W. PAINTER.

Transit-Tank for Night-Soil.

No. 163,238. Patented May 11, 1875.

Fig. 1.

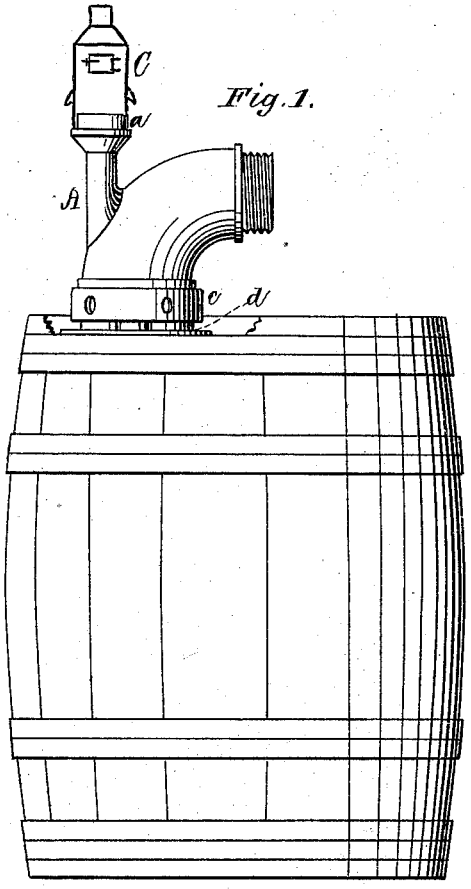


Fig. 2.

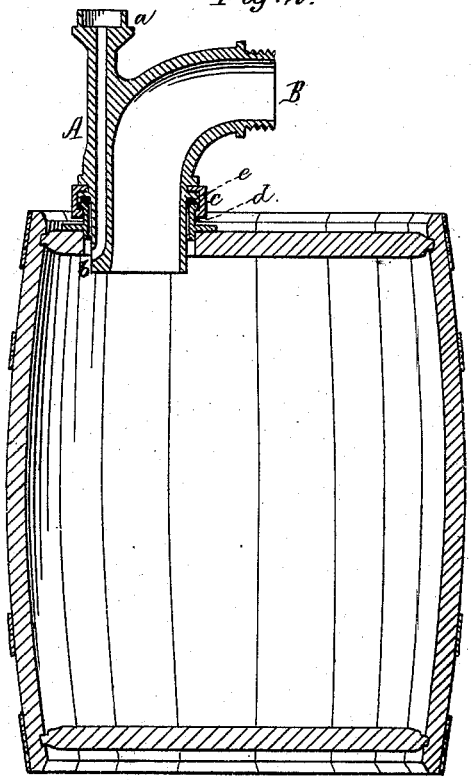


Fig. 3

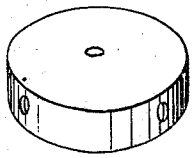


Fig. 4.

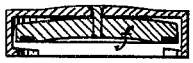
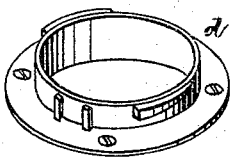


Fig. 5.



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UNITED STATES PATENT OFFICE.

WILLIAM PAINTER, OF BALTIMORE, MARYLAND.

IMPROVEMENT IN TRANSIT-TANKS FOR NIGHT-SOIL.

Specification forming part of Letters Patent No. **163,238**, dated May 11, 1875; application filed December 22, 1874.

To all whom it may concern:

Be it known that I, WILLIAM PAINTER, of the city and county of Baltimore, in the State of Maryland, have invented certain new and useful Improvements in Transit-Tanks for Night-Soil, &c.; and I do hereby declare that the following specification, taken in connection with the drawings furnished and forming a part of the same, is a clear, true, and accurate description thereof.

The objects of my invention are to render the operation of filling tanks with offensive matter for transit free from liability of creating a nuisance, and to enable the operatives to more rapidly attach and detach the deodorizing apparatus from the tanks than has heretofore been possible, and also to dispense entirely with deodorizing conducting-hose.

In connection with apparatus intended for transferring the contents of privy-vaults, &c., to tanks under the vacuum system, a deodorizing apparatus has been proposed to be permanently mounted on, and in direct communication with, the air-pump, by means of which the air is exhausted from the tank.

My invention relates to tanks employed in connection with an entirely different apparatus operated under the lifting and forcing system, whereby the matter to be removed is lifted to the pump, and from thence is forced into the tank, which must, of necessity, be provided with a vent through which air can escape as the fluid and other matters enter the tank.

In the Straus patent of January 28, 1868, No. 73,938, the first complete night-soil-pumping apparatus known to me is described. Therein, and with all similar apparatus in use before my invention of which I have knowledge, the deodorizer or purifier is attached to tanks by means of hose. This system must of course require considerable labor in handling, attaching, and detaching said hose from the tank or the deodorizer. With all portable apparatus it is desirable that its bulk and weight be decreased to a minimum, in order that the power of the teams employed may be directly applied to the actual service of removing proportionately greater quantities of the matter to be disposed of.

My invention consists, partially, in combining directly with the tank-vent a standard and a deodorizer fitted thereto, whereby the air forced from the tank during the filling operation is driven directly through the deodorizer, and the employment of deodorizing conducting-hose obviated. My invention further consists in the combination, with a tank, of an elbow or pipe which is provided with a vent-passage and a coupling device for ready attachment to and detachment from the tanks, and also in the combination, with the induction-elbow and vent-passage, of a deodorizing apparatus, and still further in the combination therewith of certain minor parts hereafter fully described.

Figure 1 represents, in perspective, a small portable tank with my improvements temporarily attached. Fig. 2 represents the same in vertical central section. Figs. 3, 4, and 5 represent a cap for closing a small portable tank.

A denotes the tank-vent. As shown in connection with small tanks it is connected with the induction-elbow B in order to obviate the necessity of more than one aperture in the tank. On large tanks, however, which are mounted on wheels, the tank-vent is a wholly independent aperture placed at the highest portion of the tank, and, as shown, is provided with the extended annular bearing-surface at *a*, and with the enlarged opening at its upper end. The vent-pipe should be provided with a screw cap or cock to effectually seal it during transit. On small tanks the vent-pipe will preferably be sufficiently high to place the deodorizing apparatus C above the elbow or induction pipe to which it is attached. As shown, the vent-tube or opening is cast with the elbow, and it extends downward to a point within the tank and outside of the inwardly-extending flange *b* of the elbow. Being thus placed outside of said flange, the entrance to the vent is not liable to be clogged during the filling operation by matter in its passage through the elbow.

The deodorizing apparatus preferred by me is a simple furnace for containing a charcoal fire. There are, however, numerous chemical deodorizers which, if placed within a chamber of the same general character as the furnace, so as to admit the passage of air from the vent, through or in contact with the deodorizing matter, will serve the same purpose. The base of the deodorizing apparatus is pro-

vided with an annular collar, the interior surface of which is so turned or finished as to effect a close, tight joint with the neck *a* of the vent-passage. The lower portion of the elbow is provided with a loose collar, *c*, which can be freely revolved, and by means of inclined-faced lugs on it and on the flanged neck *d* on the tank, the elbow and tank are connected, while an annular elastic packing-gasket, as at *e*, secures an air-tight joint. The flanged neck *d* has vertical lugs, located midway on each side, between two inclined-faced lugs, which serve to secure the central position of the flange *d* within the loose collar *c*, and thereby effect proper contact of the upper edge of the flange and the packing-gasket. The cap, shown in Figs. 3, 4, and 5, is intended for closing the tank after removing the deodorizing apparatus and the elbow. It is fitted to the flange *d* in a manner similar to the loose collar on the elbow. As, however, it must be sufficiently tight on the flange to allow of trundling the tank or otherwise handling it, it is necessary that it be provided with a gasket-plate which can be forced, under great pressure, upon the edge of the flange *d*. The gasket-plate *f* is pivoted to the cap, and has a central bearing, at which point only the plate and cap are in contact; therefore, as soon as the contact of gasket-plate and flange is effected, the cap can be freely revolved until its full pressure is attained without movement of the gasket-plate. This arrangement is important where an air-tight capacity is requisite, for no movement of the plate occurs except in right lines to and from the surface of the edge of the flange. The same effect is produced by the loose collar on the elbow, as the latter is not moved while the collar revolves in securing it to the flange. The revolving collar on the elbow and the cap are provided with holes or lugs, whereby a spanner-wrench may be applied thereto.

In operation, it will be seen that the elbow may be readily attached to the tank, the conducting-hose from the pump readily attached thereto by coupling, and the deodorizing apparatus simply placed on the vent-pipe. When so arranged, the filling operation may be conducted without offense, and the employment of deodorizing conducting-hose wholly obviated, the labor of attaching and detaching the conducting devices and deodorizing apparatus reduced to a minimum, and it may also be truly said that the bulk and weight of the apparatus are also greatly reduced in comparison with deodorizing and filling apparatus heretofore employed. In connection with vacuum-system apparatus, as heretofore proposed, the deodorizing apparatus must be permanently mounted upon or connected directly with the air-pump for the reason that the pumps are intended to be operated while the tank is being moved from place to place, while with the forcing-pump system, the deodorizer is only required while the tank is being filled with the offensive matter.

Having thus described my invention, I claim as new—

1. A night-soil tank, provided with an open air-vent, in combination with a deodorizing apparatus, which is attached directly to and mounted upon said tank, and in direct communication with the tank-vent, substantially as described.

2. The combination with a transit-tank, of an induction-pipe, provided with a tank-coupling device, and an independent vent-passage, substantially as described.

3. The combination with a night-soil transit-tank, of the induction-pipe, the independent vent-passage, and a deodorizing apparatus, mounted upon said induction-pipe and connected with said vent-passage, substantially as described.

4. The combination, with a night-soil transit-tank, of the sealing-cap, composed of the annular-flanged cap, provided with the inclined-faced lugs and the gasket-plate, provided with a central upper bearing for contact with the coincident inner surface of the cap, substantially as described.

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