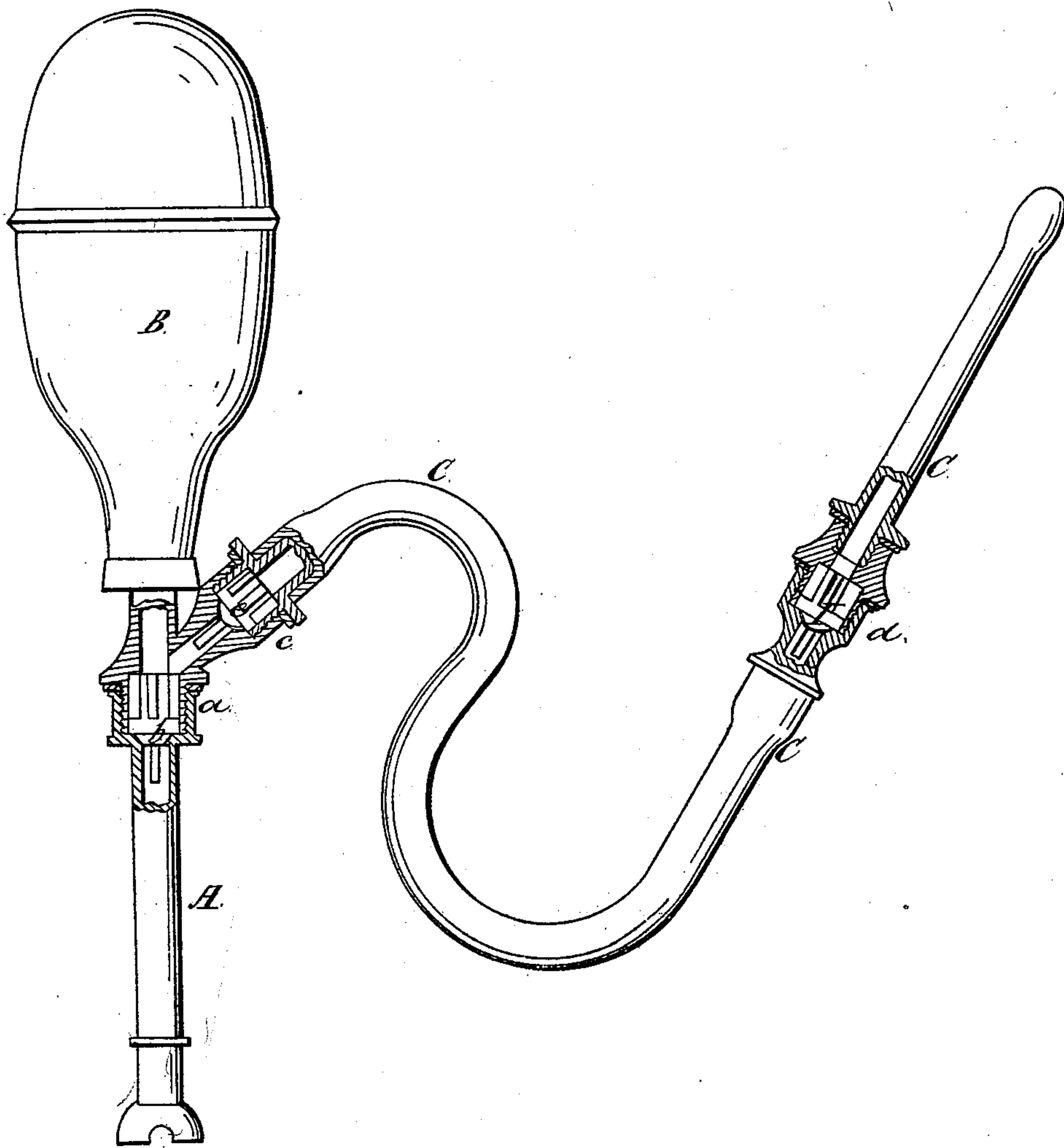


J. J. Essex.

Syringe.

N^o 89,393.

Patented Apr. 27, 1869.



Inventor.

J. J. Essex.

Witnesses
E. Woff
John F. Brooks

pr. Mumme & Co
Attorneys.

United States Patent Office.

JAMES J. ESSEX, OF NEWPORT, RHODE ISLAND.

Letters Patent No. 89,393, dated April 27, 1869.

IMPROVED SYRINGE.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, JAMES J. ESSEX, of Newport, in the county of Newport, and State of Rhode Island, have invented a new and improved Syringe; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing forming part of this specification.

The drawing represents a side view partly in section of my improved syringe.

Similar letters of reference indicate corresponding parts.

The object of this invention is to so arrange the discharge-pipe of an elastic-bulb syringe, that the admission to and the consequent discharge of air from the said pipe cannot take place, as long as liquid matter is forced through the same. The elastic-bulb syringes heretofore used were each provided with a strangulated valve, in the discharge-pipe, through which air was not only freely admitted, but also discharged, occasioning much inconvenience and frequent pain.

Such single valve did also generally fail to close quick enough to prevent the return into the syringe of the injected liquid, whereby the object of the injection was partly destroyed and the syringe itself made offensive.

My invention consists in providing the elastic or rigid discharge-pipe of an elastic-bulb syringe with two valves, one at or near each end; thereby all the aforesaid inconveniences are entirely and most effectually overcome.

The entrance of air into the discharge-pipe through the inner valve-box is thereby made absolutely impossible, as the inner valve will close immediately after pressure on the bulb ceases. The entrance of air through the outer valve-box is also prevented, as a column of liquid matter remains in the discharge-pipe upon the closed inner valve as soon as pressure upon the bulb is stopped.

The return of injected and other matter into the syringe is also prevented by the aforesaid sustaining column of liquid in the discharge-pipe, even if the outer valve should not close with requisite promptness. Furthermore, by this arrangement the necessity of strangulating the valves is overcome; greater freedom of play can be allowed the same, and a consequent larger stream can, with less friction, be passed through a pipe, through which with the old system a much smaller column of liquid could be thrown.

A in the drawing represents the suction-pipe, B, the elastic bulb, and C, the discharge-pipe of the syringe. The suction and discharge-pipes can be partly or wholly elastic, or rigid, as may be desired.

In the suction-pipe is arranged a valve-box, *a*, with a valve, *b*, in the ordinary or suitable manner. In the discharge-pipe are arranged two valve-boxes, *c* and *d*, the one near the inner, the other near the outer end of the same, as shown.

Suitable valves *e f*, are arranged in these valve-boxes *c d*, respectively as shown. The valves *e f* both open outward when pressure is applied to the bulb, and close upon their seats inwardly when the pressure is removed.

I do not claim, or confine myself to any particular arrangement of pipes, nor to any peculiar construction of nozzle, valve-boxes, and valves; but

What I claim as new, and desire to secure by Letters Patent, is—

Providing the discharge-pipe C, of a bulb-syringe with two valve-boxes and valves at or near the outer and inner ends of the same, respectively, substantially as herein shown and described, for the purpose specified.

The above specification of my invention signed by me, this 11th day of February, 1869.

JAMES J. ESSEX.

Witnesses:

FRANK BLOCKLEY,
E. GREENE COLLINS.