

No. 894,366.

PATENTED JULY 28, 1908.

M. CANTINE.
MACHINE FOR COATING PAPER.

APPLICATION FILED APR. 6, 1906.

2 SHEETS—SHEET 1.

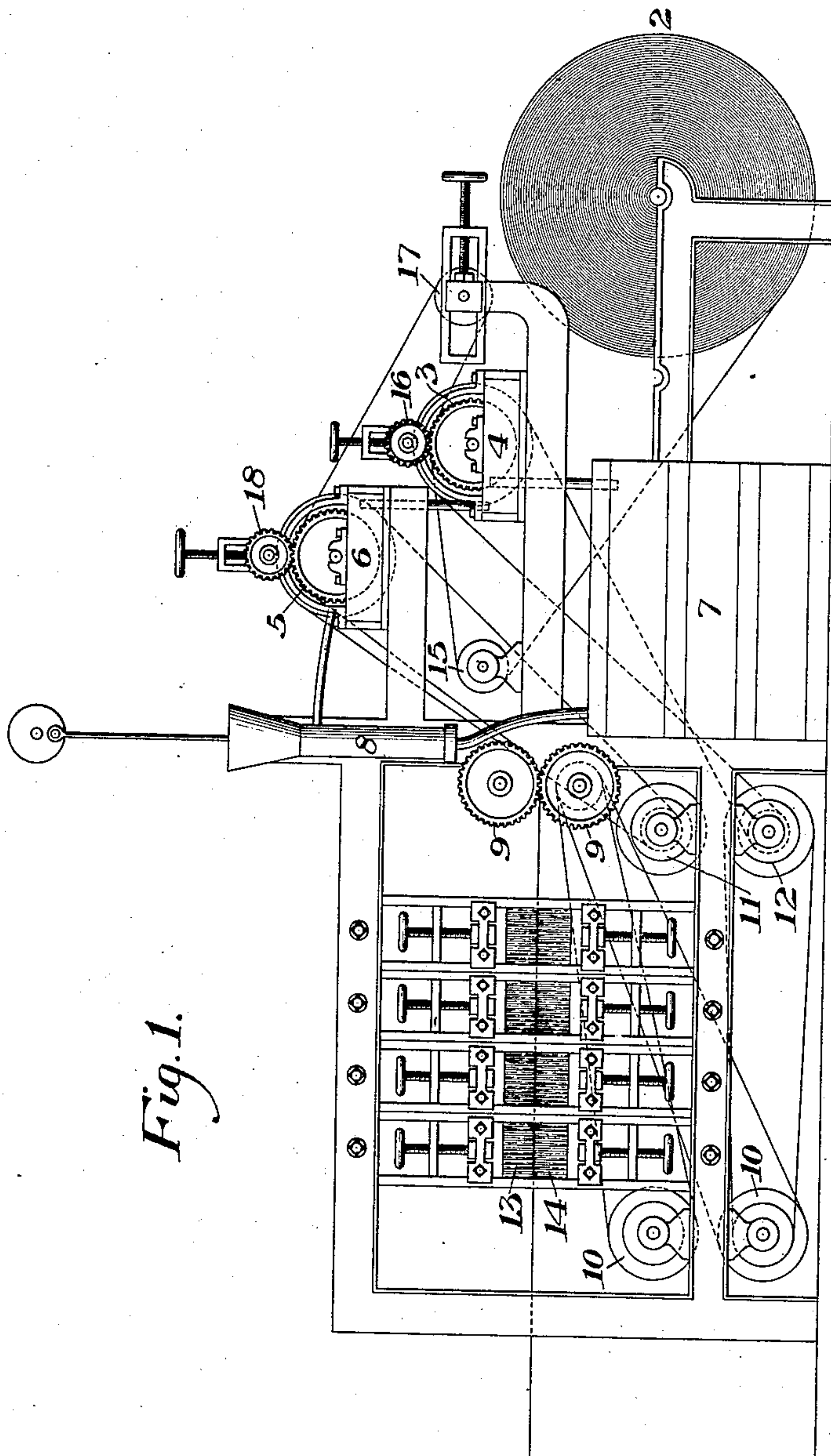


Fig. 1.

WITNESSES

Warren W. Swartz
R. A. Balderson

INVENTOR

Martin Cantine
by Perkins & Pym
his attys

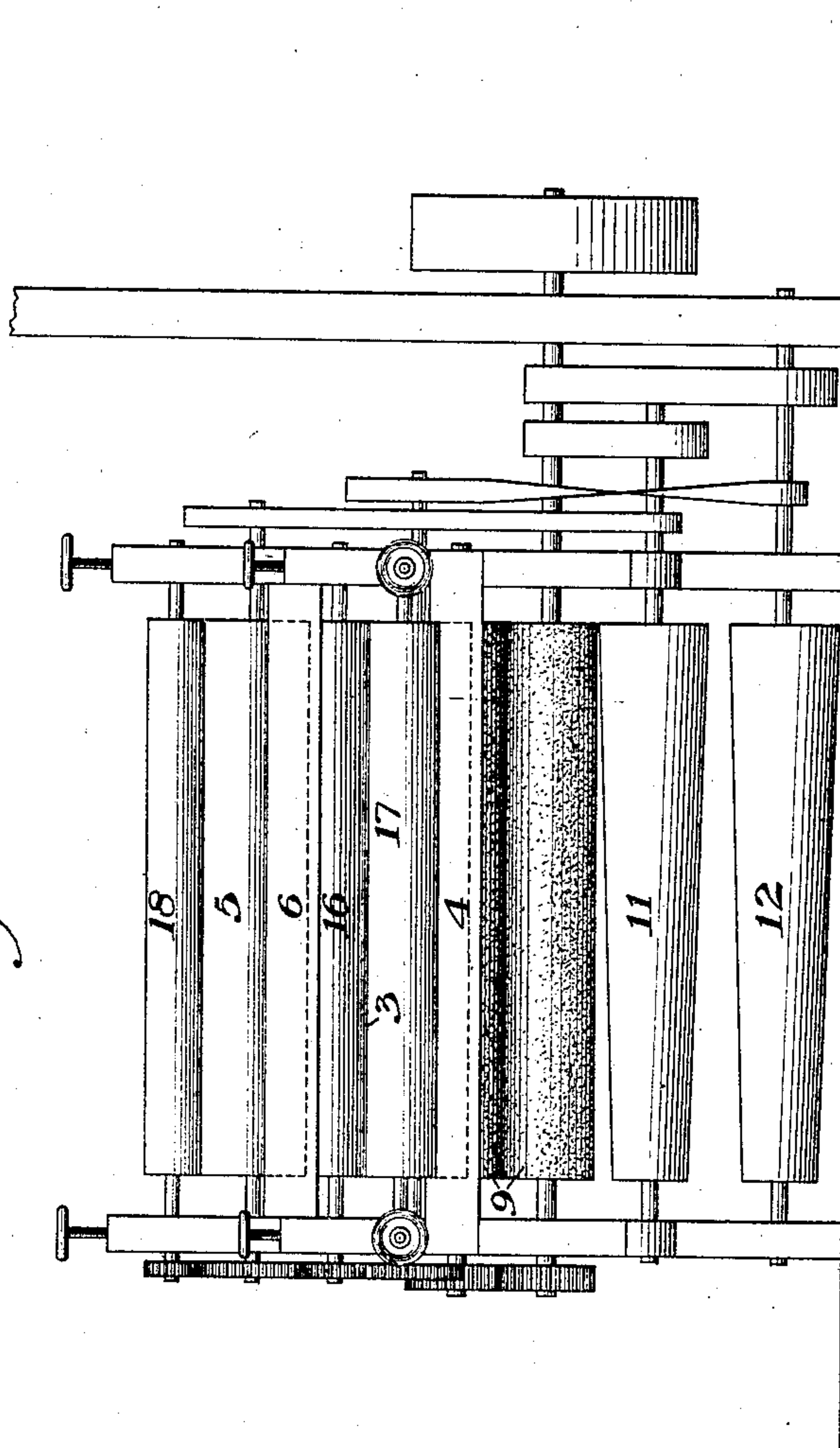
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2 SHEETS—SHEET 2.

Fig. 2.



WITNESSES

Warren W. Swartz
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UNITED STATES PATENT OFFICE.

MARTIN CANTINE, OF SAUGERTIES, NEW YORK.

MACHINE FOR COATING PAPER.

No. 894,366.

Specification of Letters Patent.

Patented July 28, 1908.

Application filed April 6, 1906. Serial No. 310,244.

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, and Fig. 2 is an end elevation of the machine.

The purpose of my invention is to provide a machine for applying coating or color to paper, to prepare it for printing or lithographing, and its advantages are that it applies the color more uniformly and with simpler mechanism than has heretofore been possible. In this connection, it is proposed to employ rolls for applying the color in contradistinction to brushes, which do not apply the color as uniformly as rolls, and therefore, where the term "color roll" or "color rolls" is employed, it is intended to mean a roll having a continuous periphery rather than a cylindrical brush.

In the drawing 2 represents a roll of the paper which is to be coated.

3 is a color-roll which is driven by gearing to be described hereafter and the periphery of which rotates in a color-box 4. 5 is a second roll, which is adapted to apply coating to the other side of the paper. It also is driven and rotates in a color-box 6.

7 is the main color-tub, from which the liquid color is lifted by a pump 8 and delivered into the color-box 6, whence it overflows into the color-box 4 and thence into the color-tub 7, thus maintaining a constant circulation of the color.

9, 9 are draft rolls for drawing the web of paper through the machine. These rolls are driven by suitable cone gearing 10, 10 so that their speed of rotation may be varied, or other means for this purpose may be employed. The color-rolls 3, 5 are also driven by cones 12 and 11, which are connected by sprocket chains with the color-rolls, so that the speed of rotation of the color-rolls may be varied, for the thickness of the liquid coating applied to the web of paper is governed by the surface-speed of the rolls. In like manner the speed of the paper passing over the rolls is varied by the operation of the cones 10 and their connecting sprocket-chains by which the rolls 9, 9 are driven. The speed of motion of the paper is therefore

independent of the speed of motion of the rolls, both being variable.

In advance of the draft-rolls 9, 9 is a series of brushes 13, 14 operating respectively on the top and bottom of the web of paper and actuated by suitable reciprocating mechanism for the purpose of spreading the coating evenly upon the paper.

In the operation of the machine, the paper is threaded between and over the rolls in the manner shown in the drawing, and the machine is then set in motion. The paper is drawn forward by the rolls 9, 9 and passes from the roll 2 over a guide roll 15, thence over and in contact with the color-roll 3, against which it is held by an adjustable top roll 16, driven by gearing from the roll 3. When in contact with the roll 3, the under side of the paper is coated with the color which is carried by the periphery of this roll, and the amount of color thus applied to the paper depends upon the speed of rotation of the roll. From the roll 3 the paper passes around a guide roll 17 and thence over the color-roll 5, against which it is held by an adjustable roll 18 geared with the color-roll. This color-roll applies the coating to the opposite side of the paper, and thence the paper, coated on both sides, passes between the rolls 9, 9, by the action of which the color is smoothed and rendered uniform and by which the paper is drawn through the machine; and thence the paper passes between the reciprocating brushes 13 and 14, by which the color is smoothed. Thence the paper passes to suitable drying mechanism, which may be of any desirable construction and need not be here specifically described.

An important feature of this machine is the employment of color-rolls for coating the opposite sides of the paper, by which, the speed of the rolls and the speed of the paper being variable, the color can be applied in whatever degree of thickness of coating may be desired. The use of brushes for applying the color is dispensed with and the action of the machine is rendered more simple and more easily controllable than heretofore.

Those skilled in the art will be able to vary the construction and arrangement of the parts in many ways, since

What I claim as my invention is:

1. A paper coating machine comprising color rolls disposed to engage opposite sides

of the work, brushing means disposed to engage opposite sides of the work after it has been subjected to the coating rolls, and feed rolls disposed to engage the work between the brushing means and the coating rolls, substantially as described.

2. A paper coating machine comprising color rolls disposed to engage opposite sides of the work, brushing means disposed to engage opposite sides of the work after it has been subjected to the coating rolls, and feed rolls disposed to engage the work between the brushing means and the coating rolls, the color and feed rolls capable of being driven at different speeds, substantially as described.

3. A paper coating machine comprising color rolls disposed to engage opposite sides of the work, brushing means disposed to engage opposite sides of the work after it has been subjected to the coating rolls, feed rolls disposed to engage the work between the brushing means and the coating rolls, and means for independently varying the speed of the color rolls and the feed rolls, substantially as described.

4. A paper coating machine having a paper roll holder, a coating roll disposed to engage one side of the paper, another coating

roll disposed for engaging the opposite side of the paper, brushing means disposed to engage opposite sides of the paper at the same portion thereof after it has been subjected to the coating rolls, positively driven feed rolls disposed to engage the paper between the brushing means and the coating rolls, and means for independently varying the speed of the color rolls and the feed rolls, substantially as described.

5. A paper coating machine having a paper roll holder, a coating roll disposed to engage one side of the paper, another coating roll disposed for engaging the opposite side of the paper, brushing means disposed to engage opposite sides of the paper at the same portion thereof after it has been subjected to the coating rolls, and positively driven feed rolls disposed to engage the work between the brushing means and coating rolls, substantially as described.

In testimony whereof, I have hereunto set my hand.

MARTIN CANTINE.

Witnesses:

JAS. DEDERICH,
W. L. FINGER.