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W. L. & F. S. CARD.

LUBRICATOR FOR SLIDE BEARINGS.

APPLICATION FILED JAN. 24, 1906.

Fig. 1.

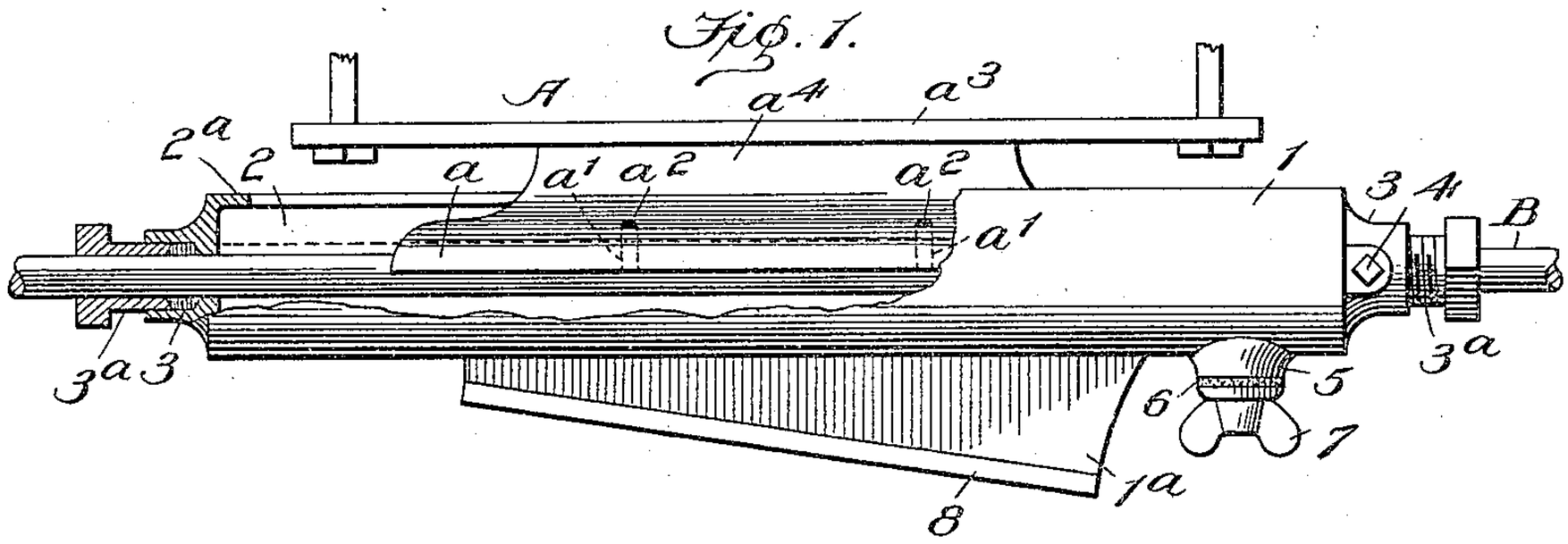


Fig. 2.

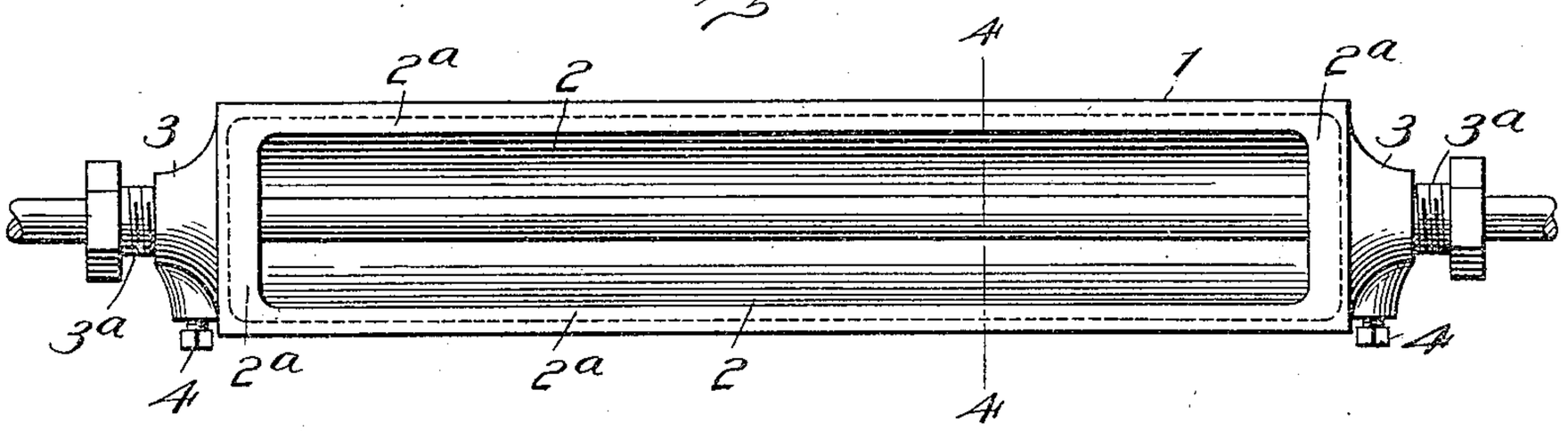


Fig. 3.

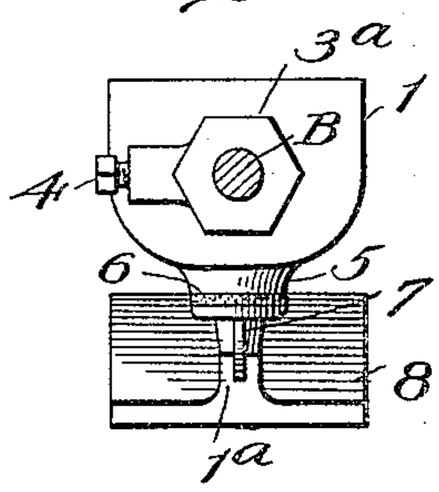


Fig. 4

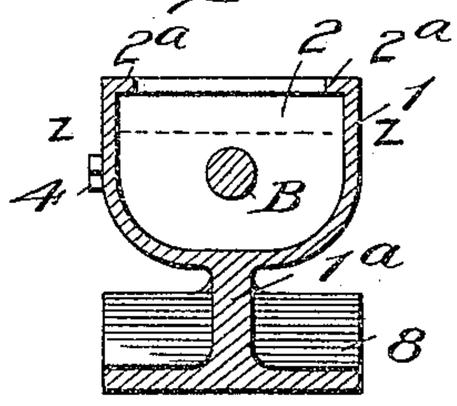


Fig. 5.

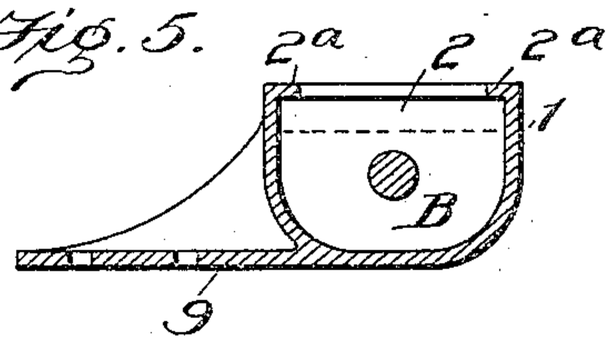


Fig. 6.

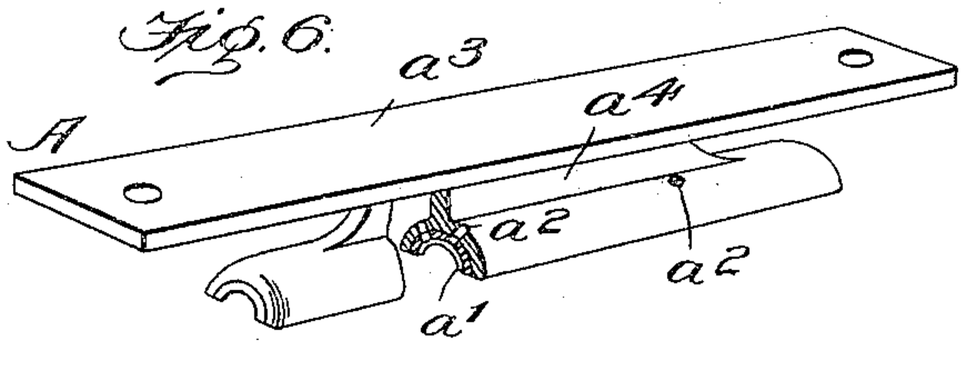
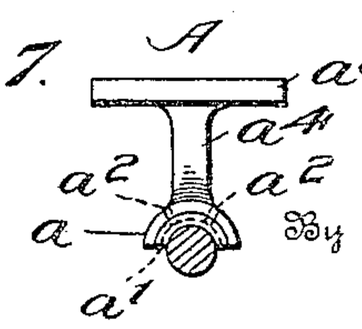


Fig. 7.



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UNITED STATES PATENT OFFICE.

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LUBRICATOR FOR SLIDE-BEARINGS.

No. 816,778. Specification of Letters Patent. Patented April 3, 1906.

Application filed January 24, 1906. Serial No. 297,613.

To all whom it may concern:

Be it known that we, WILLIAM L. CARD and FRANK S. CARD, citizens of the United States, residing in the city and county of Denver and State of Colorado, have invented certain new and useful Improvements in Lubricators for Slide-Bearings; and we 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.

Our invention relates to that class of devices commonly termed "lubricators," and is more especially directed to the lubrication of parts having a rectilinear movement one upon the other, as in the case of slide-bearings where the movable member travels upon ways or tracks.

The objects of the present invention, which for purposes of illustration is shown as applied to the track-rod of a concentrator-table, are, first, to provide a simple and efficient lubricant-chamber for the moving parts; second, to provide means for readily withdrawing the spent lubricant from the lubricant-chamber, and, third, to provide for the facile application, adjustment, and removal of the lubricant-chamber.

To this end our invention, generally stated, embraces, broadly, the combination, with a slide-bearing, of a lubricant-chamber so disposed with relation to the movable member or slide and its track or way as to include them without interfering with the movement of the slide, whereby the slide travels continuously in the lubricant.

In carrying out our invention we preferably provide the lubricant-chamber with alined stuffing-boxes or their equivalents, whereby the track or way may be submerged in the lubricant contained within the lubricant-chamber and the latter may be readily applied to, adjusted on, and removed from the said track, and such a construction embodies a further feature of our invention.

There are other minor features of invention, all as will hereinafter more fully appear.

In the drawings accompanying this specification and forming part thereof, Figure 1 is a side elevation, partly in section, of a lubricator embodying our invention shown in connection with a slide-bearing and portions of a track-rod. Fig. 2 is a plan view of the lubricant-chamber and a portion of the track-rod. Fig. 3 is an end view of the lubricant-chamber. Fig. 4 is a transverse section of the lubricant-chamber on the line 4 4, Fig. 2. Fig. 5 is a view similar to Fig. 4, a side bracket being substituted for the foot-plate of the lubricant-chamber. Fig. 6 is a detached enlarged perspective view of the slide-bearing, and Fig. 7 is an end view of the slide-bearing and a cross-section of the track-rod.

Like symbols refer to like parts wherever they occur.

In the drawings, A indicates a slide-bearing, and B the track therefor, the latter having in the present instance a circular cross-section and the former a corresponding semicylindrical cross-section, though any other form of bearing and track may be employed, if preferred.

The lower portion or foot *a* of the bearing A may be lined with Babbitt metal, in which is formed a series of transverse grooves or channels *a'* for the reception and retention of the lubricant, said channels communicating with air-holes a^2, which permit the escape of any included air when the bearing is submerged.

a^3 indicates a perforated bracket-plate whereby the bearings may be secured to the device with which the bearing is employed—as, for instance, the under side of a concentrator-table. The foot or bearing *a* is connected with the bracket-plate a^3 by means of the intermediate web or shank a^4. In service the foot or bearing *a* will contact and slide upon the track-rod B.

Inclosing the track-rod B and the foot *a* of the slide-bearing is a lubricant-chamber 1, said chamber being of general trough shape and having an opening 2 of sufficient width to permit the introduction of the foot *a* of the slide-bearing A and of such length as will accord with the required travel or path of said bearing. The ends of said trough or lubricant-chamber 1 are suitably formed for the passage of the track-rod B, and said openings are each provided with a stuffing-box 3 and gland 3^a to prevent the escape of the lubricant, as well as to permit the application to, adjustment on, and removal from the track or way of the lubricant-chamber. Adjacent to the opening 2 of the lubricant-chamber 1 are inwardly-projecting flanges or lips 2^a, which prevent the overflow of the lubricant when the slide is in motion. At each end of the lubricant-chamber adjacent to the stuffing-boxes 3 3 are set-screws 4 4, whereby the lubricant-chamber may after adjustment be securely attached to the track-rod or like

bearing. At one end of said lubricant-chamber, in the bottom thereof, is a tapped discharge-opening 5, through which spent oil and sediment may be withdrawn when desired, said discharge-opening being surrounded by a seat for the reception of a leather washer 6 or equivalent packing and being closed when the lubricator is in use by a threaded and shouldered plug 7.

As hereinbefore set forth, the lubricant-chamber may be readily modified for application to a track or way of any desired form of slide-bearing and is complete for such a purpose; but inasmuch as said lubricator has been especially designed for use with concentrator-tables having adjustable lateral inclination we provide upon the under side of the lubricant-chamber 1 a longitudinally-extending web 1^a, having the inclined foot-plate 8, which is adapted to rest upon a corresponding movable incline, whereby the lubricant-chamber 1 and the track-rod B are supported and may be raised and lowered at will.

In the case of a fixed track or where vertical adjustment of the track or way is not required a laterally-projecting bracket-flange 9, adapted to be secured to a suitable frame or bed, may be provided.

The construction of the lubricator being substantially such as hereinbefore pointed out, the lubricating-chamber 1 will be slipped endwise upon the track-rod or way B, and when adjusted thereon and secured thereto by the set-screws 4 4 the glands 3^a of the stuffing-boxes 3 will be screwed home to compress the packing and prevent the loss of oil or other lubricant, after which the lubricant-chamber 1 may be filled with the lubricant until the track-rod is submerged, preferably to about the depth indicated by the dotted line *z z*, Fig. 4. The foot *a* of the slide-bearing is then introduced through the mouth or opening 2 of the lubricant-chamber 1 and caused to rest, submerged, upon track B, whereupon the lubricant will fill the grooves or channels *a'* and force the air therefrom through the openings a^2, so that as long as the track remains submerged a skin or thin coating of the lubricant will intervene between the foot of the slide-bearing and the track or way on which it travels. Spent oil, sediment, &c., will gravitate to the bottom of the lubricant-chamber and may be thence withdrawn through the opening 5 from time to time, as may be found necessary.

Having thus described our invention, what we claim, and desire to secure by Letters Patent, is—

1. The combination of a slide-bearing, track and a lubricant-chamber which incloses said bearing and track.

2. The combination of a slide-bearing, a track, and a lubricant-chamber having openings for the reception of the track and slide-bearing.

3. The combination of a slide-bearing, a track, and a lubricant-chamber having openings for the reception of the track, said openings being provided with stuffing-boxes.

4. The combination of a slide-bearing, a track, a lubricant-chamber having openings for the reception of the track, and means for securing the lubricant-chamber to the track.

5. The combination of a slide-bearing having lubricant channels or grooves, a track therefor, and a lubricant-chamber relatively arranged with respect to the track to permit the submergence of the slide-bearing.

6. The combination of a slide-bearing having lubricant channels or grooves provided with air-ports, a track for said bearing, and a lubricant-chamber relatively arranged with respect to the track to permit the submergence of the slide-bearing.

7. The combination of a slide-bearing, a track therefor, and a lubricant-chamber having openings for the reception of the track, said lubricant-chamber being provided with means for its support and the support of the track.

8. The combination of a slide-bearing, a lubricant-chamber, and a track for the slide-bearing, said track being located within the lubricant-chamber.

9. The combination of a slide-bearing, a lubricant-chamber having means for its support, and a track for the slide-bearing arranged within and supported by the lubricant-chamber.

10. The combination of a slide-bearing, a lubricant-chamber having an opening through which the lubricant may be withdrawn, a track for the slide-bearing, said track being located within the lubricant-chamber, and a closure for the said opening in the lubricant-chamber.

11. The combination of a slide-bearing, a track therefor, and means whereby the contacting portions of said slide-bearing and track may be submerged in a lubricant.

In testimony whereof we affix our signatures in presence of the subscribing witnesses.

WILLIAM L. CARD.
FRANK S. CARD.

Witnesses to signature of William L. Card:
EDWARD NOBLE GREENLEAF,
ELFEGO RIVERDEL.

Witnesses to signature of Frank S. Card:
FRANK E. HEFFERNAN,
A. T. WILLIAMS.