Aug. 18, 1931. C. J. GLEASON 1,819,890

PISTON RING

Filed July 26, 1930

Fig. 1.

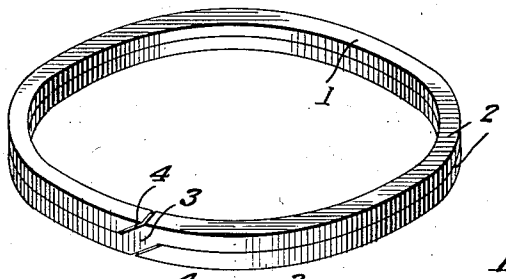


Fig. 2.

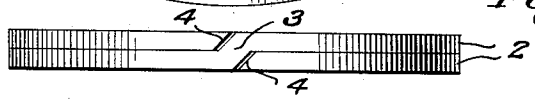


Fig. 3.

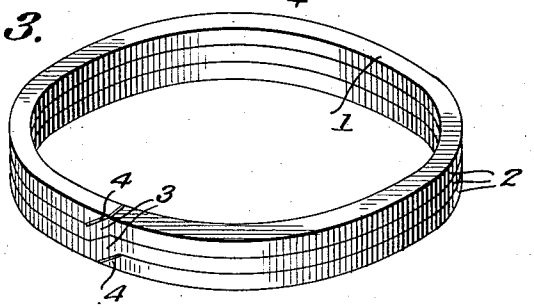


Fig. 4.

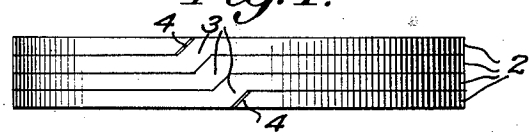
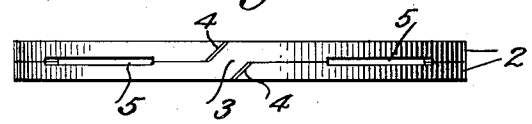


Fig. 5.



Inventor

Charles J. Gleason

By Victor J. Evans

Attorney

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UNITED STATES PATENT OFFICE

CHARLES J. GLEASON, OF AUGUSTA, GEORGIA

PISTON RING

Application filed July 26, 1930. Serial No. 470,939.

This invention relates to an improvement in piston rings for use in connection with the pistons of combustion engines, steam engines, pumps, or pistons for any other purpose, and has as its primary object to provide a piston ring which will be quick seating to walls of cylinders thereby obtaining nearly perfect compression and after use and wear will retain its efficiency and less likely to score or mar the walls of cylinder in which the piston, to which it is applied, reciprocates.

This invention also consists in certain other features of construction and in the combination and arrangement of the several parts, to be hereinafter fully described, illustrated in the accompanying drawings, and specifically pointed out in the appended claim, it being understood of course that minor changes may be made so long as they fall within the scope of the claim.

In describing my invention in detail, reference will be had to the accompanying drawings, wherein like characters denote like or corresponding parts throughout the several views, and in which:

Figure 1 is a perspective view of one form of piston ring embodying the invention.

Figure 2 is a side elevation of the ring shown in Figure 1.

Figure 3 is a perspective view illustrating a modification of the invention.

Figure 4 is a view in side elevation illustrating another modification of the invention.

Figure 5 is a view in side elevation illustrating another modification of the invention.

Generally speaking, the invention contemplates the broad idea of a piston ring consisting of a plurality of mutually overlapping coils so formed that the ring in its interior, can be made of one piece of metal.

In the embodiment shown in Figure 1 of the drawings, the ring which is indicated in general by the numeral 1, comprises two coils 2 and these coils are joined, integrally, at one end, by a diagonally bent connecting portion 3. The free ends of the coils are indicated by the numeral 4 and it will be observed that the free end of each coil is diagonally formed so that it may occupy a slightly spaced position with respect to one side of the diagonal bend 3 as shown in Figures 1 and 2 of the drawings, it being observed that the ends 4 of the two coils are presented to opposite sides of the diagonal bend 3.

The embodiment shown in Figure 3 of the drawings is identical with that shown in Figures 1 and 2 and therefore like references are employed to indicate the several coils of the ring and the individual portions thereof. In this embodiment instead of two superposed or overlapping coils, the ring comprises three overlapping coils, and the diagonal bend 3 will of course be formed between the relatively adjacent ones of the overlapping coils.

Figure 4 illustrates a modification which is identical with that shown in Figures 2 and 3 except that in this embodiment the ring is of greater thickness than even the ring in Figure 3, the ring shown in Figure 4 comprising four overlapping coils 2, and the connecting diagonal bends 3 and diagonal free ends 4 as in the preceding figures.

The embodiment illustrated in Figure 5 is identical with the embodiment shown in Figures 1 and 2 except that the coacting sides of the two coils 2 are formed, near the free ends of the coils, with matching recesses 5 which provide lubricant grooves in which a sufficient quantity of lubricant oil may accumulate to properly lubricate the cylinder wall and also the piston.

From the foregoing description of the invention it will be evident that a piston ring constructed in accordance with the process thereof will be more efficient in preventing leakage of the explosive charge and likewise in preventing leakage of oil past the piston head. It will also be evident that the piston ring constructed in the manner above described and as shown in the drawings will possess greater strength than the ordinary piston ring, and therefore will not be as liable to become broken as is the ordinary ring.

What I claim is:

A one-piece piston ring comprising overlapping coils connected by a diagonal bend, the mutually contacting sides of the coils having matching recesses to provide lubricant grooves.

In testimony whereof I affix my signature.

CHARLES J. GLEASON.