

Oct. 29, 1946.

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2,410,177

COMBINATION COMPRESSION AND OIL SCRAPING RING

Filed Oct. 20, 1945

Fig. 1.

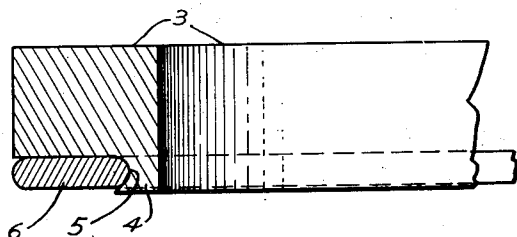
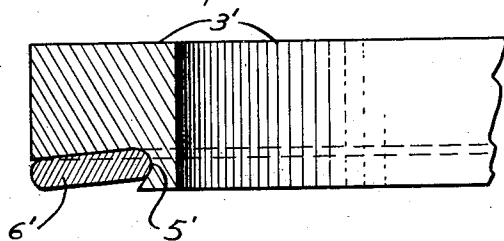


Fig. 2.



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UNITED STATES PATENT OFFICE

2,410,177

COMBINATION COMPRESSION AND OIL
SCRAPING RINGRalph J. Marvin and August Wiebke,
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Application October 20, 1945, Serial No. 623,572

4 Claims. (Cl. 309-44)

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Our invention relates to a combination compression and oil scraping ring and it has among its salient objects to provide further improvements over the oil ring shown in Patent No. 2,154,342, issued to applicant Marvin herein, whereby said ring is adapted to function both as a compression ring and as an oil scraping ring.

In order to explain our invention, we have shown the same on the accompanying sheet of drawings, in which:

Figure 1 is a fragmentary sectional view through a combination compression and oil scraping ring embodying our invention;

Figure 2 is a slightly modified form of said invention.

In the drawing, a compression ring body is designated 3, is shown in cross section, and is provided on its under side with a cupped outwardly opening flange 4, the cupped channel being designated 5, as clearly shown.

Mounted in this cupped channel, on the under-side of the ring body 3, is a spring steel ring 6, of slightly oval form in cross section, as indicated, and resting snugly in the cupped channel, against the under side of the ring body 3, and of a thickness which leaves a slight margin, or the toe of the cupped channel 5, extended beyond the thickness of said steel ring. This provides an oil catching recess around the under-side of said steel ring, with the edge of the channel toe serving as the inner wall for said oil catching recess.

The body of the ring, and the outer edge of the steel ring 6, are flush with each other, and engage the cylinder wall, when said combination ring is placed in an oil ring groove around the piston, the steel ring being on the lower side and functioning to scrape oil from the cylinder wall and into the thin recess thereunder and back to the toe portion of the cupped channel.

The embodiment of the invention shown in Fig. 2 is similar to that shown in Fig. 1 except that the flat steel ring is set at a slight angle. In this form of the invention the under side of the ring body, designated 3' is cut out on a slight angle and in such a way as to allow the inner edge of the steel ring, designated 6', to seat snugly in the cupped channel 5', as indicated, with its outer edge flush with the outer surface or periphery of the ring body.

The steel ring in both embodiments of the invention is a flat, steel ring, with its edges slightly rounded for smoothness, and this gives it a slight oval form in cross section, for wiping oil.

The heart of this invention is the provision of the flat steel ring, in the cupped groove or chan-

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nel, with the inner surface of the ring body extended beyond the thickness of said steel ring, to form an oil clearance, or catching space immediately under the steel ring and against the extended margin or toe of the cupped channel.

We do not limit our invention except as we may be limited by the hereto appended claims forming a part of this specification.

We claim:

1. A combination compression and oil scraping ring including a ring body having its inner side extended downwardly beyond the normal depth of said body and forming a downwardly depending flange around the inner side of said ring body, said flange being cupped around its outer side, a flat steel ring fitted against the under side of said ring body and having its inner edge held in said cupped flange and its outer edge flush with the outer side of said ring body, the extended toe edge of said flange forming the inner wall of an oil catching space under said ring in front of said downwardly depending flange.

2. A combination compression and oil scraping ring including a ring body having around its inner side a downwardly depending flange, the outer face of which flange is cupped to open outwardly under the bottom of said ring body, a flat steel ring fitted against the bottom of said ring body with its inner edge seated in and held by said cupped flange, the edge of said flange extending slightly beyond said steel ring, whereby to form an oil catching space around under said steel ring and in front of said extended flange.

3. A piston ring provided around its inner side with a flange-like extension, depending downwardly, and channeled on its outer face to open outwardly immediately under said ring, a flat ring fitted up against the bottom of said ring with its inner edge seated in and held by said channeled flange-like extension, and means providing clearance space for catching oil immediately under said flat ring.

4. A piston ring provided around its inner side with a depending flange portion and channeled on its outer face to open outwardly immediately under said piston ring body, the under side of said piston ring body being tapered inwardly and upwardly from its outer side and merging in said channel, a flat steel ring seated against the under side of said ring body, slightly inclined and held in said channel, and means forming clearance space under said flat ring for catching oil.

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