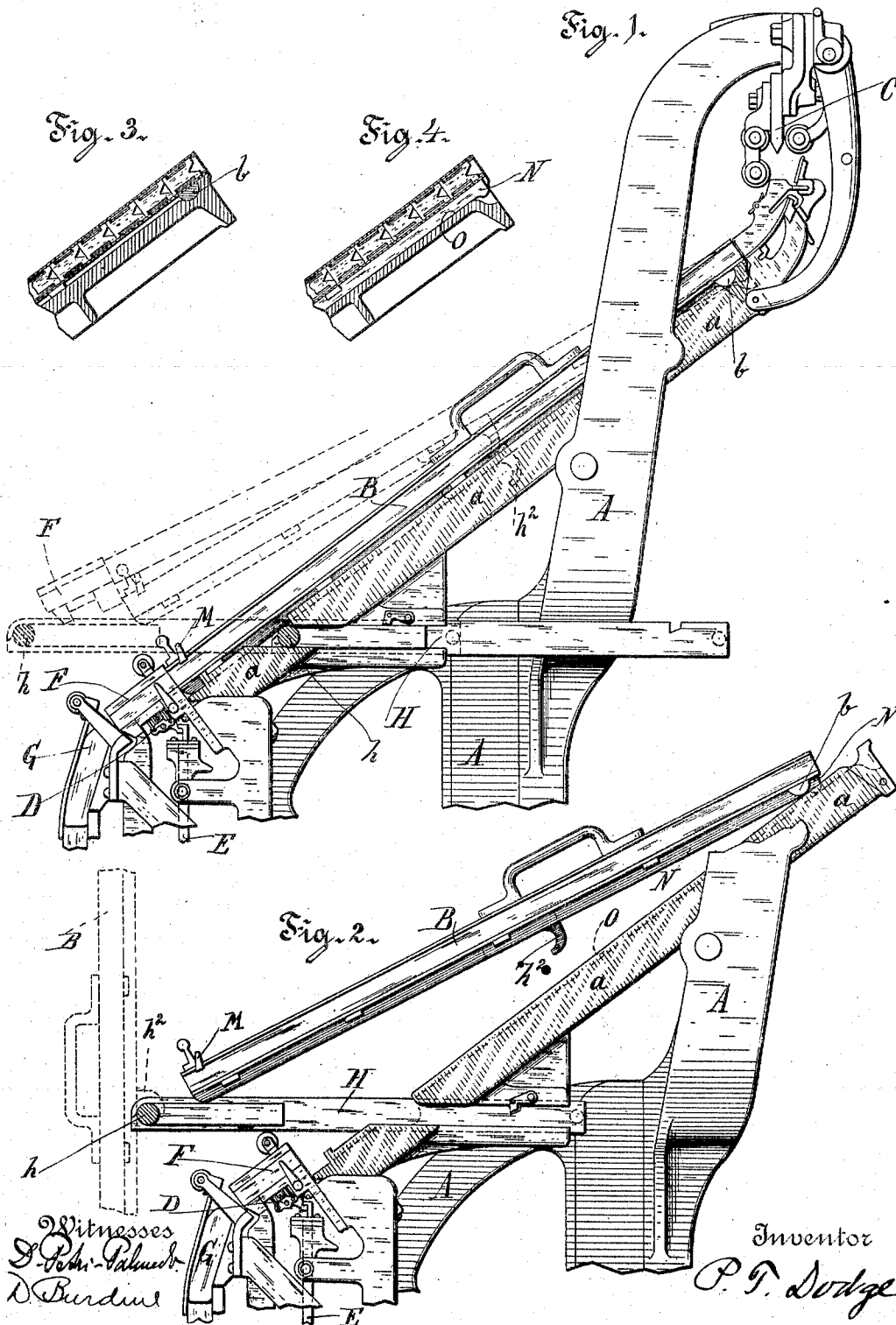


No. 816,849.

PATENTED APR. 3, 1906.

P. T. DODGE.
LINOTYPE MACHINE.
APPLICATION FILED JUNE 5, 1905.

2 SHEETS—SHEET 1.

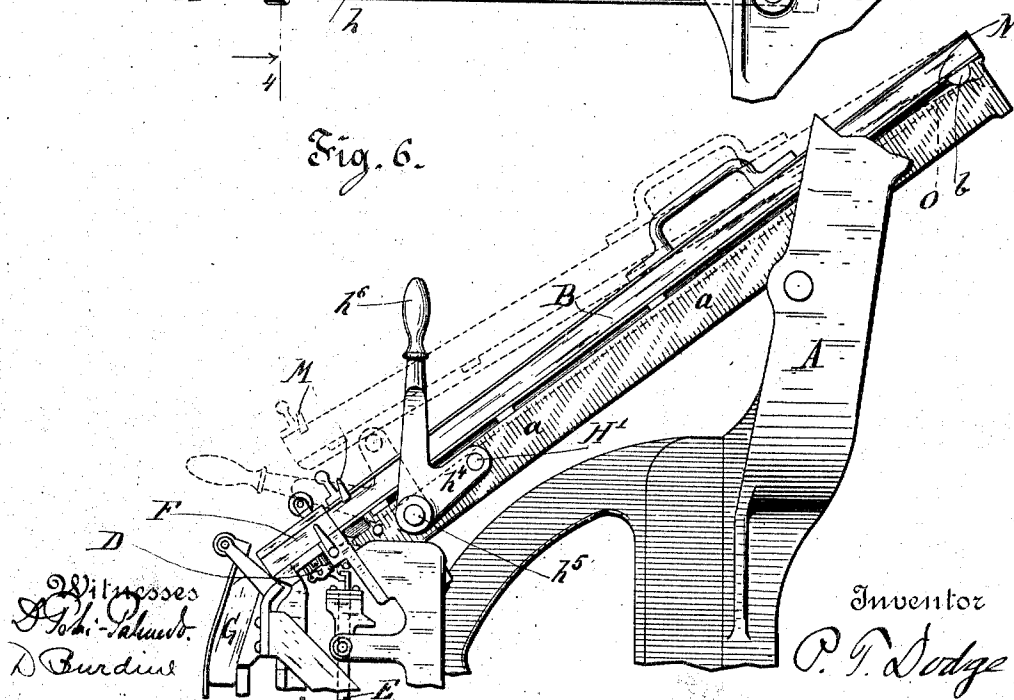
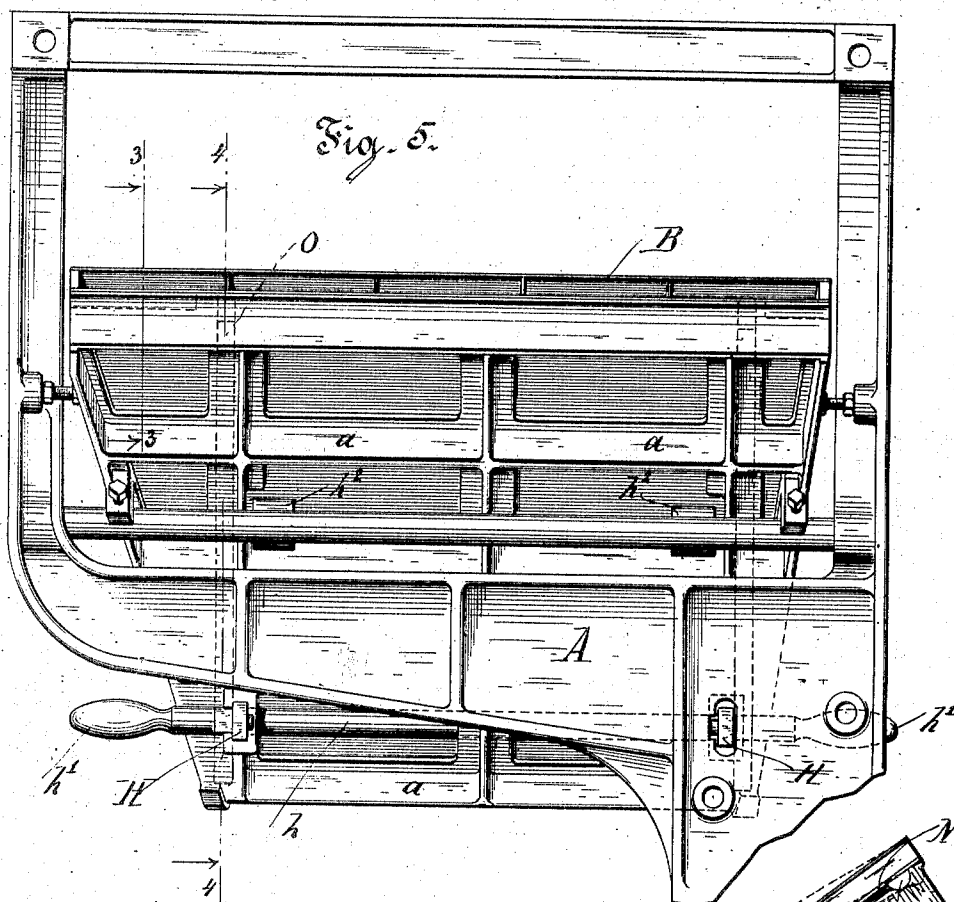


No. 816,849.

PATENTED APR. 3, 1906.

P. T. DODGE.
LINOTYPE MACHINE.
APPLICATION FILED JUNE 5, 1905.

2 SHEETS—SHEET 2.



Witnesses
J. H. Schaub.
D. Burdine

Inventor
P. T. Dodge

UNITED STATES PATENT OFFICE.

PHILIP T. DODGE, OF BROOKLYN, NEW YORK, ASSIGNOR TO MERGENTHALER LINOTYPE COMPANY, A CORPORATION OF NEW YORK.

LINOTYPE-MACHINE.

No. 816,849.

Specification of Letters Patent.

Patented April 3, 1906.

Application filed June 5, 1905. Serial No. 263,783.

To all whom it may concern:

Be it known that I, PHILIP T. DODGE, of Brooklyn, county of Kings, and State of New York, have invented a new and useful Improvement in Linotype-Machines, of which the following is a specification.

My invention has reference to Mergenthaler linotype-machines of the character represented in United States Letters Patent No. 557,000. In machines of this class the circulating matrices are stored in inclined channeled magazines, to which they are delivered at the top by a distributing mechanism and from which they are released at the lower end by means of finger-key mechanism, one at a time, in the order in which they are to appear in line. In this class of machines the magazine is removable at the rear in order to permit the application of another containing matrices for a different size or style of type. The magazine when filled with matrices weighs upward of one hundred pounds, and the usual method of removal involves a substantial amount of time and severe exertion on the part of the attendants.

The object of my invention is to facilitate the removal and application of the magazine, and to this end I construct the magazine and frame in such manner that the magazine may be withdrawn in a forward direction, and I provide on the main frame means for lifting the forward end of the magazine above its operative position and supporting and guiding it during its removal and replacement and also, if desired, for suspending it in front of the machine, so that it may be more conveniently handled and adjusted.

Referring to the drawings, Figure 1 represents a side elevation of the upper part of a machine having my improvements applied in one form, the magazine being in operative position. Fig. 2 is a similar view with the forward end of the magazine elevated and sustained preparatory to its removal. Figs. 3 and 4 are longitudinal vertical sections through the upper end of the magazine and of slightly-different forms. Fig. 5 is a rear elevation of the magazine shown in the preceding figures. Fig. 6 is a side elevation showing a modified or alternative construction.

With the exception of the parts described and claimed herein the machine may be of any ordinary or appropriate construction.

Referring to the drawings, A represents

the upper rigid part of the main frame; B, the inclined channeled magazine; C, the distributor, from which the matrices are delivered into the upper end of the magazine; D, the escapement devices at the lower end of the magazine, one for each channel, to release the matrices therefrom; and E the escapement-operating rods extending downward and connected, through intermediate devices, with finger-keys corresponding to the various characters, spaces, &c., represented by the matrices in the magazine, as usual.

The magazine B is removably seated upon and sustained by an underlying rigid base-frame *a*, forming a part of the main frame. The escapements are seated in the escapement-bar F, fixed to the main frame and containing channels which are continuations of those in the magazine, so that the matrices passing from the magazine to the escapements are delivered by the latter through the bar F into the front channeled guide G, through which they descend to the assembling devices in the usual manner. The magazine and the supporting-frame are of such form that the magazine may be lifted at the forward end and drawn forward off from the machine. As the magazine and the contained matrices are commonly of substantial weight, it is desirable to provide means for mechanically raising the forward end of the magazine above the adjoining parts and for sustaining and guiding the magazine during its application and removal. For this purpose I provide a sliding support H, consisting of two horizontal side bars mounted to slide in guides in the sides of the main frame and connected at the forward end by a transverse roller or rod *h*, which lies normally behind and beneath the forward end of the magazine, as shown in Fig. 1. The side bars are provided, as shown in Fig. 5, with laterally-protruding handles *h'*, or otherwise formed so that an operator standing at the forward end of the machine may draw them forward. The effect of such movement is to cause the bar or roller *h* to lift the forward end of the magazine, as shown in dotted lines in Fig. 1, to such height that it may then be moved forward for removal over the other parts at the front of the machine. When the magazine is thus lifted, the frame H, extending forward beyond the front of the machine, serves as a horizontal

guide and support to the forward end of the magazine, so that the attendant may conveniently draw the magazine forward from the machine. During its forward movement the rear end and a portion of the weight will be supported by the base-frame *a*, while the remainder will be supported by the front of the frame *H*. In order to further facilitate the removal and replacement of the magazine, I propose to provide the same on the under side midway of its length, or thereabout, with depending hooks *h*², which will encounter the cross-bar *h* and sustain or suspend the magazine as it is tipped over to a vertical position, in the manner indicated in dotted lines in Fig. 2. When thus supported, it may be conveniently grasped at the two sides and moved without difficulty.

In applying the magazine it is first supported on the bar *h*, then tipped backward and pushed upward and rearward to its final position, after which the frame *H* is pushed rearward, allowing the forward end of the magazine to fall to its operative position on the base-frame *a*.

In order to prevent the magazine from passing forward prematurely when its forward end is raised and to insure its proper location in the machine, I provide it near the rear end with one or more transverse projections *b*, adapted to seat themselves in corresponding notches in the frame *a*.

It will of course be understood that before the magazine is moved from its operative position the matrices will be locked therein to prevent their accidental escape. This may be effected by the insertion of a bar *M* transversely through the magazine in a position to engage the ears of the matrices, or by a rolling or rocking bar mounted permanently in the magazine, or by other means, various devices for this purpose being already known in the art.

In order to guide the magazine accurately to its place and to prevent it from shifting laterally during its movement to and from the operative position, I propose to provide longitudinal guides of any suitable character—such, for example, as a longitudinal rib or ribs *N* on the under side of the magazine, which travel and seat themselves in longitudinal grooves *O*, formed in the upper face of the frame *a*, as shown in Figs. 4 and 5 and in dotted lines in Fig. 2.

While I prefer to fix the escapement-bar on the main frame, it is to be understood that it may be fixed to and form a forward continuation of the magazine, as is usual in commercial linotypes of the present day, the escapements being in such case removed with the magazine.

The essential feature of my invention consists in lifting the forward end of the magazine and supporting the same during its forward-and-backward movement; but it is to

be understood that the details may be variously modified without departing from my invention.

In Fig. 6 I have shown a modified or alternative form, in which the main frame, the magazine, and other parts, except the lifting devices, are identical with those in the preceding figure. In place of the sliding frame *H*, I provide a transverse lifting rod or roll *H'*, carried by crank-arms *h*⁴ on opposite ends of a rock-shaft *h*⁵, extended through the base-frame *a* from side to side. The rod *H'* lies normally beneath the magazine, and one of the supporting-arms *h*⁴ is fashioned into a handle *h*⁶. When this handle is pulled forward, the effect is to lift the rod *H'*, causing it in turn to lift and sustain the end of the magazine, as shown in dotted lines. The magazine thus raised may be readily drawn forward and removed from the machine.

It is to be noted that my invention has reference particularly to that class of machines in which the heavy magazine is arranged at the top in an inclined position and in such relation to the other parts that it can be removed only in an endwise direction at the front of the machine. The parts herein shown and claimed are specially designed to lift a magazine of this character clear of the cooperating parts at its forward end and to give it support while it is being withdrawn from the machine. A clear distinction is to be drawn between a machine in which the magazine is thus removed at the front and those machines in which vertical magazines are removed edgewise horizontally from one side.

I believe myself to be the first to construct a machine in which the magazine is removable endwise in a forward direction, and in which there also exists means for mechanically lifting and sustaining the forward end of the magazine during its removal. I believe also I am the first to combine with the magazine removable in a forward direction means for suspending the same in front of the machine after it has been drawn forward from the operative position preparatory to its removal.

Having thus described my invention, what I claim is—

1. In a linotype-machine, the combination of a main frame, an inclined magazine removable endwise at the front of the machine, and means for mechanically lifting the forward end of the magazine and sustaining it during its removal and replacement clear of the adjacent parts at the front of the machine.

2. In a linotype-machine, the combination of a main frame, an escapement mechanism fixed thereon, a magazine sustained on the frame in operative relation to the escapement mechanism and removable endwise at the front of the machine, and mechanism for raising the magazine and sustaining the same

clear of the escapement mechanism during its removal.

3. In a linotype-machine, the combination of a main frame, an inclined magazine mounted thereon and removable endwise at the front of the machine, and a support movable forward beyond the magazine and adapted to raise the same and sustain it during its removal.

4. In a linotype-machine, a main frame, an inclined magazine removably mounted thereon, magazine-supports adapted to be advanced to the front of the machine, and means for suspending the magazine thereon.

5. The combination of the main frame and the base-frame *a* thereon, the removable magazine, and the sliding frame *H*.

6. The combination of the main frame and secondary frame *a* thereon, the forwardly-sliding frame *H*, and the removable magazine provided with suspending means to engage the frame *H*.

7. In a linotype-machine, the main frame, the inclined frame *a* thereon, the magazine removable in a forward direction, the movable support for the forward end of the magazine, and means, such as projections *b*, to prevent accidental movement of the magazine endwise.

8. In a linotype-machine and in combination with a supporting-frame *a*, a magazine *B* seated thereon and removable endwise therefrom at the front, and longitudinally-guiding means substantially as described to prevent lateral movement of the magazine during its removal and replacement.

In testimony whereof I hereunto set my hand, this 1st day of June, 1905, in the presence of two attesting witnesses.

PHILIP T. DODGE.

Witnesses:

K. L. BRENNAN,
WALTER MOBLARD