

No. 818,022.

PATENTED APR. 17, 1906.

A. G. ELVIN.  
AXLE BOX LUBRICATOR.  
APPLICATION FILED JAN. 26, 1906.

FIG. 1.

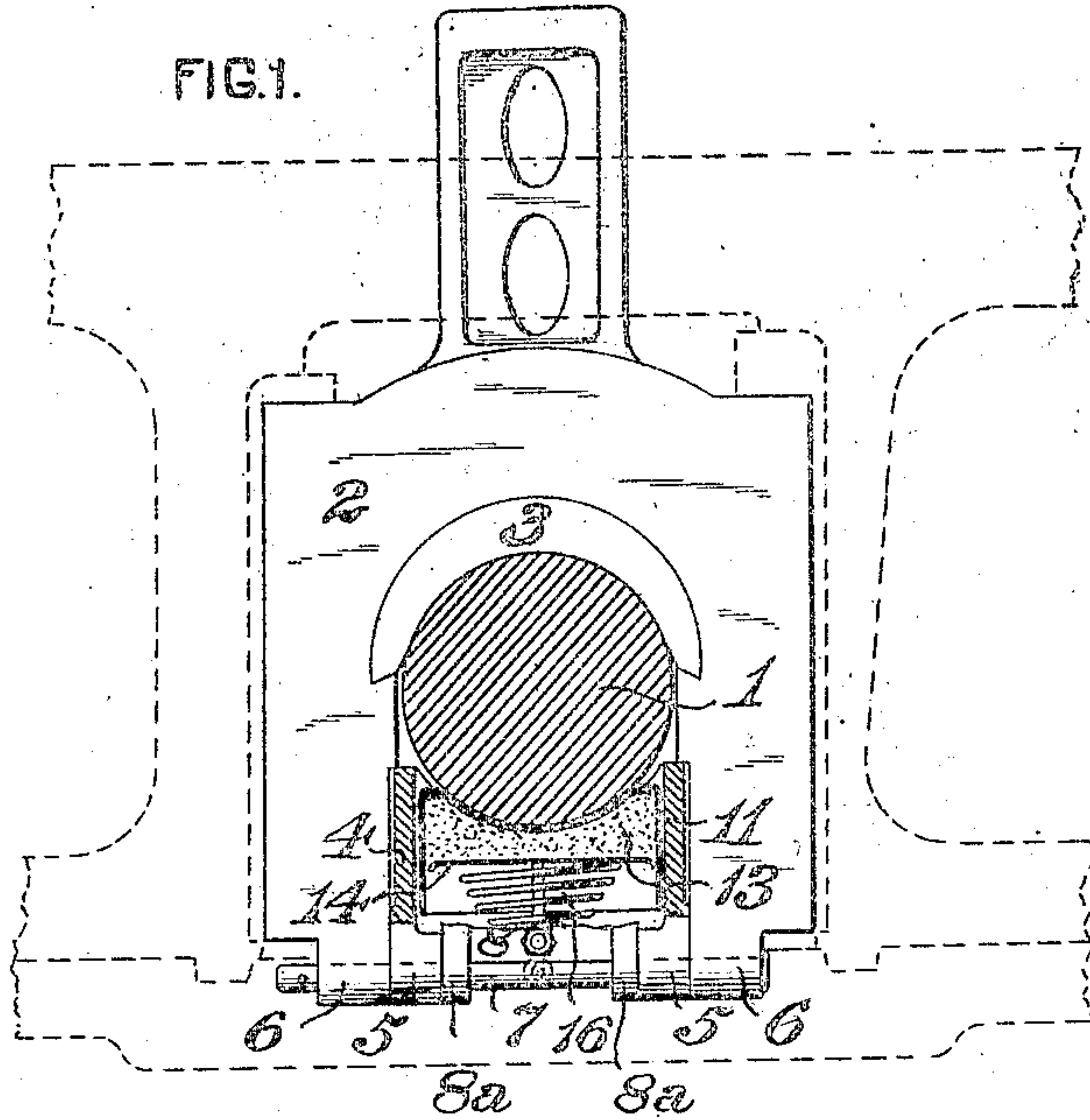


FIG. 2.

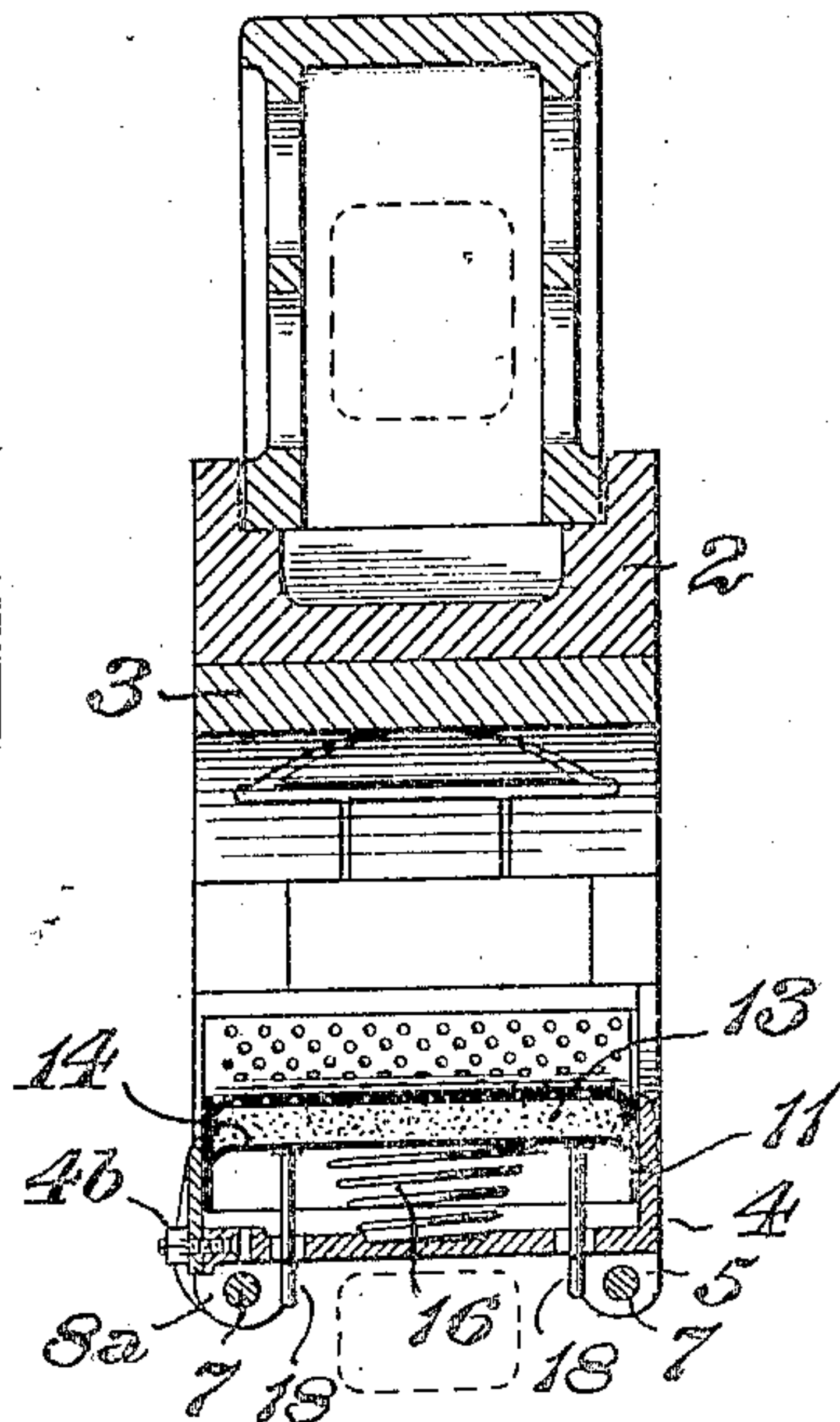


FIG. 3.

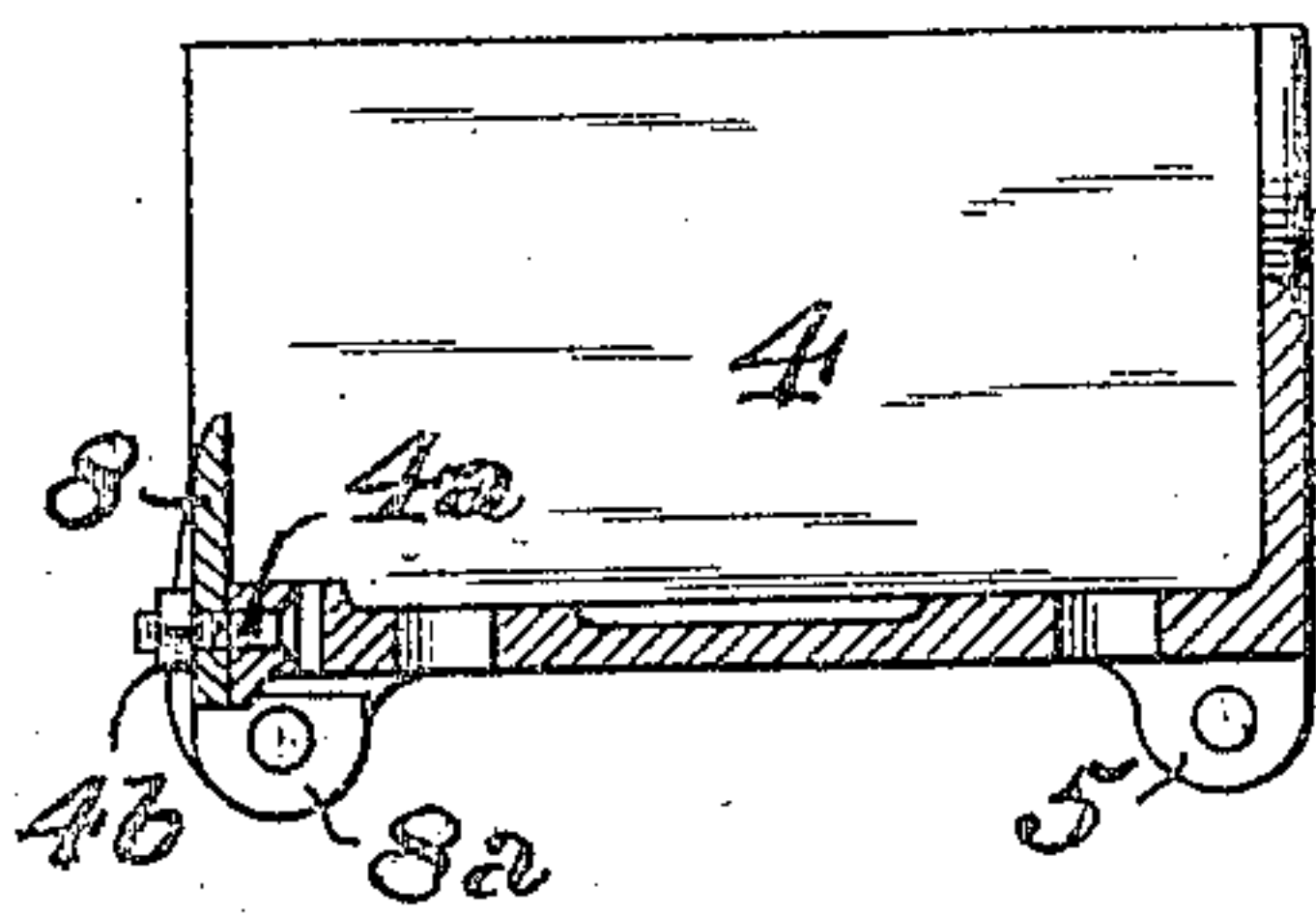


FIG. 4.

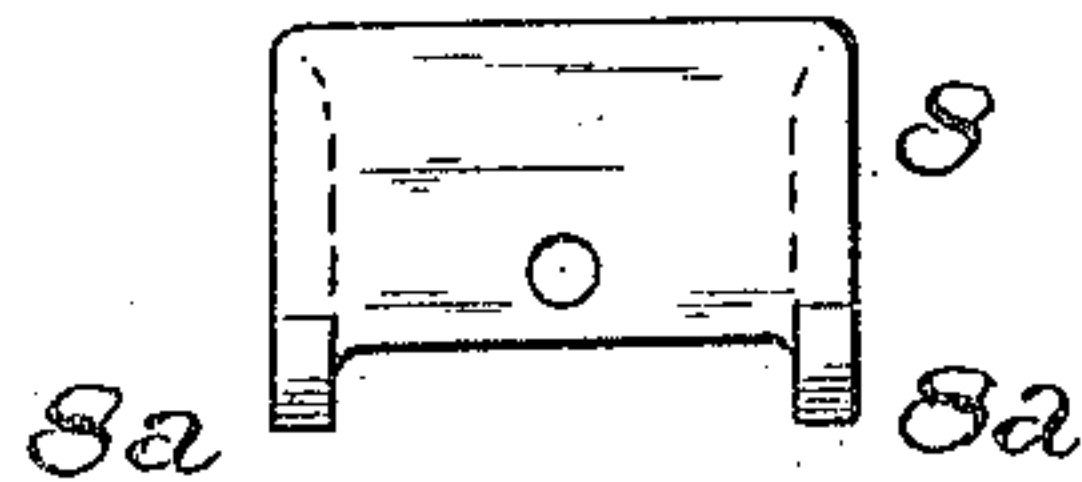


FIG. 5.

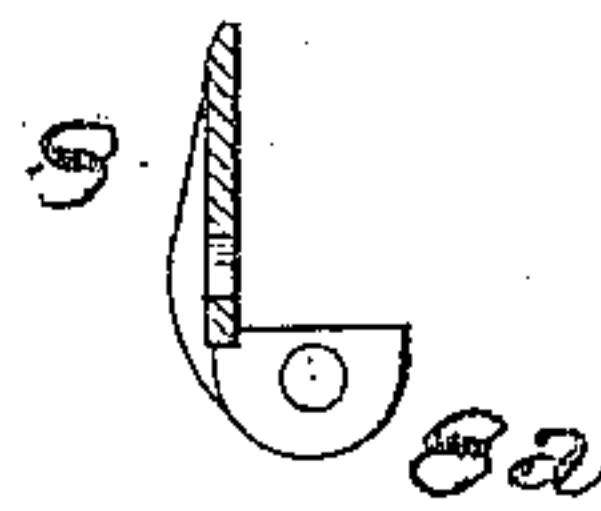
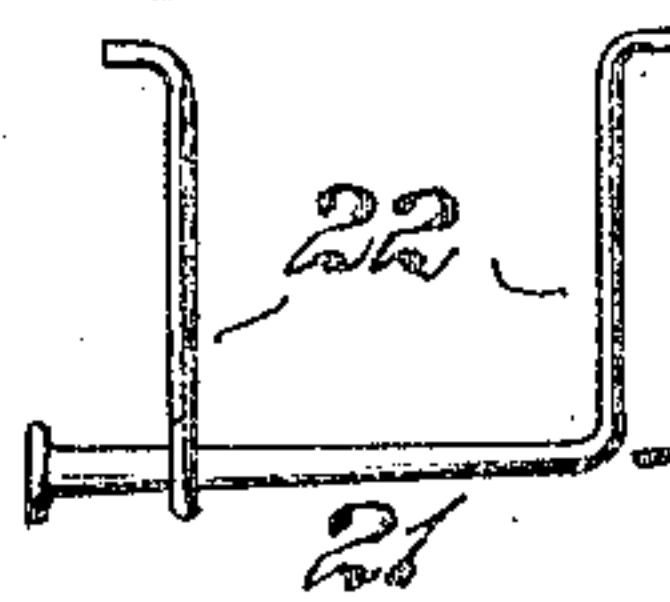


FIG. 6.



WITNESSES

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# UNITED STATES PATENT OFFICE.

ALBERT G. ELVIN, OF FRANKLIN, PENNSYLVANIA.

## AXLE-BOX LUBRICATOR.

No. 818,022.

Specification of Letters Patent.

Patented April 17, 1906.

Application filed January 26, 1906. Serial No. 298,980.

*To all whom it may concern:*

Be it known that I, ALBERT G. ELVIN, of Franklin, in the county of Venango and State of Pennsylvania, have invented a certain new and useful Improvement in Axle-Box Lubricators, of which improvement the following is a specification.

My invention relates to axle-box lubricators of the general class or type which is exemplified in Letters Patent of the United States No. 763,599, granted and issued to me under date of June 28, 1904; and its objects are to afford improved facilities for repacking when required to prevent waste of lubricant by its escape at the ends of the cellar and to insure a more uniform feed of lubricant to the journal than heretofore.

The improvement claimed is hereinafter fully set forth.

In the accompanying drawings, Figure 1 is a front view, partly in section, of a locomotive driving-axle box with my invention applied; Fig. 2, a vertical transverse central section through the same; Fig. 3, a similar section, on an enlarged scale, through the main lubricant-cellar; Fig. 4, a front view of the end plate thereof detached, Fig. 5 a vertical central section through the same; and Fig. 6, a side view of a hook device employed for facilitating the operation of repacking.

My invention is herein illustrated as applied in a locomotive driving-axle box 2, which is adapted to be fitted in jaws or pedestals and supported on one of the journals 1 of a locomotive-engine axle in the ordinary manner and is fitted with the usual brass bearing 3 and with a lower main lubricant-cellar 4, the latter being held removably in place by rods 7, passing through lugs 5 on the cellar and adjoining lugs 6 on the box. The outer or front wall of the main cellar 4 consists of a detachable separate end plate 8, provided with lateral downwardly depending lugs 8<sup>a</sup>, which is connected to the cellar 4 by a stud 4<sup>a</sup>, cast on the front thereof, said stud passing centrally through the end plate and carrying a nut 4<sup>b</sup>, adapted to bear thereon and by one of the rods 7, which passes through the side lugs 8<sup>a</sup> of the end plate.

An open-bottomed auxiliary lubricant-cellar 11 of sheet metal is fitted in the main cellar 4, and the top of the auxiliary cellar 11, which is curved transversely to approximately the radius of the journal on which the axle-box is carried, is perforated to permit the access of lubricant as it becomes liquefied

to said journal without allowing it to feed too rapidly. A follower-plate 14, having downwardly-turned edges on its four sides, is fitted freely in the auxiliary cellar 11 and is pressed upwardly toward the curved top thereof by a spring 16, which is interposed between its lower side and the bottom of the main cellar. The space between the curved top of the auxiliary cellar and the follower-plate is in the operation of the device filled up by a solid block of lubricating material 13, which gradually becomes liquefied and passes through the perforations of the top of the auxiliary cellar to the journal. The block of lubricating material is pressed upwardly by the follower-plate 14 and spring 16 in accordance with the liquefaction of its upper portion, and as the follower-plate is turned down on its edges and fits freely within the sheet-metal auxiliary cellar 11 it enters readily and works easily therein, thereby obviating liability of sticking and insuring a uniform feed of lubricant to the journal. As the entire auxiliary cellar moves upwardly with the journal in accordance with the wear of the brass, it will be seen that no space is left at its ends through which lubricant can escape and be wasted.

The degree of wear of the block of lubricant is shown, and means are afforded for depressing the follower-plate 14 to admit of repacking the auxiliary cellar with lubricant when required by one or more indicator-rods 18, (two being shown in this instance,) which are connected to the bottom of the follower-plate and pass freely through openings in the bottom of the main cellar 4, their lower ends being turned into eyes or loops. The indicator-rods may be notched or marked at different points in their length, so that the degree of upward traverse of the follower-plate, due to the wearing away of the block of lubricant 13, may be observed. When the block has become so far used that it is deemed necessary or desirable to repack the auxiliary cellar, this operation is performed in the following manner:

The front cellar-rod 7 is drawn out so as to clear the side lugs 8<sup>a</sup> of the end plate 8, the nut 4<sup>b</sup> is unscrewed from the stud 4<sup>a</sup>, and the end plate 8 is taken off, thereby leaving the entire front end of the main cellar 4 open. The follower-plate is then drawn down to the bottom of the main cellar and held there, which is preferably done by using the device shown in Fig. 6, which consists of two hooked



ended rods 22, connected to a rod 21 at such distance apart that they may engage the eyes of the indicator-rods 18, into which they are hooked, and the follower-plate pulled down to its lowest position, in which it may conveniently be held during the repacking operation by inserting a block of wood between the rod 21 and the pedestal-brace, (indicated in dotted lines in Figs. 1 and 2,) which extends across the frame-jaws below the axle. The auxiliary cellar 11 is then drawn out through the open front of the main cellar, repacked with lubricant, reinserted in the main cellar, and the end plate, front cellar-rod, and nut of the stud on the front of the main cellar replaced in their normal positions.

It will be apparent to those familiar with the duties of maintaining locomotive-engines in proper running condition that the auxiliary lubricant-cellar may be much more readily and quickly removed and replaced than the main cellar and can be better and more thoroughly packed when removed than the main cellar can be when in position. It will also be seen that its inner surfaces being entirely smooth the resistance to the feed of the lubricant and the liability of sticking of the follower-plate, which are occasioned by the unavoidable roughness of the cast-iron main cellar, are entirely obviated and a correspondingly freer and more uniform feed of the lubricant is attained. The prevention of waste of lubricant by escape thereof at the ends of the cellar is also a feature of practical importance.

I claim as my invention and desire to secure by Letters Patent—

1. In an axle-lubricator, the combination, substantially as set forth, of a main axle-box cellar which is open at its outer or front end, an end plate connected detachably to the outer end of the main cellar, an auxiliary lubricant-cellar located in the main cellar and removable therefrom through its front end, and having a perforated top plate curved to fit an axle-journal, a follower-plate fitting freely in the auxiliary cellar; and a spring interposed between and bearing on the bottom of the main cellar and the lower side of the follower-plate.

2. In an axle-lubricator, the combination, substantially as set forth, of a main axle-box cellar which is open at its outer or front end and provided with side lugs, an end plate fit-

ting against the outer end of the main cellar and having lateral lugs registering with the lugs of the main cellar, a rod passing through the lugs of the main cellar and end plate, a stud fixed to the main cellar and passing through the end plate, a nut engaging said stud and bearing on the end plate, an auxiliary lubricant-cellar located in the main cellar and removable therefrom through its front end, and having a perforated top plate curved to fit an axle-journal, a follower-plate fitting freely in the auxiliary cellar, and a spring interposed between and bearing on the bottom of the main cellar and the lower side of the follower-plate.

3. In an axle-box lubricator, the combination, substantially as set forth, of a main axle-box cellar which is open at its outer or front end, an end plate connected detachably to the outer end of the main cellar, an auxiliary lubricant-cellar located in the main cellar and removable therefrom through its front end, said auxiliary cellar being formed of smooth-surfaced sheet metal and having a perforated top plate curved to fit an axle-journal, a follower-plate fitting freely in the auxiliary cellar, and a spring interposed between and bearing on the bottom of the main cellar and the lower side of the follower-plate.

4. In an axle-box lubricator, the combination, substantially as set forth, of a main axle-box cellar which is open at its outer or front end, an end plate connected detachably to the outer end of the main cellar, an auxiliary lubricant-cellar located in the main cellar and removable therefrom through its front end and having a perforated top curved to fit an axle-journal, a follower-plate fitting freely in the auxiliary cellar and having each of its sides downwardly turned, and a spring interposed between and bearing on the bottom of the main cellar and the lower side of the follower-plate.

5. In an axle-box lubricator, an open-bottomed auxiliary lubricant-cellar of smooth-surfaced sheet metal, having a perforated top curved to fit an axle-journal and side and end walls extending downwardly therefrom and adapted to abut against the walls of a main axle-box cellar, substantially as set forth.

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Witnesses:

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