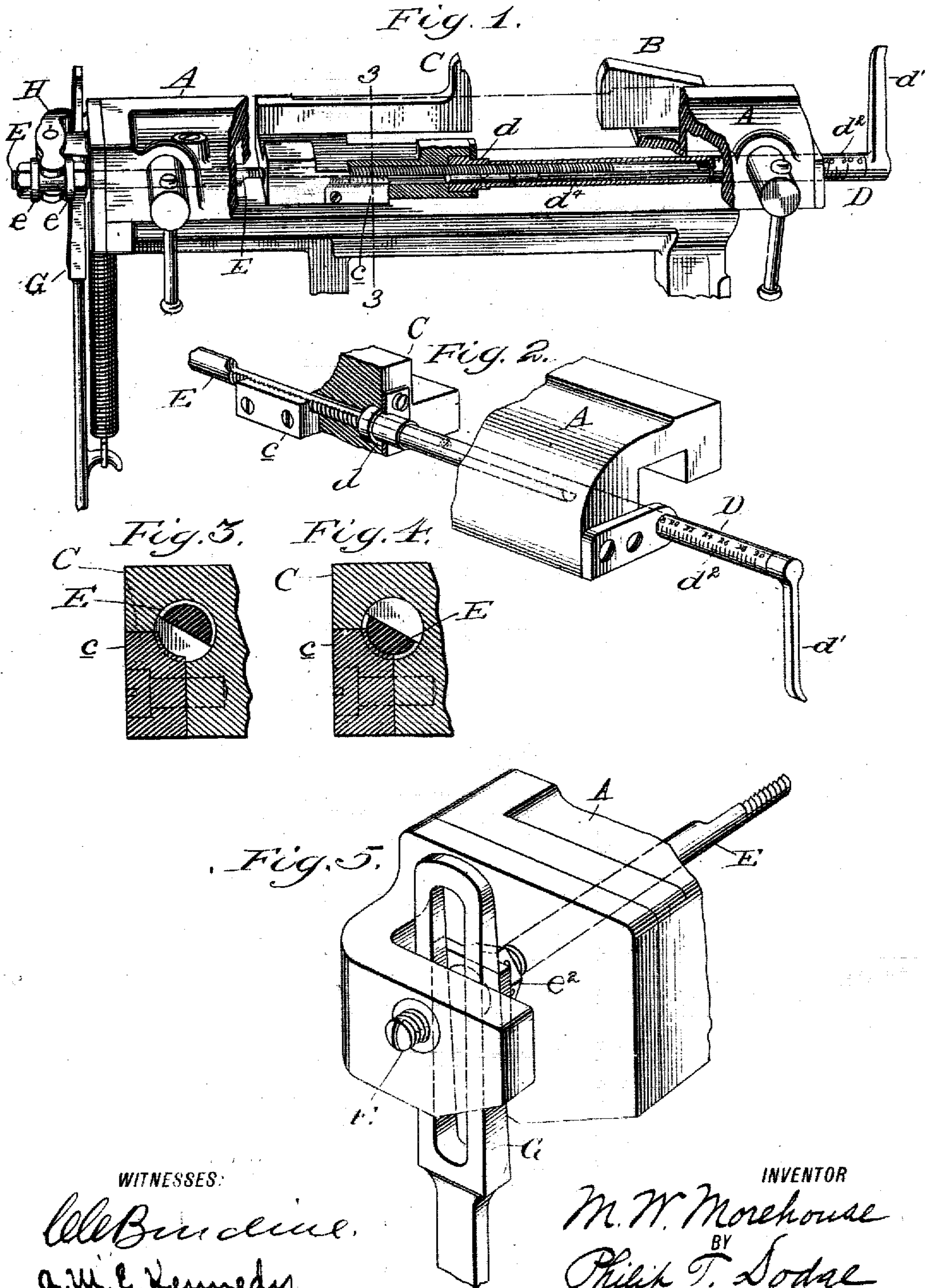


No. 826,593.

PATENTED JULY 24, 1906.

M. W. MOREHOUSE.
LINOTYPE MACHINE.
APPLICATION FILED NOV. 17, 1905.



WITNESSES:

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MELVIN W. MOREHOUSE, OF NEW YORK, N. Y., ASSIGNOR TO MERGENTHALER LINOTYPE COMPANY, A CORPORATION OF NEW YORK.

LINOTYPE-MACHINE.

No. 826,593.

Specification of Letters Patent.

Patented July 24, 1906.

Application filed November 17, 1905. Serial No. 287,796.

To all whom it may concern:

Be it known that I, MELVIN W. MOREHOUSE, of Brooklyn, New York city, 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.

This invention has reference more particularly to linotype-machines of the general organization shown in United States Letters Patent No. 436,532, wherein circulating matrices are selected and assembled in line together with expanding spacers and the line presented in front of the slotted mold expanded or justified tightly between the confining-jaws and finally after the casting action the line is lifted from the jaws to the distributing mechanism at the top of the machine.

In practice it is necessary to change frequently the length of the slugs or linotypes produced, according to the width or measure of the page or column to be printed. To this end the mold-slot in which the slugs or linotypes are cast against the matrices is made variable in length, and the matrix-confining jaws are made adjustable to correspond, so that matrix-lines of one length or another may be used at will.

The principal aim of the present invention is to enable the operator seated at the keyboard to instantly and accurately adjust the jaws to any required measure; and to this end it consists, broadly, in combining with the movable matrix-confining jaw a means within reach of the operator for locking and unlocking the jaw and moving the same to definite positions.

I have limited the accompanying drawings to those parts of a commercial Mergenthaler linotype-machine which are necessary to an understanding of my invention. As to all other parts the machine may be of any ordinary or approved construction.

Figure 1 is a perspective view looking downward against the front of the "vise-frame," so called, in which the sliding jaws are mounted with my improvement incorporated, portions being broken away to expose the internal construction. Fig. 2 is a perspective view from the front, showing the

movable jaw, its operating device, and a portion of the vise-frame. Figs. 3 and 4 are cross-sections on the line 3 3 in the preceding figures, showing the jaw locked and unlocked, respectively. Fig. 5 is a perspective view of a modified form of the jaw looking down.

Referring to the drawings, A represents the stationary portion of the main frame, commonly known as the "vise-frame" and serving mainly to support the parts by which the composed line of matrices is supported at the casting position.

B and C are two jaws mounted on the vise-frame and having vertically-opposing faces between which the line of matrices is confined.

The jaw C is mounted to slide horizontally in a guideway in the frame, so that the distance between it and the opposing jaw B may be varied according to the length of the matrix-line to be employed.

My invention has reference mainly to means for moving the jaw C.

D is a tubular rod connected at one end by a joint *d* to the jaw C and extending thence horizontally through the vise-frame to the right within convenient reach of the operator seated at the keyboard. This rod, which has a rotary motion only in relation to the jaw, is provided at the inner end with an operating arm or handle *d'* and is also provided with a series of numbered graduations *d''*, preferably representing ems and fractions of ems, which are read in connection with the end face of the vise-frame or with any suitable indicator. By means of this rod the operator is enabled to slide the jaw C endwise without rising from his seat, and by means of the graduations he is enabled to instantly determine the distance in ems between the jaw C and its companion B. In other words, he is thus enabled to set the jaw C for the measure required.

For the purpose of locking the jaw C in its adjusted position I provide a horizontal rod E, having circumferential teeth on the exterior to engage a corresponding toothed plate *c*, secured to and forming a part of the jaw C. The teeth are separated distances corresponding to the graduations on the scale in ems or fractions of ems. This admits of the jaw being locked in predetermined positions.

so that the distance between the two jaws, and the consequent length of the line, will be the exact number of ems required, the "em" being the unit of measurement in all printing operations. It is to be observed that the teeth lie at right angles to the axis of the rod or without an inclination, as in the case of screw-threads, so that when the rod is turned to lock the jaw the locking action is effected without removing the jaw from the selected position. This plate extends but partly around the rod E. The latter is flattened or cut away on one side, as shown in Figs. 2, 3, and 4, so that in turning to the positions shown in Figs. 2 and 4 its teeth will engage those of the jaw C and hold the latter in position, while, on the contrary, it will if turned to the position shown in Fig. 3 disengage from the teeth of the jaw and permit the latter to be moved endwise by the rod D, as above explained.

The end of the rod E is extended within the rod D, which slides thereover, the tube being provided on the inside with surface d^4 , which bears upon the flat surface of the rod E, so that the turning of the tube effects the turning of the toothed rod. The rod E is held firmly against end motion, and it may be connected to the frame in any manner or by any means which will permit its rotation while securing it against longitudinal movement in order that it may hold the jaw C in position. I prefer, however, to combine with the rod E means whereby a slight longitudinal movement may be effected, this for the purpose of retracting the jaw C and relieving the combined line of matrices from pressure subsequent to the casting action, so that the line, which fits tightly between the jaws, will be readily lifted out of place, as in commercial linotypes of the present day. For the purpose of thus moving the rod I employ a vertically-reciprocating wedge G, seated against the vise-frame A, acting under one end of the lever H, pivoted to said frame, and engaging at the opposite end between nuts or collars $e e$ on the end of the rod E.

When the wedge is lifted, the jaw C is advanced to its operative position. When the wedge is lowered, the jaw is permitted to retreat slightly.

The wedge instead of being arranged with the lever H may be mounted, as in Fig. 5, to bear directly against the collar e^2 on the end of the rod E.

The wedge may be actuated by any suitable automatic mechanism—for example, the mechanism now used in linotype-machines for actuating the vise-closing screw.

The operation of the jaw-adjusting device is as follows: With the parts in position shown in Fig. 2 the teeth of the rod E engage the toothed plate c of the jaw C, and as the

rod is secured against end motion the jaw is thus supported firmly against the pressure of the matrix-line. The scale on the end of the rod indicates to the operator the distance between the jaws, or, in other words, the measure for which the machine is adjusted. To change this measure, the operator turns the handle d' upward, thereby rotating the tube D, which in turn rotates the rod E until its teeth disengage from the jaw, as shown in Fig. 3. The operator then urges the tube D, carrying the jaw C, endwise in one direction or another until the scale indicates the desired position of the jaw, whereupon the handle d' is turned downward to its original position, thereby rotating tube D and causing it in turn to rotate rod E and cause the engaging of its circular locking-teeth with the plate c .

I believe myself to be the first person to combine with the movable jaw of a linotype-machine means within reach of the operator whereby it may be both moved and locked and means whereby it may be set at a predetermined position—in other words, for a given measure.

It is manifest that the details of construction may be widely modified without passing beyond the scope of my invention.

Having described my invention, what I claim is—

1. In a linotype-machine, a movable jaw to confine the matrix-line, in combination with a reciprocating device for instantaneously moving the jaw to and fro and locking it in predetermined positions, whereby the jaw may be adjusted to and locked in the required position by one hand at a single operation.
2. In a linotype-machine the combination of a jaw to confine the matrix-line, means for moving the same to different positions according to the length of line demanded, and means for locking the jaw actuated by the moving means.
3. In a linotype-machine, and in combination with an opposing jaw B, the sliding jaw C, a rod for moving said jaw, and means actuated by the rotation of the rod to lock the jaw in the position to which it is adjusted.
4. The sliding toothed jaw, the rotary rod having teeth at right angles to its axis to lock the same and the sliding and rotating rod acting to move the jaw and also turn the locking-rod.
5. In a linotype-machine, the combination of the sliding matrix-confining jaw and the rotatable rod, having teeth at right angles to its axis adapted to engage and hold the jaw, whereby the jaw may be locked in definite predetermined positions to secure uniformity in the length of the type-lines.
6. In a linotype-machine and in combination with the opposing jaw, the sliding jaw, the rotary rod adapted to lock and unlock the

jaw and means for causing a limited end motion of the rod.

7. In combination with the jaw C, the sliding and rotating rod D connected thereto, the toothed rod E rotated by rod D and engaging the jaw to lock it in position, and means substantially as shown for effecting longitudinal adjustment of the toothed rod E.

In testimony whereof I hereunto set my hand, this 13th day of November, 1905, in the presence of two attesting witnesses.

MELVIN W. MOREHOUSE.

Witnesses:

ISAAC O. HORTON,

THOMAS A. CONNOLLY.