

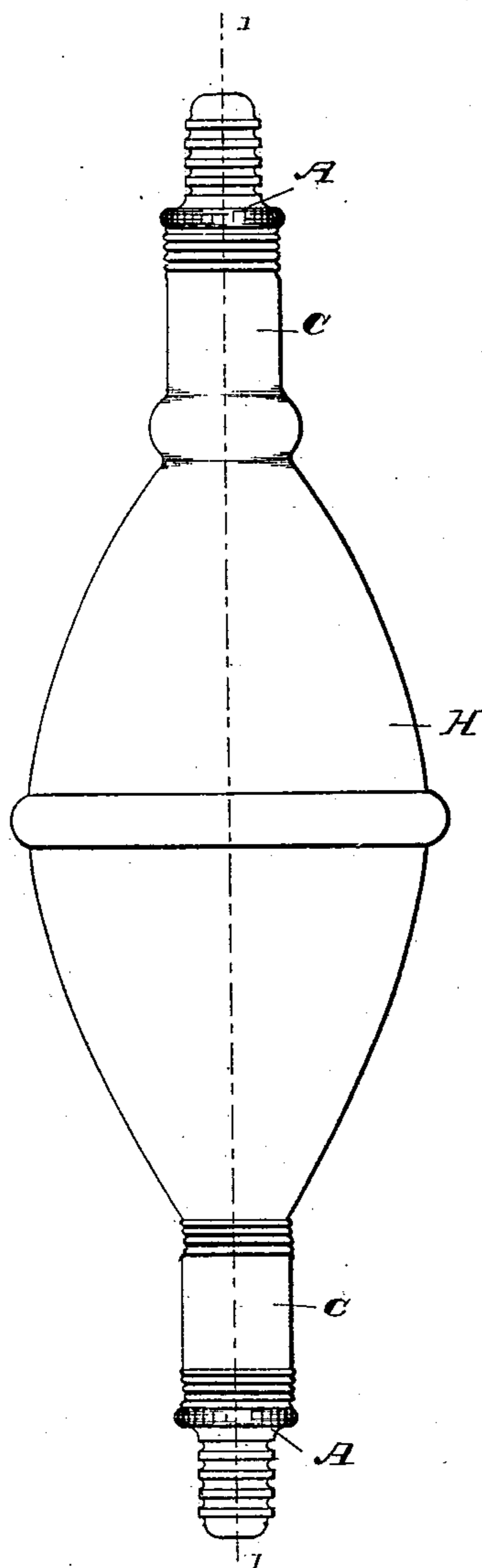
(No Model.)

J. T. WOODS.
SYRINGE BULB AND VALVE.

No. 247,142.

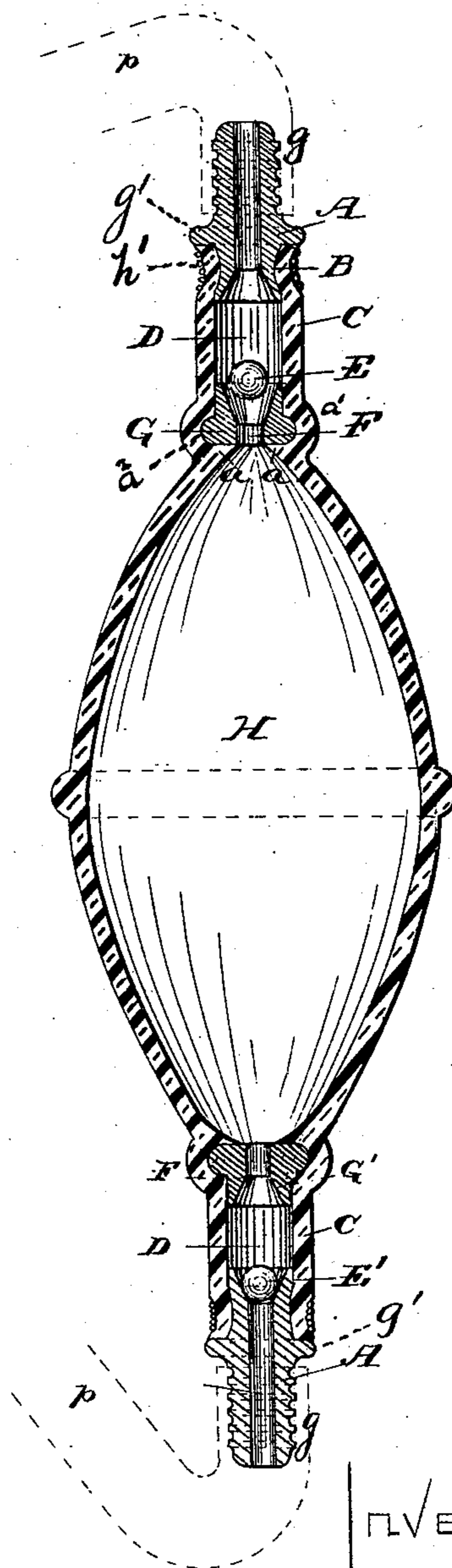
Patented Sept. 13, 1881.

FIG. 1.



Witnesses:
Wm. J. Johnston
W. E. Parker.

FIG. 2.



Inventor:
Joseph T. Woods
Att'ys
Charles G. Barr

UNITED STATES PATENT OFFICE.

JOSEPH T. WOODS, OF TOLEDO, ASSIGNOR OF ONE-HALF TO WILLIAM H. HAVEN AND JACOB J. FLECK, OF FINDLAY, OHIO.

SYRINGE BULB AND VALVE.

SPECIFICATION forming part of Letters Patent No. 247,142, dated September 13, 1881.

Application filed March 8, 1881. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH THATCHER WOODS, a citizen of the United States, residing at Toledo, in the county of Lucas and State of Ohio, have invented certain new and useful Improvements in Bulbs and Valves for Stomach-Pumps, Syringes, Aspirators, &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, 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 the rubber bulbs which are employed in syringes, stomach-pumps, and aspirators. The rubber bulb or elastic globe commonly used in such devices is provided with an inlet and an outlet tube, through which the fluid is admitted into and discharged from the bulb by the alternate contraction and expansion of the bulb, as will be readily understood by those skilled in the art.

The invention consists in an improvement in the construction of the extremities of the bulb by the provision of inlet and outlet ball-valves to admit of the use of the bulb in the peculiar manner hereinafter specified, and in the mode of securing the valve-seats in place, all as more fully described in the following specification, and particularly pointed out in the claim.

In the drawings, Figure 1 is a side elevation of a bulb embodying my improvement; and Fig. 2 is a longitudinal central section, taken on the line 1 1, Fig. 1.

The letter H indicates the body of the bulb, which is of the construction ordinarily employed in this class of syringes, stomach-pumps, and aspirators, excepting, however, that the bulb is made a little thicker than usual, to increase its strength, and that it is formed with the ends C C extended sufficiently to inclose the valve-seats and valves. As both ends of this bulb are constructed alike, a description of one will serve for both.

At one end of the valve-chamber D is arranged the valve-seat G, and at the opposite end of said chamber is arranged the valve-seat A, both of these said valve-seats being firmly secured in place by the extended end of the bulb. The bulb is formed with a bulge, a' , at its end, said bulge forming a recess, which receives the enlarged portion a^2 of the

valve-seat G, thereby effectively securing said seat in place. This recess forms an annular seat or shoulder, a , against which the seat G fits.

The outer valve-seat, A, is formed with a depression, B, and the end C of the bulb is contracted, as at h' , so as to fit into said depression of the outer seat, and thus retain the same firmly in place. The outer valve-seat is extended into a screw-nozzle, g , which projects out from the bulb end, and it is also formed with a flange, g' , which rests against the tip of the bulb end.

E' designates the ball-valve which is employed, the seats being formed with conical recesses to receive the same when seated.

$p p$ designate, in outline, sections of flexible tubing connected with the nozzles $g g$.

In use the operator will hold this bulb perpendicularly, so that the valves will drop into their proper places, as illustrated in Fig. 2. By now compressing the bulb and then releasing the pressure thereon the fluid will flow therein through the lower inlet as the bulb expands. A repetition of the pressure upon the bulb causes the fluid to be ejected through the upper outlet. By now reversing the position of the bulb and repeating the above operation there will be a reversal of the flow of the liquid, the ball-valves dropping instantly by gravity, in order to admit of such flow; hence the device can be operated without disturbing the tubes, and the fluid ejected in the first instance be readily withdrawn from the place where it was first caused to flow into. By holding the bulb in a horizontal position the valves will drop from their seats, so that the device can be used as a siphon.

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

The combination, with the elastic bulb, of the two tubular extended bulb ends, each having a bulged and a contracted portion, and the two valve-seats, one adapted to fit into the recess formed by said bulge and the other formed with a recess to receive said contracted portion of the bulb end, ball-valves being employed in connection with the valve-seats, substantially as described.

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

Witnesses: JOSEPH THATCHER WOODS.
A. FARQUHARSON,
E. H. FITCH.