C. W. SPICER.

CLEANING TANK.

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1,292,407.

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Fig. 1.

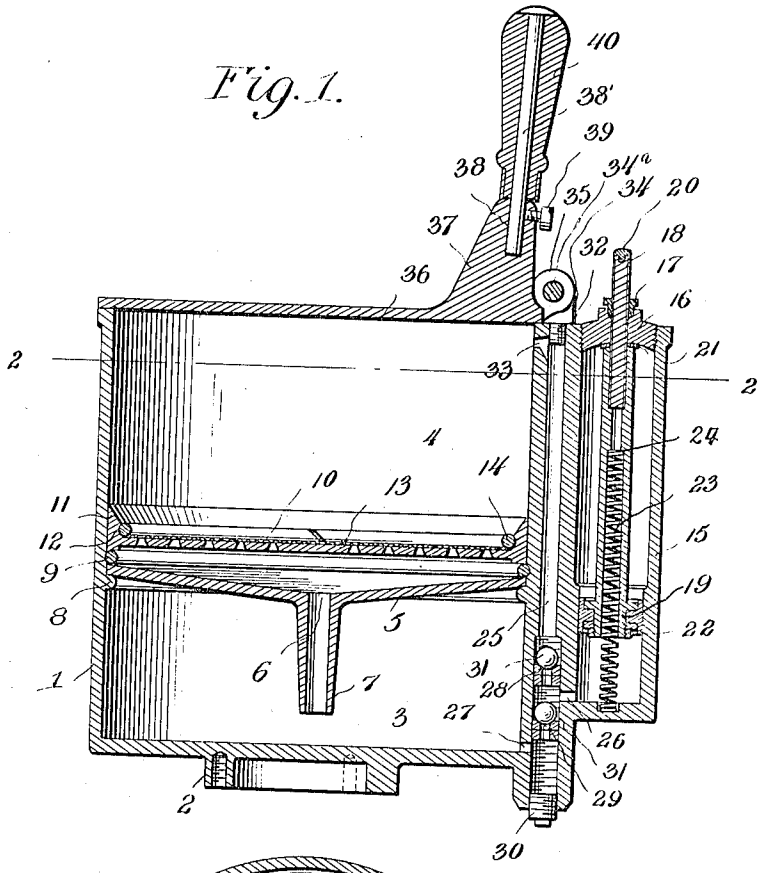
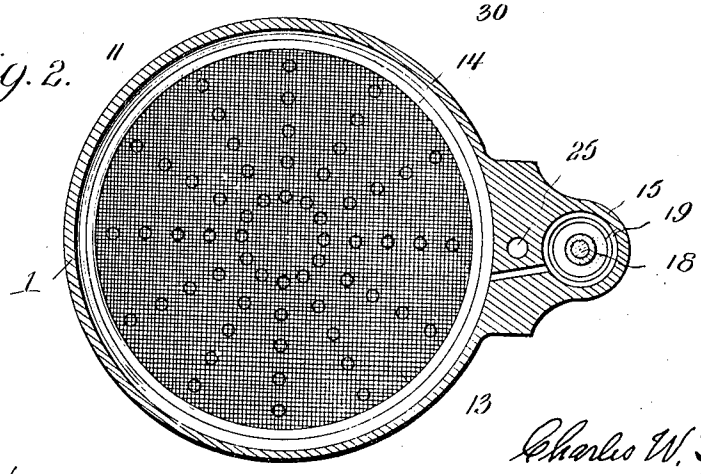


Fig. 2.



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CLEANING-TANK.

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To all whom it may concern:

Be it known that I, CHARLES W. SPICER, a citizen of the United States, residing at Washington, in the District of Columbia, have invented certain new and useful Improvements in Cleaning-Tanks, of which the following is a specification.

This invention relates to cleaning tanks and more particularly to tanks in which gasolene, alcohol or the like is used to clean machine parts, tools and like articles.

One of the principal objects of the invention is to provide a simple and efficient device in which tools, machine parts and like articles may be cleaned by the application of a cleaning fluid in a rapid and thorough manner and without danger to the operator or building.

Another object of the invention is to provide a device of this character in which the lid is so associated with the pump that when opened it will serve to actuate the pump and the pump will start the closing of the lid or cover when the latter is released.

Another essential feature of the device is the novel manner of operating the pump and projecting the cleaning fluid onto the work to be cleaned.

Further objects of the invention will appear as the following description is read in connection with the accompanying drawing, which forms a part of this application, and in which:—

Figure 1 is a vertical section taken through the tank, the support being omitted.

Fig. 2 is a horizontal section taken on the line 2—2 of Fig. 1.

In the specific embodiment of the invention as illustrated herein, 1 shows a tank, on the bottom of which is formed a suitable hub 2 for the convenient attachment of a supporting standard or wall bracket, not shown, and which may be of any preferred type best adapted for the purpose.

The tank is divided into two compartments 3 and 4, which will hereinafter be termed reservoir and cleaning compartments, respectively, by a partition 5, inclined toward a central aperture 6 from its periphery. Depending from the partition and surrounding the aperture 6 is a tube 7 which forms a fluid seal and minimizes the evaporation of the fluid in the compartment 3. This partition rests on an annular inwardly projecting rib 8 and is held firmly in position by a split spring ring 9 which is seated in a groove formed in the tank. Loosely resting on the ring 9 and fitting the tank is a foraminous partition 10 having an inwardly inclined annular flange 11 terminating in an annular groove 12, and seated on the partition 10 is a strainer gauze 13 which is held in position by a split spring ring 14, fitted in the groove 12.

Formed exteriorly of the tank and integrally therewith is a pump cylinder 15 whose interior diameter is somewhat enlarged adjacent its upper end to permit the convenient insertion and removal of the piston and its associated parts. Threaded into the upper end of the cylinder is a plug 16, carrying a packing gland 17 through which the solid stem 18 of the piston rod 19 works. This piston rod 19 is hollow and receives the stem 18 in its upper end as shown, the stem being preferably covered with brass and having a hardened steel cap 20 at its upper end to receive the thrust of the pump operating device. The upper end of the piston rod 19 forms an abutment or shoulder which engages the plug 16 and limits the upward movement of the piston rod, a cushion washer 21 resting upon the shoulder to take up the impact.

The piston rod 19 is provided with a piston head 22 at its lower end which fits the lower portion of the cylinder and is normally raised to its limit of movement by a spiral spring 23 which is seated within the piston rod and has one end abutting a shoulder 24 formed therein. The other end of the spring rests in a socket formed in the bottom of the cylinder.

The pump cylinder communicates with a vertical discharge channel 25 through a port 26 and this channel in turn connects with the reservoir compartment 3 through a port 27. This channel 25 is formed between the pump cylinder and the tank proper and is somewhat enlarged at its lower ends to receive the valve seat members 28 and 29, which are threaded therein through a plug hole at the lower end of the channel, the plug hole providing means whereby any sediment which might collect in the reservoir may be washed out, and being normally closed by a plug 30.

The valve seat members 28 and 29 are arranged above and below the port 26 and each carries a bronze ball valve 31 so as to prevent fluid in the pump chamber or channel 25 from running back into the pump or reservoir. The upper end of the channel 25 is

closed by a plug 32 and immediately below the same the adjacent wall of the tank is formed with a discharge port 33, adapted to direct the fluid diagonally across the cleaning chamber 4.

Projecting vertically from the tank body on opposite sides of the plug 32 are a pair of ears 34 having a shaft 34ª secured therein upon which are pivotally mounted the knuckles 35 of the lid or cover 36. This lid or cover is arranged to fit the upper edge of the tank closely so as to prevent escape of inflammable vapor and is provided adjacent its hinged connection with the tank with a lug 37 which is provided with a central socket 38 to receive the handle rod 38′. The handle rod is secured in the lug by a hardened set screw 39, the head of which is adapted to bear against the cap 20 and the rod carries an ordinary wooden handle 40.

In the operation of the device the reservoir is preferably filled with the cleaning fluid. When the lid is raised by the handle the articles to be cleaned can then be placed in the cleaning compartment and held therein in position to be engaged by the stream of fluid ejected through the port 33. The vertical reciprocation of the handle brings the head of the set screw 39 into engagement with the cap 20 on the end of the piston, the depression of which will force the cleaning fluid in the pump cylinder through the port 26 into the channel and past the upper valve through the discharge port 33 onto the articles to be cleaned. Upon release of the handle the piston spring will raise the same and the lid or cover will be returned to closed position. Thus it will be seen that I have provided a cleaning tank which is simple in construction and one in which gasolene may be handled for cleaning purposes in a better and safer manner than is the usual custom. It will also be seen that by the use of this tank I am enabled to accomplish the desired result with a minimum amount of gasolene as all fluid used is returned to the reservoir through the partition, in addition to which the cleaning action of the fluid is greatly increased owing to the pressure with which it is forced against the article.

What is claimed is:—

1. In a cleaning device, a tank, a cover and operating means therefor, means for delivering a stream of fluid within the tank and having a projecting element which lies in the path of the cover in its opening movement, so as to be engaged thereby for operating the fluid delivering means, and means for forcing said projecting element to a position to return the cover, when released, to closed position, thereby insuring the closing of the cover when the device is not in use.

2. In a cleaning device, a tank, a pivoted cover and operating means therefor, a pump for delivering a stream of fluid within the tank and having a projecting piston rod whose end lies in the path of the cover in its opening movement, so as to be engaged and operated thereby, and means for forcing the piston rod outward to return the cover, when released, to closed position, thereby insuring the closing of the cover when the device is not in use.

3. In a cleaning device, a tank, a pivoted cover and operating means therefor, a pump for delivering a stream of fluid within the tank, and having a projecting piston whose end lies in the path of the cover in its opening movement, so as to be engaged and operated thereby, and a spring for forcing the piston rod outward to return the cover, when released, to closed position, thereby insuring the closing of the cover when the device is not in use.

4. In a cleaning device, a tank comprising two compartments, one a reservoir for containing the cleaning fluid and the other a cleaning compartment for receiving the articles to be cleaned, a pivoted cover and operating means therefor, a pump for forcing the fluid from the reservoir and delivering said fluid in a stream across the cleaning compartment, said pump having a projecting piston rod whose end lies in the path of the cover in its opening movement, so as to be engaged and operated thereby, and means for forcing the piston rod outward to return the cover, when released, to closed position, thereby insuring closing of the cover when the device is not in use.

5. In a cleaning device, a tank, a cover and operating means therefor, an apertured partition dividing the tank into upper and lower compartments, one a reservoir for containing the cleaning fluid and the other a cleaning compartment for receiving the articles to be cleaned, a pump for lifting the fluid from the lower compartment and delivering the same in a stream across the upper compartment, said pump having a projecting piston rod whose end lies in the path of the cover in its opening movement, so as to be engaged and operated thereby, and means for forcing the piston rod outward to return the cover, when released, to closed position, thereby insuring the closing of the cover when the device is not in use.

6. In a cleaning device, a tank, a cover and operating means therefor, an apertured partition dividing the tank into upper and lower compartments, a fluid seal tube carried by the partition and projecting into the lower compartment, a strainer carried by the partition, a pump for lifting the fluid from the lower compartment and delivering the same in a stream across the upper compartment and toward the strainer, said pump having a projecting piston rod whose end lies in the path of the cover in its opening movement, so as to be engaged and operated

thereby, and means for forcing the piston rod outward to return the cover, when released, to closed position, thereby insuring the closing of the cover when the device is not in use.

7. In a cleaning device, a tank, a pivoted cover, a handle for operating the same, a hardened set screw for securing said handle to the cover, a pump for delivering a stream of fluid within the tank and having a projecting piston rod whose end lies in the path of the cover in its opening movement, so as to be engaged and operated thereby, a hardened steel cap carried by the outer end of said piston rod, said set screw cooperating with the steel cap when the cover is in position for operating the pump, and means for forcing the piston rod outward to return the cover, when released, to closed position, thereby insuring the closing of the cover when the device is not in use.

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