T. ROGATCHOFF.

PISTON.

APPLICATION FILED JAN. 25, 1921.

1,433,478. Patented Oct. 24, 1922.

Fig. 1.

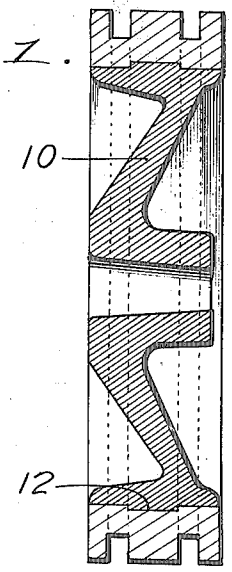


Fig. 5.

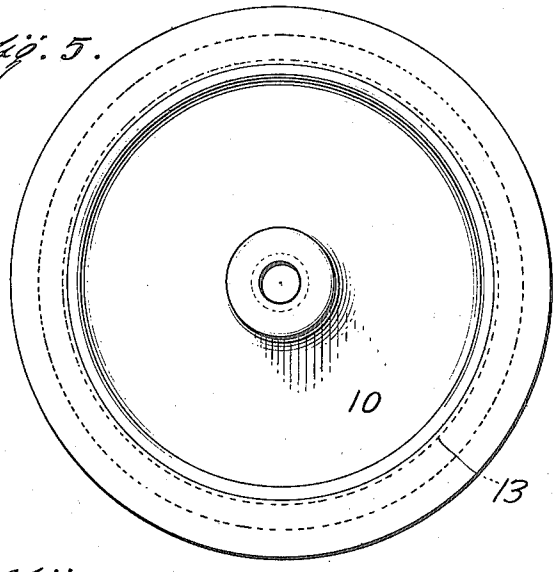


Fig. 4.

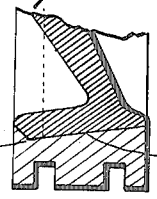


Fig. 2.

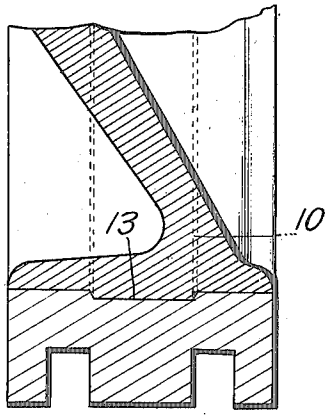
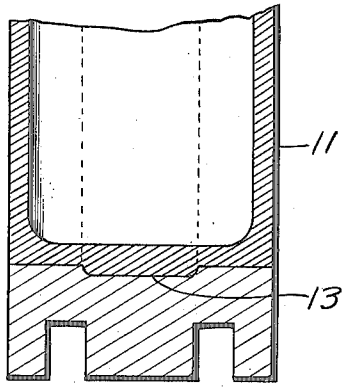


Fig. 3.



INVENTOR.

THEODORE ROGATCHOFF,

BY

Franklin H. Hough

ATTORNEY.

Patented Oct. 24, 1922. 1,433,478

UNITED STATES PATENT OFFICE.

THEODORE ROGATCHOFF, OF BALTIMORE, MARYLAND.

PISTON.

Application filed January 25, 1921. Serial No. 439,820.

To all whom it may concern:

Be it known that I, THEODORE ROGATCHOFF, a citizen of the Republic of Russia, residing at Baltimore, in the city of Baltimore and State of Maryland, have invented certain new and useful Improvements in Pistons, of which the following is a specification, reference being had therein tc the accompanying drawings.

This invention relates to pistons and has for an object to provide a sectional piston made up of a piston center and a bull ring embracing the center, said ring providing the usual and ordinary means for receiving and accommodating the piston packing.

A further object of the invention is to provide improved means for securing the bull ring to the piston center.

A further object of the invention is to provide an improvement over Patent No. 1,326,692, issued December 30, 1919.

A further object of the invention is to provide a bull ring which is shrunk onto the piston center with means for utilizing the shrinkage of metal both circumferentially and laterally of the ring.

With these and other objects in view the invention comprises certain novel units, combinations, features, elements, arrangements and functions as will be hereinafter fully described and claimed.

In the drawings:

Figure 1 is a diametrical sectional view through a piston with the improved bull ring mounted thereon;

Figure 2 is an enlarged detail fragmentary sectional view taken on a radius showing a modified type of bull ring and connection;

Figure 3 is a fragmentary detail sectional view taken on a radius and showing a slightly different type of cylinder center and means of attaching;

Figure 4 is a fragmentary detail view taken on a radius of a different type of shoulder and ring connection, and

Figure 5 is a view in side elevation of the center and ring attached, including all of the four types shown at Figures 1, 2, 3 and 4.

Like characters of reference indicate corresponding parts throughout the several views.

In the said Patent No. 1,326,692, the engagement between the bull ring and the piston was such that lateral shrinkage of the bull ring tended to loosen the connection between the center and the ring instead of tightening the same. The present invention, therefore, involves the form of the piston center as the male member and the bull ring as the female member. Specifically, the piston center 10, as shown at Figures 1 and 2, or as shown at Figure 3, as 11, comprises a rib of some type extending beyond the general periphery of said center. Said rib may be as shown at 12 in Figure 1 with substantially square cornered shoulders, or as shown at 13 in Figures 2 and 3 with inclined shoulders, or as shown at Figure 4 having both shoulders inclined but one shoulder 14 inclined at a more acute angle than the opposite shoulder 15.

It is obvious that with the center as shown, if the bull ring is expanded by heat it can be slipped over the center so that the ribs 12 or 13 will engage in complementary grooves formed in the inner periphery of the said ring. The shrinkage of the bull ring by cooling is not only circumferential shrinkage but also lateral shrinkage, and by forming the ribs upon the center instead of upon the ring, the lateral shrinkage of the ring not only binds about the periphery of the center but also contracts into gripping engagement with the rib. This arrangement produces a device which secures the ring to the center much more securely and effectively and much more quickly and economically than can be done by any other method or mechanism.

What I claim to be new is:

1. A piston comprising a center having a rib formed about its periphery and a bull ring having a groove formed about its inner periphery complementary to the rib upon the center, said ring being held in position upon the center, by the contraction from a heated and expanded condition.

2. A piston comprising a center and a bull ring, said center having a rib outstanding from its outer periphery and the ring being provided with a complementary groove in its inner periphery, the said perforations of the center and ring and the said rib and groove being held intimately in engagement by the contraction of the ring both circumferentially and laterally.

In testimony whereof I hereunto affix my signature.

THEODORE ROGATCHOFF.