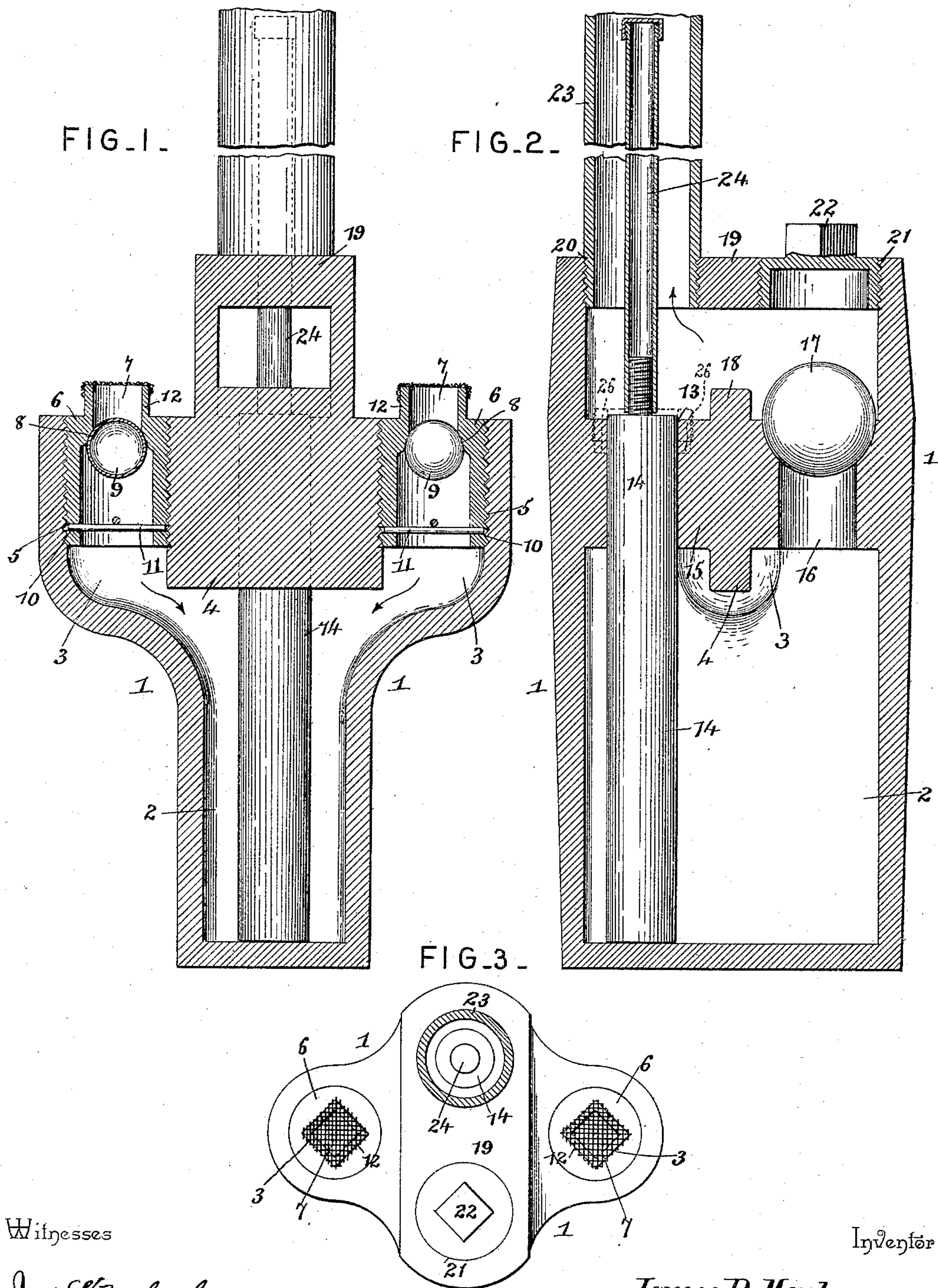


(No Model.)

J. P. MONTGOMERY.
PUMP.

No. 445,962.

Patented Feb. 3, 1891.



Witnesses

Jas. K. McLathran

Wm. Baggers

By his Attorneys,

James P. Montgomery

C. A. Snow & Co.

UNITED STATES PATENT OFFICE.

JAMES P. MONTGOMERY, OF SOUTH PUEBLO, ASSIGNOR OF SEVEN-EIGHTHS
TO LEWIS L. MARBLE, WILLIAM C. MARYMEE, AND JOHN C. SETTLE, ALL
OF PUEBLO, COLORADO.

PUMP.

SPECIFICATION forming part of Letters Patent No. 445,962, dated February 3, 1891.

Application filed October 14, 1890. Serial No. 368,115. (No model.)

To all whom it may concern:

Be it known that I, JAMES P. MONTGOMERY, a citizen of the United States, residing at South Pueblo, in the county of Pueblo and State of Colorado, have invented a new and useful Pump, of which the following is a specification.

This invention relates to pumps; and it has for its object to construct a force-pump which shall be simple, durable, and inexpensive, and by means of which water or other liquids may be forced to a considerable height with a small expenditure of power.

The invention consists in certain improvements in the construction of the pump-casing and the construction and arrangement of the valves in the same, and in further details of construction, which will be hereinafter fully described, and particularly pointed out in the claims.

In the drawings hereto annexed, Figure 1 is a vertical sectional view taken through the inlet-pipes of my improved pump. Fig. 2 is a vertical transverse sectional view taken on the line 2 2 in Fig. 1. Fig. 3 is a plan view.

Like numerals of reference indicate like parts in all the figures.

1 designates the pump-casing, which is provided with a central chamber 2, into which opens the induction-chambers 3 3, one on each side. The induction-chambers are separated by a central wall or web 4. The upper ends of the induction-chambers are interiorly screw-threaded, as shown at 5, to receive the plugs 6, having the inlet-openings 7 at their upper ends. At the lower ends of the inlet-openings 7 are formed seats 8 for the floating ball-valves 9. The lower ends of the plugs 6 are provided with perforations 10 to receive pins 11, by means of which the valves 9 are retained in the cages or valve-chambers formed by the plugs 6. The said plugs may, as will be observed, be very readily removed when it is desired to have access to the valves contained therein, the upper ends of said plugs being provided with wrench-seats 12.

In the chamber 2 of the casing 1, between one side of said casing and the wall or web 4 in the latter, is formed a cylindrical bore

13, in which works a piston 14, which is of considerable length as compared with the casing. The latter is practically provided with a horizontal partition or diaphragm 15, from which the wall or web 4 depends and in which the bore 13 is formed. The partition or diaphragm 15 on the opposite side is provided with an opening 16, the upper end of which forms a seat for the check-valve 17. A transverse lug 18, formed upon the upper side of the partition 15, prevents the ball-valve 17 from rolling over and interfering with the operation of the plunger 14. The top 19 of the casing is provided with openings 20 and 21, registering, respectively, with the bore 13 and with the perforation or opening 16. In the perforation 21 above the latter is arranged a plug 22, through which access may be had to the valve 17. From the opening 20 above bore 13 the exit-pipe 23 extends in an upward direction.

To the upper end of the piston or plunger 14 is attached the operating-rod 24, which extends upwardly through the exit-pipe 23. This rod may either be made of some material—such as wood—that is lighter than water, or it may, as shown in the drawings hereto annexed, be made of tubing, which must be of such dimensions and construction as to be capable of floating in water. This pump-rod is carefully constructed with relation to the column of water which, during operation, is contained in the exit-pipe, so as to support the weight of the piston or plunger. It follows that on the upstroke of said plunger the operation will be exceedingly easy, the plunger being assisted in the upward direction by the floating tendency of the plunger-rod, while on the downstroke the entire force of the operator or the motive power may be expended upon forcing the water upwardly through the exit-pipe.

The operation and advantages of my improved pump will be readily understood from the foregoing description, taken in connection with the drawings hereto annexed. On the upstroke of the piston or plunger the valves 9 will be open and water be admitted through the induction-chambers into the

chamber 2 of the casing below the horizontal partition 15. The valve 17 is meanwhile supported upon its seat 16. On the downstroke of the plunger the valves 9 will be forced to their seats and the contents of the chamber 2 below the partition 15 will be forced upwardly past the check-valve 17 and into the exit-pipe.

My improved pump, as will be seen from the foregoing description, is very simple in construction, and it may be manufactured at a moderate expense, the entire device comprising but a single casting, namely, the casing 1, three plugs, three valves, and the induction-pipe. Owing to this simplicity of construction, the device is not liable to get out of order, and in case of derangement of any of its parts they may be easily reached for repairs.

I prefer to provide the inlet-openings 7 of the plugs 6 with screens, for the purpose of preventing the admission of obstructions into the pump. I also reserve the right to provide the upper end of the bore 13 with a packing-box such as shown in dotted lines at 26, although this is usually deemed unnecessary.

Having thus described my invention, I claim and desire to secure by Letters Patent of the United States—

1. In a pump, the casing having a chamber provided with a horizontal partition having a downwardly-extending web or wall, the induction-chambers opening into said chamber below said partition and having plugs provided with floating valves, the cylindrical bore formed in the horizontal partition on one side of the central web, an opening formed in the opposite side of said partition and having an upwardly-opening check-valve, and the exit-pipe extending upwardly from the top of the casing, substantially as set forth.

2. In a pump, the casing having a horizontal partition provided with a cylindrical bore and an opening having a seat at its upper end for a check-valve, the induction-chamber opening into said casing below the horizontal partition and provided at their upper ends with screw-threaded plugs having inlet-openings and float-valves closing the latter, the piston or plunger mounted in the cylindrical bore, having the upwardly-extending pump-rod made of tubular or floating material, and the exit-pipe extending upwardly from the top of the casing above the cylindrical bore in the horizontal partition in the latter, substantially as set forth.

3. In a force-pump, the herein-described casing, having a horizontal partition provided with a cylindrical bore and with an opening having a valve-seat at its upper end, a check-valve mounted on said seat, an opening in the top of the casing above said check-valve having a plug, a transverse rib formed upon the upper side of the horizontal partition, the induction-chamber opening into the casing below the horizontal partition and having the floating valves at the upper ends of their inlet-openings, the exit-pipe extending upwardly from the top of the casing above the cylindrical bore, the piston or plunger working in the latter, and the plunger-rod extending upwardly through the exit-pipe, said plunger-rod being made tubular or of floating material, substantially as set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

J. P. MONTGOMERY.

Witnesses:

R. J. MARSHALL,
J. EDGAR SMITH.