L. V. RATHBUN.

DRIP CUP.

APPLICATION FILED JAN. 21, 1909.

984,850. Patented Feb. 21, 1911.

Fig. 1

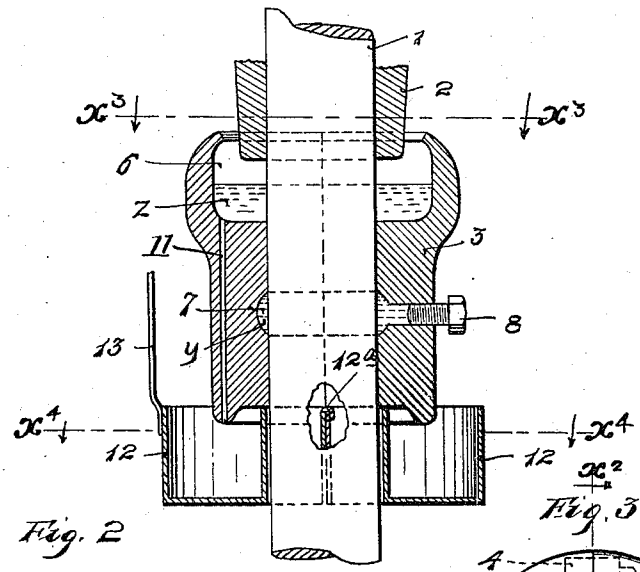


Fig. 2

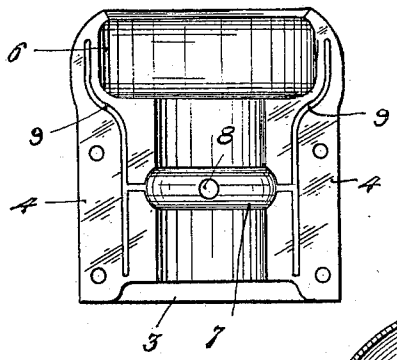


Fig. 3

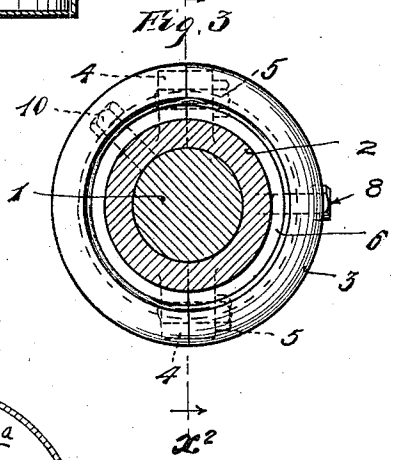
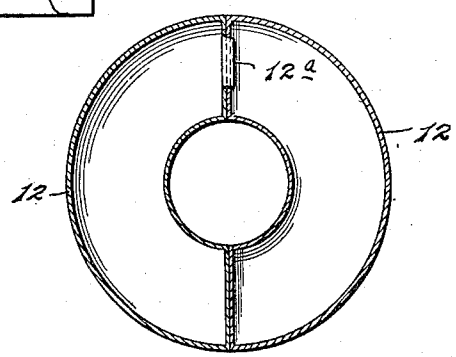


Fig. 4



Witnesses
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UNITED STATES PATENT OFFICE.

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DRIP-CUP.

984,850. Specification of Letters Patent. Patented Feb. 21, 1911.

Application filed January 21, 1909. Serial No. 473,564.

To all whom it may concern:

Be it known that I, LEWIS V. RATHBUN, a citizen of the United States, residing at Rochester, in the county of Monroe and State of New York, have invented certain new and useful Improvements in Drip-Cups; 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.

My invention has for its especial object to provide an improved drip cup for vertical shafts, adapted to catch oil which runs down the shaft from a journal or bearing located above the drip cup.

To the above ends, the invention consists of the novel devices and combinations of devices hereinafter described and defined in the claims.

The invention is illustrated in the accompanying drawings, wherein like characters indicate like parts throughout the several views.

Referring to the drawings, Figure 1 is a view partly in elevation, but chiefly in vertical section, showing the improved drip cup applied to an upright shaft, and also showing a detachable drip pan arranged for cooperation therewith; Fig. 2 is a view showing the divided drip cup separated on its division line, marked x^2 x^2 on Fig. 3; Fig. 3 is a horizontal section taken on the line x^3 x^3 of Fig. 1; and Fig. 4 is a horizontal section taken on the line x^4 x^4 of Fig. 1.

The numeral 1 indicates an upright shaft journaled in suitable bearings, one of which is indicated by the numeral 2. The improved drip cup 3 is secured on the shaft 1, just below the bearing 2, and is divided or made in two sections, so that it may be easily applied to the shaft 1 laterally, that is, without being telescoped or slid onto the shaft from its end. The two sections of the drip cup 3 are formed with flanges 4, adapted to be secured together by screws or bolts 5. An oil-containing well 6 is formed, in part, in the upper extremities of each of the two sections of the drip cup 3 and into which, as shown, the lower end of the bearing 2 depends slightly. To prevent overflow of the oil Z, under the action of centrifugal force due to rotation of the shaft 1 and drip cup 3, the wall of the well 4 is contracted at its upper edge.

The hub of the drip cup 3 is provided, adjacent to the shaft 1, with an annular channel or groove 7, having a threaded outwardly extended filling neck in which a screw 8 works with tight threaded engagement. Small channels 9 are extended from the channel 7 in the abutting faces of the two sections of the drip cup 3. These channels 9 extend nearly, but not quite, from top to bottom of the cup, but the ends of the channels 9 are, of course, closed. The annular channel 7 and the small channels 9 are formed, in part, in each of the semi-cylindrical sections of the drip cup 3.

To form a liquid tight joint between the shaft 1 and the drip cup 3, as well as between the two sections of the drip cup 3, the channel 7 and its neck is preferably filled with white lead, and the screw 8 being then inserted, is screwed inward, thereby forcing the lead y from the channel 7 into the channels 9 and into any crevice or passage which may be left between the shaft and the hub of the drip cup 3 and the two sections of the drip cup 3. This positively insures filling of all passages which might permit oil to run from the well 6 downward between the shaft and the hub of the drip cup. When this lead hardens, the drip cup will be very securely held to the shaft, and the joint between the same and the shaft will be made thoroughly liquid tight. Preferably, however, the drip cup is secured to the shaft by means independent of the joint above described, and in Fig. 3 a set screw 10 is shown as applied for this purpose. A small drainage passage 11 is extended vertically downward from the bottom of the well 6 through the hub portion of one of the sections of the drip cup 3 and is arranged to deliver into an annular catch pan located below the same.

Instead of lead, any other fluid material or any material which, under pressure, may be caused to flow and which will harden and form the required liquid tight joint, may be employed. To cover all such materials broadly, I herein use the expression "fluid packing".

The annular catch pan, shown in Figs. 1 and 4, is made up of two semi-circular sections 12, which when put together, loosely surround the shaft 1 and are detachably connected together, and are preferably suspended from some overhead support, not shown, by hanger rods 13, one of which is shown in Fig. 1. To prevent dripping oil from entering between the abutting end

plates of the two segmental sections 12, the end flanges of one of said sections are provided with overturned folds 12^a that are engaged over the end plates of the other section. This catch pan does not therefore revolve with the shaft, and may be applied thereto, or removed therefrom, while the shaft is in motion. It will, of course, be quite frequently necessary to remove the catch pan in order to empty therefrom the oil which runs from the drip cup.

The drip cup, while extremely simple, is highly efficient for the purposes had in view. It will be found especially serviceable in connection with mill machinery, and elsewhere where the running of oil down a shaft will do damage.

What I claim is:

1. The combination with an upright shaft and a bearing therefor, of a drip cup rigidly secured on said shaft below said bearing, and provided in its sleeve with a channel immediately surrounding said shaft, and provided with a filling neck extending to the exterior of said sleeve, a fluid packing in said channel, and a device working in said filling neck and operative on said packing to force the same into all leakage passages between the shaft and sleeve, thereby forming a liquid tight joint, substantially as described.

2. The combination with an upright shaft and a bearing therefor, of a drip cup surrounding said shaft below said bearing, and provided with a depending sleeve that is rigidly secured to said shaft, said sleeve having an annular channel immediately surrounding said shaft and provided with a filling neck extending to the exterior of said sleeve, a fluid packing in said annular channel, and a screw working in said filling neck and operative on said packing to force the same into all leakage passages between said shaft and sleeve, and serving to form a liquid tight joint, substantially as described.

3. The combination with an upright shaft and a bearing therefor, of a longitudinally slit or two-part drip cup located below said bearing, and provided in its sleeve with an annular channel immediately surrounding said shaft, and with channels extending from said annular channel between the sections of said cup, a fluid packing contained in said channels, and a screw applied to the sleeve of said drip cup and operative on said packing to force the same into the channels leading from said annular channel and into all space between said drip cup and shaft, thereby forming a liquid tight joint, substantially as described.

4. The combination with an upright shaft and a bearing therefor, of a drip cup applied to said shaft below said bearing, and having a downwardly extended drainage passage, and a divided or two-part annular catch pan surrounding said shaft below said drip cup, substantially as described.

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

LEWIS V. RATHBUN.

Witnesses:
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