Feb. 24, 1925. 1,527,676

C. ECKERT

MACHINE FOR BESTREWING OR COATING WEBS OR SHEETS OF PAPER OR THE LIKE WITH BRONZE OR THE LIKE

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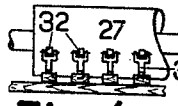


Fig.4

Fig.3

Fig.1

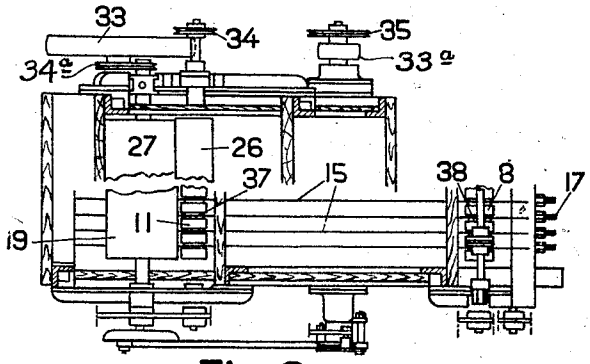


Fig.2

Inventor:
Carl Eckert
by: Hubert S. Ry.
Attorney.

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UNITED STATES PATENT OFFICE.

CARL ECKERT, OF BERLIN-NEUKOLLN, GERMANY.

MACHINE FOR BESTREWING OR COATING WEBS OR SHEETS OF PAPER OR THE LIKE WITH BRONZE OR THE LIKE.

Application filed February 2, 1924. Serial No. 690,232.

To all whom it may concern:

Be it known that I, CARL ECKERT, a citizen of the German Republic, and resident of Berlin-Neukolln, Germany, have invented a new and useful Improved Machine for Bestrewing or Coating Webs or Sheets of Paper or the like with Bronze or the like, of which the following is a specification.

My invention relates to machines of the kind in which a continuous web of paper, or paper-sheets, or the like, is bestrewed or coated with pulverulent bronze or another colored powder. The respective substance is caused to fall into a chamber in which it is distributed and turned into dust by rotating blades, the dust precipitating then onto the paper or other material which is caused to pass through said chamber.

A machine of this kind is shown and described in my United States Patent No. 1466821, Sept. 4, 1923. The machine shown in the accompanying drawing and described hereinafter is an improvement on said previous machine, and the improvement consists firstly, in guiding the paper, etc., in the chamber by and between thin wires in such a manner that the bronze, etc., covers all parts of the paper, etc., secondly, in guiding the covered paper, etc., outside said chamber by thin wires or cords or small rolls in such a manner that nothing of the bronze or the like is rubbed off, before the bestrewed or coated paper, etc., gets onto the discharge table of the machine.

My invention is illustrated by way of example in the accompanying drawing, in which Figure 1 is a vertical section thereof; Figure 2 is in its upper part a horizontal section in the plane A—B of Figure 1, and in its lower part a horizontal section in the plane C—D of said latter figure; Figure 3 shows a modification of the arrangement and combination of the parts shown in the upper part of Figure 1, and Figure 4 is a side-view of this modification, seen from the right to the left with respect to Figure 3.

The above-mentioned chamber is formed, in the example shown in Figure 1, of a box 1 which is narrowing in upward direction and carries on its top a hopper 4 receiving the pulverulent material to be distributed in said box. At the discharge end of the hopper is a distributing roller 5 which is rotated by any suitable means and causes said material to fall into the range of very quickly rotating blades 6 which consists of frames covered with gauze or an equivalent fabric. The pulverulent material is turned into dust by said blades, and the dust which is distributed very uniformly throughout the chamber precipitates also very uniformly onto the upper surface of the paper, etc., passing through the chamber below the said blades. The inner surfaces of the box walls are covered with loose sheets of paper or the like, these sheets fluttering while the blades are in motion and preventing particles of the pulverulent substance from adhering to said walls.

The paper, etc., 9 which is either a continuous piece, or successively fed sheets, is introduced into the box with the aid of rollers 7 and 8, but prior thereto the upper surface which is to receive the bronze or other colored pulverulent substance is provided with an adhesive coating to which the respective substance adheres. The thus treated paper, etc., is drawn out of the box by rollers 10 and 11. The paper is guided within the box by the wires or cords 15 and 16, of which the wires or cords 16 extend below it, in the direction of motion of the paper. The upper wires or cords do not prevent the paper from being uniformly bestrewed or coated. The wires or cords are attached at one end to hooks 14 and 18, and at the other end to tensioning members 13 and 17, by which latter they can be stretched. In order to enable the rollers 7 and 8, and 10 and 11, to take hold securely of the paper in spite of the existence of the wires or cords, at least the lower rollers 8 and 11, preferably, however, the upper ones (7 and 10) too, are provided with circumferential grooves 37 and 38 (Fig. 2) through which the wires or cords pass.

The bestrewed or coated paper departs from the wires or cords and the rear pair of rollers and passes between a curved guide-plate 30 and a roller 19 upwards to another roller 27 over and by which it is transported to the discharge table 29. While the paper is moved from the roller 19 to the roller 27 it is subjected to the action of a beating member 21 which acts on the paper by the aid of the guide-plate 30 and is acted on by cam shafts 20 and causes the superfluous pulverulent bronze etc. to fall off the paper, and down into a box 3. The box 2 located below the wires 16 serves also for collecting

particles which have fallen off the paper.

26 is a mopping roller which is covered with very quickly rotating cloth-pieces or with felt, and serves to polish the bestrewed or coated surface of the paper. In order to hold the paper fast on the roller 27 while it is acted on by the roller 26, very thin endless cords 25 are provided which run around rollers 22, 23, 24, and are kept stretched by a tensioning roller 36. As these cords are very thin, as said, they do not prevent polishing the paper over the entire surface thereof. 28 is a purifying roller which removes the last traces of the bronze etc. still adhering, perhaps loosely to the paper.

33, 33ª, 34, 34ª, and 35, are driving members for the various rotatory working members of the machine, viz.: the roller 27 is rotated by the large pulley 33; the distributing roller 5 is rotated by the small pulley 33ª; the mopping roller 26 is rotated by the cord-pulley 34; the purifying roller 28 is rotated by the cord-pulley 34ª; and the blades 6 are rotated by the cord-pulley 35.

In the modification illustrated in figures 3 and 4 small rollers 32 are provided as substitutes for the cords 25 of Figure 1. Each roller is supported in a flat spring 31 by which the papers is firmly pressed against the roller 27.

I claim:

1. A machine for bestrewing or coating webs or sheets of paper or the like with a pulverulent substance, comprising, in combination, a box and means for distributing the pulverulent substance within the same; means for conducting the paper into and out of the box below said distributing means; two sets of parallel guide members extending through the box parallel to the paper below and above it, and means for stretching said guide members, as set forth.

2. A machine for bestrewing or coating webs of sheets of paper or the like with a pulverulent substance, comprising, in combination, a box and means for distributing the pulverulent substance within the same; rollers for conducting the paper into and out of the box below said distributing means, and two sets of parallel guide wires or cords extending through the box parallel to the paper below and above it; said rollers having grooves through which said wires pass, as set forth.

3. A machine for bestrewing or coating webs or sheets of paper or the like with a pulverulent substance, comprising, in combination, a box and means for distributing the pulverulent substance within the same; means for conducting the paper into and out of the box below said distributing means, and two sets of parallel guide members extending through the box parallel to the paper below and above it; a roller over which the covered paper is conducted; a polishing roller so arranged as to be apt to act on the paper passing over said roller, a plurality of small rollers arranged to press the papers against the said roller while it is subjected to the action of said polishing roller, and means to press said rolls elastically against the paper as set forth.

In testimony whereof I affix my signature in presence of a witness.

CARL ECKERT.

Witness:
WLAD. ENDERS.