

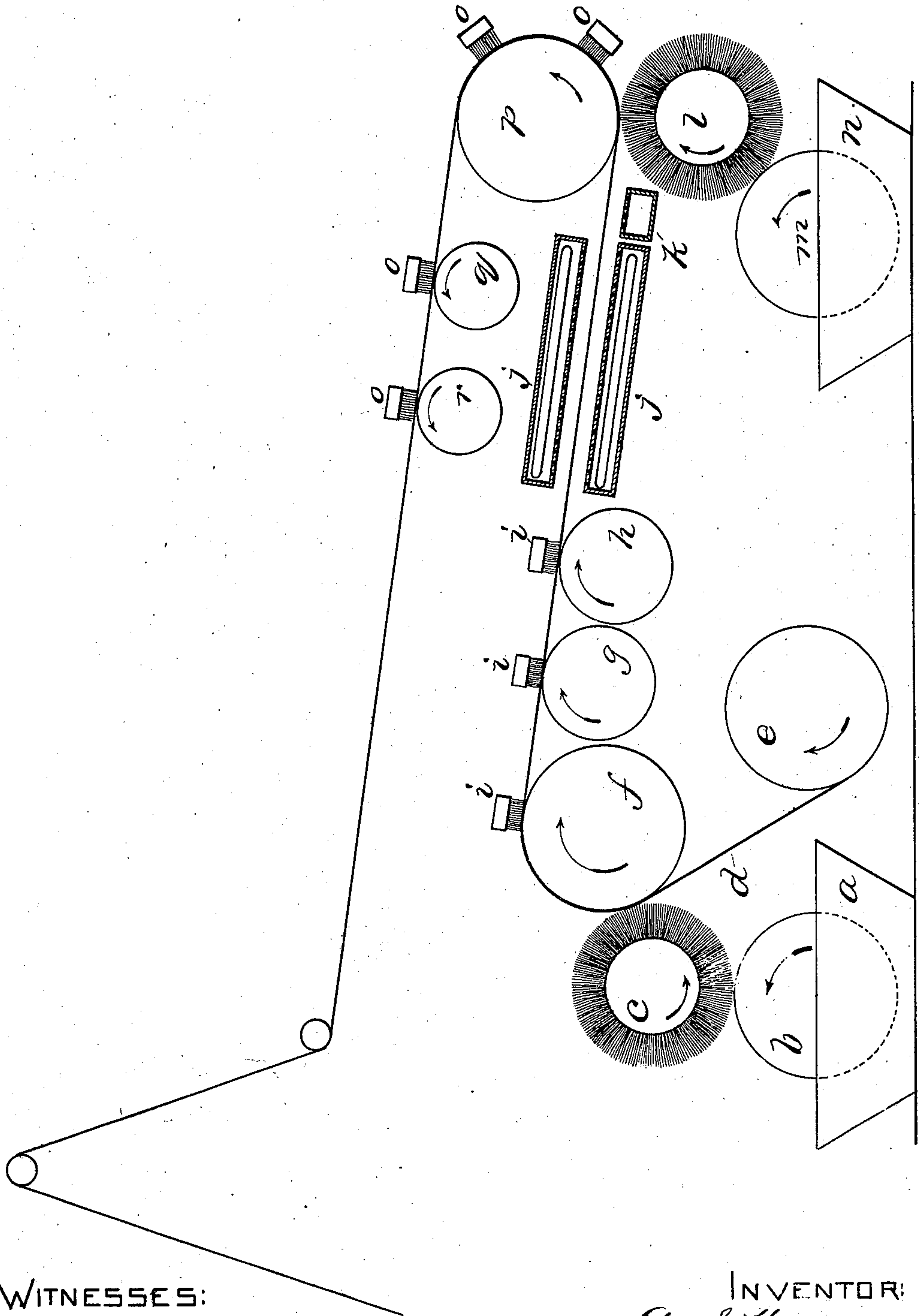
(No Model.)

A. S. WOODWARD.

PROCESS OF AND MACHINE FOR ENAMELING PAPER.

No. 528,752.

Patented Nov. 6, 1894.



WITNESSES:

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UNITED STATES PATENT OFFICE.

ALONZO S. WOODWARD, OF EAST PEPPERELL, MASSACHUSETTS.

PROCESS OF AND MACHINE FOR ENAMELING PAPER.

SPECIFICATION forming part of Letters Patent No. 528,752, dated November 6, 1894.

Application filed March 2, 1894. Serial No. 502,130. (No model.)

To all whom it may concern:

Be it known that I, ALONZO S. WOODWARD, of East Pepperell, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Processes of and Machines for Enameling Paper, of which the following is a specification.

This invention has relation to processes of and machines for enameling or otherwise coating both sides of a web of paper.

It is the object of the invention to provide a mode of and means for surface-coating paper which shall be at once efficient by way of thoroughly and evenly coating the paper, and exceedingly simple in its construction and mode of operation, so as to reduce the cost to a minimum.

To these ends the invention consists of the mode of procedure embracing the steps of first applying the enamel or coating to one side of the web, spreading or distributing it evenly thereon, drying the web, applying a blast of cold air to the uncoated side to temper the same to the condition of the opposite side at the time of coating the same, applying enamel or coating to the uncoated side and spreading or distributing it evenly thereon, and again drying the web and winding the same into a roll.

The invention also consists in the means for carrying out the aforesaid process, all as I will now proceed to describe and claim.

Reference is to be had to the annexed drawing and to the letters marked thereon, forming a part of this specification, the said drawing being a diagram, in side view, showing a way in which my improved method may be carried out, and the essential instrumentalities employed in the practice of said method.

In the drawing: *a* designates a trough or reservoir containing the enamel or other coating to be applied to the paper. In the said trough there is arranged a roll, *b*, which runs in the coating substance and conveys a film of the same to a rotary brush, *c*, which applies it to one side of a web or sheet of paper, *d*, drawn from a roll *e*. The coating is applied by the brush, *c*, to one side of the web as it passes around a roll, *f*, it being understood that the brush, *c*, runs in contact with the roll, *b*, and the web, *d*, as it is drawn off. The

web from the roll, *f*, passes along over rolls, *g h*. Above the latter rolls, as also the roll, *f*, there are arranged longitudinally reciprocating brushes, *i*, which operate on the coated surface of the web to spread or evenly distribute the enamel coating thereover. From the rolls last mentioned and the brushes, *i*, the web passes between two hot-air boxes, *j j*, where it is subjected to a current of hot air in order to dry it. After leaving the drying means, the unenameled side of the web is subjected to a current or blast of cold air from a box, *k*, which blast tempers the said uncoated side so as to bring it into the condition of the coated side before the enamel was applied thereto. The untreated side of the web now has coating applied thereto by a brush, *l*, similar to brush, *c*, receiving the material from a roll, *m*, running in a trough *n*. The last-applied coating material is spread or evenly distributed on the web by longitudinally reciprocating brushes, *o*, operating upon the paper as it passes around rolls, *p q r*.

After both sides of the web have been coated it may be led over guide rolls and dried by the action of the atmosphere in the room or in any other suitable way.

By the process and means described both sides of a web of paper may be thoroughly and evenly enameled or otherwise coated, and the work done in a most expeditious and economical manner.

Having thus explained the nature of the invention and described a way of constructing and using the same, though without attempting to set forth all of the forms in which it may be made or all of the modes of its use, it is declared that what is claimed is—

1. The improvement in the art of enameling paper which consists in first applying the coating to one side of the web, spreading or distributing it evenly thereon, drying the web by subjecting the same to a current of hot air, tempering the uncoated side by subjecting the same to a current of cold air, applying coating to the uncoated side, spreading or distributing the coating thereon, and drying the web, as set forth.

2. A machine for enameling paper comprising in its construction the tank *a*, roll *b*, and brush *c*, for applying the coating to one side

of the web, the reciprocating brushes *i* for
spreading the enamel upon one side of said
web, the hot air boxes *j* for drying the web,
the cold-air box *k* for tempering the web, the
5 trough *n*, roll *m*, and brush *l* for coating the
other side of the web, reciprocating brushes *o*
for spreading the coating last applied, and
guide and draft rolls, as set forth.

In testimony whereof I have signed my
name to this specification, in the presence of 10
two subscribing witnesses, this 21st day of
February, A. D. 1894.

ALONZO S. WOODWARD.

Witnesses:

GEORGE G. TARBELL,
ARTHUR P. WRIGHT.