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H. L. ABRAMOVITZ

TAP FOR FLUID CONTAINERS

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FIG.1.

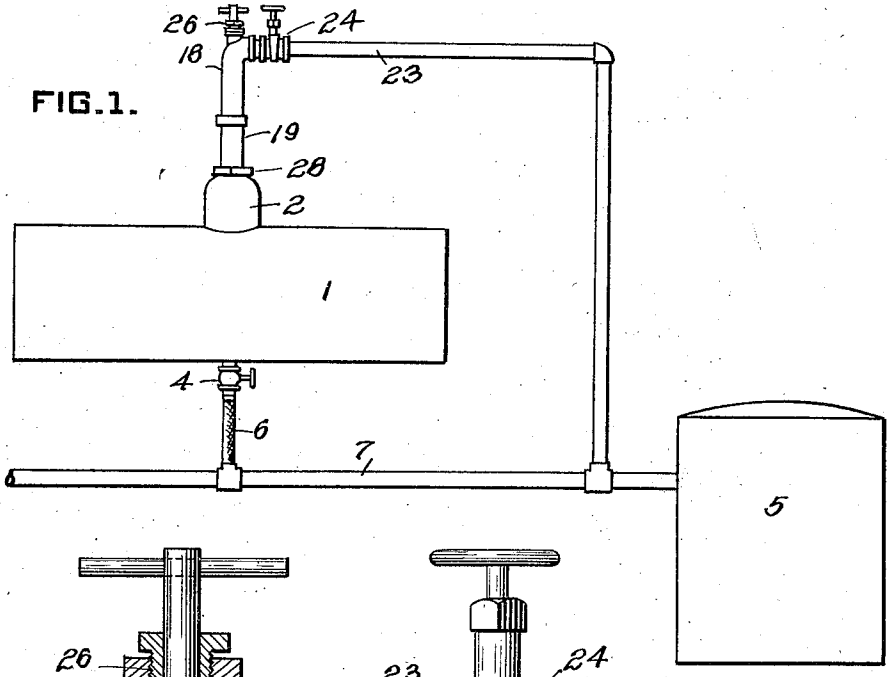


FIG.2.

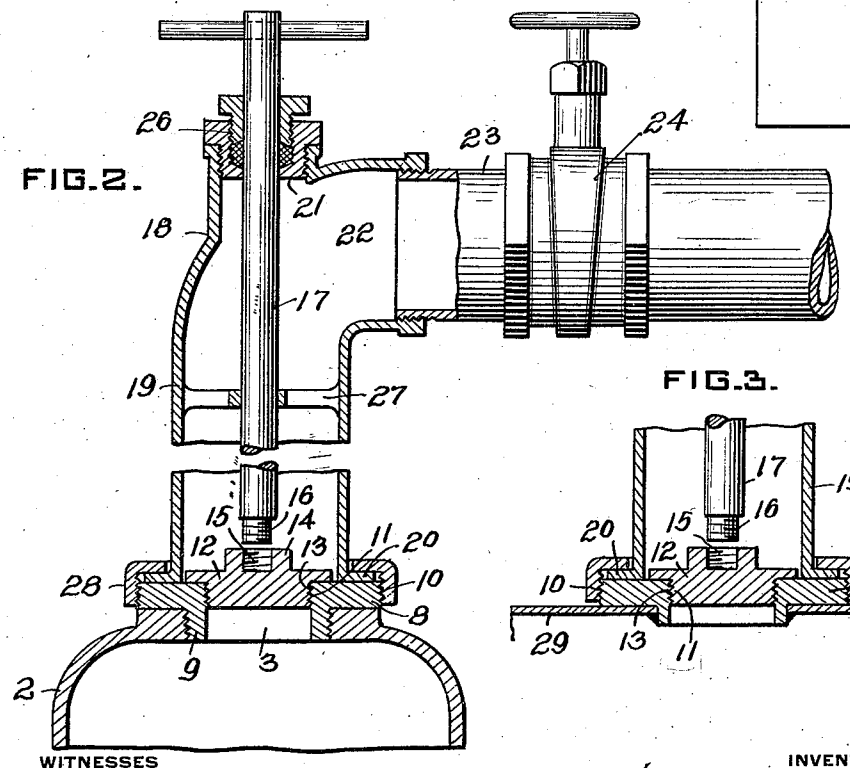


FIG.3.

WITNESSES

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UNITED STATES PATENT OFFICE.

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TAP FOR FLUID CONTAINERS.

Application filed February 25, 1919. Serial No. 279,120.

To all whom it may concern:

Be it known that I, HYMAN L. ABRAMOVITZ, a citizen of the United States, residing at Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Taps for Fluid Containers, of which the following is a specification.

My invention relates to new and improved means designed to be used in connection with containers employed for storing and transporting gaseous and vaporous fluids, such for example, as gasoline.

In the transportation of such fluids in containers, as for instance, tank cars, tanks, and barrels, considerable pressure within the containers is generated, due to the separation of certain gases and vapors from the bulk of the fluid or liquid contents, and prior to the removal of the contents it is the practice to reduce the pressure by permitting the escape of gases and vapors.

The prime object of my invention is to provide simple and efficient means designed to be readily applied to the container for collecting and saving these gases and vapors, which have heretofore been wasted.

In the embodiments of my invention illustrated, I have shown it applied to a tank car and have shown means whereby the vapors may be collected and reintroduced to the main contents of the tank car prior to its passage to a storage tank. I find this method of handling gasoline to be a great saving over the commercial methods now in use.

I have also shown my invention in connection with a barrel designed for transporting gasoline and other vaporous fluids.

In the accompanying drawings which illustrate applications of my invention,

Fig. 1 is a diagrammatic view embodying a tank such as employed on tank cars, the tap structure, a storage tank and connections between said tanks;

Fig. 2, a part sectional view and a part elevational view showing a portion of the container of the form of Fig. 1, the tap structure and a connection therewith; and

Fig. 3, a detail sectional view of a head of a barrel and a portion of the tap structure.

Referring to the drawings, 1 designates a tank of the type employed on tank cars. This tank is provided with a dome 2 having an opening 3 in the top thereof. In tanks of this character, it is the practice to discharge the fluid contents through a valve controlled element 4 located at the bottom of the tank and to convey the discharged contents to a storage tank 5, through suitable connections, as pipes 6 and 7.

As illustrated, the wall of opening 3 of the dome of the tank is threaded and is adapted to receive a bushing or similar element 8. Bushing 8, as shown, is formed with an annular depending externally threaded wall 9, an externally threaded portion 10, and an internally threaded portion 11.

12 designates a closure element or bung having a right hand threaded portion 13, the latter adapted to be entered in and engage the threaded portion 11 of bushing 8. Closure 12 is further provided with a head 14 having a left handed threaded socket 15, the latter being designed to receive a similarly threaded end 16 of a closure actuating element 17. The pitch of the threaded portions of the closure element may be varied so long as the threads of one portion are of a pitch opposite to those of the other portion.

The tap structure proper 18 is adapted to be connected with the top of the dome and disposed over the opening 3 thereof and its closure element 12. As shown, the tap structure includes a tubular discharge element 19 preferably of greater diameter than the plug and adapted to fit thereover, said element 19 having a flange 20 at one end and formed at its opposite end with an opening 21 and a branch 22, the latter communicating with a pipe 23 having a valve device 24.

Closure actuating element 17 is passed through a stuffing box 26 entered in the opening 21, and is guided within the discharge element by a spider 27. In addition to the elements above mentioned, the tap structure includes an internally threaded flanged collar 28, said collar being adapted to engage the threaded portion 10 of the bushing 8 when the tap is applied to the container.

In the form of Fig. 3, I show the tap structure applied to the head 29 of a barrel. In this form, I employ a slightly modified bushing 8′ having an annular depending portion adapted to be entered in an opening in the head and welded or otherwise secured to the head of the barrel.

It will be understood that the closure 12 may be raised from the bushing by manipu-

lating the closure actuating element 17, thereby permitting the gases and vapors to escape from the container through the discharge element 19 and from thence into pipe 23. The tap structure is readily connected with the bushing 8 by means of the threaded flanged collar 28, which latter is loosely mounted on the discharge element 19.

What I claim is:

1. A device for removing plugs from the exterior of containers which have fluid under pressure therein, which consists in a discharge member of greater diameter than the plug adapted to be secured about the plug in such manner as to prevent the escape of fluid, and means extending through the discharge member for removing and holding the plug after the discharge member has been secured in place.

2. The combination with a container having an exteriorly threaded bushing secured thereto and a closure element screwed into the bushing, of a tap structure including a discharge member removably threaded on to the exterior of said threaded bushing, a closure actuating element extending downwardly through the discharge member, and co-acting engaging means on the actuating and closure elements for turning and holding the closure element, whereby the closure element may be removed or screwed into the bushing.

3. The combination with a container having a bushing secured thereto and a closure element comprising a removable plug entered in the bushing, said bushing having a threaded peripheral flange, of a tap structure including a discharge member having an interiorly threaded collar at its lower end in sealing relation therewith and rotatable relatively thereto, said collar being adapted to cooperate with the threaded flange of said bushing, and a plug engaging element extending through the discharge member operable from the exterior thereof and having means on its inner end of rotating and holding said plug.

4. The combination with a container having an exteriorly threaded projection with an interiorly threaded opening therein, and a plug screwed into the discharge opening in said projection, of a discharge member having a threaded collar rotatable relatively to the discharge member and in sealing relation therewith for engagement with the exterior of said projection and adapted to be screwed thereto to form a seal thereabout, and means including a shaft within the discharge member having means on one end thereof operable for removing and holding the plug after the discharge member has been secured in position by means of said threaded collar.

5. A top for fluid containers comprising an elbow shaped pipe connection having a flanged lower end adapted to rest against a portion of a container, a collar surrounding said lower end of the elbow and loosely retained in place by said flange, said collar being arranged for cooperative engagement with suitable means on the container to hold said flanged lower end in sealing contact with the container, means whereby a pipe may be connected to the other end of said pipe connection, and a plug removing member within said elbow operable from the exterior thereof.

6. The combination with a container having a bushing and a threaded plug screwed into the bushing, of a tubular discharge member removably secured to said bushing, and a closure actuating element extending through the discharge member having means thereon for removably engaging and holding the threaded plug in such manner that it may be screwed out of or screwed into the threaded bushing.

7. The combination with a container having a bushing and a threaded plug screwed into the bushing, which plug is provided with a reversely threaded socket, of a tubular discharge member removably secured to said bushing and adapted to convey fluid away from the container, and a closure actuating element extending through the discharge member having threaded means thereon for engaging in the reversely threaded socket of the plug to turn the plug, and to hold said plug after it has been screwed out of the bushing.

In testimony whereof, I affix my signature in presence of two witnesses.

HYMAN LOUIS ABRAMOVITZ.

Witnesses:

J. M. GEOGHEGAN,

LOIS WINEMAN.