R. HUFF.

OIL GUARD.

APPLICATION FILED APR. 14, 1916.

1,207,759.

Patented Dec. 12, 1916.

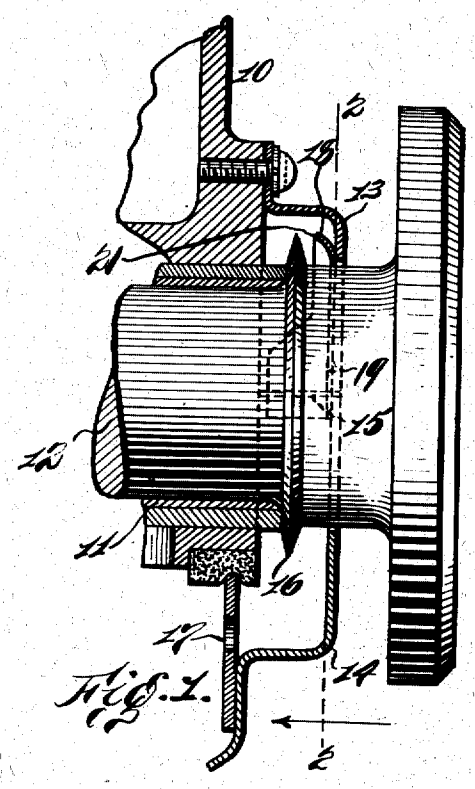


Fig. 1.

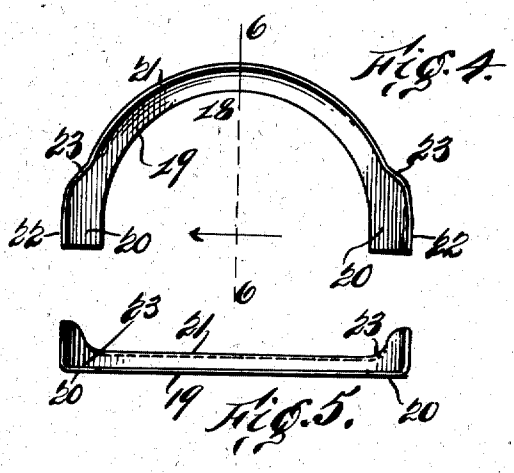


Fig. 4.

Fig. 5.

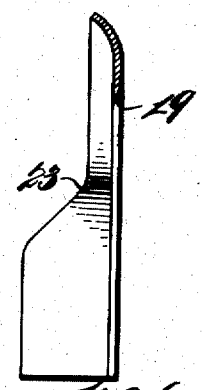


Fig. 6.

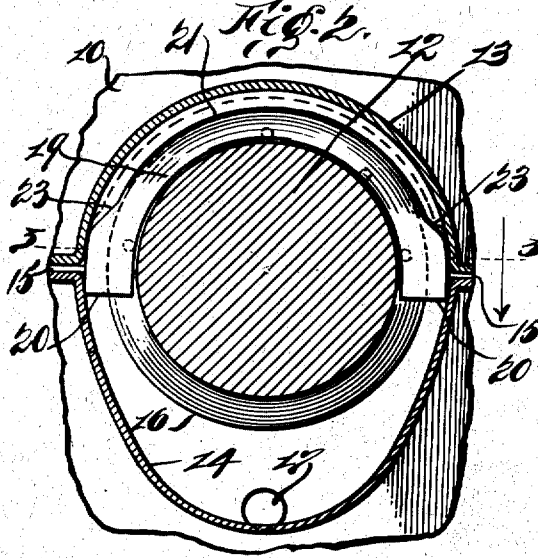


Fig. 2.

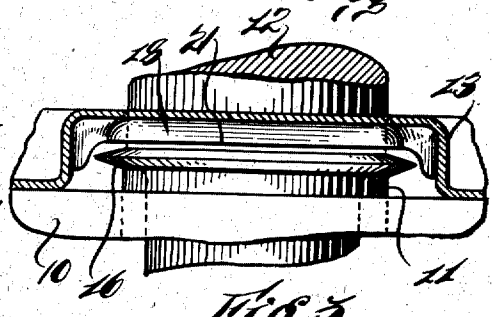


Fig. 3.

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OIL-GUARD.

1,207,759. Specification of Letters Patent. Patented Dec. 12, 1916.

Application filed April 14, 1916. Serial No. 91,018.

To all whom it may concern:

Be it known that I, RUSSELL HUFF, a citizen of the United States, residing at Detroit, Michigan, have invented certain new and useful Improvements in Oil-Guards, of which the following is a clear, full, and exact description.

This invention relates to oil guards, more particularly adapted for use in connection with well known or any other suitable means for utilizing the centrifugal force of a rotating crank shaft in a motor driven vehicle to throw off from the shaft the oil which leaks from the end of the rear bearing.

One object of the invention is to provide oil-catching means so located as to prevent the oil from dropping onto the shaft.

Another object is to compel the oil to flow away from the outer wall of the housing around the throw-off means as said oil approaches the joint between the upper and lower halves of the housing.

Still another object is to provide means which bridge the housing joint so as to conduct the oil past said joint.

Other objects are to provide practical and efficient means for conducting oil from a bearing.

These being among the objects of the present invention, the same consists of certain features of construction and combinations of parts to be hereinafter described and then claimed with reference to the accompanying drawings illustrating a desirable embodiment of the invention and in which—

Figure 1 is a sectional view partly in elevation showing the rear bearing for a crank shaft, provided with the present improvements; Fig. 2 is a section on the line 2—2 Fig. 1 in the direction of the arrow; Fig. 3 is a horizontal section on the line 3—3 Fig. 2 in the direction of the arrow; Fig. 4 is a detail elevation of the preferred oil-catching and conducting means; Fig. 5 is a side elevation thereof; and Fig. 6 is an enlarged transverse section on the line 6—6 Fig. 4 in the direction of the arrow.

Referring to the drawings, the frame or casting 10 may represent the rear part of a crank casing, provided with a bearing 11 for crank shaft 12. Housing sections 13, 14 are secured to the rear end of the frame 10 so as to provide a horizontal joint 15 between them, and a chamber within them within which is located a throw-off ring or ridge 16 extending annularly around and upon the shaft 12. At the bottom of the well of the housing chamber there is located a drain hole 17 adapted to conduct oil into the main portion of the oil-pan. The oil which flows away from the bearing 11 is thrown by the centrifugal force of the rotating shaft 12 into the housing chamber, and drops thereinto into the bottom of the well and flows out through the drain hole 17. The oil thrown off from the ring or ridge 16 either strikes against the upper section 13 of the housing or the lower section 14. The oil which is thrown against the upper section of the housing will naturally run down and would fall either upon the shaft 12 or appear at the joint 15 of the housing, where it could escape to the outside of the said housing. The above described parts are well known and the present invention relates to means for overcoming the objections thereto.

Under the present invention oil-catching or intercepting means are provided which are so located within the housing 13, 14 as to coact with the throw-off ring or ridge 16 in conducting oil away from the bearing. Preferably the said oil-catching or intercepting means comprise a trough-member 18 which is composed of a metal stamping constituting a trough and having a crown with downwardly sloping and extending ends. Said trough-member is provided with a back flange 19 which preferably extends through an arc of 180 degrees, the same constituting means for supporting the trough-member on the inner wall of the upper section of the housing. Usually said back flange is welded to the housing section 13 in such position as to closely encompass the upper portion of the shaft 12. In other words, the said back flange is positioned upon the housing at right angles to the longitudinal axis of the shaft and its inner curve follows closely the surface of the shaft. The lower extremities of the flange 18 are widened as shown in Figs. 2 and 4, so as to provide widened end portions 20 which extend below the joint 15. Trough-member 18 is furthermore provided with a catch or intercepting lip 21 which is preferably curved in cross-section and constitutes a segment of the arc, it being lo-

cated above the joint 15. A trough or channel is formed between the said lip 21 and the adjacent wall of the housing. Preferably the said catch lip is so curved as to gradually merge into the flange 19, the plane of its edge being substantially parallel with the plane of the flange 19. Below the catch lip 21 the extremities of the trough-member are provided with relatively wide flange or bridge portions 22 which are disposed at right angles to the end portions 20. The lower ends of the trough-member being therefore substantially right-angular in cross-section, they fit snugly into the corresponding corners of the housing. As the vertical section of the flange 19 and the lip 21 is of less dimension than the horizontal dimension of the end portions 20, and as the end portions 20, 22 fit into the corners of the housing while the edge of the lip 21 is spaced away from the wall of the housing, it will be seen that the curve of the edge of the lip is of less radius than the curves of the flange or bridge portions 22.

At 23 the ends of the lip 21 are joined together with the upper ends of the flange or bridge portions 22, by suitably bending up the metal stamping.

It will be seen that in practice the oil which is thrown outwardly into the upper part of the housing, will be caught by the lip 21 and will flow to both sides in the trough 18, from whence it will be carried by the connecting portions 23 along the inner walls of the body portions 22 which extend past the joint 15, and will then drop into the well of the housing.

It is obvious that the invention is susceptible of modification, as parts may be omitted, added and substituted without departing from the scope and spirit of the invention as expressed in the claims.

What I claim as new is:—

1. In a device of the class described, the combination of a housing, a shaft journaled therein and provided within said housing with centrifugally acting oil throw-off means, and catching means fitted inside of said housing for intercepting the oil thrown off and guarding said shaft against dropping of said oil thereon.

2. In a device of the class described, the combination of a housing, a shaft journaled therein and provided within said housing with a centrifugally acting, annular, oil-throw-off ridge, and catching means fitted inside of said housing for intercepting the oil thrown off and guarding said shaft against dropping of said oil thereon.

3. In a device of the class described, the combination of a housing, a shaft journaled therein and provided within said housing with centrifugally acting oil throw-off means, and catching means substantially concentric with said means and fitted inside of said housing for intercepting the oil thrown off and guarding said shaft against dropping of said oil thereon.

4. In a device of the class described, the combination of a housing, a shaft journaled therein and provided within said housing with centrifugally acting oil throw-off means, and catching means fitted in and projecting inwardly from said housing toward said throw-off means for intercepting the oil thrown off and guarding said shaft against dropping of said oil thereon.

5. In a device of the class described, the combination of a housing, a shaft journaled therein and provided within said housing with centrifugally acting oil throw-off means, and catching means fitted in and projecting inwardly from said housing toward said throw-off means and lying in an arc outside of said throw off means, said catching means being adapted for intercepting the oil thrown off and guarding said shaft against dropping of said oil thereon.

6. In a device of the class described, the combination of a sectional housing, a shaft journaled therein, and provided with centrifugally acting oil throw-off means, and, supported on the inner wall of said housing, means for catching the oil thrown off by said throw-off means and for causing the oil to flow away from the said wall and out of contact with the joint of said housing.

7. In a device of the class described, the combination of a housing, a shaft journaled therein, and provided with centrifugally acting oil throw-off means, and, supported on the inner wall of said housing, means for catching the oil thrown off by said throw-off means and for causing the oil to flow away from the said wall and provided with bridge portions extending across the joint of said housing.

8. In a device of the class described, the combination of a sectional housing, a shaft journaled therein, and provided with centrifugally acting oil throw-off means, and means for entrapping oil and conducting it out of contact with the joint of said housing.

9. In a device of the class described, the combination of a bearing, a rotatable element therein, a housing around said rotatable element and adjacent said bearing, and a trough between said bearing and housing for catching oil from said element, said trough having downwardly directed ends extending past the joint of said housing.

10. In a device of the class described, the combination of a bearing, a rotatable element therein, a housing around said rotatable element and adjacent said bearing, and a trough between said bearing and housing

for catching oil from said element, said trough having downwardly directed and flattened ends.

11. In a device of the class described, parts adapted to spatter oil, a casing for said parts, and a trough member fixed in said casing, and having an oil catching and conducting crown and ends sloping downwardly from said crown for conducting said oil away.

12. In a device of the class described, parts adapted to spatter oil, a casing for said parts, and a trough member fixed in said casing, and having an oil catching and conducting crown and ends sloping downwardly from said crown for conducting said oil away, said member being angular in cross section to provide an affixed flange and an oil intercepting and guiding flange.

13. The combination with a bearing, a shaft journaled therein, a housing at one end of said bearing and around said shaft, said housing comprising two sections with a horizontal joint, and providing a chamber around said shaft, and an annular oil throw-off ridge on said shaft, of a substantially semi-circularly extended trough member encompassing said shaft having an angular cross section to provide two flanges, said member being rigidly fixed by one of said flanges to the outer wall of said housing with its ends extended downwardly, and the other flange being inclined upwardly from said wall for a considerable portion of its length above and to the sides of said shaft, the ends of said inclined flange being widened and bent at a substantial right angle to said other flange and extended past said joint to bridge the same at both sides of said shaft.

Signed at Detroit, Mich., this 10th day of April, 1916.

RUSSELL HUFF.

Witnesses:
R. A. De Vlieg,
Alfred H. Knight.

DISCLAIMER.

1,207,759.—*Russell Huff*, Detroit, Mich. OIL-GUARD. Patent dated December 12, 1916. Disclaimer filed October 15, 1917, by the assignee, *Dodge Brothers*.

"We therefore disclaim as to said Patent No. 1,207,759, all oil guards included in the construction specified in claims 1, 3, and 4, except those in which oil 'catching means fitted inside of said housing' is fitted 'to an upright inner surface of the said housing.' "

[*Official Gazette October 23, 1917.*]