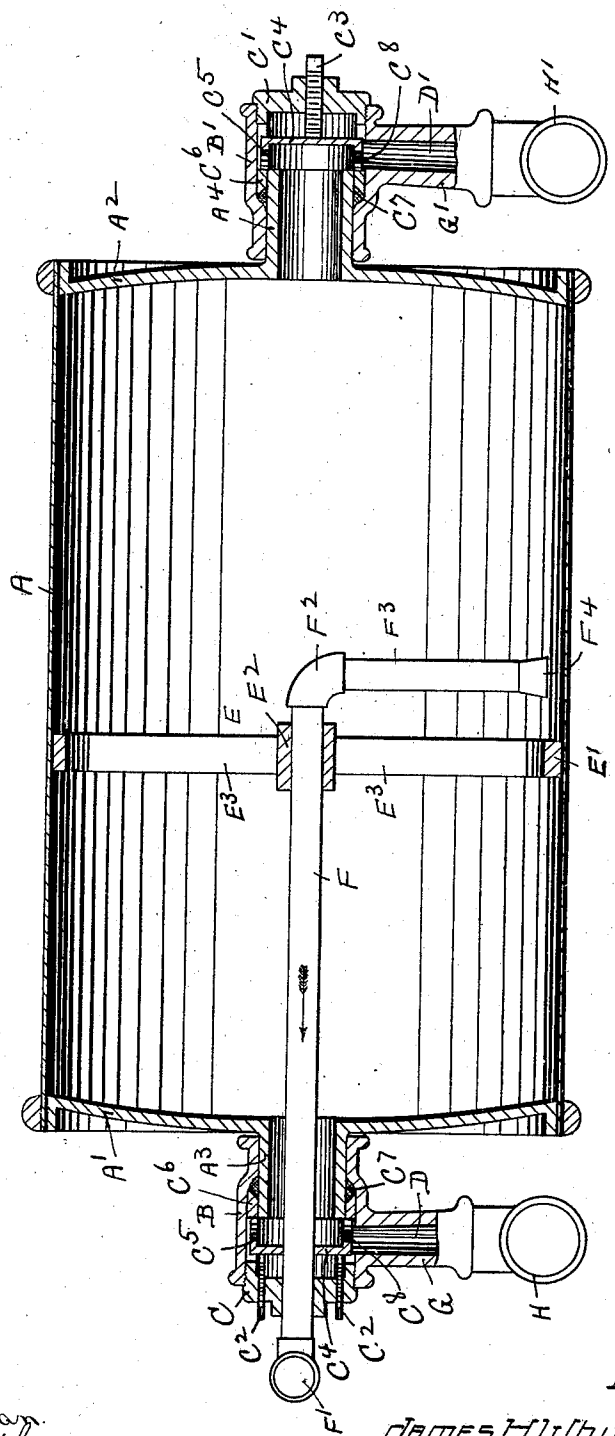
No. 683,237. Patented Sept. 24, 1901.

J. H. WHITTLE.

DRYING CYLINDER.

(Application filed Jan. 20, 1900.)

(No Model.)



Witnesses
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UNITED STATES PATENT OFFICE.

JAMES H. WHITTLE, OF WORCESTER, MASSACHUSETTS.

DRYING-CYLINDER.

SPECIFICATION forming part of Letters Patent No. 683,237, dated September 24, 1901.

Application filed January 20, 1900. Serial No. 2,192. (No model.)

To all whom it may concern:

Be it known that I, JAMES H. WHITTLE, a citizen of the United States, residing at Worcester, in the county of Worcester and Commonwealth of Massachusetts, have invented a new and useful Improvement in Drying-Cylinders, of which the following is a specification, accompanied by a drawing forming a part of the same, which represents in central longitudinal sectional view a drying-cylinder embodying my invention.

The object of my invention is to provide a more uniform distribution of heat throughout the entire length of the cylinder and to remove the water of condensation therefrom; and it consists in the construction and arrangement of parts, as hereinafter described, and set forth in the annexed claims.

Referring to the drawing, A denotes a sheet-metal cylinder or drum having cast-metal heads A′ A^2, which are provided with hollow gudgeons A^3 A^4, rotating in stuffing-boxes B B′. The outer ends of the stuffing-boxes B B′ are closed by caps C C′, having screws C^2 C^3, which bear against disks C^4, provided with annular flanges C^5. The flanges C^5 bear against rings C^6, which rest upon the packing C^7, surrounding the hollow gudgeons. The flanged disks C^4 form followers and are provided with openings C^8 in the flanges C^5, communicating with steam-passages D, by which steam is admitted within the followers and through the hollow gudgeons to the interior of the cylinder A at opposite ends thereof.

Inclosed within the cylinder A is a wheel E, having a rim E′, a hub E^2, and a series of spokes E^3, between which steam is free to pass from one end of the drum to the other. The wheel-rim E′ fits tightly inside the sheet-metal cylinder A, and the hub E^2 supports the inner end of the pipe F concentrically with the cylinder A. The outer end F′ of the pipe F is supported by the cap C of the stuffing-box and is journaled in the hub E^2, and the inner end of the pipe F is provided with an elbow F^2, connecting it with a downwardly-extended pipe F^3, having its lower end F^4 terminating near the periphery of the drum. The pipe F is held in a stationary position, while the drum A rotates, and the water of condensation which accumulates in the lower portion of the drum is forced out through the pipe by the pressure of steam in the drum. By admitting steam to the interior of the drum at opposite ends and forming an outlet for the steam and the water of condensation at the central portion of the drum the periphery of the drum is maintained at a uniform heat throughout its entire length.

The stuffing-boxes B B′ are provided with arms G G′, preferably integral therewith, and in the present instance supported upon the horizontal pipes H H′, which communicate with the steam-passages D D′ for the admission of steam to the ends of the drum A.

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

1. The combination with a rotating metal drying-cylinder, having hollow gudgeons at its opposite ends for the admission of steam to the interior of the cylinder, of an exhaust-pipe held concentrically in one of said hollow gudgeons and extending to the central section of said cylinder, with its inner end turned downwardly, and a journal-bearing for said exhaust-pipe supported by and rotating with said cylinder, substantially as described.

2. In a sheet-metal drying-cylinder, the combination with a rotating cylinder, of hollow gudgeons at its opposite ends, means for supplying steam through said gudgeons to the opposite ends of the cylinder, an exhaust-pipe held concentrically in one of said hollow gudgeons and having its inner and open end extending to the central section of said cylinder and bent downwardly to a point near the periphery of the cylinder, and a journal-bearing supported by the interior of said cylinder, whereby the inner end of said exhaust-pipe is supported, substantially as described.

3. The combination with a sheet-metal cylinder, having heads provided with hollow gudgeons, of closed stuffing-boxes forming bearings for said gudgeons, means for supplying steam to the opposite ends of said cylinder through its hollow gudgeons, an exhaust-pipe supported at its outer end by one of said stuffing-boxes, a wheel inclosed within said

cylinder having a rim carried by said cylinder, and a hub connected with said rim by a series of spokes, said hub forming a journal-bearing for the inner end of said exhaust-pipe, substantially as described.

In testimony whereof I have signed my name to this specification, in presence of two subscribing witnesses, this 1st day of January, 1900.

JAMES H. WHITTLE.

Witnesses:
RUFUS B. FOWLER,
AVA T. MURPHY.