J. ALEXANDER.

CAR AXLE LUBRICATOR.

APPLICATION FILED JUNE 20, 1916.

1,216,044.

Patented Feb. 13, 1917.

2 SHEETS—SHEET 1.

Fig. 1.

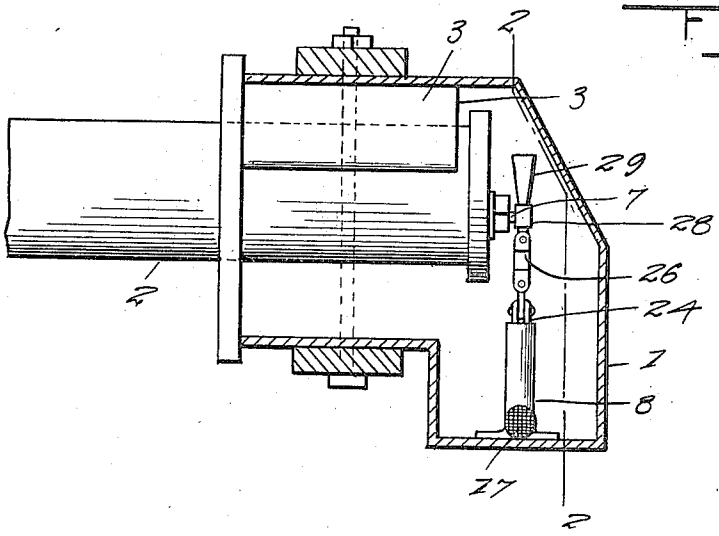
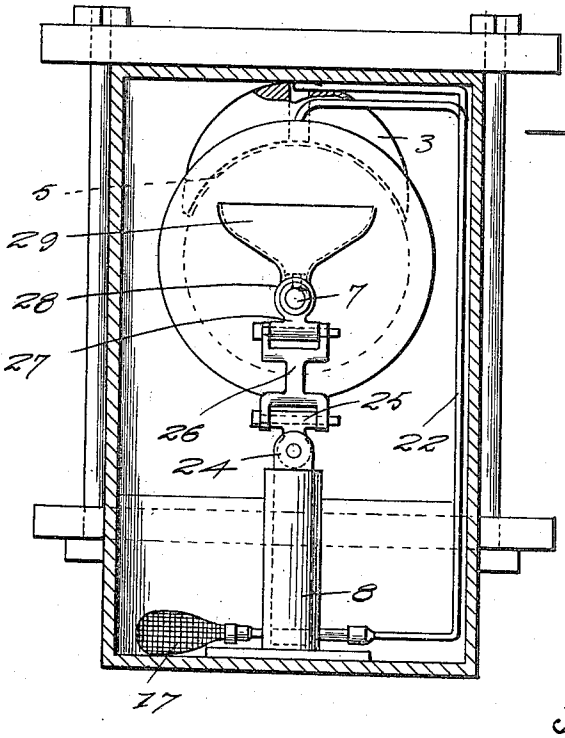


Fig. 2.



Witnesses

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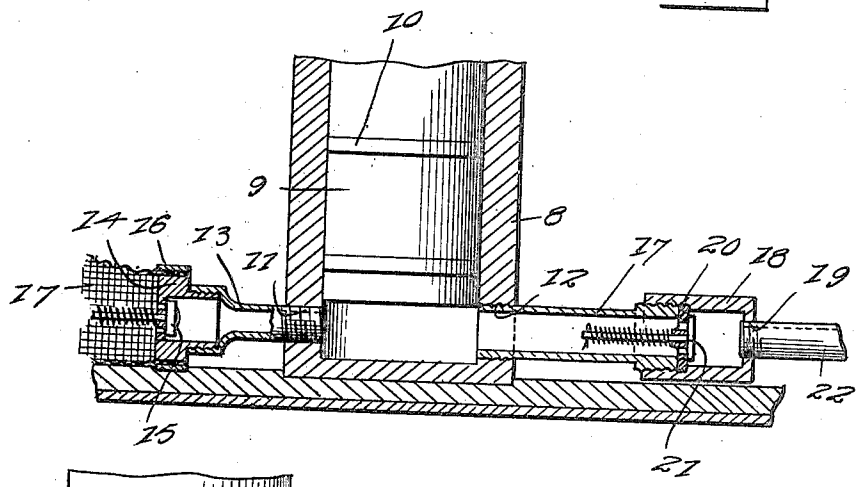
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2 SHEETS—SHEET 2.

Fig. 5.



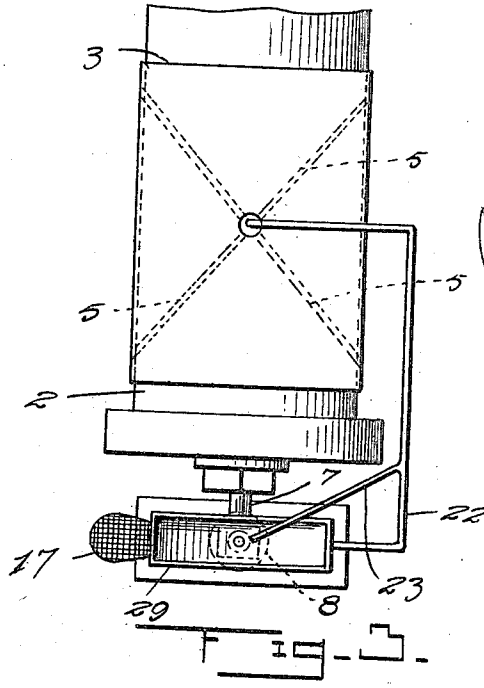


Fig. 3.

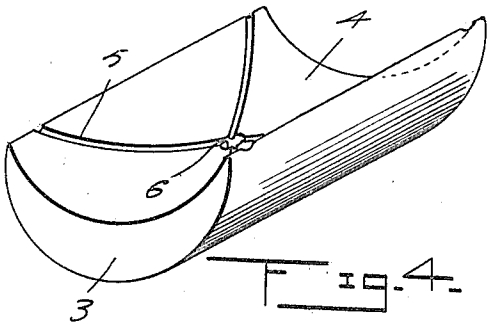


Fig. 4.

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CAR-AXLE LUBRICATOR.

1,216,044. Specification of Letters Patent. Patented Feb. 13, 1917.

Application filed June 20, 1916. Serial No. 104,690.

To all whom it may concern:

Be it known that I, JOSEPH ALEXANDER, a citizen of the United States, residing at Yeagertown, in the county of Mifflin and State of Pennsylvania, have invented certain new and useful Improvements in Car-Axle Lubricators; 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.

This invention relates to new and useful improvements in car axle lubricators, and the principal object of the invention is to provide a lubricating device for keeping a continuous circulation of lubricant over a car axle to avoid the overheating of the bearings and causing what is commonly known as a hot box.

Another object of the invention is to provide a journal box cooler in which the necessity of providing a packing of cotton waste or the like to engage the under side of the car axle is eliminated.

A still further object of the invention is to provide a bearing brass having oil distributing grooves in its contacting face which are arranged to distribute the oil over the entire bearing surface of the axle.

A still further object of the invention is to provide a pump which may be readily attached to the interior of the journal box and which is arranged to pump the oil contained in the lower portion of the box through a suitable pipe onto the axle from which it falls back into the journal box thereby keeping up a continual circulation when the car is running. It will thus be seen that the flow of oil to the brass will be automatically regulated according to the speed of travel of the car.

With these and other objects in view the invention consists in the novel combination and arrangement of parts which will be fully set forth in the following specification and accompanying drawings, in which:

Figure 1 is a sectional view through a journal box showing the pump in place,

Fig. 2 is an enlarged sectional view on line 2—2 of Fig. 1,

Fig. 3 is a top plan view of the journal box showing the central lubricant receiving opening,

Fig. 4 is a detail view of the journal bearing or brass, and

Fig. 5 is an enlarged fragmentary section through the pump cylinder illustrating the position of the inlet and outlet valves.

Referring to the drawings, the numeral 1 designates the ordinary journal box in which the ends of the usual car axle are rotatably mounted. The top wall of the journal box carries the journal brass designated by the numeral 3 which is best illustrated in Fig. 4, and this journal brass is provided with the usual concave bearing surface 4 having a plurality of diagonally arranged oil grooves 5 formed therein which communicate with the opening 6 formed centrally through the brass. As shown in Figs. 3 and 4 it will be seen that the grooves 5 radiate from the opening 6 so as to form conductors for the inflowing lubricant in order that the same will be distributed over the entire bearing surface of the end of the axle. Threaded into the end of the axle and arranged eccentrically with relation thereto is the crank pin 7, the use of which will appear as the description proceeds.

Secured to the bottom wall of the box 1 is the pump cylinder, designated by the numeral 8, the upper end of which is open and slidably receives the piston 9, which is provided with the packing ring 10 to form a liquid tight joint. The cylinder 8 is formed near its lower end with the internally screw threaded inlet opening 11, while a suitable internally screw threaded outlet opening 12 is formed at a diametrically opposite point. Threaded into the opening 11 is the nipple 13 carrying the plug 14 which is provided with a central opening which is normally closed by the valve 15. The periphery of the plug is surrounded by a ring 16 for holding the filter 17 in place, which filter consists of a bulb of screen wire or a similar material and is adapted to prevent the cinder and the like getting into the pump. Threaded into the outlet opening 12 is the nipple 17 having threaded on its outer end the socket 18 provided with the reduced threaded opening 19 in its end. The valve seat 20 is positioned in the nipple 17 and the shoulder formed by the threaded portion of the socket 18 and a valve 21 coöperates with the said valve seat in closing the outlet passage when the pump piston is moving upwardly. A pipe 22 is threaded into the bore of the threaded opening 19 and extends upwardly to a point above the upper side of the axle, and this pipe con-

tinues to the opening 6 of the brass 3 in which it is connected so as to direct the flow of the lubricant onto the axle. A branch pipe 23 leads from the pipe 22 and is positioned adjacent the end of the axle as will be clearly seen upon reference to Fig. 2 and this pipe terminates at the downturned nozzle, the use of which will appear as the description proceeds.

The upper end of the piston 9 is provided with a pair of spaced ears 24 between which is pivoted the cross member 25. A suitable link 26 is pivoted to the cross member 25 and the axis of the pivot extends at right angles to the pivot of this cross member. The upper end of the link is connected to the cross member 27 which is formed with the ear 28 which is arranged with a central opening to receive the crank pin 7 heretofore referred to. A suitable funnel 29 is connected to the ear 28 and is arranged so that its larger end is upwardly and in line with the mouth of the pipe 23, while the lower end of said funnel is provided with an opening to allow the contents of the funnel to flow onto the crank pin and thus lubricate the same.

It will be apparent from the foregoing that in use the rotation of the shaft within the journal box will cause the pump piston to reciprocate within the cylinder 8 so as to pump the liquid from the bottom of the journal box through the pipes 22 and 23 onto the axle and the crank pin. The loose connections between the crank pin and piston will allow for a slight end play of the axle and also allow said pin to revolve around the center of the axle so as to transmit reciprocatory motion to the piston.

While in the foregoing there has been shown and described the preferred embodiment of this invention, it is to be understood that such changes may be made in the combination and arrangement of parts as will fall within the spirit and scope of the appended claims.

What is claimed is:

1. The combination with a journal box, a bearing brass within the journal box, a pump operative within the journal box, a pipe leading from the pump to the journal brass and a piston operable within the pump, of a crank pin on the end of a car axle, a lubricating funnel carried by said crank pin and a branch pipe leading from the first mentioned pipe to a point directly above the funnel.

2. The combination with a journal box, a journal brass within the box, said brass being provided with lubricant distributing grooves in its under face, an axle bearing in said brass, a crank pin carried by the axle, a pump within the journal box, a piston within the pump, a distributing pipe leading from the piston to the journal brass and adapted to conduct lubricant through the journal brass, a funnel rotatably mounted on the crank pin, a barrel carried by the funnel, a connecting rod connected to the barrel and to the piston whereby upon rotation of the axle the pump will be actuated and a branch pipe leading from the distributing pipe and having its outlet end disposed directly over the center of the axle to distribute lubricant into the funnel and thereby lubricate the crank pin.

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

JOSEPH ALEXANDER

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."