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H. A. GUERLAY

PISTON RING

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Fig. 1.

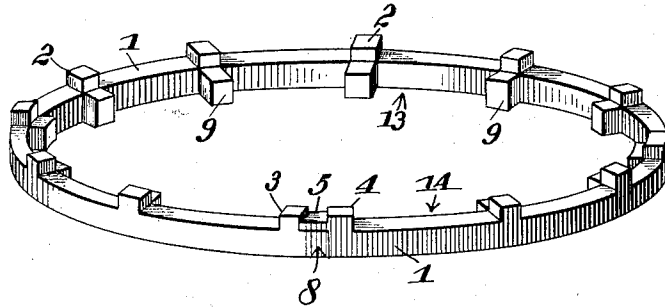


Fig. 2.

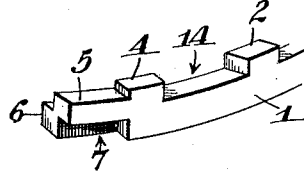
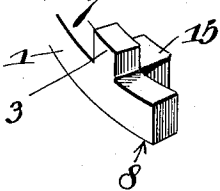


Fig. 3.

Fig. 4.

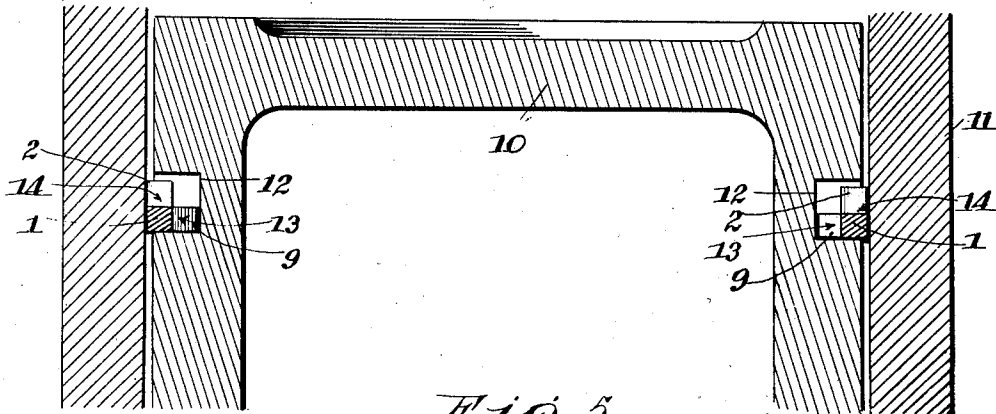
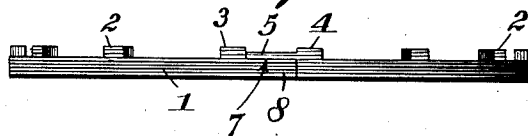


Fig. 5.



WITNESSES

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PISTON RING.

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To all whom it may concern:

Be it known that I, HAMPTON A. GUERLAY, a citizen of the United States, residing at Houston, in the county of Harris, State of Texas, have invented certain new and useful Improvements in Piston Rings, of which the following is a specification.

My invention relates to improvements in piston rings, and it consists in the constructions, combinations and arrangements herein described and claimed.

An object of the invention is to provide a ring for internal combustion engine pistons having particular provisions for pressing the ring downwardly in the groove and outwardly against the cylinder wall for the purpose of preventing leakage of compression.

Other objects and advantages appear in the following specification, reference being had to the accompanying drawing, in which:—

Figure 1 is a perspective view of the improved piston ring,

Figure 2 is a detail perspective view of one end of the ring,

Figure 3 is a perspective view of the opposite and abutting end of the ring,

Figure 4 is a section of portions of a piston and cylinder illustrating the ring in place in a groove, and

Figure 5 is an end elevation of the ring.

In carrying out the invention, the ring 1 is provided with a plurality of upstanding lugs 2 which are equally spaced apart with the exception of the lugs 3 and 4 at the abutting ends of the ring 1. These are a little closer together in order to more effectively support the joint. This joint is composed of a thin flange 5 (Fig. 3) which has an inner shoulder 6 defining a recess 7 in the under front edge of the right end of the ring to receive and house the opposite abutting end 8. The ring 1 is made of any suitable material, usually steel.

The recess receives the abutting end 8, and when fitted in position as shown in Figures 1 and 5, the outer surface of the ring is continuous. Extending inwardly of the ring 1 is a plurality of lugs 9. These are shown as of substantial continuations of the upstand-

ing lugs 2, although the particular configuration illustrated is not necessarily adhered to for the effective carrying out of the invention.

Situated inside of the ring, like the other lugs 9, is a lug 15 (Fig. 2) in continuation of the lug 3, mentioned before. This particular internal lug provides an abutment for the end of the shoulder 6 when the joint is made upon fitting the ends of the ring together. The upper lug 3 acts in the identical capacity in respect to the flange 5. The end of the flange abuts the lug 3 as clearly shown in Figure 5.

Reference is now made to Figure 4. The piston 10 may be that of any internal combustion engine cylinder 11. The piston has one or more grooves 12 as is customary. The ring 1 is fitted in place as illustrated, the body portion of the ring bearing against the interior of the cylinder 11. The inwardly extending lugs 9 aid in the support of the ring. The purpose of these lugs is to provide horizontal spaces 13 through which the compression in the cylinder may act to force the ring outwardly against the wall of the cylinder.

Similarly, the upstanding lugs 2 provides spaces 14 through which the compression may act downwardly upon the ring to force it against the bottom of the groove 12. The result of the combined actions on the ring is to keep it firmly seated against the wall of the cylinder and against the bottom of the groove so that no losses of compression from above the piston 10 may occur.

While the construction and arrangement of the improved piston ring as herein described and claimed is that of a generally preferred form, obviously, modifications and changes may be made without departing from the spirit of the invention or the scope of the claims.

I claim:

1. A piston ring having a plurality of spaced lugs upstanding on its upper surface, a plurality of spaced lugs extending inwardly of the ring, the various lugs defining spaces for the admission of pressure fluid to respectively force the ring down and out in a piston groove, and means by which a joint

is made between the separated ends of the ring including means providing a recess to receive an end of the ring, and upstanding lugs spaced closer than the other to reinforce
5 the joint.

2. A piston ring having a plurality of substantially square lugs upstanding from the upper surface, corresponding lugs in substantial continuation of the upstanding
10 lugs extending interiorly of the ring, joint-

forming means consisting of an upper flange and an internal shoulder at one end of the ring defining a recess to receive the opposite and abutting end of the ring, a pair of upstanding lugs close to the joint defined by
15 said means, one of said lugs being abutted by the end of the flange, and a single lug inside of the ring adjacent to the joint abutted by the end of said shoulder.

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