J. N. BAGLEY AND W. M. DUTTON.

GREASE PUMP.

APPLICATION FILED JAN. 23, 1920.

1,399,240. Patented Dec. 6, 1921.

Fig. 1.

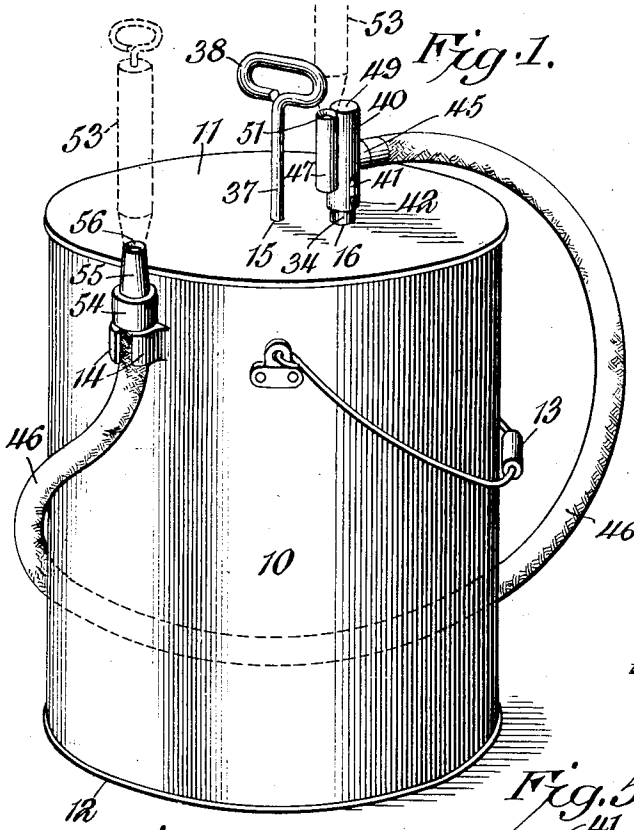


Fig. 2.

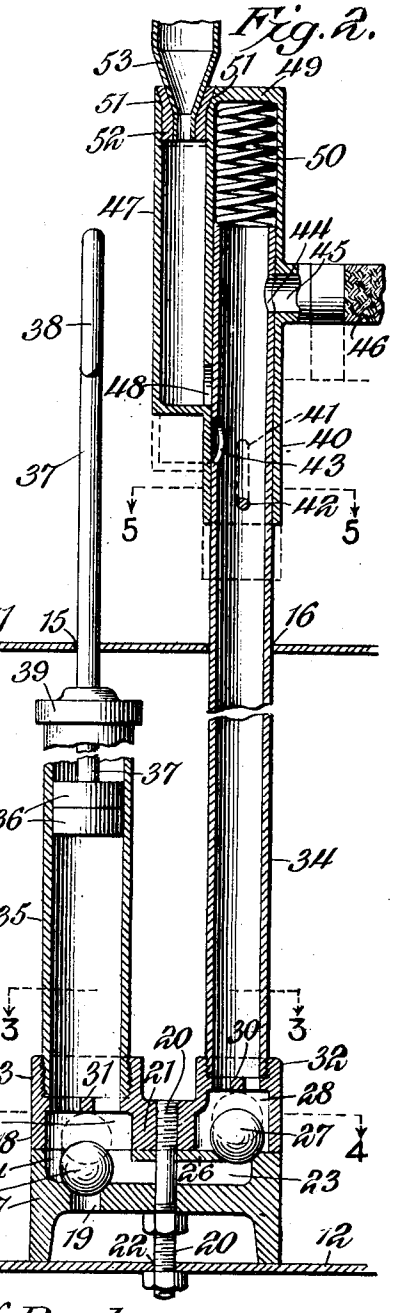


Fig. 3.

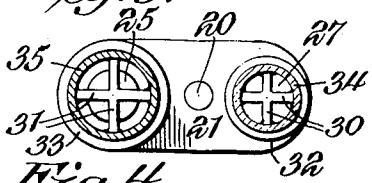


Fig. 4.

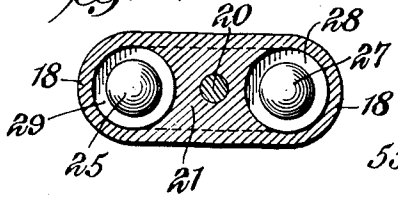
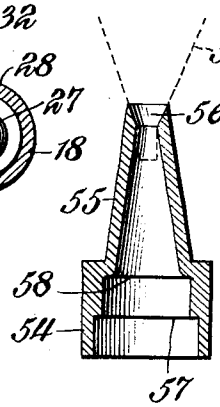


Fig. 5.



Fig. 6.



WITNESSES

Howard D. Orr

Philip E. Siggers

J. N. Bagley and W. M. Dutton, INVENTORS,

BY E. G. Siggers.

ATTORNEY

UNITED STATES PATENT OFFICE.

JOHN N. BAGLEY AND WILLIAM M. DUTTON, OF HASTINGS, NEBRASKA.

GREASE-PUMP.

1,399,240. Specification of Letters Patent. Patented Dec. 6, 1921.

Application filed January 23, 1920. Serial No. 353,523.

To all whom it may concern:

Be it known that we, JOHN N. BAGLEY and WILLIAM M. DUTTON, citizens of the United States, residing at Hastings, in the county of Adams and State of Nebraska, have invented a new and useful Grease-Pump, of which the following is a specification.

This invention relates to grease pumps of the type especially adapted to dispense hard greases.

An object of the invention is to provide a grease pump which is especially adapted to fill grease guns without waste and without getting grease on the outside of the gun, which would soil the hands and clothing.

Another object is to provide a grease pump which is adapted to be placed in grease containers as they come on the market and to dispense the lubricant from said containers.

The invention comprises generally a force pump, a discharge pipe leading from the force pump, and a valve mounted in the discharge pipe for directing the grease either through a hose or through a discharge chamber. The hose is provided with a nozzle especially adapted to receive the nozzle end of a grease gun, whereby grease may be forced into the grease gun, while the discharge chamber likewise has a nozzle for the same purpose.

The invention will be best understood from a consideration of the following detailed description taken in connection with the accompanying drawing forming part of this specification, with the understanding, however, that the invention is not confined to any strict conformity with the showing of the drawing, but may be changed and modified so long as such changes and modifications mark no material departure from the salient features of the invention as expressed in the appended claims.

In the drawing,

Figure 1 is a perspective view of an embodiment of the invention as it appears when mounted upon a grease can;

Fig. 2 is a longitudinal sectional view of the grease pump proper, showing its position within the container and indicating in dotted lines alternate positions of the movable parts;

Fig. 3 is a cross section of the line 3—3 of Fig. 2;

Fig. 4 is a cross section on the line 4—4 of Fig. 2;

Fig. 5 is a cross section on the line 5—5 of Fig. 2;

Fig. 6 is a longitudinal section of the nozzle provided on the end of the hose showing the position of a grease gun in dotted lines.

10 indicates a grease can or container of the type found on the market for holding hard greases, which can is provided with a top or cover 11, a bottom 12, a handle 13, and a bracket 14. The latter is rigidly mounted upon the can.

The top 11 of the can or container is provided with perforations 15 and 16 for a purpose to be described. Within the container the grease pump is placed. The grease pump includes a base composed of a lower casting 17 forming the bottom part thereof and an upper casting 18 providing valve chambers in connection with the lower casting. The lower casting has a bore 19 on its underside, which bore acts as a passageway for the admittance of grease into the pump. A stud 20 is passed through the casting 17 and engages with a solid portion 21 of the casting 18, thus holding the castings together. The lower end of the stud is passed through a perforation 22 in the bottom 12 of the container, and nuts are provided to hold the same firmly upon said bottom.

The base is also provided with a chamber 23 having a bridging top wall or partition 26 and merging into a recess 24. The recess 24 forms a portion of a valve chamber for a ball valve 25. The casting 18 has a recess 29 matching with the recess 24 to form the complete valve chamber in which the ball valve 25 has considerable freedom of movement. A cross bar 31, or the equivalent, is provided to prevent the ball valve 25 from rising too far off its seat. As shown in Fig. 2, the ball valve 25 closes the bore 19.

The bridging wall or partition 26 has a valve seat to receive a ball valve 27 which is movable within a valve chamber 28 provided in the casting 18. A cross bar 30 similar to the cross bar 31 prevents rising of the ball valve 27 too far off its seat. The upper part of the casting 18 has a boss 32 coaxial with the valve chamber 28, and a boss 33 coaxial with the valve chamber 29. Each boss 32, 33 is internally threaded to receive the screw-threaded ends of the pipe 34 and pump barrel or cylinder 35, respectively.

The barrel 35 receives within it the pump plunger 36 secured on the end of a pump rod 37. The rod 37 passes through the perforation 15, above referred to, and its upper end is fashioned into a handle 38, which at all times projects above the top 11 of the grease container. The upper end of the pump barrel or cylinder is closed by a cap 39.

The pipe 34 leads through the top 11 by way of the perforation 16 and has at its upper end a close fitting slidable sleeve 40 which may be termed a sleeve-valve, as it performs the function of a valve. The sleeve-valve is provided with elongated slots 41 near its lower end into which the ends of a pin 42 are fitted, the pin 42 being made fast to the discharge pipe 34. By this arrangement the sleeve valve will have a limited sliding movement on the end of the discharge pipe for a distance equal to the length of the slots 41.

The discharge pipe has a port 43 in its wall, and a second port 44 much nearer the end of the pipe than the first-mentioned port and set in a diametrically opposite portion of the pipe. The sleeve valve is provided with an integral pipe section 45, to which a metallic hose 46 is secured. A cylindrical discharge chamber 47 is also formed integrally with the sleeve-valve, and has a port 48 at its lower end, the pipe section 45 and port 48 being spaced apart a longitudinal distance which is less than the longitudinal spacing of the ports 43 and 44. The port 48 is adapted to match with the port 43, while the pipe section 45 matches with the port 44. The upper end of the sleeve-valve is closed as at 49, and a coiled spring 50 is interposed between the closed end of the sleeve-valve and the upper end of the discharge pipe 34, being seated between these parts. The action of the spring 50 will be to normally hold the slidable sleeve-valve in the position shown in full lines in Fig. 2, with the pipe section 45 in alinement with the port 44 and the ports 43 and 48 closed.

The lower end of the discharge chamber 47 is closed, but its upper end is open and is internally beveled, as indicated at 51, to form a seat to receive a nozzle piece 52. The nozzle piece is removably secured within the discharge chamber, and has a central passageway of appropriate shape to receive and seat the nozzle end of a grease gun 53.

The outer end of the hose 46 has secured thereto in any desirable way a nozzle comprising a cylindrical portion 54, which is counterbored to provide annular stepped portions 57 and 58, a tapering or conical portion 55 and a beveled end 56 adapted to receive the nozzle end of the grease gun 53.

The operation of the grease pump is as follows:—With the plunger in its lowermost position, an upstroke will be taken by means of the handle 38, whereupon the ball valve 25 will lift off its seat, admitting grease into the chamber 23, 24, the ball valve 27 being held firmly on its seat. Then a down stroke is taken, whereupon the valve 25 will close and the valve 27 will lift, admitting the hard grease which is in the chamber 23 into the pipe 34. A sufficient number of strokes will fill the pipe 34 up to a point where the grease reaches the pipe section 45, whereupon it will flow out through the hose and to the nozzle at the end thereof. The grease may be dispensed from this nozzle to various containers or parts of machines, as desired; or, as indicated in Fig. 1, a grease gun may be set with its nozzle fitting into the hose nozzle and filled by manipulating the pump. During this filling, the grease gun fits nicely upon the discharge end of the nozzle and no grease can flow between the grease gun and said end, thereby eliminating waste of grease and preventing the soiling of the hands or clothing. During this process, the cylindrical portion 54 of the hose nozzle will be held upon the bracket 14 as Fig. 1 depicts, the bracket serving to support the nozzle while the grease gun is in position.

An easier way of filling the grease gun will be to place its nozzle within the discharge end of the cylindrical discharge chamber 47 attached to the sleeve-valve, as Fig. 2 shows. When this is done, and the sleeve-valve moved to its lowermost position, as indicated in the dotted lines, the grease will be cut off from passing into the hose and will pass through the alined ports 43, 48 into the discharge chamber 47 and up into the grease gun. When the operator pushes down on the upper end of the sleeve-valve against the expansive force of the spring 50, it is clear that the flow of grease through the hose will be cut off and will be diverted into the discharge chamber. The sleeve is thus seen to function as a two-way valve.

Instead of using the handle for the pump which the drawing discloses, a rack and pinion may be employed, in which arrangement the pinion will be turned by a crank and the rack will reciprocate to raise and lower the plunger of the pump. Such a construction is employed universally in gasolene and lubricating oil dispensing stations and an illustration thereof is deemed unnecessary.

It will be clear also that any type of valve may be used instead of the ball valve disclosed, and that instead of using metallic hose, rubber or fabric hose might be employed. Moreover, the pump may be used to dispense soft greases or even oils, instead of hard grease. Various other modifications

such as these we feel free to resort to, if they seem desirable.

What is claimed is:—

1. In a lubricant pump, a discharge pipe having ports in its wall near the end remote from the pump, said end being elevated relative to the pump, a sleeve slidably mounted on the pipe at said end, said sleeve in all its positions opening one or both of said ports.

2. In a lubricant pump, a discharge pipe having ports in its wall near the end remote from the pump, a sleeve slidably mounted on the pipe at said end, a spring for normally forcing the sleeve into a position in which one of the ports is uncovered for discharge of the lubricant, while the remaining port is closed, said sleeve in another position being adapted to partially open both ports.

3. In a lubricant pump, a discharge pipe leading from the pump, spaced ports provided in the wall of the pipe short of its outer end, a sleeve mounted on that end of the pipe, said sleeve having ports corresponding in size and number with the ports of the pipe and spaced apart a distance unequal to the longitudinal spacing of the pipe ports.

4. In a lubricant pump, a discharge pipe leading from the pump, spaced ports provided in the wall of the pipe short of its outer end, a sleeve mounted on that end of the pipe, said sleeve having a discharge chamber, a port leading from the sleeve to the discharge chamber, a second port provided on the sleeve, the ports in the sleeve and pipe being so spaced that one of the sleeve ports matches with one of the pipe ports when the other pair of ports is closed.

5. In a lubricant pump, a discharge pipe leading from the pump, spaced ports provided in the wall of the pipe short of its outer end, a sleeve mounted on that end of the pipe, said sleeve having a discharge chamber, said discharge chamber having a nozzle, a port leading from the sleeve to the discharge chamber, a second port provided on the sleeve, the ports of the sleeve and of the pipe being so spaced that one of the sleeve ports registers with one of the pipe ports when the other pair of ports is closed.

6. In a lubricant pump, a discharge pipe leading from the pump, a two-way valve mounted on said pipe, a discharge chamber connected with said valve and having a mouth, and a nozzle member seated in the mouth of the discharge chamber.

7. In a lubricant pump, a discharge pipe leading from the pump, a two-way valve mounted on said pipe, a discharge chamber connected with said valve and having a mouth, and a nozzle member seated in the mouth of the discharge chamber, said nozzle being so shaped as to receive and seat the nozzles of grease guns, whereby the latter may be filled from the pipe through said chamber without loss of lubricant.

8. In a lubricant pump, a discharge pipe leading from the pump, a two-way sleeve valve mounted on said pipe, a discharge chamber connected with the said sleeve valve and having a mouth, a hose connected with said sleeve valve, and means for maintaining said sleeve valve in such position that the hose is normally open to the pipe, said means permitting movement of the sleeve valve to allow discharge of the lubricant through said mouth after cutting off the passage of the lubricant to said hose.

9. In a lubricant pump, a discharge pipe leading from the pump, a two-way valve mounted on said pipe, a discharge chamber connected with said valve and having a mouth, a hose connected with said valve, and a spring for maintaining the valve in such position that the hose is normally open to the pipe, said spring permitting movement of the valve to allow discharge of the lubricant through said mouth and to cut off the flow of lubricant to said hose.

10. In a lubricant pump, a discharge pipe leading from the pump, a two-way valve mounted on said pipe, a discharge chamber connected with said valve having a mouth, a hose connected with the valve, and a spring mounted between the end of the discharge pipe and the end of the valve for maintaining the valve in such position that the hose is normally open to the pipe, said spring permitting movement of the valve to allow discharge of the lubricant selectively through the hose or through the discharge chamber.

11. In a lubricant pump, a discharge pipe leading from the pump, a two-way valve mounted on said pipe, a discharge chamber directly connected with said valve and having a mouth, a hose connected to said valve, a nozzle provided at the outer end of said hose, said nozzle being shaped to receive and seat the nozzle end of a grease gun, whereby lubricant may be forced without waste into the same.

12. In a lubricant pump, a discharge pipe provided with spaced openings, a sleeve valve movably mounted upon the discharge end of said pipe, a hose secured to said sleeve valve, a discharge chamber also secured upon the sleeve, spaced openings in the sleeve valve adapted to alternately register with the openings in the pipe and also simultaneously communicate with said openings in the pipe, said valve permitting the unrestricted flow of lubricant either through the hose or through the discharge chamber and the restricted flow of lubricant through both simultaneously.

13. In a lubricant pump, a discharge pipe leading from the pump, a two-way valve mounted on said pipe, a discharge chamber connected with said valve and having a

mouth, a nozzle provided at the mouth of the discharge chamber, a hose leading from the valve, and a nozzle provided in the outer end of the hose, each of said nozzles being so shaped as to receive and seat the nozzle end of a grease gun, whereby lubricant may be forced into the same without waste.

14. In a lubricant pump, a discharge pipe leading from the pump, a two-way valve mounted on said pipe, a discharge chamber connected with said valve and having a mouth, a nozzle member seated in the mouth of the discharge chamber, a hose attached to and leading from the valve, a nozzle provided in the outer end of the hose, said nozzles being so shaped as to receive and seat the nozzle end of a grease gun whereby lubricant may be forced into the same without waste, means for maintaining the valve in such position that the hose is normally open to the pipe, said means permitting movement of the valve to allow discharge of the lubricant through the discharge chamber and to cut off the flow of lubricant to the hose.

15. A lubricant dispenser including a container, a pump within the container, a discharge pipe having an open end and leading from the pump outside the container, ports provided near the end of said pipe outside the container, and means mounted on said pipe for closing either one of the ports while maintaining the other open, said means also closing the pipe end.

16. A lubricant dispenser comprising a container having a cover, a pump within the container, a discharge pipe leading from the pump up through said cover and having its end extended above the cover, ports provided near the outer end of said pipe outside the container, and a sleeve valve slidably and non-rotatably mounted on the pipe end for closing either one of the ports while maintaining the other open.

17. A lubricant dispenser including a container having a top and bottom, a pump within the container, a discharge pipe leading up from the pump through said top and having its outer end extended above the top, ports provided near the outer end of said pipe outside the container, a sleeve-valve slidably mounted on the pipe above the top for closing either of the ports while maintaining the other open, a hose secured to and leading off from the sleeve-valve at one side thereof, and a discharge chamber leading off from the sleeve-valve at the other side thereof.

18. A lubricant dispenser including a container having a top and bottom, a pump set within the container, a discharge pipe leading up from the pump through said top, and extended above the same, ports provided near the outer end of said pipe outside the container, a sleeve-valve slidable on the pipe above the top for closing one of the ports while maintaining the other open, a hose secured to the sleeve-valve, and a discharge chamber also secured to the sleeve-valve, said hose receiving lubricant from the pump when the discharge chamber has its supply cut off and the discharge chamber receiving lubricant from the pump when the hose has its supply cut off.

19. In a lubricant dispenser, a discharge pipe, a port near the end of said pipe, a sleeve valve mounted on the pipe end and slidable thereon to open or close said port, a discharge chamber integral with said sleeve valve and extending alongside the latter and having a port adapted to register with the port in the pipe, said discharge chamber having its longitudinal axis parallel with the corresponding axis of the sleeve valve and having its mouth in the plane of that end of the sleeve valve pipe which is beyond the pipe end.

In testimony that we claim the foregoing as our own, we have hereto affixed our signatures in the presence of two witnesses.

JOHN N. BAGLEY.
WILLIAM M. DUTTON.

Witnesses:
GEORGE R. DUTTON,
JOHN W. YATES.