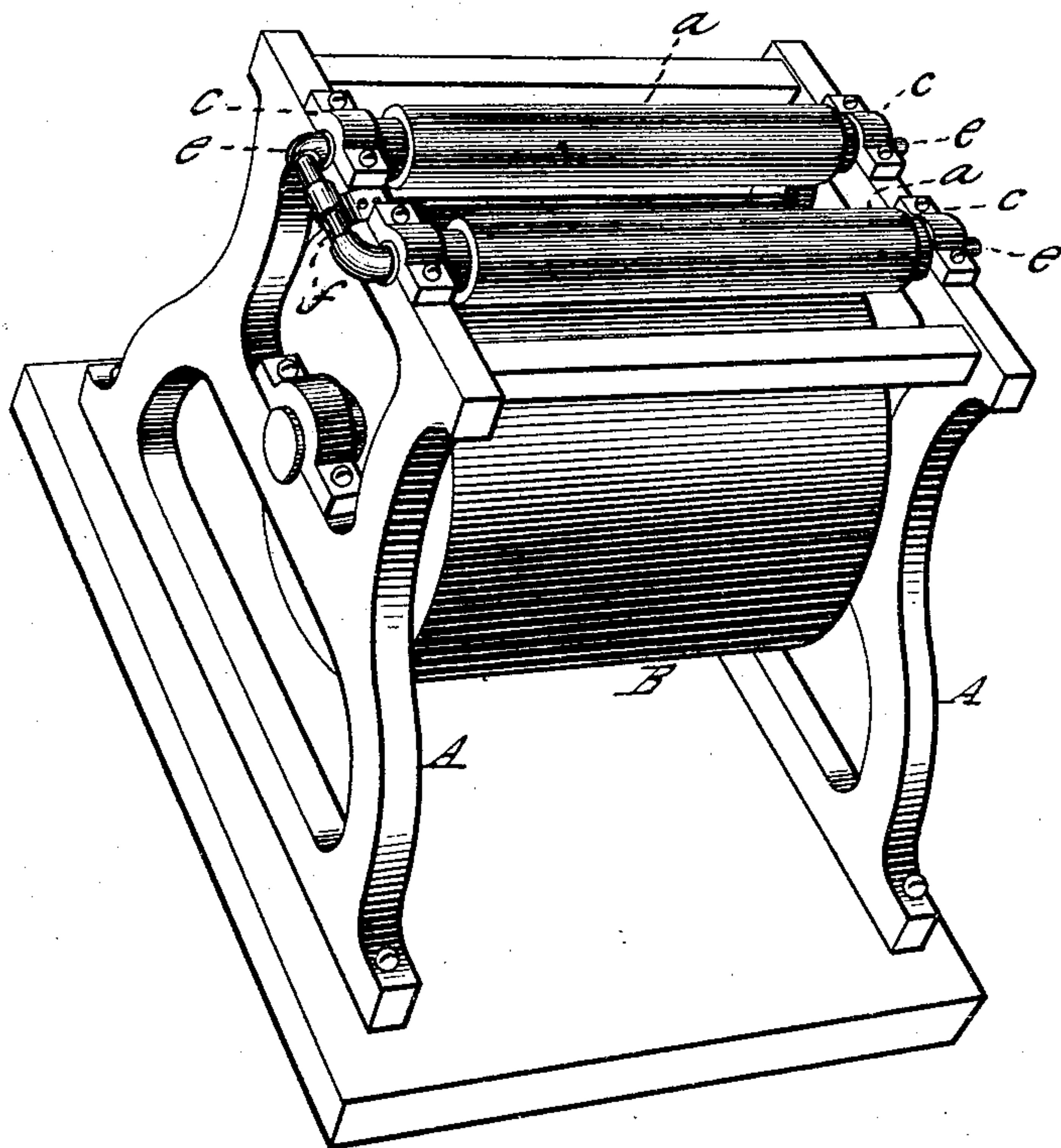


C. H. DENISON.
Machinery for Uniting Paper and Cloth.

No. 163,582.

Patented May 25, 1875.



Witnesses,

J. P. Wall
C. E. Buckland.

Inventor,

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UNITED STATES PATENT OFFICE.

CHARLES H. DENISON, OF NEW YORK, N. Y.

IMPROVEMENT IN MACHINERY FOR UNITING PAPER AND CLOTH.

Specification forming part of Letters Patent No. **163,582**, dated May 25, 1875; application filed July 16, 1874.

To all whom it may concern:

Be it known that I, CHARLES H. DENISON, of the city, county, and State of New York, have invented a new and useful Improvement in Machinery for Uniting Paper to Cloth; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing, making a part of this specification, and to the letters of reference marked thereon, in which—

Figure 1 is a perspective view of so much of a machine for uniting paper to cloth as is necessary to illustrate the application of my invention thereto.

My invention relates to a machine for uniting paper to cloth in a continuous strip or sheet; and it consists of the combination of the hollow steam drying-cylinder with one or more hollow carrier-rolls, each fitted with a circulating pipe or pipes, which pipes may be made continuous with the rolls, if desirable, through which pipes and hollow rolls a stream of cold water is forced, which operates to prevent the rolls from becoming heated by the heat derived from the steam drying-cylinder, and prevents the paste from drying and accumulating thereon.

In the ordinary machines for uniting paper to cloth, both the cloth and the paper are run onto the machine at one end, and the paste applied automatically to either one or the other, or both, and after being united the strip or sheet or sheet is passed around a number of steam drying-cylinders to dry the paste and give the combined article a good smooth surface.

In passing from one cylinder to another the united cloth and paper passes over solid carrier-rolls, which are located generally just above the cylinders, and quite near them, and, as the paper is heated quite hot in passing around the cylinders, the heat is communicated from the cylinders to these solid carrier-rolls. As the united cloth and paper passes along, some of the superfluous paste upon the pasted article adheres to these solid carrier-rolls, and, as they are heated quite hot, the paste dries

thereon very quickly and adheres to the rolls, accumulating very fast, so as to very materially increase the size of the rolls, and it becomes necessary to clean off the accumulating paste, which, owing to the heated condition of the rolls, sometimes becomes so hard as to make it extremely difficult to remove.

My invention is designed to entirely obviate the accumulation of paste upon the rolls.

In the drawing, A represents the frame in which the steam drying-cylinder B has its bearings, and of which cylinders, in a full-sized machine, there are several. Above each cylinder B are located two carrier-rolls, *a*, which are made hollow, and having their bearings also in the frame A, at *c*, and into each end of each roll *a* is inserted a pipe, *e*, and these pipes may be connected together by a pipe, *f*, as shown in the drawing, at alternate ends of the sets of rolls, so that a stream of cold water may be forced through the pipe into the first set of rolls in a machine, and successively through all the others; or, the stream may be forced through each set or any number of sets separately, according to the temperature at which it is desired to keep the rolls.

This continuous flow of a stream of cold water keeps the carrier-rolls *a* perfectly cool, so that the paste does not leave the strip of paper and adhere to the rolls, as it otherwise would do, and the cleaning of the carrier-rolls is entirely dispensed with, except the slight washing off of the ordinary accumulation of dirt.

Having thus described my invention, what I claim as new is—

The combination, in a machine for uniting paper to cloth, of the steam drying-cylinder for drying the paper and cloth, and the hollow carrier-roll for carrying the same, provided with pipes for introducing water for cooling said carrier-rolls to keep the surface moist and prevent paste from accumulating thereon, substantially as described.

CHARLES H. DENISON.

Witnesses:

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