

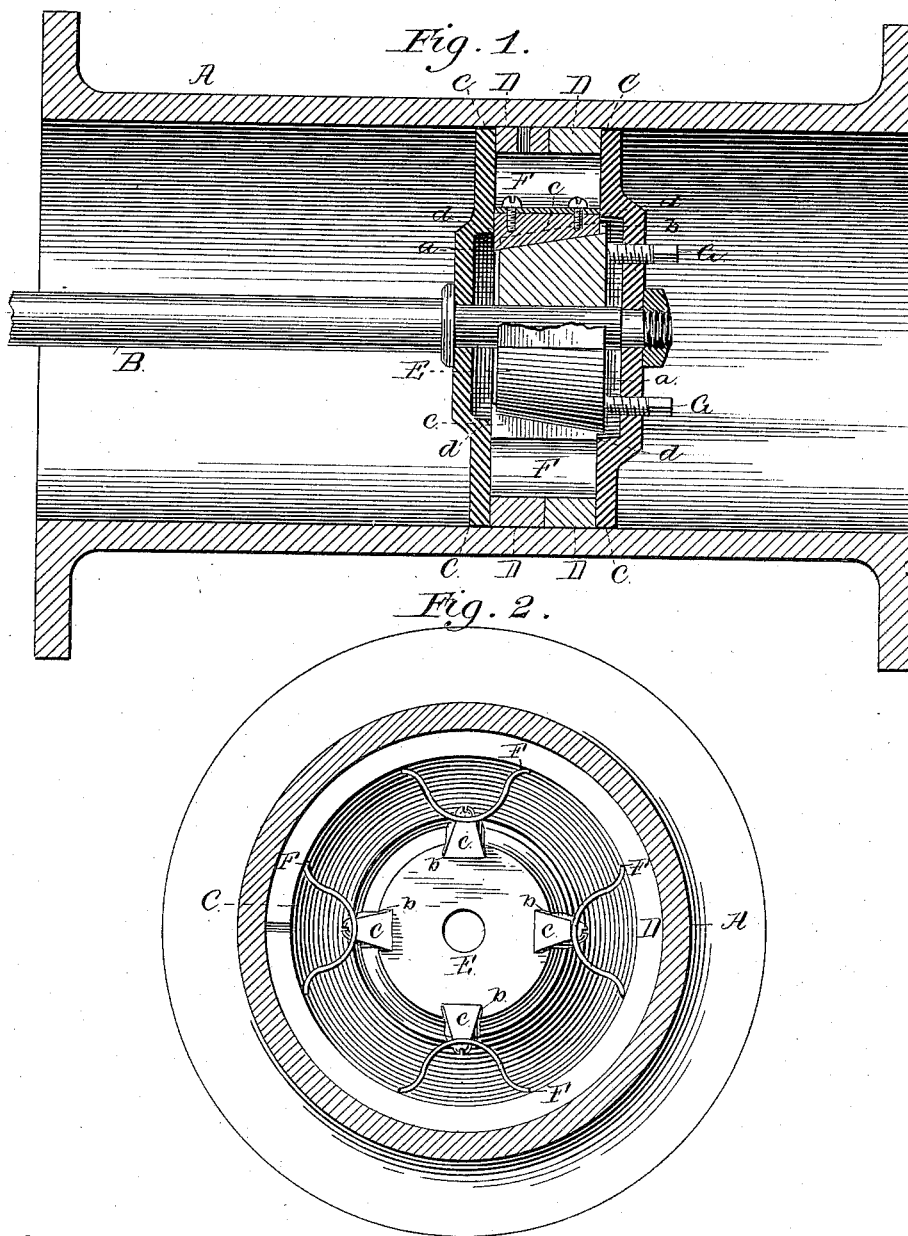
(No Model.)

I. L. SCHROEDER.

STEAM PISTON.

No. 306,436.

Patented Oct. 14, 1884.



Witnesses:

Frank S. Blanchard.
Jno. C. Schroeder.

Inventor:

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UNITED STATES PATENT OFFICE.

ISAAC L. SCHROEDER, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-HALF TO
ELLEN ADELLE HALLETT, OF SAME PLACE.

STEAM-PISTON.

SPECIFICATION forming part of Letters Patent No. 306,436, dated October 14, 1884.

Application filed January 3, 1884. (No model.)

To all whom it may concern:

Be it known that I, ISAAC L. SCHROEDER, a citizen of the United States of America, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Steam-Pistons, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to that class of piston-packings wherein the packing-rings are maintained in contact with the interior of the cylinder by means of a series of springs which exert an adjustable elastic pressure thereon.

The object of my invention is to obtain a simple arrangement of parts whereby the piston-ring will be operated upon with uniformity and equal pressure from all points.

The invention therein consists in the construction, arrangement, and combination of the several parts of the device, all as more fully hereinafter described, and pointed out in the claims.

For the better comprehension and understanding of my invention, attention is invited to the accompanying drawings, in which—

Figure 1 is a central longitudinal section through the steam-cylinder and a portion of the piston proper, and Fig. 2 a transverse vertical section on the line *xx* of Fig. 1.

A denotes the steam-cylinder, and B the piston-rod, provided on its end with the piston proper, composed of two heads or disks, C C, between which are interposed the usual divided metallic packing-rings D D. The heads C C of the piston are of ordinary construction, except that they are each provided with an interior annular recess, *a*, concentric with the piston-rod. These recesses are of a diameter sufficient to permit of the longitudinal movement of a hub or core, E, which is shaped like a cone, and is keyed or otherwise suitably mounted upon the piston-rod between the two heads of the piston. This cone-shaped hub or core is provided upon its external periphery with four or more dovetail grooves, *b b b b*, arranged around the same at points equidistant apart. In each of these grooves *b* is inserted a wedge-shaped block, *c*, the outer periphery

of which is parallel with the axis of the piston, while its inner periphery inclines away from the center of the piston, or, in other words, is parallel with the external periphery of the hub or core E. The extremities of these wedge-shaped blocks *c* abut against shoulders *d* formed by the recesses *a* in the piston-heads, and said shoulders secure the blocks against movement in a longitudinal direction, which is contrary to the movement of the cone-shaped hub or core E, the purpose of which will be hereinafter fully understood.

To the outer periphery of each block *c* is secured, by screws or other suitable means, a curved metallic spring, F, the two ends of which bear with equal pressure upon the interior of the packing-rings D D.

G G are two set-screws which pass through the outer head or disk of the piston and bear against the larger head of the cone-shaped hub or core E.

To force the packing-rings against the interior of the cylinder with any desired pressure, it is only necessary to apply a socket-wrench to the heads of the set-screws, and in turning they press the hub forward upon the piston-rod, and this movement simultaneously expands all the blocks *c*, and the springs F are in turn pressed uniformly and with equal pressure against the interior of the packing-rings. The limit of the tension or pressure will of course depend upon the strength and elasticity of the springs.

Although I have described two set-screws for operating the hub or core E, it will be manifest that but one will successfully answer the purpose.

Aside from the advantages arising from the arrangement of the springs in this device, it will be noticed that I effect a saving of material and produce a packing which is durable and efficient and not complicated.

What I claim is—

1. In a packing for pistons, the combination, with the piston-heads and the packing-rings interposed between the same, of a sliding cone-shaped hub mounted upon the piston-rod and provided with dovetail grooves within which

fit wedge-shaped blocks having inclined inner peripheries, and each provided with a curved spring, substantially as described.

2. In a piston-packing of the substantial character described, the combination, with the sliding cone-shaped hub, of the piston-heads each provided with an interior annular recess concentric with their axis, and one of

said heads having a set screw or screws for operating said hub, substantially as described. 10

In testimony whereof I affix my signature in presence of two witnesses.

ISAAC L. SCHROEDER.

Witnesses:

JNO. C. SCHROEDER,
E. M. FOWLER.