

(No Model.)

2 Sheets—Sheet 1.

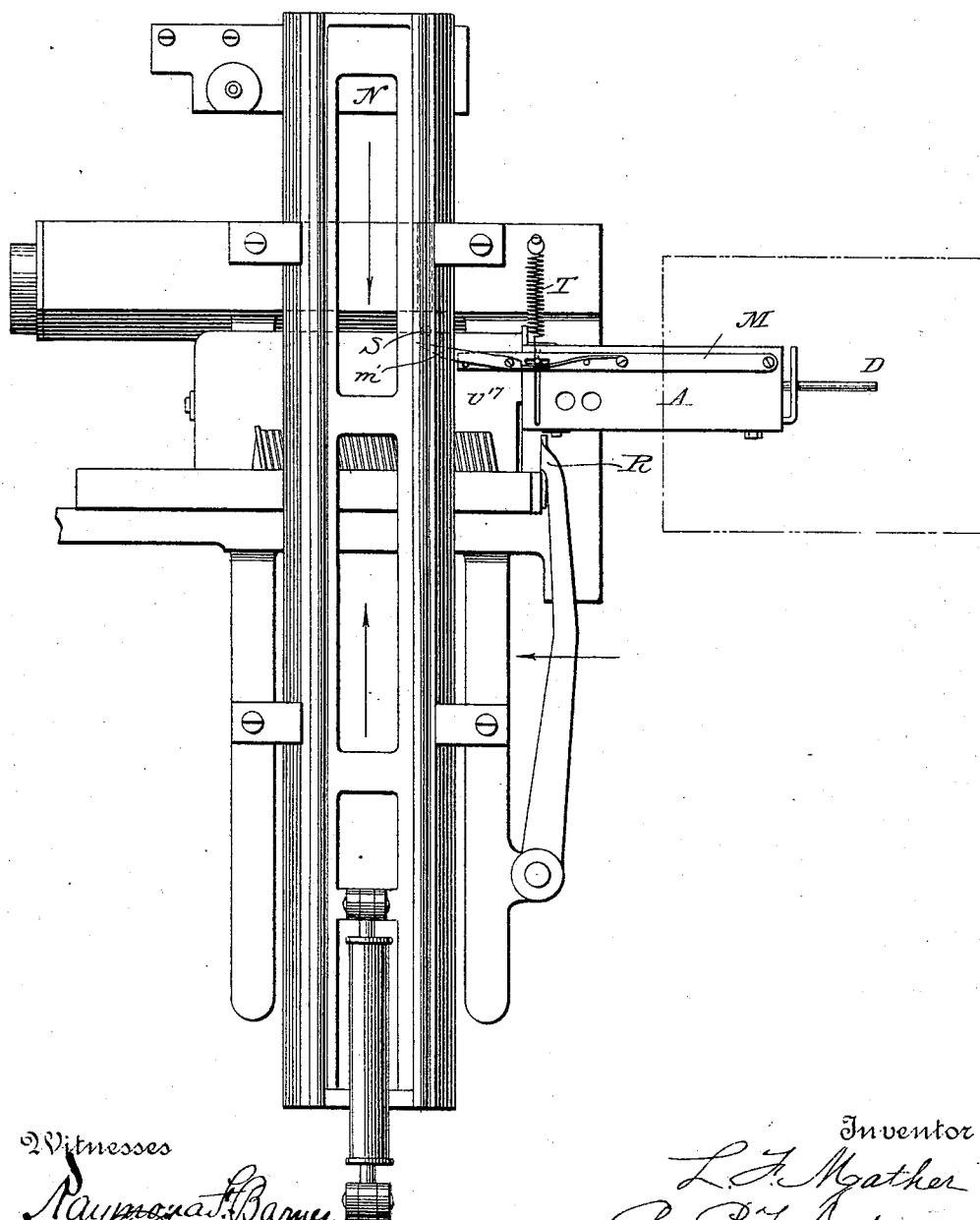
L. F. MATHER.

LEADING MECHANISM FOR LINOTYPE MACHINES.

No. 539,992.

Patented May 28, 1895.

Fig. 1.



Witnesses

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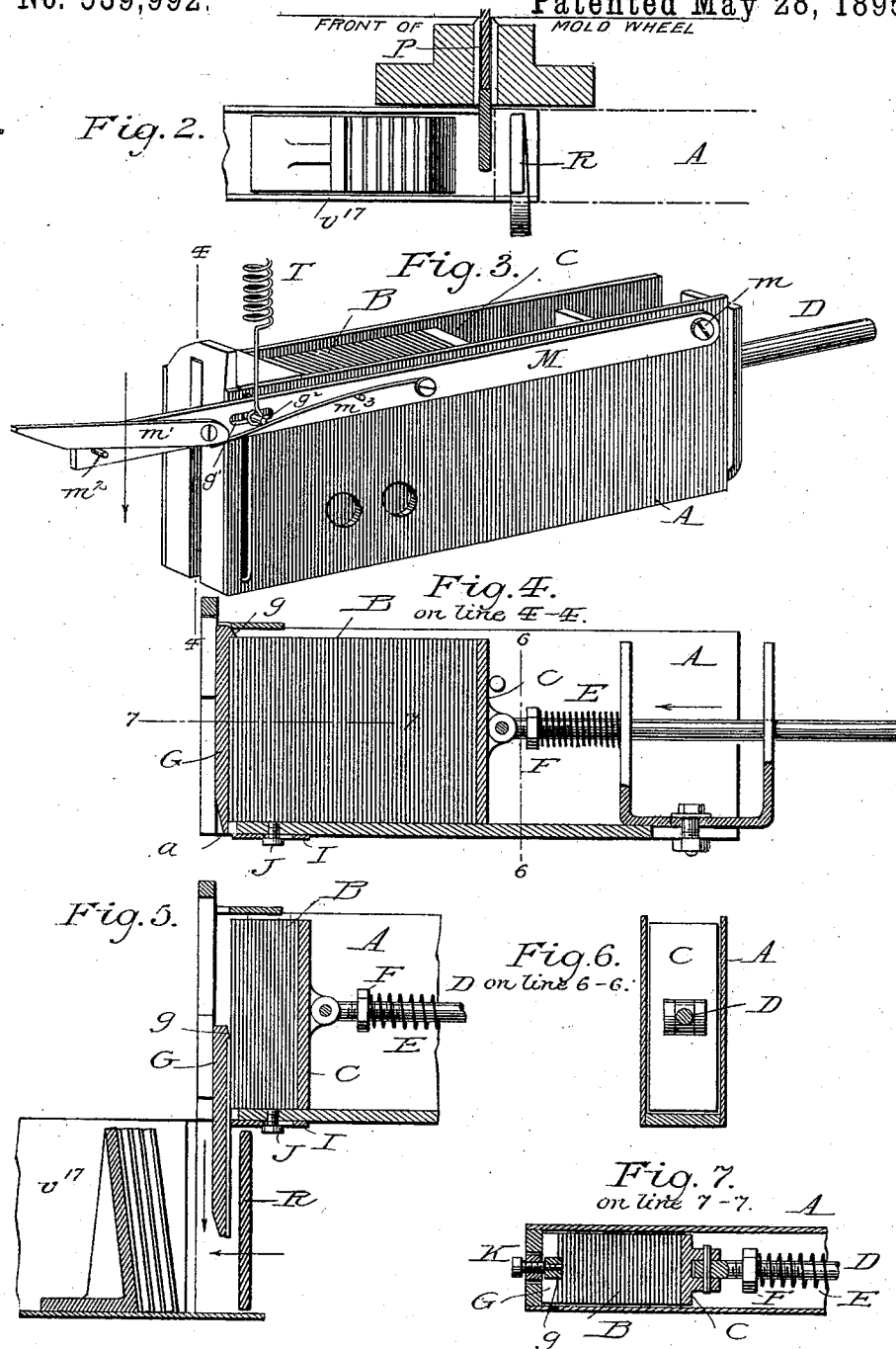
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UNITED STATES PATENT OFFICE.

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LEADING MECHANISM FOR LINOTYPE-MACHINES.

SPECIFICATION forming part of Letters Patent No. 539,992, dated May 28, 1895.

Application filed June 3, 1892. Serial No. 435,388. (No model.)

To all whom it may concern:

Be it known that I, LEWIS FREDK. MATHER, of Brooklyn, county of Kings, and State of New York, have invented a new and useful Improvement in Leading Mechanisms for Linotype-Machines, &c., of which the following is a specification.

This invention has reference to an attachment for what are now known in the art as linotype machines, such, for example, as that represented in Letters Patent of the United States No. 436,532, issued September 16, 1890, to Ottmar Mergenthaler. These machines, being operated by finger keys, produce and assemble side by side type metal bars or slugs, each bearing on one edge the characters to print an entire line, and hence known as linotypes. In making use of these linotypes it is frequently desirable to lead the printed matter; that is to say, to introduce "leads" between them for the purpose of increasing the distance between the lines of print, in the same manner and with the same effect that ordinary printers' type are leaded. Up to the present time it has been the custom to introduce the leads between the finished linotypes, after they are removed from the machine.

The objects of my invention are to avoid the labor and time required for the leading operation and to provide means whereby the leads may be automatically introduced between the linotypes, in the machine which produces them.

To this end the invention consists broadly in the combination with mechanism for delivering or for forming and delivering linotypes, a secondary mechanism whereby the leads, stored in a galley or holder, are automatically introduced between the successive linotypes as hereinafter more fully explained. It will be understood by the skilled mechanic that the details of the mechanism to this end may be constructed in various forms the equivalent of that herein shown, without departing from the limits of the invention.

I have represented the improvement as applied in its preferred form, to a machine such as shown in the Mergenthaler patent above mentioned, to which reference may be had

for a detailed description of those parts which are not shown in the accompanying drawings.

The drawings are limited to such parts of the machine as are immediately associated with my invention.

Figure 1 is a front elevation of the vise-frame of a Mergenthaler machine, showing more particularly the galley to receive the linotypes and means for assembling the linotypes therein, together with my improved attachment. Fig. 2 is a horizontal cross-section on the line 2 2 of the preceding figure, showing more particularly the manner in which the successive linotypes are driven forward from the mold into the galley. Fig. 3 is a perspective view of the leading device detached. Fig. 4 is a vertical longitudinal section through my attachment from right to left on the line 4 4 of Figs. 2, 3, &c. Fig. 5 is a longitudinal-vertical section through one end of the attachment in the act of delivering a lead into the galley beneath. Fig. 6 is a cross-section on the line 6 6 of Fig. 4. Fig. 7 is a horizontal section on the line 7 7 of Fig. 4.

I will first describe the construction of my attachment, and thereafter its mode of action in connection with the machine.

Referring to Figs. 2 to 7, A represents a metallic box or holder, open at the top and adapted to receive a series of ordinary printers' leads B, standing on end one behind another. This box is closed at the two ends but is provided near the front end with a bottom opening *a*, adapted to permit a single lead at a time to pass down endwise therethrough. Within the box there is mounted a follower plate C, attached to the forward end of a horizontal sliding rod D, and urged constantly forward by a spring E, encircling the rod and acting against an adjustable nut or collar F thereon. This follower device presses the column of leads constantly forward in a horizontal direction, so that the foremost lead rests against the vertical wall at the front end of the box and so that the column of leads is advanced step by step as the successive leads are delivered through the bottom opening.

G is a slide mounted to move vertically in the front end of the box, in advance of the

column of leads. It is arranged to slide downward through the bottom and is provided at the upper end with a lip *g*, which engages, when the slide is in an elevated position, over the upper end of the forward lead. When the slide is carried downward, the lip carries the lead before it through the bottom opening *a*, until it is finally delivered from the box, the next lead in the series being supported by the bottom of the box so that it cannot escape. After the delivery of the first lead, the slide rises until its lip is above the top of the next lead, whereupon the column of leads is pushed forward by the spring, until the second lead, now at the front of the column, is in position to be discharged in its turn, as shown in Fig. 4. This action is repeated until all of the leads are discharged. The opening at the bottom is made of such size that under ordinary circumstances it will permit the passage of a single standard lead only, and in like manner the lip *g* is made of suitable width to engage and deliver only a single lead. In order, however, to admit of the device being adjusted to deliver leads of different thicknesses or to deliver two or more leads at one time, when the print is to be "double leaded," I propose to provide the box at the bottom with an adjustable throat of any suitable character, such for instance, as the adjustable plate *I*, slotted and secured by a screw *J* as shown in Figs. 4 and 5, or equivalent device, which will admit of its being moved endwise to vary the size of the delivery opening. The lip at the top of the plate may also be made adjustable in like manner, to engage two or more leads. One form of adjustment is shown in Fig. 7, the lip *g* being made in a separate piece and attached to the forward end of an adjusting screw *K*, mounted in the slide.

For the purpose of reciprocating the slide *I*, a lever *M* is pivoted to the outside of the box at *m*, and provided near the opposite end with a slot *g'*, to receive a stud *g''*, projecting from the slide through a vertical slot in the side of the box. The end of the lever is provided with a pivoted pawl *m'*, arranged to swing freely upward, but limited in its downward motion by a stop pin *m''*, upon which it normally rests under the influence of the depressing spring *m'''*.

I will now describe the manner of applying this device to the machine. The machine is provided, as usual, with a stationary galley or receiver *v*¹⁷, having at one end an opening to receive the successive linotypes, which are projected therethrough from the rear, as shown in Fig. 2, by a reciprocating ejector blade *P*, which pushes them forward one after another from the mold, in which they are formed. The linotypes are thus delivered into the galley standing on end, in front of an arm *R*, which vibrates to the right and left, so that after each linotype enters the end

of the galley it is carried to the left, added to the end of the line, and the entire line advanced in the galley sufficiently to make room for the next linotype.

The lever *M* and the ejector slide are held normally in an elevated position by the spring *T* extending from the lever, and a pin, on the main frame. As the slide *N* descends, the pin *S*, fixed thereon for the purpose, acts on the pawl *m'*, carrying the lever *M* downward until it ejects a lead into the galley and until the pin passes the end of the pawl, after which the leading devices are restored to their original position by the spring *T*. As the slide *N* rises, its pin *S* lifts the pawl *m'* which falls thereunder in position to be again depressed when the slide next descends. As the slide *N* moves upward and downward in the operation of the machine, once during the production of each line, it will be seen that the action of the leading device is properly timed. It will be observed that the leads and the linotypes are delivered into the galley alternately and by distinct actions.

In order to stop the delivery of leads, it is only necessary to throw back the pawl *m'* until it is out of the path of the actuating pin.

I am aware that various mechanisms have been constructed for inserting leads between composed lines of type during the progress of composition, and this I do not claim. I believe myself, however, to be the first to combine with a machine for casting solid type lines or linotypes and delivering same into a galley, an automatic mechanism whereby leads may be inserted into the galley between the linotypes.

Having thus described my invention, what I claim is—

1. In a linotype machine, the combination of mechanism for forming linotypes or slugs and delivering the same into a galley or holder, a magazine or holder for leads, and an automatic mechanism for delivering said leads into the galley, between the successive linotypes, substantially as described.

2. In a linotype machine, a casting mechanism for forming linotypes, a galley or holder, mechanism for delivering the linotypes from the casting mechanism to the galley, in combination with a magazine for leads, and an automatic mechanism arranged to deliver a lead from the magazine into the galley, after the delivery of each linotype, substantially as described and shown.

3. In combination with a lead box or holder, the follower or pressure device therein, the lead-ejecting slide, its actuating lever, a yielding pawl, and a reciprocating part to act on said pawl.

4. In combination with a linotype machine having the receiving galley and a reciprocating ejector slide *N*, the lead box or magazine, a follower therein, an ejector slide for the leads, an actuating lever, a pawl, and a lift-

ing spring, said parts arranged for joint operation, substantially as described.

5 In combination with a linotype machine, including a receiving galley and means for delivering the linotypes successively thereto as formed, a lead delivering mechanism, combined with and actuated by the elevator slide N, of said machine.

In testimony whereof I hereunto set my hand, this 29th day of March, 1892, in the presence of two attesting witnesses.

LEWIS FREDK. MATHER.

Witnesses:

PHILIP T. DODGE,
G. VAN OSTRAND.