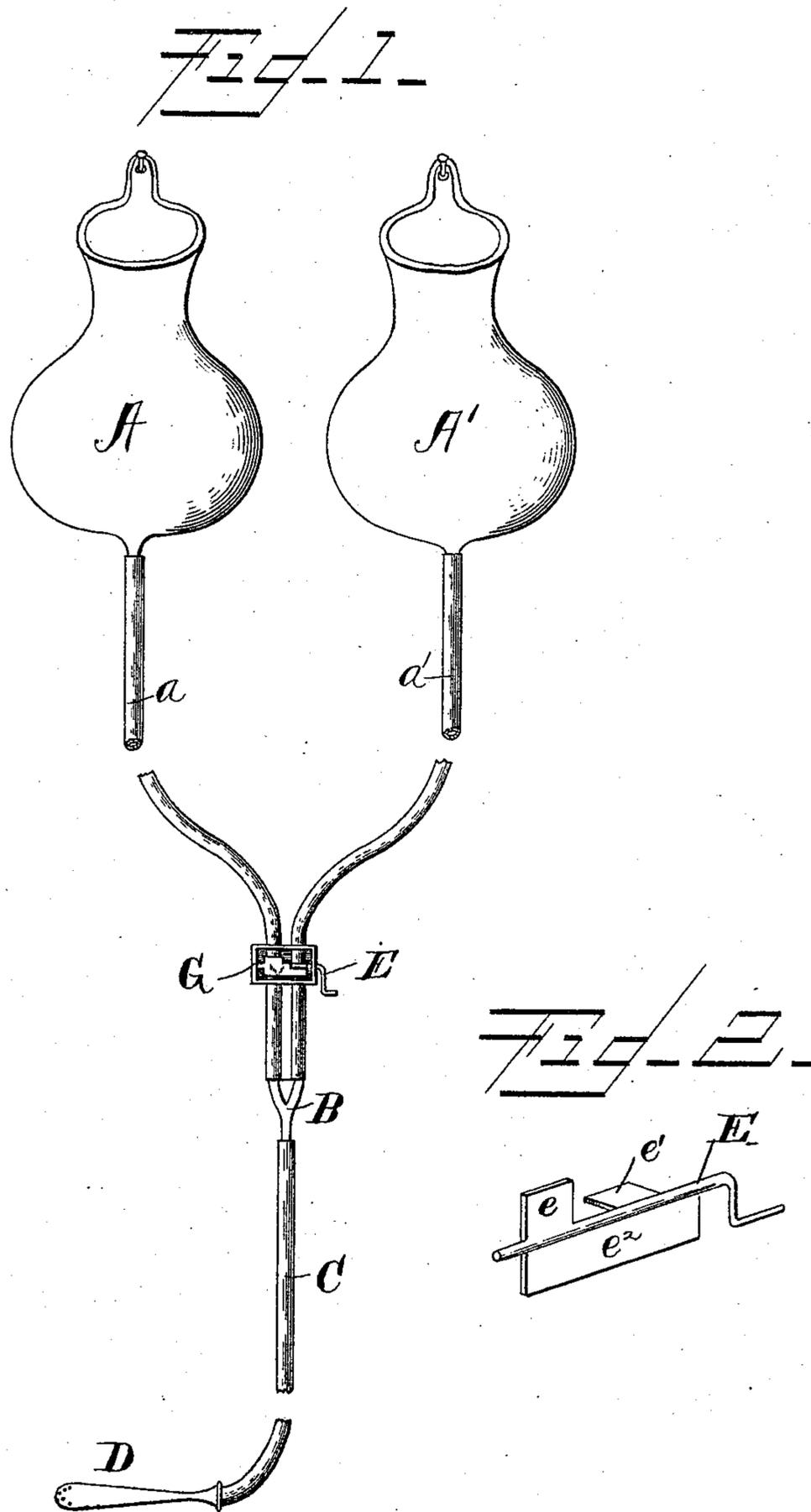


(No Model.)

F. S. KETCHUM.  
DUPLEX SYRINGE.

No. 485,698.

Patented Nov. 8, 1892.



WITNESSES  
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# UNITED STATES PATENT OFFICE.

FRANK S. KETCHUM, OF NEW YORK, N. Y.

## DUPLEX SYRINGE.

SPECIFICATION forming part of Letters Patent No. 485,698, dated November 8, 1892.

Application filed July 9, 1892. Serial No. 439,528. (No model.)

*To all whom it may concern:*

Be it known that I, FRANK S. KETCHUM, a citizen of the United States, residing at New York, in the county of New York and State of  
5 New York, have invented certain new and useful Improvements in Duplex Syringes; and I do 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 ap-  
10 pertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to improvements in  
15 syringes; and it consists in the novel construction and combination of parts hereinafter fully described and claimed.

Figure 1 is a plan view of my improved duplex syringe, and Fig. 2 is a perspective view  
20 of the valve-key removed from the frame.

A A' are a pair of ordinary fountain-syringes connected by tubes  $a a'$  to a Y-shaped connection B, provided with a flexible tube C, terminating in an injection-tube D.

25 G is a frame, which may be of any suitable shape to slip upon the tubes  $a a'$  and contain the key E. This key E is provided with three radial flanges  $e, e',$  and  $e^2$ , and they are arranged to impinge upon the tubing  $a a'$  and  
30 cut off the supply from the receptacles A A' or control it at will.

Assuming that the receptacle A is filled with cold water and A' is filled with hot water and the key E is turned so that its flange  
35  $e^2$  cuts off the supply from both tubes and it

it desired to discharge the cold water, the key is turned so that the flange  $e'$  closes the tube  $a'$ . While the flanges  $e$  and  $e^2$  are clear of the tube  $a$ , or in the position shown in Fig. 1, the cold water has an unobstructed flow  
40 from the receptacle A to the discharge-tube D. If the key E be turned so that the flange  $e$  impinges on the tube  $a$ , then the supply of cold water is cut off and at the same time the flange  $e'$  releases the pressure on the tube  $a'$   
45 and permits the hot water to flow, whereas, if the key is turned so as to bring the flange  $e^2$  into contact with the tubes the supply from both is cut off.

The various uses to which this invention  
50 may be applied will readily suggest themselves without further description.

Having thus described my invention, what I claim as new and useful, and desire to secure  
55 by Letters Patent of the United States, is—

In a syringe, the combination of the liquid-receptacles, the flexible and elastic tubes connected therewith, the frame through which  
60 said tubes pass, the key journaled in said frame and provided with radial flanges, and the Y-shaped connections provided with a flexible tube having an injection-tube, substantially as described.

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

FRANK S. KETCHUM.

Witnesses:

H. J. ENNIS,

WARREN C. STONE.