

No. 850,675.

PATENTED APR. 16, 1907

C. J. RICHARDSON.
PISTON REPLACING DEVICE.
APPLICATION FILED JULY 28, 1906.

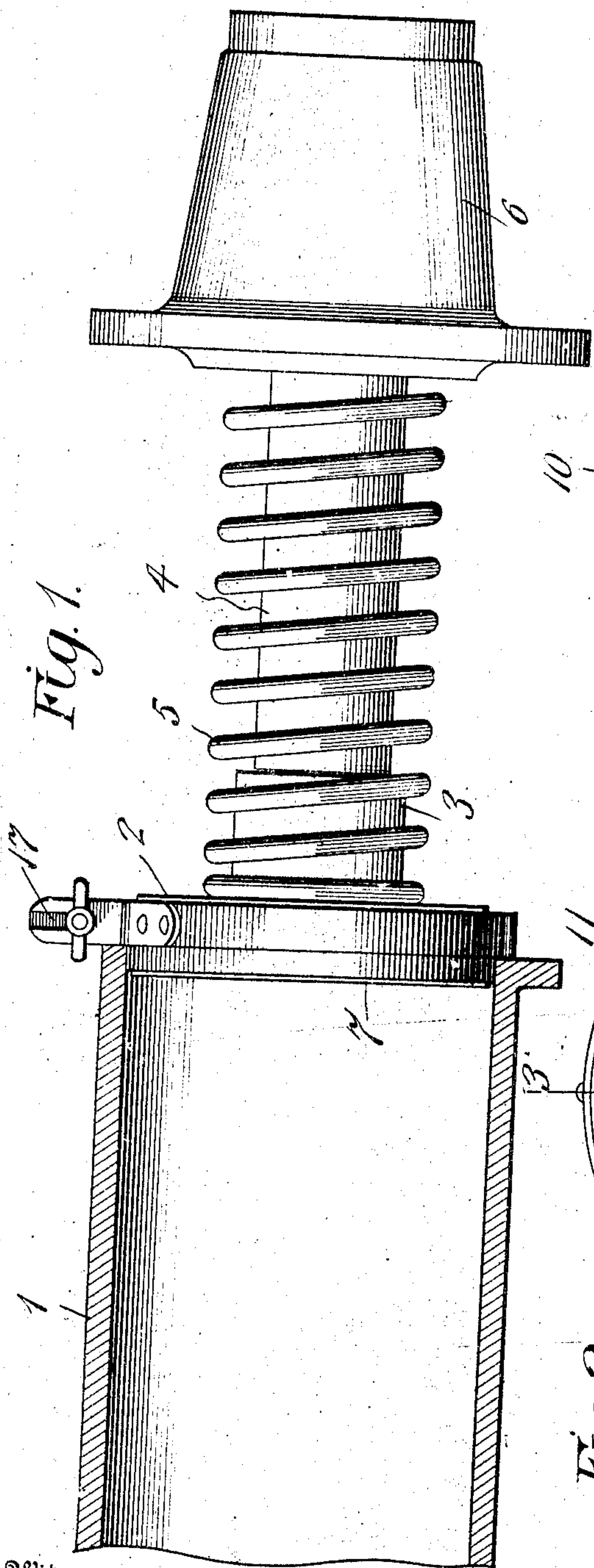


Fig. 1.

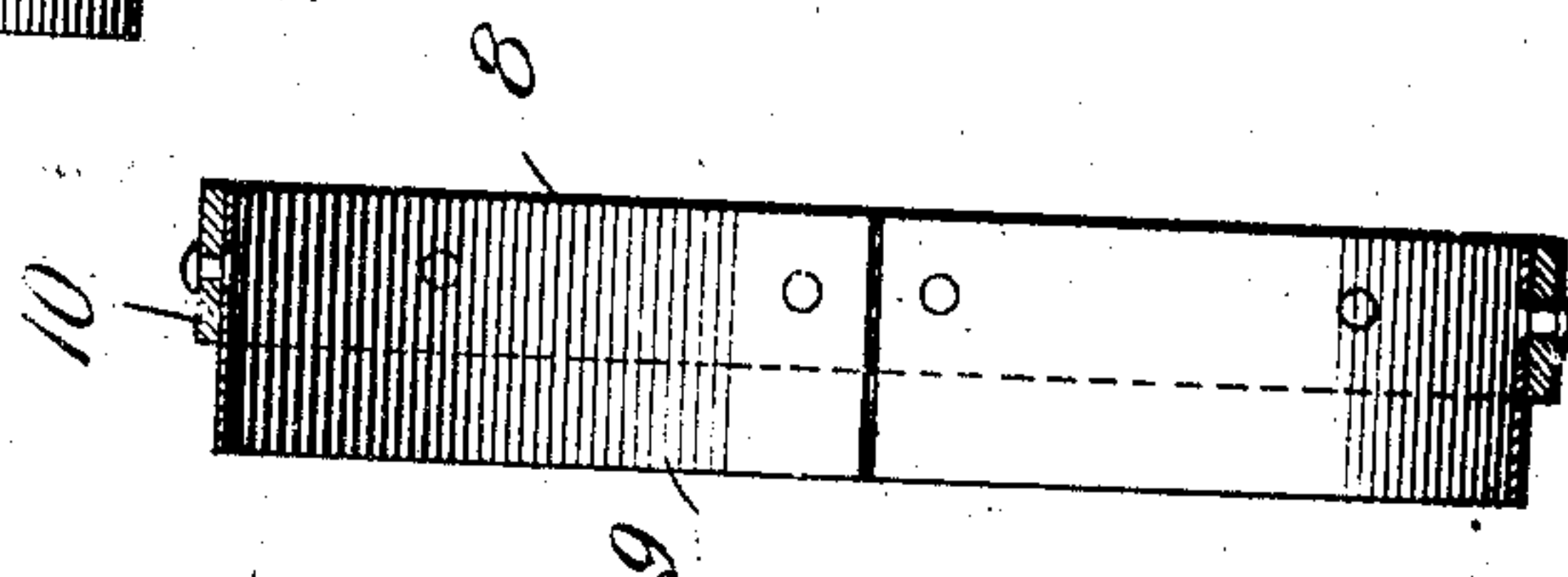


Fig. 3.

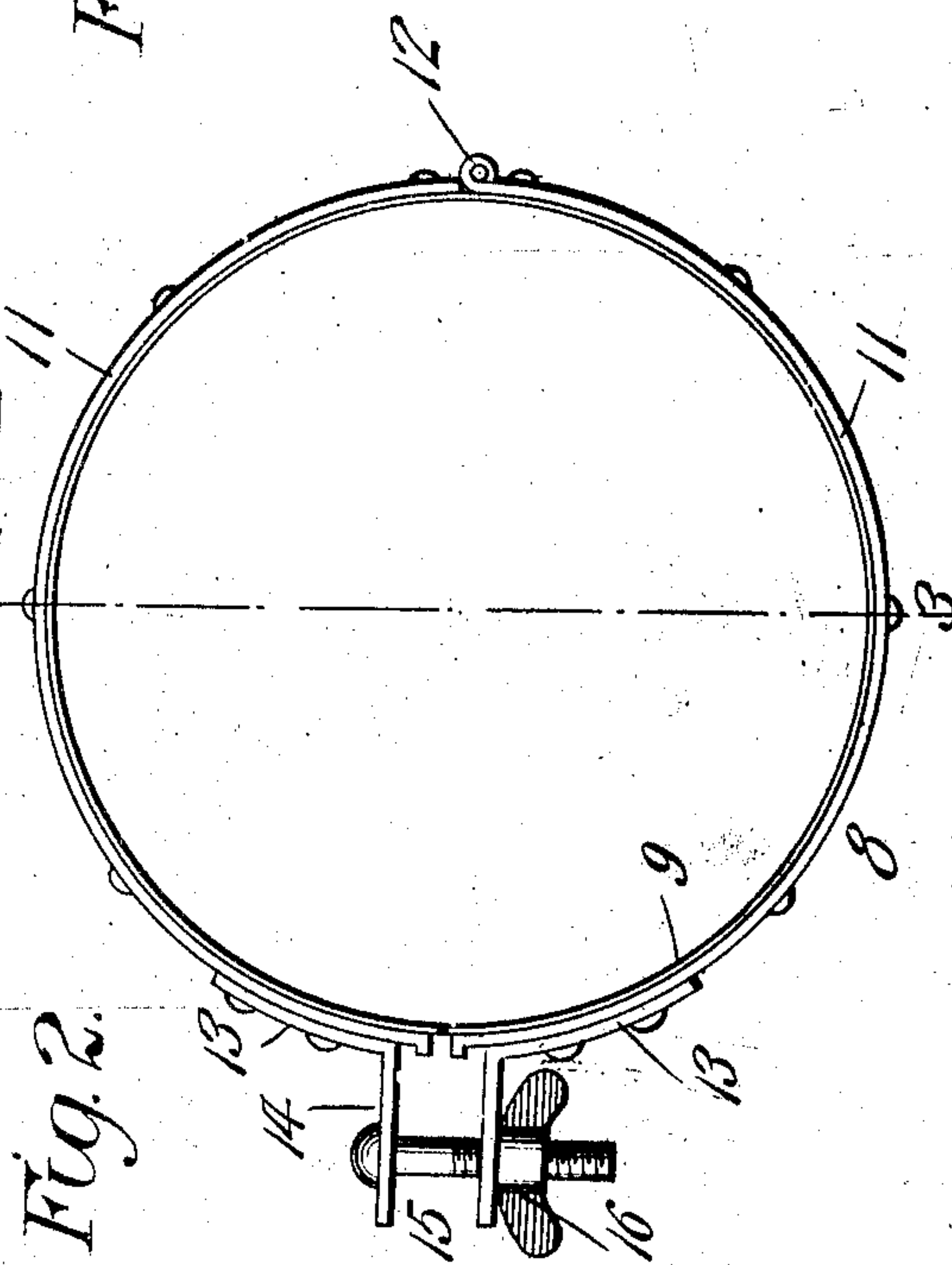


Fig. 2.

Witnesses
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CHARLES J. RICHARDSON, OF BALTIMORE, MARYLAND.

PISTON-REPLACING DEVICE.

No. 850,675.

Specification of Letters Patent.

Patented April 16, 1907.

Application filed July 28, 1906. Serial No. 328,267.

To all whom it may concern:

Be it known that I, CHARLES J. RICHARDSON, a citizen of the United States, residing at Baltimore, in the State of Maryland, have
5 invented new and useful Improvements in Piston-Replacing Devices, of which the following is a specification.

In the operation of cleaning air-brakes it is customary to remove the brake-piston
10 from the cylinder and thoroughly cleanse the interior of the latter by wiping it with waste and kerosene-oil, care being taken to thoroughly scrape and clean the leaky groove. Before replacing the piston the packing-
15 leather is thoroughly cleaned with oily waste, as is also the expander-ring, which serves to expand the leather within the cylinder. In replacing the parts the ring is first applied within the packing-leather and the latter
20 worked into the end of the cylinder, it being essential that the true circular formation of the ring be preserved, or otherwise holes will be rapidly worn in the leather, due to an unequal pressure thereof against the walls of
25 the cylinders under the influence of the ring. Under the present mode of cleaning and re-assembling the parts there is great liability of the ring becoming bent out of true as a result of the difficulty experienced in properly
30 returning the leather into the cylinder, in consequence of which the leather rapidly wears unequally, as before stated, resulting in leaky defective brakes.

This invention relates to devices designed
35 for use in replacing the pistons, and has for its objects to produce a comparatively simple inexpensive device of this character which may in practice be conveniently manipulated, one whereby the operation of re-
40 turning the packing-leather to the cylinder is facilitated, and one in which liability of the leather being misshaped or the ring bent out of true is wholly obviated.

With these and other objects in view the
45 invention comprises the novel features of construction and combination of parts more fully hereinafter described.

In the accompanying drawings, Figure 1 is a side elevation, partly in section, of an air-
50 brake cylinder and piston, showing my improved device applied for use in the operation of returning the piston to the cylinder. Fig. 2 is a front edge view of the device. Fig. 3 is a section through the stem, taken on
55 the line 3 3 of Fig. 2.

Referring to the drawings, 1 designates a brake-cylinder adapted to receive a piston-head 2, provided with a tubular sleeve 3, arranged for sliding movement on a rod 4 and to be moved to released position under the
60 influence of a spring 5, coiled upon the rod between the cylinder-head 6 and piston 2, which latter is equipped with a packing-leather 7, having arranged therein an expander-ring. (Not shown.) These parts
65 are all of the usual construction and material and adapted in practice to perform their ordinary functions.

The replacing device embodying the invention comprises a split ring 8, having a thin
70 forwardly-projecting entrance portion or flange 9, between which and the ring there is formed an external marginal shoulder 10, constituting an abutment for limiting the entrance of the portion or flange 9 into the cyl-
75 inder, the ring 8 being composed of a pair of semicircular members or sections 11, having one pair of their meeting ends hingedly connected, as at 12, whereby the sections may be
80 moved relatively to open or closed position.

Attached to the sections 11 adjacent their other or movable ends are members 13, hav-
ing outwardly-projecting portions or ears 14, adapted to receive a locking member or bolt
15, threaded for the reception of a thumb-
85 nut 16, one of the ears 14 being slotted, as at 17, to permit ready disengagement of the bolt therefrom when the thumb-nut 16 is loosened.

In practice after the piston has been re-
90 moved from the cylinder and cleaned and it is desired to return the same to the cylinder the ring 8 is opened by loosening the thumb-nut 16 and disengaging the bolt from the section 11, which has the slotted ear 14,
95 and is thereafter applied around the packing-leather 7, it being understood that the expander-ring is arranged within the leather before application of the ring 8. The re-
100 placing-ring having been applied around the packing-leather for properly compressing the same, the flange 9 is inserted in the open end of cylinder 1 for carrying the leather into the
latter, after which the thumb-nut 16 is again
105 manipulated for releasing the sections of the ring, which is then withdrawn from the cylinder and removed from around the packing-leather. The piston 2 may then be shoved
into the cylinder and this without disorder-
110 ing the packing-leather or the expander-ring

contained therein. It is to be particularly observed that through the medium of my improved device the piston may be conveniently returned to the cylinder and that in
5 application of the piston liability of the expander-ring being bent out of shape, together with the consequent objectionable results, is wholly obviated.

Having thus described my invention, what
10 I claim is—

1. A piston-replacing ring comprising a pair of hingedly-connected sections, and means for locking the sections in active position, said ring being provided with a forwardly-projecting marginal flange designed
15 to enter the end of a cylinder.

2. A piston-replacing device comprising a band adaptable to embrace the piston-head and consisting of a pair of hingedly-connected sections, and means for locking the sections in active position, said band being provided with a forwardly-projecting marginal flange designed to enter the end of the cylinder and with a stop-shoulder for limiting the entrance of the flange.
20

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

CHARLES J. RICHARDSON.

Witnesses:

WM. TAYLOR, Jr.,
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