

(Model.)

2 Sheets—Sheet 1.

F. S. TAFT.
Machine for Cutting Printer's Leads, &c.

No. 233,894.

Patented Nov. 2, 1880.

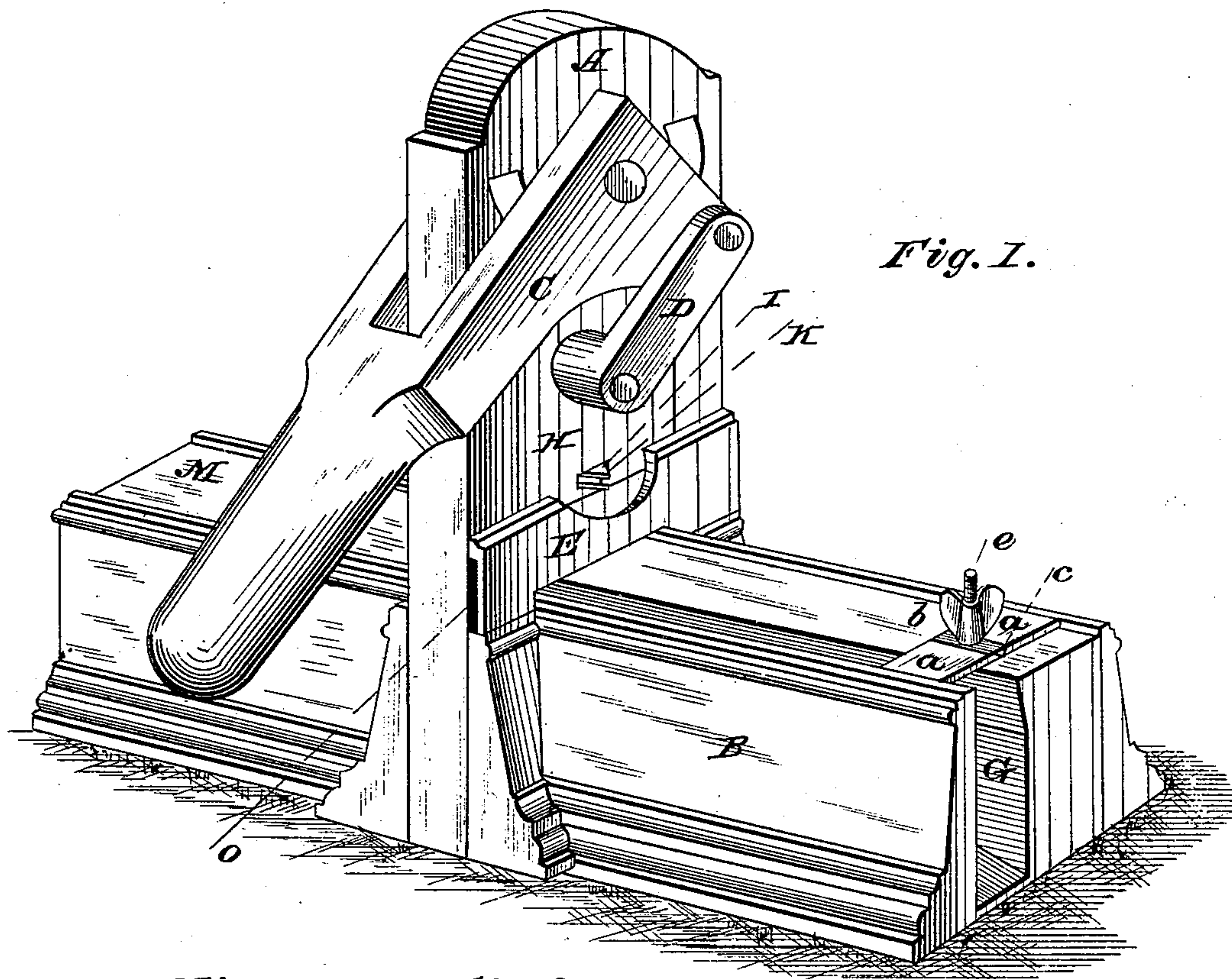


Fig. 2.

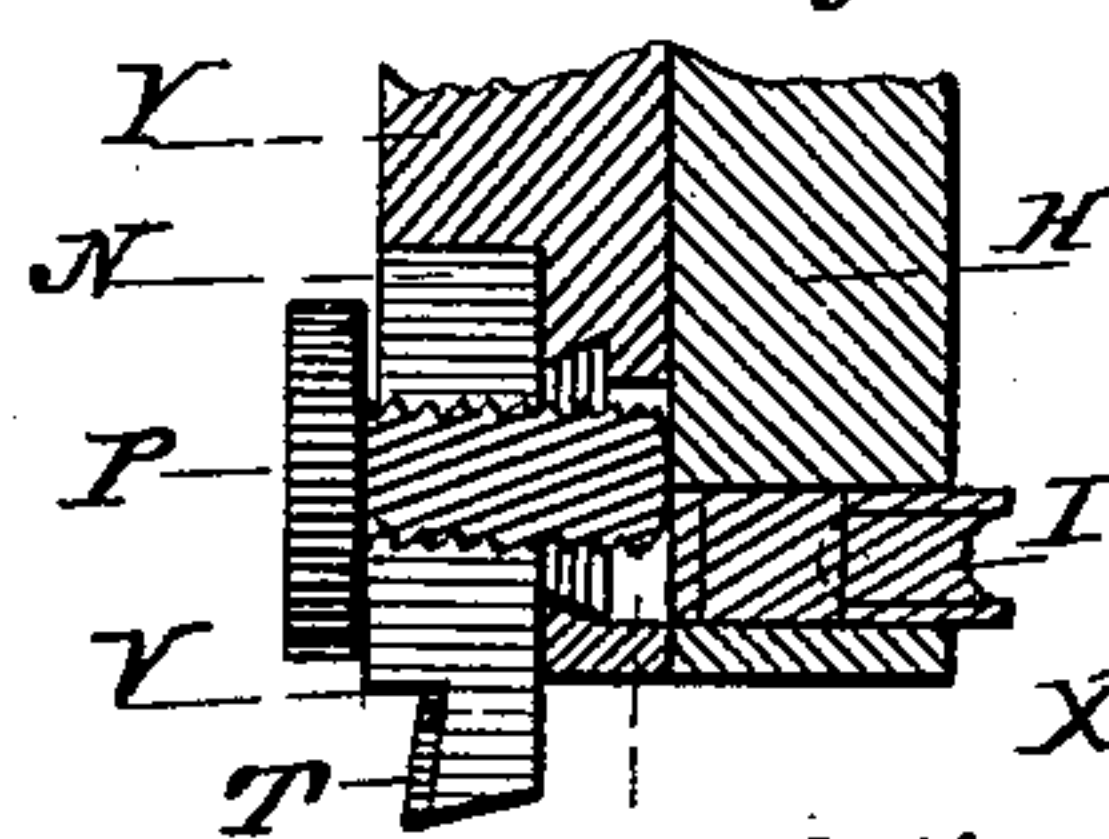
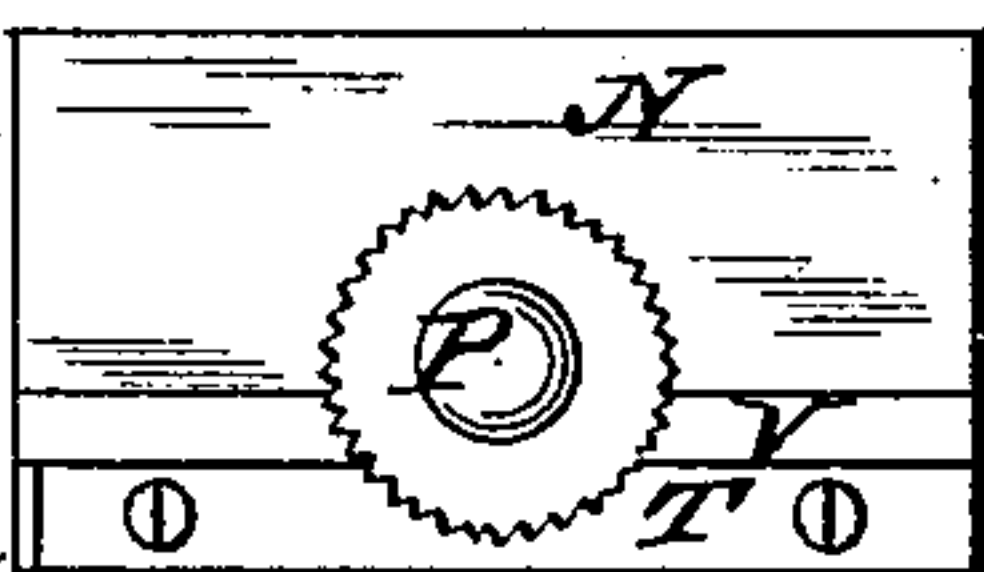


Fig. 3.



X'

Fig. 4.

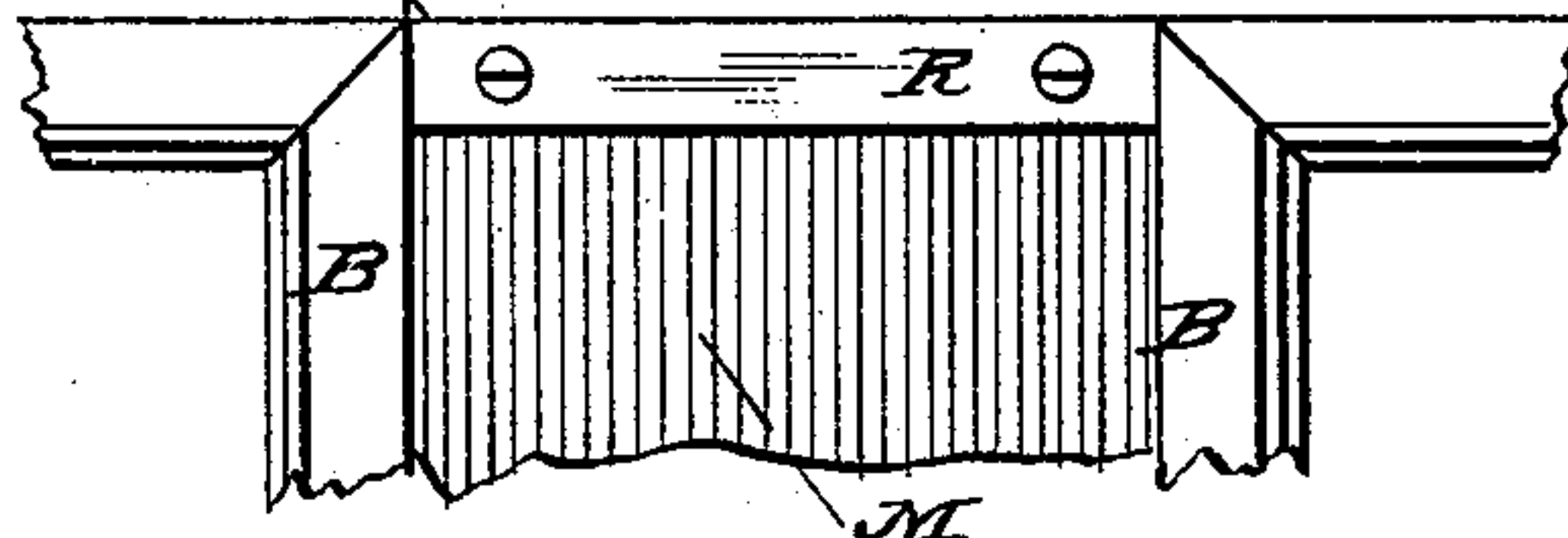


Fig. 5.

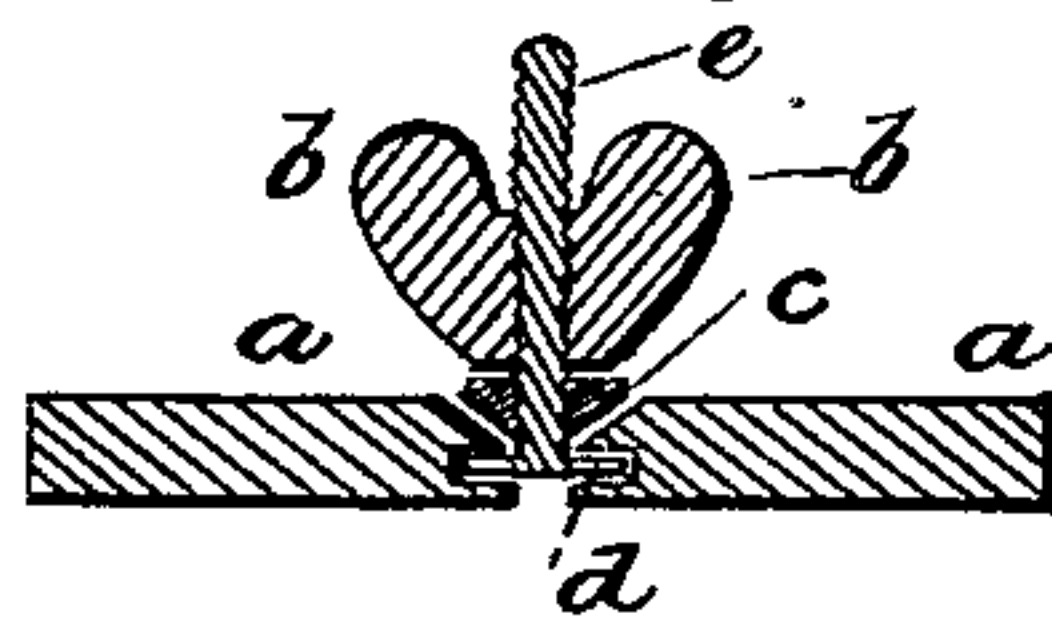


Fig. 6.

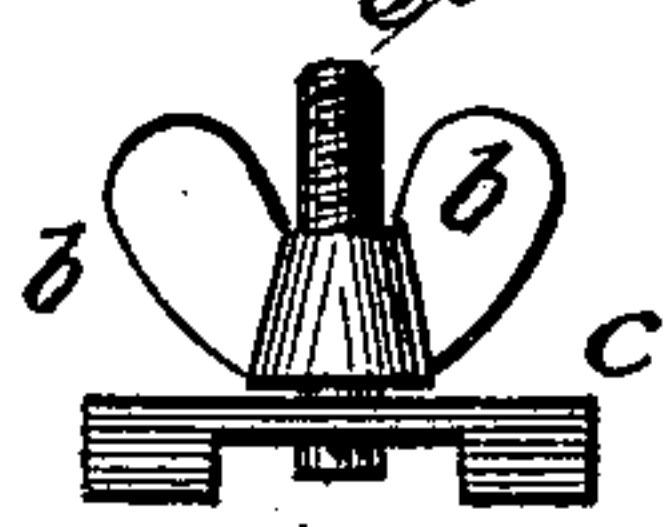


Fig. 7.

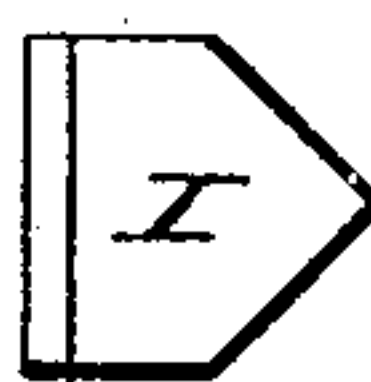


Fig. 8.

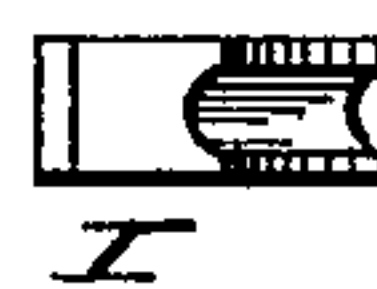


Fig. 9.

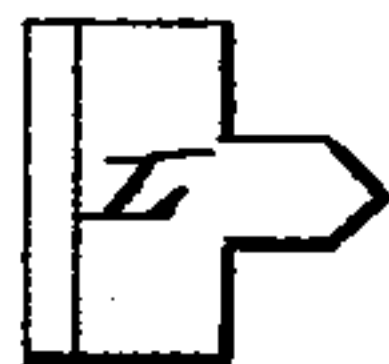
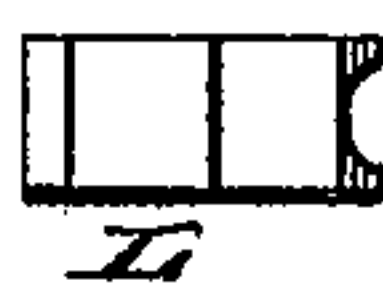


Fig. 10.



Witnesses:
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Inventor:
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(Model.)

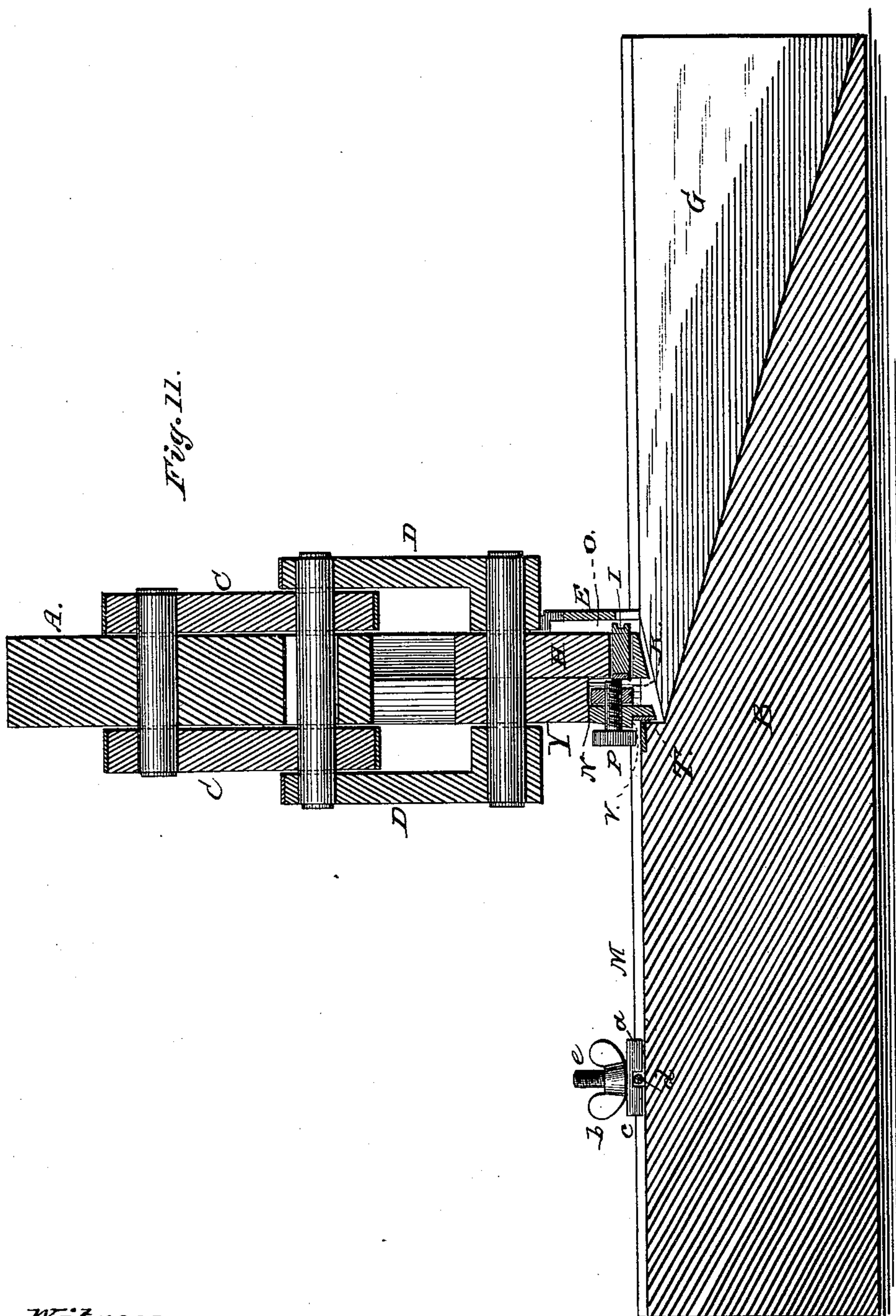
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Machine for Cutting Printer's Leads, &c.

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Fred. G. Dieterich

Inventor:
Frank S. Taft

UNITED STATES PATENT OFFICE.

FRANK S. TAFT, OF MIDDLESEX, NEW YORK, ASSIGNOR OF ONE-FOURTH
TO ALLEN V. REED, OF WASHINGTON, D. C.

MACHINE FOR CUTTING PRINTERS' LEADS, &c.

SPECIFICATION forming part of Letters Patent No. 233,894, dated November 2, 1880.

Application filed April 16, 1880. (Model.)

To all whom it may concern:

Be it known that I, FRANK S. TAFT, a citizen of the United States, residing at Middlesex, in the county of Yates and State of New York, have invented a new and useful Machine to Facilitate the Operation of Printing, of which the following is a specification.

The object of my invention is to improve machinery designed for gaging and cutting printers' leads, and for cutting, mitering, and kerning printers' rules, as will be hereinafter explained.

In the accompanying drawings, in which similar letters of reference indicate like parts, Figure 1 is a perspective of a device embodying my invention. Fig. 2 is a vertical longitudinal section of the feed-screw and mitering-tool. Fig. 3 is a plan of a portion of the opposite side of the slide shown in Fig. 1. Fig. 4 is a top view of a portion of the bed. Fig. 5 is a vertical section of the gage, and Fig. 6 is a side elevation of the same. Fig. 7 is a plan of the mitering-tool, and Fig. 8 a side elevation of the same; and Figs. 9 and 10 represent, respectively, a top view and side elevation of the cutting-tool. Fig. 11 is a vertical longitudinal section.

To a bed, B, and crossing it at right angles equidistant from either end, is attached an upright frame, A, through the center and upper part of which is a shaft supporting on either side of said frame A the two ends of a bifurcated lever, C, through the two lower ends of which is a second shaft, which traverses a semicircular slot cut through the thickness of the frame A, to the ends of which second shaft are attached two connecting-bars, D, which transmit the motion of the lever, and which are further attached to a third shaft, which passes through the slide H.

Attached to the frame A, and extending at right angles across the bed B at its junction with said frame A, is a plate, E, through the length of which is a slot, O. From the top downward, and equidistant from either end of the plate E, is a semicircular opening one-third of the breadth of said plate E.

An opening, G, extends from the center to one end of the bed B, the bottom of which is inclined to a degree corresponding to the depth of the bed.

Through the lower part of the slide H, and extending partly through its opposite half, Y, Fig. 2, extends a groove, K, into one end of which is inserted the mitering-tool I, or the cutting-tool L, as desired, the other end being occupied by the feed-screw P.

Inserted into the plate Y, which forms one-half of the slide H, is a plate, N, through which the feed-screw P passes, and to which a cutter, T, is secured. On one extremity of this cutter there is a beveled corner, X, which matches a corresponding plate, R, affixed to the channel M of the bed-plate. This plate R forms the lower cutter, and has a lip, X', so that when the rules are cut a "kern" is formed to match the beveled edge of the rule against which it is set, and thereby enables the lines to appear to meet. Two plates, *a a*, having one of their edges beveled and opposite one another, receive into the V-shaped groove thus formed a wedge-shaped rider, *c*, through the center of which is a screw, *e*, operated by a swivel, *b*, said screw being secured from turning by the pin *d*, the ends of which project into corresponding holes in the beveled sides of the plates *a a*.

The mitering-tool I is formed by cutting from a four-cornered plate two of its corners at such an angle that a point is formed in its center, said angle-lines terminating on either side of said plate at a distance backward from the point one-half the breadth of said plate, top and bottom being alike, and through the center of the thickness of the two angled sides is a semicircular groove, meeting at the junction of the two angles at the point.

The cutting-tool L is formed in like manner, except that the angles are extended only a short distance from its point backward, sufficient to produce the desired breadth of cut, the depth of the cut being limited by the shoulders, as shown in Fig. 9. All the cutting parts described are composed of steel.

The operation of the device is as follows: When leads are to be cut the gage is made stationary by turning the swivel *b* of the screw *e*, which forces the wedge or rider *c* into the groove formed by placing the two beveled sides of the plates *a a* together, thus forcing said plates outward from the center and against the sides of the channel M, leaving a

space between said gage and the stationary cutter R corresponding to the length of lead desired. The lead is then placed in the channel M, against the side nearest the operator, and slid under the cutter T until it strikes the gage. The lever C being then operated, the slide H Y descends, and the cutter T, secured to said slide, cuts the lead; the severed portion, falling into the opening G and sliding down the incline, is discharged at the lower end thereof.

In the operation of "kerning" the rule, in order to leave the lip or projection, the rule is placed in the channel M, against the side opposite to that on which the lead is placed, the gage being shifted from the right to the left end of the said channel M and fixed in position. The end of the rule to be kerned being then over the lip X', Fig. 4, the beveled corner X, on descending, then cuts out the strip, leaving the lip, and the shoulder V directly over said cutter T then strikes the rule, to flatten out the slight burr occasioned by the operation.

When rules are to be mitered the strip is first marked off and slid into the slot O in the plate E, with the marked side outward, when it will be seen that the flat side of the rule is presented to the mitering-tool I. The semi-circular opening in the plate E is for the purpose of readily introducing and removing the mitering and other tools into and from the slot K, also in order to readily adjust the lines marked on the rule to the point of the tool. The rule being in position, the feed-screw P is operated and the tool is forced against the rule, thus securing it firmly. The lever is then operated and the tool in the slot forced forward as the cutting progresses by said feed-screw P.

The double motion transmitted to the slide H Y facilitates the operation of mitering, and the tools used, being constructed on the principle described and demonstrated in Figs. 7 and 8, are double-cutting—that is to say, they cut both in ascending and descending with equal facility.

The cutting-tool L, Figs. 9 and 10, is operated in like manner; but the result is a simple severing of the rule into two or more parts.

Rules are cut of any desired angle by the use of tools of corresponding angle, constructed on the principle described, and illustrated in the accompanying drawings.

While I prefer to construct slide H Y of two detachable parts, I do not confine myself to such construction, as it may be made of one part only.

It will be seen that at one and the same operation the rules are evenly gaged and the kerns are produced on them.

What I claim, and desire to secure by Letters Patent, is—

1. In a machine for cutting, mitering, and kerning leads and rules, the combination of the bed B, having inclined opening G, and a fixed cutter-plate, R, with lip X', set at right angles to said opening at its top, with frame A, lever C, connecting-bars D, and slide H Y, substantially as shown and described.

2. The combination, in a machine for cutting, mitering, and kerning leads and rules, of a vertical sliding head, H Y, having a slot, K, with a miter-cutting tool set in said slot, a feed-screw, P, for operating the same, and a horizontal cutter, T, with beveled corner X, the whole being constructed and arranged in the manner and for the uses and purposes specified.

3. An adjustable gage consisting of two plates, *a a*, having inward-beveled edges, with a corresponding beveled rider, *c*, carrying threaded bolt *e*, with rectangular catch-pins *d* and thumb-screw *b*, for the uses and purposes specified.

4. In a machine for mitering rules, a V-shaped cutter adjustably applied to the slide H Y, in combination with the slotted guide and holding-plate E and a frame, A, substantially as described.

5. In a machine adapted for the purposes described, the cutters T and R and flattening-shoulder V on slide H Y, in combination with the bed B and frame A, substantially as described.

FRANK S. TAFT.

Witnesses:

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