(Model.)

J. S. PIPER.

Paper Drying Machine.

No. 243,615. **Patented June 28, 1881.**

Fig. 1

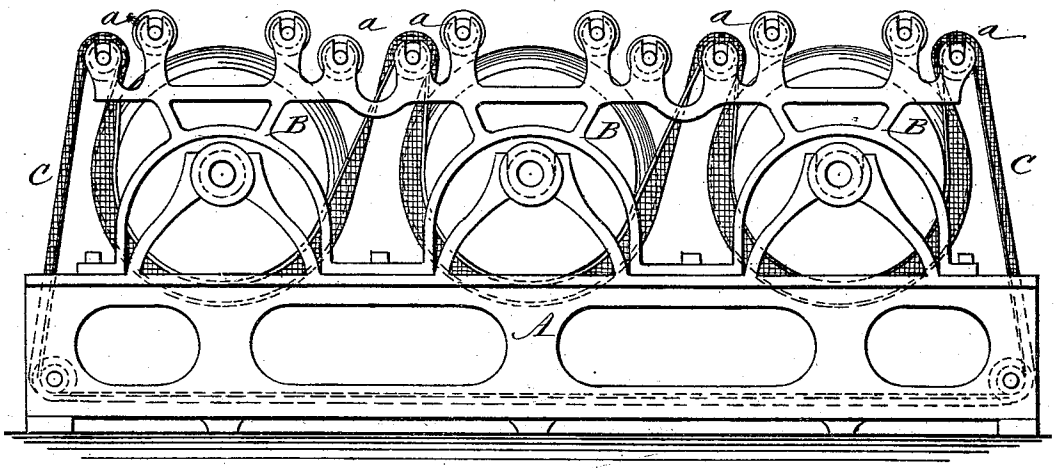


Fig. 2

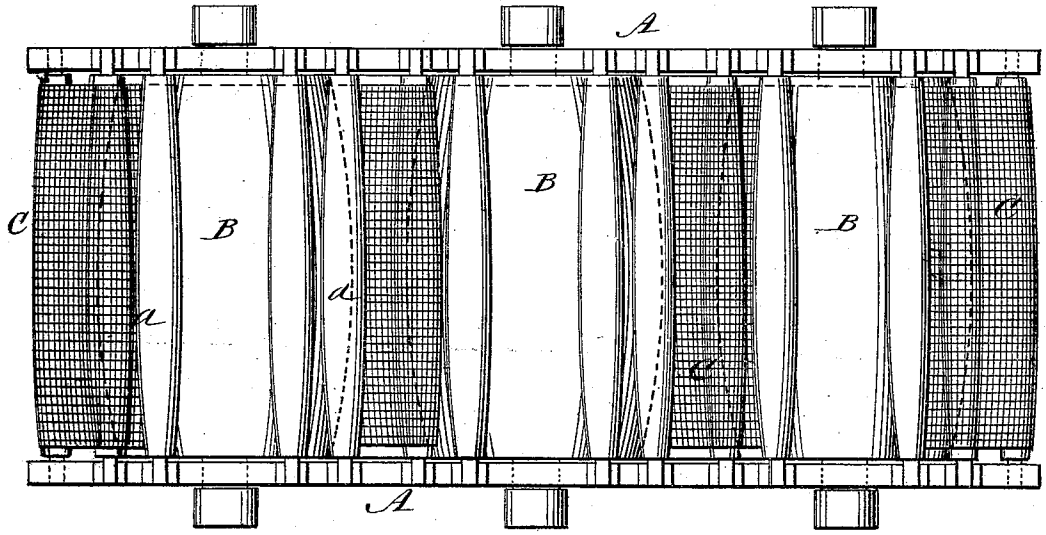
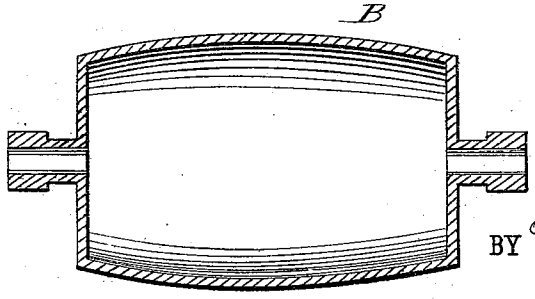


Fig. 3



WITNESSES:

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UNITED STATES PATENT OFFICE.

JAMES S. PIPER, OF ROCKFORD, ILLINOIS.

PAPER-DRYING MACHINE.

SPECIFICATION forming part of Letters Patent No. 243,615, dated June 28, 1881.

Application filed December 6, 1880. (Model.)

To all whom it may concern:

Be it known that I, JAMES S. PIPER, of Rockford, in the county of Winnebago and State of Illinois, have invented a new and useful Improvement in Paper-Drying Machines, of which the following is a specification.

My improvements relate to machines for drying the wet sheet from an ordinary cylinder, Fourdrinier or other paper-machine, the special object of the invention being to give a lap or belly to the sheet during the drying operation, whereby such sheets are adapted for use in the manufacture of paper barrels.

My invention consists in convex or barrel-shaped drying-rollers or drums arranged in a train and fitted to receive and hold the wet sheet during contraction in drying, so that the dried sheet shall have the required fullness or belly extending lengthwise.

In the accompanying drawings, forming part of this specification, Figure 1 is a side elevation of a drying-machine containing my improvements. Fig. 2 is plan view of the same; and Fig. 3 is a longitudinal section of one roller.

Similar letters of reference indicate corresponding parts.

A A are side frames supporting the stretching and drying rollers or drums B, which are sustained by suitable boxes in a horizontal line to form a train, as in ordinary drying-machines.

a a are rollers sustained in boxes on frames A contiguous to the surface of rollers B, and carrying an endless felt, C.

The rollers or drums B have their surfaces formed convex or with a bilge corresponding to a barrel, the shape and size being similar to the barrels into which the dried sheet is to be subsequently made. These convex drums are hollow, and have hollow trunnions for admission of steam, as usual.

The felt C is formed of concave shape in cross-section or with a fullness to correspond with the convexity of drums B. The felt-supporting rollers *a* are also made convex to conform to the felt, and are to be arranged in any suitable manner for properly carrying the felt.

In operation the wet sheet from the paper-machine is taken by the felt C and carried beneath the drums B successively. The sheet is thereby stretched between its sides, and by the contraction in drying assumes the convex shape of the drums, so that when delivered it has the required fullness or belly. The dried sheet is to be wound on a convex reel, and will be subsequently rolled on a suitable mandrel to form barrels having the required bilge shape.

I am aware that in the manufacture of barrels from paper-pulp the pulp has been carried forward by concave endless belts to concave formers. Such I do not claim. The process of manufacture is different, and such machine forms the barrel complete.

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent—

1. In paper-drying machines, a train of convex or barrel-shaped drying-drums fitted to stretch and shape the web or sheet of wet paper, substantially as shown and described.

2. In paper-drying machines, the combination of convex drying-drums B and convex endless felt C, carried by rollers *a*, substantially as and for the purposes set forth.

JAMES S. PIPER.

Witnesses:

EBENEZER FLEMING,

IRVIN FRENCH.