G. S. Mayes,

Bronzing Machine.

No. 61,550. Patented Jan. 29 1867.

Fig. 3.

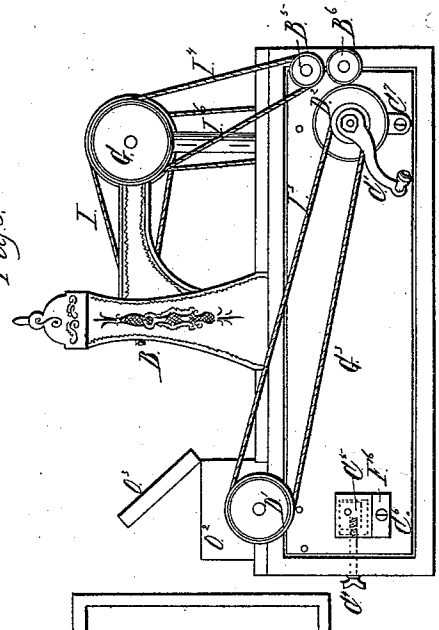


Fig. 4.

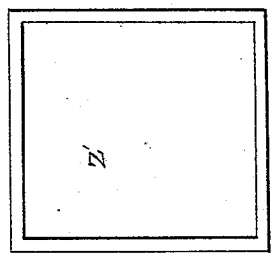


Fig. 2.

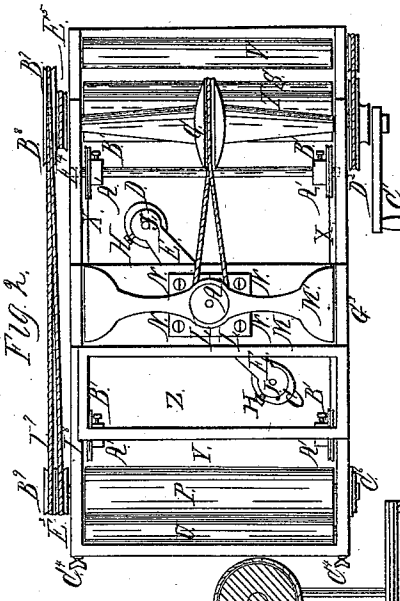
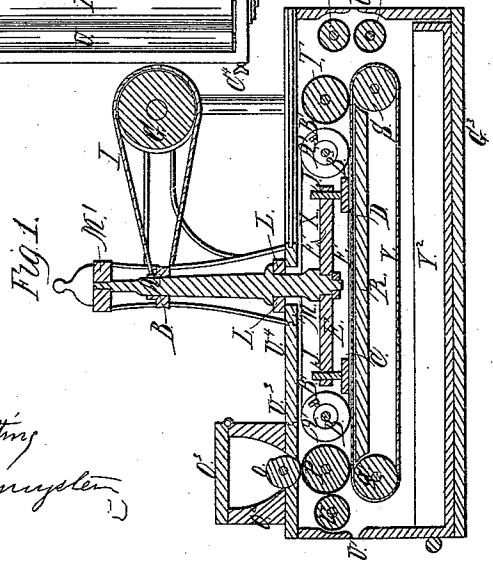


Fig. 1.



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AM. PHOTO-LITHO. CO. N.Y. (OSBORNE'S PROCESS)

United States Patent Office.

GEORGE L. MAYES, OF BUFFALO, NEW YORK.

Letters Patent No. 61,550, *dated January* 29, 1867; *antedated January* 14, 1867.

BRONZING MACHINE.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, GEORGE L. MAYES, of Buffalo, in the county of Erie, and State of New York, have invented certain new and useful improvements in Bronzing Machines; and I do hereby declare that the following description of the construction and operation thereof is sufficiently clear and exact to enable others skilled in the art to make and use the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a longitudinal section.

Figure 2, a plan view.

Figure 3, a side elevation.

Figure 4, a plate of glass and frame representing a part of the transparent top of the machines.

The nature of my invention consists in, first, the employment of a vertical revolving shaft, provided with arms at the lower extremity, upon which are fastened one or more brushes, composed of fur or other suitable material, in combination with suitable feeding mechanism of a machine for bronzing printed sheets of paper or other equivalent material; second, in combination, with the mechanism of a bronzing machine, of one or more lights of glass, or other transparent substance, for the purpose of presenting to view the working of the machinery inside; third, the use of a grooved revolving roller for distributing the bronze, or its equivalent, when used in combination with a suitable box for holding the bronze, and a brush or brushes for receiving and distributing it; fourth, in combination with the endless apron, upon which the card-board or paper is carried through the machine, of a thumb-screw and box so arranged that said apron may be loosened or tightened, as desired; fifth, in the employment of adjustable feed-wheels, which run upon the margin of a printed sheet when carried along by the endless apron, when said wheels are used in combination with a belt or tape made to run in a groove in each of said wheels; sixth, in making the revolving brushes and endless apron capable of being adjusted vertically by means of a set-screw, or its equivalent.

In fig. 1, A represents the vertical rotary shaft. It receives its motion from the pulley G and belt I. E E are the arms. They are made of one piece, and are fastened to the shaft A by the nut F. C D are two pads or brushes. J J are two upright rods fastened one in the centre of each pad or brush. They slip up into an aperture near the end of each arm, and are adjusted and fastened by the set-screws H H, as shown in fig. 2. The lower part of the shaft A runs in the box L L, which is made in two halves, and is screwed on to the cross-piece M by the screws N N N N, as shown in fig. 2. At the top it works in a box or aperture in the cross-piece M^1. O, in fig. 1, is an end view of the roller for distributing the bronze, showing the form of the groove, which runs along its entire length. O^2 is an end view of the box in which it works. It is placed crosswise on the machine, and is the receptacle for the bronze. O^3 is the cover. P is a roll, covered with fur, or its equivalent. It is placed directly under the grooved roll O. U, T, V, and W are also fur rolls. Q and S are two rollers, upon which the endless apron is moved. R is a bed-piece, which is placed just under the endless apron Y. The letters A^1 represent the feed-wheels for holding the paper, and X X are bands which run in the grooves in said wheels. The letters B^1 represent set-screws for holding said wheels in place upon the rods B^2 and B^3. The ends of the rods B^2 and B^3 work in recesses made in the sides of the box G^3. They receive their motion from the endless apron. Y^2 is a drawer, for receiving the waste or surplus bronze. Z is a transparent cover. It slides in a groove made in the cross-piece M and in the lower side of the box O^2, as shown at the points U^3 and U^4 in fig 1. Z^1, in fig. 4, represents another transparent plate or frame. It slides along the top of the box in grooves made in each side. This transparent top is important, as oftentimes expensive work is passed through the machine, which requires to be carefully handled. By it the progress of the work is seen at all times, and thus loss by the wrinkling or springing up of the paper is prevented. In figs. 2 and 3, C^4 represents a thumb-screw for tightening the endless apron. There are two, one on each side of the box G^3. They screw into boxes, one of which is shown by the inner dotted lines at C^5 in fig. 3. Each is fastened to a plate similar to the one shown at C^6. The ends of the roll Q work in said boxes. The outer or larger square of dotted lines surrounding the box C^5 represents an opening in the sides of the machine for said box to work in. There are four of such openings; two for the boxes of the roller Q, and two for the roller S. They are made large enough to allow both a vertical and horizontal movement to be given to the roller Q, and a vertical movement to the

roller S. These boxes are adjusted vertically, and held in place to the sides of the machine by the screws F^6 and C^7, as shown in fig. 3. In the plan view the bronze receptacle or box is left off, so that the rollers below it may be seen. The printed sheets to be bronzed are fed into the machine at the opening U^1. They receive the bronze from the rollers U and P in their passage, which is distributed and rubbed on to the printed surfaces by the revolving brushes when the sheets move under them. As they continue on through the machine they are cleaned by the rolls T, V, and W, and delivered from the mouth U^2. The bronze dusted from the sheets falls into the drawer below, from whence it can be taken out and used again. The various parts of the machinery are moved by the crank C^1, the band I^3, and wheel D^1 moves the grooved roll O for distributing the bronze. The bands I^7 and wheels B^7 and B^9 move the fur roll P; which, in connection with the wheel E^3 and band I^8, give motion to the wheels E^4 E^5, pulley G, the vertical shaft A, and the wheels B^5 and B^6, together with the fur rollers, endless apron, &c.

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

1. The vertical rotary shaft A and brushes C and D, as described, when used in combination with the feeding mechanism of a machine for bronzing printed sheets of paper or other equivalent material.

2. In combination therewith of one or more lights of glass or other transparent substance, for the purposes specified.

3. The grooved roller O, as and for the purposes described.

4. In combination with the endless apron Y, of the thumb-screws C^4, the boxes C^5, plate C^3, set-screws F^6 and C^7, as and for the purposes described.

5. The adjustable feed-wheels A^1, in combination with the bands or belts, as described.

GEORGE L. MAYES.

Witnesses:

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