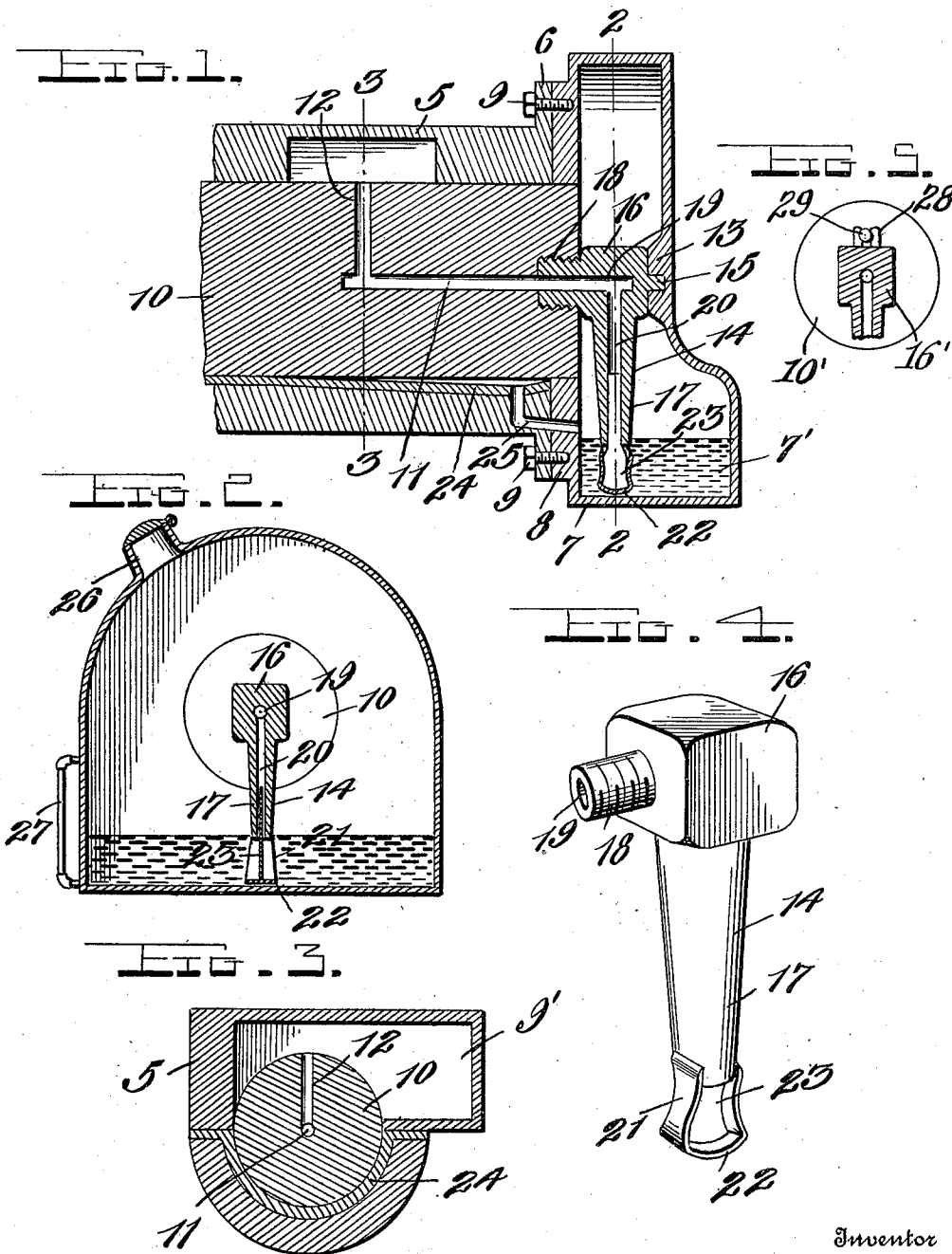


F. H. CROOKS.
LUBRICATOR.
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1,004,853.

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Witnesses

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LUBRICATOR.

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To all whom it may concern:

Be it known that I, FRANK H. CROOKS, a citizen of the United States, residing at Anderson, in the county of Madison and State of Indiana, have invented certain new and useful Improvements in Lubricators, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to lubricators and has for its object to provide a novel and simple device for lubricating truck axles so as to eliminate or reduce to a minimum degree friction between the axle and the journal box.

Another object of the invention is to provide, in combination with an oil reservoir arranged upon the journal box, means carried by the truck axle to rotate therewith within the oil reservoir and automatically supply oil to the periphery of the journal within the box, in either direction of rotation of the journal.

A still further object of the invention is to provide an oil take up device of novel construction carried by the journal, said device including means for properly directing a sufficient quantity of oil into a longitudinal passage in the journal and through a transverse passage connecting therewith and opening upon the periphery of the journal.

Still another object of my invention is to provide means for returning the superfluous oil which is applied to the periphery of the journal, to the oil reservoir, thus entirely eliminating waste.

Another object of the invention resides in the provision of a lubricator of the above specified character which is comparatively simple in construction, strong and durable in use and extremely efficient in practical operation.

With the above and other objects in view, the invention consists of the novel features of construction, combination and arrangement of parts hereinafter fully described and claimed, and illustrated in the accompanying drawings, in which—

Figure 1 is a longitudinal section through a journal box and the journal showing my improved lubricator arranged thereon; Fig. 2 is a section taken on the line 2—2 of Fig. 1; Fig. 3 is a section taken on the line 3—3 of Fig. 1; Fig. 4 is a detail perspective view of the oil take up device which is car-

ried by the journal; and Fig. 5 is a detail fragmentary section illustrating a slightly modified form of the invention.

Referring in detail to the drawing 5 60 designates the journal box which may be of any ordinary or approved form and has formed on one end thereof a flange 6. The oil reservoir 7 is also provided upon one face with a flange 8 which is adapted to 65 engage upon the flange 6 when the parts are assembled, suitable fastening bolts 9 being disposed through said flanges to rigidly secure the reservoir upon the end of the journal box. Upon the body of the journal 70 box 5, the usual waste box 9' is formed, but in the application of my invention, the use of oil saturated waste material is rendered unnecessary, as the invention is designed to continuously apply oil to the periphery of 75 the journal at all times and to withdraw and return to the reservoir all superfluous oil so that waste of the lubricant is entirely eliminated.

10 designates the journal which is mounted 80 in the journal box and is provided in its end with a longitudinal oil passage 11. With this oil passage adjacent to its inner end, the radially disposed port 12 communicates, said port opening upon the periphery 85 of the journal in line with the center of the box 9. The oil reservoir 7 is centrally formed with a boss or enlargement 13 to provide a bearing for the stud 15 which is formed upon the take-up member 14. This 90 member consists of a substantially rectangular body 16 and a tapering arm or stem 17 which is integrally formed therewith. The body 14, upon the opposite end thereof to the stud 15 is reduced to provide a cylindrical screw threaded extension 18. This 95 screw threaded extension is adapted for threaded engagement in the end of the journal 10 as clearly shown in Fig. 1 of the drawings. The extension 18 and the body 100 14 of the take-up member are longitudinally bored as indicated at 19, said bore extending into the body 14 slightly beyond its center. This bore is in alinement with and forms a continuation of the longitudinal oil 105 passage 11 in the end of the axle or journal. The arm 17 is also formed with a longitudinal bore 20 which connects with the inner end of the bore 19 in the body of the member 14. Upon the extremity of the tapered 110 arm 17 at opposite sides thereof, the inwardly curved plates 21 are formed. These

plates are connected at their ends by means of a bowed plate 22 which is adapted to be disposed in concentric relation to the inner wall of the oil reservoir in the circular movement of the arm 17 as the journal rotates in its bearing as will be obvious from the following description. The plates 21 are somewhat narrower than the diameter of the lower end of the arm 17 and between these plates, the end of an oil directing partition plate 23 extends. This plate 23 has its major portion located centrally in the bore 20 of the arm 17, and as the arm moves within the oil reservoir chamber, the oil strikes against one surface of the plate 23 and moves between the same and one of the plates 21 into one side of the divided bore 20. The connecting plate 22 at the ends of the plates 21 acts as a scoop in the circular movement of the end of the arm through the body of oil. In this manner the oil is taken up by the arm in either direction of its circular movement so that the supply of oil to the journal is uninterrupted.

The application of the oil to the periphery of the journal will be obvious from the foregoing description taken in connection with the accompanying drawing. After the oil has been caught between the plates 21 and 23 and directed into the divided bore 20 of the arm 17, it flows into the bore 19 and the passage 11 in the journal, thence into the radial port 12 from which it is applied directly upon the periphery of the journal and the walls of the box 5 as the journal rotates. The oil is thrown outwardly from the port 12 into the box 9' which spreads the same in opposite directions over the surface of the journal. The superfluous oil is carried back to the oil reservoir by means of an inclined directing plate 24 which extends beneath and substantially half way around the journal 10 in concentric relation thereto. A short passage 25 connects one end of this semicircular directing plate to the oil reservoir or chamber as shown in Fig. 1.

The upper portion of the oil reservoir 7 is preferably semicircular in form, the lower portion thereof being laterally extended to provide an enlargement 7' which forms the oil containing chamber. It will, however, be understood that this reservoir may be made of any other desired shape or form as may be found most convenient in varying circumstances. The peripheral wall of the upper semicircular portion of the reservoir is provided with a feed spout 26 which is closed by means of an ordinary hinged cover or in any other desirable manner. At one end of the lower enlarged portion 7' of the reservoir which forms the oil chamber, a gage tube 27 is arranged so that the amount of the oil within the chamber may at all times be accurately determined.

In Fig. 5 of the drawing I have illustrated a slightly modified construction wherein the body 16' of the oil take-up member has formed thereon adjacent to the threaded extension 18, the spaced studs 28. The end of the journal 10' is provided with a threaded opening to receive the threaded shank of a screw 29 which is disposed between the studs 28, the head of said screw bearing upon said studs and maintaining the same in close frictional contact with the end of the journal. In this form of the invention, the head 16' is not provided with the pivot stud 15 as in the main form illustrated in Fig. 1. By employing the fastening screw 29, the liability of the extension 18 threading out of the opening in the end of the journal and causing the head to bind against the boss 13 of the reservoir wall, is entirely overcome so that the rotation of the take-up member with the journal is at all times assured.

From the foregoing description taken in connection with the accompanying drawing, it will be readily observed that a continuous and copious supply of oil is supplied to the periphery of the journal and the walls of the boxing in which it is mounted and all danger of the ordinary hot boxes which frequently occur in the journals of railway trucks, is overcome.

The device is comparatively simple in its construction and the various parts thereof may be easily and quickly assembled in operative position. The use of saturated waste material as is commonly employed for the lubrication of truck journals is also eliminated by means of my device. There is absolutely no waste of the lubricant, as the superfluous amount which is supplied to the journal is returned to the oil chamber and used over again in the operation of the device. Owing to the peculiar construction of the oil take-up member which is mounted in the end of the journal, a sufficient supply of the lubricant to the journal is assured in either direction of rotation of the same.

While I have shown and described the specific construction and manner of arrangement of the various parts, it will be understood that my invention is susceptible of considerable modification without departing from the essential feature or sacrificing any of the advantages thereof.

Having thus described the invention what is claimed is:—

1. The combination with a journal box and a journal mounted therein, of a reservoir rigidly fixed to one end of the journal box, said journal having an oil passage therein opening upon its periphery, a take-up member arranged in the end of the journal and having a bearing in the wall of the reservoir, said member having an arm extending at right angles to the rotative axis

of the journal and provided with a longitudinal bore communicating with the passage in the journal, a plate longitudinally disposed in the outer end of the bore of said arm and dividing the same, said plate projecting beyond the end of the arm, and means carried by said arm to direct the oil in the reservoir against the projecting portion of said plate and into the bore of said arm in either direction of rotation of the journal, substantially as and for the purpose specified.

2. The combination with a journal box and a journal mounted therein, of a reservoir rigidly fixed to one end of the journal box, said journal having an oil passage therein opening upon its periphery, a take-up member arranged in the end of the journal and having a bearing in the wall of the reservoir, said member including an arm

circularly movable in the reservoir, said arm having a longitudinal bore, the body of said member also having a bore therein connecting the passage in said journal and the bore of the arm, a division plate fixed in the end of the bore in said arm, oil directing plates arranged on opposite sides of said division plate to direct the oil in the reservoir against the latter plate and into the bore of said arm in either direction of rotation of the journal, an inclined plate arranged beneath the journal to receive the superfluous oil, and a return pipe connecting said plate and the reservoir.

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

FRANK H. CROOKS.

Witnesses:

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."