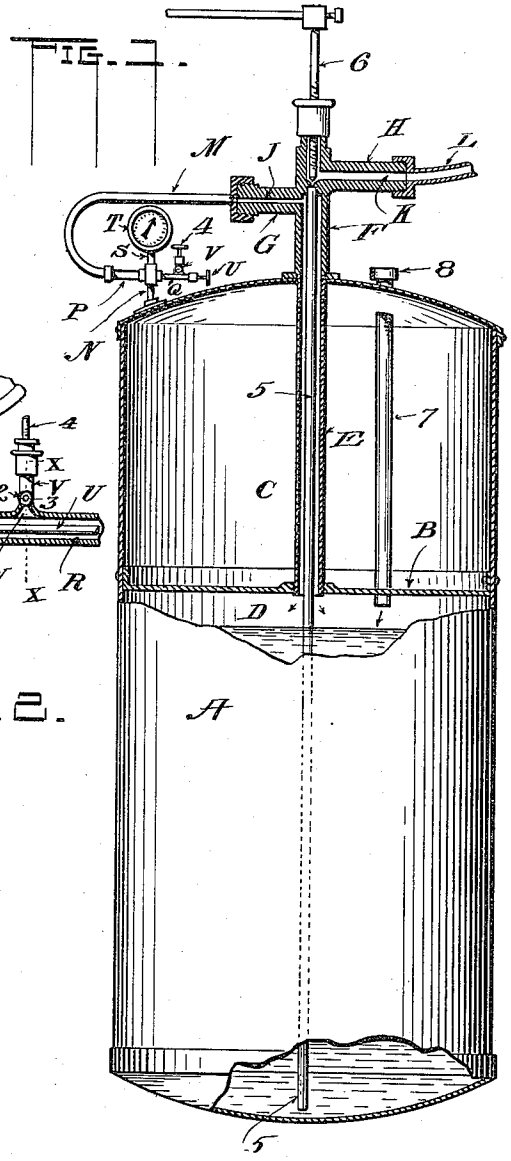
E. SEITZ.

PRESSURE TANK FOR VAPOR LAMP SYSTEMS.

APPLICATION FILED DEC. 9, 1911.

1,155,622. Patented Oct. 5, 1915.

FIG. 1.



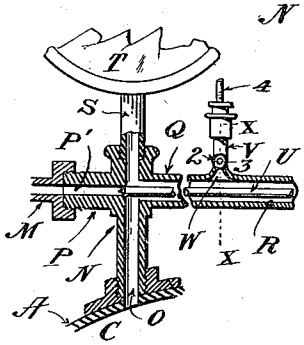


FIG. 2.

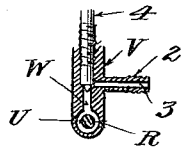


FIG. 3.

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PRESSURE-TANK FOR VAPOR-LAMP SYSTEMS.

1,155,622. Specification of Letters Patent. Patented Oct. 5, 1915.

Application filed December 9, 1911. Serial No. 664,940.

To all whom it may concern:

Be it known that I, EDWARD SEITZ, citizen of the United States, residing at Peoria, in the county of Peoria and State of Illinois, have invented certain new and useful Improvements in Pressure-Tanks for Vapor-Lamp Systems; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to pressure tanks for vapor lighting systems and pertains more particularly to a tank having a division wall or partition for dividing it into two compartments; one for containing air under pressure, and the other a hydrocarbon.

An object of the invention is to provide a tank for the purposes described, having two compartments, in which the air-pressure in the air compartment will not be lost when in the act of filling the other compartment with the hydrocarbon.

Another object is to provide a pressure tank having a separate compartment for air and a separate compartment for a hydrocarbon in which but few fittings or parts are necessary and in which, also, all the said fittings or parts are mounted upon the top of said tank.

For certain uses of the tank, for instance when in connection with individual lamps at street corners and other "out-of-door" use it is often a requirement that the parts or fittings should all be mounted upon the top of the tank so as not to be in the way of or interfere with other structures entering into the structure of the lamp mechanism. This disposition of the parts is also desirable since said parts can be readily reached and manipulated.

In the accompanying drawing which illustrates my invention, Figure 1 is an elevation of my improved pressure tank, in part section, and shown together with certain connections. Fig. 2 is a detail, in vertical section, of parts shown in Fig. 1, and Fig. 3 is a vertical transverse section of a part of the apparatus shown in Fig. 2 taken on line *xx* of that figure.

The tank is indicated as a whole by the letter A and it is provided with a partition B at any desired point to divide said tank into two receivers C and D, the former for receiving air under pressure, the latter for receiving the hydrocarbon which supplies the lamp or lamps of the lighting system.

E is a pipe secured at one end in the partition B and opening at its other end through the top of the tank to which it is secured in an air tight manner or so that there can be no escape of air around it from the compartment C.

Secured on the top of the tank in any suitable manner and communicating with the pipe E is a fitting F. This is preferably a casting provided with two lateral extensions G, H, each having a passage J, K respectively. Connected to the extension H is a hollow wire or other tubular conduit L which leads to the lamps of the lighting system. Secured to the extension H is a pipe M connected with a fitting N secured in a suitable manner to the top of the tank A and communicating with the receiver or compartment C through a passage O. This fitting has a lateral extension P provided with a passage P′ with which the said pipe M communicates and it also has at the opposite side an extension Q having a passage R. Both these passages communicate with the main passage O, described, and the latter communicates through an upper extension S with a pressure gage T. A valve U lies in the passage R and seats at its end in the passage P′ and closes it from communication with the passage O. Mounted upon the extension Q or cast therewith is a tubular part V which communicates with the passage R through a passage W, Fig. 3. Extending from said part V is a tubular extension 2 whose passage 3 communicates with the said passage W, and a valve 4 is adapted to seat in one of said passages so as to cut off communication between the two. Lying within the pipe E is a pipe 5 which is smaller than the bore of said pipe E and the bore of the said fitting F, and whose upper end terminates in the latter between the passage J and the passage K and communicates only with the latter. A valve 6 is adapted to seat in the passage K so that communication between the said pipe and the said passage can be interrupted as desired, there being no communication whatever at any time between the passage J and said pipe 5, nor between the latter and the pipe E.

7 indicates a pipe extending through the

top of the tank and the air receiver C and terminating within the receiver D which receives the hydrocarbon. A suitable cap or fitting 8 closes the top of said pipe and the latter is secured in the top of the tank so that escape of air from the receiver C is prevented. Preferably said pipe 5 extends to the bottom of the receiver D in the usual way so that the hydrocarbon in the bottom of the tank can be forced up through it into the passage K of the extension H of the said fitting F.

My invention is particularly adapted for lighting systems where the flow of fluid is to be automatically interrupted and, though not shown, said mechanism has control of the valve 6 whereby the fluid may be stopped in its flow at a predetermined time.

In practice an air pump is connected with the extension 2 of the part V by which air under pressure can be stored in the receiver C. This is done by opening the valve 4. The air will then be forced through the passage W of the extension of the part V, and the passages R and O of the parts Q and N respectively. The air from the receiver C can now be allowed to enter the receiver D upon the lighting-fluid by opening the valve U. It passes through the extension P, the pipe M and the passage J of the extension G into the fitting F and pipe E and then enters said compartment. The pressure now causes the fluid to arise within the pipe 5 and if the valve 6 is open it enters the passage K and passes to the conduit L and the lamp system so long as said valve 6 is open.

Since the air receiver is tightly closed to all escape of air except through the fitting N, pressure can be readily held therein. But it is observed that the air in order to reach the receiver D must follow the course above outlined and that the air would be exhausted at once upon the removal of the cap 8 from the fitting pipe 7 unless a bar to its escape were employed. That there may be no escape the valve U in the fitting N is employed so that when said pipe 7 is opened egress of air by the way of said fitting is impossible and the only air lost is that within the receiver D. At the same time the passage R, through which the said valve extends allows pump pressure to enter the receiver C from the part V.

My pressure tank is distinguished from those of which I am aware in that in having the two receptacles preferably comprised in one structure, there are but two connections passing through and extending between the said receptacles *i. e.* the pipe 7 for filling the hydrocarbon receptacle D, and the pipe E for the introduction of air into the latter. The pipe 5 for the discharge of the hydrocarbon is carried up through the pipe E and thus no extra opening is made necessary in the wall of the tank for it nor in the dividing wall or partition B. The result is that the tank can be constructed at low cost and but few openings to give trouble through leakage of air, or the hydrocarbon, are provided.

Various changes may be made in the construction or arrangements of the parts that will lie within the meaning of the invention and the claims since I do not wish to be confined particularly to what is described and shown.

I claim:

1. In a device for the purpose described, the combination of a tank including two receivers, a pipe extending through one of the receivers and communicating with and terminating within the other, means through which to introduce air under pressure into the first named receiver including a valve, a pipe connecting said means with the first named pipe, a pipe extending longitudinally through the first, and terminating in the second receiver including a valve in control or the same, and a third pipe extending through the first receiver terminating in the other and provided with a closure at its upper end.

2. In a device of the character described, the combination of a tank including an upper and a lower receiver, a pipe extending through the upper receiver and terminating at one end in the lower receiver, its upper end terminating outside the said upper receiver, a fitting mounted on said tank provided with a passage in communication with the pipe, said fitting having an extension, a second tubular fitting mounted on the top of the tank, means connecting it with said extension, a valve controlling the flow of fluid through said second fitting, the first described fitting having a second valved tubular extension, a valve in said extension, a second pipe lying within the first described pipe and extending into the lower of the receivers and terminating at its upper end in the first described fitting and communicating with its second or valved extension.

3. In a device for the purpose set forth, the combination of a tank, a partition therein separating the tank into an upper and a lower air tight receiver, a pipe opening at its end through the partition into the lower receiver and extending through and outside of the upper receiver, a fitting on the top of the latter including a passage receiving the end of said pipe, said fitting having two branches each provided with a passage, a second fitting on the top of the upper receiver provided with a passage communicating with said receiver, a conduit connecting the passage of said second fitting with one of the said branches of the first said fitting, a valve in said second fitting in control of its passage, means through which to introduce air under pressure to the passage of said

second fitting and thence to the upper receiver, a second pipe extending longitudinally through the first pipe and having communication at one end with the other passage of the first described fitting, said pipe extending into the bottom of the lower receiver, a valve in control of the passage of said first named fitting with which the second pipe connects, and a filling pipe connected into the lower receiver.

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

EDWARD SEITZ.

Witnesses:
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L. M. THURLOW.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."