

P. B. HOLMES.
ROTARY ENGINE.

No. 29,787.

Patented Aug. 28, 1860.

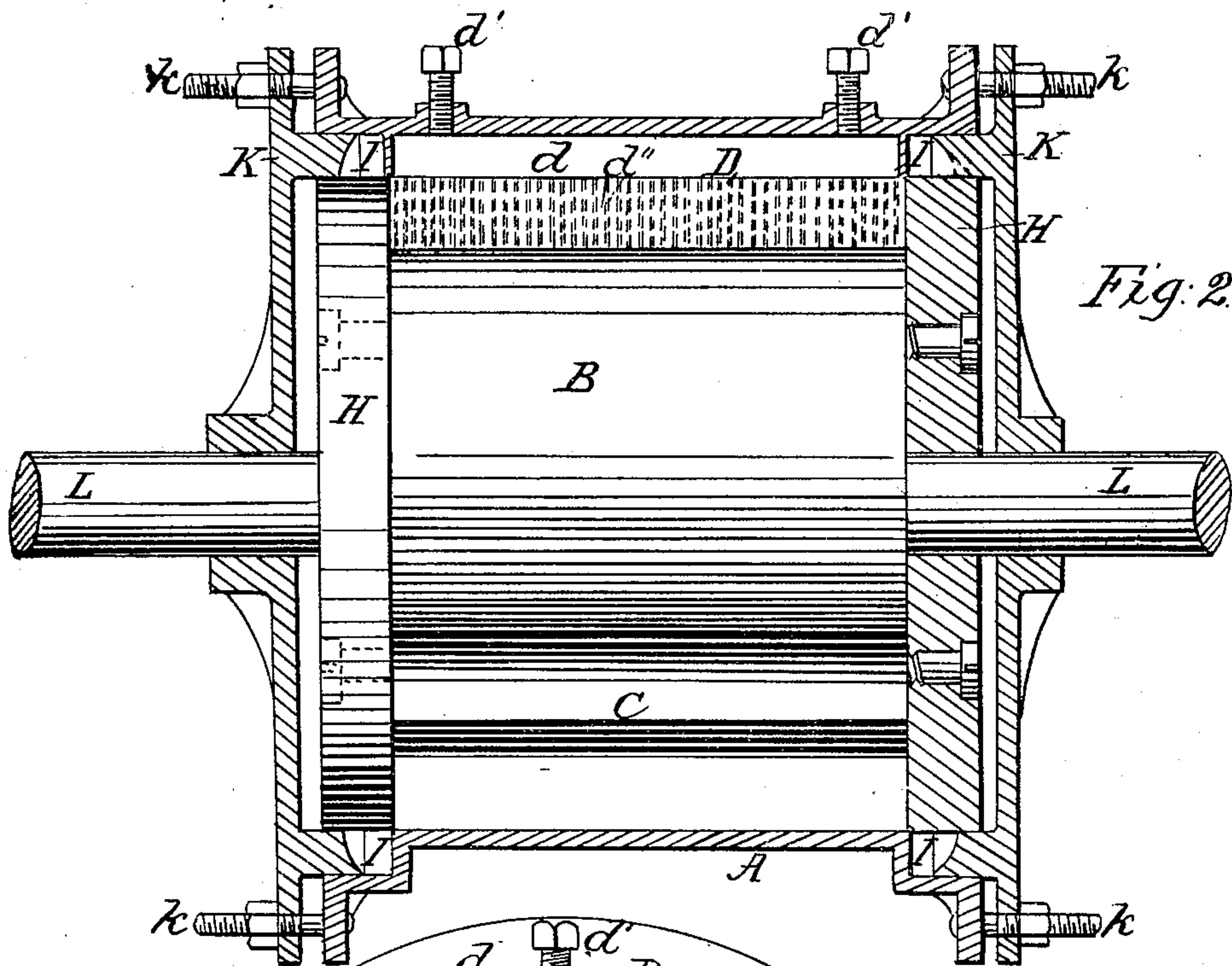


Fig. 2

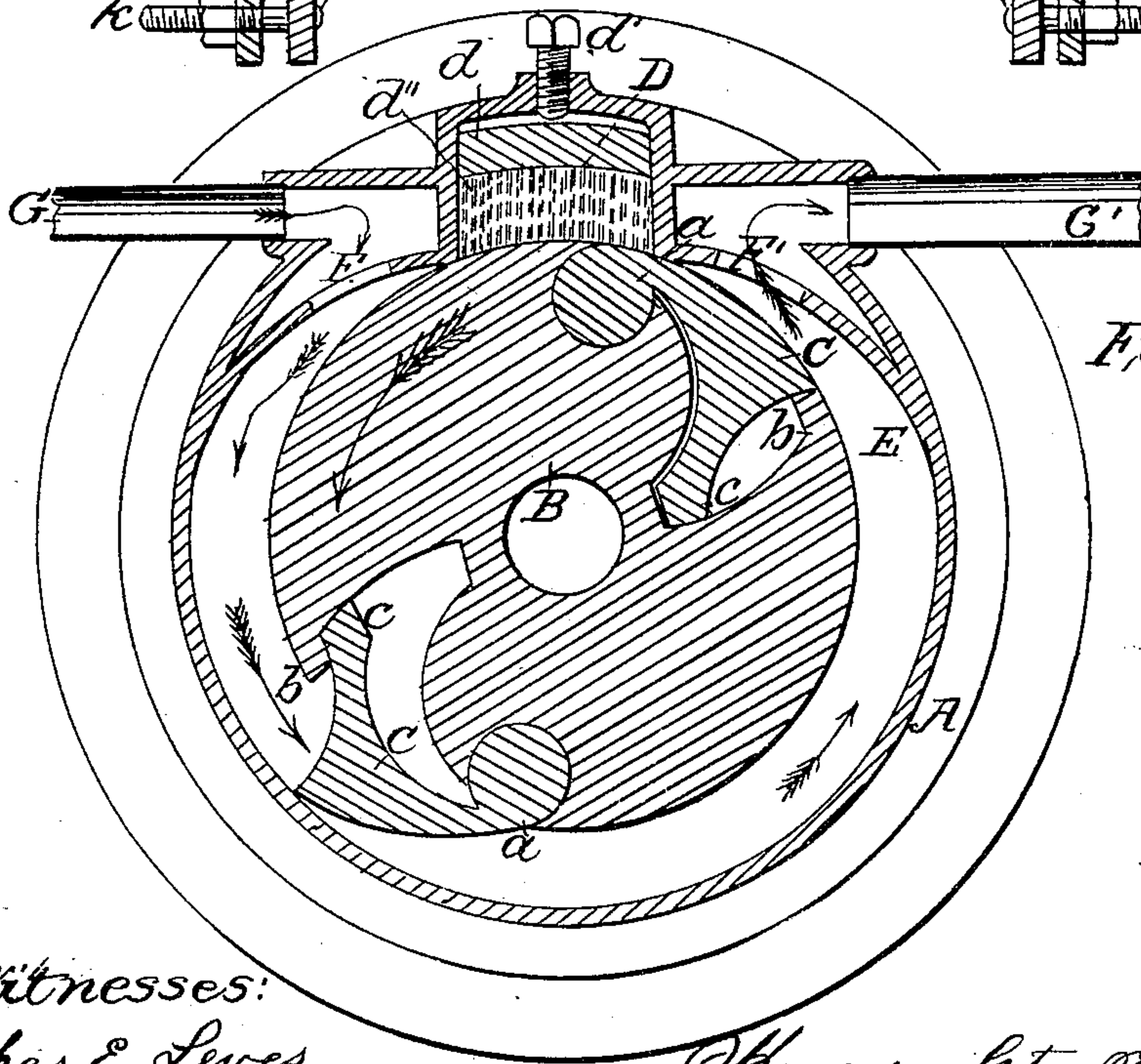


Fig. 1

Witnesses:
Chas. E. Leves
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Inventor:
Knights Brothers Atty
for P. B. Holmes

UNITED STATES PATENT OFFICE.

P. B. HOLMES, OF CINCINNATI, OHIO.

ROTARY ENGINE.

Specification of Letters Patent No. 29,787, dated August 28, 1860.

To all whom it may concern:

Be it known that I, PERRY B. HOLMES, of Cincinnati, Hamilton county, Ohio, have invented a certain new and Improved Rotary Engine; and I hereby declare the following to be a full and exact description of the same, reference being had to the accompanying drawings, making part of this specification, in which—

10 Figure 1 is a transverse section and Fig. 2 is an axial section of an engine embodying my improvements.

A is the stationary shell or casing of the engine.

15 B is the piston head of cylindrical form. This head B has fixed to it collars H and is fast to and rotates with the shaft L coincident with the axis of the shell or casing A. The head B is chambered on two opposite sides of its periphery to receive pistons C which are each hinged to the head at *a*. Shoulders *b* in the head receiving projec- 20 tions *c* on the pistons, serve to limit the outward sweep of the latter.

25 An abutment packing chamber D is formed in the casing as shown, extending inwardly to meet the rotary head B, and having its inner edge connected on each side to the outer casing, by curved parts E E'.

30 Apertures F F' connecting with pipes G G' serve respectively for entrance and exit ports of the engine.

The chamber D, is fitted with a packing follower *d* and tightening screws *d'* for the 35 purpose of setting up the packing *d''*.

The piston head B is of the exact length of the bore of the cylinder and the collars H are of the same diameter with said bore, and form on the outside in connection with the 40 casing A, packing chambers I which are closed by the casing heads K and screws *k*. The plates E cause the pistons C to close

and open gradually in passing the abutment D.

For engines worked at high speed or pressure, the centrifugal and steam forces will serve to throw and hold the pistons out but springs may be employed as an auxiliary in some cases to insure a prompt and full expansion of the pistons. 45 50

The extent of opening of the pistons C being limited by the stops *b*, the pistons are prevented from pressing against the concave with such force as to materially detract from the effectiveness or durability of the machine, the greater motion of the extremity 55 of the piston keeping it always more worn than the stopping surfaces *b*, *c*, and thus automatically relieving it of any stress.

By the construction of the revolving head, 60 the steam space communicating with the chambers I, only at the extreme periphery of the collars H enables it to be easily and durably packed.

The doubly inclined abutment E E' enables the easy closing and opening of the piston while the arrangement of adjustable packing within the butment effectually prevents any waste of steam between the supply and exhaust. 65 70

I claim as new and of my invention herein—

The described combination of collars H heads K and packing chambers I, constructed arranged and operating in connection 75 with the packing *d d' d''* in the manner and for the purpose explained.

In testimony of which invention, I hereunto set my hand.

P. B. HOLMES.

Witnesses:

GEO. H. KNIGHT,
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