UNITED STATES PATENT OFFICE.

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IMPROVEMENT IN PROCESSES OF BRONZING AND FLOCKING PAPER, COTTON, LINEN, &c.

Specification forming part of Letters Patent No. **209,625**, dated November 5, 1878; application filed October 10, 1878.

To all whom it may concern:

Be it known that we, ROBERT EVANS PETERSON and EDWARD J. FROST, of the city of Philadelphia, in the State of Pennsylvania, have invented a new and useful Process for Bronzing and Flocking Paper, Cotton, Linen, and Silk Cloth, and other similar fabrics used for printing purposes, which process is fully set forth in the following specification.

This invention relates to that class of processes for bronzing, flocking, or otherwise powdering sheets of paper or other material that has been prepared with a size or other tenacious substance in such manner as to retain said bronze or other powder where the same may come in contact therewith; and it consists in passing the paper, cotton or linen cloth, or other fabric, the surface of which has been first properly sized or otherwise prepared to retain said bronze or other powder when brought into contact therewith, through a current of air charged with bronze or other powder, which is thereby driven against said prepared paper or other fabric, and by circulation and agitation brought into contact with every part of the surface intended to receive the same.

In carrying out our invention, take a sheet of paper and size the same, or such portions thereof as it may be desired to bronze, with the ordinary sizing in use among printers for such purposes, or any similar substance possessing the necessary retaining property, and by means of a rotary cylinder made to revolve in an air-chamber constructed for that purpose, or by any similar means, pass the said paper, with its prepared surface exposed to the action of a current of air within said chamber, by revolution of said cylinder into the same, and there bring the said prepared surface into contact with the bronze or other powder intended to be deposited thereon by means of a strong current of air charged with said bronze or other powder, and kept in constant circulation and agitation by means of pipes connecting with said air-chamber, through which, by means of proper machinery constructed for that purpose, the air is forced into said chamber; and it will be found that the said paper, where sized, has received a full and equable charge of bronze or other powder, and that all those parts of the paper not intended to be so covered are left clean and unimpaired.

By this process the most elaborate and delicate designs of artistic printing are executed without smudging or broadening the lines, as is the case with the processes of bronzing ordinarily in use, the same force of air which drives the bronze-powder into close adhesion with the sized portion of the surface acting with equal force upon the unsized surface to keep it clean and blow away all extraneous matter.

Hitherto bronzing, flocking, and other like operations in the printing business have been done by means of brushes, pads, or by the hand, and generally by manual application; but bronzing-machines have been constructed to facilitate these operations, all, so far as we know, imitating these processes, the sized paper being brought into contact with the surface of brushes or pads containing the bronze, the effect of which is often to impair the beauty and regularity of the work by smudging and broadening the lines thereof. It is to avoid this defect, and also to increase the facility with which bronzing can be done, so as to keep pace, if possible, with other improvements in the printing business, that we have invented the process herein described and a machine for carrying the same into effect; and its advantages over the processes now in vogue are very many, including among them, besides those above recited, rapidity of execution and economy of material and labor.

We claim as our invention—

The process of bronzing, flocking, or otherwise powdering paper or other fabric prepared by sizing or other like process to receive and retain said bronze or other powder by passing the same through a chamber through which currents of air charged with bronze or other powder are kept in rapid circulation by means of proper machinery provided for that purpose, substantially as described.

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Witnesses:
JOHN B. PETERSON,
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