2 Sheets—Sheet 1.

H. J. STONE.

MACHINE FOR SHAVING METAL FOR PRINTERS' RULES AND LEADS.

No. 184,738. Patented Nov. 28, 1876.

FIG. 1.

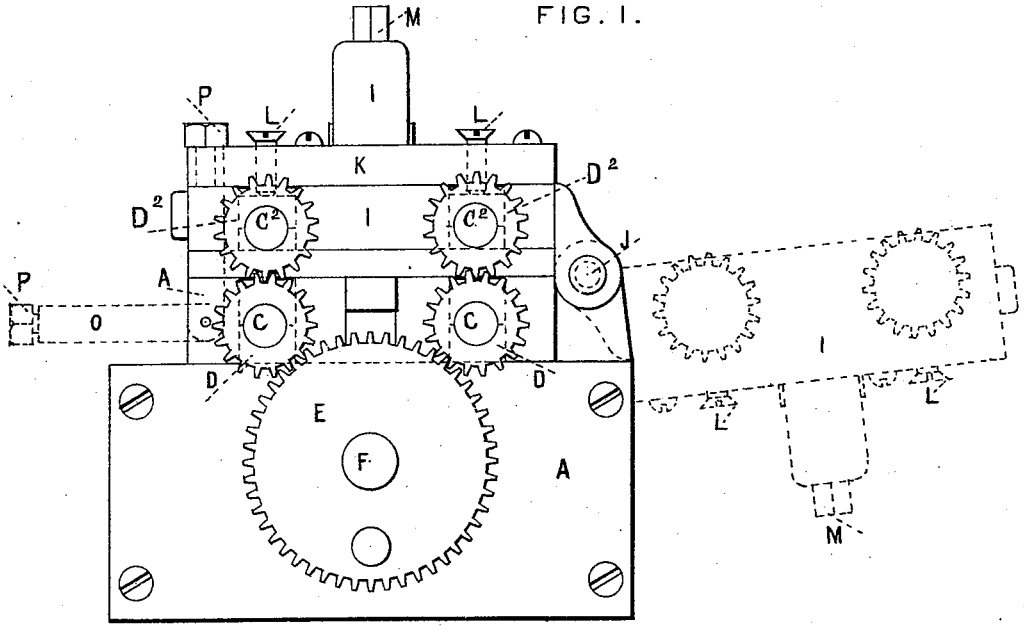
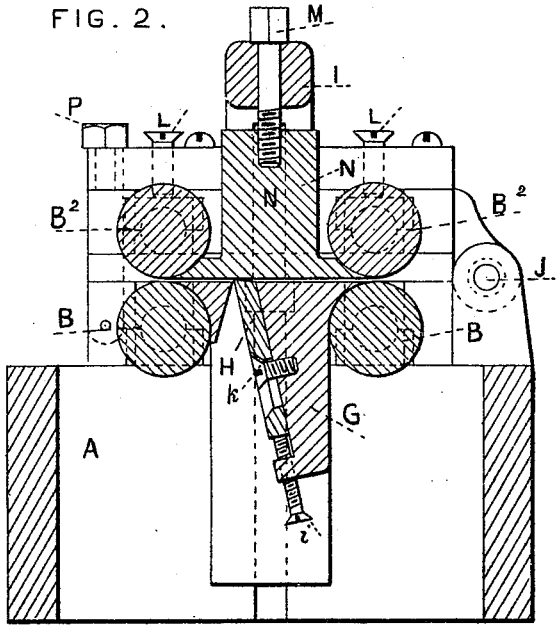


FIG. 2.



WITNESSES.

Henry D. Gordon

Thos. F. Stoddard

Henry J. Stone by A. Sidney Doane atty

INVENTOR.

2 Sheets—Sheet 2.

H. J. STONE.

MACHINE FOR SHAVING METAL FOR PRINTERS' RULES AND LEADS.

No. 184,738. Patented Nov. 28, 1876.

FIG. 3.

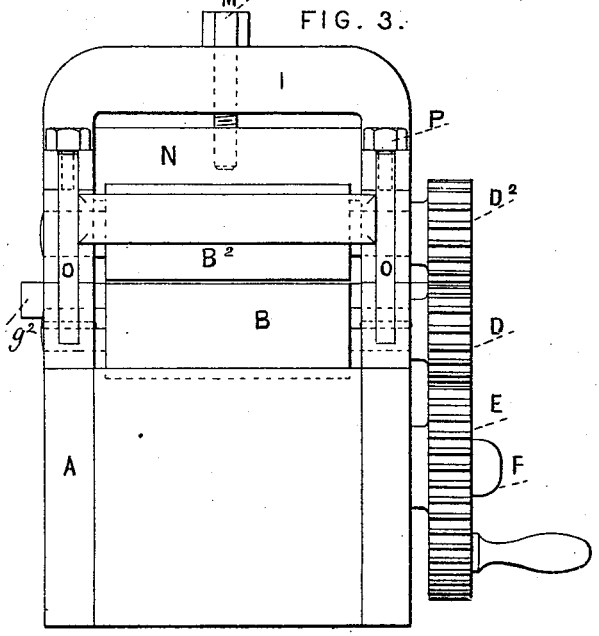


FIG. 4.

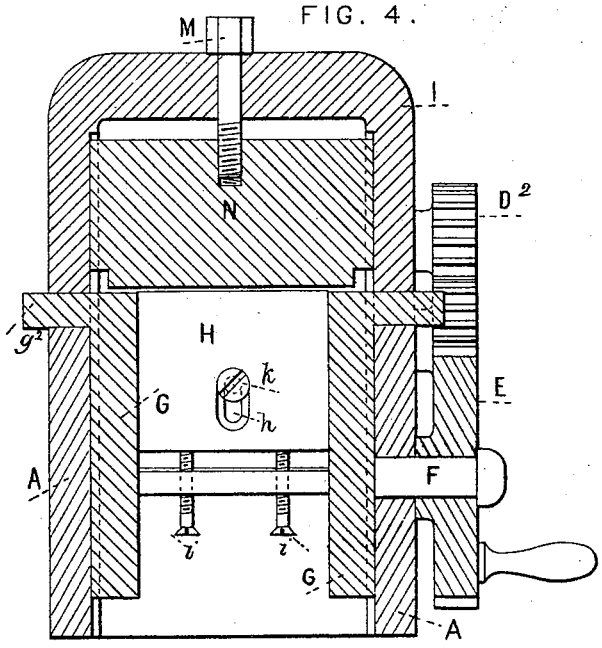


FIG. 5.

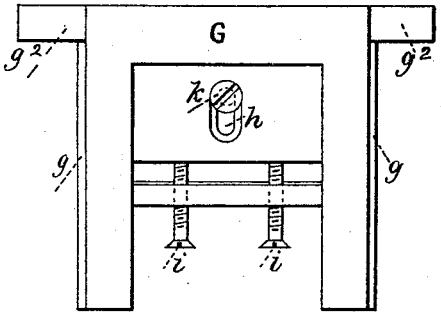


FIG. 6.

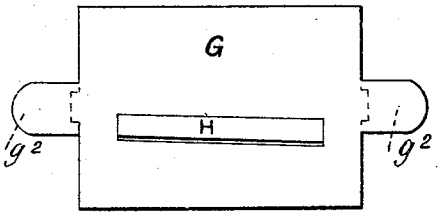
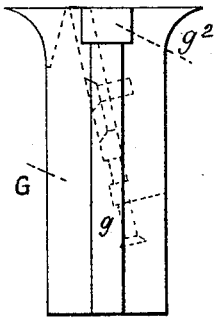


FIG. 7.



WITNESSES.

Henry R. Gordon

Thos. G. Stoddard

Henry J. Stone by A. Sidney Dean atty.

INVENTOR.

UNITED STATES PATENT OFFICE.

HENRY J. STONE, OF NEW HAVEN, CONNECTICUT, ASSIGNOR TO WILLIAM QUAIL, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN MACHINES FOR SHAVING METAL FOR PRINTERS' RULES AND LEADS.

Specification forming part of Letters Patent No. **184,738**, dated November 28, 1876; application filed March 15, 1876.

To all whom it may concern:

Be it known that I, HENRY J. STONE, of the city and county of New Haven, Connecticut, have invented, made, and applied to use a new and Improved Machine for Shaving or Dressing Printers' Leads or Brass Rules; and that the following is a full, clear, and correct description of same, reference being had to the accompanying drawing, making part of this specification, and to the letters of reference marked thereon, in which—

Figure 1 is a side view of my machine for shaving or dressing printers' leads or rule. Fig. 2 is a longitudinal section of the same. Fig. 3 is a front view of the same. Fig. 4 is a transverse sectional view of the machine. Fig. 5 is a detached view, showing knife-block. Fig. 6 is a top view of knife-block. Fig. 7 is a side view of knife-block.

In the drawing, like parts of the invention are pointed out by the same letters of reference.

The nature of the present invention consists in the construction, as more fully hereinafter set forth, of an improved machine for shaving and dressing printers' leads or brass rule, the object of the invention being the production of a machine for such purpose that will accomplish the object successfully and economically.

To enable those skilled in the arts to make and use my invention, I will describe the construction and operation of the same.

A shows a frame for supporting the working parts of the machine, made, preferably, of iron. The upper parts of the frame A are grooved, and receive boxes, in which are received the feed-rollers B, supported upon the shafts C. D show pinions secured upon the shafts C at one end, which pinions D engage with and are driven by the cog-wheel E, supported by a spindle, F, inserted in one side of the frame A. The frame A is also grooved upon the interior of its sides to receive the knife-block G, supporting the knife H, for shaving or dressing the leads or brass rule. This block G (see Figs. 5, 6, and 7 of the drawing) is provided upon its side with the projecting strips *g* and lugs g^2, the former of which, when the knife-block is inserted in the machine, slide into the grooves upon the interior of the sides, while the latter are received in the slotted portions of the frame.

The upper portion of the block G projects on both ends beyond the point for inserting the knife H, and the material of which the block is composed is cut away below the face of the block, so that the forward and rear ends of the same below its face are partially curved, and that when the block is placed in position in the machine between the rollers B, the projecting front and rear ends of the block shall partially cover the rollers B, and form, as it were, a support for the lead or rule before and after its presentation to the knife H. The further object in thus forming the upper portion of the knife-block is to prevent as far as possible, the doubling up or bending of the lead in its passage through the machine.

The slot in the knife-block G, in which the knife H is received, is inclined, so that when the knife H is inserted in the same it occupies a slightly-inclined position. Thus the lead as it enters the machine is gradually (as far as its surface is concerned) brought into contact with the knife, and, as it were, a drawing shave or cut is given by the knife.

The knife is slotted about centrally, as at *h*, to admit of its adjustment, by means of the screws *i*, passed through the cross-rib of the block G, and bearing upon the under side of the knife H, and, when adjusted, is secured by a set-screw, *k*, entering the knife-block, and bearing in the slot in the knife. The portion of the knife-block against which the knife rests when in position is inclined from the face downward, so that the knife inclines slightly forward.

I shows a second frame, or the upper portion of the machine, attached to the lower frame of the machine by the bolts J, forming pivots upon which it may be turned, so that it can, when access is required to the interior of the machine, be turned over and back, and away from this lower frame.

Within this frame I are received a second pair of feed or friction rollers, B^2, supported upon shafts C^2, having upon one end the pinions D^2, engaging with and driven by the pin-

ions D upon the shafts C. The shafts C^2 rest in movable boxes received in the slotted portions of the frame I, and over these boxes are placed the cap pieces K, through which pass set-screws L, by which the position of the rollers B^2, shafts C^2, and pinions D^2 relatively to the rollers B, shafts C, and pinions D is determined and fixed. The central portion of this upper frame is arched, through which is passed a regulating-screw, M. Between the rollers B^2 the frame is grooved upon the interior of its sides to receive the pressure-block N, employed to hold the lead or rule in proper position to be shaved or dressed in its passage through the machine. This pressure-block consists of an upright plate or body of metal, in the center of which the screw M, passed through the arched portion of the frame, has its bearing, and upon its sides are the projecting strips (as in the case of the knife-block) received within the grooves upon the interior of the sides of the frame I.

The lower portion of the block is made of about the same width as the knife-block, and its front and rear ends are partially inclined, so that when placed in position they shall partially cover the face of the rollers B^2, and prevent the bending or doubling up of the lead or rule in its passage through the machine.

The forward ends of the frame I are slotted, as are also the forward ends of the frame A. Two standards, O, are pinned at their lower ends within the slotted portions of the frame A, and when the frame I is closed upon the frame A, the standards O are received within the slotted portions of the frame I, and screw-bolts P, inserted in the upper ends of these standards, serve to permanently hold the frame I in proper position upon the frame A.

The machine may be connected to any convenient motor, and be thus driven or set in operation.

Such being the construction, the operation will be readily understood.

The rollers B^2 and pressure-block N are adjusted to allow the lead or rule to pass through the machine, and the knife H is adjusted by means of the screws *i* to shave off the desired thickness of lead or rule upon one side, and motion being communicated to the machine the cog-wheel E drives the pinions D and D^2, and through them the shafts C and C^2, upon which are the rollers B B^2. The lead or rule is inserted between the forward rollers B and B^2, and by them is carried along and presented to the knife H, positioned, as already set forth, in the knife-block G, and as it passes over the knife the cutting-edge of the same shaves or dresses the under side of the lead or rule, the pressure-block N bearing upon its upper side, and holding the lead or rule well down in position that the shaving imparted to it may be uniform. After being thus shaved or dressed, the lead is carried along by the rollers B and B^2 at the rear of the machine, and is delivered from the machine by them. A re-adjustment of the pressure-block now takes place, and the unshaved side of the lead or rule (the lead being inserted in the machine with its shaved or dressed side up) is brought into contact with the knife, and the operation already described is repeated, and the lead or rule shaved or dressed on both sides, is delivered from the machine.

Having now set forth my invention, what I claim as new is—

1. The knife-block G, with its forward and rear ends, constructed to partially cover the rollers B, for the purposes substantially set forth.

2. The pressure-block N, with its lower portion constructed to partially cover the rollers B^2, for the purposes substantially as set forth.

3. The combination, with the frames A and I, of the revolving rollers B and B^2, the knife-block G supporting the knife H, and the pressure-block N, and regulating-screw M, constructed and operating substantially as and for the purpose specified.

HENRY J. STONE.

Witnesses:
A. SIDNEY DOANE,
THOS. F. STODDARD.