2 Sheets—Sheet 1.

W. H. GOLDING.

Machine for Cutting Printer's Rule and Lead.

No. 206,781. Patented Aug. 6, 1878.

Fig. 1.

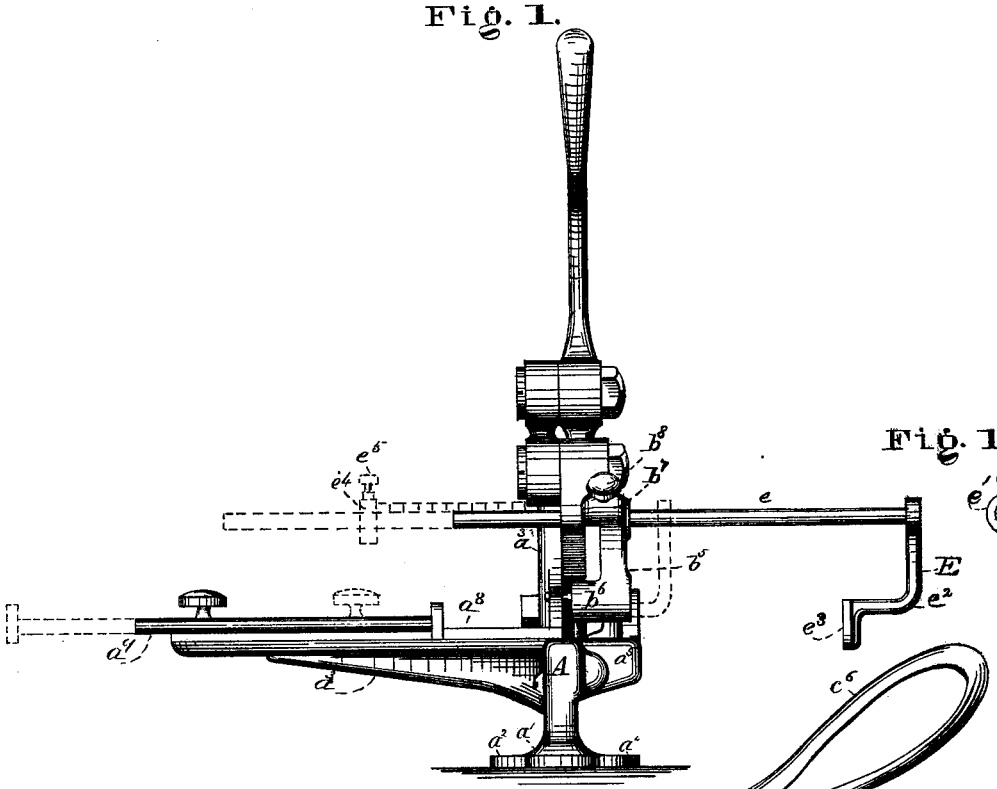

Fig. 1, a.

Fig. 2.

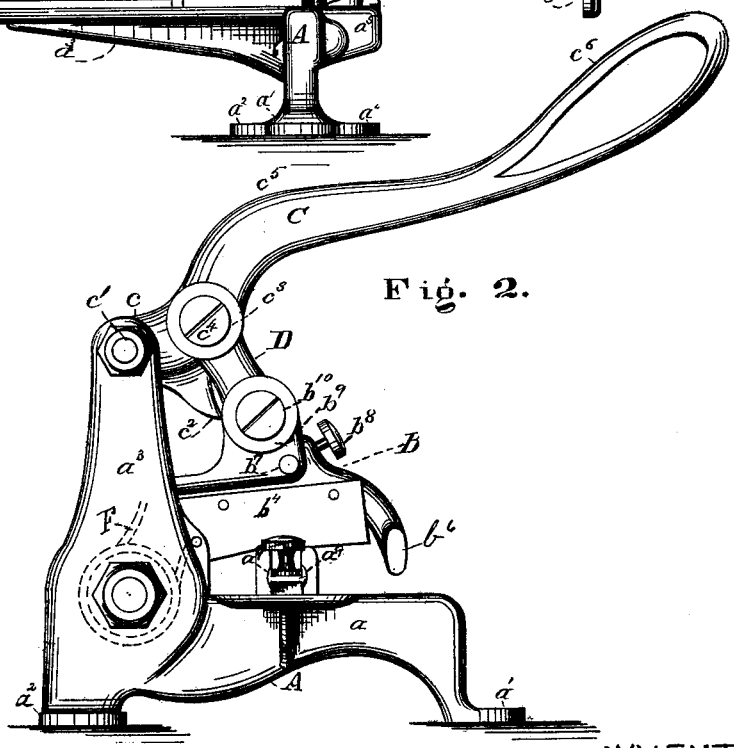

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Fig. 3.

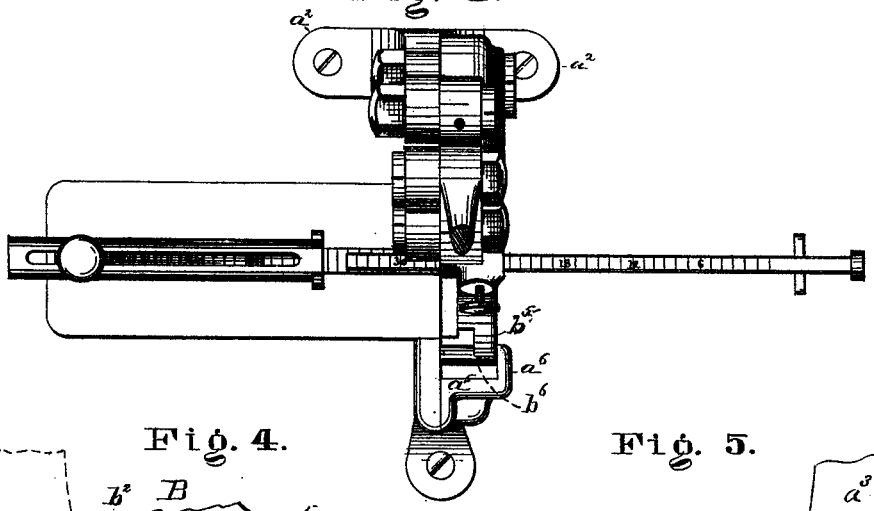


Fig. 4.

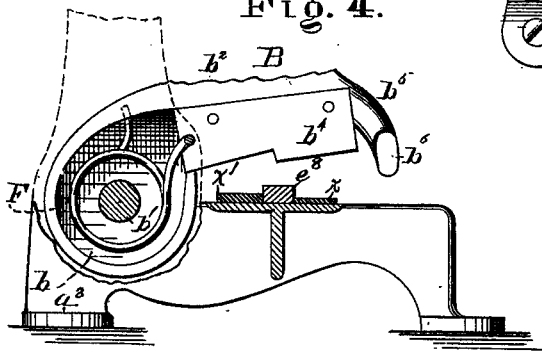


Fig. 5.

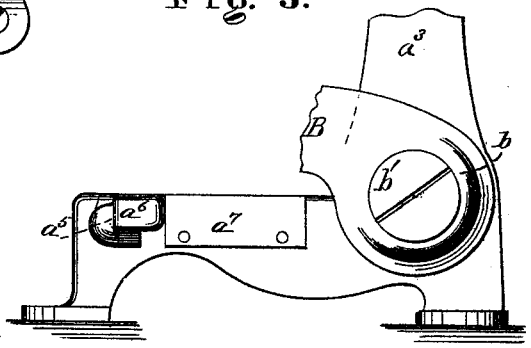


Fig. 6,a.

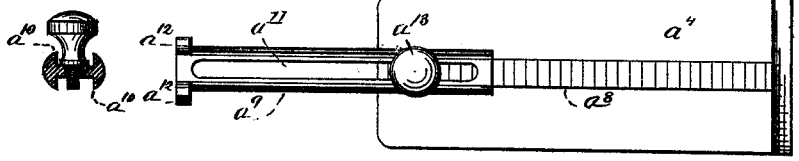
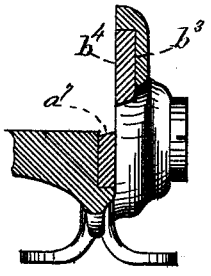


Fig. 6.

Fig. 7.



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UNITED STATES PATENT OFFICE.

WILLIAM H. GOLDING, OF CHELSEA, MASSACHUSETTS.

IMPROVEMENT IN MACHINES FOR CUTTING PRINTERS' RULES AND LEADS.

Specification forming part of Letters Patent No. **206,781**, dated August 6, 1878; application filed September 26, 1877.

To all whom it may concern:

Be it known that I, WM. H. GOLDING, of the city of Chelsea, county of Suffolk, and State of Massachusetts, have invented a new and useful Machine for Cutting Printers' Rules and Leads; and I do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

This invention is a machine which is adapted for the double purpose of cutting printers' rules and printers' leads; and its novelty consists, namely: first, in the special construction of the cutting-blade, by means of which it is adapted to perform properly the double work for which it is designed; and, second, in the special construction of the mechanism for operating the cutter.

It consists, further, in certain details of construction, which, in connection with the foregoing, will be fully described hereinafter.

In the drawings, Figure 1 represents a front elevation of my improved machine; Fig. 2, a right-end elevation of the same; Fig. 3, a plan view, with a portion of the handle cut away to show the parts beneath; and Figs. 4, 5, 6, and 7, detail views of various parts.

To enable others skilled in the art to make and use my invention, I will now proceed to describe fully its construction and manner of operation.

A, Figs. 1 and 2, represents a casting forming the base or foundation portion of the machine, which consists, mainly, of the transverse bar a, Fig. 2, supported in front by the foot a^1 and in rear by the diverging feet a^2 a^2, Fig. 3, as shown.

a^3, Fig. 2, represents a vertical extension or standard by means of which certain other parts are supported, as hereinafter described; and a^4, Fig. 1, a longitudinal extension which forms the supporting-bed for the rules or leads when being cut.

a^5, Figs. 1, 3, and 5, represents an arm rigidly fixed to the front end of the bar a, which is provided with an extension, a^6, adapted to guide the front end of the cutter bar or head in its final movement, as will be hereinafter described.

a^7, Fig. 5, represents the stationary cutter-plate, which is removably secured by screws or other proper fastenings to the end of bar a in proper relation to the supporting-bed, as shown.

a^8, Figs. 1, 4, and 6, represents a gage-plate consisting of a metal strip rigidly attached to the supporting-bed a^4 in a central position, which is graduated or marked off in divisions of pica length, as shown.

a^9 represents the gage proper, consisting of a bar of proper length, provided with the guiding-flanges a^{10} a^{10}, Fig. 6^a, by means of which it is properly held in its longitudinal movements upon the gage plate a^8, the central slot a^{11}, Fig. 6, and the heads a^{12} a^{12} on each side, as shown.

a^{13} represents a set-screw, by means of which the gage may be held in any desired position.

B, Fig. 4, represents the cutting bar or head, consisting of a casting having the pivot portion b, Fig. 5, secured to the standard a^3 by the bolt b^1, as shown, the main portion b^2 having the recess b^3, Fig. 7, for receiving and holding the moving cutter b^4, and the curved end portion b^5 terminating in the guide-block b^6, Figs. 1, 3, and 4, as shown.

b^7, Figs. 1 and 2, represents a socket for holding the rod of the front gage, hereinafter referred to, and b^8 a set-screw for securing the gage in any desired position.

b^9, Fig. 2, represents an ear having a proper opening, by means of which and the bolt b^{10} the connecting-rod of the actuating-lever is secured to the cutter-arm.

C, Fig. 2, represents the actuating-lever, consisting of a head or pivot portion, c, secured to the upper end of standard a^3 by the bolt c^1, as shown, the stop-projection c^2, the opening c^3 for receiving the bolt c^4 of the connecting-rod, the curved extension c^5, and the handle end c^6, as shown.

D, Fig. 2, represents the connecting-rod uniting the actuating-lever to the cutter-bar, consisting of a bar of proper length, provided at its ends with openings for receiving the securing-bolts, as shown.

E, Fig. 1, represents the front gage, consisting of a rod or bar, e, having a flattened

side, c^1, Fig. 1ª, marked off in pica divisions, as shown, and a bent arm, c^2, Fig. 1, supporting the gage-plate c^3, as shown.

c^4 represents an adjustable collar adapted to slide upon the gage-rod, and c^5 a set-screw, by means of which the collar may be secured in any desired position.

F, Figs. 2 and 4, represents a spring, the main portion of which is coiled about the pivot-bolt of the cutter-bar, while one end is attached to the standard a^3 and the other to the cutter-bar, as shown.

The operation of my invention will now be described.

When it is desired to cut leads, the front portion of the supporting-bed is used, as shown at x, Fig. 4, the gage being adjusted in such manner as to provide, by means of its head, a proper stop or bearing at the proper place for the end of the lead, as shown in Fig. 1.

If it is desired to employ lengths exceeding that of the supporting-bed, the gage may be reversed, as shown in Fig. 6, in which case the inner face of the head will form the stop or bearing for the end of the lead.

When it is desired to cut rules, the rear portion of the supporting-bed is used, as shown at x', Fig. 4, the gage being adjusted in the same manner as when leads are cut.

If the front gage is used, the desired distance may be obtained by properly adjusting the gage-rod by the pica divisions, or by placing the desired length in quads upon the flat face of the gage-rod, as shown in dotted lines, Fig. 1, and then moving the collar up to the quads and securing it in place. By then removing the quads and pushing out the gage until the collar strikes the standard, the desired distance will be obtained. This gage is preferably used only for short lengths.

The upper cutter, it will be observed, is provided with two independent cutting-edges, as shown in Fig. 4, one of which is adapted to move in planes parallel to the lower when in the act of cutting, while the other, by means of an incline edge, is adapted to move in planes at an angle to the lower cutter, for the purpose of making a shearing cut. By means of this construction the front end of the cutter, which moves in planes parallel to the lower when in the act of cutting, is specially adapted for cutting leads with a perfectly square cut—that is, without twist or turn of any kind—while the rear end is adapted to cut rules of heavier material without requiring an excessive exertion and without straining the machine.

It will be understood that the front portion of the cutter, where the power is less advantageously applied, is adapted for cutting leads which are comparatively thin and of soft material, while the rear portion, where the power is more advantageously applied, is adapted for cutting rules, which are comparatively thick and of harder material.

The cutter also, it will be observed, whether the front or rear portion is in action, is strongly held at both ends, so that lateral movement is impossible.

The end of the cutter-bar which is pivoted to the standard a^3 is held, of course, by the pivot-bolt against lateral movement, and its opposite end, b^5, is held by the extension a^6 of the arm a^5, as shown in Fig. 3, the block b^5 moving behind the arm a^6 and bearing against the same before the cutter begins to act.

The actuating-lever is united to the cutter-bar in such manner that the power exerted is most advantageously applied. The short arm of the lever and the connecting-rod form, in fact, a toggle-joint, by means of which the cutter-bar is actuated with great power. The lever and cutting-head are balanced by the spring F, so that the operator in using the machine is not required to lift the same.

The upward movement of the lever is properly limited by the stop c^2, Fig. 2, which, at the proper time, comes in contact with the rear face of the ear b^9, as shown.

Some of the advantages of the described construction are as follows: The machine is adapted for two kinds of work—*i. e.*, to cut rules or leads, and to do each in the best possible manner. It is very strong in all its parts, and possesses ample power for the purpose for which it is designed. It is compact in form, and yet is adapted, by means of its reversible gage, to cut long lengths.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination of the pivoted cutter-head with the cutter having the straight and inclined cutting-edges, both located on the same side of, and the inclined edges next to the pivotal point of, the head, as and for the purpose set forth.

2. In combination with the supporting-bed having the central gage-plate, the reversible gage a^9, having the central slot a^{11} and heads a^{12}, as described.

3. In combination with a fixed cutter and a cutter pivoted at one end, the guiding-block b^6 and arm a^5, for holding the free end of the cutter against lateral movement, as described.

This specification signed and witnessed this 19th day of September, 1877.

WM. H. GOLDING.

Witnesses:
EDW. H. DENNISON,
THOMAS WADE.