(Model.)

C. H. HYSSONG.

PISTON VALVE.

No. 284,964. Patented Sept. 11, 1883.

Fig. 1.

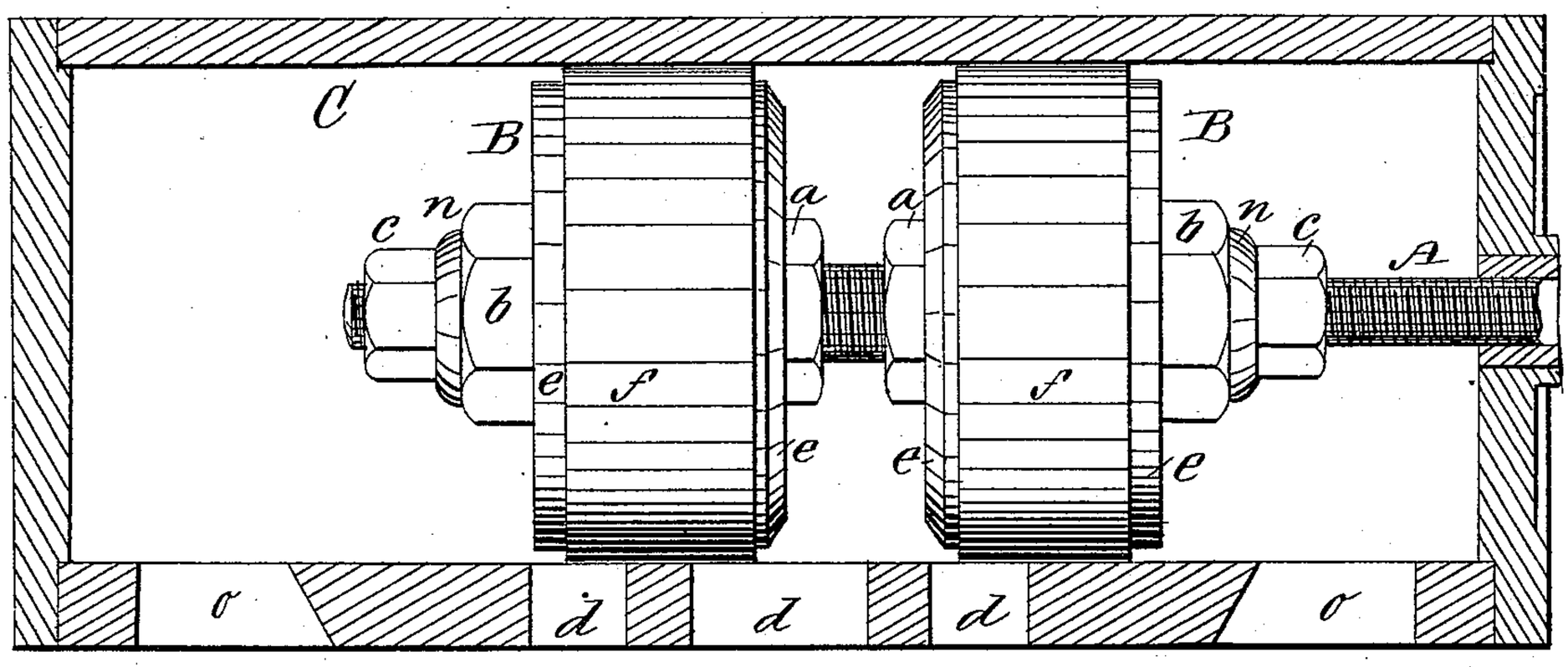


Fig. 2.

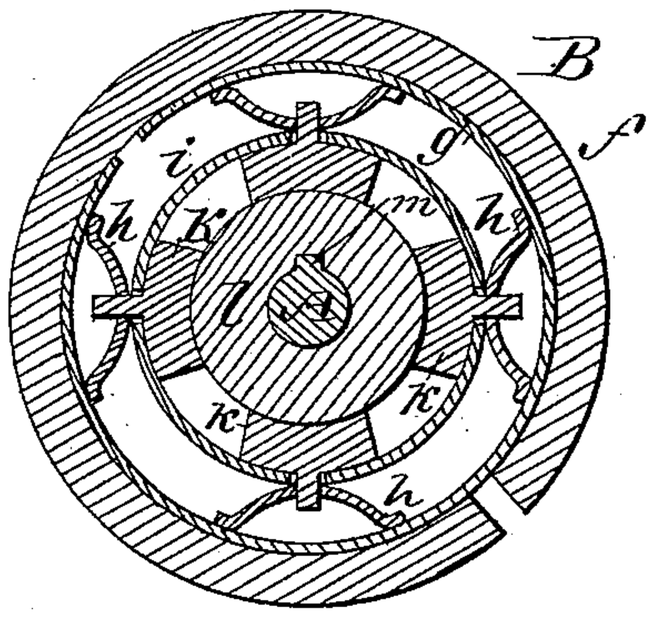
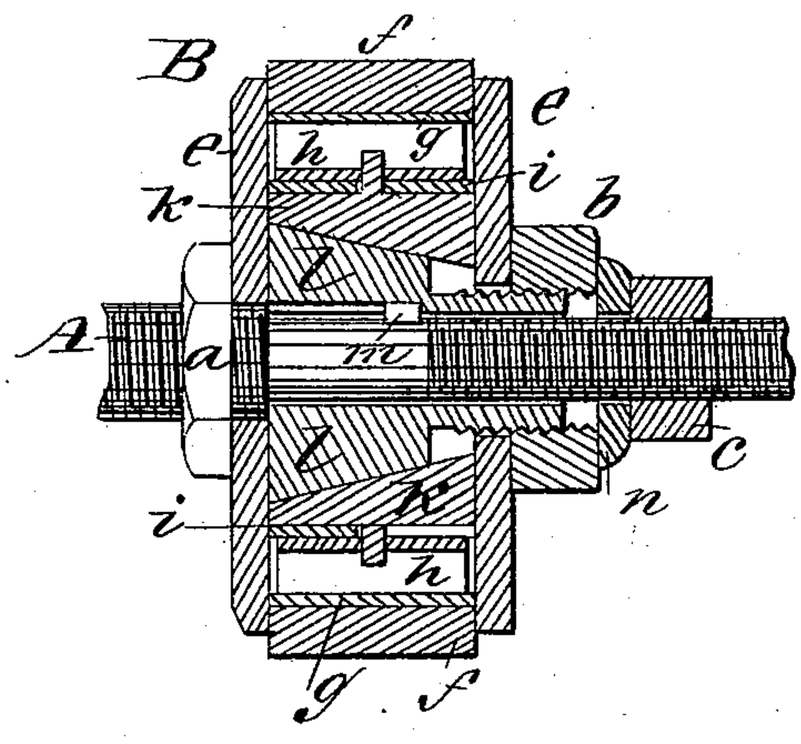


Fig. 3.



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UNITED STATES PATENT OFFICE.

CHARLES H. HYSSONG, OF ALTOONA, PENNSYLVANIA.

PISTON-VALVE.

SPECIFICATION forming part of Letters Patent No. 284,964, dated September 11, 1883.

Application filed June 18, 1883. (Model.)

To all whom it may concern:

Be it known that I, CHARLES H. HYSSONG, of Altoona, in the county of Blair and State of Pennsylvania, have invented a new and Improved Piston-Valve, of which the following is a full, clear, and exact description.

My invention consists in a balanced piston-valve for engines, adjustable to vary the lap and lead, and to vary the cavity, the valve being for use with or without a steam-chest, as hereinafter described and claimed.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a sectional side view of my improved valve and case, and Figs. 2 and 3 are cross-sections of the heads of the valve.

A is the rod or piston of the valve, and B B the heads, secured on the rod by nuts *a b c*.

C is the case, formed with an aperture of a size to receive the heads B, so that they may slide therein above the steam and exhaust ports *d*. As shown in Fig. 3, each piston-head B is formed by follower-plates *e*, clamped upon an expansion packing-ring, *f*, by the nuts *a b*. Within the ring *f* is an expansion-ring, *g*, sustained by springs *h* on ring-segments *i*, that in turn rest on tapering segment-blocks *k*, and a tapering collar, *l*, on rod A. The collar *l* is turned down to allow of its endwise movement, and is threaded on its end, projecting through one plate, *e*, to receive the nut *b*. It is also grooved to engage a lug, *m*, on bolt *a*, to prevent the collar from turning. This construction allows adjustment of the collar *l*, so as to expand the packing-ring more or less, and a set-nut, *c*, with its washer *n*, retains the parts as adjusted. The heads B can also be adjusted on rod A to vary the lap and lead, and the length of the exhaust-cavity. The case C relieves the valve-heads B from steam-pressure, except at the ends, where the pressure is balanced.

The case may be fitted within a steam-chest, or used without any chest. In the latter case the ends are closed and made with steam-inlet ports *o*, as shown in Fig. 1, and the case of a length to retain the valve-heads throughout their whole movement.

By this construction and arrangement of the valve and case the valve-heads move without friction from steam-pressure. They can be accurately adjusted to vary the lap and lead, and the packings set up without removing the heads from the case.

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

The combination, with the piston-rod A, threaded, as shown, and having lug *m*, the heads B B, the nuts *a b c*, and the case C, having ports *d*, of the follower-plates *e e*, expansion-rings *f g*, springs *h*, segments and blocks *i k*, and grooved end-threaded collar *l*, as shown and described.

CHARLES H. HYSSONG.

Witnesses:
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HARRY J. HOAR.