No. 610,333. Patented Sept. 6, 1898.

E. SHERIDAN.

TANK FOR PRESSURE APPARATUS.

(Application filed July 1, 1896.)

(No Model.)

FIG. 1.

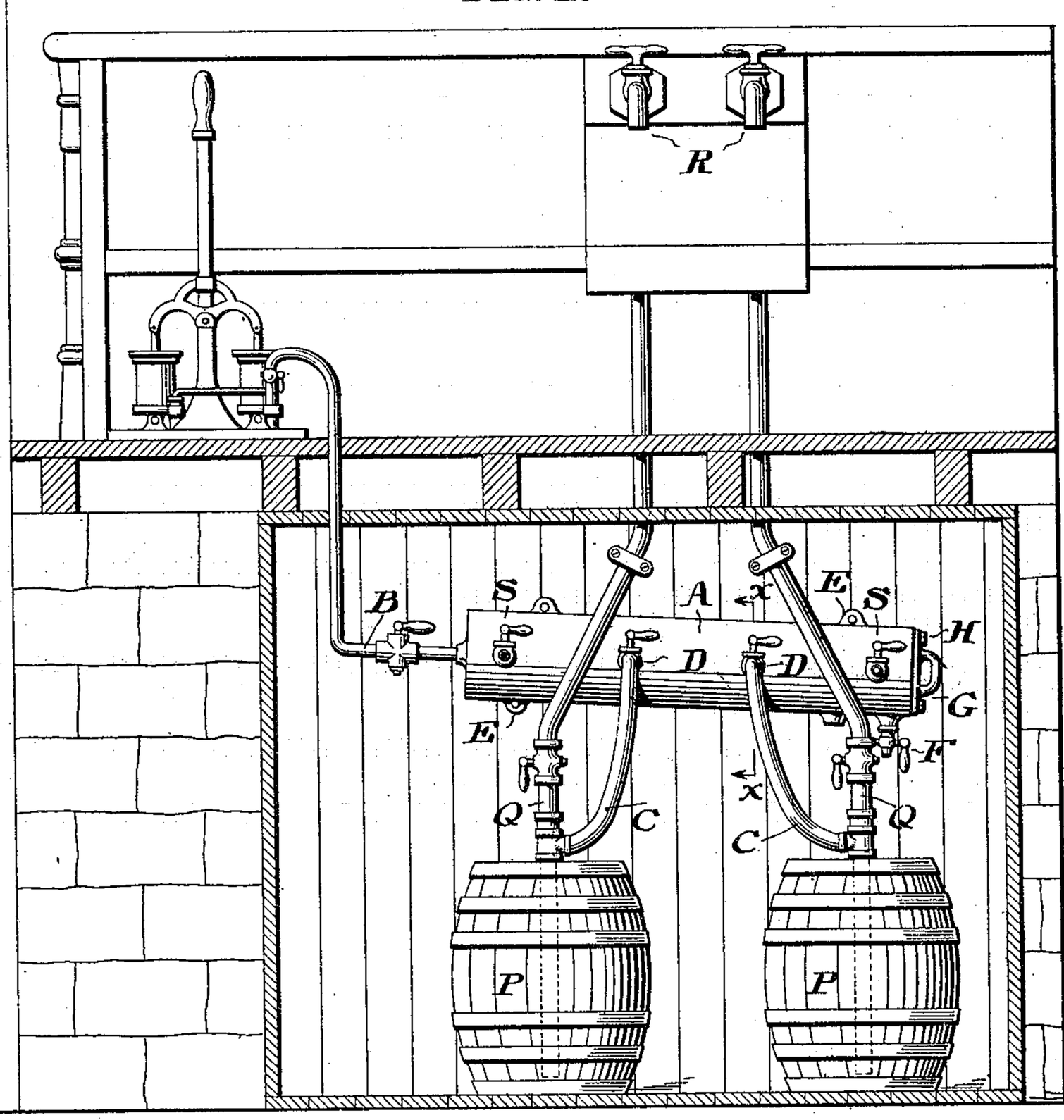


FIG. 2.

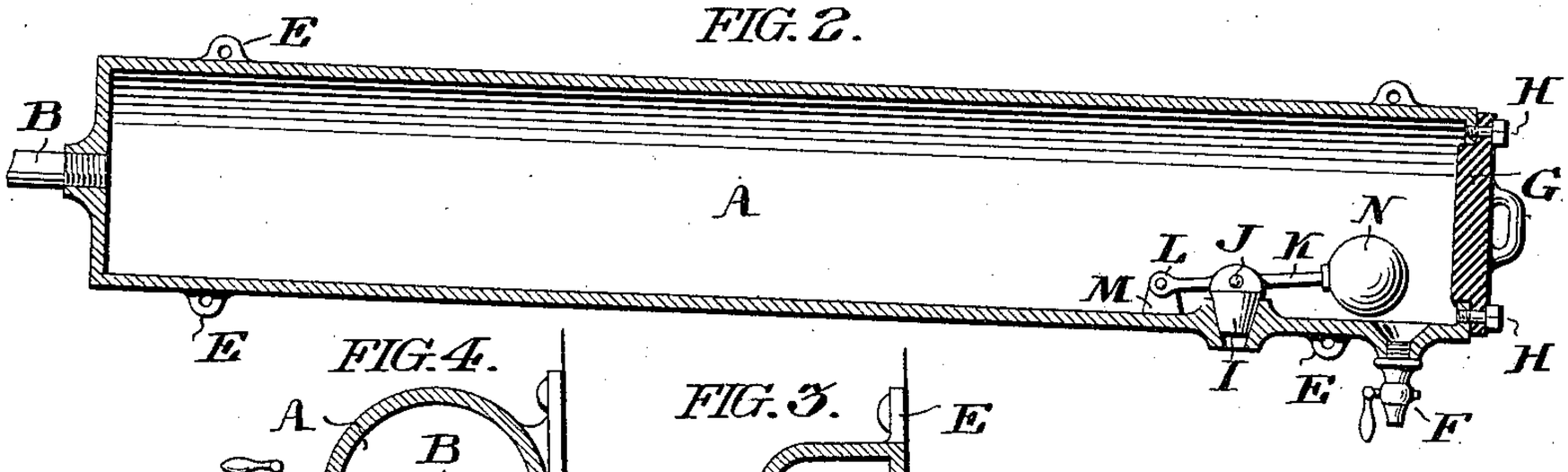


FIG. 4.

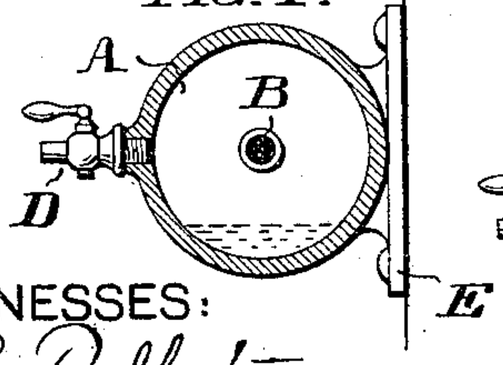
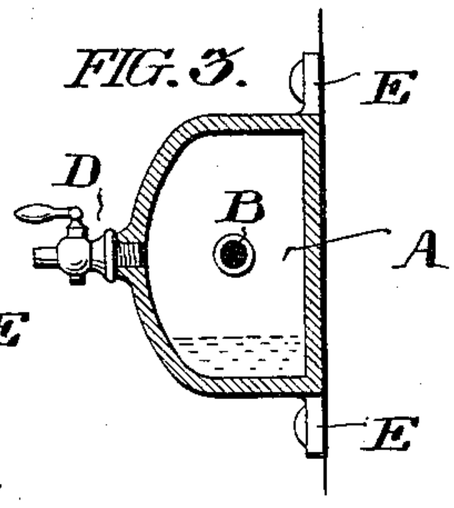


FIG. 3.



WITNESSES:

E. L. Fullerton.

Clifton C. Hallowell

INVENTOR:

EDWARD SHERIDAN,

By Arthur E. Paige,

Atty.

UNITED STATES PATENT OFFICE.

EDWARD SHERIDAN, OF PHILADELPHIA, PENNSYLVANIA.

TANK FOR PRESSURE APPARATUS.

SPECIFICATION forming part of Letters Patent No. 610,333, dated September 6, 1898.

Application filed July 1, 1896. Serial No. 597,800. (No model.)

To all whom it may concern:

Be it known that I, EDWARD SHERIDAN, of Philadelphia, in the State of Pennsylvania, have invented certain new and useful Improvements in Tanks for Pressure Apparatus, of which the following is a specification, reference being had to the accompanying drawings.

My invention relates to apparatus used to elevate beverages from closed receptacles, such as kegs, by the introduction to said receptacles of compressed atmospheric air, said receptacles being provided with suitable outlet-pipes through which their contents may be discharged under said pressure at distant dispensing valves or spigots.

My present invention is particularly adapted for use in an apparatus wherein atmospheric air is compressed by the intermittent action of a manually-operated pump. To continuously maintain pressure in said receptacles from a pump thus operated, it is necessary to provide a tank or reservoir wherein a large body of compressed air may be stored, the operator of said apparatus being required to dispense the beverages from said valves or spigots, as well as to maintain the proper pressure in said air-reservoir by operating said pump at intervals. As a matter of economy apparatus of the type referred to is ordinarily designed to simultaneously afford pressure for a plurality of said receptacles in which different beverages may be contained, it being the ordinary practice to thus connect beer, ale, porter, &c. In the practical operation of such an apparatus certain difficulties are presented. First the aforesaid receptacles are brought to the apparatus closed and must be connected therewith, the initial pressure within said receptacles being always greater than that normally maintained in said compressed-air tank. When connection is first made with a full receptacle, its contents are by reason of said excessive internal pressure forced upward not only into the liquid-discharge pipes, but also into the air-pipes, the rise of the discharged liquid in the latter continuing until an equilibrium between the pressure of the air and the pressure of the liquid is reached. In the further operation of the apparatus as the contents of said receptacles are drawn off at the dispensing-valves the liquid which had risen as aforesaid in the air-pipes gravitates to the receptacle. The liquid coating left within the air-pipe connections during the temporary presence of the beverage sours upon exposure to the air, and subsequently imparts through the latter to the beverage not only a disagreeable odor, but a characteristic impure flavor. It is obvious, therefore, that it is not only advantageous but necessary to limit the extent of the air-pipes thus successively washed by the beverage and dried by the compressed air. Hitherto this has been attempted by apparatus wherein check-valves are introduced in the air-pipe connections adjacent to the beverage-receptacles and between the latter and the source of compressed air, the primary source—*i. e.*, the pump—and the secondary source—*i. e.*, the air reservoir or tank.

It is the object of my present invention to provide a single-tank structure peculiarly adapted to serve the combined purpose of the separate air-reservoirs and waste-liquid traps of the prior art, to so arrange the various air and liquid connections of said tank structure that the aforesaid check-valves hitherto necessary in apparatus of this class may be eliminated, and, moreover, to so construct said tank that its entire interior surface is accessible through a large opening provided with a removable lid, the latter being so arranged that it may be readily removed by unskilled labor and said interior surface of the tank manually scrubbed without dismantling the apparatus.

I have shown a convenient embodiment of my invention in the accompanying drawings, wherein—

Figure 1 is a general view of an apparatus to which my invention is particularly adapted, as aforesaid. Fig. 2 is a longitudinal sectional view of the pressure-tank. Fig. 3 is a transverse sectional view of the tank on the line $x\,x$ of Fig. 1. Fig. 4 is a sectional view similar to that of Fig. 3, showing a modified construction of the tank.

Referring now to Fig. 1, A is a convenient form of my improved tank connected with an ordinary hand-pump, as aforesaid, by means of the air-pipe B. Said tank A is adapted for connection with a plurality of beverage-receptacles P P by means of air-pipes C C, con-

nection of said pipes with the tank A being made through openings in the latter, placed above its bottom and disposed *seriatim* along its side. Said openings for pipes C are conveniently provided with valves or faucets, those marked D D in Fig. 1 being connected to receptacles P P, as shown, and those marked S S being adapted for similar connection to additional receptacles.

The tank A may be supported in proper position in any convenient manner, preferably by means of lugs E, which are shown in Fig. 3 as integral with the tank A, the latter being shown therein as flattened upon one side, so that it may be fitted against the rear wall. (Indicated in Fig. 1.) It is obvious, however, that said tank may be otherwise shaped and supported, as indicated in Fig. 4.

The bottom of the tank A is conveniently provided with a drip-valve F. A large opening in said tank, giving access to its inner surface, as aforesaid, is provided with a removable lid G, which is normally secured over said opening by bolts H, so that it may be readily removed by an unskilled operator without disturbing any of the pipe connections.

It having been found in practice that the viscid coating of decomposed vegetable matter deposited by the described waste of liquid within the air-pipes cannot be removed except by direct attrition, the construction above described is of obvious advantage in that said overflow is limited to the large tank A, and the interior surface of said tank is accessible for the cleansing operation through the opening covered by the removable lid G. The pipes C connect directly with tapping-plugs in the receptacles P P. Said plugs each comprise an annular outlet for its pipe C within the receptacle P and a concentric liquid-discharge pipe Q, leading therefrom by suitable connections to the dispensing valve or faucet R. As shown in Fig. 1, said tank A is so proportioned in relation to the receptacles P as to contain a relatively large body of compressed air. Said tank thus serves as a secondary source or reservoir of compressed air, which is supplied from the primary source—*i. e.*, the pump—by intermittent operation of the latter, the operator being thus free to discharge his other duties in the intervals between operations of said pump.

As described, the air-pipe connections leading to the respective beverage-receptacles P P are located so far above the bottom of the tank A that a large portion of said tank serves as a trap for waste liquid, and the necessity for a separate structure to perform that function is thus obivated. Moreover, the described arrangement of the connections C relative to said tank A does not permit the initial overflow from a full receptacle to be discharged into another partly-emptied receptacle, as noted relative to the devices of the prior art.

In operation it is designed that the tank A shall be thoroughly scoured, as aforesaid, once in twenty-four hours. Prior to the removal of the lid G the overflowed liquid in the tank A may be drawn off through the drip-valve F. It is, however, obvious that the liquid contents of the tank A may be automatically withdrawn by the following device: The float N, mounted upon the extremity of the lever K, is fulcrumed at L to the lug M and serves to open the valve I, which is pivoted to said lever at J, when said float N is uplifted by the said liquid accumulated in the bottom of said tank A.

I am aware that it is not original with myself to provide a closed metal tank with a manhole and a removable cover for said manhole. I do not, therefore, desire to broadly claim such construction. However, as far as I am aware it is new in this art to provide means whereby the interior of the air-reservoir may be rendered accessible for manual cleansing without dismantling the same or removing any of its pipe connections. I therefore do not desire to limit myself to the precise construction of my invention which I have shown and described; but it is to be understood that the following claim is laid to a structure for the purpose hereinbefore set forth and that said apparatus in coöperative combination comprises a source of compressed air, such as the pump described, air-pipe connections from said pump to my improved pressure-tank, and air-pipe connections from said tank to the receptacles containing the beverage, as aforesaid, said receptacles being also provided with discharge-pipe connections leading to dispensing-valves.

Having thus fully described my invention, what I claim as new and useful is—

The combination in a beverage-forcing apparatus, of an air-supply, means for conducting the beverage to and dispensing it at a bar and a horizontal and fixed reservoir for compressed air provided with a trap for waste liquid, a removable lid at one end, a series of keg connections, in one side and above the bottom of said tank and means to drain the waste liquid, the whole arranged so that the lid may be readily removed, and the reservoir scoured by hand, without disturbing the pipe connections, substantially as set forth.

In testimony whereof I have hereunto affixed my signature in the presence of two subscribing witnesses.

EDWARD SHERIDAN.

Witnesses:
FELIX MATTNER,
MARK BUFORD.