

1,047,743.

Patented Dec. 17, 1912.

2 SHEETS—SHEET 1.

Fig. 3.

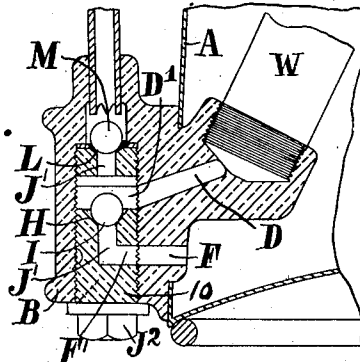
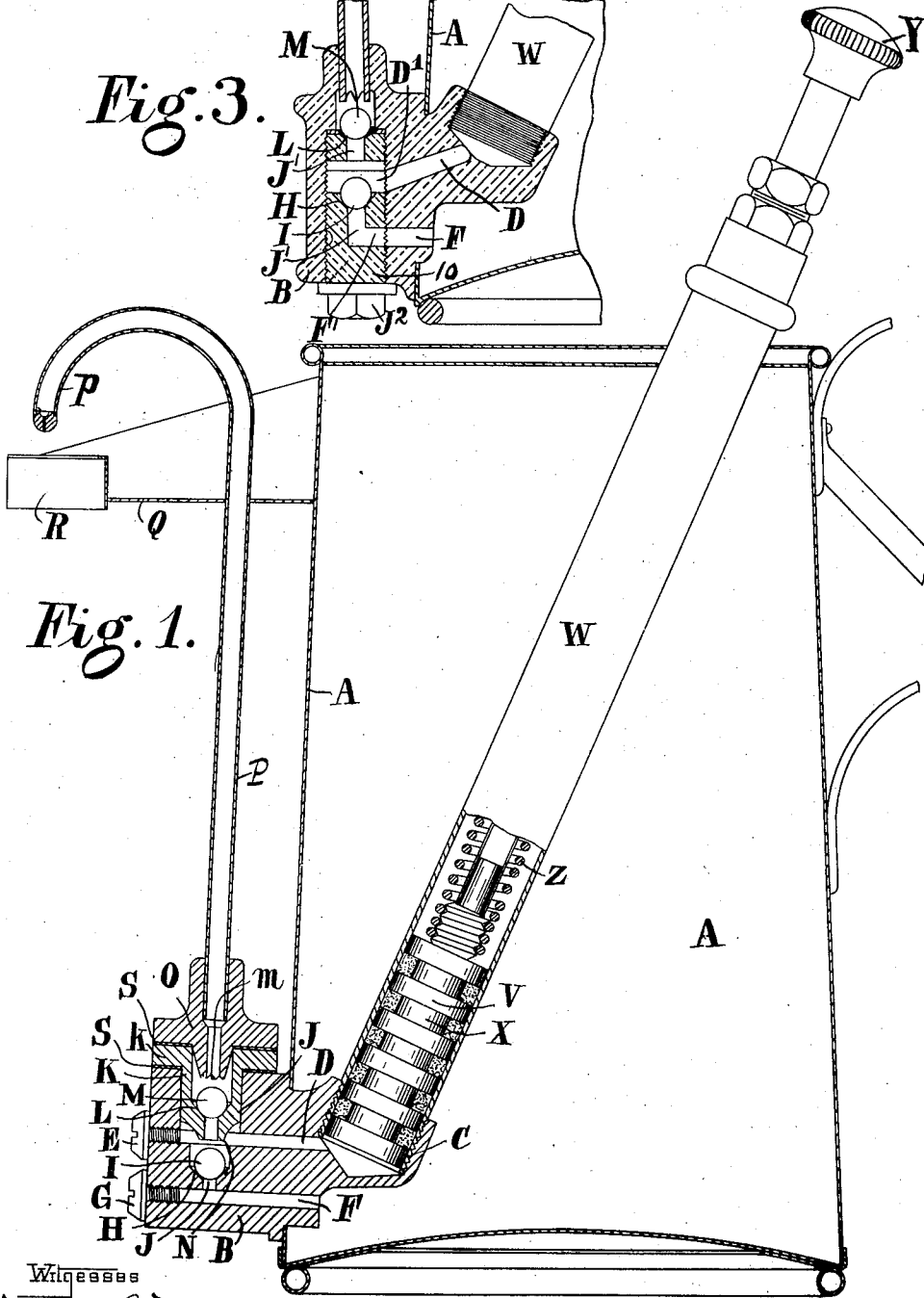


Fig. 1.



Witnesses

M. P. Mason
S. E. Seerist.

Inventor

James William Bullock
by Mason Fenwick & Laurence
his Attorneys.

J. W. BULLOCK.
LUBRICATING DEVICE.
APPLICATION FILED MAY 23, 1910.

Patented Dec. 17, 1912.
2 SHEETS-SHEET 2.

1,047,743.

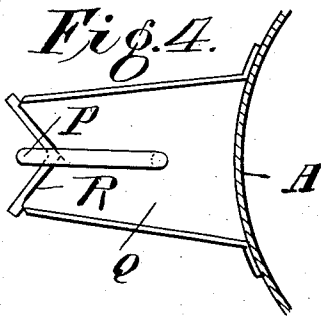
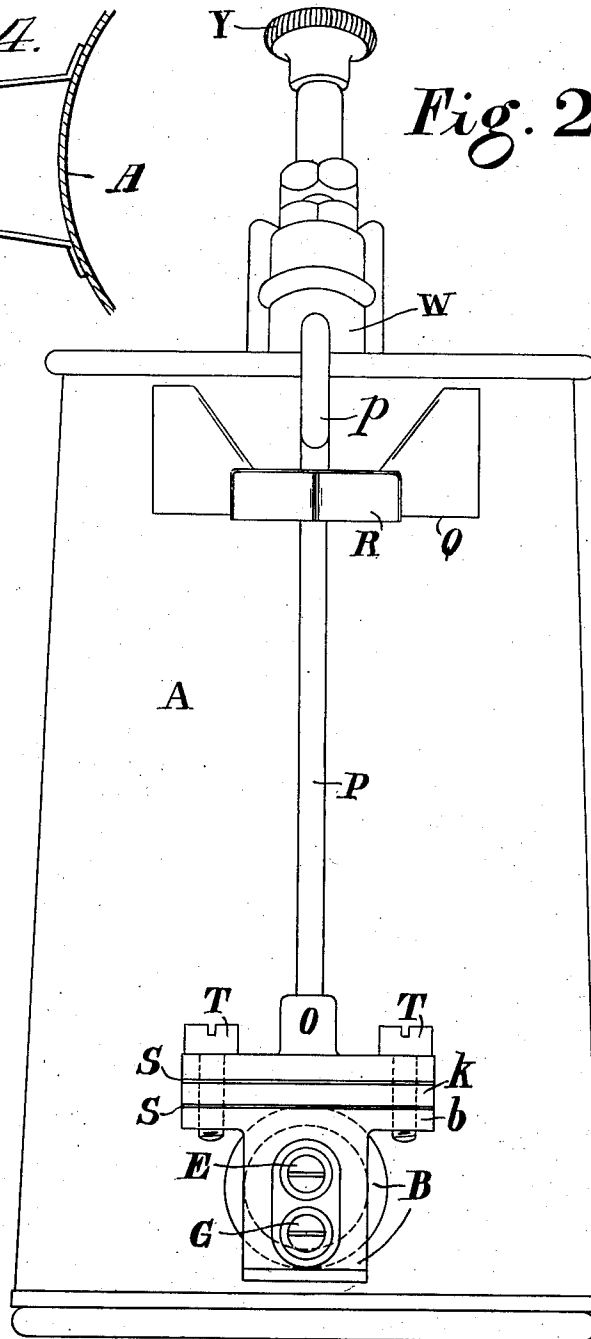


Fig. 2.



Witnesses

Inventor

M. P. Meier,
Q. E. Seibert.

James William Bullock
By Mason, Fenwick & Lawrence
his Attorneys.

UNITED STATES PATENT OFFICE.

JAMES WM. BULLOCK, OF WIGAN, ENGLAND.

LUBRICATING DEVICE.

1,047,743.

Specification of Letters Patent.

Patented Dec. 17, 1912.

Application filed May 23, 1910. Serial No. 562,905.

To all whom it may concern:

Be it known that I, JAMES WILLIAM BULLOCK, a subject of the King of Great Britain, residing at Wigan, in the county of Lancaster, in the Kingdom of England, have invented certain new and useful Improvements in Lubricating Devices, of which the following is a specification.

This invention relates to devices for filling a receptacle or lubricating certain parts of a machine with oil without spilling the oil, such devices being applicable for lubricating ring spindles used in cotton spinning, but can be used for other purposes also.

The invention is of that kind wherein there is a can or container having a spout or nozzle projecting therefrom, the can being fitted with a pump for obtaining a forced feed, and with means whereby a quantity of oil is discharged through the spout at each stroke.

The invention will be understood from the following description, reference being had to the accompanying drawings, in which,

Figure 1 is a sectional view of my lubricating device, with the piston in the position it will occupy when the knob Y is pressed down by the hand; Fig. 2, a front view; Fig. 3, a detail sectional view showing a slight modification and Fig. 4 is a detail view showing a portion of the structure of Fig. 1 in top plan.

In carrying the invention into effect, I solder or otherwise fasten to the can A in front at or near the base, a block or valve-casing B, which projects through the can to the inside, and is there provided with a cup-shaped part C, into which the lower end of the pump barrel is screwed or otherwise secured. Passing through this member from the cup or pump barrel is a passage D, closed at the front end by a removable plug E, and below this passage is another similar passage F, which gives access to the interior of the container A. This passage is also closed by a removable plug G at the front. These removable plugs provide means for cleaning the two passages D and F.

Intersecting the upper passage D and joining the lower one F is a vertical conduit J, formed at its intersection with the horizontal passage F with a valve seat H, which contains a vertical lift ball valve I,

and above this the vertical conduit is enlarged to receive a flanged tubular member K made hollow, and formed with another valve seat L, to receive another vertical lift ball valve M. The valve I constitutes a suction valve, the valve M the delivery valve. The upper end of the member K has a flange $\frac{1}{2}$ which rests on top of the valve-casing B, and its lower end is so made as to form a stop N for the ball valve I below, so as to prevent it rising so high as to block up the upper oil passage D when the pump barrel is filling by suction. The stop N may be serrated. The tubular member K receives at the top a flanged nipple O to which is secured a spout P projecting upward to the top of the container, and as this nipple is held concentric in member K the spout is held in line with the vertical conduit J. The upper part of this spout passes through an arm Q projecting from the side of the container A, and is bent downward at the end p , while the nipple O to which the lower end of the spout P is attached forms, by engaging the member K, a convenient centering means for the spout. The screws T lock the spout P in the proper position relative to the guide piece R when the spout P and the nipple O has been replaced after the same has been removed for cleaning. The projecting arm Q aforesaid is provided at the end with a guide piece R, to hold the device with the bent down or discharge end of the spout in proper position above the foot-step socket or other part requiring to be filled with oil, and thus avoid spilling. This guide piece embodies projecting arms with a V-groove, which abut against the outside of the part requiring to be filled with oil. The lower end of the nipple O is made to form a stop m serrated at bottom.

The casing B which is soldered to the front of the container A, is by preference curved at front, to the radius of the container; but may be made of circular or other form, or the container might have the front flattened at the place where the member B goes through. The faces at the top of the members B and K can be provided with washers S of leather or other compressible material to make good the joints. The members K and O are made to fit properly so that their flanges may easily come together, and when brought together they are

locked by screws T passed through them, and screwed into holes in the flange *b* of the casing B.

By this invention the use of springs for keeping the valves normally on their seats is entirely dispensed with, these springs being found to be a constant source of trouble. The piston V of the pump W is provided or formed with annular circumferential grooves X, which when the apparatus is in use are filled or occupied by oil, which acts as a packing.

The mode of action is as follows:—The device is so placed that the guide piece R abuts against the outside of the part requiring lubrication, and holds the spout in proper relation therewith, also with the spout a little out of or slightly dipping into it, but not enough to catch therein. I then place the thumb on the knob Y of the piston rod and depress it so that the piston is forced from the top to the bottom of its barrel W, that is, into the position shown in Fig. 1. This squirts a quantity of oil directly through the upper oil passage D, lifts the upper valve M (the lower one I being closed), and so through the spout P directly into the part requiring lubrication, in such manner that none is spilled. By releasing the knob Y the piston springs upward by a spring Z, closing the outlet valve M and drawing in by suction a fresh quantity of oil through the lower valve I and lower passage F from the container A into the pump barrel W ready for the next operation. The piston in its normal position is held in its upper position by the spring Z. Should any of the oil passages or valves get choked, all that is necessary is to remove the plugs E and G at the end of the passages, or lift out the upper nipple O with its spout P, and the tubular member K with its valve M. The parts can then be readily cleaned. The parts can be readily replaced, and the members K and O form a centering for the spout. The pump is contained wholly within the container A, and the container requires no base flange below its bottom or floor. The spout P need not necessarily project upward to the top of the container. Any suitable valves other than the ball valves may be used.

I do not confine myself to a casing B made exactly as in Figs. 1 and 2. For example, it could be made with a circular boring with the passages D and F leading thereto as in Fig. 3, from the pump barrel and container respectively, and into the said boring is screwed or otherwise secured, a plug 10 containing the vertical conduit J', which has provided therein the valve seats H and L and the valves I and M, also the lateral passages D' F' forming a continuation of the passages D and F. The mode of operation is the same as that

already described. For cleaning purposes, the plug may be removed from the boring in the chamber B by unscrewing it by means of the head J'. This arrangement comes within the scope of my invention.

I am aware that oil cans have heretofore been made with valve chambers, to which ball gravity valves have been fitted, but in that case the valve chamber was inside the can and the valves could not be readily withdrawn for cleaning or repair. Also that in sight feed lubricators each pump with its plunger, spring and non-return valves has been formed in one casting, which is secured in place by set screws, and removable plugs were provided at the ends of the horizontal valve passages in the casting. Thus any one feed pump and its parts may be withdrawn for cleaning or repair, but in that case the valve chamber was not in connection with the reservoir, but in connection with a sight or pipe feed passage and the whole casting which was outside the reservoir with its pump valves and springs were removable collectively, and the general arrangement of parts was quite different from mine.

I declare that what I claim is:—

1. In a lubricating device, a vessel, a valve casing projecting through one of the walls thereof and communicating with the interior near the bottom, a pump connected with the valve casing and located within the vessel, said casing being provided with a passage opening into the vessel, and a passage connected with the pump, each of said passages communicating with the exterior of the casing, valves for controlling the passage of liquid through the casing and means for closing the outer ends of said passages.

2. In a lubricating device, a vessel, a valve casing projecting through one wall thereof and having a passage connected with the interior of the vessel, a pump connected with the interior of the casing, a spout connected with the casing, and a guard member secured to the vessel adjacent to the end of the spout for contacting with the article to be lubricated.

3. In a lubricating device, a vessel, a casing projecting through the wall thereof, said casing being provided with a passage connecting with the interior of the vessel and with the outer portion of the casing, means for closing the outer end of the passage, a pump connected with the casing, a tubular member located within a bore in the casing and having communication with said passage, a second passage connected with the tubular member and with the barrel of the pump and a spout connected with the tubular member.

4. A lubricating device comprising a receptacle, a valve casing extending through one wall thereof, a pump within the recep-

tacle and having connection with the valve casing, said casing being provided with a bore, a tubular member located within the bore, the casing having a passage for connecting said tubular member with the interior of the vessel, a valve for controlling the passage of liquid through the casing from the receptacle into the tubular member, a nipple connected with the tubular member and a spout connected with the nipple.

5. A lubricating device comprising a receptacle, a casing projecting through one wall thereof, said casing being provided with a passage connecting with the interior of the receptacle, a second passage adjacent to the passage first mentioned, a pump with-

in the receptacle having connection with the second passage, said casing also being provided with a bore having connection with each of the aforesaid passages, valves for controlling the flow of liquid from each of the passages to the said bore, a tubular member located within the bore and a spout communicating with the tubular member.

In witness whereof, I have hereunto signed my name this 14th day of May 1910, in the presence of two subscribing witnesses.

JAS. WM. BULLOCK.

Witnesses:

G. C. DYMOND,
H. WILLIAMS.