

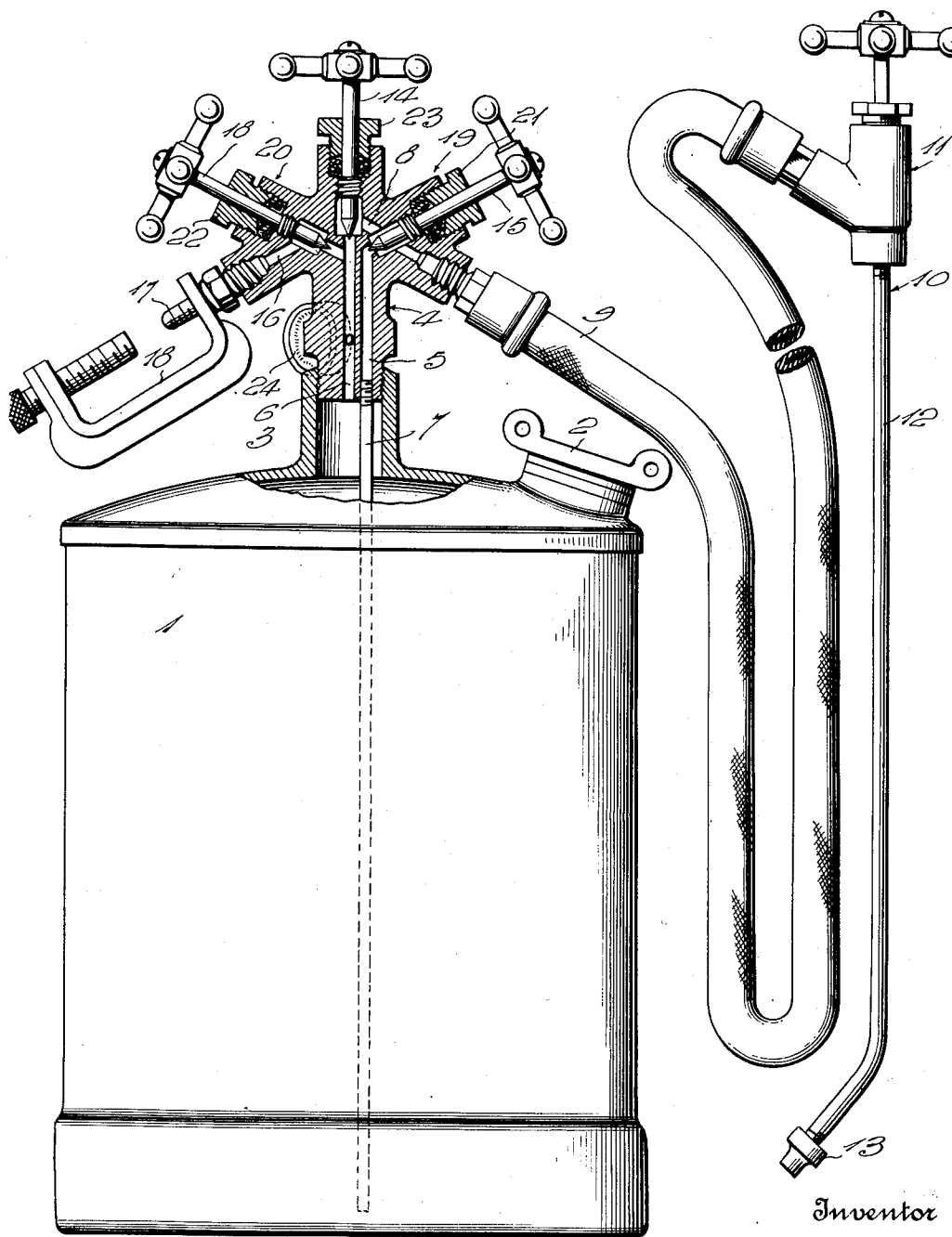
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LIQUID SPRAYING DEVICE

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UNITED STATES PATENT OFFICE

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LIQUID-SPRAYING DEVICE

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The invention aims to provide a new and improved device which may be used for spraying liquid under pressure, the primary uses of the device being for spraying lubricating oil between the leaves of vehicle springs and for spraying gasoline, benzine, kerosene or other cleaning liquid on any surface from which grease and the like is to be removed, for instance, for thoroughly cleaning automobile motors, transmission casings and the like.

It is one object of the invention to provide a device of the class set forth which although being rather simple and inexpensive, will be highly efficient, very durable and in every way desirable.

A further aim is to provide a novel relation of valves and ports whereby any desired percentage of gas (preferably compressed air) may be mixed with the outgoing liquid (either oil or cleaning liquid) and whereby the discharge of liquid may be entirely cut off if desired, permitting only compressed gas to discharge, and if desired permitting the discharge of gas to be cut off so that only the liquid will be discharged.

The invention embodies a tank to contain a quantity of liquid, the upper portion of this tank being adapted to receive air or other gas under pressure for the purpose of effecting discharge of the liquid from the tank, and it is a further aim of my invention to provide a novel relation of parts whereby the usual chuck of a tire inflation hose may be clamped upon an air inlet nipple of the tank for the purpose of supplying the necessary fluid pressure to the tank. In some instances, after pressure to the desired degree has been obtained in the tank, the inflation hose may be disconnected from the nipple and in other instances requiring almost constant use of the air pressure from the inflation hose, said hose may remain coupled to the nipple.

With the foregoing in view, the invention resides in the novel subject matter hereinafter described and claimed, description being accomplished by reference to the accompanying drawing which illustrates a side elevation partly broken away and in section.

In the drawing above briefly described, the

numeral 1 denotes a fluid-tight tank having a filling cap 2 at any desired point for partially filling it with liquid. The top of this tank is provided with an upstanding neck 3 into which the lower end of a vertically elongated valve body 4 is threaded. A liquid outlet port 5 and a gas outlet port 6 are formed longitudinally in the body 4 and both open through the lower end thereof, said port 5 being in communication with the upper end of a liquid discharge tube 7 which leads from the lower portion of the tank 1. The upper ends of both ports 5-6 are in communication with a main discharge port 8 from which a discharge hose 9 leads to a liquid spraying gun 10, said gun preferably consisting of a control valve 11, a discharge tube 12 extending from said valve, and a spray head 13 on the free end of said tube. This spray head is removable and it will be understood that a number of such heads designed for different purposes, may be furnished with the device, the proper head being applied to the tube 12, according to the work to be done.

A valve 14 is provided to control the discharge of gas from the port 6 into the main discharge port 8, and another valve 15 is employed to control discharge of liquid from port 5 into said main discharge port 8. Thus, any desired mixture of gas and liquid may be discharged through the port 8 and the hose 9 to the gun 10, or the discharge of gas may be prevented while permitting only liquid to discharge, or the discharge of liquid may be cut off permitting only the escape of gas.

A gas inlet port 16 leads to the gas outlet port 6 from an appropriate nipple 17, and a valve 18 is provided for said port 16. The usual chuck of a tire inflation hose may be engaged with the nipple 17 for supplying pressure to the upper portion of the tank 1, and I provide an appropriate clamp 18 suitably attached to the nipple 17 or other desired part of the device, for the purpose of clamping the aforesaid chuck upon the nipple whenever advisable.

In the preferred form of construction, the body 4 is provided with two lateral bosses 19 and 20, the main discharge port 8 being formed transversely through the boss 19

while the gas inlet port 16 is formed transversely through the boss 20. The valve 15 is threaded into a portion of the boss 19 and valve 18 is similarly threaded in a portion of the boss 20, suitable stuffing boxes 21 and 22 being provided for these two valves. The valve 14 is threaded into the upper end of the body 4 and is provided with a stuffing box 23. The three valves 14—15—18 are of the needle type in the preferred construction, with their hand wheels readily accessible.

Any desired portion of the device may carry a pressure gauge whereby the pressure in the tank may be readily determined. In the present showing, a gauge of this character is denoted at 24 in communication with the passage 6.

By employing the novel construction shown and described, any desired mixture of compressed gas and liquid may be discharged from the gun 10 or either gas or liquid may be discharged without the other, as the circumstances may require. Not only can the device be effectively used for spraying lubricating oil, for instance, between the leaves of vehicle springs, but it is effectively usable also for forcibly discharging gasoline or other cleaning liquid for use in removing grease or other accumulations from motors and other machine parts.

On account of the existing advantages for the details disclosed, they are preferably followed. However, within the scope of the invention as claimed, numerous variations may be made.

I claim:—

1. In a liquid spraying device, a gas pressure and liquid-containing tank, a valve body projecting therefrom and provided with two laterally projecting bosses, said body having both gas and liquid conducting ports formed longitudinally therein, a main transverse discharge passage leading from said gas and liquid conducting ports through one of said bosses, and a transverse gas inlet port leading through the other boss to said gas conducting port, a liquid conducting tube leading to said liquid conducting port from the lower portion of the tank, a valve threaded in the outer end of said body for controlling discharge of gas from said gas conducting port into said main discharge port, a valve threaded in said one boss for controlling discharge of liquid from said liquid conducting port into said main discharge port, and a valve for said gas inlet port threaded in said other boss.

2. In a liquid spraying device, a vertically elongated valve body provided with two laterally projecting bosses near its upper end, and at its lower end having means for connecting it with a tank, a stuffing box having a threaded connection with the upper end of said body, two upwardly diverging stuffing boxes having threaded connections with the upper portions of said bosses, two downward-

ly diverging nipples carried by the lower portions of said bosses for engagement with an inflation hose and a discharge hose respectively, and three upwardly diverging needle valves passing through the aforesaid stuffing boxes respectively and threaded into said body; said body having both gas and liquid conducting ports from its lower end to points near its upper end, said gas and liquid conducting ports having seats at their upper end co-operable with the central needle valve and one of the other needle valves respectively; one of said bosses being formed with an inclined discharge port leading to said discharge hose nipple and positioned for communication with said gas and liquid conducting ports upon opening of said central needle valve and said one of the other needle valves; the other boss being provided with a gas inlet port from said inflation hose nipple to said gas conducting port controlled by the third one of said needle valves.

In testimony whereof I have hereunto affixed my signature.

ARNO A. EWALD.