

F. J. EMMERICH.
BRONZING-MACHINE.

No. 175,440.

Patented March 28, 1876.

Fig. 1.

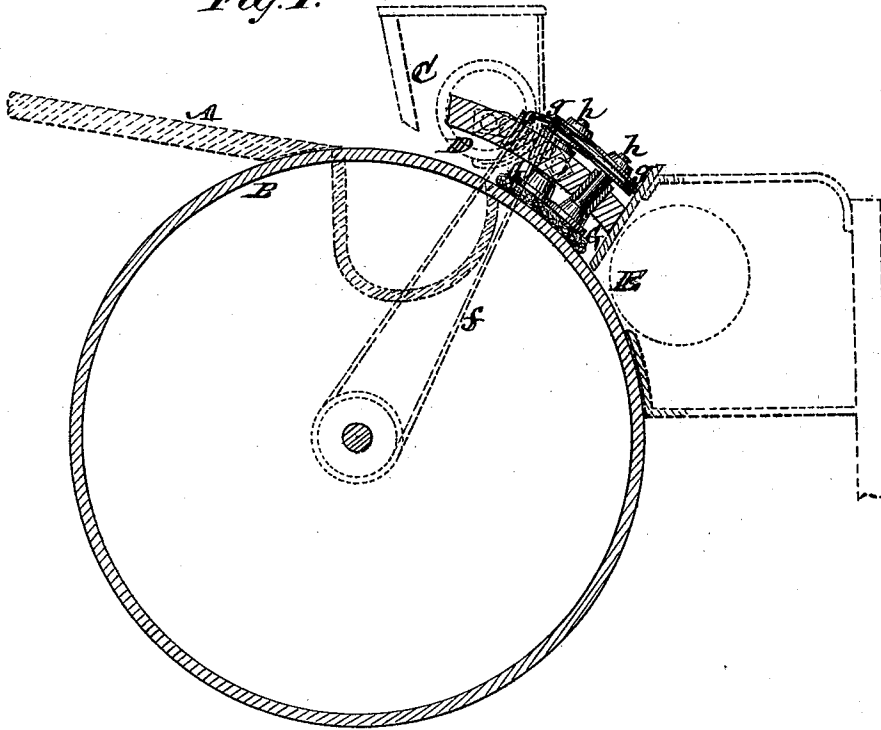
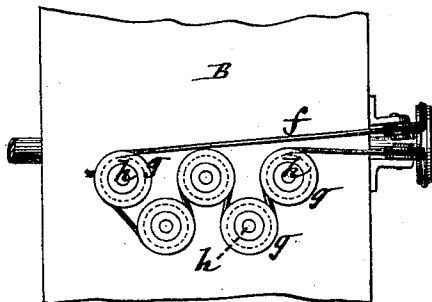


Fig. 2.



Witnesses.

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IMPROVEMENT IN BRONZING-MACHINES.

Specification forming part of Letters Patent No. **175,440**, dated March 28, 1876; application filed February 26, 1876.

To all whom it may concern:

Be it known that I, FRANK J. EMMERICH, of the city, county, and State of New York, have invented a new and useful Improvement in Bronzing-Machines; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, which forms part of this specification.

This invention relates to machines for applying bronze or other powder to paper, foil, oil-cloth, and other materials, after the same have been printed with ink or size. It is applicable to machines employing any kind of an endless carrier of the material to be bronzed, including an endless carrying-platform or belt, but it will here be described as applied to cylinder bronzing-machines, such as those used for bronzing the printed or sized portions of sheets of paper as the same are taken by the revolving cylinder and passed under a pad or pads, which operate to diffuse the powder over the sheet, and cause it to adhere to the printed or sized portions of the latter.

The invention consists in a combination, with an endless carrier, on which the sheet or material to be bronzed is placed, of any number of pads, arranged to turn or rotate about independent axes, which are normal or perpendicular, or thereabout, to the line or course of travel of the endless carrier, whereby the bronze is diffused over, and caused to adhere to, the sized or printed surfaces in an even or regular manner, and without marking or marring the bronzed surfaces.

Figure 1 represents a side view of a cylinder bronzing-machine, in part, with my improved rotary bronzing cushions or pads applied. Fig. 2 is a longitudinal view of the main cylinder, in part, with the rotary cushions or pads arranged over the same.

To simplify explanation, the material having its printed or sized surfaces to be bronzed will here be referred to as a sheet of paper, which is passed down or over an inclined feed-board, A, onto a main revolving cylinder, B, which may be provided with grippers, and which takes the sheet and passes it under a trough or box, C, containing the bronzing-powder and a distributing-roller, D, with other appurtenances, if necessary, from whence the

sheet passes under the pads or cushions that diffuse the loosely-distributed powder, and cause it to adhere to the printed or sized portions of the sheet, which, subsequently, is conveyed by the cylinder B against and past a roller, E, that wipes the superfluous powder from all but the printed or sized portions of the sheet. This being the general action of other cylinder bronzing-machines, any further description of the same, or of various details of the machine which form no part of this invention, is unnecessary here, and I shall now proceed to explain the construction and action of the cushions or pads, which, in connection with the endless carrier, constitute my invention. These cushions or pads G differ from other moving pads for the like purpose in being composed of a series of turning or rotating disks, plates, or bodies, arranged in one or more rows along the cylinder, and having their axes perpendicular to the axis of the cylinder B. Said pads may have their acting surfaces or faces composed of fur, plush, cotton, wool, or any other suitable material. They may either be driven by bands or gearing, and be caused to rotate either all in the same direction, or some in one direction and others in an opposite direction, and may have either a continuous rotary motion or an alternate or reciprocating one about their axes.

In the drawing, said pads are represented as driven in a continuous rotary manner by a band, f, from the shaft of the main cylinder, arranged to pass over idlers and round pulleys g on the spindles of the pads; but they may be driven by pinions on their spindles and a reciprocating double rack, arranged parallel with the length of the cylinder B, and interposed between each two adjacent rows of pads, so as to gear with their pinions, and serving to give a circular reciprocating motion to the pads about their axes. Other means, however, may be used for driving the pads, the spindles h of which turn in boxes or bearings carried by the frame of the machine.

By thus using cushions or pads having a rotary motion about their axes, which are perpendicular to the axis of the main cylinder, the bronzing-powder is most thoroughly diffused over, and caused to adhere to, the printed or

sized surfaces under exposure without that marking, marring, or streaking which is incidental to a pad reciprocating in a straight line, and the work is done much more efficiently than by revolving pads having their axes parallel with the axis of the cylinder which carries the sheet or material to be bronzed. Said bronzing cushions or pads may either be arranged above, below, or on either side of the cylinder, it only being necessary that their axes should be normal to the acting or carrying surface of the cylinder, or perpendicular to the acting or carrying surface of the end-

less apron or belt when such form of endless carrier is used in place of the cylinder B.

I claim—

The combination, with an endless carrier on which the sheet or material to be bronzed is placed, of a series of rotary bronzing cushions or pads, G, having their axes perpendicular to the acting or carrying surface of said carrier, substantially as specified.

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Witnesses:

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