

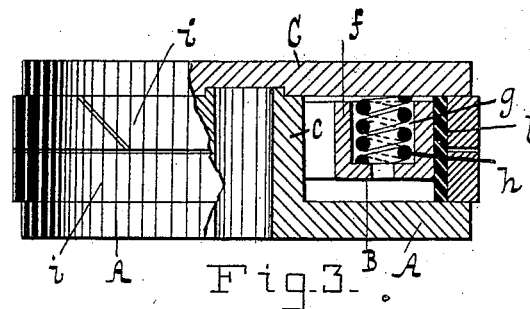
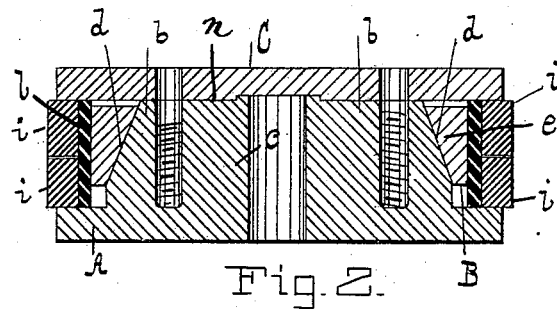
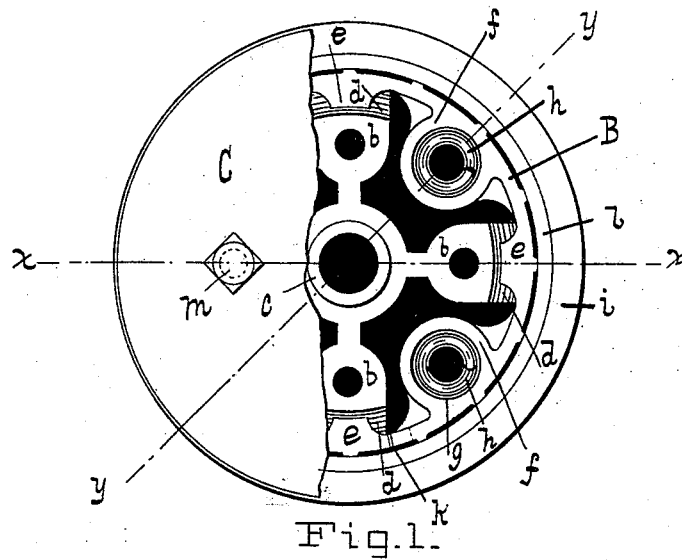
(No Model.)

W. A. BOYDEN.

PISTON PACKING.

No. 342,819.

Patented June 1, 1886.



WITNESSES:

Wm. A. Boyden
Wilson Ringle

INVENTOR:

WM. A. BOYDEN.
By *W. A. Boyden*

Attorney.

UNITED STATES PATENT OFFICE.

WILLIAM A. BOYDEN, OF BROOKLYN, NEW YORK, ASSIGNOR OF ONE-HALF
TO JABEZ C. GILBERT, OF SAME PLACE.

PISTON-PACKING.

SPECIFICATION forming part of Letters Patent No. 342,819, dated June 1, 1886.

Application filed October 7, 1885. Serial No. 179,183. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM A. BOYDEN, a citizen of the United States, residing at Brooklyn, in the State of New York, have invented certain new and useful Improvements in Piston-Packings, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to improvements in piston-packings in which the packing is set out automatically by means of spiral springs working in a plane at right angles to that in which the packing-ring moves, and acting thereon by means of a cut cylindrical ring provided with pockets for the said springs, and incline surfaces which coact with like incline surfaces on the "spider" or ribs of the piston, which, as the springs press thereon, expands the ring, and thus sets the packing out, the same being illustrated in the accompanying drawings, in which—

Figure 1 is a front view with the follower partly broken away, showing the interior of the head; Fig. 2, a sectional view on line *x*, and Fig. 3 a part sectional view on line *y*.

Similar letters refer to similar parts throughout the several views.

The letter A designates the plate that contains the ribs *b* and the hub *c*, which may be constructed in any desired shape, with the ribs *b* at their ends formed at an angle, *d*, over which is placed the ring B, provided with counter incline projections *e*, which coact with the said angles *d* to open the ring B when pressed thereon, and the lugs *f*, which are provided with pockets *g*, in which are placed the springs *h*, that press the ring B against the inclines, by which, as the piston-rings *i* wear away, they are automatically set out as the ring B is cut at *k*, which permits it to expand as it is forced on the angle surfaces *d*, thereby acting on the equalizing ring *l*, which is also cut, and which equally applies the force exerted on both the piston-rings *i*, which are constructed on well-known principles.

The follower-plate C is constructed as usual, and secured to the plate A by means of the

screws *m*, which pass through the plate C and are threaded into the ribs *b*. The plate C is screwed hard against the surface *n* of the ribs *b* when the head is placed in the cylinder, which compresses the springs *h*, and thereby expands the ring B, as before stated, thus forcing the piston-rings *i* against the interior of the cylinder, and continuing to do so automatically until they are entirely worn away, without any attention from the attendants.

By the construction as above stated and shown, in case one of the springs *h* should break or cease to act, the result would be the same, as the ring B would be expanded by the action of the other springs, and in case of such an accident none of the parts could become loose to cause rattling or interfering with the operation of the other parts; and, also, my improvement can be applied to the ordinary piston-head; the only alteration necessary is to turn off the ends of the ribs *b* to form the angle-surface *d* and provide the pocket-ring B, all the other parts being reused, which results in a great saving, &c., especially so in locomotives, when adopting or applying a new device.

Having fully described my invention, what I claim, and wish to secure by United States Letters Patent, is—

1. In a piston-packing, the combination of the plates A and C, the former provided with ribs *b*, having angular surfaces *d*, the cut ring B, provided with the pockets *g* and incline surfaces that coact with the angular ones *d*, the springs *h*, and the packing-rings, as herein set forth.

2. In combination with a piston-head provided with ribs having surfaces as described, the cut ring B, provided with pockets for springs, and incline surfaces, and the springs *h*, whereby the packing-rings are automatically set out, as set forth.

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

WILLIAM A. BOYDEN.

Witnesses:

FREDERICK EDER,
JABEZ C. GILBERT.