

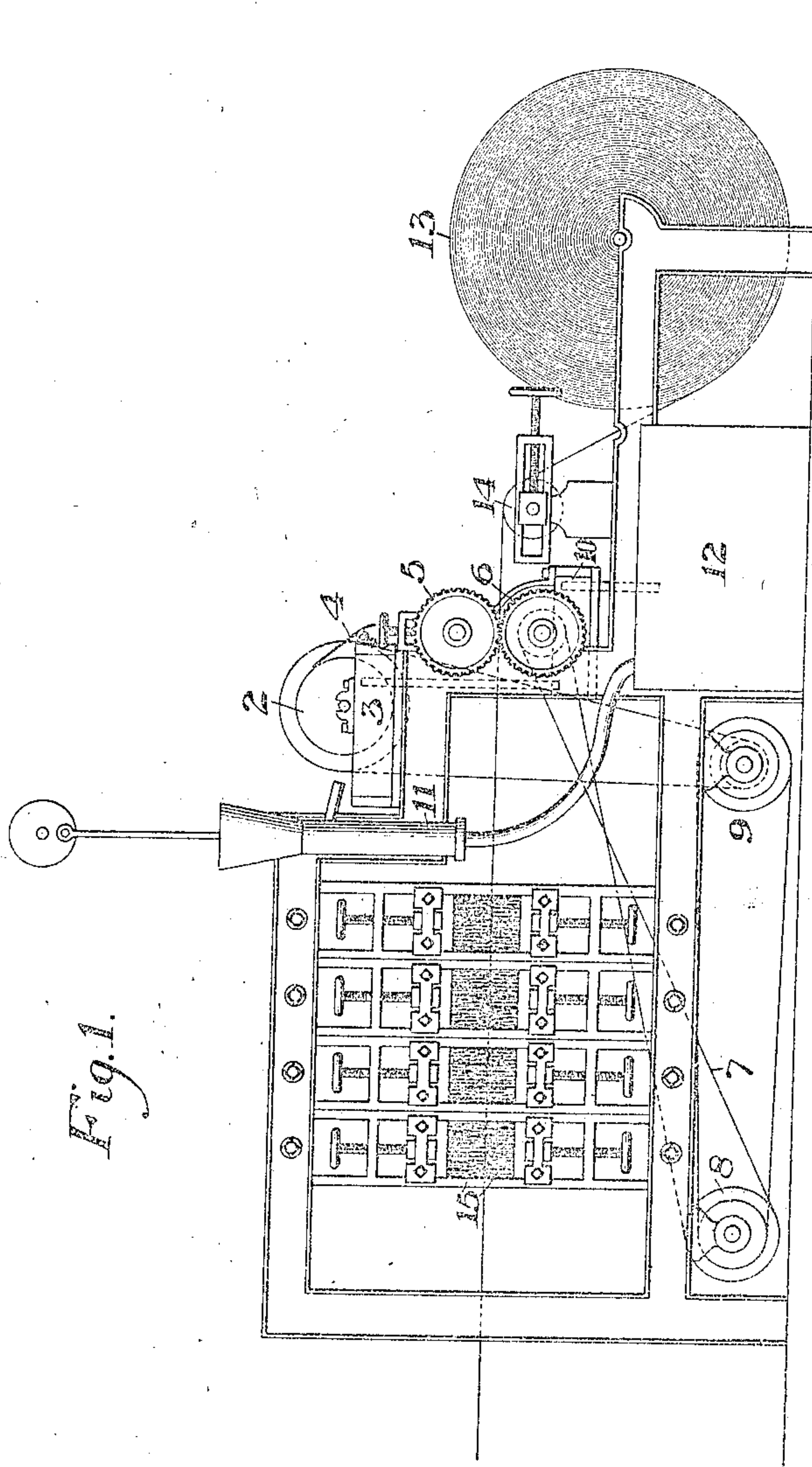
No. 875,241.

PATENTED DEC. 31, 1907

M. CANTINE.
MACHINE FOR COATING PAPER.

APPLICATION FILED APR. 6, 1906.

2 SHEETS—SHEET 1.



WITNESSES

Warren W. Swartz
R. A. Balderson

INVENTOR

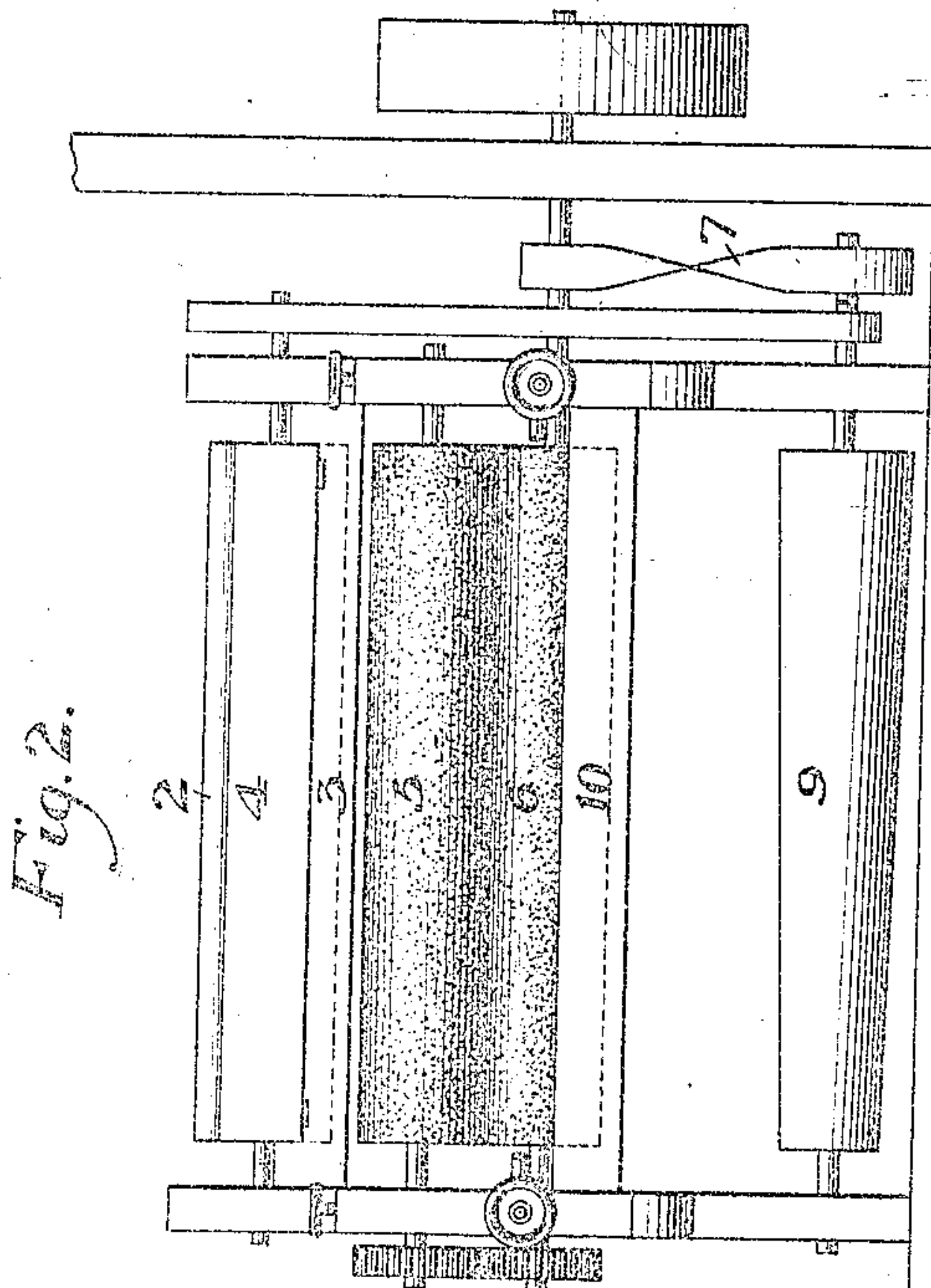
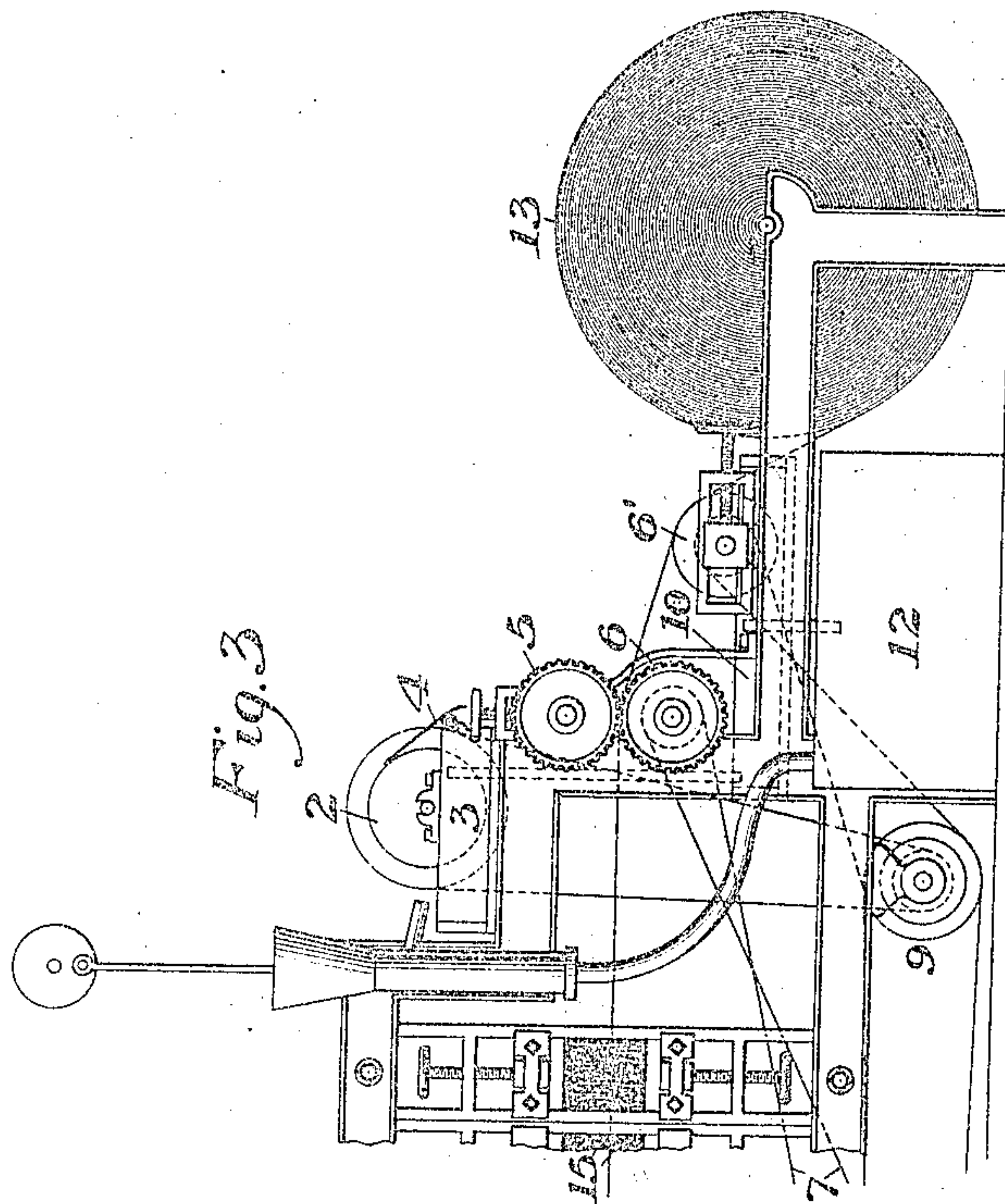
Martin Cantine
by Deane & Dykes
his attys

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2 SHEETS—SHEET 2.



WITNESSES

Warren H. Swartz
R. A. Balderoon.

INVENTOR

Martin Cantine
by Belknap & Rogers
his attys

UNITED STATES PATENT OFFICE.

MARTIN CANTINE, OF SAUGERTIES, NEW YORK.

MACHINE FOR COATING PAPER.

No. 875,241.

Specification of Letters Patent.

Patented Dec. 31, 1907.

Application filed April 6, 1906. Serial No. 310,245.

To all whom it may concern:

Be it known that I, MARTIN CANTINE, of Saugerties, in the county of Ulster and State of New York, have invented a new and useful Machine for Coating Paper, of which the following is a specification, reference being had to the accompanying drawing, in which—

Figure 1 shows my improved machine in side elevation; Fig. 2 is an end elevation of the machine; and Fig. 3 is a side elevation showing a modified construction of the apparatus.

The purpose of my invention is to provide means for applying coating to paper in a simple manner and with great uniformity. The purpose of the coating is to surface the paper preparatory to printing or lithographing.

An important feature of the invention resides in a peculiar combination and arrangement of color-applying rolls, whereby a uniform amount of color will be applied to each side of the work regardless of the rate of speed of the machine. I prefer to employ what will be termed "hard-faced" color-applying rolls, as distinguished from brush rolls, although, as a matter of fact, the rolls will be provided with yieldable surface coverings, for instance, felt. It will therefore be understood that hereinafter where I use the term "hard-faced roll", I mean to exclude brushes, and to include all other forms of rolls. These rolls are mounted so as to mutually contact when there is no work in the machine, thereby to pinch the work and prevent the surplus color from following on between the rolls, such surplus color being squeezed off the work.

As shown in the drawings, the machine comprises a color-roll 2 which rotates in a color-box 3 and is provided with a skimming-plate or doctor 4, the edge of which is nearly in contact with the surface of the roll, so as to skim the color therefrom and to deliver it upon the surface of a lower felt-coated roll 5. This roll 5 is geared to a companion felt-covered roll 6, and one of the rolls 5 or 6 is driven by a sprocket-chain 7 from a cone pulley 8, or other means may be provided for driving the roll 6 at a variable rate of speed. The color-roll 2 is also driven from a cone pulley 9, by which its speed of rotation may be governed and the amount of color drawn up by its surface and delivered to the doctor 4 controlled. The roll 5 is provided with adjusting screws by

which it may be pressed against the roll 6, and the contact pressure of these rolls upon the intervening web of paper varied. The lower roll 6 dips into a color-box 10 and applies the color directly to the under side of the web of paper, and color being applied to the upper side of the web of paper by means of the felt-covered roll 5, which receives the color from the doctor 4. 11 is a color pump which communicates with a color tub 12 and lifts the color to the box 3, from whence it is discharged through a suitable overflow into the box 10, overflowing from the box 10 into the tub 12, so that a constant flow of color is maintained.

In the operation of the machine, the paper is drawn from a roll 13 and passes over a guide-roll 14, which draws the paper in a horizontal plane between the rolls 5 and 6 where the coating is applied to both sides of the paper. Thence the paper passes between brushes 15 reciprocated by suitable mechanism and adapted to smooth the color which has been applied by the rolls, and from the brushes the paper is drawn by suitable draft-rolls or otherwise to and through drying mechanism of the usual variety.

In Fig. 3 I show a modified construction of the apparatus, in which the roll 6 is not used for applying the color directly to the paper, but the color is applied by an auxiliary roll 6' which dips into the color-box 10 and over which the web of paper is drawn. The color is applied by this roll to the under side of the paper-web, and thence the paper passes between the rolls 5 and 6, the coating being applied to its upper surface by the roll 5 in the manner explained above.

Within the scope of my invention as defined in the claims, those skilled in the art will be able to modify the construction of the apparatus in many ways, since

What I claim is:

1. A web coating machine having a pair of mutually contacting positively driven hard face color rolls which are also feed rolls, substantially as described.

2. A web coating machine having a pair of superimposed mutually contacting and positively driven hard face color rolls, which are also feed rolls substantially as described.

3. A machine for coating paper comprising coating rolls between which the paper passes and by which the color is applied to its opposite sides, a color-box and color-roll, a plate disposed to receive the color from the surface

of the color-roll and deliver it to the surface of the upper coating-roll, and a color-box in which the lower coating-roll rotates and by which the color is supplied thereto substantially as described.

4. A web coating machine having a pair of mutually contacting positively driven hard face color rolls, which are also feed rolls, and brushes for opposite sides of the work after it passes from the rolls substantially as described.

5. A web coating machine having a pair of mutually contacting superimposed positively driven hard face color rolls, which are also feed rolls, and brushes for opposite sides of the work after it passes from the rolls substantially as described.

6. A web coating machine having a pair of superimposed positively driven mutually contacting hard face color rolls, which are also feed rolls means to guide the work between the rolls in a substantially horizontal direction and superimposed brushes in rear of the rolls and disposed to engage opposite sides of the work substantially as described.

7. A coating machine having an upper color box, a lower color box in communication therewith, an upper coating roll, a color feed roll operating in the upper box, a skimming plate disposed in cooperative relation with the feed roll to drip the color upon the coating roll, a lower coating roll operating in the lower box, and means for maintaining a circulation of the liquid coating from the

lower box to the upper box substantially as described.

8. In a web coating machine, the combination of a pair of substantially parallel positively driven hard faced coating rolls having their peripheries in mutual contact, said rolls also being feed rolls, and means for guiding the web between the rolls in a substantially straight line, whereby the coating is applied simultaneously and uniformly to opposite sides of the work, substantially as described.

9. In a web coating machine, the combination of a pair of superimposed substantially horizontal positively driven and mutually contacting hard-faced coating rolls, said rolls also being feed rolls, and means for guiding the work between the rolls in a substantially horizontal direction, whereby the coating is applied simultaneously and uniformly to opposite sides of the work, substantially as described.

10. A web-coating machine having superimposed mutually-contacting positively driven hard-face color rolls, and superimposed brushes disposed to brush opposite faces of the work after it passes between the color rolls, substantially as described.

In testimony whereof, I have hereunto set my hand.

MARTIN CANTINE.

Witnesses:

JAS. DEDERICH,
W. L. FINGER.