I. A. RANDEL.

JOURNAL LUBRICATING DEVICE.

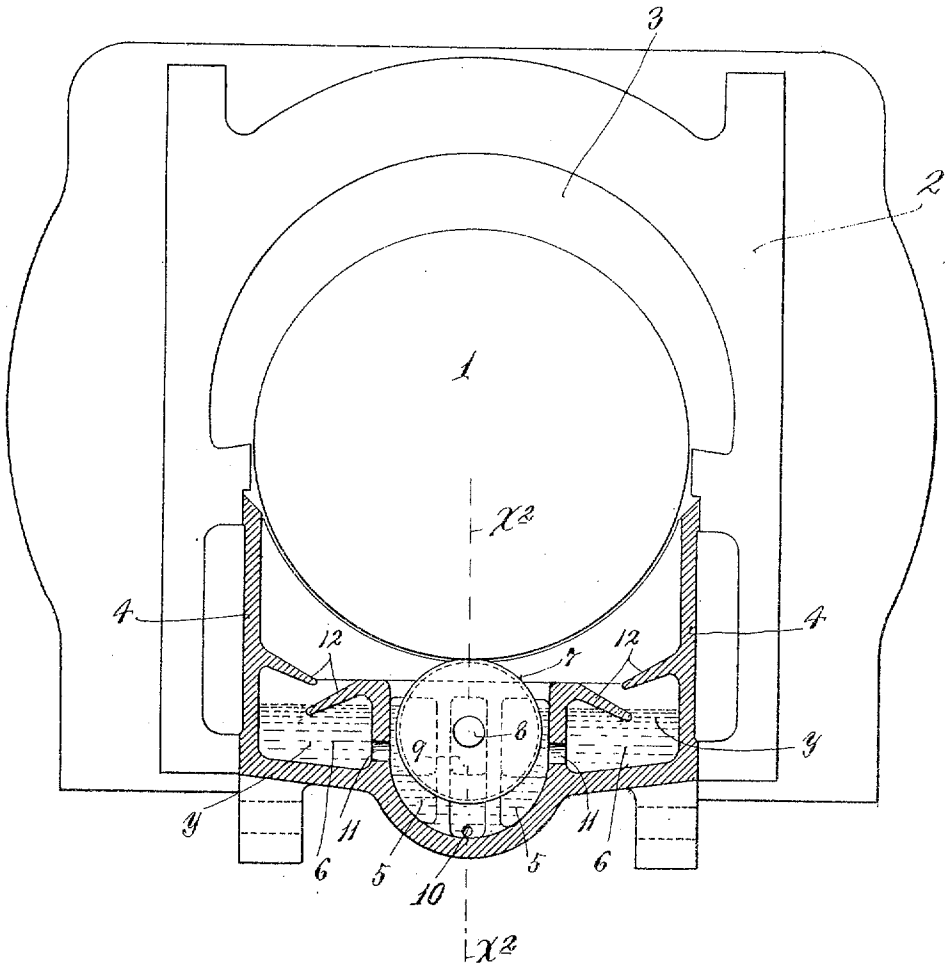
APPLICATION FILED MAR. 7, 1910.

972,719.

Patented Oct. 11, 1910.

2 SHEETS—SHEET 1.

Fig. 1



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2 SHEETS—SHEET 2.

Fig. 3

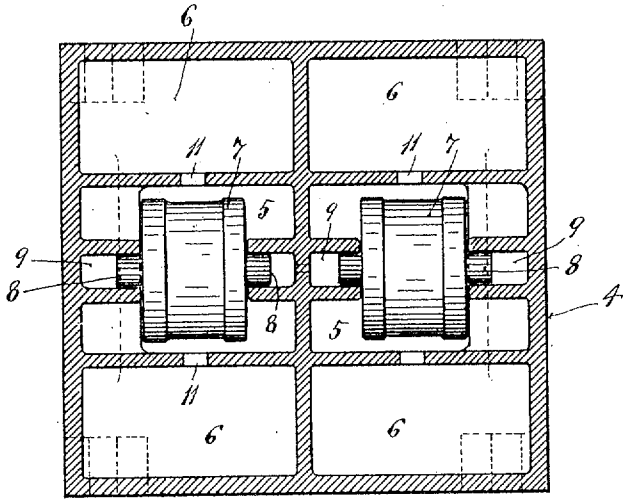
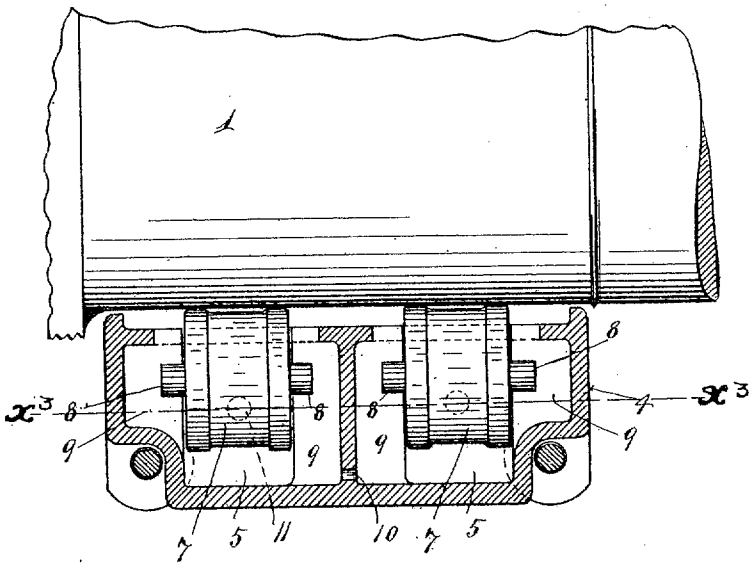


Fig. 2



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UNITED STATES PATENT OFFICE.

IVAR A. RANDEL, OF CHICAGO, ILLINOIS, ASSIGNOR TO McCORD & COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION.

JOURNAL-LUBRICATING DEVICE.

972,719. Specification of Letters Patent. **Patented Oct. 11, 1910.**

Application filed March 7, 1910. Serial No. 547,629.

To all whom it may concern:

Be it known that I, IVAR A. RANDEL, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Journal-Lubricating Devices; 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 object to provide an improved lubricator adapted for general use in connection with journals, but especially adapted for use on the journals of locomotives and car trucks.

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

In the accompanying drawings which illustrate the invention, like characters indicate like parts throughout the several views.

Referring to the drawings, Figure 1 is a view, partly in side elevation and partly in vertical section, illustrating my invention applied to a locomotive driving box; Fig. 2 is a view partly in elevation and partly in section on the line x^2 x^2 of Fig. 1, some parts being broken away; and Fig. 3 is a horizontal section taken on the line x^3 x^3 of Fig. 2, some parts being shown in full.

The numeral 1 indicates the axle, the numeral 2 the locomotive driving box, and the numeral 3 the bearing brass, which parts are of standard or any suitable construction.

The numeral 4 indicates the oil cellar which is secured in the box 2 below the axle 1 in the usual or any suitable manner.

The oil cellar 4, as shown and as preferably constructed for locomotive service, has two alined laterally spaced so-called float or main chambers 5 and two front and two rear supplemental or drip chambers 6. All the said chambers, it will be noted, are arranged in pairs, the members of which are separated approximately at the center of the journal. The oil in the cellar is indicated by the character *y*. The oil distributers, in the form of cylindrical floats 7, are located one within each of the oil chambers 5 and are immersed in the oil contained in the said chambers and their buoyancy keeps the upper surfaces thereof pressed against the lower surfaces of the axle 1, so that they will be rotated under frictional engagement therewith, when the axle is rotated. These rotating floats may be constructed of wood or any other suitable material and they are preferably provided with trunnions 8 that work in vertical guides 9 formed in the sides of the chambers 5. The trunnions 8 hold the rotating floats in proper working positions and they are of such diameters, as compared with the diameters of said floats, that the resistance due to their engagement with the walls of the guides 9 is of a negligible amount. The vertically extended guides 9 permit the rotating floats, by their own buoyancy, to move vertically and thereby compensate for any wear of the brasses 3 or for varying thickness in different brasses which, from time to time, may be used in the box 2.

The dividing of the oil cellar into compartments is important, especially on long journals such as locomotive or car axle journals. When a locomotive or a car passes over a curve, the journal box is tipped on an angle great enough to allow the oil to run or spill from a well filled cellar of the types hitherto employed. To further illustrate, suppose an oil cellar fastened to a twelve-inch long journal box passes over a curve which would tip one and one-half inches in its length, and that this cellar has only one compartment. In this instance, to prevent spilling of oil, it would be necessary to keep the oil level one and one-half inches below the top of the box. On the other hand, with the compartments divided longitudinally of the journal, as illustrated in the drawings, the level of the oil could be maintained within three-fourths of an inch from the top of the well without causing spilling of the oil under the conditions above described.

The longitudinally spaced main oil chambers 5 are preferably in communication with each other through one or more small orifices 10 (see Fig. 2), which permits the oil to slowly run from the one chamber to the other. The supplemental chambers 6 are connected to the corresponding main chambers 5 by relatively large oil passages 11.

In addition to the features of subdividing the oil cellar into a multiplicity of chambers or compartments, the so-called supplemental oil chambers are provided, at their upper

portions, with overlapped baffle plates 12 which will also very greatly aid in keeping the oil in the cellars.

When the axle is rotated, the rotating floats will, as is evident and as stated, also rotate the said floats and the latter will continuously deliver the lubricating oil to the axle. The lubricant will follow the axle and part of it will be drawn between the axle and bearing brass, while the surplus oil will, under the action of gravity, run down the inner surface of the side wall of the cellar and thence into the underlying supplemental chambers 6 and from the latter back into the main oil chambers 5. Any sediment, such as iron particles, will be deposited in the supplemental oil chambers and, hence, will not be carried back to the axle journal.

In connection with certain classes of service, such, for example, as train service or boat or automobile service, where sudden jerks or tipping of the cellar will be produced, the use of the baffle plates for preventing splashing of the oil is highly desirable, while in stationary service, such baffle plates are not at all necessary.

What I claim is:

1. The combination with an axle and a bearing therefor, of an oil cellar having compartments provided with overlapped baffle plates, substantially as described.

2. The combination with an axle and a bearing therefor, of an oil cellar having outside and intermediate compartments spaced circumferentially of said axle and having communication at their lower portions, and a rotary oil distributer in the intermediate compartment, in the form of a float immersed in oil contained in the said intermediate compartment and by its own buoyancy held in engagement with the said axle and arranged to be rotated thereby.

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

IVAR A. RANDEL.

Witnesses:

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