

D. HESTON.
Bronzing Machines

Patented Aug. 25, 1874.

No. 154,480.

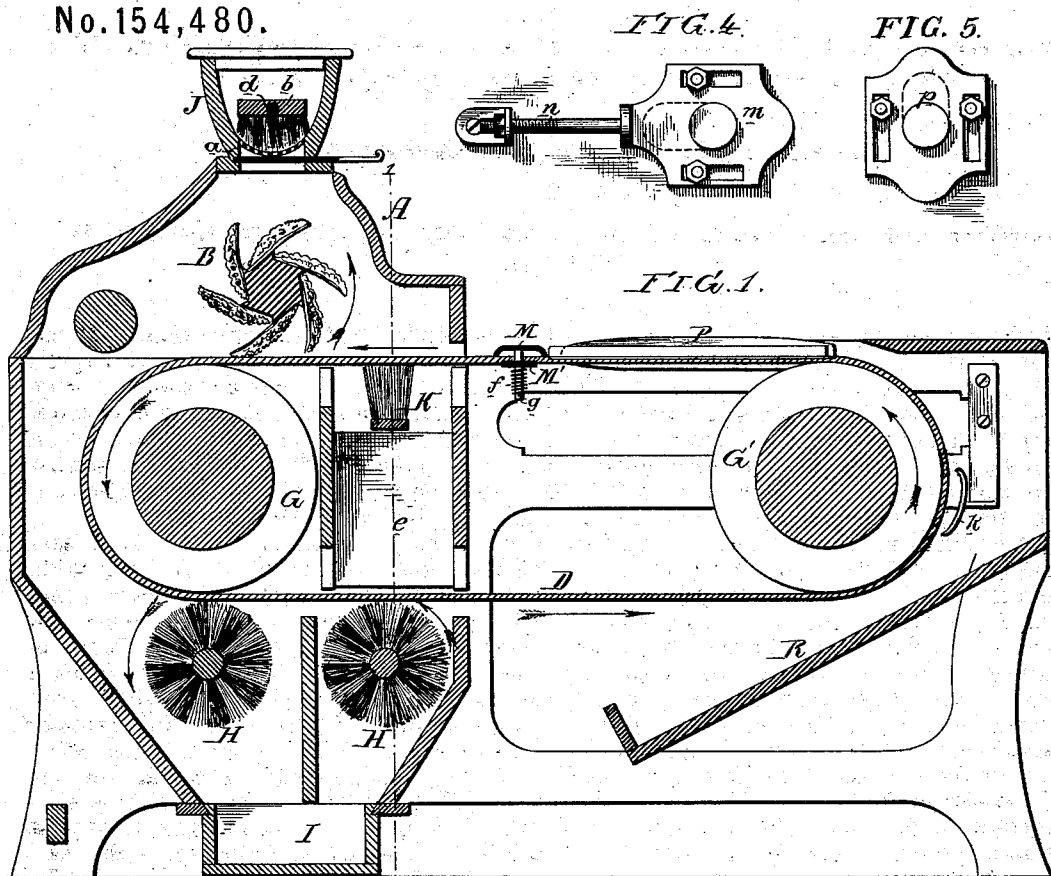


FIG. 4.

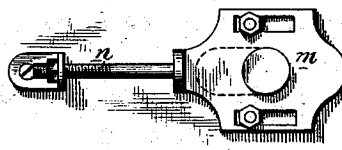


FIG. 5.

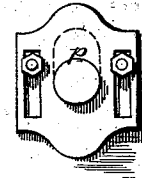


FIG. 1.

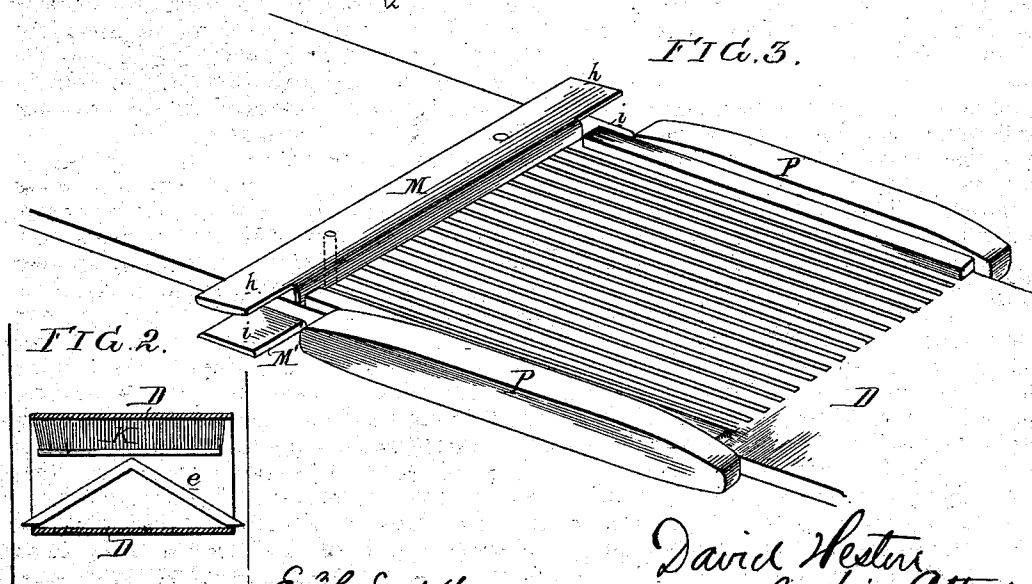


FIG. 2.

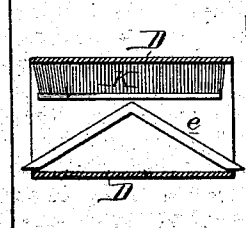


FIG. 3.

E. H. Eschfeller
Witnesses, Harry Smith

David Heston
By his Atty.
Housers and Son

UNITED STATES PATENT OFFICE.

DAVID HESTON, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO HIMSELF AND ROBERT S. MENAMIN, OF SAME PLACE.

IMPROVEMENT IN BRONZING-MACHINES.

Specification forming part of Letters Patent No. 154,480, dated August 25, 1874; application filed July 2, 1874.

To all whom it may concern:

Be it known that I, DAVID HESTON, of Philadelphia, Pennsylvania, have invented certain Improvements in Bronzing-Machines, of which the following is a specification:

My invention relates to improvements in the bronzing-machine for which Letters Patent No. 150,037, were granted to myself and ROBERT S. MENAMIN, as my assignees, on the 21st day of April, 1874; and the objects of my said improvements are to facilitate the distribution of the bronze onto the paper to prevent the bronze from accumulating on the inner surface of the endless conveyer or apron, to prevent the paper from adhering to the outer surface of the latter, and to facilitate the attachment of the paper to and its removal from the said apron, which objects I attain by constructing the machine as I will now proceed to describe, reference being had to the accompanying drawing, in which—

Figure 1 is a sectional elevation of the improved machine; Fig. 2, a transverse section on the line 1 2, Fig. 1; Fig. 3, a perspective view of a portion of the endless apron; and Figs. 4 and 5, detached views of parts of the machine.

The frame of the machine consists of a box, A, within which is a rotating pad, B, for distributing the bronze-powder onto the sheets of paper carried by the endless apron D, the latter passing around rollers G and G', and the superfluous bronze being removed from the paper by revolving brushes H H, arranged beneath the apron, and over a drawer or other receptacle, I, at the bottom of the box. In these respects the machine is substantially the same as in my aforesaid patent of April 21, 1874. The bronze is discharged onto the rotating pad B, from a box, J, having a curved and perforated bottom, *a*, through which the powder is gradually forced by a brush, *b*, secured to a shaft, *d*, to which a slow oscillating or vibrating movement is imparted. I have found that the bronze can be distributed much more evenly by this arrangement than by the reciprocating brush described in my aforesaid patent. To prevent the bronze-powder from adhering to and accumulating upon the inner surface of the apron D in sufficient quanti-

ties to interfere with the operation of the machine, I extend a brush, K, transversely across the said apron, in the manner shown in Figs. 1 and 2, and arrange a double inclined chute, *e*, beneath the said brush, by which the sweepings are conducted off to the opposite sides of the machine, and prevented from falling upon the lower portion of the apron.

In ordinary machines of this class, each sheet of paper is attached at one end to the endless apron by a spring-clip, which is opened at the proper moment, in order to release the sheet. The action of the brushes upon the paper, however, causes the latter to adhere to the smooth surface of the apron, which interferes materially with the successful operation of the machine. This objection I have effectually overcome by simply grooving the surface of the apron in the manner plainly shown in Fig. 3, or the same result may be attained by grooving the surface of the said apron transversely as well as longitudinally, so as to form a series of projections, or by otherwise roughening its surface. Various forms of clips may be used for retaining the paper upon the apron, while it is being subjected to the bronzing process, but I prefer the arrangement illustrated in the drawing, which I will now proceed to describe.

Each clip consists of two bars or plates, M and M', the former of which extends across the outer, and the latter across the inner side of the apron, at points directly opposite each other. The plate M' is permanently secured to the apron, and should be flush with its inner side, but the plate M, which is the clip proper, is held against the surface of the apron by the action of springs *f*, wound upon pins *g*, secured to the said plate M, and extending through both the apron and the plate M'. The opposite ends *h h* and *i i* of both of the plates M and M', extend beyond the edges of the apron, as shown in Fig. 3, so that when the said plates are carried by the movement of the belt past bars P P, secured to the frame of the machine, their projecting ends shall pass over and under the said bars, and this, owing to the peculiar shape of the latter, which are of the nature of fixed cams, will have the effect of elevating the clip M above

the surface of the apron, in order to permit the introduction of the edge of a sheet of paper beneath it, the paper being tightly clamped to the apron by the action of the springs, as soon as the clip has passed the bars P. The paper after having been subjected to the bronzing process is carried by the clip to a position directly over an inclined receptacle, R, when the ends *h h* of the said clip are caused to pass over cam-like projections *k*, (see Fig. 1,) and are thus lifted sufficiently to withdraw the clip from the apron, and release the paper.

As the apron is apt to become loose after a period of wear, I provide one or both of its rollers G with sliding bearings *m*, which can be adjusted and retained after adjustment by a screw, *m*, in a manner which will be readily understood on reference to Fig. 4.

The brushes are also provided with adjustable bearings *p*, Fig. 5, which permit them to be set up toward the apron, as they become worn away.

I claim as my invention—

1. The combination, in a bronzing-machine,

of the rotating pad B, and the box J, with its perforated curved bottom *a*, and vibrating brush *b*, all substantially as and for the purpose specified.

2. The combination, substantially as described, of the apron D, the brush K, maintained in contact with the inner surface of the said apron, and the chute or deflector *e*, beneath the said brush.

3. The apron D, having a series of ribs or projections on its surface, as herein set forth.

4. The combination, substantially as described, of the endless apron D, its spring-clips M M', and the fixed bars or cams P P, adjacent to the edges of the said apron.

5. The combination of the endless apron D, the spring-clips M M', and the fixed cams or inclines *k*, all as and for the purpose specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

DAVID HESTON.

Witnesses:

WM. A. STEEL,
HARRY SMITH.