W. W. COLLINS.

MEANS FOR REMOVING WATER OF CONDENSATION FROM CYLINDERS.

APPLICATION FILED MAY 7, 1917.

1,259,837. Patented Mar. 19, 1918.

Fig. 1

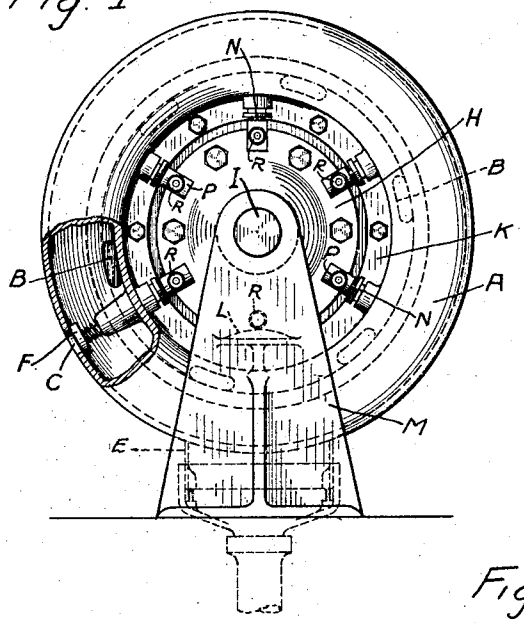


Fig. 2

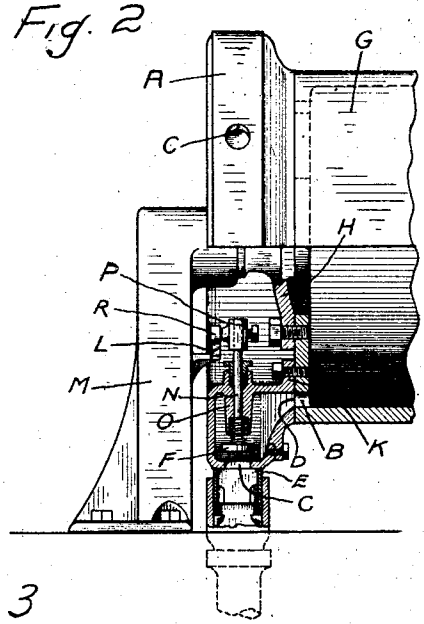
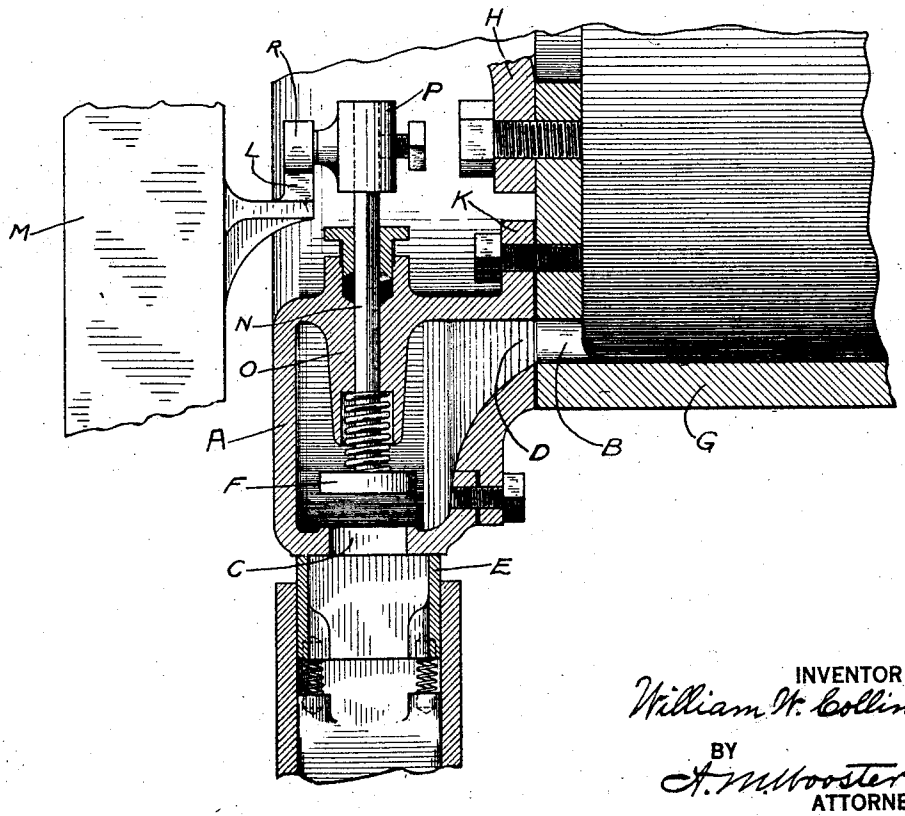


Fig. 3



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MEANS FOR REMOVING WATER OF CONDENSATION FROM CYLINDERS.

1,259,837. Specification of Letters Patent. Patented Mar. 19, 1918.

Application filed May 7, 1917. Serial No. 167,153.

To all whom it may concern:

Be it known that I, WILLIAM W. COLLINS, a citizen of the United States, residing at Bridgeport, in the county of Fairfield and State of Connecticut, have invented an Improvement in Means for Removing Water of Condensation from Cylinders, of which the following is a specification.

This invention has for its object to provide a simple and relatively inexpensive means for removing water of condensation from all makes and styles of steam cylinders, whether used for drying or heating purposes, which may be attached to new cylinders or cylinders already in use, and which shall be wholly exterior to the cylinder itself, it being simply required to form a plurality of openings in one head of the cylinder.

With these and other objects in view, the invention consists in certain constructions and in certain parts, improvements and combinations which will be hereinafter described, and particularly pointed out in the claims hereunto appended.

In the accompanying drawing forming a part of this specification,

Figure 1 is an end elevation partly broken away, showing the application of my invention to a steam cylinder,

Fig. 2 a side elevation, partly broken away, corresponding therewith, and

Fig. 3 a fragmentary sectional view on an enlarged scale.

G denotes a rotating steam cylinder, which may be of any ordinary or preferred construction and is adapted for general use as in drying and heating, the only requirement of my present invention being the provision of a plurality of openings B in the cylinder head at its peripheral wall. H denotes a trunnion plate which is attached to the cylinder head in the usual manner, I a trunnion and M a standard in which the trunnion is journaled. This standard is shown as provided on its inner face with a valve operating cam or striker L.

A denotes an annular metallic chamber of greater diameter than the cylinder which is provided with an inwardly extending flange K, by means of which it is secured to the cylinder head, with an annular opening D in its inner face which corresponds with openings B in the cylinder head, and with a plurality of peripheral openings C. Below the chamber is a pocket E arranged to form a close running joint between the chamber and itself. The peripheral openings C in the chamber are normally closed by spring actuated radially disposed valves F, the stems N of which are adapted to slide in hubs O in the wall of the chamber. At the inner end of each valve stem is a head P carrying a roller R adapted to engage the striker, or cam, which acts to raise the valve against the power of the spring, the valve dropping back to its seat again as soon as the roller has passed the striker.

As the openings B in the cylinder head are at the peripheral wall thereof, that is at the outer edge of the bore of the cylinder, and as these openings correspond with annular opening D in the inner face of the chamber, it follows that water of condensation in the cylinder will pass out freely into the chamber at all times and will collect in the lowest place in the chamber. As each valve approaches the low point, in the rotation of the cylinder, it will be lifted by the striker and the water of condensation will escape into the pocket. An instant later, the valve is closed again, by the action of the spring, and the water collects again in the low place in the chamber until the next valve is raised by the striker and so on, valves enough being provided to prevent any appreciable collection of water in the chamber.

Having thus described my invention, I claim:—

1. A structure of the character described, comprising an annular chamber adapted for attachment to the head of a steam cylinder, and having an annular opening, for the purpose set forth, and peripheral openings, spring actuated valves adapted to close the peripheral openings, and means for raising the valves to permit escape of water of condensation.

2. A structure of the character described, comprising an annular chamber having an inwardly extending attaching flange, an annular opening, for the purpose set forth, and peripheral openings, spring actuated radially disposed valves adapted to close the peripheral openings, and means for raising each valve independently against the power of its spring.

3. A structure of the character described, comprising an annular chamber adapted for attachment to the head of a rotating steam cylinder and having an annular opening, for the purpose set forth, peripheral open-

ings, and hubs, spring actuated valves adapted to close the peripheral openings and having stems adapted to slide in the hubs, and means for raising the valves against the power of the springs.

4. A structure of the character described, comprising an annular chamber adapted for attachment to the head of a steam cylinder and having an annular opening, peripheral openings, and hubs, spring actuated valves which close the peripheral openings and are provided with stems adapted to slide in the hubs, and a striker adapted to coöperate with the valve stems to raise each valve independently, for the purpose set forth.

5. The combination of a rotating steam cylinder having openings in its head, an annular chamber secured thereto, and having a corresponding annular opening, and peripheral openings, spring actuated valves adapted to close the peripheral openings, and means for raising each valve against the power of its spring.

6. The combination of a rotating steam cylinder having openings in its head, an annular chamber of greater diameter than the cylinder, secured thereto, and having an annular opening corresponding with the openings in the cylinder, and peripheral openings, spring actuated valves adapted to close the peripheral openings and means for raising the valves against the power of the springs.

7. The combination of a rotating steam cylinder having openings in its head, an annular chamber secured thereto, and having an annular opening corresponding with the openings in the cylinder head, and peripheral openings, spring actuated radially disposed valves adapted to close the peripheral openings, a pocket forming a running joint with the chamber, and means for raising each valve when the corresponding peripheral opening registers with the pocket.

8. The combination of a rotating steam cylinder having openings in its head, an annular chamber of greater diameter, secured thereto, and having an annular opening corresponding with the openings in the cylinder head, and peripheral openings, spring actuated radially disposed valves adapted to close the peripheral openings, and means for raising each valve against the power of its spring at the low point in the rotation of the cylinder and chamber.

9. The combination of a rotating cylinder having openings in its head, an annular chamber secured thereto, and having a corresponding annular opening, peripheral openings, and hubs, spring actuated valves having stems sliding in the hubs, a pocket forming a running joint with the chamber, and a striker coöperating with each valve stem to raise the valve when the corresponding peripheral opening registers with the pocket.

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Witnesses:
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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."