

C. S. CLARK.
PAPER-DRYING MACHINE.

No. 170,712.

Patented Dec. 7, 1875.

fig: 1.

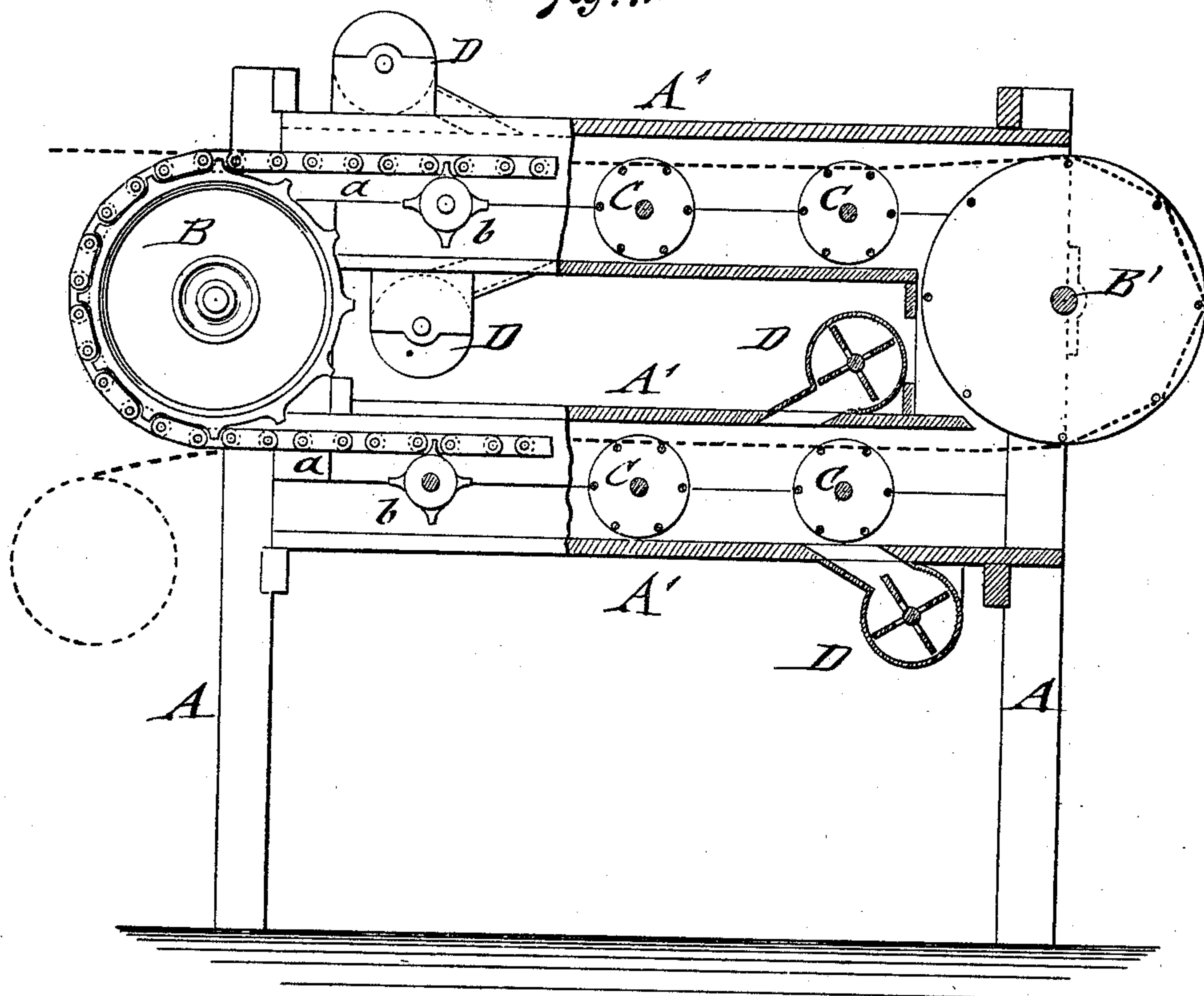
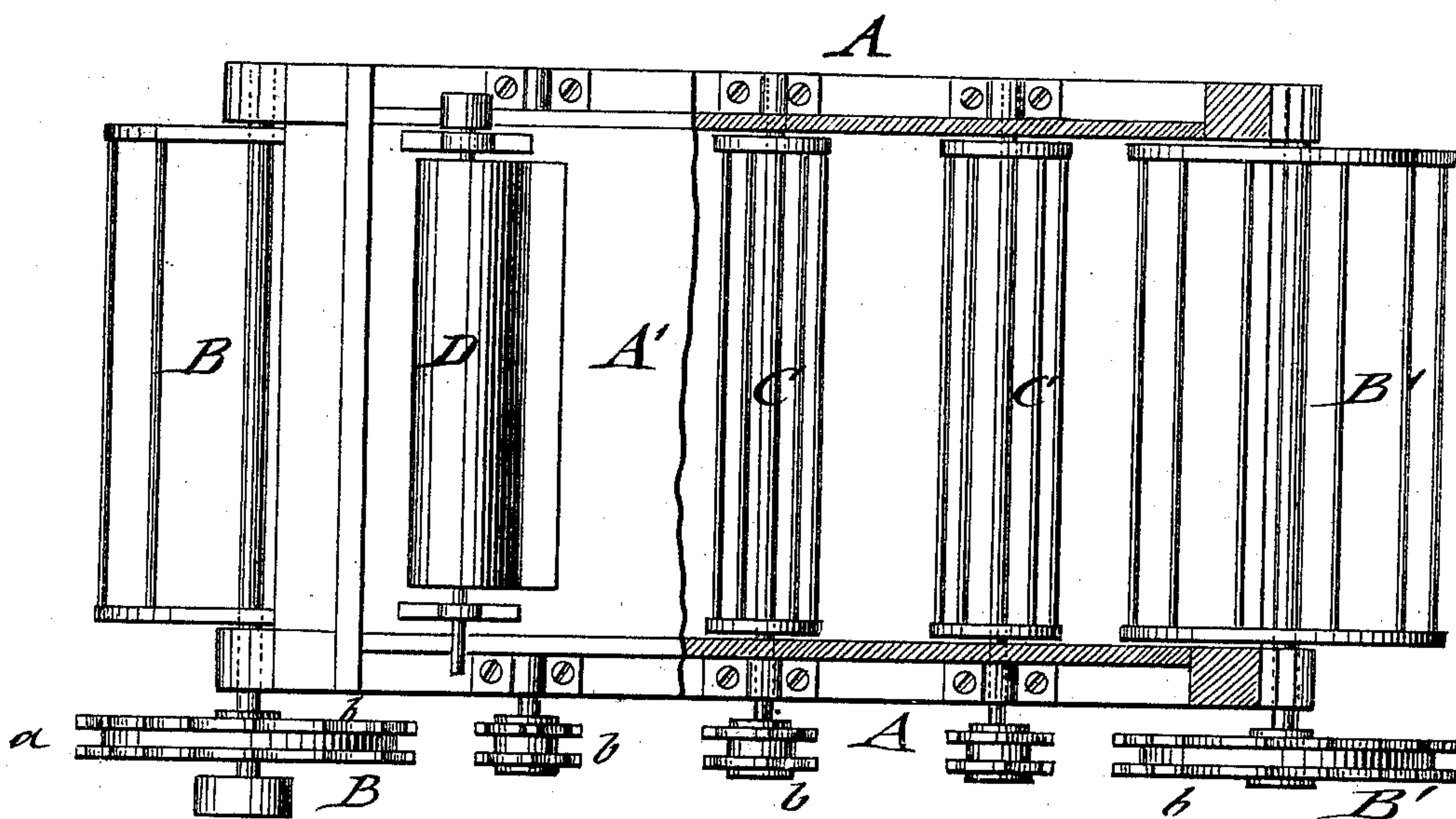


fig: 2.



WITNESSES:

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UNITED STATES PATENT OFFICE.

CULVER S. CLARK, OF NEW YORK, N. Y.

IMPROVEMENT IN PAPER-DRYING MACHINES.

Specification forming part of Letters Patent No. **170,712**, dated December 7, 1875; application filed November 6, 1875.

To all whom it may concern:

Be it known that I, CULVER S. CLARK, of the city, county, and State of New York, have invented a new and Improved Paper-Drying Machine, of which the following is a specification:

In the accompanying drawing, Figure 1 represents a sectional side elevation of my improved paper-drying machine, and Fig. 2 a top view of the same with part cut off to show the arrangement of the paper-conveying cylinders.

Similar letters of reference indicate corresponding parts.

The object of my invention is to provide for paper-manufacturers an improved machine for drying sized and unsized paper in a rapid and superior manner, so as to economize time and labor thereby.

The invention consists of suitably-arranged casings, through which the continuous sheet of paper is conveyed by feeding and carrying cylinders made of open rods, to expose the paper at top and bottom sides to hot-air drafts thrown thereon from blowers or fans in the same direction in which the paper is traveling.

In the drawing, A represents a supporting-frame, on which, by preference, two boxes or casings, A', are arranged horizontally, one above the other, forming thereby channels of suitable length, which are closed at the sides and open at the ends.

The apparatus is preferably built of such dimensions that the paper may be completely dried during its passage, first through the upper, and then through the lower casing.

The paper is taken up by a driving-drum, B, of larger diameter at one end of the upper casing, from which it is transferred to carrying-cylinders C, of which a certain number, in proportion to the length of the machine, is arranged at suitable distance from each other in each casing. A larger conveying-drum, B', at the opposite end of the upper casing A', serves to transfer or lap the continuous sheet of paper from the cylinders of the upper casing to those of the lower, over which the same is traveling in opposite direction.

The drums B B' and cylinders C are constructed of side disks with lateral connecting-rods, which serve to support the traveling sheet of paper without allowing the same to stick or adhere thereto, the open cylinders ad-

mitting, furthermore, the unobstructed action of air-blasts on one or both sides of the paper. The driving-drum B is connected by a spur-wheel and endless chain, a, with spur-wheels b at the ends of the carrying-cylinders D, and of the conveying-drum B', for imparting an even rotary motion to all the cylinders, and causing the traveling of the sheet of paper in one direction on the cylinders of the upper, and in opposite on those of the lower casing.

In place of the endless chain any other suitable mechanism for revolving the cylinders and drums may be employed.

At the top and bottom of both casings A' are arranged fans or blowers D, near the point of entrance of the paper, whose fan-casings open, by inclined channels, into the casings A', to throw hot-air blasts on both sides of the paper, and in the direction of the same.

The continuous action of the air-blasts on both sides of the wet paper traveling through the casing produces the even and uniform drying of the same throughout, the air-blasts assisting the easy forward motion of the paper over the carrying-cylinders, and preventing any sticking of the paper thereon. For this reason the apparatus is of special advantage for the drying of sized paper, which has hitherto offered considerable difficulty to a rapid drying process. When the paper leaves the lower casing, it is completely dried and wound upon a reel, for further disposition.

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

1. In paper-drying machines, the combination of paper-carrying cylinders and feeding-drums, made of lateral rods supported in side disks, with blowers above and below the same, to admit the unobstructed action of the air-blasts on one or both sides of the paper, substantially as set forth.

2. The combination of two end-open cases, A A', with drums, intermediate rotary carriers, and hot-air fans, delivering the air on opposite sides of the paper in the direction of the latter's motion, for the purpose specified.

CULVER S. CLARK.

Witnesses:

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