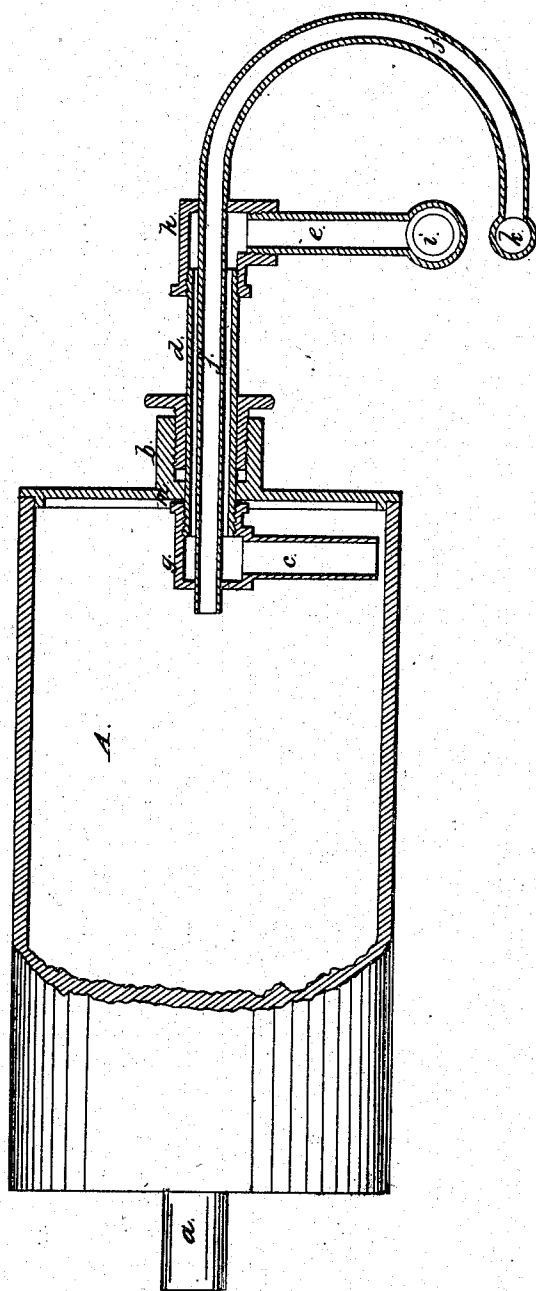


J. Booth.
Steam Drying Cylinder.
No. 16,905. Patented Mar. 31, 1857.



UNITED STATES PATENT OFFICE.

JOHN BOOTH, OF PAWTUCKET, RHODE ISLAND.

STEAM DRYING-CYLINDER.

Specification of Letters Patent No. 16,905, dated March 31, 1857.

To all whom it may concern:

Be it known that I, JOHN BOOTH, of Pawtucket, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Steam Drying-Cylinders, for drying yarn, thread, woven fabrics, paper, and other substances; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, which represents a side view, partly in section, of a drying-cylinder, with my improvements.

My invention consists in the arrangement of the steam-pipe which supplies a drying cylinder with steam, to pass through a siphon pipe leading through one of the journals of the cylinder, to carry off the water of condensation; thus bringing the steam and water pipes to the same end of the cylinder, which is a more generally convenient arrangement than having them at opposite ends, besides requiring but one stuffing box.

To enable others to apply my invention, I will proceed to describe its construction and operation.

A, is the cylinder, having a solid journal *a*, and a hollow journal *b*.

c, d, e, is the siphon pipe, for conveying the water of condensation from the cylinder, made in three pieces, of which the piece *d*, passes through a stuffing-box *f*, in the hollow journal *b*, and the pieces *c*, and *e*, are connected to the said piece *d*, by elbows *g*, and *h*; the piece *c*, which constitutes the shorter leg of the siphon, being inside the cylinder, and extending downward so as nearly to touch the bottom of the interior thereof; and the piece *e*, which constitutes the longer leg of the siphon, being outside the cylinder and connecting with the horizontal escape pipe *i*, which will serve to convey the water from several cylinders, connected with it by similar siphon pipes, to the condenser. The inner elbow *g*, fits

close up to the cylinder head *m*, so as to make a steam-tight or nearly steam-tight joint, which renders very little packing necessary for the stuffing box, to prevent leakage. By means of this siphon pipe, the water in the cylinder, if it should rise above the top of the siphon pipe, would be all conveyed out of the cylinder by the natural action of the siphon; but a very slight pressure of steam within the cylinder serves to expel the water therefrom, as fast as it rises above the bottom of the shorter leg of the siphon. This action is the same, whether the cylinder be stationary or revolving; and therefore the siphon is superior to the common arrangement of gutters for carrying off the water, which only operates when the cylinder is in motion with the steam on; besides which, the siphon is less liable to get out of order.

j, is the steam-pipe, passing through the siphon pipe, and connecting outside the cylinder, with the supply pipe *k*. The connections between the steam and siphon pipes should preferably be made steam-tight by soldering, brazing, or other means, to prevent the escape of steam around the steam pipe into the siphon pipe. By taking the steam pipe through the siphon pipe, it will be understood that one stuffing-box is dispensed with; two being necessary if the steam pipe enter the cylinder at one journal and the siphon pipe pass through the other.

What I claim as my invention, and desire to secure by Letters Patent, is:—

The arrangement of the steam and water pipes at one end of a drying cylinder, in the manner and for the purpose substantially as herein described.

JOHN BOOTH.

Witnesses:

CHAS. C. CLEVELAND,
RAY POTTER.