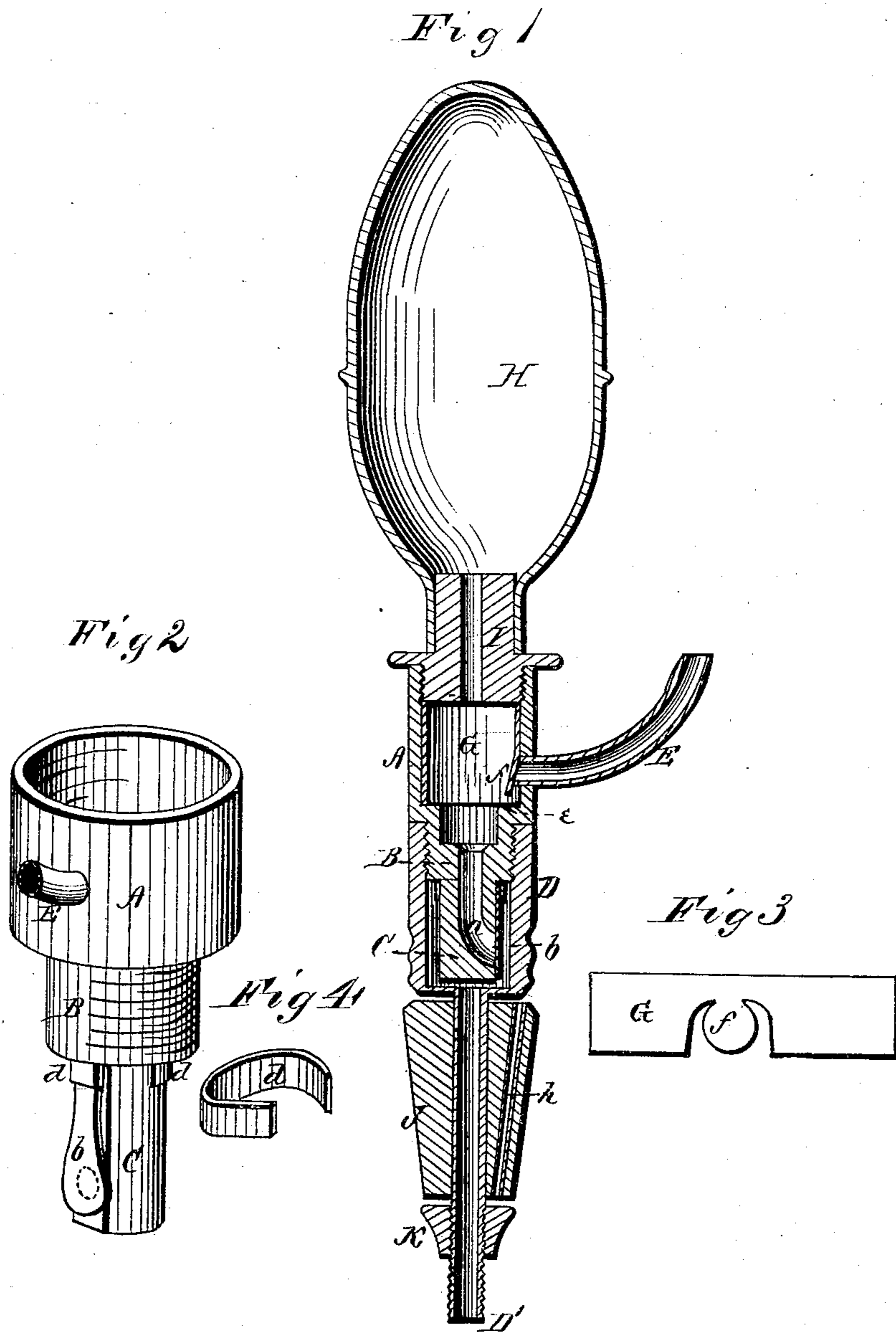


W. W. GRANT.

Siphons.

No. 152,363.

Patented June 23, 1874.



WITNESSES.
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UNITED STATES PATENT OFFICE.

W. WALLACE GRANT, OF ST. LOUIS, MISSOURI.

IMPROVEMENT IN SIPHONS.

Specification forming part of Letters Patent No. **152,363**, dated June 23, 1874; application filed May 23, 1874.

To all whom it may concern:

Be it known that I, W. WALLACE GRANT, of St. Louis, in the county of St. Louis and in the State of Missouri, have invented certain new and useful Improvements in Siphons; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making a part of this specification.

The nature of my invention consists in the construction and arrangement of a siphon attachment for transferring liquids, chemicals, &c., from one bottle or vessel into another, as will be hereinafter more fully set forth.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawing, in which—

Figure 1 is a longitudinal section of my invention. Fig. 2 is an enlarged perspective view of the part thereof in or on which the valves are situated. Fig. 3 shows the construction of the upper valve; and Fig. 4 shows a spring for holding the lower valve in position.

A represents a cylinder of metal, rubber, or other suitable material, and of any suitable dimensions, the lower end B of which is reduced in diameter, and provided with a downward-projecting stem, C, as shown in Fig. 1. The part B of this cylinder is provided with exterior screw-threads to screw into a cylinder, D, which is of the same exterior diameter as the cylinder A, and forms a continuation of the same, the stem C being entirely inclosed therein with a space around and below it, as shown. Through the stem C is a passage, *a*, from the interior of the cylinder A, down through and out at the side of the stem. This side of the stem is made flat, and over the end of the passage *a* is placed a valve, *b*, which is held by means of a flat spring, *d*, constructed to correspond with the shape of the stem C, as shown in Fig. 4. E represents the end of a siphon-tube inserted in one side of the cylinder A, the end of said tube being inclined within the cylinder. Upon

the shoulder *e*, formed around the interior of the cylinder, is placed a strip, G, of rubber or other suitable spring material, in which is formed, or to which is attached, a valve, *f*, to close the inner end of the siphon-tube E. This end of the tube being beveled or inclined, as described, the valve will close much easier and better than if the end were left straight and flush with the interior of the cylinder. In the upper end of the cylinder A is screwed a hollow plug, I, upon the upper end of which the rubber bulb H is firmly secured. It will be noticed that both the valves *b* and *f* depend downward, and their natural position is such as to keep the respective apertures closed. From the lower end of the cylinder D extends a tube, D', provided with exterior screw-threads around its lower end. On this tube is placed a tapering plug, J, of rubber or other suitable material, and through this plug is passed an air-tube, *h*. On the end of the tube D', below the plug J, is screwed a nut, K, the upper surface of which should be large enough to close the lower end of the air-tube *h* when the nut is screwed up against the plug J.

When this device is used in connection with a filter, the nut K should be screwed up so as to close the air-tube *h*; but when the device is inserted directly into the bottle or other vessel into which the liquid is to be transferred, the air-tube should be left open, so as to allow the air contained in the bottle to escape as the liquid enters and displaces it.

The operation of this device is as follows: By compressing the bulb H, the valve *f* is closed, and the air expelled through the valve *b*. Then as the bulb expands again, the valve *b* closes, and the liquid drawn in through the valve *f* into the cylinder A, from which it passes through the valve *b* and tube D' into the filter or vessel, as the case may be.

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

1. The straight cylinder A B, provided with the stem C, having passage *a*, and the downward-depending valves *b* *f*, substantially as and for the purposes herein set forth.

2. The combination, with the cylinder A, of the spring-strip G, provided with the valve *f*, and the inclined or beveled end of the siphon-tube E, substantially as and for the purposes herein set forth.

3. The combination of the stem C, provided with passage *a*, and flattened on one side, the valve *b*, and spring *d*, all constructed substantially as and for the purposes herein set forth.

4. The combination of the tube D', tapering rubber or other plug J, with air-tube *h*, and the nut K, substantially as and for the purposes herein set forth.

5. The combination of the cylinder A B, with stem C, valves *b f*, plug I, rubber or other bulb H, siphon-tube E, cylinder D with tube D', and rubber or other plug J, all constructed substantially as and for the purposes herein set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 21st day of May, 1874.

W. WALLACE GRANT.

Witnesses:

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