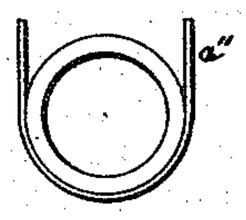
R. A. McCAULEY.

Apparatus for Cleaning Sinks, Cesspools, &c.

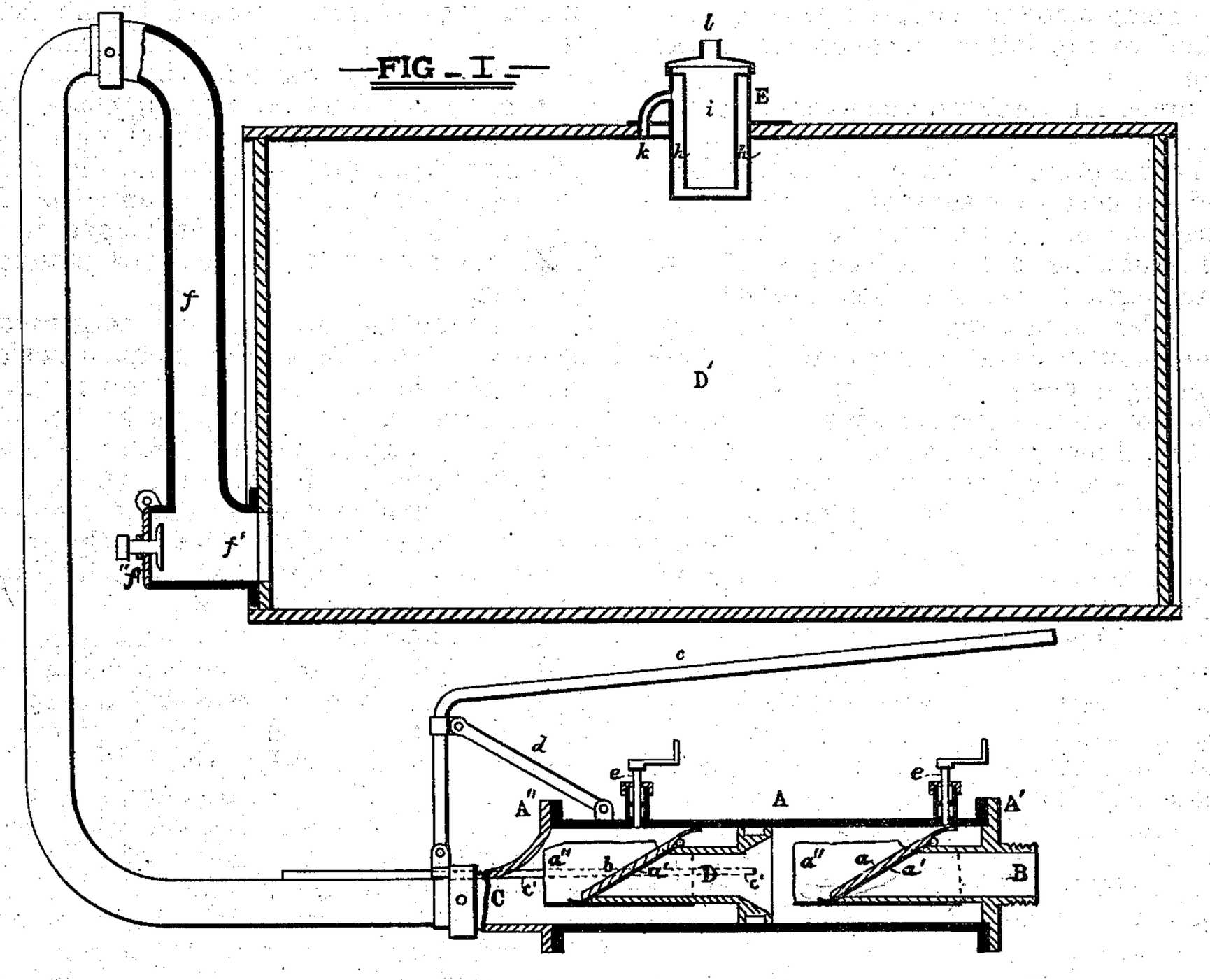
No. 156,366. Patented Oct. 27, 1874.

— FIG. II —

— FIG. III —



— FIG. I —



— WITNESSES —

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UNITED STATES PATENT OFFICE.

REUBEN A. McCAULEY, OF BALTIMORE, MARYLAND.

IMPROVEMENT IN APPARATUS FOR CLEANING SINKS, CESS-POOLS, &c.

Specification forming part of Letters Patent No. **156,366,** dated October 27, 1874; application filed August 7, 1874.

To all whom it may concern:

Be it known that I, REUBEN A. McCAULEY, of the city of Baltimore and State of Maryland, have invented certain new and useful Improvements in Apparatus for Cleaning Sinks, Cess-Pools, and the like, of which the following is a specification; and I do hereby declare that in the following is contained a full, clear, and exact description of my said invention, reference being made to the accompanying drawing, and to the letters of reference marked thereon.

My invention relates to the pump forming a part of the said apparatus, and has for its object the adapting of the pump to the above-named purpose by means of a certain novel construction of the valves, piston, and other attachments, the said parts being constructed and arranged to perform their several functions under circumstances which would render the pump inoperative if provided with corresponding devices of the ordinary kind.

Other features are herein described and illustrated, showing the adaptation of the pump to the purpose for which it is designed, such features not being claimed herein as a part of my present invention, but which will form the subject-matter of a future application. For the better understanding of my present invention, I state that the said features are certain attachments to the tank usually employed to receive the matter discharged from the pump, which attachments are designed to reduce the agitation of the said matter, and consequently lessen the amount of offensive gases generated in the tank, and also means for treating the said gases, and deodorizing and disinfecting the air driven from the tank, as it is filled with the said matter discharged from the pump.

In the description of my invention which follows, due reference must be had to the accompanying drawing, forming a part of this specification, in which drawing—

Figure 1 is a view of the pump and tank connected by the discharge-hose, parts of the same being shown in section; and Figs. 2 and 3, detached views of portions of the invention.

Similar letters of reference indicate similar parts of the invention in all the views.

A represents the barrel of the pump, to which are secured the heads A′ and A″. B is the induction-nozzle, the inner end of which is beveled or inclined, and fitted with a weighted valve, *a*, hinged at the upper side of the nozzle, and provided with a lever, by means of which it may be opened, for purposes hereinafter described. The face of the valve is furnished with some flexible material, *a′*, to assist in forming a close joint. Under ordinary circumstances the joint is formed by the face of the valve covered with the said flexible material coming in contact with the inclined face of the nozzle, no dependence being placed upon any other means. A flexible packing, *a″*, partially surrounds the front end of the nozzle projecting therefrom, and comes into use when an obstructing body becomes lodged in the nozzle in a position to prevent the closing of the valve.

The advantage gained from constructing the valve so as to occupy an inclined position when closed is that, when an object is caught between the valve and seat, the said mass is forced to a position at the greatest distance from the fulcrum or hinge of the valve, thereby giving a smaller opening than could otherwise be obtained, and one more easily covered by the projecting edges of the flexible packing *a″*.

C is the eduction-nozzle, projecting from the head A″, and tapered to the size of the discharging-hose, to give free exit to the discharged matter. D is a hollow piston, recessed at the back, and at the front provided with a valve, *b a′ a″*, corresponding with the valve *a a′ a″*. The piston is operated by means of side rods, which pass through suitable packing-boxes in the head A″, and connect with the pump-lever *c*, pivoted to a vibrating bar, *d*.

Great difficulty has been experienced in the management of pumps of this class, owing to the valves becoming clogged by an accumulation of heavy matter, and to such an extent as to make it necessary to discontinue the use of the pump until the valves can be relieved by taking the pump apart. To provide for such contingency, I use screws or stems *e*, which enter the pump-barrel through packing-boxes on the upper side thereof, and bear, when forced down, upon the levers on portions of the valves *a a′ a″* and *b a′ a″*. By this means

the valves can be opened so as to give a free and unobstructed opening through the pump, and its contents allowed to pass again to the sink.

To mitigate the agitation of the discharged matter in the tank D′, I connect the delivery-hose with the upper end of a stand-pipe, *f*, which communicates with the tank at or near the bottom thereof, through the medium of the branch *f′*, having the hinged door or valve *f″*, by means of which the tank is cleared of its contents. I place the stand-pipe *f* on the outside of the tank, to allow for a convenient mode of securing the lower end of the pipe to the tank; but it may be inserted through an opening in the side or end of the tank, and secured by means of a flange conforming in shape to that of the part of the tank through which the pipe passes. In the latter case an ordinary outlet-pipe could be used to empty the tank, instead of the branch *f′*.

E is a vessel, formed of two metallic cylinders, which come in contact at their upper ends, forming an annular compartment, *h*, which, owing to the inner cylinder being shorter than the outer one, is in communication with the inner cylinder or central chamber *i* of the vessel. The annular compartment *h* is connected by means of a pipe, *k*, to the tank D′.

Before the pump is put in operation, the deodorizing-vessel E is nearly filled with some disinfecting liquid or substance, which, if a liquid, rises to the same height in both the central chamber and annular compartments. Upon the entrance to the tank of the discharged matter from the pump, the air and gases are forced through the pipe *k* into the annular compartment, near the top thereof, and through the deodorizing-liquid to the central chamber, from which they escape through the aperture *l* in an inoffensive condition.

It will be seen that, by this arrangement, the gases are forced to pass twice through the liquid before escaping from the vessel.

If desired, the inner cylinder may be dispensed with, the air-pipe being formed to extend nearly to the bottom of the vessel E. By this means the air would be deodorized, but not to the same extent as by the use of the inner cylinder, also.

The vessel E can be either attached to the tank D′, as shown, or separated from it, and adapted to be used in connection with several tanks in succession, a flexible pipe being used in place of the rigid pipe described.

Having described my invention, what I claim as new, and wish to secure by Letters Patent of the United States, is—

1. The hollow piston D, provided with the weighted hinged valve *b*, having the flexible packing *a′* upon its face, and the flexible packing *a″* partially surrounding the front portion of the piston, and extending therefrom, substantially as specified, for the purposes set forth.

2. The induction-nozzle B, provided with the weighted hinged valve *a*, and flexible packing *a′* upon the face of said valve, and also provided with the flexible packing *a″*, partially surrounding the inner end of the nozzle, and extending therefrom, in combination with the hollow piston D, hinged valve *b*, and flexible packing *a′ a″*, all arranged within the pump, substantially as and for the purposes set forth.

3. The screws or stems *e*, adapted to enter the pump-chamber A, as described, in combination with the weighted hinged valves *a a′* and *b a′*, as specified.

In testimony whereof I have hereto subscribed my name, in the city of Baltimore, this 4th day of August, in the year of our Lord 1874.

REUBEN A. McCAULEY.

Witnesses:

WM. S. MURPHY,
SAMUEL HARRINGTON.