No. 726,358. PATENTED APR. 28, 1903.

C. F. W. SCHUMACHER.

PAPER COATING MACHINE.

APPLICATION FILED MAR. 20, 1901. RENEWED SEPT. 16, 1902.

NO MODEL.

Fig. 1.

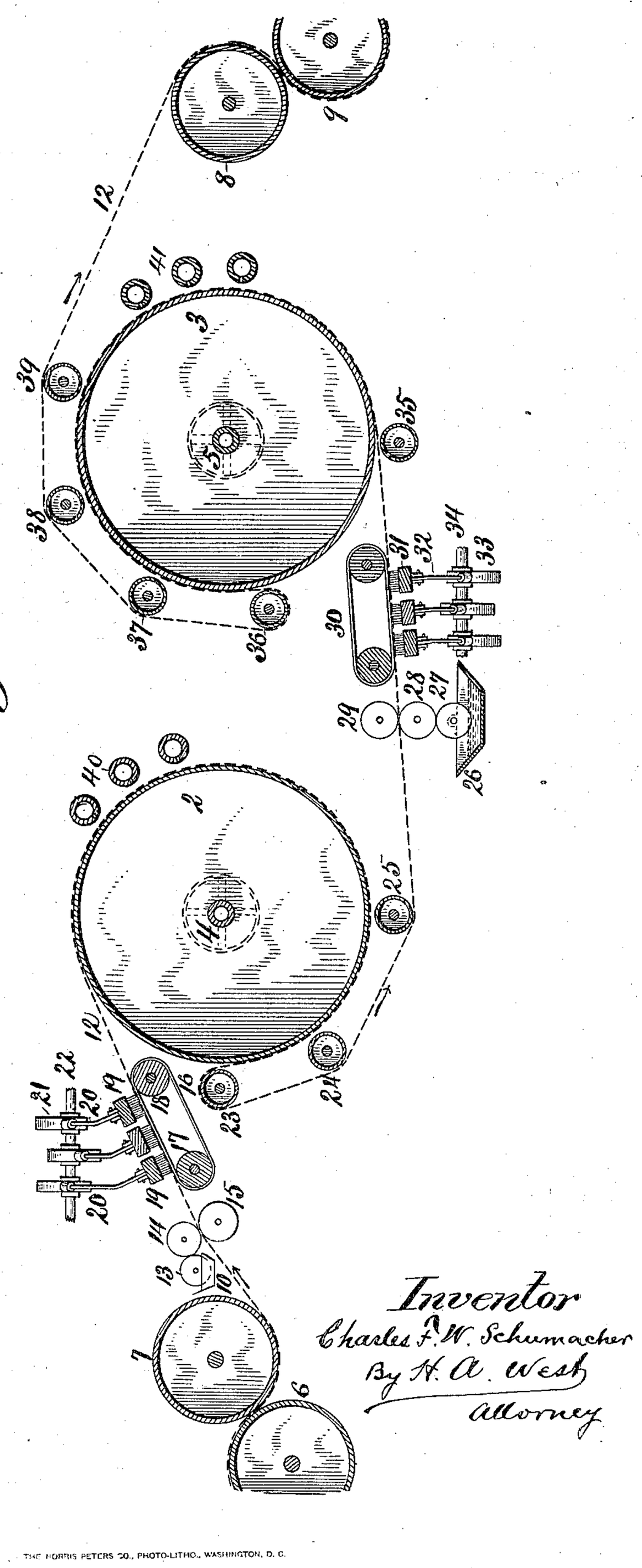
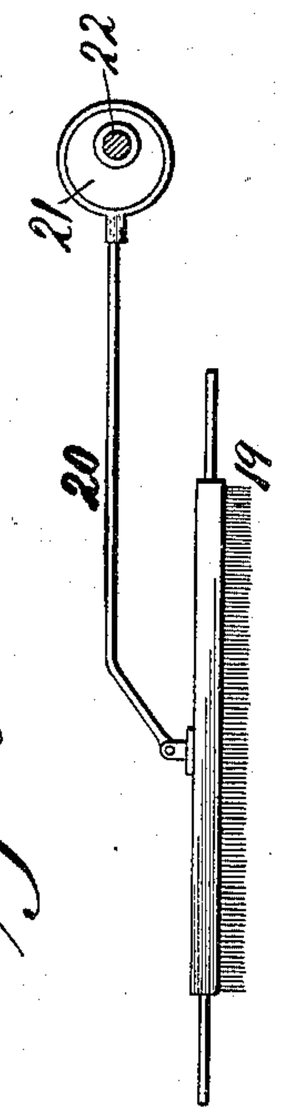


Fig. 2.



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CHARLES F. W. SCHUMACHER, OF KALAMAZOO, MICHIGAN.

PAPER-COATING MACHINE.

SPECIFICATION forming part of Letters Patent No. 726,358, dated April 28, 1903.

Application filed March 20, 1901. Renewed September 16, 1902. Serial No. 123,643. (No model.)

To all whom it may concern:

Be it known that I, CHARLES F. W. SCHUMACHER, a citizen of the United States, and a resident of Kalamazoo, in the county of Kalamazoo and State of Michigan, have invented certain new and useful Improvements in Paper-Coating Machines, of which the following is a specification.

In the accompanying drawings, to which reference is made and which form a part of this specification, Figure 1 is a sectional diagrammatic view of my invention, illustrating its application to an ordinary paper-machine; and Fig. 2 is a detailed side view of one of the brushes and means for reciprocating the same.

The main object of my invention is to provide ordinary paper-machines with means whereby the paper may be surfaced or coated with the ordinary glue and clay coating material used for coating paper, thus avoiding the expense of two operations and effecting a saving in machinery and in floor-space in the mill; and to this end my invention consists in the construction, arrangement, and combination of parts, all as hereinafter described and claimed.

In the drawings, 2 3 represent large hollow rollers or drums heated, preferably, by steam entering the hollow axis or shafts 4 5, and 6 7 represent primary or leading rolls, from which the paper is led to the coating-machine, and 8 9 represent terminal rolls, by which the paper is led away from the coating-machine.

10 represents a trough or fountain for the coating material, which is applied to the upper surface of the paper 12 by the two rolls 13 14, the latter acting in conjunction with the supporting-roll 15.

The paper, having passed through that portion of the paper-machine at the left of the drawing and having thus been sufficiently dried, passes from the roll 7 between the rolls 14 15 and receives on its upper surface a thick coating of the glue and clay mixture, tinted to any desired color by pigment. From the rolls 14 15 the paper passes over the endless belt or apron 16 on rolls 17 18, beneath one or more spreading-brushes 19, which are reciprocated on the surface of the paper by rods 20, attached to the brushes and to eccentrics 21 on the shaft 22. The brushes spread the coating material upon the paper in the well-known manner. From the brushes and endless belt or apron the paper passes to the heated drum 2 and passes nearly around the same to the heated roll 23, thence around this roll, back beneath the rolls 24 25, adjacent to the drum 2, so that direct heat is applied and air-drying takes place before the opposite surface of the paper receives its coating material. The paper is now coated upon its under surface from the trough or fountain 26, through the rolls 27 28, the latter operating against the top roll 29. From rolls 28 29 the paper passes beneath the endless belt or apron 30, between it and one or more spreading-brushes 31, which, like the brushes 19, are reciprocated by the rods 32, connected to the eccentrics 33 on the shaft 34. The paper then passes to the heated drum 3, with its first-coated surface next to the drum over the roll 35. The paper passes nearly around the drum 3 and receives direct heat to the roll 36, thence around this roll, back adjacent to the heated drum 3, over the rolls 37, 28, and 39 to the other rolls 8 9 of the paper-machine, thus gaining air-drying to set the coating material sufficiently to run on the regular paper-machine for final drying.

40 41 represent a series of pipes or conduits arranged adjacent to the drums 2 3 and formed with perforations or slits for directing a blast of air upon the paper on the drums. These conduits are to be connected to any suitable blower or air-pressure apparatus. (Not necessary to be shown.)

In case only one surface of the paper is to be coated the under-surface mechanism may be thrown out of action or omitted in building the machine.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a machine for coating paper, the combination of a fountain for coating material, rolls for applying the coating material to the paper, means for spreading the coating material on the paper, a heated drum on which the coated paper passes, and a series of rolls beneath the heated drum, the uppermost of which holds the paper in contact with the heating-drum, and around which it passes back against the other rolls of the series,

which latter rolls space the paper from the heated drum, substantially as and for the purposes set forth.

2. In a machine for coating paper, the combination of a fountain for coating material, rolls for applying the coating material to one side of the paper, means for spreading the coating material on the paper, a heated drum on which the coated paper passes, rolls beneath the heated drum for holding the paper in contact with the drum and for reversing the paper and holding the reversed portion away from, but adjacent to, the heated drum, another fountain for coating material, rolls for applying coating material to the opposite side of the paper from said last-mentioned fountain, means for spreading the coating material on said opposite side of the paper, another heated drum and a series of rolls above the said last-mentioned heated drum, one of which holds the paper in contact with the drum and around which the paper passes back to the other rolls in the series, which latter space the paper from the drum, substantially as and for the purposes set forth.

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