

(No Model.)

A. T. HOLT.
SIPHON SYRINGE.

No. 455,402.

Patented July 7, 1891.

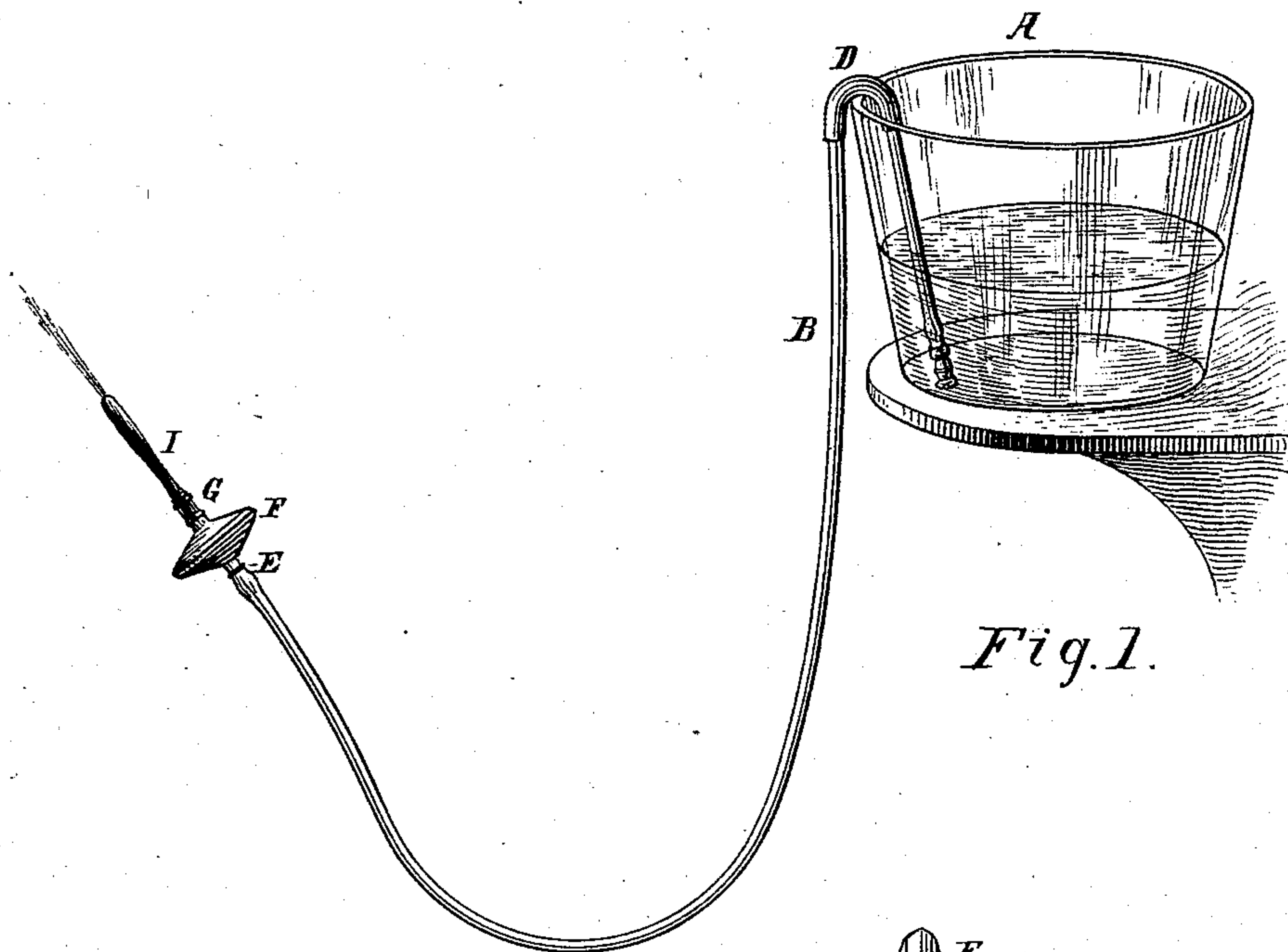


Fig. 1.

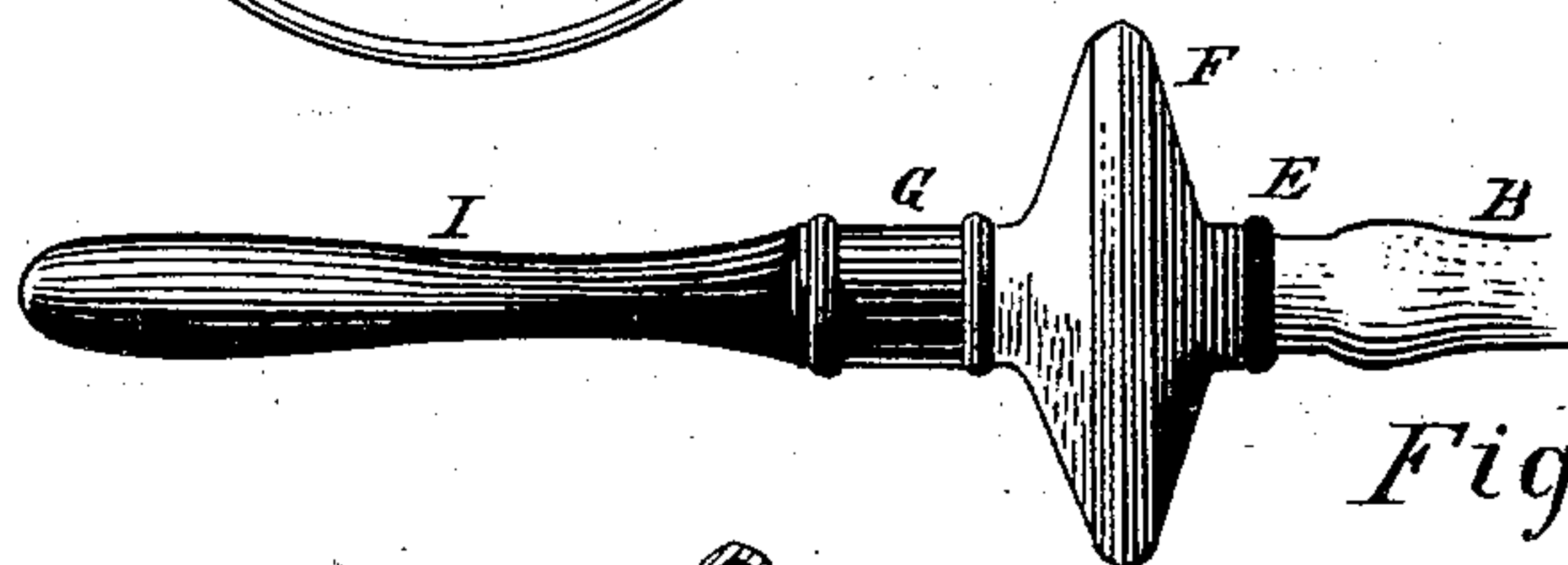


Fig. 2.

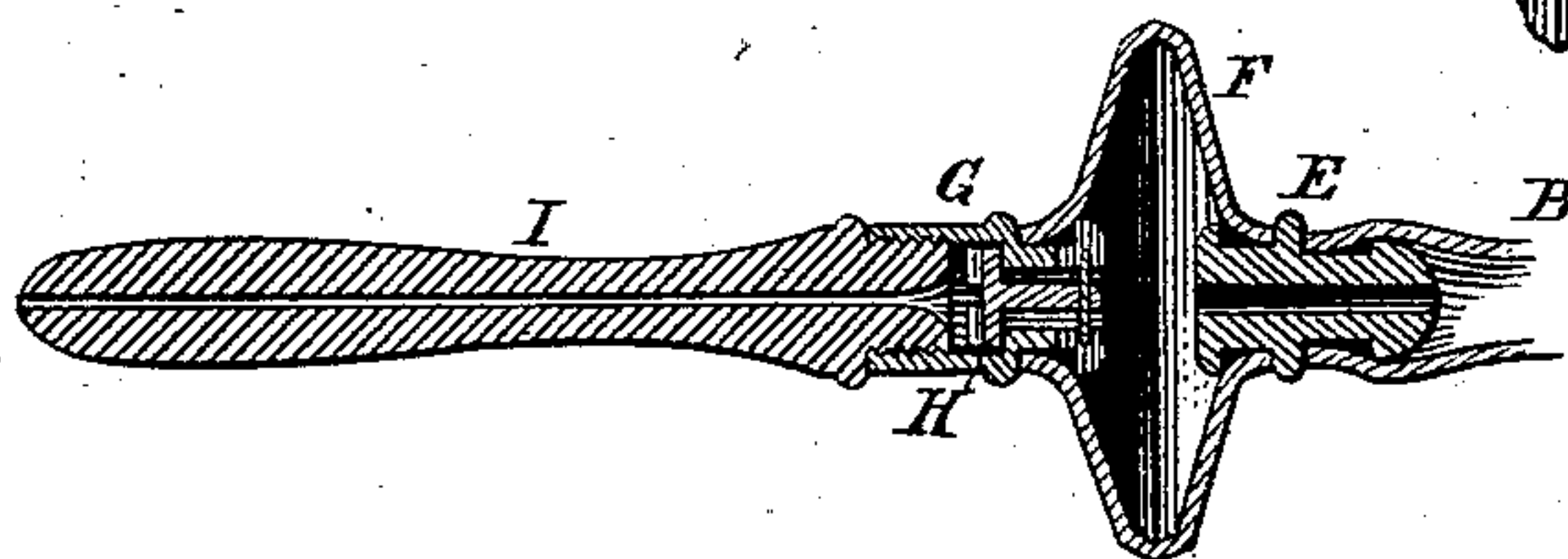


Fig. 3.

WITNESSES

Tron O. Peterson
C. E. Humphrey

ATTORNEY

INVENTOR

Albert T. Holt:

C. P. Humphrey

UNITED STATES PATENT OFFICE.

ALBERT T. HOLT, OF AKRON, OHIO, ASSIGNOR TO THE B. F. GOODRICH COMPANY, OF SAME PLACE.

SIPHON-SYRINGE.

SPECIFICATION forming part of Letters Patent No. 455,402, dated July 7, 1891.

Application filed March 9, 1891. Serial No. 384,308. (No model.)

To all whom it may concern:

Be it known that I, ALBERT T. HOLT, a citizen of the United States, residing at Akron, in the county of Summit and State of Ohio, have invented a certain new and useful Improvement in Siphon-Syringes, of which the following is a specification.

My invention has relation to that class of syringes wherein the impelling force is gravitation and in which a long flexible tube is used, the suction end of which extends from the interior over the top of a vessel containing the fluid to be used, which vessel is elevated at any desired height above the discharge or pipe end.

The object of my invention is to produce an improved device for starting the flow of fluid from the vessel over the bend of the siphon, which shall be efficient, light, compact, and in which the number of parts shall be reduced to a minimum.

To the aforesaid object my invention consists in the peculiar and novel apparatus hereinafter described, and then specifically claimed, reference being had to the accompanying drawings, forming a part of this specification.

In the accompanying drawings, in which similar letters of reference indicate like parts in the different drawings, Figure 1 represents my improved siphon-syringe connected with the fluid-vessel; Fig. 2, a full size elevation of the tube and hollow diaphragm; Fig. 3, a central longitudinal section of Fig. 2.

Referring to the drawings, A is the fluid-vessel, supported on any suitable shelf or bracket.

B is the flexible tube of the syringe, its suction end provided with a metallic tip C to prevent collapsing and permit a free flow of fluid between the points of its serrated edge immersed in the fluid. At the edge of the vessel the tube is re-enforced with a case D of hard rubber to retain it on the edge of the vessel and prevent its collapsing. In the opposite end of the tube is inserted one end of a short hard-rubber tube E, having rounded flanges at each end to enable it to be retained

by the elasticity of the soft-rubber parts in which it is inserted, and a central rim to form an abutment for these parts. The other end of the tube E is inserted in the orifice in one side of the hollow diaphragm F. The hollow diaphragm F is of thin soft vulcanized rubber of sufficient firmness to retain its shape and in form consists of two saucer-shaped disks with hollow faces inward and united at the edges. In each side of the hollow diaphragm is a central orifice, from which projects a short tubular extension, by which one side is attached to the tube E and the other to an oppositely-disposed hard rubber tube G. In the tube G is an outward-opening valve H, and the outer end is internally screw-threaded to receive the pipe I.

In operation the suction end of the tube being inserted in the vessel A, the tubes E G are held in the fingers of each hand and the hollow diaphragm laterally distended, thereby creating a vacuum in the tube B and causing the fluid to rise therein and pass over the edge of the vessel until the siphon is charged, when the fluid continues to pass over by gravitation, the valve H preventing the entrance of air through the pipe I when the diaphragm E is distended. The distended diaphragm resumes its normal shape by its inherent elasticity.

I claim—

In a siphon-syringe, the combination, with the siphon-tube and the discharge-pipe, of a hollow double saucer-shaped elastic diaphragm susceptible of lateral distention to create a vacuum in the tube, having central openings connected, respectively, with the tube and pipe and provided with an outwardly-opening valve in the opening of the discharge side, substantially as shown and described.

In testimony that I claim the above I hereunto set my hand.

ALBERT T. HOLT.

In presence of—

H. C. CORSON,
C. P. HUMPHREY.