

W. PAINTER.
Valve.

No. 168,775.

Patented Oct. 11, 1875.

Fig. 1.

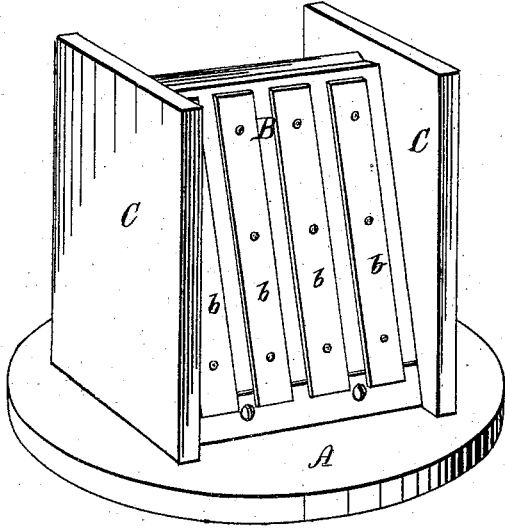


Fig. 2.

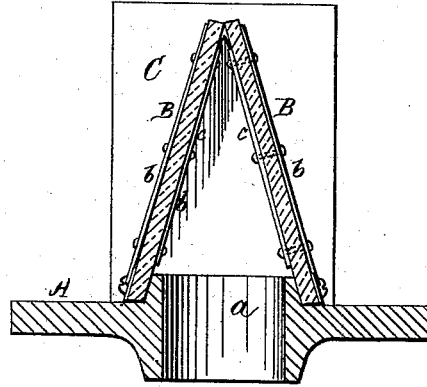
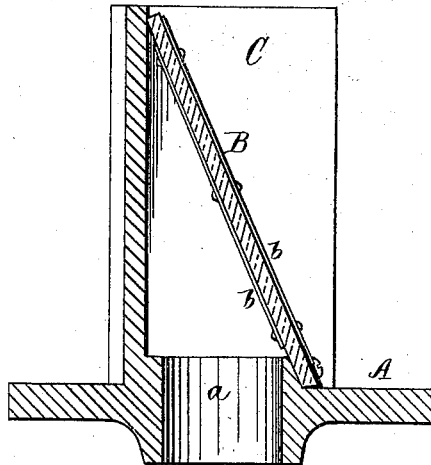


Fig. 3.



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WILLIAM PAINTER, OF BALTIMORE, MARYLAND.

IMPROVEMENT IN VALVES.

Specification forming part of Letters Patent No. 168,775, dated October 11, 1875; application filed October 6, 1875.

CASE B.

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 Valves; 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.

My improved valves are intended for use in connection with apparatus for removing the contents of privy-vaults, cess-pools, &c.

My invention consists in the combination of side plates with one or two flat flexible valve-covers, having stiffeners or braces, and hinged to a valve-plate, and provided with suitable seats. In several Letters Patent heretofore issued to me I have shown and described numerous forms of valves embodying flexible flaps or covers, provided with stiffeners, which render the flaps or covers inflexible in one direction, but otherwise flexible stiffeners of the character referred to are employed in connection with the covers of the valves herein described.

Referring to the drawings, Figure 1 represents in perspective one of my improved valves, having two covers in combination with the side plates. Fig. 2 represents the same in section. Fig. 3 represents one of my improved valves, having but one cover in combination with the side plates.

In each figure, A denotes the valve-plate, which may be circular or otherwise in form, and is usually provided with means for attaching it to a pump-barrel, a piston, or other device with which it is intended to be used. The valve-opening is shown at *a*, and it is usually of large area, in order to admit the free passage of such more or less solid matters as are liable to be deposited in vaults and cess-pools. B denotes in each instance a flexible valve-cover. It is hinged or otherwise secured to the valve-plate at one end, and is provided with the longitudinal stiffeners or braces *b*, which, by rendering it inflexible longitudinally, do not materially impair its flexibility laterally, and therefore, while the covers are prevented from being forced backward through the valve-

opening, they are free to adapt themselves to close around any solid obstruction which may be temporarily lodged between the covers when the valve should be closed. C in each instance denotes one of two side plates. They are located on each side of the valve-opening, and have coincident parallel faces, between which the valve-covers may freely vibrate. Each side plate has a seat, as at *c*, with which the valve-covers engage when the valve is closed. While it is preferable that two of the valve-covers be employed, as shown in Figs. 1 and 2, it is obvious that one of these may be employed in combination with the side plates. Such a valve is shown in Fig. 3. In this valve the flexible cover moves to and from a stationary surface, as is usual in single-leaf valves. It will be seen that the side plates serve to close the apertures at each side of the valve when the covers are not on their seats, and that the back pressure on the covers is directed solely to their outer surfaces, which results in a prompt and perfect closure. It is of value that valves for this peculiar service should, when open, present a free and continuous passage for the valve-opening, and also that the valve, when open, should present an opening having an area as nearly as possible equal to that of the valve-port or opening in the valve-plate, and also that the covers should, in order to present such an opening, have but little movement, in order that a prompt closure may be effected. It will be seen that valves constructed as herein shown possess these desirable features. A very slight movement of each of the two covers results in an opening equal to the area of the opening in the valve-plate, and when a single cover is employed, with the side plates widely separated, it is obvious that but little movement of the cover will be requisite for attaining the desired area of opening. The covers being flexible, they readily adapt themselves to their seats and to each other, as well as to solid matters temporarily held between the covers, or between them and their seats at the closure of the valve. The braces or stiffeners may be arranged at their lower ends to

serve as springs, or a separate spring may be applied to each cover, so as to insure a prompt closure when but little back pressure occurs incidental to their operation. In some cases I prefer to provide the covers with flexible valve-flaps, extended for several inches beyond the ends of the stiffeners or braces, as described in Letters Patent heretofore issued to me.

Having thus described my invention, I

claim as new and desire to secure by Letters Patent—

The combination, with a flexible valve cover or covers, provided with longitudinal stiffeners or braces, of the side plates, substantially as and for the purposes specified.

WILLIAM PAINTER.

Witnesses :

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PHILIP F. LARNER.