

O. S. HOWARD.

Devices for Centering Piston-Heads.

No. 141,221.

Patented July 29, 1873.

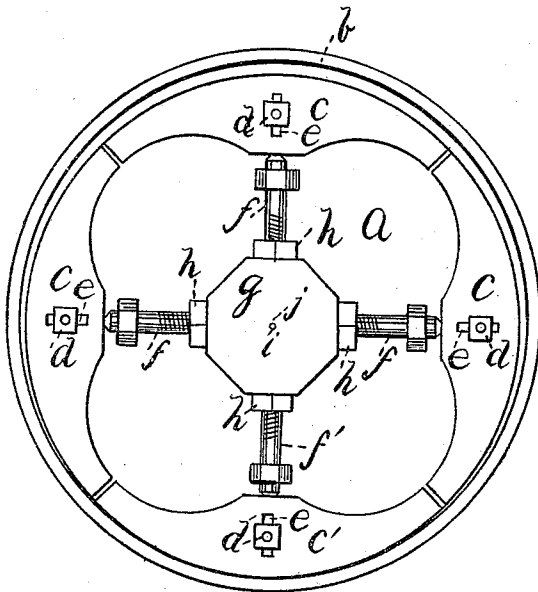


Fig. 1.

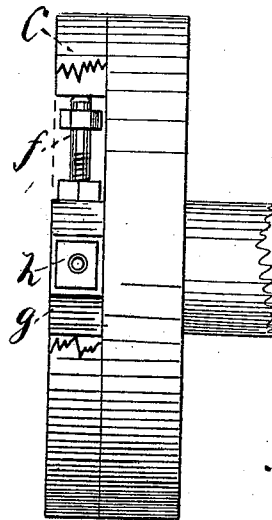


Fig. 2.

Witness
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UNITED STATES PATENT OFFICE.

OSCAR S. HOWARD, OF BANGOR, MAINE, ASSIGNOR TO HIMSELF AND
HENCKLEY & EGERY IRON COMPANY, OF SAME PLACE.

IMPROVEMENT IN DEVICES FOR CENTERING PISTON-HEADS.

Specification forming part of Letters Patent No. **141,221**, dated July 29, 1873; application filed
May 5, 1873.

To all whom it may concern:

Be it known that I, OSCAR S. HOWARD, of Bangor, in the county of Penobscot and State of Maine, have invented certain new and useful Improvements in Device for Centering Piston-Heads; and I do hereby declare that the following is a full, clear, and exact description thereof, that will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings and to the letters of reference marked thereon, which form a part of this specification, in which—

Figure 1 shows a front view of a piston-head with my attachment thereon; Fig. 2, a side view of same.

Same letters show like parts.

My invention relates to an improved attachment to piston-heads, enabling them to be kept in the center of the cylinder, and remedying unequal wear. It consists of segments, secured to the face of the piston by screw-bolts passing through slots, so as to be capable of adjustment toward or from the center of the head. Their movement is regulated by set-screws extending radially from the center of the head, and when properly adjusted they may be secured by tightening up the bolts by which they are attached to the head.

Referring to the drawing, *a* shows the face of a piston-head; *b*, the surrounding cylinder; *c*, segments bolted to the face of the head by screw-bolts *d*, passing through the slots *e*. At *f* are set-screws for adjusting the segments, one end bearing against them and the other entering, by a screw-thread, the projection *g*,

at the center of the head, or a nut, *h*, resting thereon.

Suppose the piston-head to be out of center, as in the drawing. The cylinder-head having been removed, the segment *c'* is forced down by means of its set-screw *f'*, (the bolt *d'* having first been loosened,) raising the piston-head until its center *i* coincides with the center *j* of the cylinder. The bolt *d'* is then tightened, and the head is ready for use. The operation is, of course, the same, in the case of side wear of the head.

My invention is particularly adapted to use with piston-heads having no "follower" bolted to them.

I do not claim the devices shown in L. J. Knowles' patent of July 19, 1870, for an improved piston. My invention is entirely independent of the packing of the head, and simply acts as an adjustable bearing-surface by which the piston may be kept at a perfect center.

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

In combination with a piston-head, the slotted segments *c*, secured to the faces of said piston by bolts *d* passing through said slots, and adjustable by set-screws *f*, all arranged and operating substantially as and for the described purposes.

In testimony that I claim the foregoing I have hereunto set my hand this 1st day of May, 1873.

Witnesses: OSCAR S. HOWARD.
HENRY N. FAIRBANKS,
WM. FRANKLIN SEAVEY.