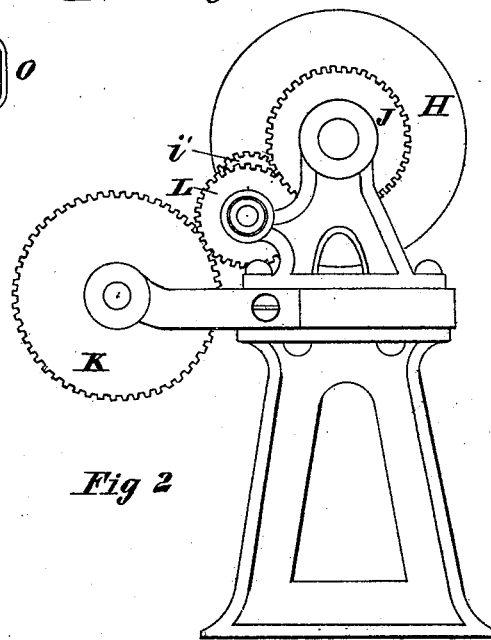
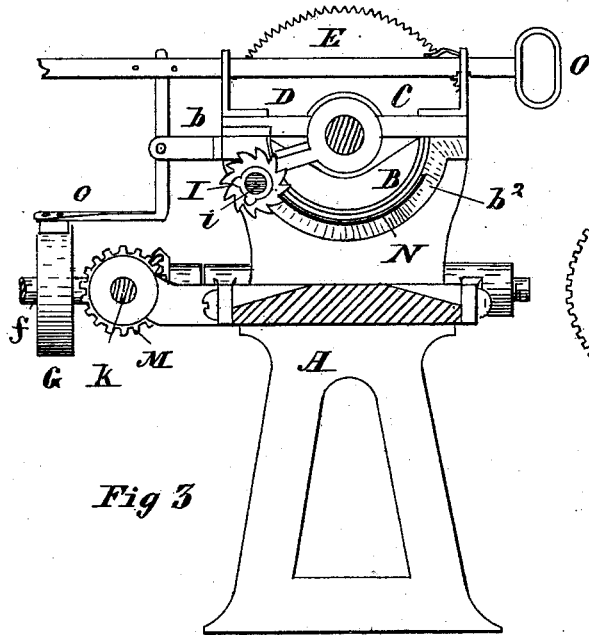
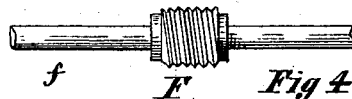
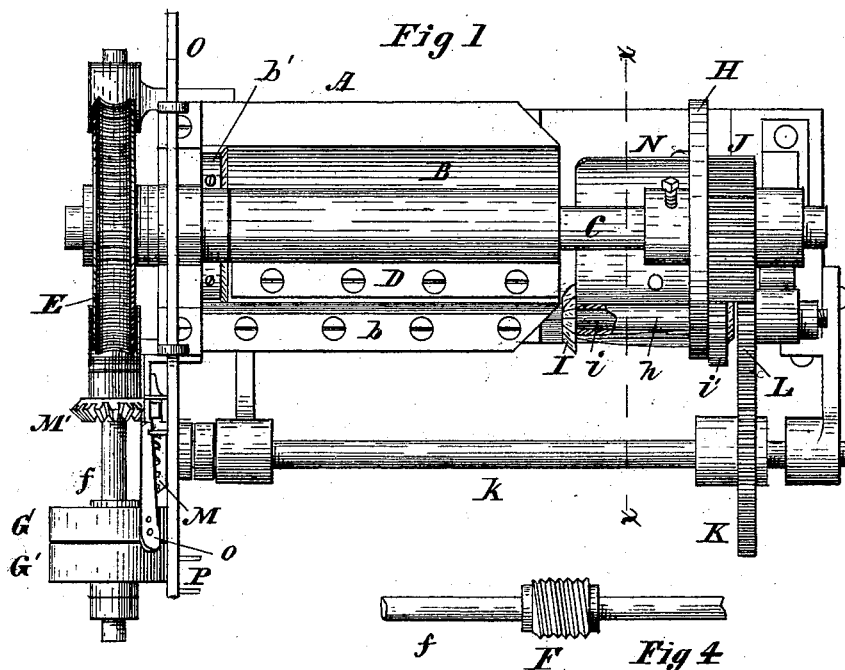
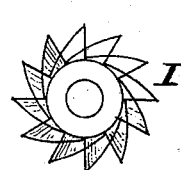


W. SCOTT.
Machine for Shaving and Trimming Stereotype-Plates.
No. 221,366. Patented Nov. 4, 1879.



Witnesses
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UNITED STATES PATENT OFFICE.

WALTER SCOTT, OF CHICAGO, ILLINOIS.

IMPROVEMENT IN MACHINES FOR SHAVING AND TRIMMING STEREOTYPE-PLATES.

Specification forming part of Letters Patent No. **221,366**, dated November 4, 1879; application filed April 10, 1879.

To all whom it may concern:

Be it known that I, WALTER SCOTT, of Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Machines for Shaving and Trimming Stereotype-plates, which is fully described in the following specification, reference being had to the drawings, in which—

Figure 1 represents a plan view of a machine embodying my improvements; Fig. 2, an end elevation of the same at the trimmer end of the machine; Fig. 3, a transverse section taken on the line *x x*, Fig. 1; Fig. 4, a plan view of the screw which drives the shaving-shaft, and Fig. 5 a plan view of the trimming-cutter.

Heretofore the two operations of shaving and trimming stereotype-plates have been performed independently of each other and on separate machines.

The object of my invention is to provide a single machine which will perform both of these operations simultaneously, thereby saving much time and expense.

The invention consists in special devices and combinations of devices for performing the required work, all of which will be hereinafter more fully described, and pointed out definitely in the claims.

In the drawings, A represents a supporting-frame, on which the several operating devices are mounted. On the top of this frame is arranged the concave bed B, for the reception of the stereotype-plates used on cylinder-presses, which, as is well known, are semicircular in form. This bed is therefore of a corresponding form, as in machines which have heretofore been used for shaving stereotype-plates. On the upper edge of the bed, at the back of the machine, is a gage-plate, *b*, which projects inward slightly over the edge, so that it forms a gage-stop against the back edge of the plate rests when placed in the bed, thereby preventing movement during the operation of shaving.

At the outer end of the bed there is also arranged an end gage, *b'*, against which the finished end of the plate rests during the shaving and trimming, the edge of this gage being beveled to correspond with the beveled end of the plate. This gage may also be made ad-

justable, so as to adapt the machine to plates of different lengths, the length of the plate being always determined, as will hereinafter appear, by the position of this end gage.

The opposite end of the bed is straight and may be beveled, if desired, as shown at *b²* in the drawings, to aid in clearing while the cutter is trimming the plates.

Above the bed a shaft, C, is arranged, mounted in suitable bearings and extending the whole length of the machine, though the bed itself is somewhat shorter. The shaving knife or cutter D is attached to this shaft and extends nearly or quite the whole length of the bed, being necessarily flush with the beveled end of the latter. This cutter is of ordinary construction and may be secured to the shaft in any suitable way.

On the outer end of the shaft, outside of the bed, a worm-wheel, E, is fastened, with which is geared a worm, F, on a transverse shaft, *f*, below. The shaft *f* is also provided at one end with a fast band-pulley, G, and a loose pulley, G', by the former of which motion is communicated to the shaft, and thereby the necessary rotation is given to the shaft C to revolve the shaving-knife in the proper direction, from front to rear, over the bed; and a stereotype-plate having been placed within the bed and brought up against the gages, will have its inner concave surface, or, rather, the ribs thereon, cut down or shaved smoothly and uniformly by the revolution of the knife above it, in the usual way.

A disk, H, is mounted on the shaft C, and secured thereto near to the bearing opposite to the beveled end of the bed. This disk is provided with a tubular bearing, *h*, projecting inward toward the bed, in which is mounted a cutter, I, which is of inclined or beveled form, as shown in Figs. 1 and 5 of the drawings, the inclination or bevel corresponding to that required on the end of the plate. This cutter will, of course, be carried around with the disk H by the revolution of the shaft C, and it is arranged to project above the surface of the bed as it passes around close to the end of the latter. The shaft *i* on which this cutter is mounted extends through the tubular bearing *h*, and is provided with a pinion, *i'*, on its other end, just outside of the

disk. A gear-wheel, J, is mounted loosely on the shaft C, between the bearing of the latter and the disk H, and is arranged to mesh with the pinion *i'*.

Rotary motion is given to the wheel J by means of a gear-wheel, K, mounted on a shaft, *k*, extending along the back side of the machine, an intermediate or transmitting wheel, L, being arranged between the gear-wheels J and K. The shaft *k* is provided at its other end with a bevel-gear, M, which meshes with a corresponding gear-wheel, M', on the shaft *f*, whereby the necessary rotary motion is communicated to the shaft *k*.

It is evident, therefore, that while the cutter I is carried around in an orbit outside of the shaft C, it will also be rotated on its own axis by means of the gearing just described, both motions being communicated from the shaft *f*, which also drives the shaving-knife, as already described.

Now, the cutter I is arranged to travel just a little in rear of the shaving-knife, and it is evident that as it projects above the surface of the bed it will cut off the rough end of the stereotype-plate projecting beyond the end of the bed, the cutter commencing to act on the plate at about the same moment as the shaving-knife.

It is also evident, from the peculiar construction and arrangement of this cutter I, that the end of the plate will be trimmed off on a bevel corresponding to that part of the other end of the plate, and that the plate will be held by the gages and shaving-knife, no extra holding device being required for trimming.

As the trimming goes on the rough end will, of course, have a tendency to break off, and this will finally occur before the cut is completed, to the great danger of fracturing the plate and ruining it.

To obviate this danger I provide a concave supporting-plate, N, which extends back from the tubular bearing *h*, to which it may be attached, or to the disk H, if more convenient. This rest or support is arranged so as to pass underneath the projecting end of the stereotype-plate, thereby holding up the latter until it is entirely cut off, when it is discharged from the rear end of the support by the continued revolution of the latter.

I have also provided a brake-lever, O, which is bent and provided with a brake-shoe, *o*, arranged over the tight pulley G. The upper end of this brake-lever is arranged between pins on the shipping-slide P, by means of which the band is transferred from one pulley to the other, or this slide may be slotted, or any other means adopted for vibrating the

brake-lever, which is so arranged and pivoted that the brake will be applied to the driving-pulley, when the band is shifted to the loose pulley and raised therefrom, when the band is shifted back to the tight pulley.

It will thus be seen that with a single machine, and at one operation, the entire work of shaving and trimming a stereotype-plate is performed, so that when the plate is removed from the machine it is ready for the cylinder, except the little dressing which is always done by the hand. The entire operation is effected very expeditiously, so that there is a great saving of time, labor, and expense as compared with the old method in which the plates are transferred from one machine to another.

In details of construction this machine may, of course, be changed, hence I do not wish to be understood as limiting myself to the precise construction and organization of devices herein described and shown.

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

1. The trimmer I, connected to and carried by the shaft of the shaving-knife, in combination with mechanism for rotating the trimmer on its axis, and mechanism for rotating the shaft of the shaving-knife, whereby the trimmer is fed automatically to the plate and at the same time rotated to cut the same while it is being shaved, substantially as described.

2. The revolving shaving-knife, in combination with the concave bed B, the beveled trimmer, and mechanism for rotating the trimmer and at the same time moving it forward in the arc of a circle, the plate being held in place by the shaving-knife during the operation of the trimmer, which acts simultaneously with the shaving-knife, substantially as described.

3. The disk H, mounted on the shaft of the shaving-knife, in combination with the cutter I, mounted in bearings on the disk, the pinion *i'*, and the gear-wheel J, mounted loosely on the same shaft as the disk, substantially as and for the purpose set forth.

4. The concave support N, arranged behind the trimmer I, in combination with the bed B, substantially as and for the purpose set forth.

5. The main driving-shaft *f*, in combination with the shaving-knife D, the trimmer I, and gear-trains operated from said shaft, whereby both the shaving-knife and the trimmer are driven from the single shaft *f*, substantially as described.

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