No. 684,321. Patented Oct. 8, 1901.

W. W. ST. JOHN.

PISTON PACKING RING.

(Application filed Oct. 25, 1900.)

(No Model.)

Fig. 2.

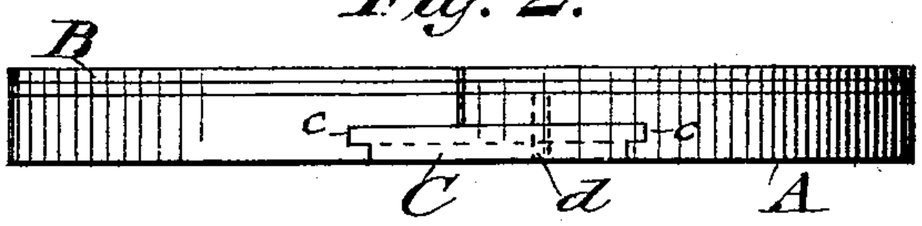


Fig. 1.

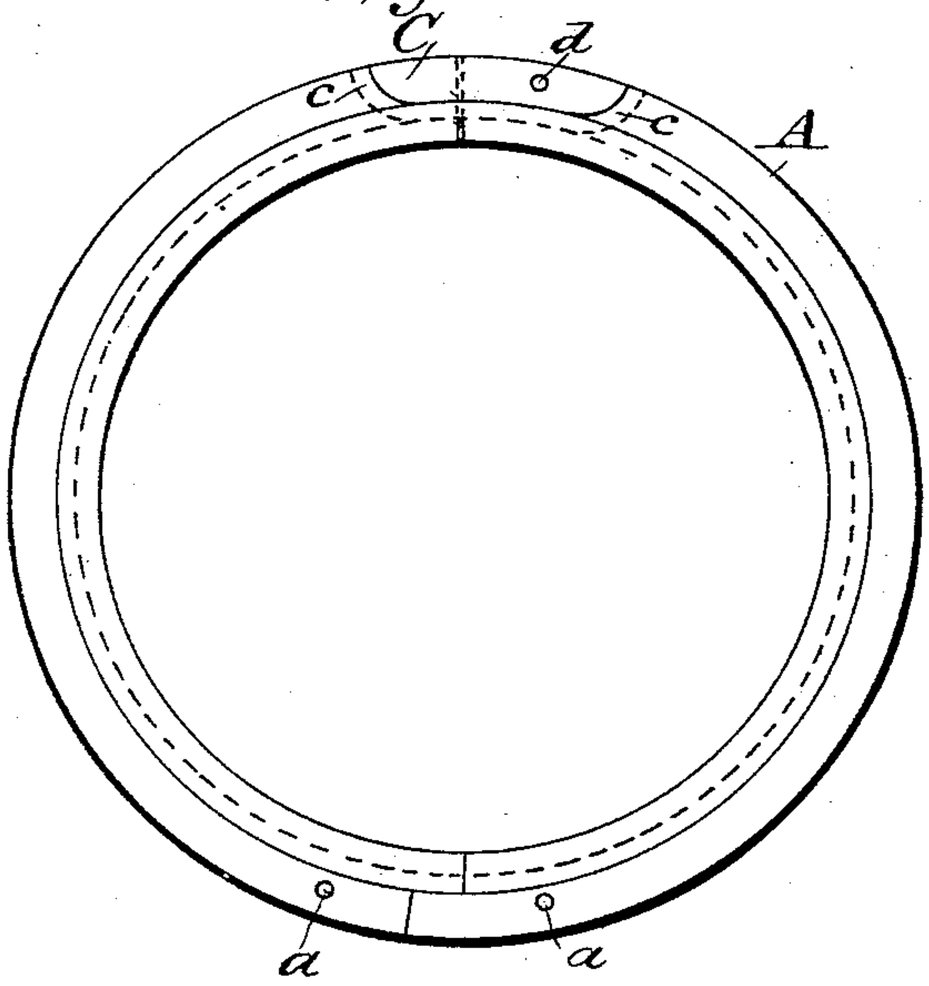


Fig. 4.

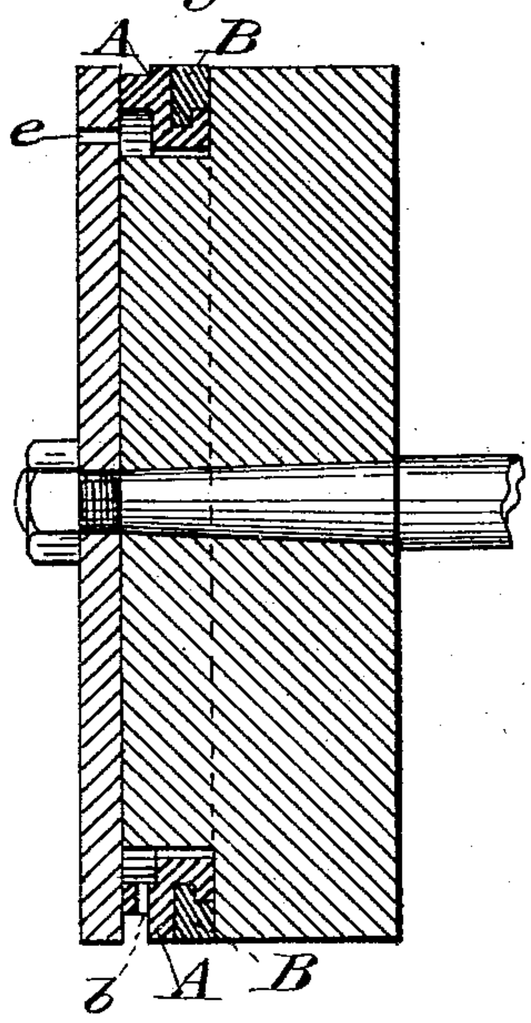
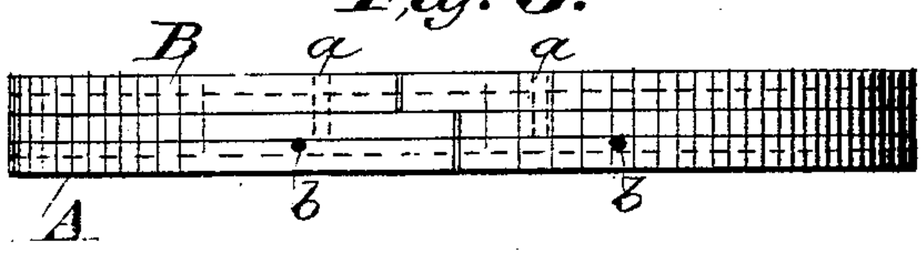


Fig. 3.



Witnesses:

Walter S. Flint.

Albert L. Barnes.

Inventor:

Wm. W. St. John,

By T. C. Bucht,

Attorney.

UNITED STATES PATENT OFFICE.

WILLIAM W. ST. JOHN, OF BINGHAMTON, NEW YORK.

PISTON PACKING-RING.

SPECIFICATION forming part of Letters Patent No. 684,321, dated October 8, 1901.

Application filed October 25, 1900. Serial No. 34,348. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM W. ST. JOHN, a citizen of the United States, residing at Binghamton, in the county of Broome and State of New York, have invented certain new and useful Improvements in Piston Packing-Rings; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to that class of packing-rings for pistons in which the split ring is made steam-tight by a filling-piece of peculiar construction and arrangement.

The object of the invention is to produce a packing-ring of such cross-section that one of the sections fits into a rabbet in the other and provided with a filling-piece to form a tight joint; also, to produce the filling-piece with a tongue on its inner side, which fits into a corresponding rabbet in the ring; also, to arrange the filling-piece so that it closes the joint of the ring in a thorough manner; also, that it can be milled in while the ring is in the lathe and when put in can be turned off with the ring; furthermore, that the recess in the outside face of the ring admits steam all around it, and small holes in this part of the ring admit steam under the ring to press it against the bore of the cylinder, and, finally, that a perfectly-tight ring can be produced at a small cost. The recessed part may be of any width to fill the groove, as it does not affect the packing-ring surface.

With these objects in view my invention consists in the peculiar construction of certain parts and the novel arrangement of parts, as will be more fully described hereinafter and specifically pointed out in the claims, reference being had to the accompanying drawings, in which—

Figure 1 represents a plan of the packing-ring. Fig. 2 is a side or edge view of the same, showing the filling-piece. Fig. 3 is a similar view showing the holes for admitting steam under the ring. Fig. 4 is a cross-section of a piston with the packing-rings in position.

In the drawings, A represents a packing-ring of the cross-section shown in Fig. 4, into which the auxiliary ring B, of L shape, fits, having one side fitting into a rabbet to retain it in position. These rings are cut and secured together by the rivets *a a*, (shown in Fig. 3,) while the opposite side is provided with the filling-piece C. In this view holes *b b* are shown for admitting steam under the ring A to press it out against the bore of the cylinder. The filling-piece C is provided with a tongue *c* on its inner side, that fits into a rabbet, and it is held in place by a rivet or pin *d* at one end, while the other end is free, so as to allow the ring to expand, as required. The tongue extends laterally into a rabbet arranged between the two faces of the ring C, and not as it has been heretofore done—*i. e.*, extending sidewise from the ends of the filling-piece and into rabbets in a circumferential manner. In my piston packing-ring the tongue is also arranged to extend laterally around the inner edge of the filling-piece and is milled out of the thickness of the filling-piece, while in all others known to me the said filling-piece is parallel and the tongue extends longitudinally from the ends thereof. The recess for the filling-piece in the face of the ring admits steam all around the ring and can be made of any width desired for packing purposes. An opening or hole *e* through the follower D or outside of the groove serves to admit steam under the ring, if desired. A short spring may be used to hold the ends of the ring down.

It will be readily observed by those skilled in the art that this ring will make a perfectly-tight packing for a piston, it is not liable to get out of order, it will not cause binding of the piston in the cylinder, can accommodate itself to the bore of the cylinder and yet form a tight joint, preventing any leakage of steam, which is a very objectionable feature in piston-packing and causing loss of horse-power; it can be readily produced at a reasonable cost, and it can be easily applied to steam, hydraulic, hot-air, pneumatic, or other engines.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a piston-packing, the combination of

the piston with the divided packing-ring and a filling-piece having a flange projecting therefrom and a rabbet in the packing-ring, into which the flange of the filling-piece is seated, substantially as specified.

2. In a piston-packing, the combination of the piston, and the divided packing-ring, with a filling-piece, having a flange projecting therefrom and a rabbet in the packing-ring, into which the said flange of the filling-piece is seated, a spring and means for fastening the filling-piece to the packing, all as set forth.

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

WILLIAM W. ST. JOHN.

Witnesses:
WALTER S. FLINT,
ALBERT S. BARNES.