(No Model.) 3 Sheets—Sheet 1.

A. SEGAL.

MACHINE FOR WATERPROOFING OR SIZING PAPER.

No. 343,861. Patented June 15, 1886.

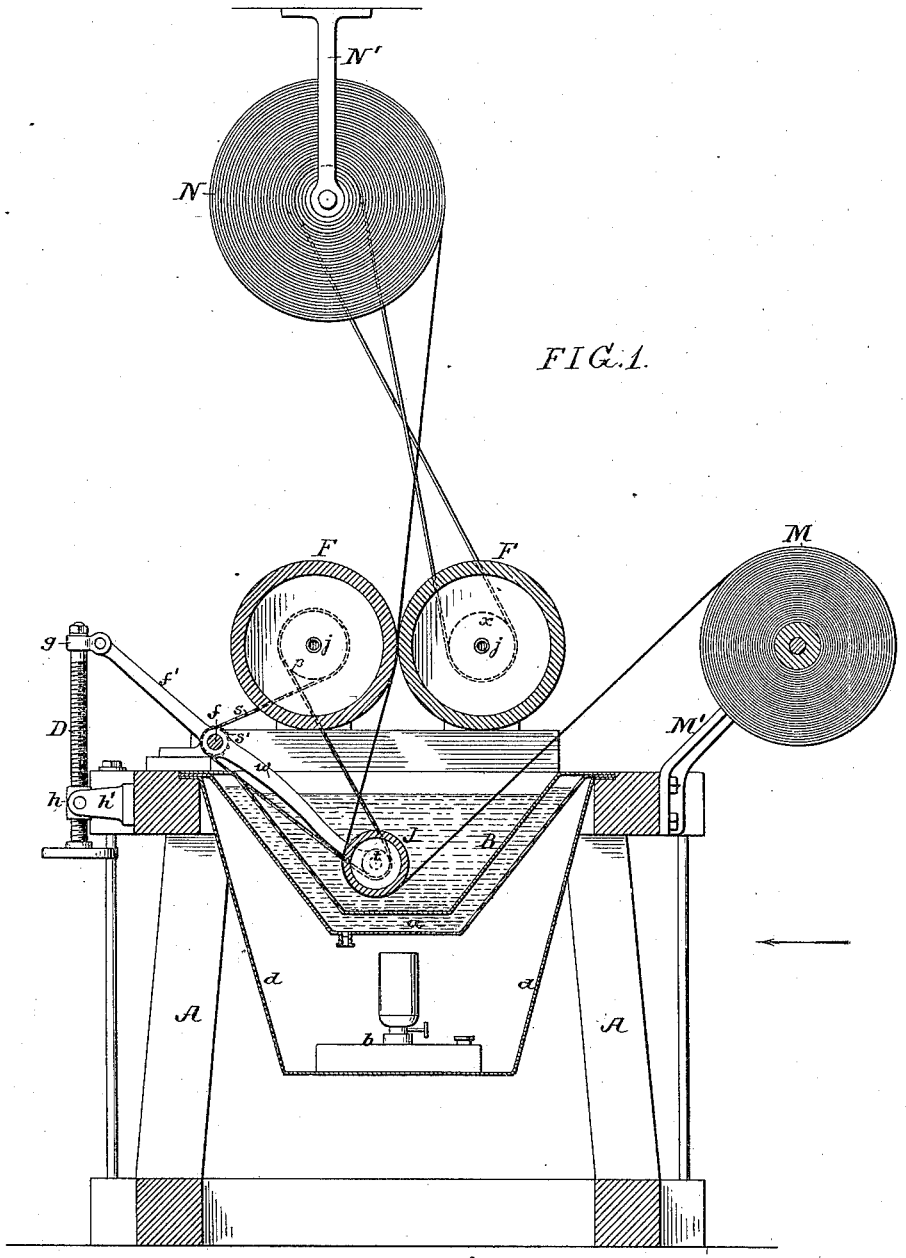

FIG. 1.

Witnesses:
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William T. Davis

Inventor:
Adolph Segal
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(No Model.) 3 Sheets—Sheet 2.

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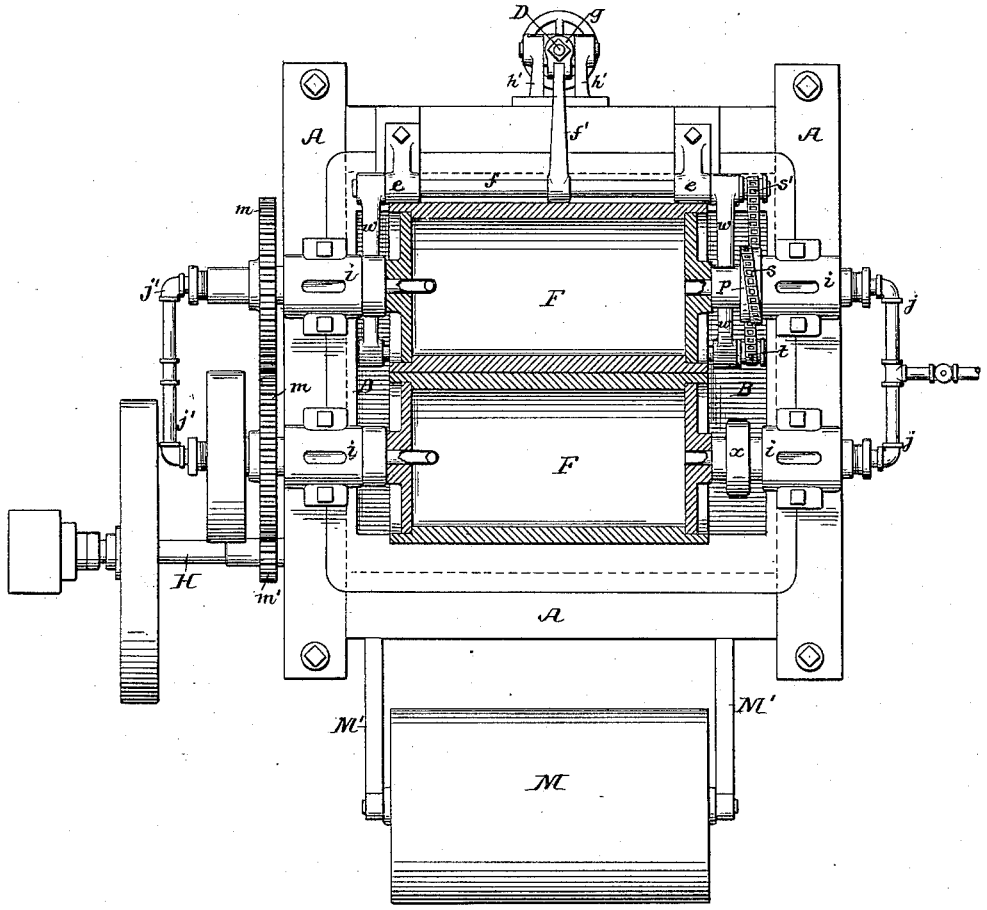
FIG. 2.



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(No Model.) 3 Sheets—Sheet 3.

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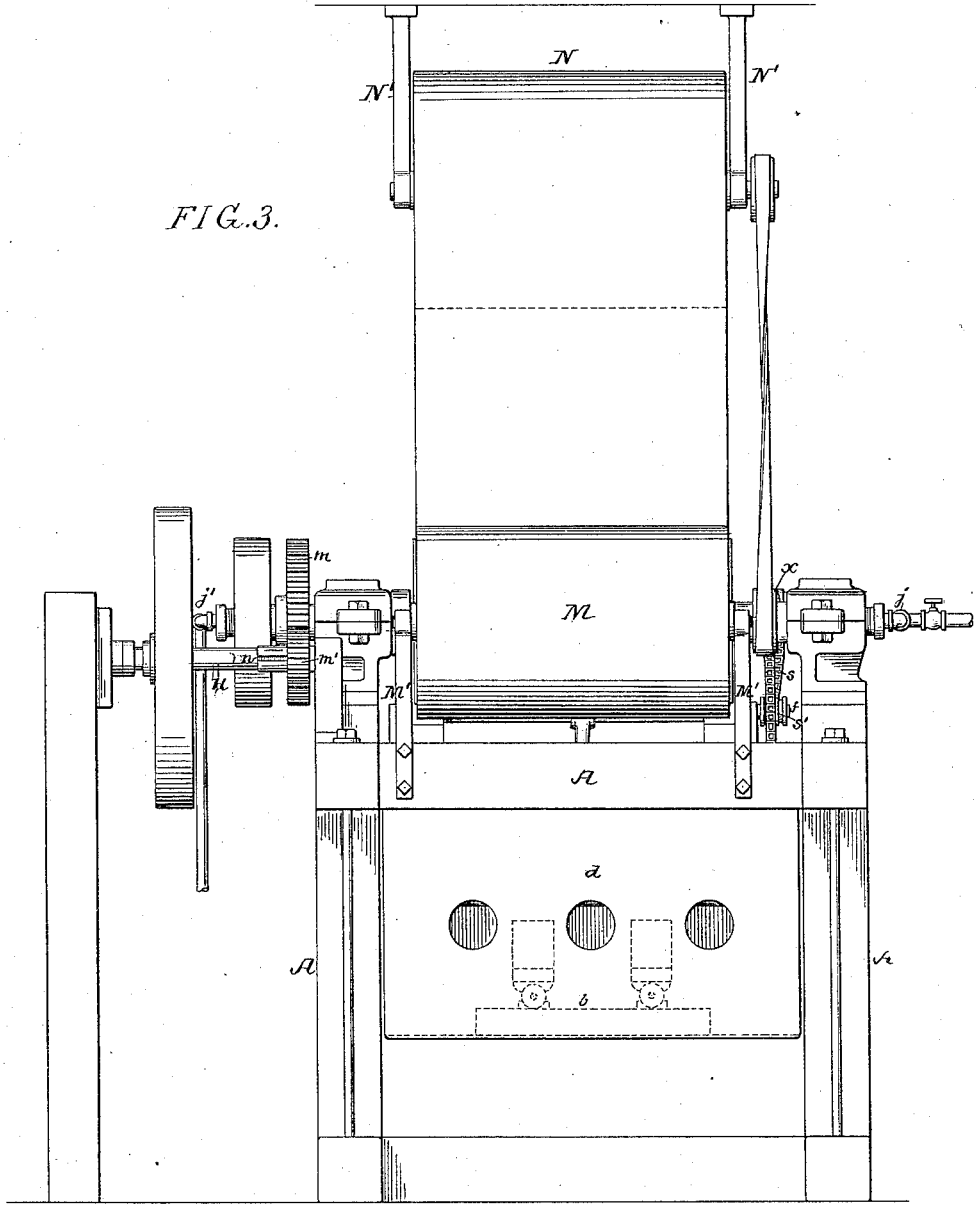
FIG. 3.



Witnesses:
William D. Conner
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Inventor:
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UNITED STATES PATENT OFFICE.

ADOLPH SEGAL, OF CAMDEN, NEW JERSEY, ASSIGNOR OF ONE-HALF TO CHARLES BENJAMIN WILKINSON, OF PHILADELPHIA, PENNSYLVANIA.

MACHINE FOR WATERPROOFING OR SIZING PAPER.

SPECIFICATION forming part of Letters Patent No. 343,861, dated June 15, 1886.

Application filed April 1, 1886. Serial No. 197,423. (No model.)

To all whom it may concern:

Be it known that I, ADOLPH SEGAL, a subject of the Emperor of Austria, residing in Camden, New Jersey, United States of America, have invented certain Improvements in Machines for Waterproofing or Sizing Paper, &c., of which the following is a specification.

My invention relates to that class of machines for waterproofing or sizing paper or other fabrics in which the fabric is first passed through the waterproofing or sizing material and then between rolls which express the surplus material from the paper and impart the desired finish to the surface of the same.

My invention comprises certain details in the construction of a machine of this class with the view of simplifying the same and improving its efficiency.

In the accompanying drawings, Figure 1 is a longitudinal section of a machine embodying my invention; Fig. 2, a plan view of the same, partly in section, and Fig. 3 an end view looking in the direction of the arrow, Fig. 1.

A represents a frame, to the upper portion of which is secured the flanged upper edge of a vessel, B, which contains the waterproofing or sizing material or compound, this vessel having a water-jacket, *a*, the contents of which can be heated by a lamp, *b*, supported in a casing, *d*, below the vessel B, this water-jacket providing a means of uniformly heating the waterproofing or sizing material when the latter is such that heat is required in order to maintain it in liquid condition or otherwise facilitate its action upon the paper.

Hung to suitable bearings, *e*, on the frame A, is a rock-shaft, *f*, an arm, *f'*, on which is connected by a link, *g*, to the upper end of a screw, D, the latter being adapted to a swiveled nut, *h*, hung to a bracket, *h'*, on the frame.

To opposite bearings, *i*, on the frame A are adapted the journals of a pair of hollow rolls, F F', these journals being also hollow, for the reception of inlet and exhaust pipes *j j'*, whereby steam may be caused to circulate through the hollow rolls for the purpose of heating the same. The rolls are geared together by means of spur-wheels *m m*, and with one of said wheels engages a spur-pinion, *m'*, on the driving-shaft H, this pinion having a key or feather adapted to a slot, *n*, in the shaft, so that the rolls can be readily thrown out of gear when desired.

On the journal of the roll F is a wheel, *p*, for the reception of a chain-belt, *s*, which passes around an idle pulley, *s'*, on the end of the rock-shaft *f*, and thence around a sprocket-wheel, *t*, on the shaft of a hollow roll, J, which is free to turn in bearings near the ends of arms *w*, secured to the rock-shaft *f*.

The paper or other fabric to be treated is drawn from a roll, M, the journals of which are mounted in brackets M' on the frame A, and the paper passes first around the roll J, which is adjusted so as to be submerged in the liquid contents of the vessel B, the paper after being coated, saturated, or impregnated with the contents of the vessel, then passing between the rolls F F', and thence to the winding-roll N, the journals of which are adapted to hangers N' on the ceiling or other available support, said roll being suitably driven by means of a crossed belt from a pulley, *x*, on the shaft of the roll F'. The rolls F F' serve to express from the web of paper or other fabric any surplus sizing or waterproofing material which may be carried up by the same, and serve also to impart the desired finish to the opposite surfaces of the web, and to dry the same before it is wound upon the roll N. The dipping-roll J is hollow, and before commencing the waterproofing or sizing operation the screw D is manipulated so as to bring said roll J into contact with the heated roll F', the rolls being then rotated for a time sufficient to insure the proper heating of the roll F and prevent it from chilling the contents of the vessel B when it is lowered into the same. In the event of the breaking of the web of fabric the roll J may be lifted above the liquid contents of the vessel B, so as to permit the ready passage of the web beneath the same.

I claim as my invention—

1. The combination of the vessel for containing waterproofing or sizing composition, heated press-rolls above the same, a dipping-roll, and means for adjusting said roll so as to bring it into contact with one of said heated press-rolls or lower it into the vessel, all substantially as specified.

2. The combination of the vessel B, the

press-rolls, the adjustable dipping-roll, serving as a means for directing the web of paper into the waterproofing or sizing material in said vessel, and means for driving said dipping-roll and press-rolls, all substantially as specified.

3. The combination of the vessel B and the press-rolls above the same, the dipping-roll, the rock-shaft having arms carrying the said roll, and an adjusting-screw acting upon another arm on said rock-shaft, all substantially as specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ADOLPH SEGAL.

Witnesses:
WILLIAM F. DAVIS,
HARRY SMITH.