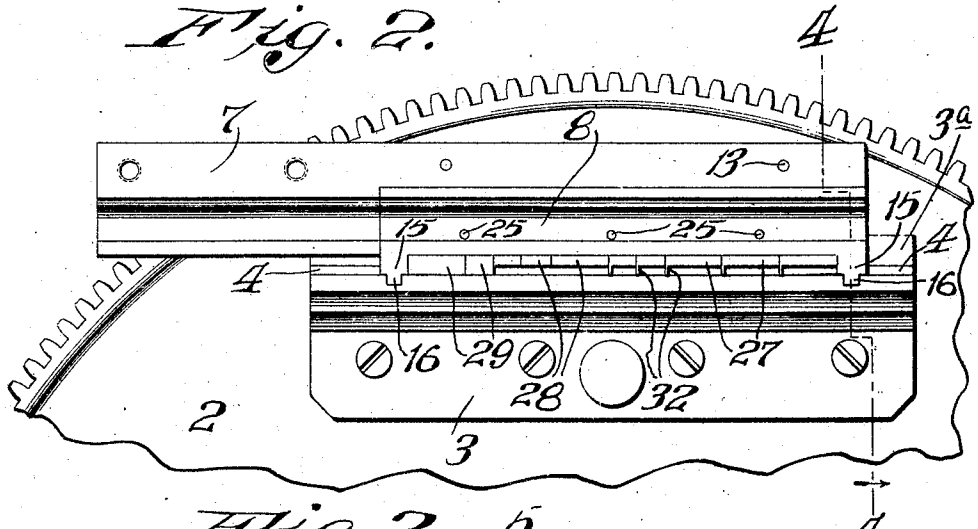
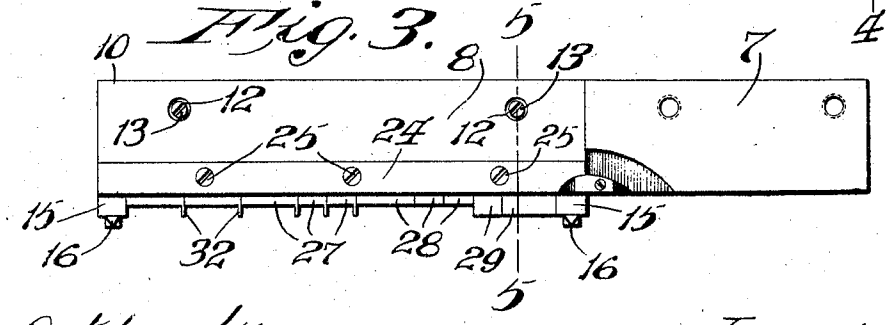


Fig. 3.



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2 SHEETS—SHEET 2.

Fig. 4

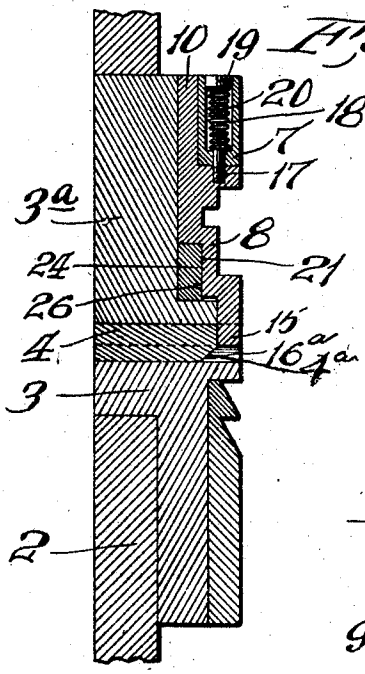

Fig. 5.

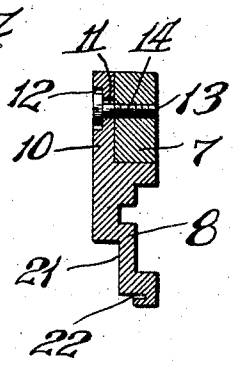

Fig. 6.

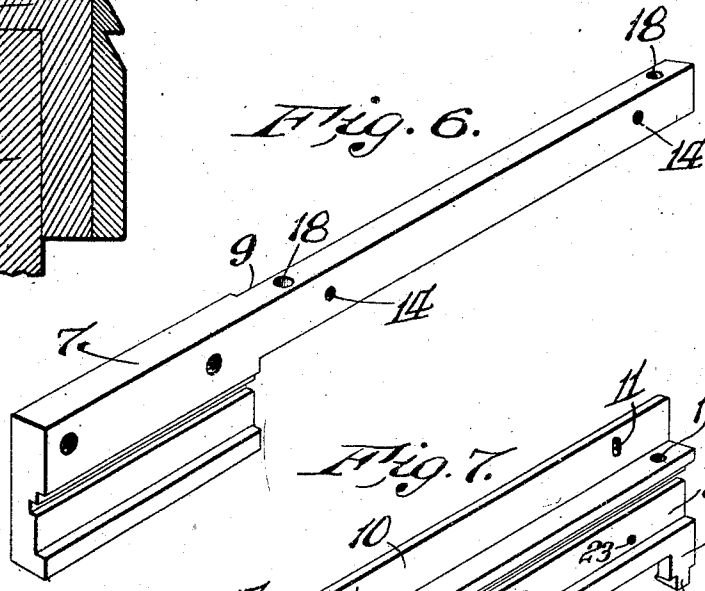

Fig. 7.

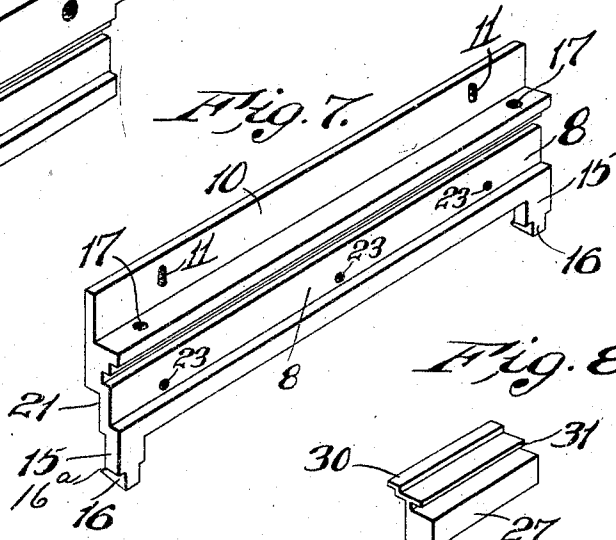

Fig. 8.

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UNITED STATES PATENT OFFICE.

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LINOTYPE-MACHINE.

968,064. Specification of Letters Patent. Patented Aug. 23, 1910.

Application filed November 15, 1909. Serial No. 528,021.

To all whom it may concern:

Be it known that I, ANDREW E. MARKWELL, a citizen of the United States, and resident of St. Louis, Missouri, have invented certain new and useful Improvements in Linotype-Machines, of which the following is a specification containing a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention relates to improvements in linotype machines, the object of my invention being to construct the back jaw of a first elevator of a linotype machine in such manner as to receive division plates, which plates are arranged to form slots in the slugs for the reception of rules without the employment of special matrices as has been done heretofore.

For the above purposes my invention consists in certain novel features of construction and arrangement of parts as will be hereinafter more fully described, pointed out in the claims and illustrated by the accompanying drawings, in which—

Figure 1 is a vertical sectional elevation of a portion of the metal pot, a portion of the mold disk, a portion of the first elevator with the front jaw thereon and my improved first elevator back jaw and parts carried thereby in positions to cast a slug; Fig. 2 is a front elevation of a portion of the mold disk and mold base plate carried thereby and illustrates the back jaw of the first elevator removed from the elevator proper and in position relative to the mold base plate for casting a slug; Fig. 3 is a rear face view of the complete back jaw of the first elevator; Fig. 4 is a sectional elevation taken approximately on the line 4—4 of Fig. 2; Fig. 5 is a sectional elevation taken on the line 5—5 of Fig. 3, the clamping plate and division plates being removed; Fig. 6 is a perspective of the back jaw proper; Fig. 7 is a perspective of the removable section of the back jaw; and, Fig. 8 is a perspective of one of the division plates.

Referring by numerals to the accompanying drawings: 1 designates the metal pot which is of ordinary construction, 2 a mold disk which is of ordinary construction, 3 the mold base plate of the mold carried by the disk which is of ordinary construction, except that the top cap or plate 3^a of the mold is of less height or thickness, from front to rear, and provided with liners 4 having integral ribs with beveled front faces 4^a for purposes hereinafter made clear.

5 designates the first elevator proper which is of ordinary construction and carried by the elevator is the front jaw 6 which is of ordinary construction. Arranged for attachment to the first elevator 5 is the back jaw 7, a portion 8 of which is detachably secured to the jaw proper. The reduced portion of the back jaw proper 7 is recessed at 9 and the removable section 8 is provided with a vertical flange 10 of a size to fill the recess 9.

The removable section 8 is provided with slots 11 extending through the flange 10 and with elongated openings 12 communicating with the slots 11 through which a cap screw 13 is inserted and seated in the screw seats 14 of the reduced portion of the jaw 7, thus permitting a slight vertical movement of the section 8 relative to the jaw 7. Formed at each extremity of the section 8 and projecting from the lower margin thereof, are a pair of lugs 15, each of which is provided with an integral shoe 16 having beveled faces 16^a arranged to seat in depressions formed in the top face of the mold base plate as shown in Fig. 2 and under the liners with the bevel faces 16^a, engaging the beveled faces 4^a of the liners as shown in Fig. 4. Formed in the section 8 are screw seats 17 longitudinally alining with apertures 18 formed in the reduced portion of the jaw 7, and inserted through the openings 18 and seated in the screw seats 17 are cap screws 19 embraced by extensile coil springs 20 the function of which springs is to normally hold the section 8 upwardly against the jaw 7.

The rear face of the section 8 is recessed at 21 and in said recessed portion 21 is a longitudinal groove 22 and formed through said recessed portion 21 is a number of screw seats 23. A clamping plate 24 is arranged to be secured to the section 8 in the recess 21 by means of the cap screws 25, and formed in the forward face of the clamping plate 24, adjacent its lower margin, is a groove 26. Arranged to be secured between the section and the clamping plate 24 is a series of division plates 27, 28 and 29, each of which is provided with a projecting flange 30 ar-

ranged to be seated in the groove 26 formed in the forward face of the clamping plate and with a flange 31 arranged to be seated in the groove 22 formed in the section 8 of the back jaw. Each of the division plates 27 is provided with a flange 32 projecting downwardly from its lower face.

The jaw 6 and mold base plate 3 are provided with the usual grooves for receiving and holding projections carried by the matrices. As shown in Fig. 1 of the drawing, the matrix 33 is of the ordinary construction, that is a matrix carrying two letters, and further the matrices employed are of the type in which only a shallow groove is formed in which the character is formed.

As shown in the drawings, the division plates 27, 28 and 29 are of different lengths as required to form and space the slots in the slugs unequal distances apart. The division plates 28 are arranged to produce a slug of the desired length and the division plates 29 are arranged to completely fill the opening between the upper face of the mold base plate and the clamping plate. The division plates are of lengths determined by the "point system," a set of each variety of which I furnish with the attachments.

Heretofore in forming slugs with slots to receive brass rules, special matrices were employed in which the figure or letter was in the bottom of an unusually deep slot instead of being located in a shallow slot as in the ordinary matrix. When such matrices were employed a special mold was required being of less height or thickness from front to rear and the slots were formed by special matrices or division plates, without slots. In operating, under the old system, the operator lays out or casts up his table employing in the assembler scale, a strip of paper with marks to indicate the required rules. My improved attachment for linotype machines is arranged to hold the devices, for forming the slots in the slugs, in the mold base plate, and employs the ordinary "two letter" matrix, thus it is obvious a greater variety of "faces" may appear in the printed tables.

The flanges 32 of the division plates 27 are arranged to be positioned by the first elevator in such manner as to engage the upper face of the mold base plate and in line with the mold slot so that when a slug is cast the flanges will form slots in said slugs. To prevent "burring" of the flanges 32 when being positioned in the mold base plate, the springs 20 permit a slight vertical movement of the section 8 and clamp 24 relative to the mold base plate and when the section 8 and clamp, together with the division plates, are inserted in the proper position on the mold base plate and back jaw proper, the bevel faces 16^a of the shoes 16 engaging the under bevel faces 4^a of the liners tend to normally hold the flanges 32 against the mold base plate, when the slug is being cast.

By reason of the reduced thickness from front to rear of the top cap or plate 3^a, the flanges on the division plates may be made of greater length than heretofore, thus deeper slots may be formed in the slugs which permit of the use of heavier rules. I have found in practice the rule as at present used is easily bent out of shape and for this reason I construct my device so that heavier rules may be employed.

I claim:

1. The combination in a linotype machine, of a mold base plate with a first elevator back jaw constructed of two pieces vertically movable relative to each other, a clamping plate carried by one of the pieces of the back jaw and division plates arranged to be secured in the back jaw by said clamping plate.

2. In a linotype machine, the combination with a mold base plate of a first elevator, a back jaw carried by the elevator, a section of which back jaw is movable vertically relative to the jaw proper, a clamping plate carried by the movable portion of the back jaw, there being longitudinal slots formed in the meeting faces of the movable section of the back jaw and the clamping plate and division plates having flanges arranged to be embraced and held by the slots formed in the clamping plate and back jaw.

3. In a linotype machine, the combination with a mold base plate of a first elevator, a back jaw carried by the elevator, a section of the back jaw being separable from the jaw proper and capable of a slight vertical movement relative to the jaw proper, a clamping plate arranged to be secured to the separable section of the back jaw, division plates for forming slots in slugs carried by the back jaw and held in place by said clamping plate.

4. In a linotype machine, the combination with a mold base plate of a first elevator, a sectional back jaw carried by the elevator and means carried by the back jaw for forming slots in slugs.

5. In a linotype machine, the combination with a mold base plate of a first elevator, a back jaw carried by the elevator, a section of which back jaw is movable vertically relative to the jaw proper, a clamping plate carried by the movable section of the back jaw, division plates carried by the movable section of the back jaw and held thereto by said clamping plate and flanges carried by the division plates for forming slots in slugs.

6. In a linotype machine, the combination with a mold base plate of a first elevator jaw back having a section movable relative to the jaw proper, means for securing the

movable section to the jaw proper and means for normally holding the movable section vertically against the jaw proper, a clamping plate secured to the movable section of the back jaw, there being slots formed in the movable section of the jaw and the clamping plate, division plates arranged to be held between the movable section of the jaw and the clamping plate and flanges carried by the division plates for forming slots in slugs.

7. In a linotype machine, a disk, a mold base plate carried by the disk, there being depressions formed in the top face of the mold base plate, liners, a cap for securing the liners to the mold base plate, a first elevator back jaw having a section movable vertically relative to the jaw proper, downwardly projecting lugs carried by the movable section of the jaw, tapering shoes carried by said lugs arranged to be seated in the depressions and in engagement with liners, a clamping plate secured to the movable section of the back jaw and division plates carried by the movable section of the back jaw and held thereto by said clamping plate.

In testimony whereof, I have signed my name to this specification, in presence of two subscribing witnesses.

ANDREW E. MARKWELL.

Witnesses:

E. E. LONGAN,

E. L. WALLACE.