Jan. 15, 1924. 1,481,167

M. M. WHITE

PISTON RING

Filed March 30, 1922

FIG. 1.

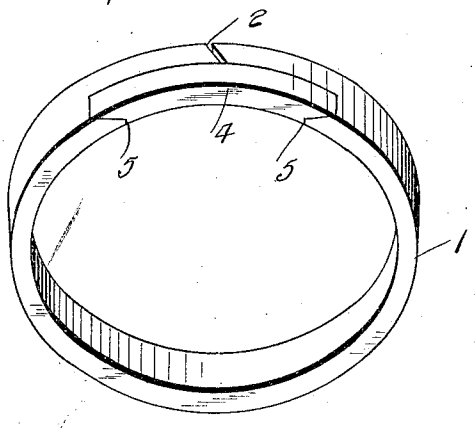


FIG. 2.

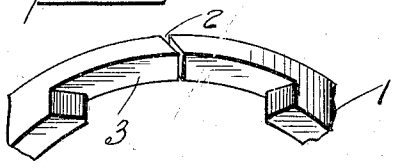


FIG. 3.

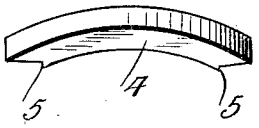
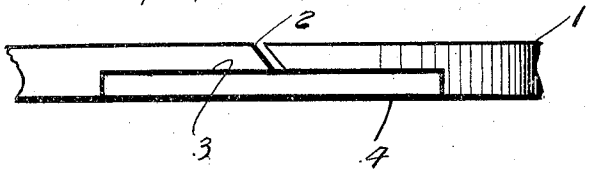


FIG. 4.



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UNITED STATES PATENT OFFICE.

MALCOLM M. WHITE, OF APPLETON, TENNESSEE.

PISTON RING.

Application filed March 30, 1922. Serial No. 548,085.

To all whom it may concern:

Be it known that I, MALCOLM M. WHITE, a citizen of the United States, residing at Appleton, in the county of Lawrence and State of Tennessee, have invented certain new and useful Improvements in Piston Rings; and I do hereby 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.

This invention relates to metallic packing for pistons, and more particularly to piston rings which are split diagonally to admit of their contraction and automatic expansion.

The present invention has for its primary object the provision of a piston ring of the type aforesaid which will prevent loss of pressure and the escape of oil to such an extent as to foul the plugs, valves and working parts of an internal combustion engine.

The invention consists of a piston ring having a portion cut from one side opposite the split and having a section snugly fitting the cut away portion and overlapping the split of the ring, whereby to prevent any opening for the escape of pressure or oil.

Other objects and advantages will be apparent and suggest themselves as the nature of the invention is understood.

While the drawings illustrate an embodiment of the invention it is to be understood that in adapting the same to meet different conditions and requirements, various changes in the form, proportion and minor details of construction may be resorted to without departing from the nature of the invention.

Referring to the accompanying drawings forming a part of the application,

Figure 1 is a perspective view of a piston ring embodying the invention,

Figure 2 is a detail view of a portion of the ring with the sections omitted,

Figure 3 is a detail view of the sections, and

Figure 4 is a side view of a portion of the ring with the sections in position.

Corresponding and like parts are referred to in the following description and designated in the several views of the drawings by like reference characters.

The numeral 1 designates a piston ring such as usually provided for the pistons of internal combustion engines. The piston ring 1 has a diagonal split 2 and a portion cut from a side thereof opposite the split 2 as indicated at 3, the ends of the cut away portion 3 coinciding with a chordal line so as not to interfere with the contraction and expansion of the ring in the usual manner. The cut away portion 3 may extend to any depth and project a uniform distance upon opposite sides of the split 2.

A section 4 is of such relative size and configuration as to snugly fit the cut away portion 3 and conform to the ring so as to come flush with the different faces or sides thereof. The section 4 is designed to be of the same material as the body of the ring and its end portions are in the same straight line to coincide with the straight ends of the cut away portions 3. Shoulders 5 are formed adjacent the inner side of the section 4 to engage the inner ends of the straight portions formed at the ends of the cut away portion 3, whereby to prevent relative endwise play or movement of the section 4 which would tend to cause unequal wear of the ends thereof. When section 4 is in position, it overlaps the split 2 of the ring 1 and insures a close joint, whereby to prevent loss of pressure or the escape of oil by the ring in such quantity as to foul the plugs, valves and other parts of the engine.

What is claimed is:

A piston ring provided with a split and having a portion cut away from a side thereof opposite the split, said cut away portion extending an equal distance beyond each side of the split, the ends of the cut away portion conforming to a chordal line of the ring to provide flat outwardly facing surfaces at each end of the cut away portion, said flat surfaces having their ends adjacent the inner peripheries of the ring cut away to provide shoulders, a section snugly fitting and conforming to the cut away portion of the ring and having shoulders at its opposite ends to engage the shoulders formed at the ends of the cut away portion of the ring, whereby to prevent any longitudinal movement of the section to cause unequal wear of the ends thereof.

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

MALCOLM M. WHITE.

Witnesses:

CARROLL VAUGHAN,

E. COX.