M. MORATTA.

PACKING RING.

APPLICATION FILED APR. 28, 1916.

1,229,498. Patented June 12, 1917.

Fig. 1.

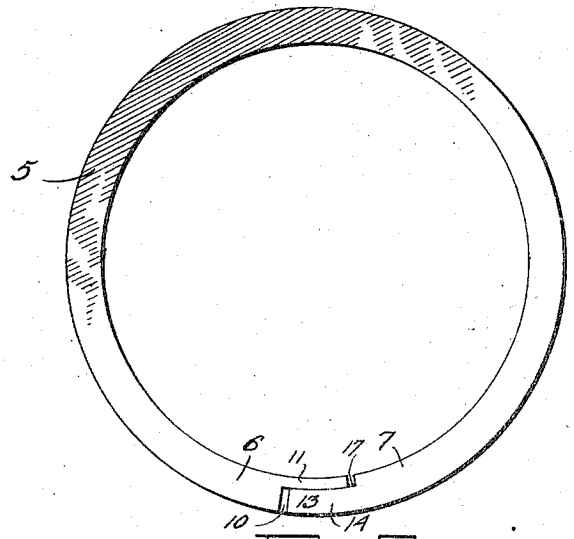


Fig. 2.

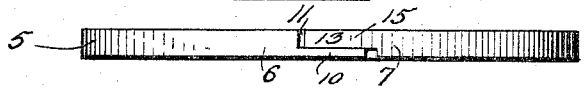
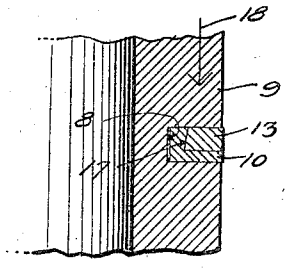


Fig. 3.

Fig. 4.



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PACKING-RING.

1,229,498. Specification of Letters Patent. Patented June 12, 1917.

Application filed April 28, 1916. Serial No. 94,145.

To all whom it may concern:

Be it known that I, MATHEW MORATTA, a citizen of the United States, residing at Princeton, in the county of Gibson and State of Indiana, have invented certain new and useful Improvements in Packing-Rings, of which the following is a specification.

My present invention relates to packing rings for pistons.

The principal object of my invention is to provide a packing ring of the class described which comprises a single unit, the engaging end portions at the circumferential division, which are formed so as to effectively prevent passage of the motive fluid thereby, being well adapted to resist the forces coming thereupon, so that a ring which may be maintained in good repair for a considerable length of time, is provided.

Other objects of my invention will appear in the following detailed description taken in connection with the accompanying drawings, forming a part of this specification, in which drawings:

Figure 1 is a top plan view of a packing ring constructed according to my invention.

Fig. 2 is a side elevation of the same looking in the direction of the circumferential division.

Fig. 3 is an enlarged fragmentary perspective view of the end portions of the ring which are normally in engagement, but separated in said view, to disclose details.

Fig. 4 is a fragmentary enlarged vertical sectional view through a portion of a piston to show the ring in operative relation thereto.

In the drawing, where similar characters refer to similar parts throughout the several views, 5 designates the main body portion of a ring preferably of the concentric type; 6, one end portion at the circumferential division; and 7, the other end portion.

The ring is adapted to fit in a circumferential groove 8 formed in the piston 9, in a well known manner, the ring being formed of spring material having an inherent tendency to expand.

The earliest type of packing ring was a one-piece concentric ring, a slot or vent cut out of its circumference, providing a considerable opening so as to permit of expansion due to heat. Such an opening furnished a direct passage for the escape of fluid since from one-thirty second of an inch upward must be allowed to accomplish the end in view. In order to prevent the fluid from passing a ring constructed according to my invention, one engaging end portion, that designated 6 in the drawing, is provided with a base 10, the lower portion of which is flush with the under face of the ring, this being in height, less than one-half the height of the main body portion 5, as clearly shown in Fig. 3 of the drawing. A wall 11 is also provided at said end portion 6, flush with the internal periphery of the main body portion 5, the width of said wall being less than one-half the width of said main body portion, the wall 11 being above the base 10 and in combination with which a groove 12 is provided open to the upper and outside faces of the ring.

The other engaging end portion of the ring, that designated 7, is provided with a tongue 13, with adjacent faces 14 and 15, flush with the upper and outer side faces of the main body portion 5, said faces of the tongue being narrower than the said faces of the main body portion, but greater than one-half the width of the latter, so that the tongue 13 extending circumferentially from end portion 7, fits into the grooves 12 and in surface contact with the top of base 10 and the lateral face of wall 11.

The wall 11 is so formed that the outer face 16 thereof converges inwardly with respect to the internal peripheral face toward the base 10 as clearly shown in Fig. 4 of the drawing, and the tongue 13 is formed with its inner side face 17 diverging downwardly with respect to the outer face 15, so that the tongue 13 engages the top of the base 10, and the face 16 of wall 11 with surface contact, thus effectively preventing vibration of the tongue 13 about its juncture with the main body portion of the ring, when the piston 9 is reciprocated.

When the ring is assembled in operative relation with the piston, the base 10 is disposed lowermost, or in other words, farthest in the line of force 18 acting upon the piston during a power stroke. Thus the union of tongue 13 with the main body portion 5, is of a substantial area to withstand any shocks, coming upon the ring during the power stroke, and said tongue 13 is not likely to become broken where the impact upon the piston is sudden, such as in internal combustion engines.

Because of the disposition of the faces 16 and 17 with respect to the internal and ex-

ternal peripheries of the ring, the face 14 of the tongue 13, and the under side of base 10 is maintained flush with the upper and lower faces respectively, of the ring, and surface contact is maintained between the tongue 13 and the faces of grooves 12, preventing rupture of the fibers of tongue 13 at its juncture with the main body 5 of the ring, which is very apt to occur if the walls 15 and 17 of tongue 13 were parallel, due to clinging of the free end portion of the tongue 13 with the wall of the cylinder when lubrication is insufficient.

Changes in details may be made without departing from the spirit or scope of my invention; but,

I claim:

1. A packing ring comprising a main body portion and engaging end portions, one of said end portions provided with a base less in height than one-half the height of said main body portion, a wall flush with the internal periphery of the ring and above the said base, the width of said wall being less than one-half the width of said main body portion, the outer face of said wall converging inwardly with respect to the inner peripheral face toward said base and the other end portion provided with a tongue engaging the top of said base and the outer lateral face of said wall, with surface contact.

2. A packing ring comprising a main body portion and engaging end portions, one of said end portions provided with a base and a wall flush with the internal periphery of the ring and above the said base, the outer face of said wall converging inwardly with respect to the inner peripheral face toward said base, and the other end portion provided with a tongue engaging the top of said base, said tongue provided with an inner face diverging downwardly with respect to its outer peripheral face, said inner side face engaging said outer face of said wall, with surface contact.

MATHEW MORATTA.