May 13, 1924. 1,493,898

J. C. ROSS

DISPENSING APPARATUS

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Fig. 4.

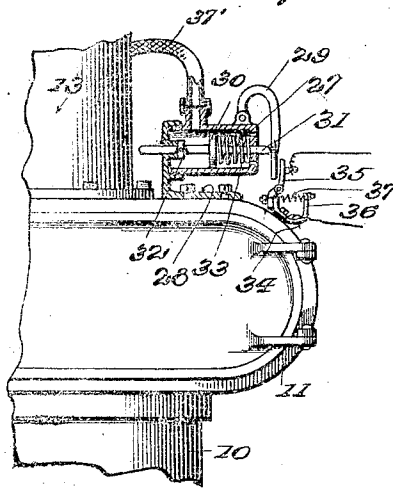
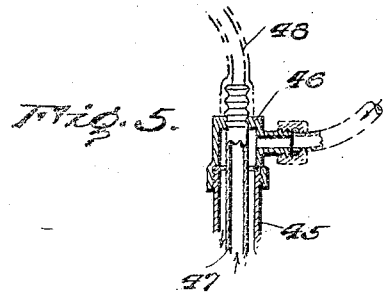


Fig. 1.

Fig. 5.



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Fig. 2.

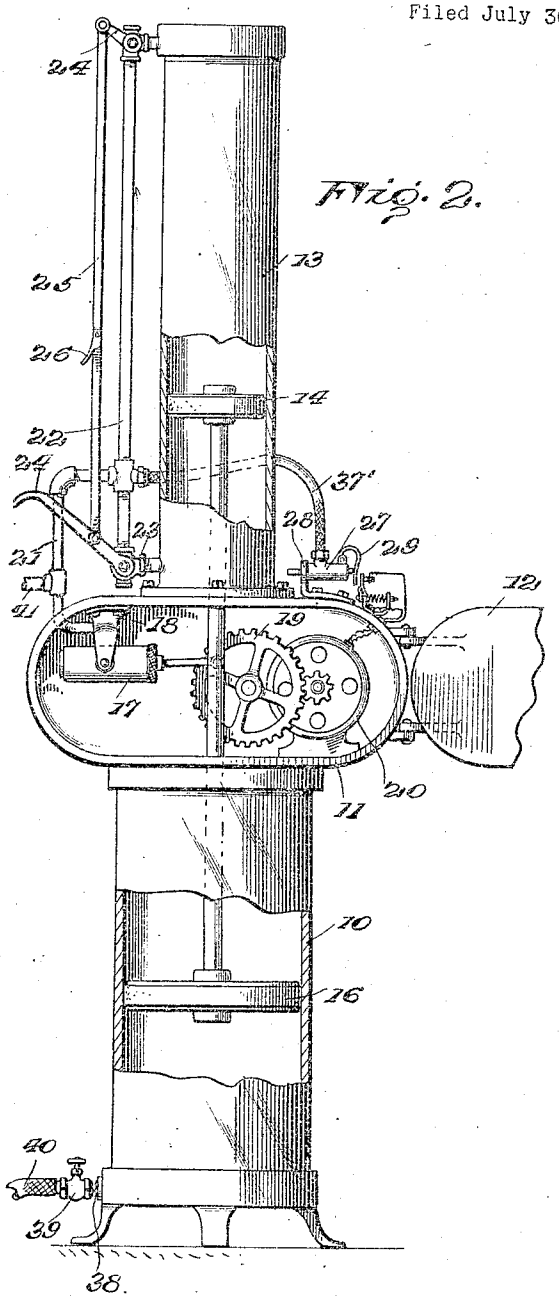
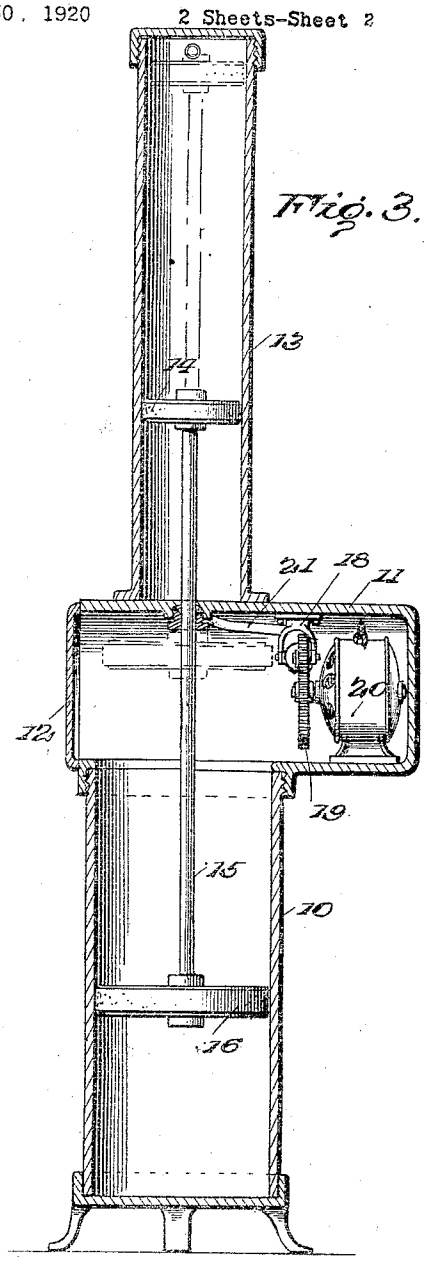


Fig. 3.



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Patented May 13, 1924. 1,493,898

UNITED STATES PATENT OFFICE.

JOHN C. ROSS, OF AKRON, OHIO.

DISPENSING APPARATUS.

Application filed July 30, 1920. Serial No. 400,027.

To all whom it may concern:

Be it known that I, JOHN C. ROSS, a citizen of the United States, residing at Akron, in the county of Summit and State of Ohio, have invented certain new and useful Improvements in Dispensing Apparatus, of which the following is a specification.

This invention relates to an improved lubricant dispensing apparatus and has as one of its principal objects to provide a device for discharging both lubricating oil and hard grease.

A still further object of the invention in this connection is to provide an apparatus wherein, when desired, a continuous discharge flow of lubricating oil may be had.

And the invention has as a still further object to provide an apparatus which, in being capable of dispensing either hard grease or lubricating oil, will be particularly adapted for use in lubricating the journals of mine car wheels or in other situations where the use of both hard grease and fluid lubricant is found necessary.

Other and incidental objects will appear hereinafter.

In the drawings:

Figure 1 is a fragmentary perspective view of my improved apparatus.

Figure 2 is a fragmentary elevation of the device, parts being broken away and shown in section.

Figure 3 is a vertical sectional view taken at substantially right angles to Figures 2.

Figure 4 is a fragmentary section showing the circuit breaker employed in connection with the air pump of the device.

Figure 5 is a detail sectional view of the intake and discharge fitting employed in connection with the lubricating oil container of the device.

In carrying the invention into effect, I employ a cylinder 10 which provides a hard grease container. This cylinder is supported in vertical position by a suitable stand and mounted upon the upper end of said cylinder is a pump casing 11 normally closed by a door 12. Upstanding from the pump casing in axial alinement with the cylinder 10 is an air cylinder 13 and reciprocable in this cylinder is a piston 14 having a piston rod 15 extending through the pump casing and carrying at its lower end a piston 16 reciprocable within the cylinder 10. Arranged within the pump casing is an air pump 17 mounted to oscillate upon a yoke 18 and, as will be observed upon reference to Figure 2 of the drawings, the pump piston is connected to a gear wheel 19 preferably driven by an electric motor 20 of suitable type. Thus, when the gear wheel 19 is turned by the motor 20, the pump piston will be reciprocated. Communicating through the yoke 18 with the pump cylinder is a pipe 21 connected to a pipe 22 entering opposite ends of the cylinder 13 and interposed in this latter pipe are three way valves 23. To the stems of said valves are connected levers 24, the lowermost of which is elongated to provide a handle and coupling said levers to rock in unison is a connecting rod 25. This rod is, as shown in detail in Figure 9, formed of pivotally connected sections, the uppermost of which is channeled to receive the adjacent end portion of the lower section of the rod frictionally coacting therewith for holding the rod sections in alinement, and is provided with a laterally projecting thumb lug 26. As will be clear, this lug may be grasped for swinging the meeting ends of the rod sections laterally outward and thus breaking the rod. Associated with the motor 20 is a circuit breaker shown in detail in Figure 4 of the drawings. This circuit breaker includes a casing 27 which is in communication with the pipe 22 through a pipe 37′ and is supported by a bracket 28 secured to the casing 11. Pivoted upon the casing 27 is an arm 29 extending downwardly in front of the outer end of said casing and slidable within the casing is a piston 30 having a piston rod 31 extending freely through the outer end wall of the casing to confront the free end of the arm 29. The piston rod is equipped with a shoulder 32 for limiting the piston in its inward movement and bearing between the piston and the outer end of the casing is a helical spring 33 surrounding the piston rod and normally acting to hold the piston retracted. Beneath the free end of the arm 29 is mounted upon the pump casing a bracket 34 insulated from the casing and forming a fixed switch contact. Upon said bracket is pivoted a movable switch contact 35 insulated from the fixed contact and adapted to coact therewith at its lower end while the upper end of the movable contact extends in front of the lower end of the arm 29. Projecting from the bracket 34 is an arm 36 and extending between this arm and

the lower end portion of the contact 35 is a spring 37 normally holding the switch closed.

A feed wire is connected to the movable contact 35 and another wire is connected to the fixed contact to lead to the motor. Thus, current will normally be supplied through the switch to the motor 20. However, as soon as the air pressure in the pipe 22 becomes sufficient to overcome the spring 33 of the circuit breaker, the piston 30 will be moved outwardly when the piston rod 31 will press the free end of the arm 29 against the upper end portion of the pivoted contact 35 of the switch. The switch will thus be opened and will be held open until the pressure in the cylinder falls when the spring 33 will retract the piston so that the pivoted contact 35 of the switch will be freed and again closed by the spring 37. When this occurs, the motor will, of course, be again started.

Leading from the lower end portion of the cylinder 10 is a discharge pipe 38 in which is preferably interposed a valve 39 and connected to said pipe is a discharge hose 40. Thus, as will now be readily understood in view of the preceding description, the valve levers 24 may be swung upwardly for admitting air to the cylinder 13 above the piston 14 and relieving the cylinder below the piston, when this piston will be driven downwardly within the cylinder to, in turn, depress the piston 16 for discharging grease through the hose 40 from the cylinder 10. On the other hand, by swinging the valve levers downwardly, the piston 16 may be elevated when a further supply of grease may be introduced into the grease cylinder, it being observed in this connection that when the piston 16 is at the top of its stroke, grease may be introduced into the cylinder 10 through the door opening of the pump casing 11.

Extending from the pipe 21 is a pipe 41 in which is interposed a valve 42 and connected to said pipe is a hose 43. The hose is of a length to extend to a suitably located lubricating oil container 44. Extending downwardly into this container, as particularly shown in Figure 5, is a pipe 45 upon the upper end of which is threaded a T-coupling 46. The hose 43 is, as will be noted, connected to this coupling and threaded through the upper end of the coupling is a lubricant discharge pipe 47 of a diameter somewhat less than the pipe 45 and extending downwardly within said pipe into the container. To the upper end of the pipe 47 is connected a discharge hose 48. As will be clear, the valve 42 may be opened for admitting air through the hose 43 into the container 44. Air pressure in the container will then serve to expel the lubricating oil within the container through the pipe 47 and hose 48.

Having thus described the invention, what is claimed as new is:

1. In a dispensing apparatus, the combination of alined cylinders, a casing connecting said cylinders, pistons in said cylinders coupled with each other, one of the cylinders opening into the casing whereby such cylinder may be filled through the casing, and means normally closing the casing.

2. In a dispensing apparatus, the combination of alined air and supply cylinders, a casing connecting said cylinders, pistons in said cylinders coupled with each other, the supply cylinder opening into the casing whereby such cylinder may be filled through the casing, a pump in said casing for supplying air to the air cylinder, and means normally closing the casing.

In testimony whereof I affix my signature.

JOHN C. ROSS. [L. S.]