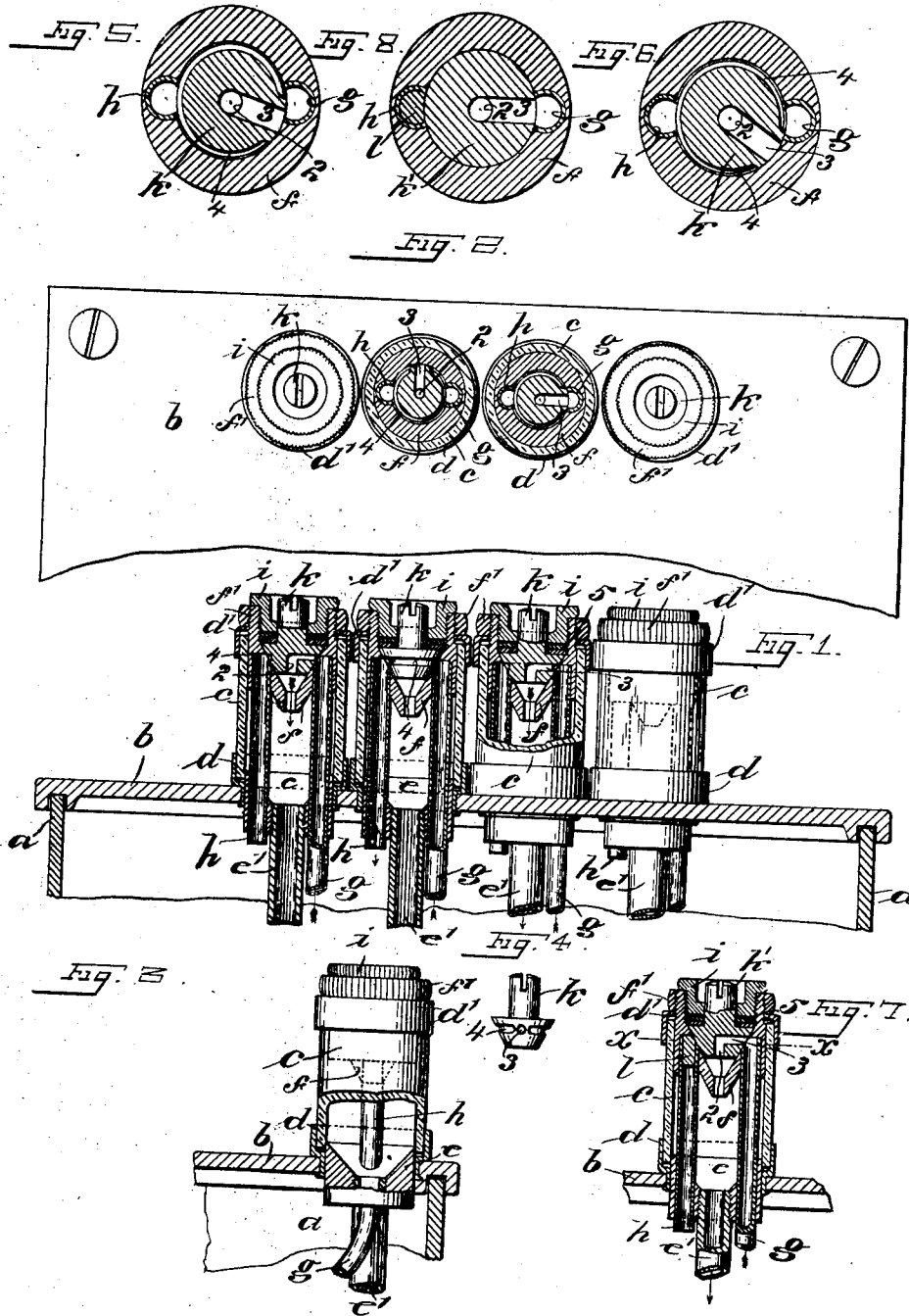


No. 827,032.

PATENTED JULY 24, 1906.

J. TH. PEDERSEN.
LUBRICATOR.

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WITNESSES
H. J. Smith
Chas. H. Smith

INVENTOR
Johannes Th. Pedersen.
PER Harold Terrell

UNITED STATES PATENT OFFICE.

JOHANNES TH. PEDERSEN, OF NEW YORK, N. Y., ASSIGNOR TO PEDERSEN MANUFACTURING COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

LUBRICATOR.

No. 827,032.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, JOHANNES TH. PEDERSEN, a citizen of the United States, residing at Woodside, in the county of Queens, city and State of New York, have invented an Improvement in Lubricators, of which the following is a specification.

My invention relates particularly to the class of oil-feeding devices or lubricators especially adapted to supply lubricating-oil to the machinery of motor-vehicles, motor-boats, &c., and the same is a division of my application for Letters Patent, filed May 26, 1905, Serial No. 262,350, the object of my present invention being to provide a lubricator of simple construction and in which springs, check-valves, and other small and uncertain parts that are liable to get out of order are dispensed with.

My invention relates particularly to the sight-feed devices of these lubricators, and in carrying out the same each sight-feed is provided with a regulatable oil-feed controlling the quantity of oil delivered to be forced to the machinery and with means for returning the surplus thereof to the oil-receptacle. The parts are separable and are easily taken apart for cleaning. The number of feed devices and discharge-pipes agree with the number of places to be lubricated, and their construction and operation are herein-after more particularly set forth.

In the drawings, Figure 1 is a vertical longitudinal section and partial elevation of the devices of my improvement, at the same time showing a portion of the walls of the receptacle for oil and the cover. Fig. 2 is a plan of the parts shown in Fig. 1 and a section through two of the lubricating devices. Fig. 3 is an elevation and partial section of the devices shown in Fig. 1 and at right angles thereto. Fig. 4 is an elevation of the regulatable sight-feed device or valve. Figs. 5 and 6 are sectional plans, in larger size, through this valve and the sight-feed devices. Fig. 7 is a vertical section of a modified form of my improvement, and Fig. 8 is a sectional plan at about the line $x x$ of Fig. 7 and of a size to correspond with Figs. 5 and 6.

a represents part of the side walls of the receptacle for holding the oil, and b is a cover of said receptacle, shown in Fig. 2 as connected thereto by corner-screws and as having a groove in the under surface for the cover to

fit down over the upper edge of the side walls of the body. The sight-feed devices are preferably connected to the cover and extend above the same, and the cover is apertured to receive the metal annuli or rings d , which are secured thereto in said apertures by over-turning the lower edge and by their shoulders above the cover.

c represents the cylindrical sections of glass of the sight-feeds, which fit down into the annuli d , and each of the sight-feed devices is provided with an annulus d' at the upper end, which fits over the upper end of the cylindrical section of glass.

In the lower portion of each sight-feed device e represents a thimble centrally receiving the pipe e' , the central portion of the thimble being made funnel shape for the discharge of the oil into the pipe e' , and this thimble fits snugly in the lower portion of the annulus d . At the upper end there is also a thimble f , which is of conical configuration centrally perforated. This thimble comes within the annulus d' and extends above the same and is securely held in position by the clamping-nut f' , which screws upon the outer surface of the thimble f down to the upper end of said annulus d' . A pipe g passes through the thimble e , through the sight-feed, and up into the thimble f , and the upper end thereof at one side is cut away. A pipe h also passes vertically through the sight-feed diametrically opposite from the pipe g —that is to say, through the thimble e and through the thimble f , with its upper end cut away at one side—and a cap i screws into the upper end of the thimble f to close the same and to serve as a bearing for the valve k , the stem of which is located centrally in an aperture of the said cap, the conical surface of said valve being received in the conical central portion of the thimble f , the surfaces contacting for a liquid-tight bearing. This valve is provided with a screw-kerf or other means by which the same may be turned by any suitable instrument.

The valves of the sight-feed devices are alike in the preferred form of my invention—that is to say, each valve k is provided with a central aperture 2, a lateral aperture 3, merging with the aperture 2, and a circumferential by-pass 4, the center of which is in the same horizontal plane with the center of the lateral opening 3. This particular con-

struction is plainly shown in Figs. 1, 2, 4, 5, and 6. Washers 5 are employed between the valve *k* and cap *i*. In the drawings it will be noticed that the sections, Fig. 2, through the sight-feed devices and said valve are in the same position as the vertical section, Fig. 1—that is, the right hand of the sight-feed devices shows the lateral opening 3 agreeing with the opening in the pipe *g* and the left-hand section shows the lateral opening 3 between the pipes *g* and *h*. Consequently according to the right-hand section oil flowing up the pipe *g* would all flow through the lateral opening 3 and the central aperture 2 into the center of the sight-feed device and away by the pipe *e'*, while according to the left-hand section no oil would flow through the lateral opening 3 and central opening 2, but all of it would flow by the circumferential by-pass 4 and by the pipe *h* back into the reservoir. This latter condition is also manifest from the section Fig. 6, while from the section Fig. 5 it will be seen that part of the oil going up by the pipe *g* would flow by the lateral opening 3 and central aperture 2, and part of the oil would flow by the circumferential by-pass 4 and pipe *h*, the flow being divided. It will thus be seen that by the simple turning of the valve *k* the flow of oil may be regulated at the will of the operator to pass from the reservoir and pipe *g* either through the pipe *e'*, and so to the parts of the machinery to be lubricated, according to the description of my aforesaid application, or by the pipe *h* back into the reservoir.

In the modification shown in Figs. 7 and 8 it will be noticed that I have inserted a plug *l* in the upper end of the pipe *h*. This will of course prevent any oil flowing down the pipe *h* and returning to the reservoir and will consequently make unnecessary the circumferential by-pass 4 and will compel the oil in regulatable quantities, determined by the turning of the valve *k*, to pass through the sight-feed into the pipe *e'*. I have in this modification retained the pipe *h* rather than dispensing therewith, because the same is quite essential in the construction and for the balanced support of the thimbles *f* and *e* at opposite sides of the sight-feed.

I have shown in Fig. 2 the peripheries of the clamp-nut *f'* and cap *i* as knurled, so that the same may be grasped and turned by the fingers in case it is essential to separate the parts of the oil-feed device from one another and from the cover of the oil-receptacle, in which movement the thimbles *e* and *f*, being firmly connected by the pipes *g* and *h*, come away with said pipes and the pipe *e'*, leaving the annulus *d* alone secured to the cover, and they may be replaced in the reverse manner.

I claim as my invention—

1. In a lubricating device, the combination with a support-plate, of a series of sight-feed devices each comprising a cylindrical section

of glass, a metal annulus at one end secured to said plate or support, a metal annulus at the other end, a thimble within the end adjacent to the support, a central discharge-pipe from said thimble, a pipe passing up through said thimble, and a second pipe down through the thimble at opposite sides of the center, a conical thimble at the upper end of said pipes, a valve movable in the latter thimble, provided with apertures coacting with the pipes and with the thimble in which the same may move, and a cap for holding the valve in place.

2. In a lubricating device, the combination with a sight-feed structure having a pipe passing up within the same and a second pipe at an opposite point extending down through the same, of a centrally-apertured conical thimble connected to adjacent ends of said pipes, and said pipes opening within the thimble, a conical valve having a central aperture and lateral narrow aperture, and a circular by-pass, said apertures and by-pass being centrally in a common plane with the outlet of said pipes, substantially as set forth.

3. In a lubricating device, the combination with a sight-feed structure having a pipe passing up within the same and a second pipe at an opposite point extending down through the same, of a centrally-apertured conical thimble connected to adjacent ends of said pipes and said pipes opening within the thimble, a conical valve having a central aperture and lateral narrow aperture and a circular by-pass, said apertures and by-pass being centrally in a common plane with the outlet of said pipes, a means for keeping the valve in position, and a means for turning the same.

4. In a lubricating device, the combination with a receptacle for lubricating-oil, of a sight-feed device, a pipe extending from the receptacle into the sight-feed device, a central discharge-pipe from said sight-feed device, a short pipe oppositely placed to the first aforesaid pipe, and a valve acting in the sight-feed device whereby the entering oil may be entirely returned to the receptacle or partially returned or wholly discharged.

5. In a lubricating device, the combination with a receptacle for oil, of a sight-feed device, means for bringing lubricating-oil to the sight-feed device and for passing the same through the sight-feed device, and a unitary revoluble device for regulating the flow of said oil whereby the entire flow is discharged from the sight-feed device for use, or is partially discharged for use and partially returned to the receptacle or wholly returned to the receptacle as desired.

6. In a lubricating device, the combination with a sight-feed structure having a pipe passing up within the same, and a second pipe at an opposite point extending down through the same, of a centrally-apertured conical thimble connected to adjacent ends of said

pipes, and said pipes opening within the thimble, a valve having a central aperture and lateral narrow aperture, and a circular by-pass, said apertures and by-pass being centrally in a common plane with the outlet of said pipes.

7. In a lubricating device, the combination with a support-plate, of a sight-feed device, comprising a cylindrical section of glass, a metal annulus secured to said plate or support in an aperture provided therefor, and a metal annulus at the other end of the glass, conical devices received within the said cylindrical glass, pipes connecting the same together at opposite points, means for securing the same in place in said glass, and a central discharge-pipe.

8. In a lubricating device, the combination with a conical structure, of a revoluble valve having a conical surface to fit the conical device aforesaid and said valve provided with a central aperture, a lateral aperture merging therewith, a circumferential by-pass centrally in the same plane as the lateral aperture, and pipes connected to said conical structure at diametrically opposite points and having their upper ends beveled and centrally merging into the same horizontal plane as the said by-pass.

9. In a lubricating device, the combination with a sight-feed structure having a pipe passing up within the same, of a centrally-apertured conical thimble, a conical valve

having a central aperture and a lateral narrow aperture coinciding with the upper end of the aforesaid pipe and the central aperture with the central portion of said thimble.

10. In a lubricating device, the combination with a sight-feed structure having a pipe passing up within the same, of a centrally-apertured conical thimble, a conical valve having a central aperture and a lateral narrow aperture coinciding with the upper end of the aforesaid pipe and the central aperture with the central portion of said thimble, a means for keeping the valve in position, and a means for turning the same.

11. In a lubricating device, the combination with a sight-feed structure having a pipe passing up within the same and a second pipe at an opposite point extending down through the same, of a centrally-apertured conical thimble connected to adjacent ends of said pipes and said pipes opening within the thimble, a valve having a central aperture and lateral narrow aperture and a circular by-pass, said aperture and by-pass being centrally in a common plane with the outlet of said pipes, a means for keeping the valve in position, and a means for turning the same.

Signed by me this 1st day of August, 1905.

JOHANNES TH. PEDERSEN.

Witnesses:

GEO. T. PINCKNEY,
BERTHA M. ALLEN