No. 819,440. PATENTED MAY 1, 1906.

J. LAHAŸE.

ADJUSTABLE DROP FEED LUBRICATOR.

APPLICATION FILED SEPT. 18, 1905.

Fig. 1.

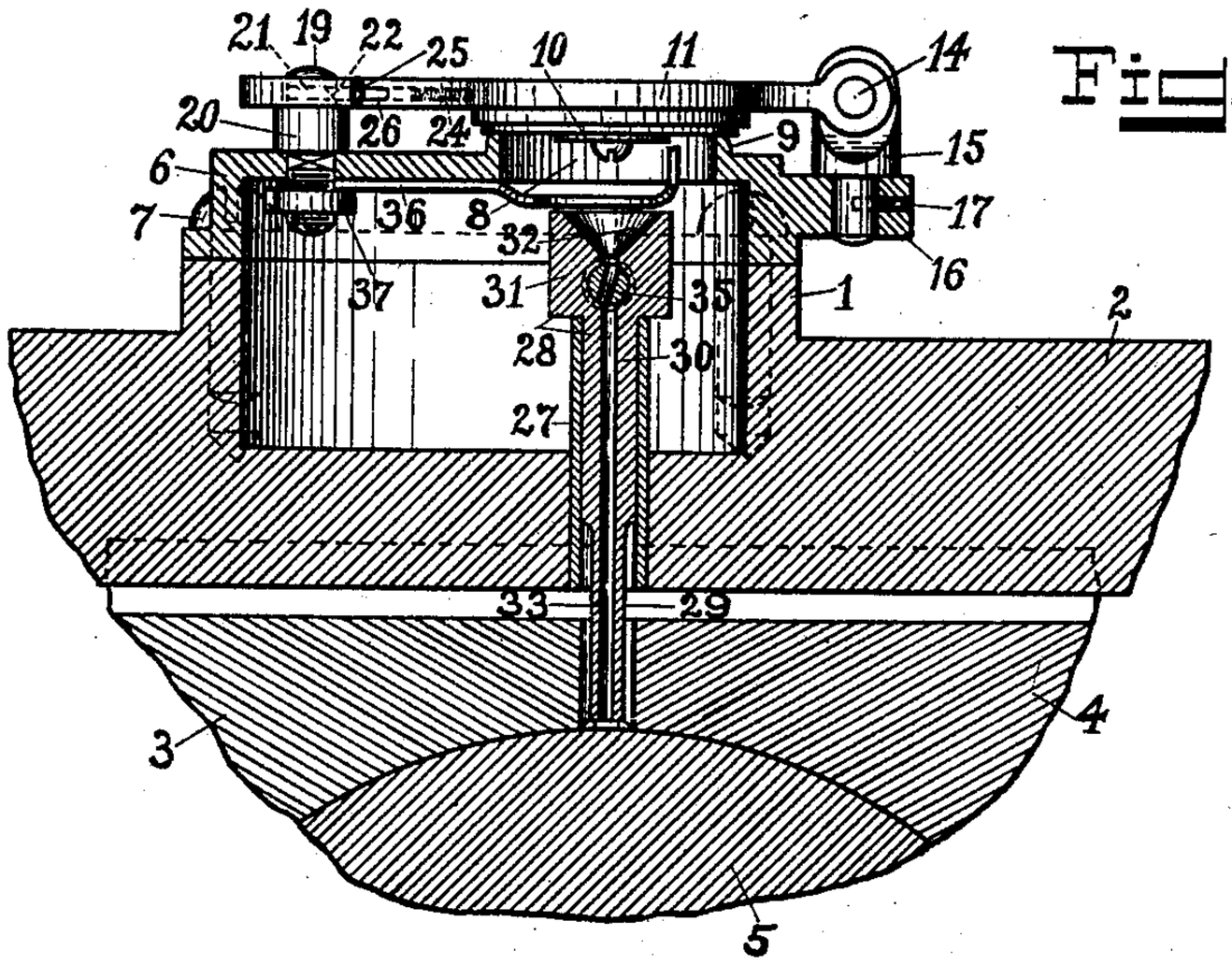
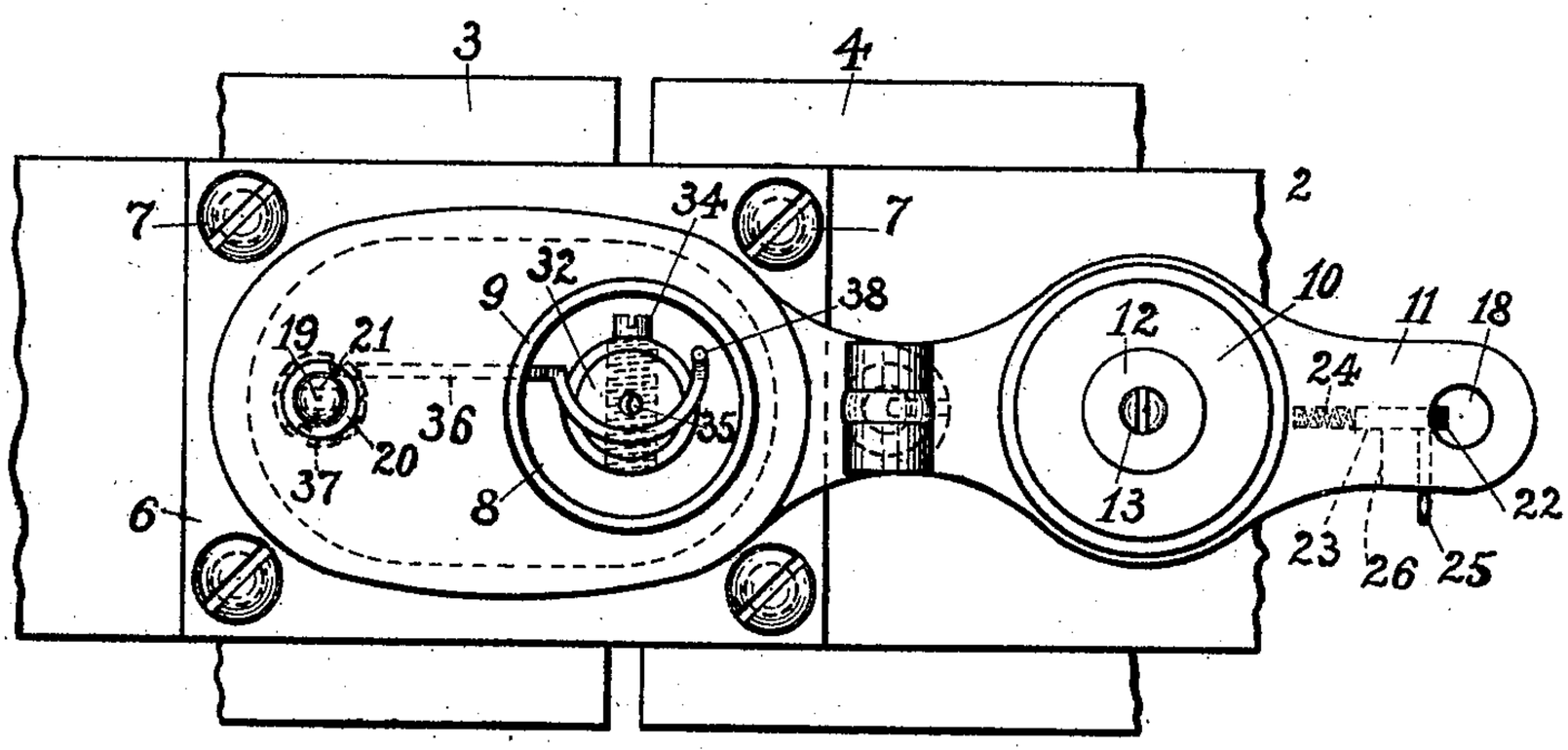


Fig. 2.



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UNITED STATES PATENT OFFICE.

JOSEF LAHAŸE, OF AIX-LA-CHAPELLE, GERMANY.

ADJUSTABLE DROP-FEED LUBRICATOR.

No. 819,440. Specification of Letters Patent. Patented May 1, 1906.

Application filed September 18, 1905. Serial No. 278,949.

To all whom it may concern:

Be it known that I, JOSEF LAHAŸE, a subject of the King of Prussia, German Emperor, residing at Aix-la-Chapelle, No. 7 Georgstrasse, in the Kingdom of Prussia, Empire of Germany, have invented certain new and useful Improvements in Adjustable Drop-Feed 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.

My present invention relates to lubricators, and particularly to a lubricator adapted for connecting-rods, eccentric-rods, and any other parts of machinery executing a combined rotary and reciprocating motion.

The object of my present invention is to provide a lubricator by means of which the lubricant can be regulated to keep the journal well lubricated under any load and speed without any waste of the lubricant, to which end the lubricator is provided with a removable feed-tube whose bore can be adjusted when withdrawn, thus making it possible to execute the desirable adjustment conveniently and to observe the result of the adjustment without experimenting. This way of regulating the flow of the lubricant is particularly well adapted for locomotive connecting-rods and the like, as the short stop at the most stations does not permit extended experiments.

In the accompanying drawings, Figure 1 is a longitudinal sectional view of a part of a connecting-rod provided with lubricator according to the present invention. Fig. 2 is a plan view of the lubricator with opened cover.

As shown in Fig. 1, the reservoir 1 of the lubricator is here forming an integral part of the connecting-rod 2, but might of course be formed separately and then secured to the connecting-rod afterward.

3 and 4 indicate parts of the connecting-rod brasses, and 5 represents a part of the crank-pin to be lubricated.

The reservoir 1 is here closed by a cap 6, secured thereto by screws 7. The cap itself has an aperture 8, surrounded with a rim 9, to serve as seat to the leather or rubber disk 10, secured to the cover 11 by means of the washer 12 and screw 13. The cover is hinged at 14 to a stud 15, secured to a projection 16 of the cap 6 by means of the pin 17. The opposite end of the cover 11 shows an aperture 18 for the reception of the pintle 19 of the stud 20 when the cover takes up the closed position. (Shown in Fig. 1.) To retain the cover in place, the pintle 19 is provided with a hole 21, into which the nose 22 of the pin 23 enters after the cover 11 has been pressed down. This pin is held in its locking position by a spring 24, placed in the same bore which serves for the reception of the pin 23, and thus makes the latter self-locking. To retract this pin for opening the cover, it is provided with a lateral thumb-pin 25, playing in the slot 26.

The bottom of the reservoir 1 is provided with a tubular projection 27, here shown in the shape of a short tube. In this tubular projection the removable feed-tube 28 is inserted through the aperture 8 of the cap 6 and consists of the lower thinner part 29, the middle part or shank 30, snugly fitting into the tubular projection 27, and the head 31, provided with a cup-shaped recess 32. To regulate the communication between the bore 33 of the feed-tube and the cup-shaped recess 32 at pleasure, the head 31 is provided with a screw, cock, or the like 34, whose cross-bore 35 may be brought in any desirable position relative to the bore 33 by simply turning it accordingly. The feed-tube 28 is retained in its working position by a spring 36, held against the lower side of the cap 6 by the nut 37 of the stud 20. The free end of the spring 36 is bent, as shown in Figs. 1 and 2, and is provided with a projection 38, by means of which the spring 36 is moved sidewise when the feed-tube 28 is to be removed for regulating purposes or for applying the lubricant directly to the crank-pin 5. On setting a connecting-rod provided with this lubricator in motion the lubricant will be thrown against the under side of the cap 6 and the disk 10 during one part of the connecting-rod's motion, and during another part of said motion a part of the lubricant thus thrown upward will fall into the cup-shaped recess 32 and pass through the bore 33 to the top of the crank-pin 5. If now, for instance, a crank-pin has become heated after a long run and a thorough lubrication is required during the few minutes usually at the disposal of the engine-driver at a station, the cover 11 is opened, the spring 36 pushed sidewise, and the feed-tube 28 withdrawn with any suitable instrument, after which the lubricant is poured in larger quantities into the tubular projection, from which it passes directly to the heated crank-pin. If

desirable, the screw 34 may now be adjusted, too, by filling the cup-shaped recess 32 with the lubricant and letting more drops of the latter pass through the bore 33 per unit of time than formerly, so that a reheating of the crank-pin is excluded. After the adjustment has been accomplished the feed-tube is inserted again, the spring 36 takes up its former position, and the cover 11 is put down, which manipulations can be accomplished within a few moments.

This lubricator offers many advantages over other lubricators of this class and among others these, that the amount of the lubricant contained in the reservoir is at all times clearly visible after opening the cover and that the large aperture of the cap 6 facilitates a hurried refilling of the reservoir, advantages of considerable value where the renewal of the lubricant must be accomplished in a few moments. Besides these advantages this lubricant is a great lubricant-saver, as the adjustment of the feed-tube can be regulated to suit any load and speed, so that none of the lubricant need run to waste, and finally this lubricator permits a lubrication by hand to apply the lubricant in emergencies in larger quantities to the rubbing surfaces than when it is working automatically.

I claim—

1. A drop-feed lubricator comprising a reservoir with a tubular bottom projection for direct lubrication, a feed-tube removably held in said tubular projection and provided with an adjustable bore, a cap secured to said reservoir and provided with an aperture for the introduction of the lubricant and insertion or withdrawal of said feed-tube, means for holding down said removable feed-tube, and a cover for closing said aperture when the lubricator is in operation.

2. A drop-feed lubricator comprising in combination with a part of machinery executing a combined rotary and reciprocating motion, a reservoir forming an integral part of said part of machinery, a tubular projection upon the bottom of said reservoir, a feed-tube passing through said tubular projection and provided with a recessed head having below said recess adjusting means to vary the free sectional area of the feed-tube passage, a cap secured to said reservoir and provided with an aperture arranged opposite said feed-tube, a spring on said cap to retain said feed-tube in place, a self-locking cover hinged to said cap, and a sealing-disk at the bottom side of said cover to close the aperture in said cap air-tight.

3. In a lubricator of the kind described the combination with the reservoir, of a tubular projection upon the bottom of said reservoir, a feed-tube removably held in said tubular projection and provided with a cup-shaped head having adjustable feed-regulating means, and means retaining said feed-tube in its working position and adapted to let the feed-tube pass upward for regulating purposes.

4. In a lubricator of the kind described the combination with the tubular projection of the reservoir, of a removable feed-tube passing through and held by said tubular projection and comprising a lower reduced part ending adjacent to the surface to be oiled, a shank snugly fitting into the bore of said tubular projection, a head having a cup-shaped recess for the reception of the lubricant; and adjusting means below said recess to regulate the flow of the lubricant through said feed-tube.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOSEF LAHAŸE.

Witnesses:
HENRY QUADFLIEG,
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