

Aug. 27, 1929.

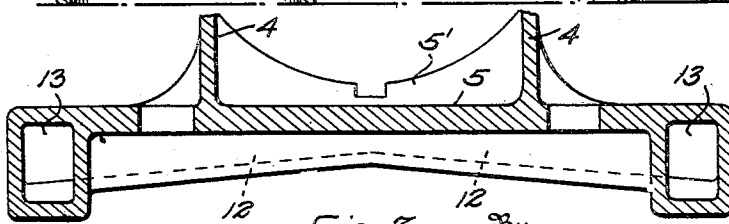
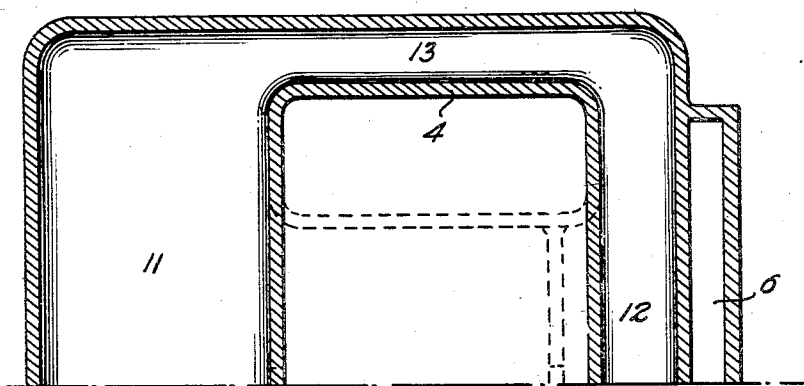
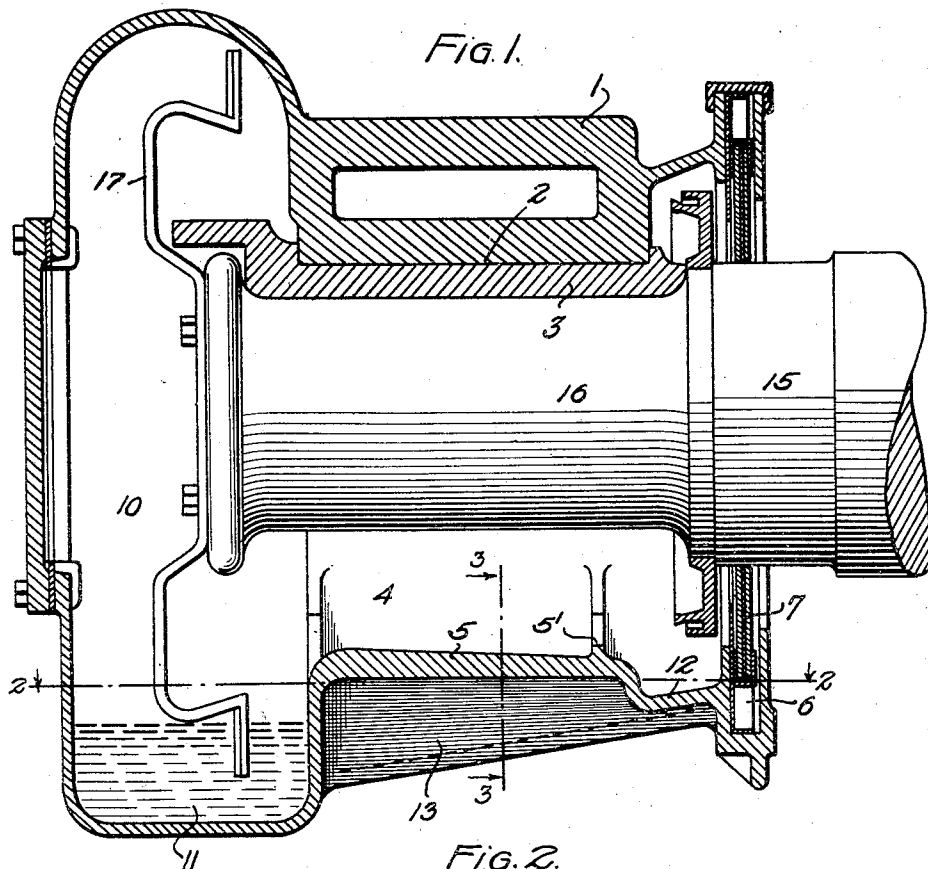
A. DE BAC

1,726,261

AUTOMATIC LUBRICATING JOURNAL BOX

Filed Oct. 12, 1928

2 Sheets-Sheet 1



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Aug. 27, 1929.

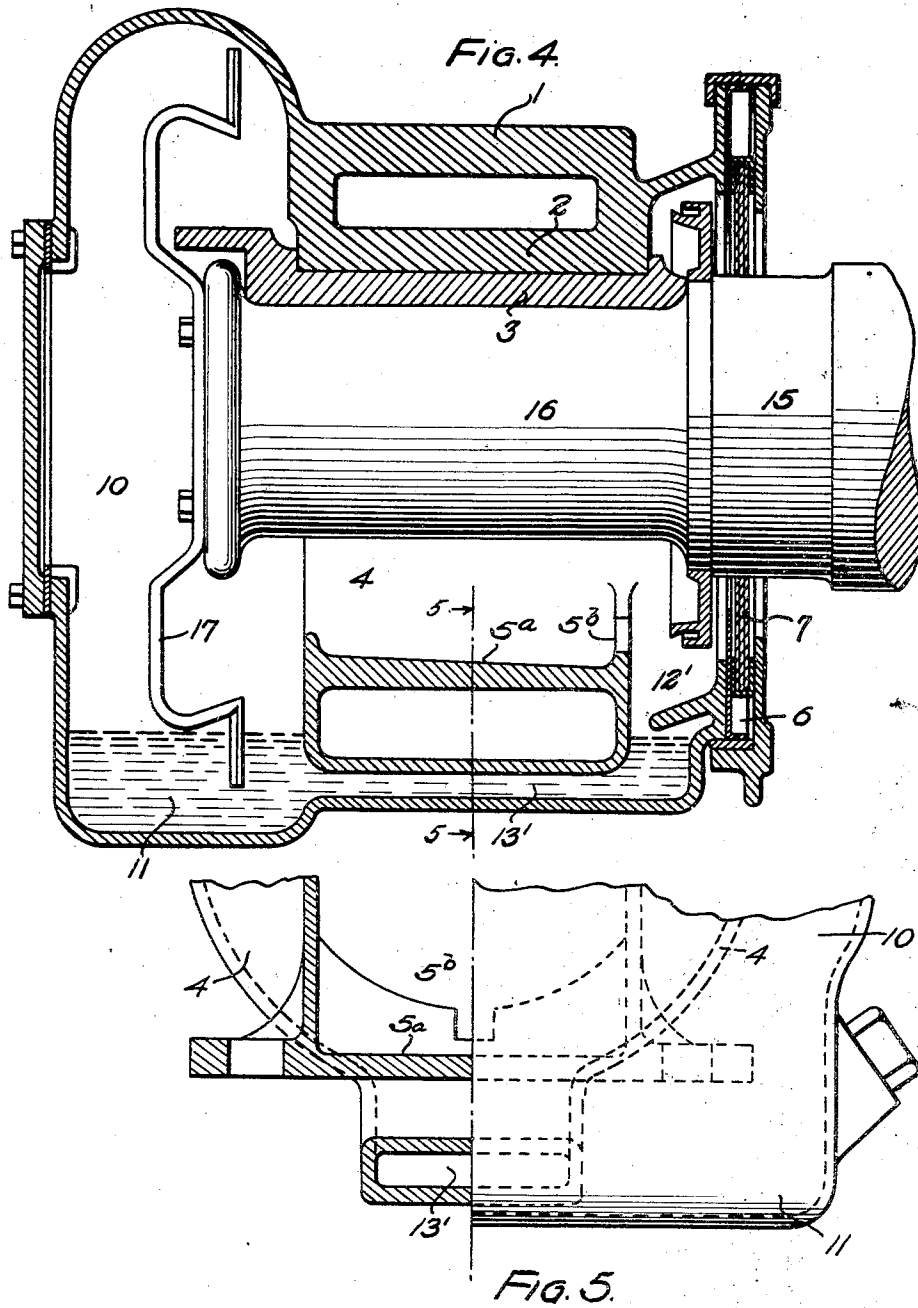
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AUTOMATIC LUBRICATING JOURNAL BOX

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2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE.

ALFRED DE BAC, OF GENEVA, SWITZERLAND, ASSIGNOR TO ISOTHERMOS CORPORATION OF AMERICA, OF NEW YORK, N. Y., A CORPORATION OF DELAWARE.

AUTOMATIC LUBRICATING JOURNAL BOX.

Application filed October 12, 1928. Serial No. 312,038.

The invention relates to automatic lubricating journal boxes involving an oil reservoir in the bottom of the box and a paddle or blade distributor fixed to the shaft or axle which serves to pick up the oil and distribute the same to the bearing; and has for its object to provide the box with extended settling surfaces over which the oil flows in its return from the bearing and the journal to the reservoir, so that solid material, such as metal particles detached from the bearing, may be segregated from the oil and the latter may be used repeatedly and indefinitely without bodily removing such solid material.

The invention is illustrated in the accompanying drawings, in which:—

Fig. 1 is a lateral sectional elevation of a typical box involving the invention.

Fig. 2 is a section on line 2—2 of Fig. 1.

Fig. 3 is a section on line 3—3 of Fig. 1.

Fig. 4 is a view similar to Fig. 1, showing a modified construction of box.

Fig. 5 is a fragmentary front elevation partly in section on line 5—5 of Fig. 4.

Referring to Figs. 1, 2 and 3, the journal box is in the form of a cast metal casing having a top 1 provided with an interior seat 2 to receive the journal bearing 3, side walls, 4, 4 and a rearwardly inclined bottom 5, the forward end of the box being provided with an integral circumferentially enlarged chamber 10 having an oil reservoir 11 at the bottom thereof.

The rear portion of the box is provided with a chamber 6 to receive a dust guard 7, which latter may be of any approved form to embrace the shaft or axle and seal the opening through which the latter passes to the box. The axle 15 is provided with a journal 16, which engages the bearing 3. Secured to the end of the axle and operating in the enlarged chamber 10 is a radial blade or paddle 17, the ends of which paddle, when rotated, dip into the oil in the oil reservoir 11 and ultimately deliver the oil to the top of the bearing 3, as more particularly described in Letters Patent No. 1,617,205 dated February 8, 1927. It will be understood that this particular type of rotary distributor is merely exemplary and that the invention may be utilized in connection with this or any other form of rotary dis-

tributor operating on the same general principle, to wit, the maintenance of a body of oil in a reservoir at the bottom of the box and the elevation and distribution of the oil in proper quantities to the bearing to lubricate the same. In automatic lubricating journal boxes of this general type, it is desirable to conserve the oil and to obviate the necessity of removing the oil from the journal box to clear the same of foreign material, such as small particles of metal abraded or detached from the bearing, which, if permitted to remain in the body of oil, would produce a rapid wearing of the bearing and increase the friction between the journal and the bearing, shortening the life of both and increasing the danger of igniting the oil. The purpose of the instant invention is to provide the box with means for effecting the separation of any foreign material entrained in the oil and, to this end, the box is provided with settling surfaces over which the oil, in its return from the bearing 3 and journal 16 to the reservoir 11, passes slowly, so that the foreign materials will settle out of the oil and be retained upon the surfaces aforesaid. As indicated, the bottom wall 5 of the box, located immediately below the journal 16 and receiving the oil dripping therefrom, is inclined toward the rear of the box and preferably provided with a transverse rib 5' connecting it with the side walls 4 of the box, which rib serves as a dam, so that a large proportion of the solid material carried by the oil will settle on the inclined top surface 5 of the bottom and be retained by the rib 5'. The inner end of the inclined bottom 5 connects with two laterally and downwardly inclined gutters 12, 12, disposed symmetrically with respect to the vertical plane passing through the longitudinal axis of the journal, which gutters discharge at their lower ends into lateral channels or conduits 13 formed integrally with the box, which channels, in turn, are inclined downward toward the front of the box and discharge into the reservoir 11. The bottom surfaces of the gutter-like elements 12 and the channels 13 constitute further settling areas or surfaces onto which any solid material which remains in the oil, after the latter has passed over the inclined bottom

5, settles, as the relatively thin film of oil flows over said surfaces; the solid material remaining on the surfaces aforesaid and the oil in a practically pure condition returning to the reservoir 11.

In the modification shown in Figs. 4 and 5, the general structural arrangement of the elements of the journal box and the automatic lubricator is the same as that shown in Fig. 1, the only difference being in the form and disposition of the settling surfaces, which include a rearwardly inclined bottom surface 5^a, which terminates short of the rear wall of the box and is preferably provided with a dam-like rib 5^b similar to the element 5' in the first modification. The rear end of the inclined bottom 5^a discharges into the vertical passage 12', the lower end of which opens into a duct or conduit 13' formed integrally with the box structure and below the bottom thereof and which communicates with the oil reservoir 11 in the enlarged front portion of the box. In this case, the inclined surface 5^a and the bottom of the conduit 13' constitute extended settling surfaces unto which any solid material entrained in the oil settles and is retained.

In both forms of the apparatus described, it will be seen that the settling surfaces are of such extent as to cause the oil returning from the bearing to flow thereover in a relatively thin film, so that any and all metallic particles carried by the oil settle upon and are retained by the surfaces.

What I claim is:

1. A journal box for automatic lubricators comprising top, side and bottom walls, the latter being inclined toward the rear of the box and constituting a settling surface for solid matter entrained in the oil, an oil reservoir in the front of the box, and a conduit connecting the discharge end of the inclined bottom with the reservoir, the bottom of said conduit constituting a further settling surface.

2. A journal box for automatic lubricators comprising top, side and bottom walls, the latter being inclined toward the rear of the box and constituting a settling surface for solid matter entrained in the oil, an oil reservoir in the front of the box, and an inclined conduit connecting the discharge end of the inclined bottom with the reservoir, the bottom of said conduit constituting a further settling surface.

3. A journal box for automatic lubricators comprising top, side and bottom walls, the latter being inclined toward the rear of the box and constituting a settling surface for solid matter entrained in the oil, an oil reservoir in the front of the box, and transversely and longitudinally inclined conduits connecting the discharge end of the inclined bottom with the reservoir and constituting further settling surfaces.

In testimony whereof I affix my signature.

ALFRED DE BAC.