J. H. F. OTTO.
PISTON-PACKINGS.

No. 195,771. Patented Oct. 2, 1877.

Fig. 1.

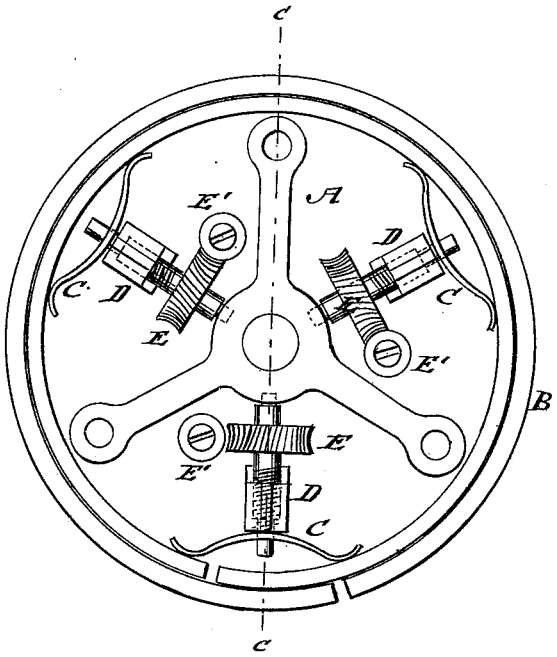
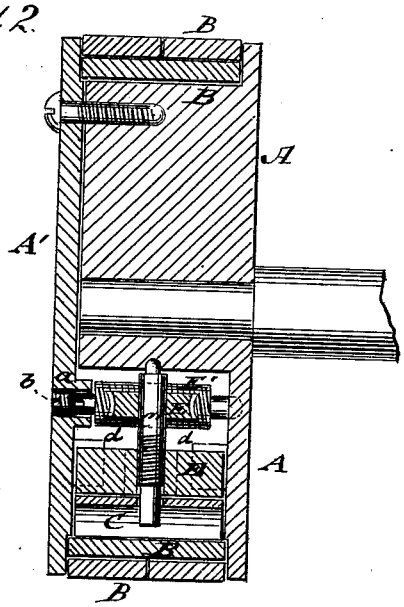


Fig. 2.



WITNESSES:

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J. H. FERDINAND OTTO, OF REEDSVILLE, WISCONSIN.

IMPROVEMENT IN PISTON-PACKINGS.

Specification forming part of Letters Patent No. **195,771**, dated October 2, 1877; application filed April 30, 1877.

To all whom it may concern:

Be it known that I, J. H. FERDINAND OTTO, of Reedsville, in the county of Manitowoc and State of Wisconsin, have invented a new and Improved Piston-Packing, of which the following is a specification:

In the accompanying drawings, Figure 1 represents a top view of my improved piston-packing, with end plate removed to show interior parts; and Fig. 2 is a vertical central section of the piston on line *c c*, Fig. 1.

Similar letters of reference indicate corresponding parts.

The invention relates to improvements in metallic piston-packing, by which the packing-rings are readily adjusted to the required degree of tightness by a simple and easily-operated mechanism, which may also be introduced into any piston in use.

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

In the drawing, A represents the piston of a steam-cylinder, pump, &c.; and B, the inner and outer split packing-rings, of suitable metal, that are guided between the end plates of the piston, and expanded by three or more interior band-springs, C, of suitable power and width, according to the size of the piston.

The expanding-springs C are operated upon by sliding nuts D, that are moved forward or back by means of radial screws C′, which are operated by a worm-gear, E E′. The shafts of the intermeshing pinions E′ pass parallel to the piston-rod into inner sockets *a* of the face-plate A′, which is attached, by screw-bolts, to the body of the piston. The sliding nut is guided between lugs *d* on the inside faces of piston-head and follower.

The socket-openings of the face-plate are closed by short cap-screws *b*, which admit, when removed, the engaging of the key with the nicked ends of the pinion-shafts, so as to turn the same and set the springs and rings to the required degree of expansion. The cap *b* prevents leakage, and serves at the same time as a stop to the driving-shafts to keep them in position and prevent play.

By taking out the cap-screws the split packing-rings may be readily adjusted to the bore of the cylinder and to any degree of tightness, the same being reset from time to time, to provide for wear, and for the replacing of the rings and of the expanding springs when worn out, by merely taking off the face-plate of the piston.

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

The combination, with springs C, that set against the split rings of a piston, of the nuts D, sliding in guides *d*, the radial swiveled screws C′, the worm-wheel E, and the end-nicked worm-shaft, all as shown and described.

J. H. FERDINAND OTTO.

Witnesses:

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