2 Sheets—Sheet 1.

W. T. MORGANS.

MACHINE FOR PREPARING STEREOTYPE MATRICES.

No. 108,813. Patented Nov. 1. 1870

Fig. 1.
Plan

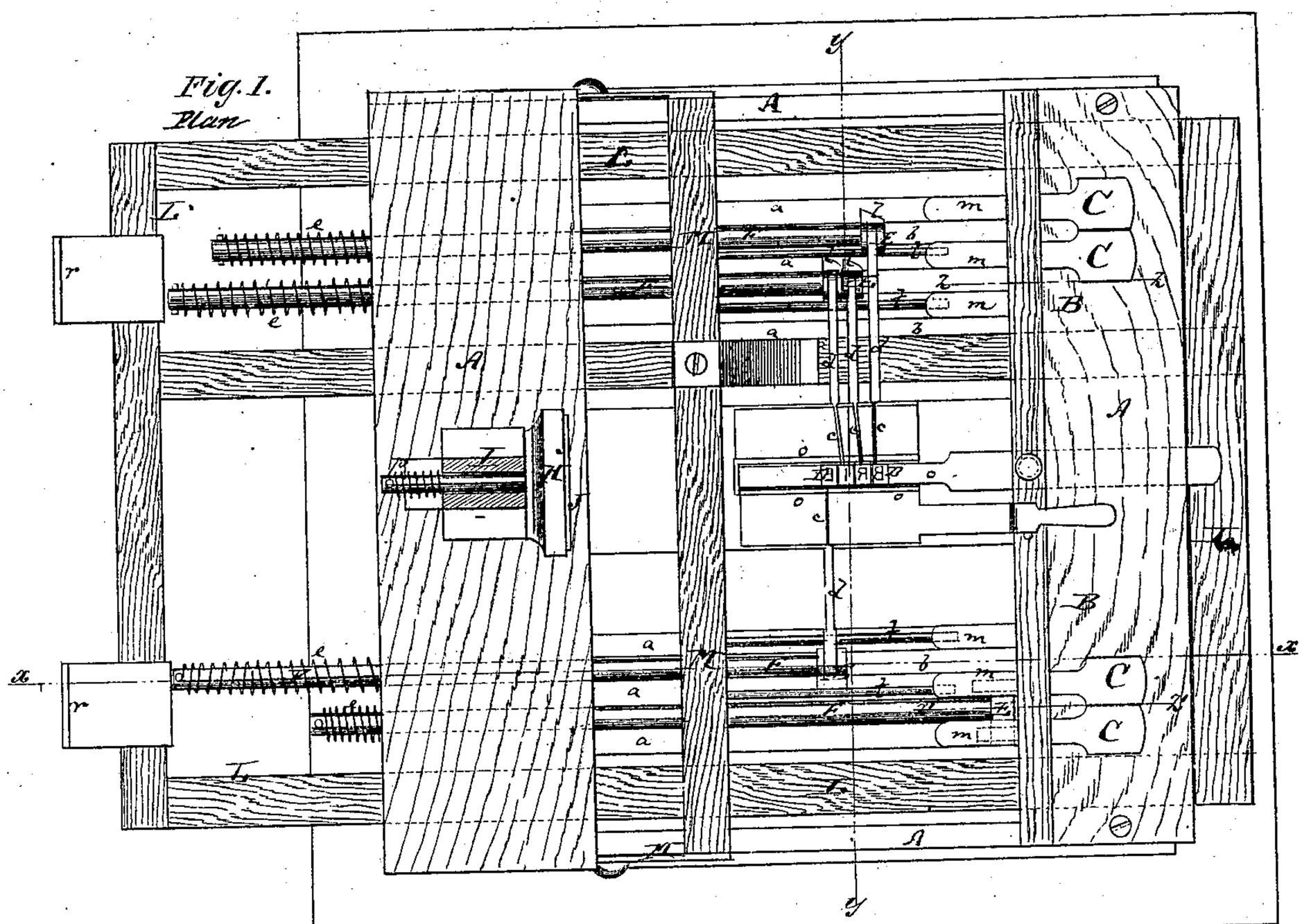
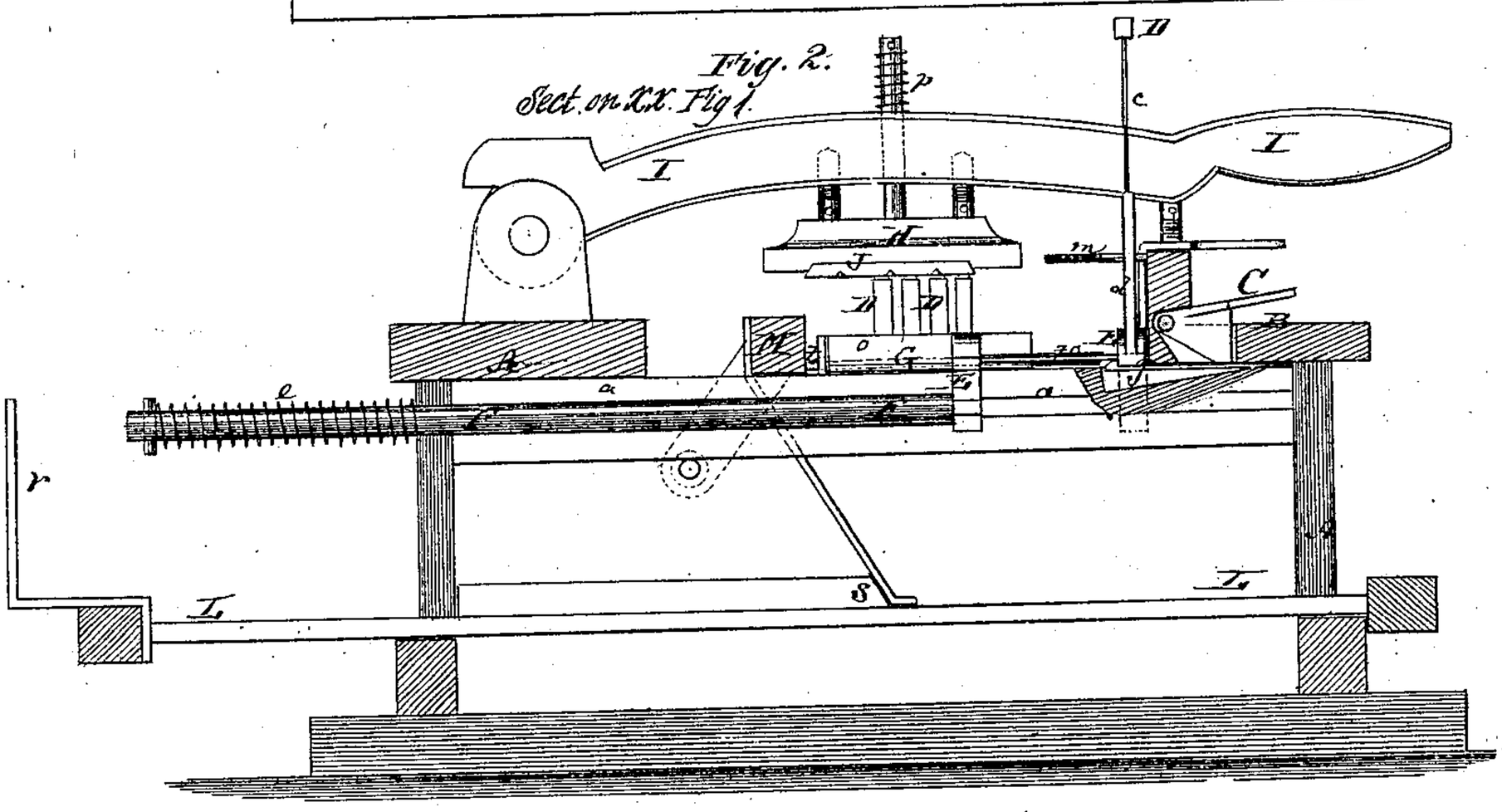


Fig. 2.
Section xx. Fig 1.



Witnesses:
Gustave Dieterich
S. S. Mabee

Inventor:
Wm T. Morgans
Per Munn & Co
Attorneys.

2 Sheets—Sheet 2.

W. T. MORGANS.

MACHINE FOR PREPARING STEREOTYPE MATRICES.

No. 108,813. Patented Nov. 1, 1870.

Fig. 3.
Section Y. Y. Fig 1.

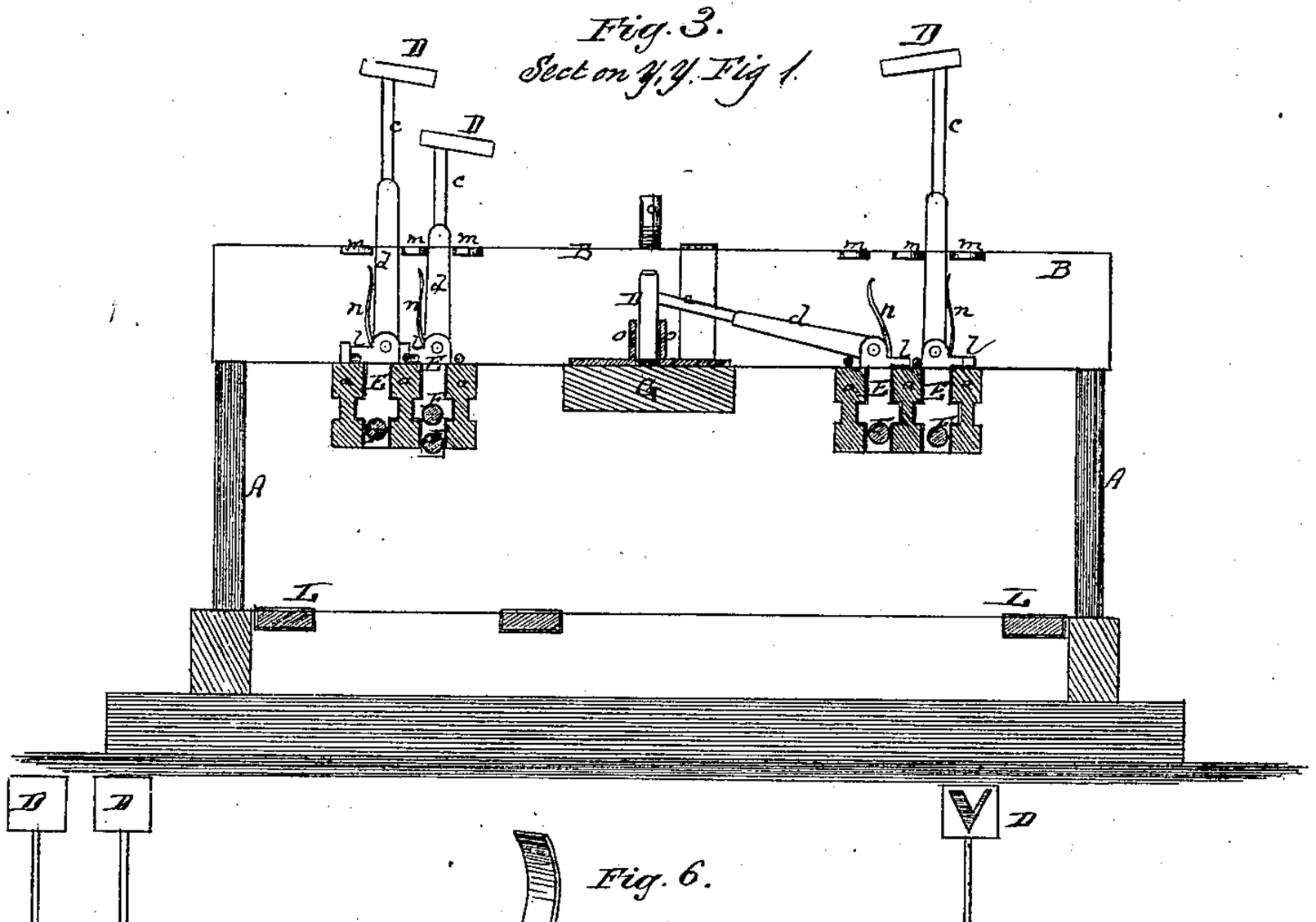


Fig. 6.

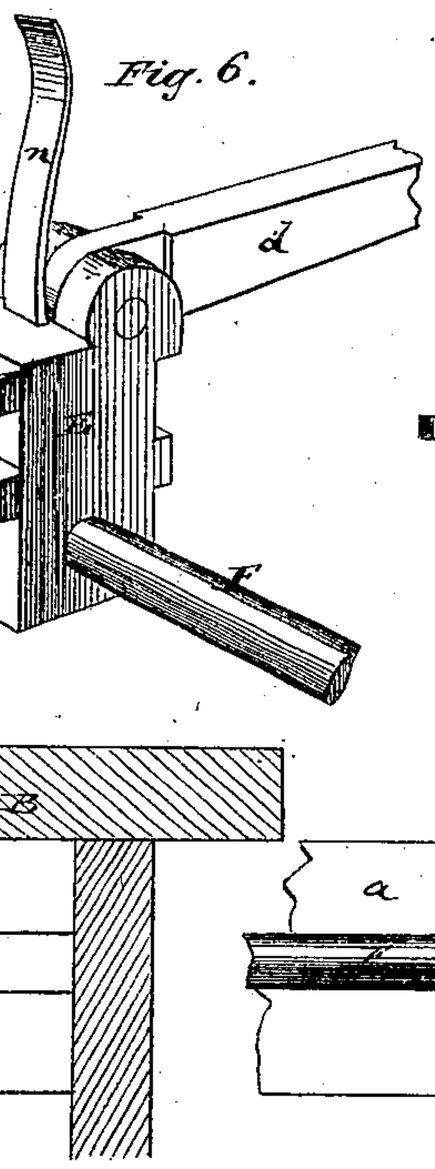


Fig. 4.
Enlarged

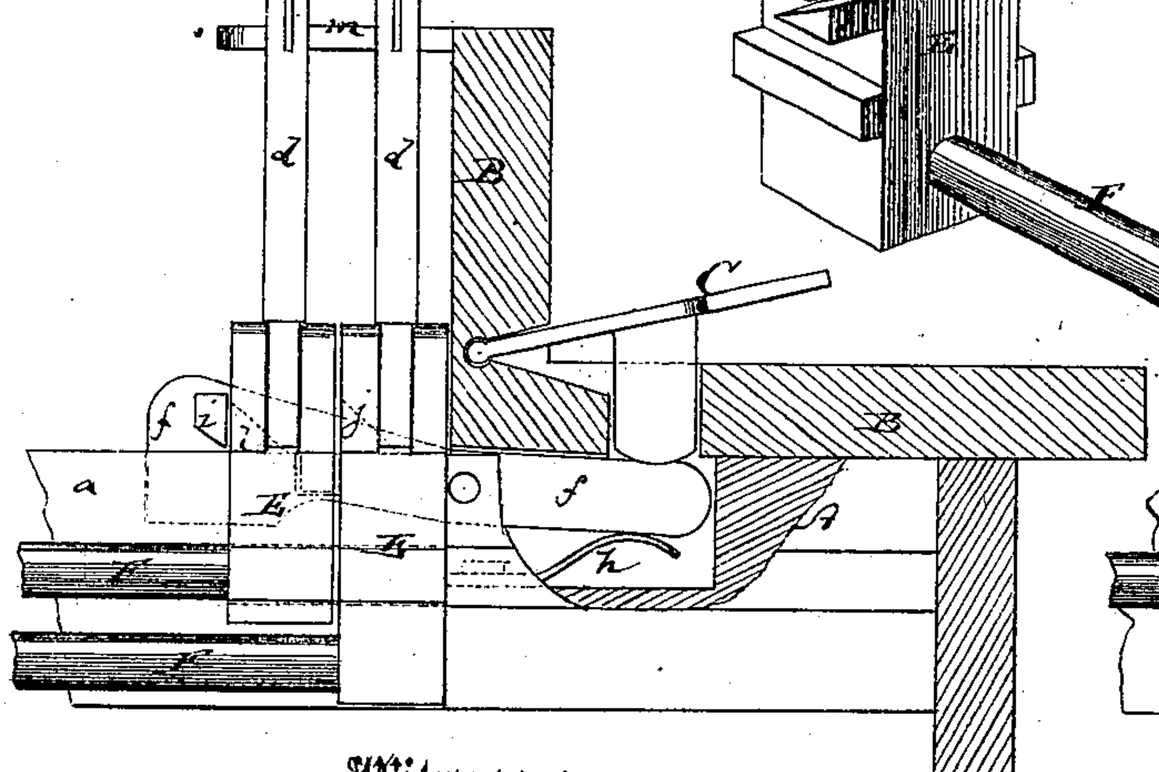
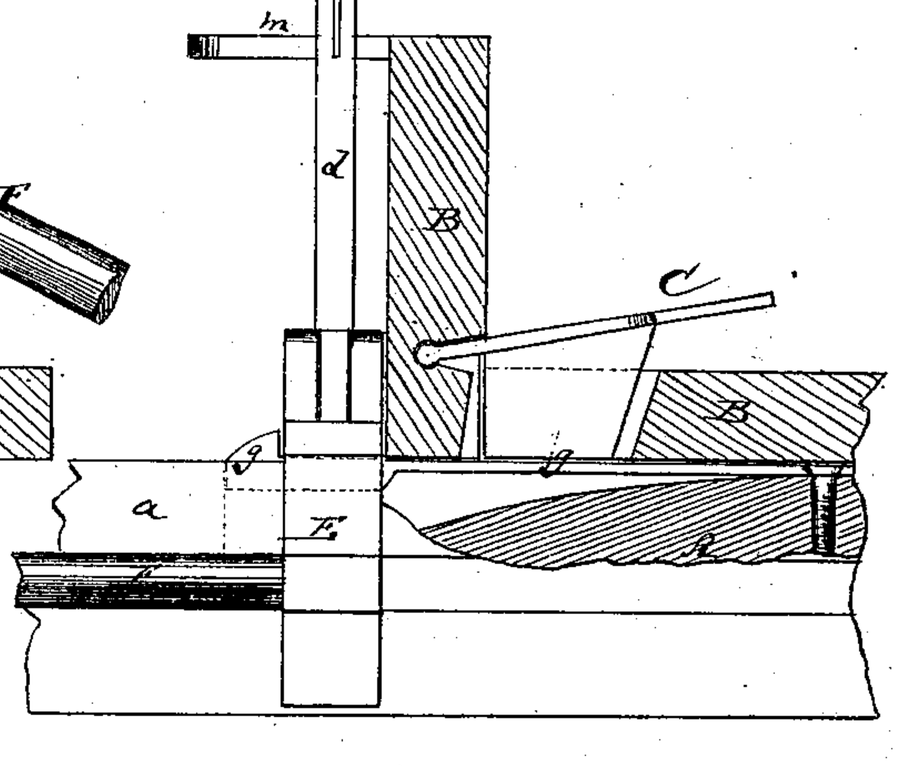


Fig. 5.
Enlarged



Witnesses:

Gustave Dieterich
D. S. Mabee

Inventor:
Wm. T. Morgans
Per Munn & Co
Attorneys.

United States Patent Office.

WILLIAM T. MORGANS, OF YOUNGSVILLE, ASSIGNOR TO HIMSELF AND ISAAC ANDERSON, OF JEFFERSONVILLE, NEW YORK.

Letters Patent No. 108,813, dated November 1, 1870.

IMPROVEMENT IN MACHINES FOR PREPARING STEREOTYPE-MATRICES.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, WILLIAM T. MORGANS, of Youngsville, in the county of Sullivan and State of New York, have invented a new and Improved Type-setting and Distributing-Machine; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing forming part of this specification.

Figure 1 represents a plan or top view of my improved type-setting and distributing-machine.

Figure 2 is a vertical longitudinal section of the same taken on the plane of the line *x x*, fig. 1.

Figure 3 is a vertical transverse section of the same taken on the plane of the line *y y*, fig. 1.

Figures 4 and 5 are detail vertical sections on an enlarged scale of the keys and type-holders.

Figure 6 is a detail perspective view of a slide which holds a pivoted type-holder.

Similar letters of reference indicate corresponding parts.

The object of this invention is to construct a machine by means of which types or dies for printing can be set up in rows in the requisite succession by means of pivoted keys, and on which provision is made for instantly and simultaneously redistributing all the characters to their proper places by a slight motion of the distributing-frame.

The invention consists in certain improvements which will be first described in connection with all that is necessary to the full understanding thereof, and then clearly specified in the summary or claim.

A in the drawing represents the frame of my improved type-setting machine. This frame is made of suitable material, and of suitable size and shape, as best adapted to the mechanism employed.

The frame A contains a series of parallel longitudinal bars *a a*, which form between a number of parallel slots, *r*, that serve as guides and receptacles for the types and dies.

There are as many slots *b* as there are forms or characters to be used.

B is the key-board, arranged at the front end of the frame. It contains a key, C, for each set or kind of types, each key being in front and line with the slot *b* in which its types are contained.

The types D D are respectively secured by means of springs *c* to bars *d*, that are pivoted to slides E.

The slides E travel in the slots *b* on the rails or guides *a a*.

Each slide E is connected with a rod or bar, F, which carries, or is secured to, a spring, *e*, as shown.

The spring *e* has the tendency to carry the rod F and its type away from the key.

For the several types in one slot *b*, the respective rods F are arranged one below the other, so as to clear each other.

Each key C is connected with a pivoted lever, *f*, as in fig. 4, or with a spring-catch, *g*, as in fig. 5.

The lever *f*, if used, has a spring, *h*, for throwing its rear end down and for raising the key.

Each lever *f* has two projecting ears, *i* and *j*. The ear *i*, which is nearest the rear end of the lever *f*, serves to hold the first or inner slide E, by catching against a wedge-shaped ear, *l*, that projects from the lever *f*.

When, by pressing upon a key, C, the ear *i* is raised to clear the wedge *l* of the first slide, said slide will be released, so that the spring *e* can carry it backward or away from the key. The next slide to the one thus liberated will, while the first is drawn out by the spring *e*, be arrested by the catch *j*, and is then, after the key C is again swung up, carried against the catch *i* to be next in order when the key is touched.

While held in contact with the keys C, the arms *d*, with their springs *c*, are held in a vertical position by means of ears *m m* that project from the key-board. When, however, a slide is carried off by a spring, *e*, its arm *d* will be drawn clear of the ears *m*, and a spring, *n*, secured to the slide, will then cause the type with its arm to swing toward the printing-bed G of the machine.

The length of the arms *d* and springs *c* of the several rows of type is so regulated that the types will all be in a row when they fall upon the bed G, as indicated in fig. 1. On this printing-bed is arranged a longitudinal groove or receptacle, formed by fixed or adjustable plates or shoulders *o o*, to press the type compactly together and hold them in lines. Into this channel the types drop, so as to stand in a vertical position therein, their arms *d* being meanwhile horizontal.

The printing-surface of each type may be on the upper or lower end. I have represented it to be on the upper end.

The springs *e* draw the several types close together and the springs *c* take off the shock or jar, making the motion or disposition of types in the row quite free from unnecessary friction.

The printing is done upon a plate or block, H, which is secured to a swinging lever, I, so as to be adjustable thereon, for which purpose springs *p* are applied to the connection of said block. Over this block can be laid the paper or other material to be printed upon, and then the lever is swung down upon the types on G to obtain the impression.

When dies are used in place of the types, I insert a soft-metal plate, J, in a groove of the block H. The dies will produce the desired impressions in the surface of said plate.

The plate J m have parallel grooves, as indicated in fig. 2, for spacing the several lines of printing.

In the lower part of the frame A is arranged a sliding frame, L, which carries at its rear end projecting ears *r r*, by means of which all the rods F can, with their slides be forced forward.

After the requisite impressions have been made by the types or dies, the frame L is drawn forward for replacing of the types in their slots. When thus drawn forward, an incline *s* on L will first swing a pivoted frame, M, which has a series of projecting fingers *t t*. These fingers elevate the arms *d* into a vertical position. Then the frame L carries the slides forward, and locks them again to their keys. The fingers *t* keep the arms *d* upright until the same are held by the ears *m*.

The slides E never leave their slots, and need thus not be specially collected for distribution. By the mere forward motion of the frame L, the types or dies will, herefore, be all simultaneously distributed.

Having thus described my invention,

I claim as new and desire to secure by Letters Patnt—

1. The printing-types or dies D, secured to swinging arms or holders which are attached to slides as set forth.

2. The levers *f*, having ears *i j*, combined with the wedge-shaped projections on slides E, as and for the purpose specified.

3. The rods F and springs *e*, applied to the type-slides, for the purpose of carrying the same to the printing-block, in the manner specified.

4. The ears *m m*, arranged on the frame for holding the type-shanks upright, as set forth.

5. The springs *u* on the slides E, for throwing the type-shanks into horizontal positions, as set forth.

6. The frame M, provided with fingers *t*, for elevating the type-shanks preparatory to distribution, substantially as herein shown and described.

7. The sliding frame L, arranged to swing the frame M, and push the rods F and slides E, substantially as herein shown and described.

WILLIAM T. MORGANS.

Witnesses:

ISAAC ANDERSON,
A. V. BRIESEN.