A. H. PARKER.

DRIER FOR DRYING COATED PAPER.

APPLICATION FILED OCT. 18, 1920.

1,426,095. Patented Aug. 15, 1922.

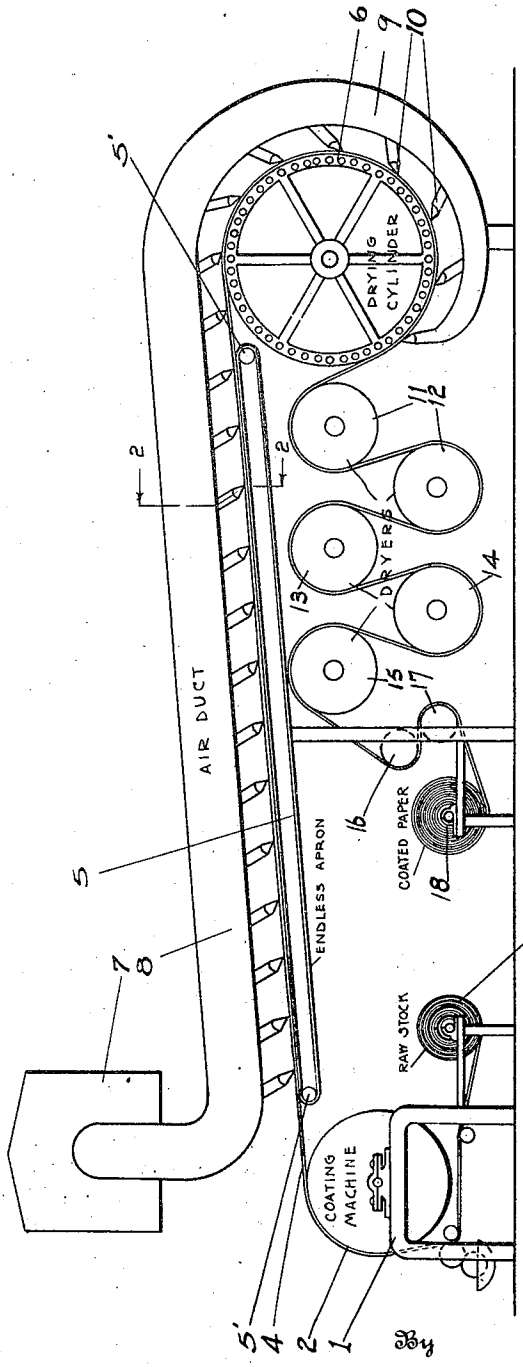


Fig. I.

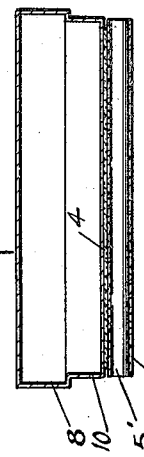


Fig. II.

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UNITED STATES PATENT OFFICE.

ALBERT H. PARKER, OF OTSEGO, MICHIGAN.

DRIER FOR DRYING COATED PAPER.

1,426,095. Specification of Letters Patent. Patented Aug. 15, 1922.

Application filed October 18, 1920. Serial No. 417,807.

To all whom it may concern:

Be it known that I, ALBERT H. PARKER, a citizen of the United States, residing at Otsego, in the county of Allegan and State of Michigan, have invented certain new and useful Improvements in an Improved Drier for Drying Coated Paper, of which the following is a specification.

This invention relates to an improved drier for drying coated paper.

The object of the invention is to hasten the process of drying coated paper as it comes from a coating machine.

Objects which pertain to details and economies of construction and operation will appear from the detailed description to follow.

I accomplish the objects of my invention by the devices and means described in the following specification. The invention is clearly defined and pointed out in the claims.

A structure which is a preferred embodiment of my invention is illustrated diagrammatically in the annexed drawing forming a part of this specification, in which:

Fig. I is a detail side elevation view of a structure embodying the features of my invention.

Fig. II is an enlarged detail transverse sectional view on the irregular section line 2—2 of Fig. I.

In the drawing, similar numerals of reference refer to similar parts throughout the several views.

Considering the numbered parts of the drawing, 1 is a coating machine, 2 is the main cylinder of a coating machine, 3 is the raw stock roll from which is delivered the sheet 4 through the coating machine in the usual way. This sheet when coated is delivered, coated side up, upon the endless carrier 5 which is supported at each end by rollers 5′—5′. The sheet 4 is delivered from the endless apron onto a drying cylinder which is heated by steam pipes or otherwise to hasten the process of drying.

A broad air duct 8 delivers from an air pressure supply 7 along the line of travel of said sheet and extends circumferentially at 9 around the drying cylinder 6. The broad delivery nozzles 10 deliver air jets in proximity to the coating on sheet 4 across its entire width. The sheet 4 is delivered to a series of driers or drier rolls 11, 12, 13, 14 and 15, and the dried sheet is carried by a pair of delivery rolls 16 and 17 and wound into a roll 18 of finished coated paper.

It will thus be seen that in the operation of this device the raw stock being delivered through the coating machine is delivered to the endless apron 5, which endless apron holds the sheet upwardly into proximity to the series of drying nozzles 10 through which is delivered the drying air which may be either heated or not as desired.

As the sheet advances it passes over to the drying cylinder 6, being subjected to heat within that cylinder which dries the same very rapidly so that its surface has become sufficiently hard to permit it to be wrapped with its coated surface toward the cylinder 11. The sheet is then passed through this series of drier rolls which are of any suitable construction and comes out practically bone-dry to be wound up into roll 18.

I have described my improved drier in the form which I prefer. I desire to state that it can be considerably varied in its details without departing from my invention. While I show the air nozzles delivering broad flat jets of air entirely across the sheet this can be considerably varied. However, the comparatively large volume of dry air hastens the process of drying. While the drying cylinder is usually heated by steam other means of heating might be employed. By making the apparatus very large, of course, heat can be entirely dispensed with and the structure operate very satisfactorily except for its bulk.

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

1. In a drier for coated paper, the combination of an endless apron for supporting the coated sheet, a heated drier cylinder disposed at the delivery end of said endless apron to receive the coated sheet, an air duct disposed in proximity to the said apron and encircling the said drying drum, air nozzles from the said air duct directed against the coated surface of the sheet, and drier drums to receive the sheets from the said drying cylinder, coating for the purpose specified.

2. In a drier for coated paper, the combination of a hollow heated drier cylinder disposed to receive the coated sheet coated side out, an air duct disposed in proximity to and encircling the said drying drum, air nozzles from the said air duct directed against the outer coated surface of the heated sheet, and drier drums to receive the sheets from the said drying cylinder.

3. In a drier for coated paper, the combination of an endless apron for supporting the coated sheet, a heated drier cylinder disposed at the delivery end of said endless apron to receive the coated sheet, an air duct disposed in proximity to the said apron and encircling the said drying drum, and air nozzles from the said air duct directed against the coated surface of the sheet.

4. In a drier for coated paper, the combination of a hollow heated revoluble drier cylinder disposed to receive the coated sheet coated side out, an air duct disposed in proximity to and encircling the said drying drum, and air nozzles from the said air duct directed against the outer coated surface of the heated sheet.

In witness whereof I have hereunto set my hand and seal in the presence of two witnesses.

ALBERT H. PARKER. [L. S.]

Witnesses:
D. B. NISBET,
HARRY D. BARNEY.