

A. MLITZ.
LUBRICATING DEVICE.
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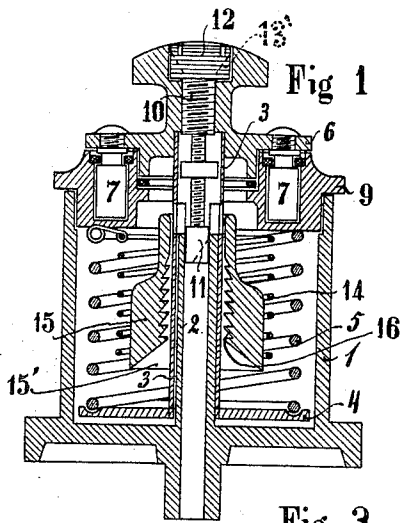


Fig 3

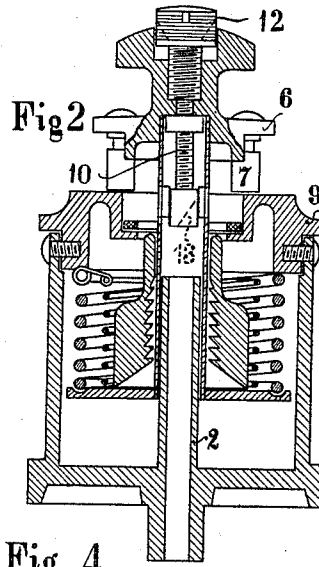


Fig 4

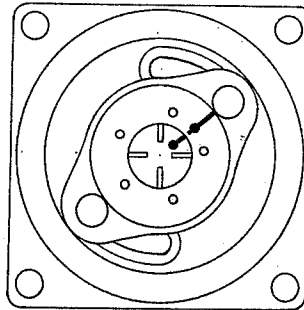
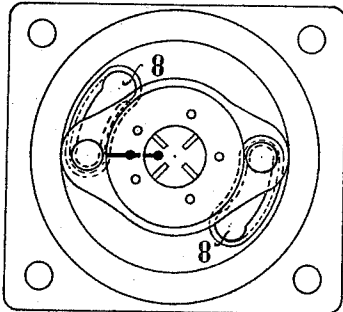
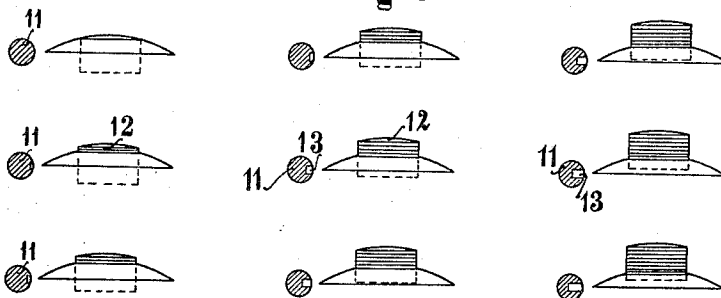


Fig 5



Witnesses:

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UNITED STATES PATENT OFFICE.

AUGUST MLITZ, OF CHARLOTTENBURG, GERMANY.

LUBRICATING DEVICE.

1,006,257.

Specification of Letters Patent.

Patented Oct. 17, 1911.

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To all whom it may concern:

Be it known that I, AUGUST MLITZ, a subject of the German Emperor, and a resident of 12 Oranienstrasse, in the city of Charlottenburg, Kingdom of Prussia, and German Empire, have invented certain new and useful Improvements in Lubricating Devices, of which the following is a specification.

My present invention has reference to a lubricating device especially for movable or moving parts of machines and machines on wheels, locomotives and the like.

This lubricator will feed the oil only when the machine is working, thereby saving a great deal of oil otherwise passing useless through the outlet tube.

The new lubricator is provided with arrangements to regulate the flow of oil through the oil outlet tube, to indicate on the outside the quantity of oil passing through the outlet-tube and to prevent the entrance of dust from the outside into the oil vessel.

The accompanying drawing shows a form of my invention. Figure 1 is a cross section of this form of my invention with closed lid; Fig. 2 is a cross section of the same form with opened lid, Figs. 3 and 4 are plan views of Figs. 1 and 2. Fig. 5 is a diagrammatic representation of the cross section of the regulating piston showing the sectional area of the piston at the upper edge of the outlet-tube, the piston being in nine different positions, from the position of complete closure to the position of complete opening. The head of the regulating screw is shown beside the piston in corresponding positions.

In the middle of the oil reservoir an oil-outlet-tube 2 is arranged which extends vertically inward and is surrounded by a sleeve 3. At its lower end this sleeve is provided with a plate 4. Between this plate and the cover 9 the spring 5 is arranged. A cover or lid 6 fastened to the upper end of the sleeve may be withdrawn in an upward direction against the action of the spring 5 after being turned for a certain amount in the manner illustrated in Fig. 2. The cover or lid 6 is provided with two studs 7 which are guided in slots 8 provided with enlargements at one of their ends, as shown in Figs. 3 and 4, in such a manner, that the cover or lid 6, after the studs are entered into the enlargements of the slots 8 and the required turn is given to the cover, may be securely clamped

to the part 9 of the cover which is secured to the oil reservoir 1 by suitable tightening means. When the oil vessel is to be filled up the cover 6, as shown in Fig. 2, is withdrawn upward from the enlargements of the slots 8, (see Fig. 3.) The pins or studs 7 will then be able to rest against the rim of the stationary part 9 of the cover, so that oil may be filled in through the now uncovered opening.

Around the oil-outlet-tube 2 and the sleeve 3 which is perforated above the top of the oil-outlet-tube, an oil-forwarding-member 15 is suspended at the lower end of a spiral spring 14. When the machine is running, this oil-forwarding-member will be caused to swing up and down, by the shaking of the machine or of the particular part of machinery on which the lubricating device is arranged. In order to make the oil-forwarding-member do its work more effectively, the bore of the member is flared downwardly at 15' in the lower part of the member, so that the oil can better enter the bore, when the member descends, and is driven upward with a greater force. By suitable grooves 16 in the member above the flared part of the bore the flow of oil is still further favored, and the delivery of the oil from the forwarding-member to the outlet-tube facilitated.

In the middle of the part of the cover 6 which may be lifted, an adjustable screw 10 is arranged which may be adjusted from above, preferably by means of a suitable key. To the lower end of the screw a small piston 11 is attached, fitting into the oil tube 2 and provided with a slot 13, gradually increasing in depth toward the lower end of the piston and serving for the passage of the oil. By unscrewing the screw 10 more or less in an upward direction, the free sectional area for the passage of the oil is increased. In order to be able to ascertain the amount of oil passing through the oil-outlet-tube 2 by looking at the device from the side, the head 12 of the regulating screw 10 represented in Figs. 1 to 5, is provided with delicate horizontal divisional lines, of which the amount of divisions visible in the particular case, is an accurate measure for the free sectional area of the piston and for the passage of oil through the oil-outlet-tube 2. The accuracy of the reading off may be increased, by providing the head 12 with one or more recesses 13' which are identi-

cally shaped with the slot of the piston. In the present case the head of the adjustable regulating screw is arranged in the handle of the cover 6.

5 The operation of the described lubricating device is as follows. When the machine is running the lubricating device being in operative position the oil forwarding member will be caused to swing up and down by the shaking of the machine or of the particular
10 part of machinery on which the lubricating device is arranged. When the oil forwarding member swings downward the oil enters the bore of the member and is pressed
15 through the bore of the member. When the oil forwarding member swings upward a part of the oil still contained in the bore of the member and on the upper side of the same will be forwarded to the top of the oil
20 outlet tube and enter the same.

What I claim as my invention and desire to secure by Letters Patent of the United States, is:—

1. In a lubricating device the combination
25 of an oil-vessel, an oil outlet-tube in the interior of the vessel, an oil forwarding member around said tube suitable means for the regulation of the outlet-opening in the tube, the oil-forwarding-member being suspended
30 in such a way as to be able to swing up and down, the bore of the forwarding-member being flared downwardly in the lower part of the forwarding member in order to cause the oil to pass through the bore and to enter
35 the oil-outlet-tube, when the oil-forwarding-member is swinging up and down substantially as and for the purpose set forth.

2. In a lubricating device the combination of an oil-vessel, an oil outlet tube in the interior of the vessel, an oil forwarding member around said tube suitable means for the regulation of the outlet-opening in the tube, the oil-forwarding-member being suspended
40 in such a way as to be able to swing up and down, the bore of the forwarding-member being flared downwardly in the lower part of the box and having suitable grooves above the flared parts of the bore in order to cause the oil to pass through the bore and to enter
45 the oil-outlet-tube, when the oil-forwarding-member is swinging up and down substantially as and for the purpose set forth.

3. In a lubricating device the combination of an oil-vessel, an oil outlet-tube in the interior of the vessel, an oil forwarding member around said tube suitable means for the regulation of the outlet-opening in the tube, the oil-forwarding-member being suspended on a spiral spring surrounding the oil-forwarding-member on the outside and fastened to
60 the lid of the oil-vessel, the bore of the forwarding-member being flared downwardly in the lower part of the member in order to cause the oil to pass through the bore and to enter the oil-outlet-tube, when the oil-for-

warding-member is swinging up and down substantially as and for the purpose set forth.

4. In a lubricating device the combination of an oil-vessel, an oil outlet tube in the interior of the vessel, an oil forwarding member around said tube a regulating piston closing the oil-outlet-tube on the top this regulating piston having a slot deepened toward the under side of the piston, the oil-forwarding-member being suspended in such a way as to be able to swing up and down, the bore of the forwarding-member being flared downwardly in the lower part of the box in order to cause the oil to pass through the bore and to enter the oil-outlet-tube, when the oil-forwarding-box is swinging up and down substantially as and for the purpose set forth.

5. In a lubricating device the combination of an oil-vessel, an oil outlet-tube in the interior of the vessel, an oil forwarding member around said tube a regulating piston, closing the oil-outlet-tube on the top and having a slot deepened toward the under side of the piston, this regulating piston being provided with a head projecting out of the vessel the head being provided with a suitable scale of horizontal divisional lines in order to indicate on the outside the quantity of the oil passing through the outlet-tube, the oil-forwarding-member being suspended in such a way as to be able to swing up and down, the bore of the forwarding-member being flared downwardly in the lower part of the forwarding-member in order to cause the oil to pass through the bore and to enter the oil-outlet-tube, when the oil-forwarding-member is swinging up and down substantially as and for the purpose set forth.

6. In a lubricating device the combination of an oil-vessel, an oil outlet-tube in the interior of the vessel, an oil forwarding member around said tube a regulating piston, closing the oil-outlet-tube on the top and having a slot deepened toward the underside of the piston, this regulating piston being provided with a head projecting out of the vessel the head being provided with one or more recesses identically shaped with the slot of the piston in order to indicate on the outside the quantity of the oil passing through the outlet-tube, the oil-forwarding-member being suspended in such a way as to be able to swing up and down, the bore of the forwarding-member being flared downwardly in the lower part of the forwarding-member in order to cause the oil to pass through the bore and to enter the oil-outlet-tube, when the oil-forwarding-member is swinging up and down substantially as and for the purpose set forth.

7. In a lubricating device the combination of an oil-vessel, an oil outlet-tube in the in-

terior of the vessel, an oil forwarding member around said tube a regulating piston, closing the oil-outlet-tube on the top and having a slot deepened toward the under side of the piston, this regulating piston being provided with a head projecting out of the vessel the head being provided with one or more recesses identically shaped with the slot of the piston and with scale of horizontal divisional lines in order to indicate on the outside the quantity of the oil passing through the outlet-tube, the oil-forwarding-member being suspended in such a way as to be able to swing up and down, the bore of the forwarding-member being flared downwardly in the lower part of the forwarding-member in order to cause the oil to pass through the bore and to enter the oil-outlet-tube, when the oil-forwarding-member is swinging up and down substantially as and for the purpose set forth.

8. In a lubricating device the combination of an oil-vessel closed by a suitable lid in order to prevent the entering of dust into the oil-vessel, an oil outlet-tube in the interior of the vessel, an oil forwarding member around said tube suitable means for the regulation of the outlet-opening in the tube, the oil-forwarding-member being suspended in such a way as to be able to swing up and

down, the bore of the forwarding-member being flared downwardly in the lower part of the member in order to cause the oil to pass through the bore and to enter the oil-outlet-tube, when the oil-forwarding-member is swinging up and down substantially as and for the purpose set forth.

9. In a lubricating device the combination of an oil-vessel, closed by a suitable lid in order to prevent the entering of dust into the oil-vessel, an oil outlet-tube in the interior of the vessel, an oil-forwarding member around said tube suitable means for the regulation of the outlet-opening in the tube, the oil-forwarding-member being suspended in such a way as to be able to swing up and down, the bore of the forwarding-member being provided with suitable grooves in order to cause the oil to pass through the bore and to enter the oil-outlet-tube, when the oil-forwarding-member is swinging up and down substantially as and for the purpose set forth.

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

AUGUST MLITZ.

Witnesses:

OSKAR ARENDT,
WOLDEMAR HAUPT.