

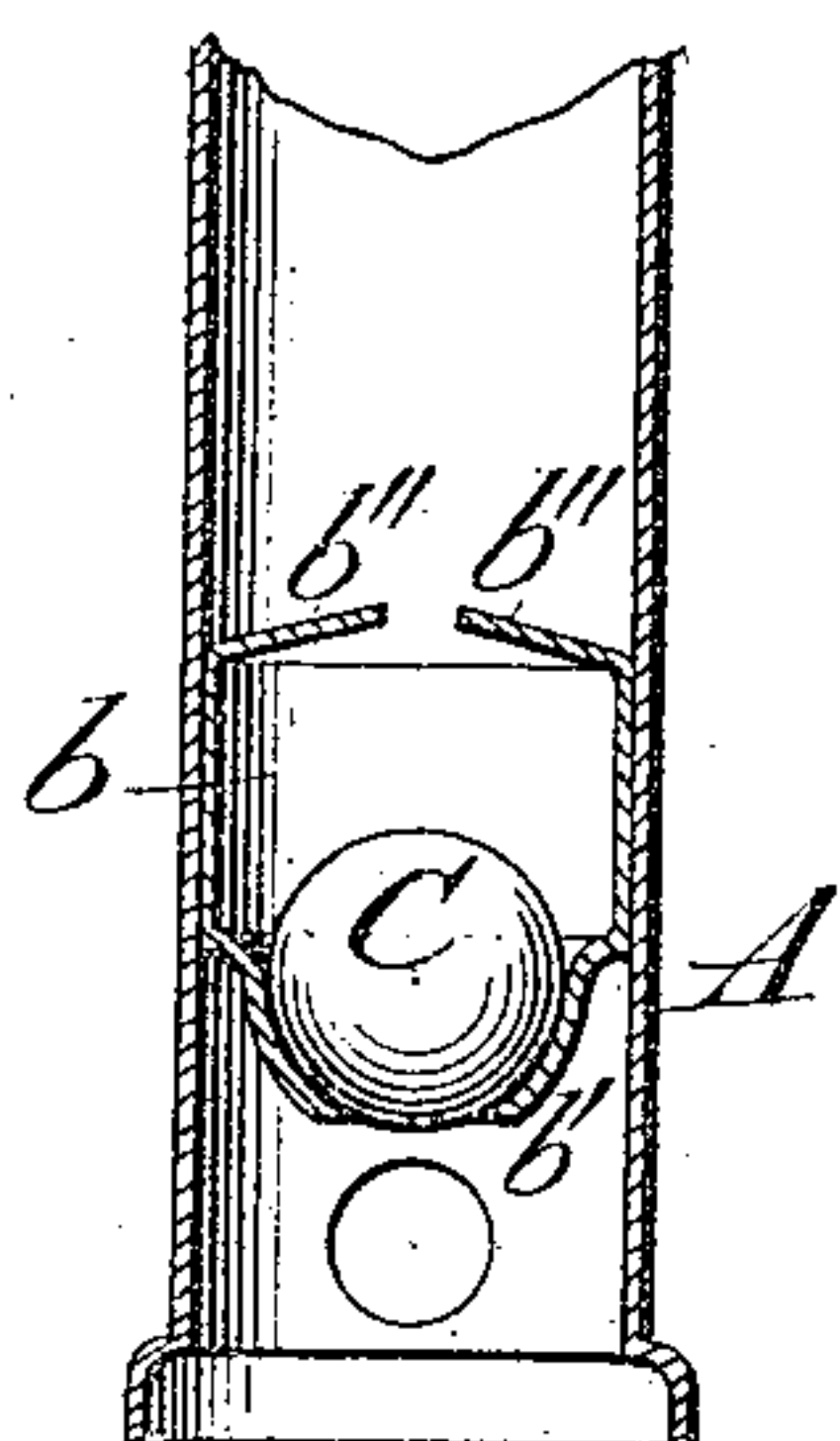
(No Model.)

J. A. WHITMAN.  
PUMP.

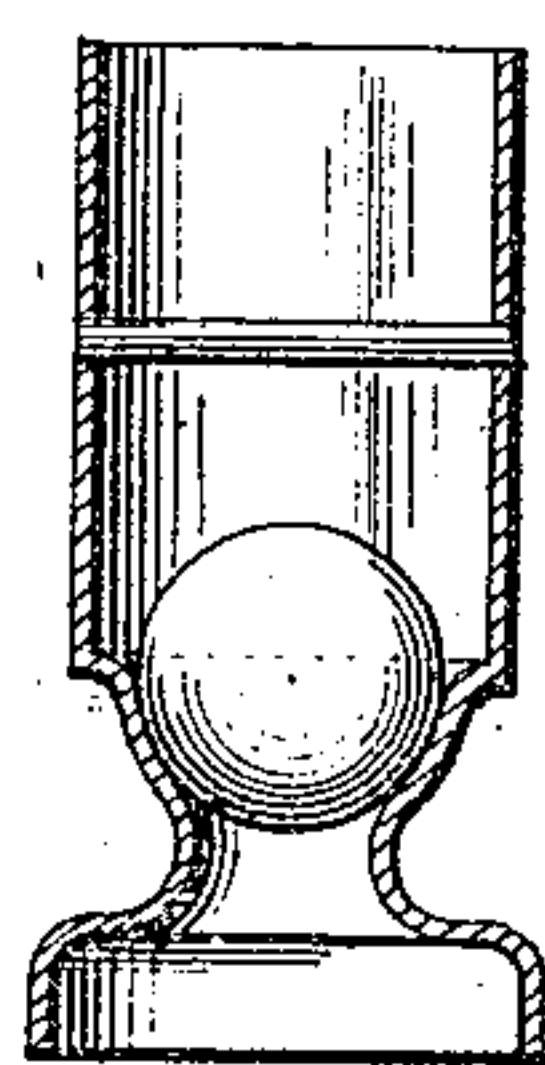
No. 248,902.

Patented Nov. 1, 1881.

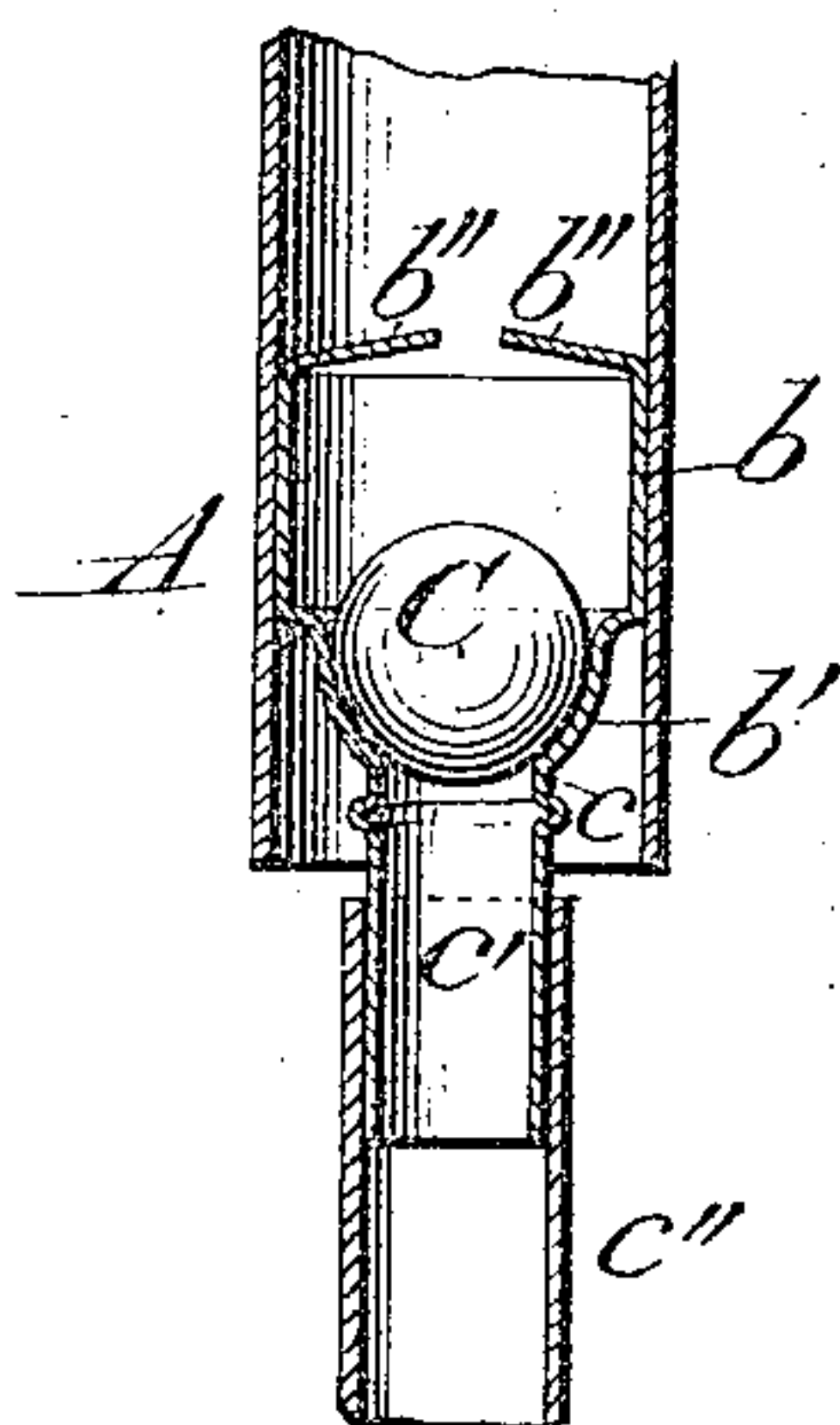
*Fig. 1.*



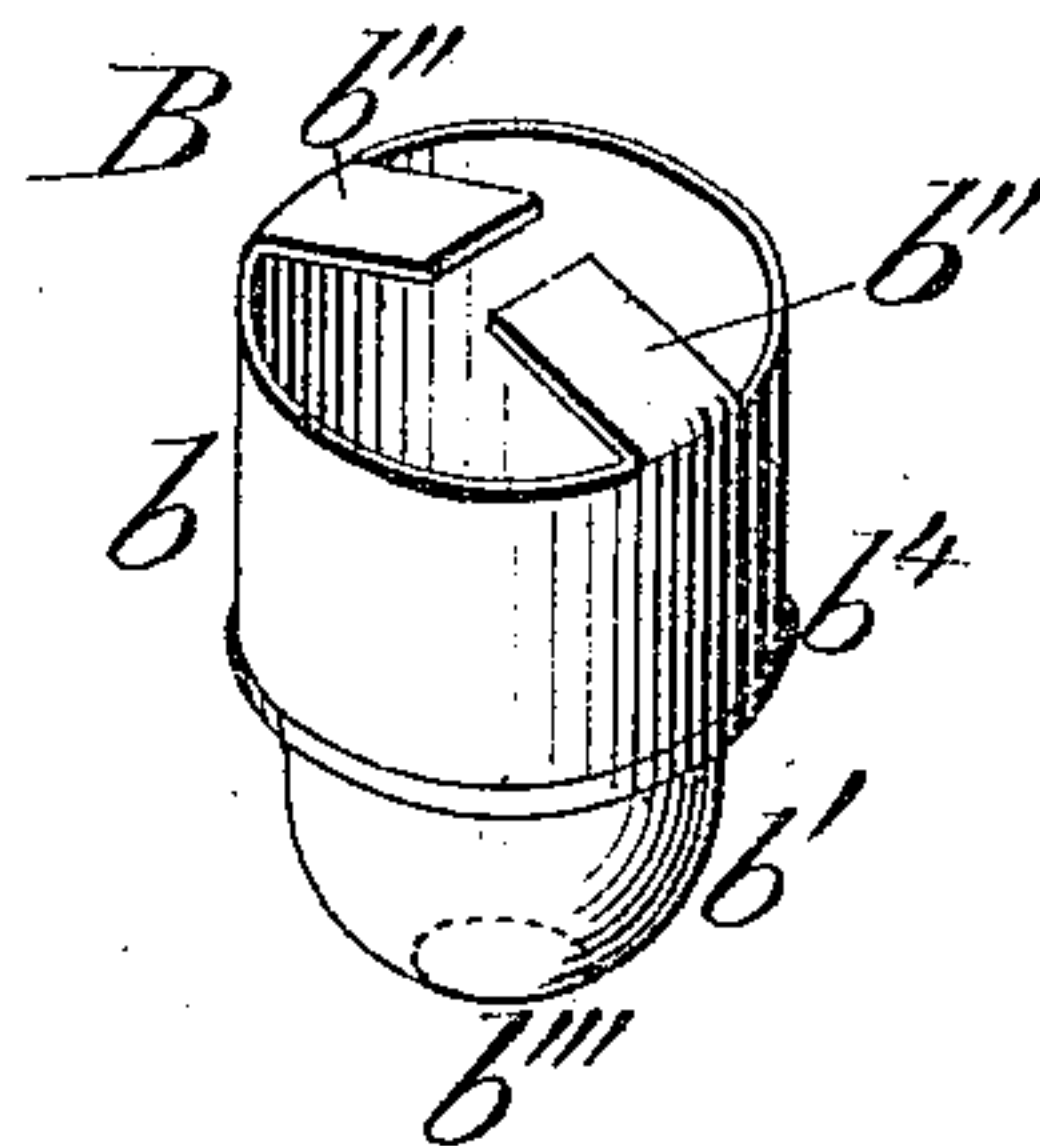
*Fig. 5.*



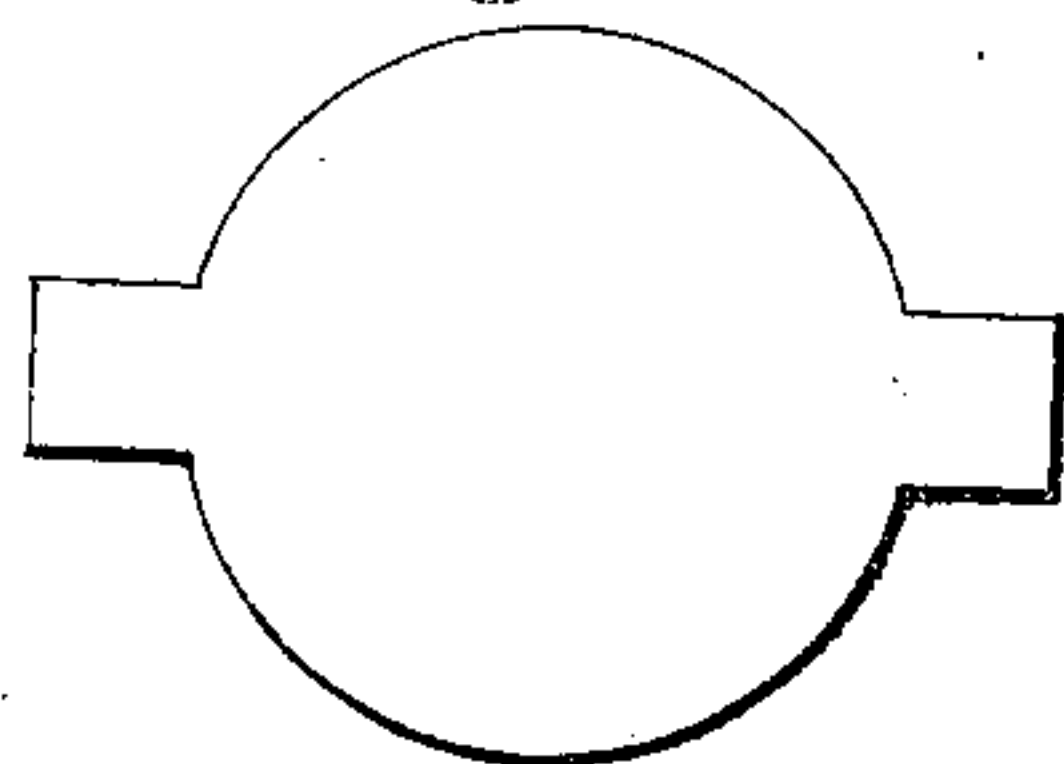
*Fig. 3.*



*Fig. 4.*



*Fig. 2.*



*Attest:*

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*By A. Cranford*  
*att'y*

# UNITED STATES PATENT OFFICE.

JOSIAH A. WHITMAN, OF CRANSTON, RHODE ISLAND.

## PUMP.

SPECIFICATION forming part of Letters Patent No. 248,902, dated November 1, 1881.

Application filed August 11, 1881. (No model.)

*To all whom it may concern:*

Be it known that I, JOSIAH A. WHITMAN, a citizen of the United States, residing at Cranston, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Pumps; 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, reference being had to the accompanying drawings, and to the letters or figures of reference marked thereon, which form a part of this specification.

This invention relates to improvements in the construction of pumps, and particularly that kind patented to me January 8, 1878, numbered 199,131; and it consists in the construction of the parts of a pump, as will be fully hereinafter described.

In the drawings, Figure 1 represents a sectional upright view of a pump-cylinder or hollow plunger with the valve-box in place. Fig. 2 represents a plate of sheet metal, from which the valve-box is formed. Fig. 3 represents a sectional upright view of pump-cylinder and valve-box with an elongation to receive an induction pipe or hose. Fig. 4 represents the valve-box in perspective and removed from the cylinder or plunger, and Fig. 5 represents the mode in use for stopping the valve in its upward reciprocations.

A represents the barrel or cylinder of a pump, made from wrought-metal pipe, or, where a hollow plunger is used, it would represent such plunger when working in the barrel or cylinder of a pump.

B represents an adjustable and insertible valve-box to be inserted in the cylinder or hollow plunger of a pump. This valve-box is formed into shape from a single piece of sheet-brass or other tough metal, the form of which, when cut from the sheet, is seen at Fig. 5, or it may be formed from metal tubing; but I prefer to form it wholly from a flat piece of sheet metal, and to have the side walls, *b*, to form a chamber for a ball or other form of free valve, the stops *b''* at the upper edge of the box to limit the rise of the valve, the valve-seat *b'* at the base of the box, the inlet-opening *b'''*, and a slight enlargement in the diameter of the box is made at *b<sup>4</sup>* to insure a water-tight fit

between the box and cylinder when the box is forced into the internal bore of the pump-cylinder or hollow plunger of a pump. If, however, the finish of the parts is perfect, the box may be inserted without this enlargement; but I prefer to have it. A valve-box so made and formed up from a flat piece of sheet metal, or from wrought-metal tubing, and having the construction as above described, is adjustable in the cylinder as the lower valve, or in a hollow plunger of a pump as the upper valve, to any desired position therein, and can be removed therefrom at pleasure. If other forms than ball-valves are used, the box may be formed without the stops *b''*. The valve-box, with or without the valve, is kept as an article of manufacture to be sold without the other parts of the pump, as such boxes will be made in sizes to suit the diameter of the bore of the tubing from which the pump cylinder or plunger is made.

C represents a free ball-valve placed within the box B, and enough less in diameter than the bore of the box to admit the proper quantity of water to pass by it and freely reciprocate therein, and is limited in its reciprocations by the stops *b''* at the top of the box, which, being a part of the same piece of metal, are bent inward toward each other and prevent the valve from rising higher than is necessary. These stops obviate the necessity of boring or drilling holes in the cylinder or plunger of the pump, to insert a stop-pin to limit the rise of the valve, and, being less in width than the inner diameter of the box, give ample space for the passage of the water through the box. Other forms of valves than balls may be used in this box, as it only requires the shape of the bearing of the valve to be known to produce a seat to fit the valve.

In some cases it is desirable to form the lower end of the valve-box to attach an induction-pipe thereto, and when that is the case box B is elongated or extended below the valve-seat and contracted to have the same diameter of opening as the inlet-opening in the valve-seat, as seen at *c* in Fig. 3, to form the part *c'* to receive the hose *c''*. The box for this purpose, with the hose-connection, is made from a single piece of metal tubing struck up into the shape desired.

Whenever the valve-box is greater in diam-



eter than the cylinder or plunger of a pump the cylinder or plunger can easily be expanded to the diameter that will receive the box under suitable pressure, or such pressure as will insure a tight joint between the box and cylinder, and to such height as may be desirable above the bottom of the cylinder or plunger.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. An adjustable and insertible valve-box, B, made from a single piece of metal, and having the valve-chamber within the walls *b*, valve-seat *b'*, and inlet-opening *b'''*, substantially as and for the purposes described.

2. An adjustable and insertible valve-box, B, made from a single piece of metal, and having the valve-chamber within the walls *b*, valve-seat *b'*, valve-stops *b''*, and inlet-opening *b'''*, substantially as and for the purposes described.

3. A pump-valve box, B, made from a single piece of metal, having valve-chamber within the walls *b*, valve-seat *b'*, stops *b''*, inlet-opening *b'''*, and enlarged part *b<sup>4</sup>*, as and for the purposes described.

4. A pump-valve box constructed, as above described, from a single piece of metal, adapted to be used with the cylinder or hollow plunger of a pump, substantially as described.

5. A pump-valve box formed from a single piece of metal, having a chamber for a free valve, stops to limit the rise of the valve, a valve-seat, an inlet-opening, and a contracted portion, *c'*, to receive the induction-pipe *c''* thereon, as and for the purposes described.

6. As an article of manufacture, a pump-valve box having a chamber for the valve, the valve-seat, the inlet-opening, the valve-stops, and the part to receive the induction-pipe, substantially as described.

7. As an article of manufacture, a pump-valve box having a chamber for a valve, a valve-seat, an inlet-opening, and a valve-stop, substantially as described.

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

JOSIAH A. WHITMAN.

Witnesses:

HENRY WHITMAN,  
JOHN J. BUCKLEY.