

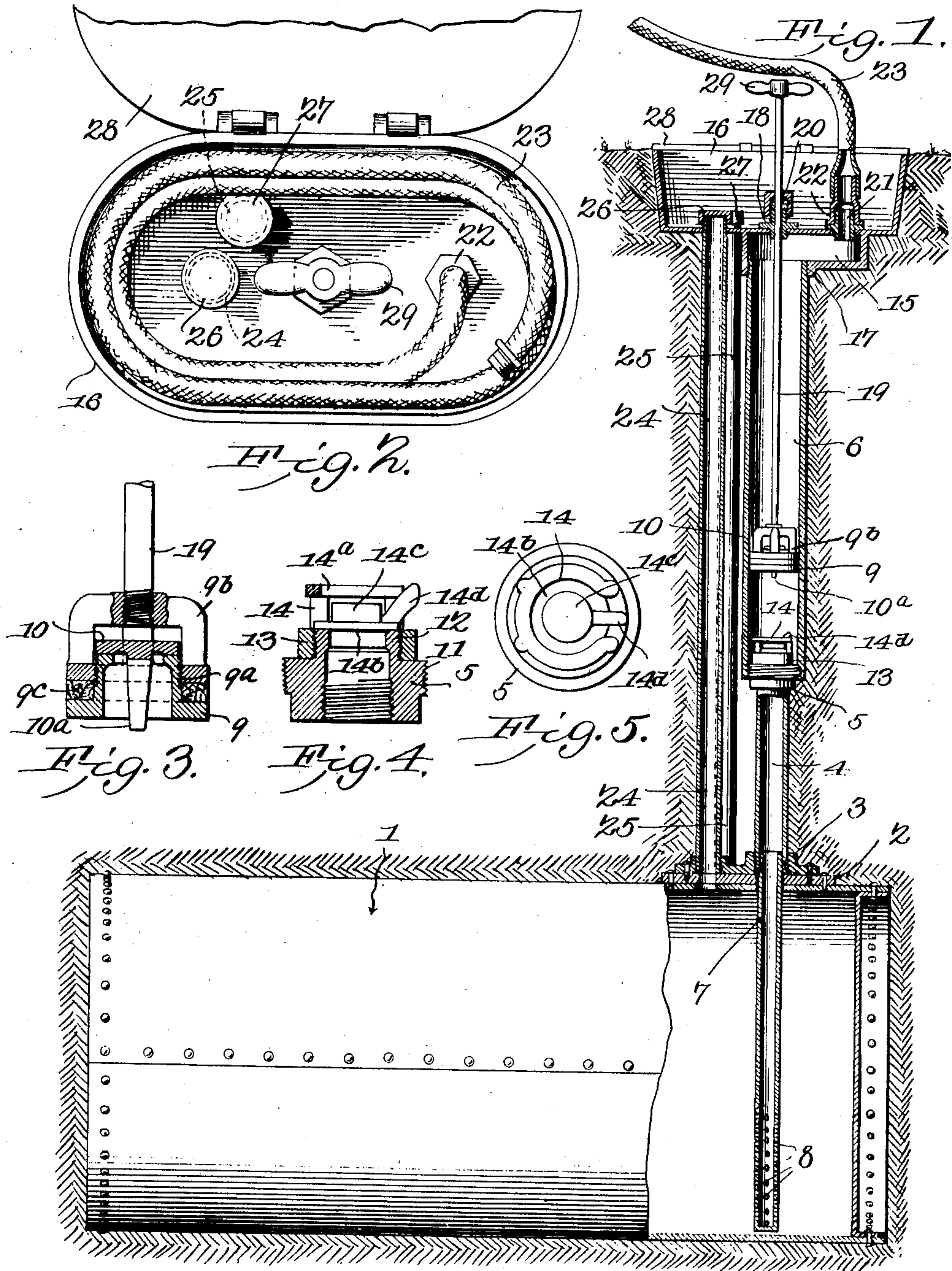
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J. J. TOKHEIM.

OIL TANK.

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UNITED STATES PATENT OFFICE.

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OIL-TANK.

No. 826,912.

Specification of Letters Patent.

Patented July 24, 1906.

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To all whom it may concern:

Be it known that I, JOHN J. TOKHEIM, a citizen of the United States, residing at Cedar Rapids, in the county of Linn and State of Iowa, have invented a new and useful Oil-Tank, of which the following is a specification.

This invention relates generally to oil-tanks, and more particularly to one adapted for storing gasoline for use in connection with automobiles.

The object of the invention is to provide means whereby gasoline may be safely stored and be readily dispensed to the receiver of an automobile, the construction of the apparatus being such that no waste will ensue and all danger of escape of gas will be obviated and refilling when necessary may be quickly and easily accomplished.

With the above and other objects in view, as will appear as the nature of the invention is better understood, the same consists in the novel construction and combination of parts of a gasoline-tank and dispensing mechanism connected therewith, as will be hereinafter fully described and claimed.

In the accompanying drawings, forming a part of this specification, and in which like characters of reference indicate corresponding parts, Figure 1 is a view in elevation, partly in section, exhibiting the manner in which the gasoline-tank and its appurtenances are disposed in the ground. Fig. 2 is a top plan view, on an enlarged scale, showing the use to which one part of the apparatus is put when the apparatus is not in use. Fig. 3 is a sectional detail view through the piston. Fig. 4 is a similar view through the valve that controls the passage of gasoline to the place of discharge. Fig. 5 is a top plan view of the valve shown in Fig. 4.

The apparatus consists of a tank for storing gasoline, a pump connected therewith for withdrawing the gasoline and dispensing it, means for permitting supply of gasoline and air to the tank, and means for storing the pipe or hose used in conveying the gasoline from the tank to the automobile or the like when not in use.

The tank 1 may be made of any suitable material, preferably of galvanized steel, having riveted and soldered joints in order to preclude the possibility of leakage. This

tank is adapted to be sunk any desired distance in the ground in order to render it harmless should it spring a leak.

Secured to the upper side of the tank at any desired point by being riveted and soldered thereto is a casting 2, to which is bolted a casting 3, and this latter casting is engaged by the lower end of a pipe 4, the upper end of which has secured to it a casting 5, with which is combined the lower end of the pump-cylinder 6. The pipe 4 has secured to its lower end a pipe 7, which extends down into the tank and is provided with perforations 8 to prevent passage to the pump-cylinder of any extraneous matter that would tend to interfere with the proper operation of the pump. Working within the cylinder is a piston 9, having a hollow externally-threaded and centrally-perforated teat or boss 9^a, that is engaged by a cage 9^b, with which is connected a piston-rod, presently to be described, there being a packing 9^c interposed between the upper face of the piston and the under face of the spider to effect an oil-tight juncture between the piston and the cylinder. Arranged within the cage is a gravity-valve 10, having an extension 10^a, that projects below the under face of the piston, the function of which will presently appear.

The casting 5, which, in effect, constitutes a nipple, has exterior threads 11, that engage with interior threads in the pump-cylinder. The upper side of the nipple has an exteriorly-threaded hollow boss 12, which is engaged by the base-ring 13 of a cage consisting of a plurality of legs 14 and an open-sided ring 14^a. Arranged within the cage and resting upon the upper face of the nipple is a gravity-valve 14^b, having a centrally-arranged boss 14^c and a laterally and upwardly projecting arm 14^d, that extends between the separated portions of the ring, the arm 14^d constituting a valve-tripping member. The object of the extension 10^a and the arm 14^d is to cause tripping of the valves 10 and 14^b when the piston is pushed to its lowest point, thereby to permit any gasoline contained within the cylinder to run back into the tank, and thus prevent rotting of the hose which is used to convey the gasoline to the tank of the automobile. This is effected by contact between the extension 10^a and the boss 14^c

and the flange of the piston 9 and the arm 14^d when the piston is moved to the position above described.

The upper end of the cylinder connects
5 with a chamber 15, formed on the under side of a box 16, forming the pump-head, the cylinder being combined with the chamber by a threaded connection at 17. Arranged centrally of the bottom of the pump-head is a
10 stuffing-box 18, in which the piston-rod 19 works, a gland 20, carried by the stuffing-box, operating to secure a liquid-tight juncture between the parts. Arranged at one end of the pump-head and communicating with the
15 chamber is a threaded nipple 21, which is designed to be engaged by a coupling 22, carried by a hose 23, this latter being designed to convey the gasolene from the chamber to the tank of the automobile. Communicat-
20 ing with the bottom of the head on the side opposite the nipple 21 are two pipes 24 and 25, the pipe 24 being the filling-pipe and the pipe 25 the vent-pipe, and these two pipes are threaded into the casting 3 and communicate
25 with the tank through openings in the casting 2, the upper end of the filling-pipe being closed by a cap 26 and the like end of the vent-pipe being closed by a cap 27.

As shown in Fig. 2, the pump-head 16 is
30 elongated and has rounded ends and is designed to house the hose when the apparatus is not in use, as shown in the above figure, whereby the hose will always be convenient of access and will be shielded from liability of
35 danger or loss. The pump-head will, normally be sunk in the ground, so as not to present an obstruction, and is closed by a lid or cover 28, which will have combined with it a suitable lock to prevent tampering with the
40 pump and other parts of the apparatus. When the tank is to be filled, the two caps 26 and 27 are detached and a hose or other suitable filling medium is inserted in the pipe 24, and as the gasolene passes to the tank there-
45 through the air displaced will pass out through the pipe 25. After the filling has been completed the caps are replaced, thereby preventing escape of fumes. When the apparatus is to be used for filling the tank of
50 an automobile, one end of the hose is placed therein and the piston-rod reciprocated by grasping the handle 29, thereby causing the gasolene to be drawn from the tank 1 and supplied to the automobile-tank. When the
55 filling is completed, the piston-rod is pushed down until the piston reaches the bottom of the cylinder 6, whereupon the valves 10 and 14^b will be tripped and allow any gasolene re-

maining in the hose and also any remaining in the cylinder above the piston to escape
60 back to the tank, thereby not only conserving the gasolene, but preventing rapid destruction of the hose, which would inevitably result were the gasolene allowed to remain therein.

The improvements herein defined, while simple in character, will be found to coact in the production of an article that will be found of high efficiency in use and will insure a
65 safety in handling gasolene not heretofore possible with the ordinary methods in vogue.

Another feature of the invention is that by making the pump-head in the shape shown
70 no kinking of the hose housed thereby will ensue, so that the life of the hose will be materially extended and the loss resulting from the frequent purchase of hose will be obviated.

Having thus described the invention, what is claimed is—

1. The combination with an underground tank, of a pump-cylinder connected there-
80 with, a head carried by the cylinder and disposed substantially flush with the ground-line, a nipple carried by the bottom of the head and communicating with the cylinder, and a hose connected with the nipple.

2. The combination with an underground tank, of a pump including a head disposed
85 substantially flush with the ground-line and provided with means for attachment to a hose, and a filling and vent pipe connecting the head and the tank.

3. The combination with an underground tank, of a pump embodying a head disposed
90 substantially flush with the ground-line and constituting a storage-box and provided with a nipple, with a stuffing-box and with a filling and vent pipe, and a piston-rod engaging the stuffing-box.

4. The combination with an underground tank, of a pump-cylinder embodying a head
95 constituting a storage-box, a piston working in the cylinder and having its upper end normally housed within the box, valves carried by the piston and by the cylinder, and means for tripping the valves on the downward
100 movement of the piston.

In testimony that I claim the foregoing as my own I have hereto affixed my signature
105 in the presence of two witnesses.

JOHN J. TOKHEIM.

Witnesses:

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