C. R. JAMES.

Piston-Packing.

No. 169,174. Patented Oct. 26, 1875.

*Fig: 1.*

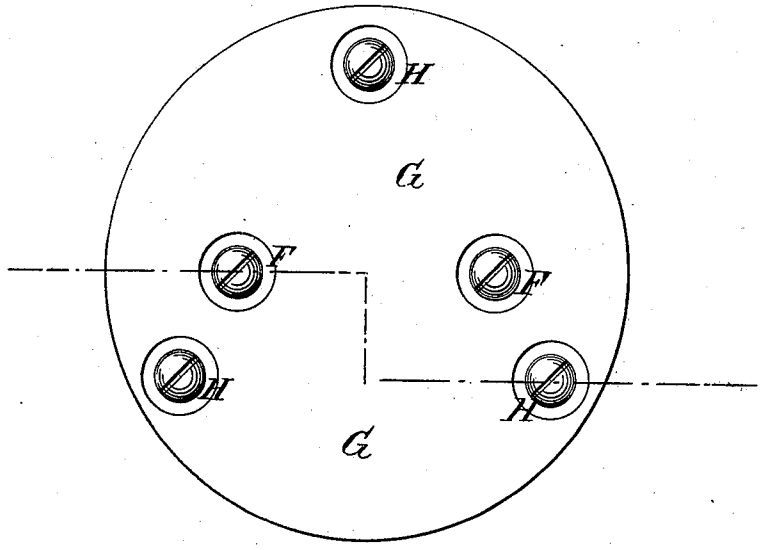


*Fig: 2.*

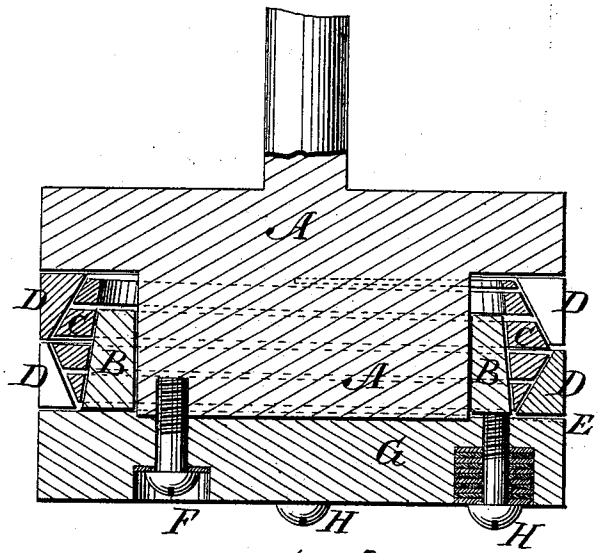


*Fig: 3.*

WITNESSES:

Frances McArdle.

A. F. Terry

INVENTOR:

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BY

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# UNITED STATES PATENT OFFICE.

CHRISTOPHER R. JAMES, OF JERSEY CITY, NEW JERSEY.

## IMPROVEMENT IN PISTON-PACKINGS.

Specification forming part of Letters Patent No. **169,174**, dated October 26, 1875; application filed September 25, 1875.

*To all whom it may concern:*

Be it known that I, CHRISTOPHER R. JAMES, of Jersey City, Hudson county, New Jersey, have invented a new and Improved Piston-Packing, of which the following is a specification:

The invention will first be described in connection with drawing, and then pointed out in the claim.

Figure 1 is a side elevation of a piston with my improved packing. Fig. 2 is a section on the line *x x;* and Fig. 3 is a plan of a washer such as I propose to use for regulating the adjusting-screws, by which the conical ring is adjusted for expanding the springs.

Similar letters of reference indicate corresponding parts.

A is the piston; B, the circular tapered adjusting-ring; C, the double conical expanding-spring; and D, the packing-rings. These rings are tapered on the inside to correspond with the spring, which is tapered on its exterior face, and one ring is placed on each side of the double taper or conical face of the spring, so that the spring presses them out against the cylinder, and at the same time presses them against the piston and follower, respectively, so as to pack the joint at E steam-tight as well, and thus prevent the steam from leaking under the packing-rings, and unduly forcing them against the cylinder, so as to make too much friction. F represents the bolts, by which the follower G is attached to the piston; and H represents the set-screws for adjusting the expanding-ring.

For enabling the screws H to be adjusted exactly alike, I propose to use an equal number of these washers I with each one for removing one from each set-screw, from time to time, as the rings need to be shifted; and to enable the washers to be removed without taking out the set-screws, I propose to make them with a slot, J, through one side, to slip on and off the screws readily.

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

The combination, with the packing-rings, of the double conical expanding-spring, having conical inner surface, and the wedge-shaped ring B, as and for the purpose specified.

CHRISTOPR. R. JAMES.

Witnesses:

T. B. MOSHER,

ALEX. F. ROBERTS.