

(No Model.)

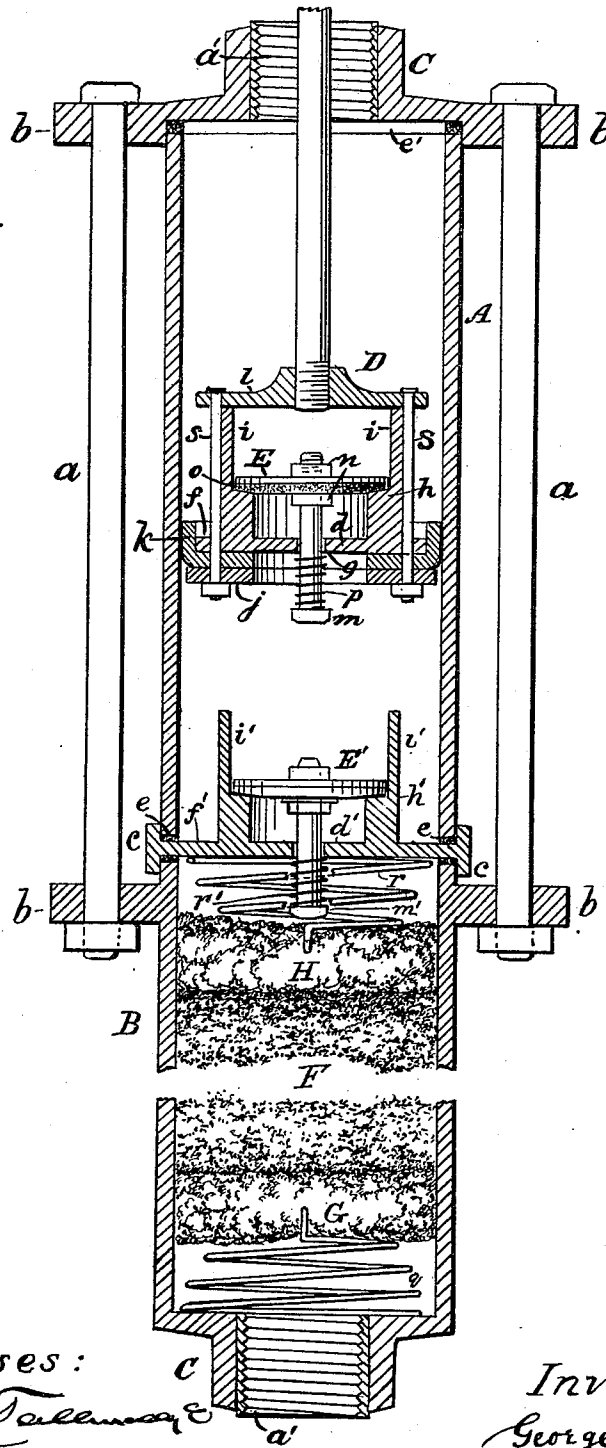
2 Sheets—Sheet 1.

G. F. BEEBE.
PUMP.

No. 449,607.

Patented Mar. 31, 1891.

Fig. 1.



Witnesses:

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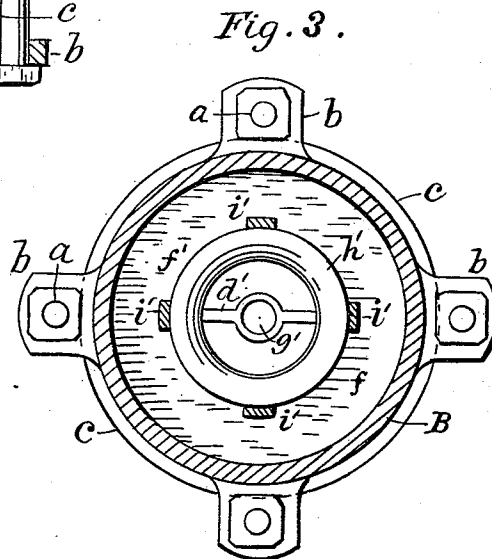
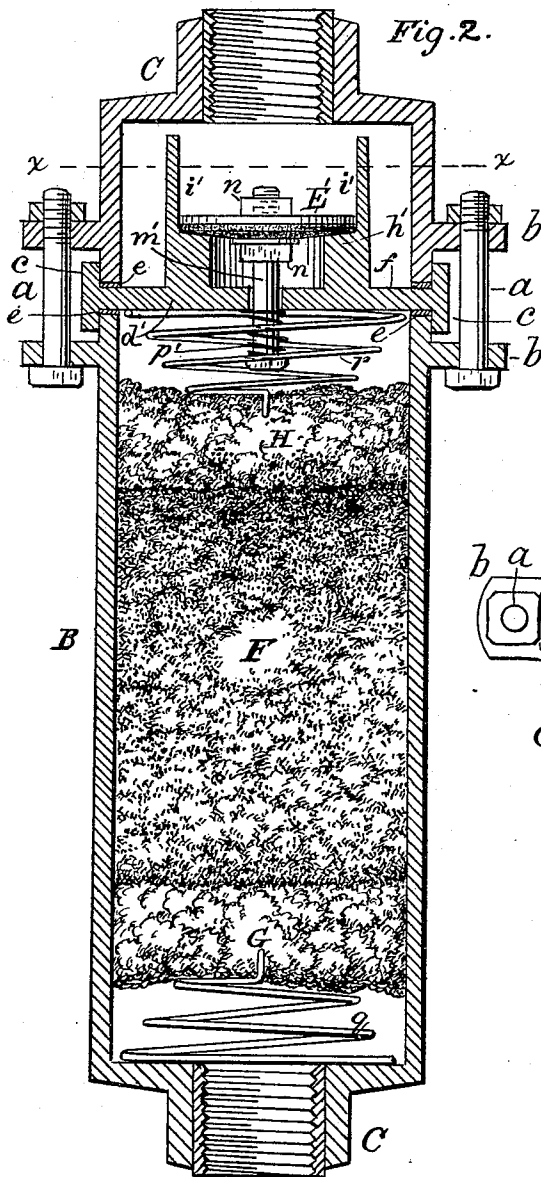
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2 Sheets—Sheet 2.

G. F. BEEBE.
PUMP.

No. 449,607.

Patented Mar. 31, 1891.



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UNITED STATES PATENT OFFICE.

GEORGE F. BEEBE, OF HORNELLVILLE, NEW YORK, ASSIGNOR TO MAX MARSHALL, OF WASHINGTON, DISTRICT OF COLUMBIA.

PUMP.

SPECIFICATION forming part of Letters Patent No. 449,607, dated March 31, 1891.

Application filed November 5, 1890. Serial No. 370,395. (No model.)

To all whom it may concern:

Be it known that I, GEORGE F. BEEBE, a citizen of the United States, residing at Hornellsville, in the county of Steuben and State of New York, have invented certain new and useful Improvements in Pumps, Hydrants, &c.; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to pumps, hydrants, and other devices for drawing water; and it consists in an improved attachment for the same, as hereinafter described and claimed, the object of the invention being to furnish a device to prevent sand and other matter rising through the tubing and interfering with the working of the plunger or valve and also to filter the water and render it pure and fit for use.

In the accompanying drawings, Figure 1 represents a vertical central section of an attachment for pump-tubing having my improvements. Fig. 2 is a similar view showing a modification in construction. Fig. 3 is a sectional plan, the section being taken on line *xx* of Fig. 2.

The casing of the attachment is tubular in form and is made in two parts, (designated by A and B,) said parts being detachably secured together by means of screw bolts or rods *a* and lugs *b*. The parts A and B are each provided with an opening, which is surrounded by a neck or collar C, which has an inner thread for attaching it to tubing, the thread being formed on a lining or coupling *a'*, which is set in casting the casing.

D indicates a plunger placed in the casing A and provided with an annular plate *f*, across the center of which extends a bar *d*, having a central aperture *g*. A circular valve-seat *h* extends up from the plate *f* and surrounds the central opening therein, and about said valve-seat are the fixed vertical guides *i*, which are preferably four in number. A leather packing *k* is placed under the annular plate *f*, the edge of said packing being turned up, as seen in Fig. 1, so as to form a receptacle outside of the valve-seat for any

sand or particles that might rise through the plunger-valve. A top plate *l* is placed on the tops of the guides *i* and has a threaded aperture for the attachment of a plunger-rod. A bottom ring *j* is placed under the packing, and the parts are secured together by bolts *s*. On the said valve-seat and within the guides *i* is placed a valve E, which has a circular head provided with a bearing-surface *o*, of rubber or other similar material, the parts being secured by a threaded bolt *m*, which forms the valve-stem, and nuts *n*. The bolt *m*, with its head downward, extends through the aperture *g* in the bar *d*, and is provided with a spring *p*, which allows the valve to open as the plunger descends and then returns it to its seat.

The tubular part A of the casing forms the working-barrel in which the plunger makes its movement, and at the bottom of said part is placed a valve-seat with a foot-valve therein, the same being somewhat similar in construction to the valve and seat in the plunger, as above described. The circular annular plate *f'* extends outward between the parts A and B of the casing at the junction of said parts, and is provided with a double flange *c* at its periphery, which incloses the edges of both of said parts, suitable ring packing *e* being placed at the junction of parts, as shown. A circular valve-seat *h'*, provided with vertical guides *i'*, surrounds the central opening in the plate *f'*, and a perforated bar *d'* extends across said opening. A valve E', similar in construction to the valve E, is placed in the valve-seat, being provided with a bearing-surface of rubber or other similar material and a stem *m'*, which extends down through the bar *d'* and is provided with a spiral spring *r'*, which holds the valve to its seat, but allows it to open with the rising water. The plate *f'*, bar *d'*, flanges *c*, valve-seat, and guides *i'* are usually cast in one piece.

The top of casing A is made detachable, and a packing-ring *e'* is placed at the joint of the top part and the tubular casing.

The casing B is provided with a filling of filtering material, the main part of which is preferably charcoal F, which rests on a layer of sponge G, the latter resting on a device of

open-work, which may be a coiled spring *g*. On the top of the charcoal filling is also placed a layer of sponge *H* and a device to form a guard for the valve-stem *m'*, which may be a coiled spring *r*, surrounding said valve-stem. The layers of sponge allow the passage of water, but prevent the charcoal or particles thereof passing upward or downward, and the coiled springs prevent the valve-stem and the water-passage at the bottom becoming clogged.

The attachment, as above described, is intended for pumps, and is especially adapted for the tubing of deep wells, the plunger and foot-valve, constructed as described, being most effective in preventing the rising of sand or particles of matter above the plunger.

A modification in construction of the attachment is shown in Figs. 2 and 3. In this form of attachment the plunger is dispensed with, and the upper part *A* of the casing, being less in extent, does not form a working-barrel, but incloses a valve *E'* with its seat and guides. This form of the attachment may be applied to the tubing of various devices, but is especially adapted for hydrants and other devices in which plungers are not employed. When it is applied to a pump, it is connected with the pump-tubing below the working-barrel and check-valve, (if the pump has a check-valve.)

I claim—

1. An attachment provided with a tubular casing adapted for connection at its extremities with the tubing of devices for drawing water, a pump-cylinder formed within said casing, and a plunger provided with a spring-valve and placed in said cylinder, a valve-seat fixed in said casing below said cylinder and provided with vertical guides, a valve pro-

vided with a stem and placed loosely in said seat, said valve being provided with a retaining-spring, filtering material placed within said casing below said valve, and devices adapted to prevent said filtering material clogging said valve and the water-passage at the lower end of the casing, substantially as and for the purposes described.

2. An attachment provided with a tubular casing adapted for connection at its extremities with the tubing of devices for drawing water, a valve-seat in said casing, a spring-valve provided with a stem and resting in said seat with the stem extending downward through a guide, suitable filtering material in said casing below said valve, and devices placed in the casing adapted to prevent the filtering material clogging the valve and the water-passage, substantially as set forth and described.

3. The combination, with the casing formed of parts *A* and *B*, of an annular plate *f'*, provided with outer flanges *c* and packing *e*, a circular valve-seat *h'*, with guides *i'* surrounding said seat and perforated bar *d'*, a valve *E'*, provided with a stem which extends downward through said bar *d'* and a retaining-spring on said stem, a filling or filtering material in case *B*, sponge being placed above and below said material, and springs *g* and *r* for keeping the filtering material and sponge in place, substantially as and for the purposes described.

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

GEORGE F. BEEBE.

Witnesses:

PHILIP MAURO,
H. A. DANIELS.