P. McBRIDE & W. F. BRENIZER.

Sand-Papering Machines.

No. 152,393. Patented June 23, 1874.

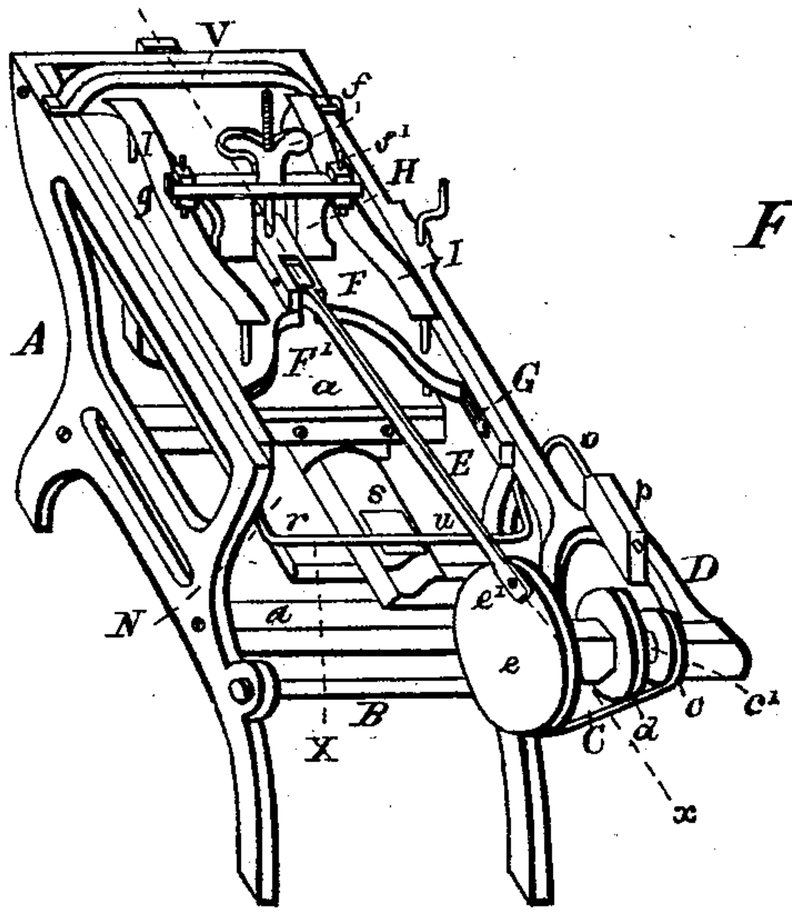


Fig. 1.

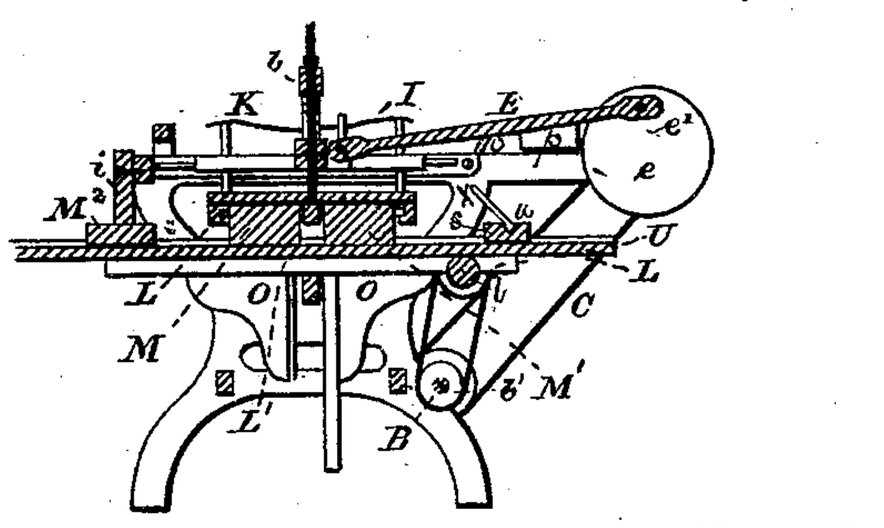


Fig. 2.

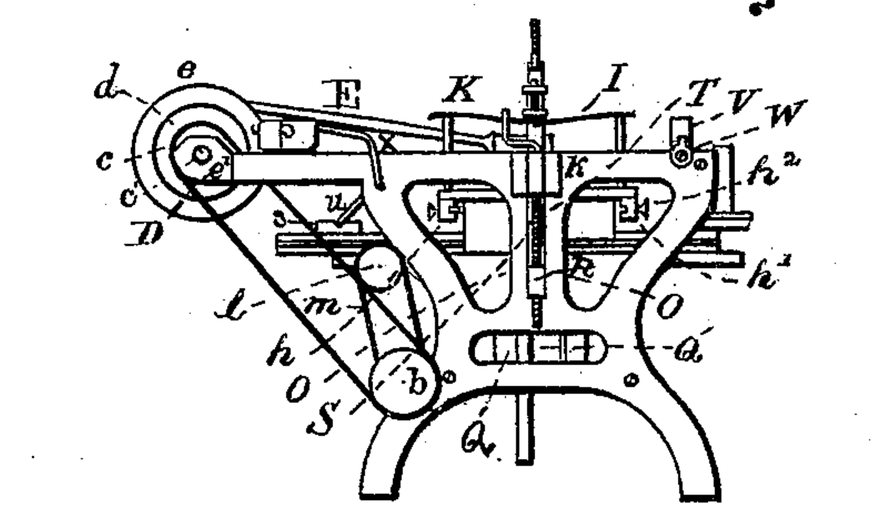
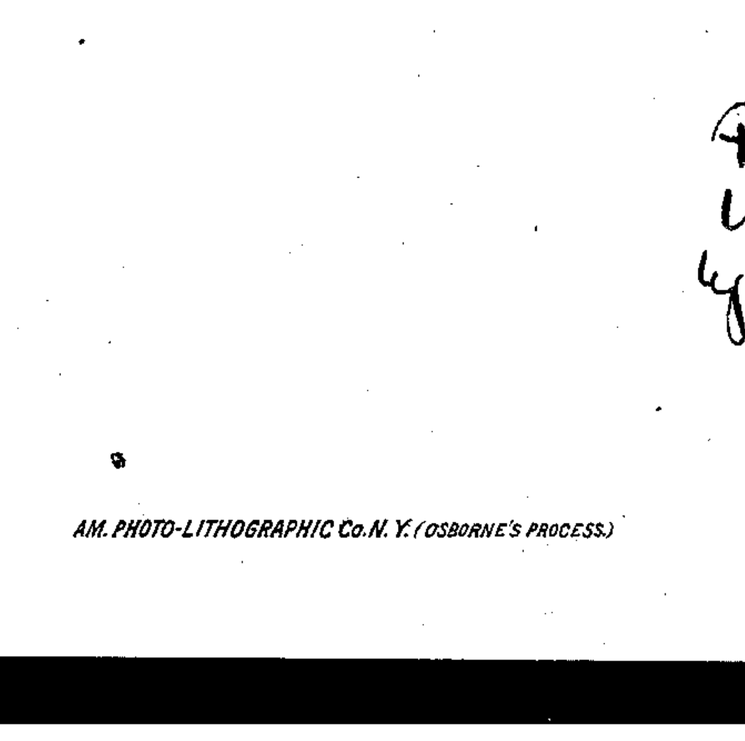


Fig. 3.



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UNITED STATES PATENT OFFICE.

PAUL McBRIDE AND WARREN F. BRENIZER, OF WILLIAMSPORT, PA.

IMPROVEMENT IN SANDPAPERING-MACHINES.

Specification forming part of Letters Patent No. **152,393**, dated June 23, 1874; application filed February 23, 1874.

To all whom it may concern:

Be it known that we, PAUL McBRIDE and WARREN F. BRENIZER, of Williamsport, in the county of Lycoming and State of Pennsylvania, have invented a new and useful Improvement in Sandpapering-Machine for smoothing moldings; and we 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.

The object we have in view is the construction of a machine for smoothing and polishing moldings of various styles and sizes, and either straight or curved, in a more perfect manner; and our invention therein consists, principally, in the means employed to give an elastic adjustable pressure upon the rubbers; in the means employed to adapt the rubbers to either straight or curved moldings of various styles and sizes; in means employed for giving movement to the moldings, and at the same to hold them upon the table by an elastic pressure; in pivoting the rubbing-block frame; and in the combination of the various operative parts, all as more particularly hereinafter set forth.

In order to enable those skilled in the art to make and use our machine, we proceed to describe the same in connection with the drawings, in which—

Figure 1 is a front perspective elevation of our machine. Fig. 2 is a vertical section of the same on the line *x x* of Fig. 1. Fig. 3 is a side view of the same.

Upon proper side frames A, connected by cross-ties *a*, and at the front lower portion of the frames, is placed a shaft, B, journaled in the frames, and having outside of the frames a pulley, *b*. A driving-belt, C, communicates motion to the pulley *b* from a pulley, *c*, upon a shaft, *c'*, which is journaled in a forked arm, D, which is secured upon the top of one of the frames. A second pulley, *d*, is upon the same shaft, to which power is applied in any convenient way to drive the machine. Upon the inner end of the same shaft is placed a wheel, *e*, with a wrist-pin, *e'*, or a suitable crank, and upon the wrist-pin one end of a pitman, E, works, the other end of which is pivoted to a frame, F F', and reciprocates the same back and forth. This frame just mentioned consists of an upper part, F, which reciprocates in ways G, pivoted at their front ends upon the inside of the upper portion of the side frames A, and a lower part, F', which also reciprocates in unison with the part F, and, in addition, has a vertical adjustability. Upon the part F is mounted another frame, H, through the center of which a bolt passes down through both of the frames F and F', and is secured to the latter. The upper part of this bolt is threaded to receive a thumb-nut, *f*, by means of which the frame F' may be raised or lowered. Through the projecting ends of the frame H other bolts, *f'*, pass down into leaf-springs I, and are secured to said springs, and have their upper ends threaded and supplied with suitable nuts *g*, by means of which said springs may be raised or lowered as the frame F' is raised or lowered. To the ends of the spring I are secured rods K, which pass down through the frame F into the frame F', where their lower ends are secured. To the under side of the frame F' are secured three cross-pieces, L L', the outside ones having upon their inside tongues *h*, movable in suitable gains, h^1, and capable of being adjusted in position in said gains by means of the screws h^2. The central cross-piece L' has no tongue or gains, but may be armed with holding-points. The object of the cross-pieces L and L' is to hold two or more suitable rubbing-blocks, M M', placed between the cross-pieces named, and held in position by the screws h^2 and the holding-points, if the latter are used, and having thus a lateral adjustability, limited by the length of such pieces. These blocks are of various styles and sizes required for the various sorts of moldings, and are preferably arranged so that one block shall operate upon the inner curves of the moldings and the other upon the outer curves at the same time. Upon the rear end of the machine another rubbing-block, M^2, is secured to a slotted arm, *i*, which in turn is fastened to the machine in such a way as to have a vertical adjustment, and at the same time enable the rubbing-block to be moved laterally, so as to present its face in different angles of direction, and cause it to work into side recesses or curves in the moldings. It also serves to hold down one end of

a long molding. All these rubbing-blocks are covered with sand-paper or other wearing substances, secured to them in any convenient way. A bed, N, is arranged under the frame F′, and has secured to its sides side pieces O, the inner edges of which are adapted to slide up and down in ways Q, secured to one of the side frames A. Under the center of the bed is a cross-piece, R, one end of which protrudes through a slot, S, in the side frame A, and has a vertical movement therein regulated by a screw-bolt, T, which passes down through suitable bearings *k* at the top of the side of the frame A, and through the protruding end of the cross-piece R, and by this means the bed is raised or lowered, as desired. In the front end of this bed a feed-roll, U, is journaled, upon the outer end of which is placed a pulley, *l*, which connects by a band, *m*, with the pulley *b′*, and gives rotation to the feed-roll. A brace, V, holds the rear ends of the ways G in relative position, and enables the operator conveniently to raise that end of the ways, and with them the frames F F′, so as to give convenient access to the under part of the frame F′ for the removal or putting in position of the rubber blocks. A latch, W, is pivoted upon the outer part of the frame A, so as to turn down over and secure the the ways G in horizontal position. A holding spring-rod, X, journaled in the side frames A, has a central portion, *u*, bent down toward the bed N, and its protruding upper end *o* is bent over and furnished with a sliding weight, *p*, or, instead thereof, it may have a suitable spring, or both of them may be used together. The lower part *u* of this spring-rod X may conveniently fit into a score in a suitable block, *s*, which fits into the principal recess in the molding, and holds down one end of the same.

In the use of our machine, the molding is introduced upon the bed and under the rubbing-blocks, fastened down by the spring-rod, and motion may be communicated to the machine. The molding is then carried along by the feed-roller, and the principal rubbing-blocks reciprocated back and forth over the moldings with an elastic pressure, the rubbing-blocks being adjusted to fit the particular molding, whether straight or curved.

The bed may be raised or lowered, as described, and also the lower frame F′, so that moldings of any thickness may be smoothed. Whether the lower frame F′ is raised or lowered makes no difference in the operation of the leaf-springs, which are always kept up to their work by their adjusting-screws.

The principal advantages of our machine consists in its great convenience in use, the excellent manner in which it performs its work, in that respect greatly surpassing hand-work, and the rapidity and cheapness with which it performs its operations.

Having thus described our machine, and stated some of its advantages, what we claim as new therein, and our invention, is—

1. In combination with the frame F′, having the cross-pieces L L′ and the tongues *h*, the rubbing-blocks M M¹, all constructed and arranged substantially as set forth.

2. In combination, the bed N having a feed-roll, and the spring-rod X adapted to hold a molding upon said bed, all constructed and arranged substantially as set forth.

3. In a machine for smoothing moldings, the pivoted frames F F′, constructed and arranged substantially as set forth.

4. In combination, the vertically-adjustable pivoted frames F F′ and the bed N, constructed and arranged substantially as set forth.

5. In combination with the frames F F′, the rubbing-blocks M M¹ and the rubbing-block M², all constructed, arranged, and operating substantially as described and shown.

This specification signed and witnessed this 11th day of February, 1874.

PAUL McBRIDE.
WARREN F. BRENIZER.

Witnesses:
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