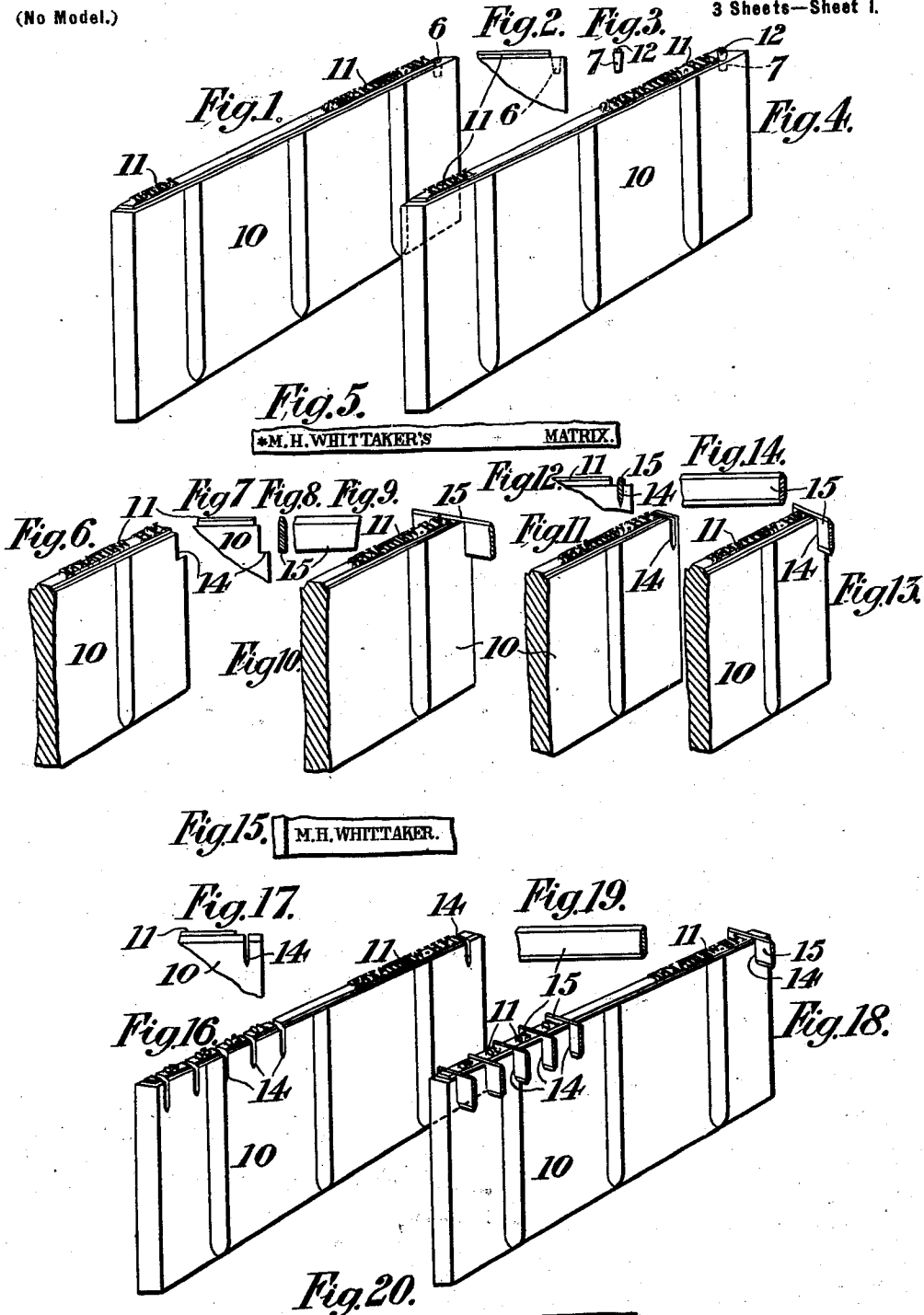


M. H. WHITTAKER.
LINO TYPE MACHINE.

(Application filed Sept. 23, 1901.)

(No Model.)

3 Sheets—Sheet 1.



Witnesses.
A. B. Hammett
J. S. Elmore

M.H. WHITTAKER 10 20 30 40

Inventor
M. H. Whittaker
 per *J. J. Dodge*
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M. H. WHITTAKER.
LINTYPE MACHINE.

(Application filed Sept. 28, 1901.)

(No Model.)

3 Sheets—Sheet 2.

Fig. 24.

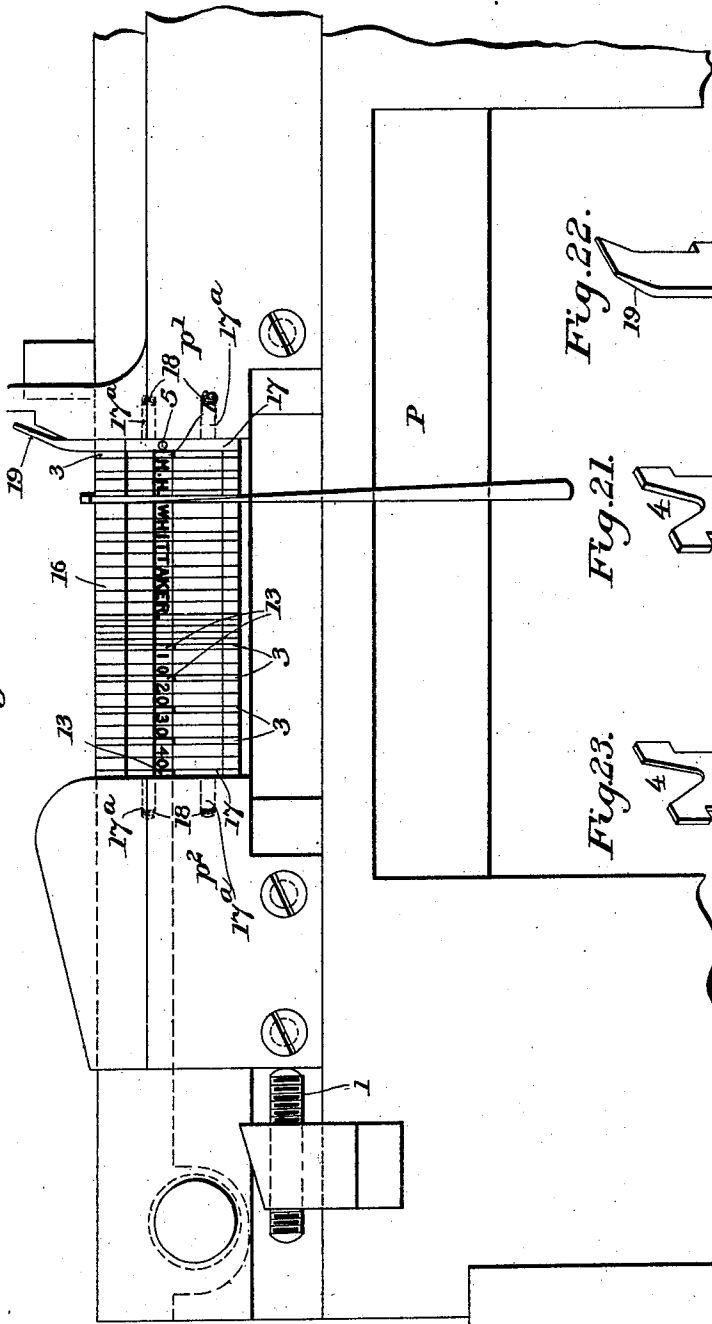


Fig. 22.

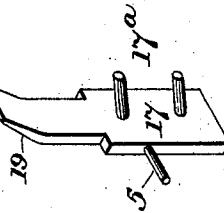


Fig. 21.

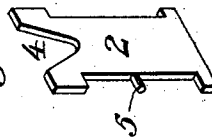
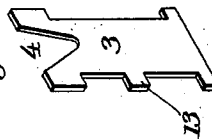


Fig. 23.



Witnesses

F. Selmon
H. R. Kenned

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M. H. Whittaker
By *P. J. Dodge*
Attorney

No. 691,685.

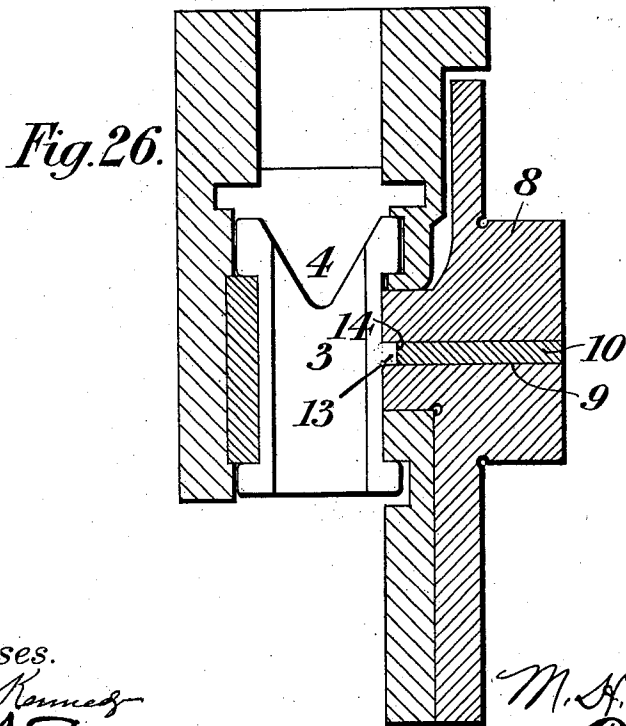
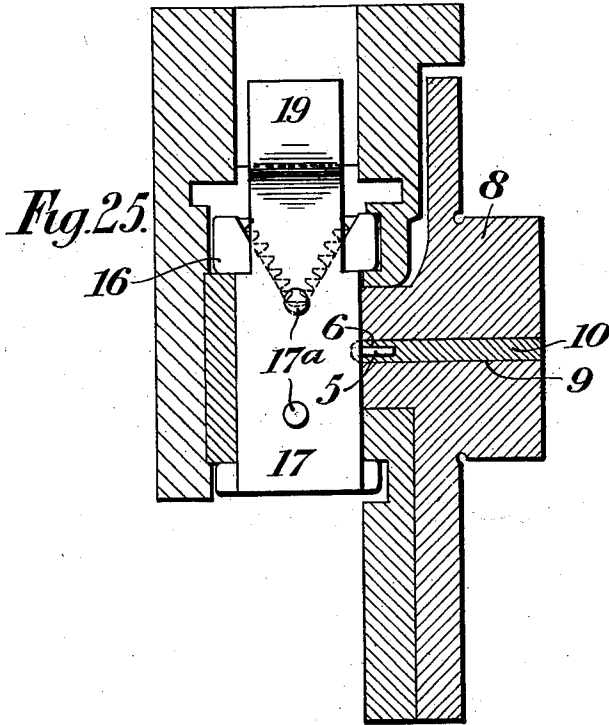
Patented Jan. 21, 1902.

M. H. WHITTAKER.
LINO TYPE MACHINE.

(Application filed Sept. 23, 1901.)

(No Model.)

3 Sheets—Sheet 3.



Witnesses.
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UNITED STATES PATENT OFFICE.

MATTHEW H. WHITTAKER, OF SALFORD, ENGLAND, ASSIGNOR TO THE
MERGENTHALER LINOTYPE COMPANY, OF NEW YORK, N. Y.

LINOTYPE-MACHINE.

SPECIFICATION forming part of Letters Patent No. 691,685, dated January 21, 1902.

Application filed September 23, 1901. Serial No. 76,228. (No model.)

To all whom it may concern:

Be it known that I, MATTHEW HENRY WHITTAKER, of 6 Trafford road, Salford, in the county of Lancaster, England, have invented certain new and useful Improvements in Linotype-Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The present invention relates to improvements in linotype-machines, and is specially applicable to the linotypes and molding means described in the specification of Letters Patent No. 436,532, dated September 16, 1890.

It consists in the combination, with the casting edge of the matrices, of projections adapted by standing in the mold for the linotype-body to form in the resulting linotypes cavities proper for receiving printing-faces additional to those that are cast on the linotype.

One of the additional printing-faces used at present is a star or a letter at the head of a line in a racing-program to indicate that the respective horse has arrived. It is the practice at present to make the respective linotype an "en" short and to put a temporary space at the end of it, which space is replaced by the star or letter type as soon as the news of arrival is at hand. According to the present invention the improved matrix is composed at the head of the line, so that the linotype is of standard length, thereby dispensing with a change of mold.

By means of my invention it is possible to produce a printing-form before or during a race or other contest and to complete the same ready for instant use by simply inserting in the cavities of the proper slugs the sorts or other characters to indicate the winners or to give other information desired.

Another additional printing-face is a column-rule. The length of a rule varies from that of the whole column to that of a column of tabular matter in the principal column. According to present practice all rules are type-high; but according to the present invention an improved matrix is or may be composed into the line wherever a rule is to appear and will make a transverse notch in the top edge of the respective linotype for re-

ceiving the column-rule or appropriate portion thereof.

In the accompanying drawings, which are to be taken as part of this specification and read therewith, Figure 1 is a perspective view of one form of the improved linotype adapted to receive an additional star or letter type, as before explained; Fig. 2, an elevation of one corner of the same linotype; Fig. 3, an elevation of the additional star or letter type; and Fig. 4, a perspective view of the same linotype and star or letter type complete and ready for use; Fig. 5, a line of printing such as produced by the linotype and type shown in Fig. 4; Fig. 6, a perspective view of a portion of one form of the improved linotype adapted to receive an additional column-rule; Fig. 7, an elevation of the top right-hand corner of Fig. 6; Figs. 8 and 9, respectively, a transverse section and a side elevation of a portion of the additional column-rule; Fig. 10, a perspective view showing portions of the linotype and rule ready for use; Fig. 11, a perspective view of a portion of another form of the linotype adapted to receive an additional column-rule, Figs. 12 and 13 showing the said rule in position therein; Fig. 14, a side elevation of a portion of the column-rule detached; Fig. 15, a printed impression of a linotype and column-rule arranged as in Fig. 10 or Fig. 13; Figs. 16, 17, 18, and 19, views illustrative of linotypes and column-rules for producing printing such as represented in Fig. 20; Figs. 21 and 22, perspective views of alternative matrices for producing star or letter receiving recesses in the linotypes; Fig. 23, a perspective view of a matrix for producing a rule-receiving recess in a linotype; Fig. 24, a rear elevation of as much of a linotype-machine as is necessary to show the improved matrices in position ready for the casting of a linotype with recesses for receiving a star or letter and several column-rules, and Figs. 25 and 26 enlarged sections of as much of a linotype-machine as is necessary to illustrate the manner of casting linotypes according to the present invention.

Referring first to Fig. 24, P is the vise, fitted with the jaws p' and p'' , the former under spring control and movable in the vise P and the latter practically fixed or adjustable as

to its outward movement in said vise by a stop-screw 1. The parts just enumerated are substantially as in existing linotype-machines.

5 The improved matrices 2 or 3 correspond in general shape with those in use at the present time, each consisting of a solid piece of metal unchangeable in form or thickness. If the matrices 2 or 3 are to be distributed
10 into the magazine, the V-shaped notches 4 thereof are toothed, as in dotted lines in Fig. 25, so that the said matrices may be engaged with and be raised by the elevator-arm, and they subsequently fall into the appropriate
15 magazine-channel, as in the ordinary matrix distribution. If, however, the matrices are not to be so distributed, the V-shaped notches 4 are plain, as shown in the drawings, so that they will not engage with the suspending-
20 plate of the elevator-arm, but fall into the sorts-box, from which they may be removed as occasion may require for composing by hand into the line of matrices formed in the assembly-box.

25 The projection 5 for forming a seating or cavity 6, Figs. 1 and 2, for a star or letter type 7, Figs. 3 and 4, is preferably circular in cross-section, slightly taper, and at its thickest part less in diameter than the thick-
30 ness of the matrix 2. When the matrix 2 is presented in casting position against the mold-block 8, the projection 5 extends into the mold-cavity 9 in the manner indicated in Fig. 25 and serves as a core to produce the
35 desired seating 6. The seating 6 may be of any desired depth, provided it is less than the depth of the linotype 10, and the type 7 for insertion therein is formed of a depth to correspond therewith, so that the printing-faces
40 11 and 12 of, respectively, the linotype 10 and the added type 7 may be in the same plane. The types 7 are inserted into the linotypes 10 by hand.

It will be observed that the seating or cavity
45 6 is adapted to receive and hold the type firmly against movement in any direction without assistance from any outside source.

In setting stock - reports, market-reports, tariff, and other tables requiring the figures
50 or other characters to appear in vertical columns the matrices will be made, as usual, of uniform thickness, so that my matrices for producing the notches or seating or slots may be set in the line at predetermined distances
55 from the end of the line, thus causing the seatings or slots in the successive slugs to fall in exact alinement when the slugs are assembled in the form, so that the printing-rules may be readily inserted.

60 The projection 13 for forming a seating-slot 14 for a column-rule 15 is as wide as the linotype is thick, so that the resultant notch or seating will extend completely across the said linotype, as shown most clearly in Figs. 7, 10,
65 11, 13, 16, 17, and 18.

The improved matrices 23 if their V-notches 4 be provided with teeth (such as are shown

applied to the ordinary matrix 16 in Fig. 25) are composed into the line in the assembly-
70 box in the same way as are the said ordinary matrices at the present time—that is to say, by depressing a key-lever appropriated thereto; but if, as shown in Figs. 21, 23, and 26, the said notches be devoid of teeth then, as
75 aforesaid, the matrices 2 3 are taken from the sorts-box and composed into the assembly-box by hand.

In cases such as those illustrated in Figs. 1, 2, 4, 6, 10, 11, and 13, in which a recess 6 or
8c 14 is to be formed at either end of the linotype—that is to say, either preceding or following the type-matter thereon—the projection 5 or 13 for producing it may be provided upon a
85 matrix 17, Figs. 22 and 24, capable of being affixed to the vise-jaw p' or p^2 by two dowel-pins 17^a, which enter holes or recesses 18 in the
90 appropriate vise-jaw. There are usually two matrices 16 (right and left handed) provided for each machine, one for each jaw p' p^2 , that attachable to the jaw p' being advantageously
95 provided with the inclined end 19, which serves to direct the matrices 16 into their proper positions between the jaws p' p^2 . In Fig. 24 the matrix 17, attached to the vise-
95 jaw p' , is arranged for forming a star or special letter recess or seating 6 at the beginning of the type-matter on the linotype, and the matrix 17, attached to the vise-jaw p^2 , is arranged for forming a rule-receiving seating
100 14 at the opposite end of the said type-matter. When a linotype is cast from a line of matrices arranged as in Fig. 24, it will be substantially as illustrated in Fig. 16—that is to say, it will consist of the legend "M. H. Whittaker 10 20 30 40" and have (besides
105 the recesses 6 and 14 last mentioned) other rule-recesses 14 between the recess 6 and adjacent type-face "M" and before each of the numbers.

The rule-recess 14 when situated at either
110 end of a linotype may either be formed as a recess proper, as shown in Figs. 11, 12, 16, and 17, in which case the subsequently-applied column-rule 15 will be supported on both sides by the metal of the linotype,
115 or it may constitute practically a ledge, as shown in Figs. 6 and 7, in which case the column-rule will be supported on one side by the linotype-body and on the other side by the chase or a filling-piece inserted between
120 it and the said chase. The column-rule 14 may be either of the single-edged form (shown in Figs. 8, 9, and 10) or the double-edged form. (Shown in Figs. 12, 13, 14, 18, and 19.)

I claim—

1. A matrix for a linotype-machine having a non-compressible metallic body with a solid
125 projection adapted to enter the front of the slotted mold to produce a transverse slot of definite form and size in the printing edge of
130 the linotype.

2. In a linotype-machine, and in combination with a slotted mold wherein the linotypes are formed, an incompressible matrix

adapted to fit against the mold, and provided with a solid projection adapted to enter the front of the mold whereby it is adapted to produce in the printing edge of the slug or
5 linotype a transverse slot of definite form.

3. In a linotype-machine, the combination of a slotted mold wherein the linotypes are formed, a series of cooperating matrices having female characters therein, and other matrices having solid projections adapted to extend beyond the faces of the first-named matrices and into the mold whereby they are adapted to form cavities of definite form at
10 definite points in the linotypes.

4. In a linotype-machine and in combination with a mold, a series of figure-matrices of uniform thickness in combination with a series of matrices having slot-producing projections, substantially as described, whereby
15

figure-printing linotypes may be produced in succession with their figures and slots in position to aline vertically, thus permitting the introduction of column-rules in the slots of the form. 20

5. In a linotype-machine, the combination of a matrix-confining jaw and a matrix adapted to interlock therewith, and provided with a projection to enter the mold. 25

6. A matrix for a linotype having a projection to enter the mold and a laterally-inclined upper end 19, substantially as described. 30

In witness whereof I have hereunto set my hand in the presence of two witnesses.

MATTHEW H. WHITTAKER.

Witnesses:

JOHN WILLIAM THOMAS,
ERNOLD SIMPSON MOSELEY.