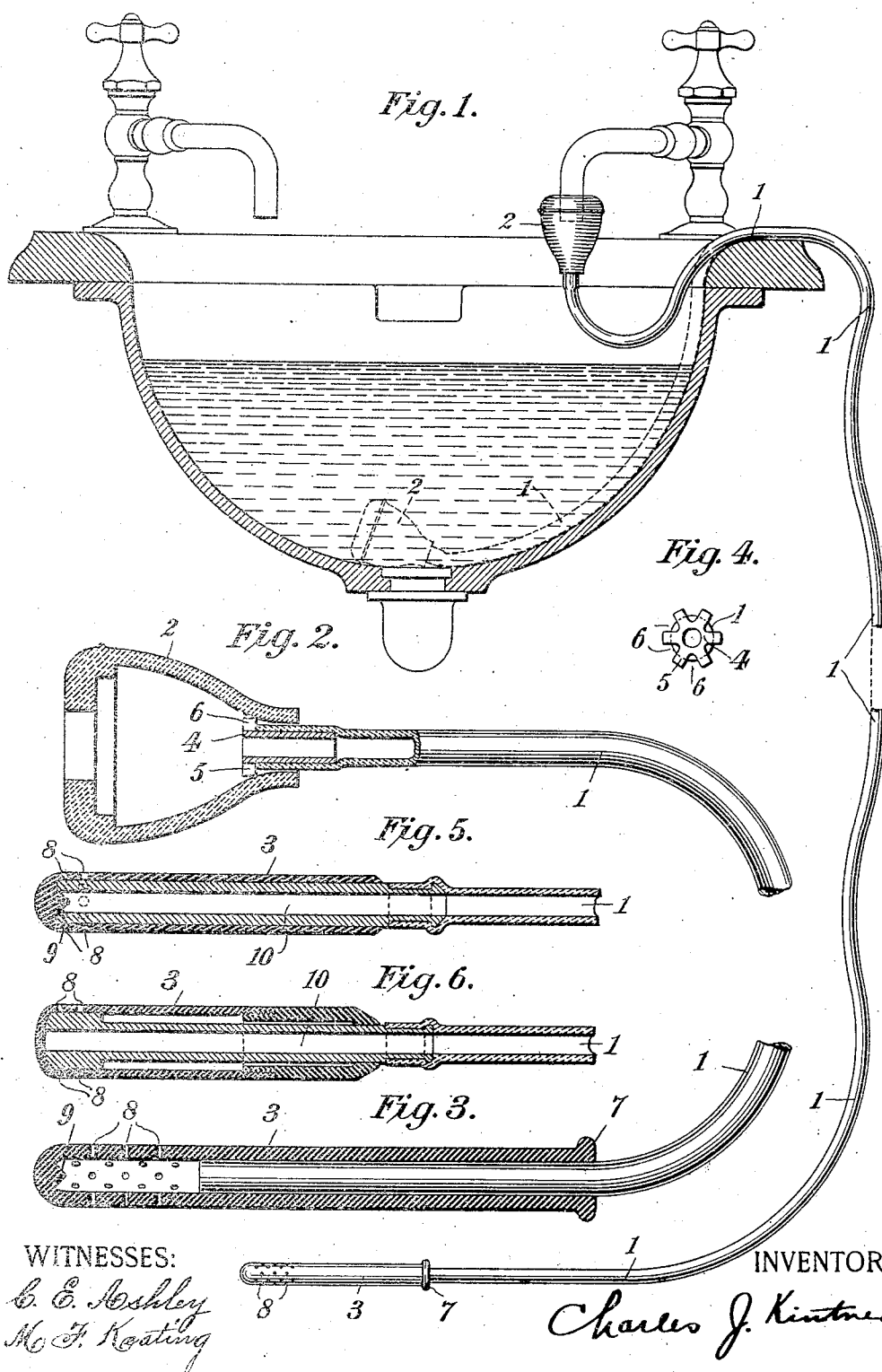


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PATENTED JULY 17, 1906.

C. J. KINTNER.
SYRINGE.

APPLICATION FILED JULY 22, 1905.



UNITED STATES PATENT OFFICE.

CHARLES J. KINTNER, OF NEW YORK, N. Y.

SYRINGE.

No. 826,172.

Specification of Letters Patent.

Patented July 17, 1906.

Application filed July 22, 1905. Serial No. 270,880.

To all whom it may concern:

Be it known that I, CHARLES J. KINTNER, a citizen of the United States, residing in New York, borough of Manhattan, county and State of New York, have made a new and useful Invention in Syringes, of which the following is a specification.

My invention is directed particularly to an improvement in syringes of the fountain type; and it has for its objects, first, to provide a novel form of tubular syringe adapted for use either with the faucet or faucets of a washbasin or bath-tub or other stationary water-supply or with open-mouthed or open-top vessels—such as washbasins, pitchers, or the like—upon the siphon principle; second, to devise a novel type of vent for use in connection with the syringe when used with the faucets of a stationary source of water-supply; third, to devise a novel type of nozzle such that it embraces at one and the same time not only an absolute cut-off, but means for regulating the flow of water there-through.

In a prior United States patent granted to me on the 3d of October, 1905, and numbered 801,019, I have described and claimed generically flexible or yielding means for connecting a flexible or tubular syringe with the faucet of a washbasin or a bath-tub and venting means connected therewith for regulating the flow of water to a syringe-nozzle, and I therefore make no claim in the present case to the application of this generic venting principle, the particular feature of venting, in so far as it refers to the present case, being an improvement upon that disclosed in the before-mentioned patent. In said patent I have also disclosed the usual type of spring or snap cut-off, combined with a soft flexible rubber syringe-tube, such tubes, it is well known, becoming seriously damaged if such flexible snap cut-offs be left closed for an indefinite length of time. It was with the object, therefore, of overcoming this objection that a second feature of my invention was devised—namely, the production of a telescoping nozzle which constitutes at one and the same time not only an absolute cut-off which will not damage or in any sense effect the condition of the tube, but also a means of regulating the flow at the eduction-holes of the nozzle, as desired.

For a full and clear understanding of my invention, such as will enable others skilled

in the art to construct and use the same, reference is had to the accompanying drawings, in which—

Figure 1 represents a sectional view taken through a stationary washbasin with the faucets illustrated in elevational view and my novel form of syringe as attached thereto, the dotted lines illustrating the same when utilized upon the siphon principle. Fig. 2 is an enlarged sectional view taken through the flexible or yielding connector, the induction end of the syringe-tube, and the novel venting-connector. Fig. 3 is a longitudinal sectional view taken through one form of my novel syringe-nozzle, the end of the syringe-tube being shown in side elevational view. Fig. 4 is an end elevational view of the connector shown in Fig. 2 as seen looking thereat from left to right. Figs. 5 and 6 are longitudinal sectional views of modified forms of the improved nozzle shown as connected to the free end of a syringe-tube.

Referring now to the drawings in detail, in all of which like numerals represent like parts wherever used, 1 represents a flexible syringe-tube of the usual type, preferably of soft rubber, and 2 a well-known form of flexible connector for connecting the same directly to one of the faucets of a washbasin, said basin being shown in sectional view and as partly filled with water.

3 (see Fig. 3) represents one form of my novel type of syringe-nozzle, the same being constructed either of hard rubber or of metal, such as silver, or other metal heavily electroplated, said nozzle having the conformation shown with a rib 7 at its inner end and a longitudinal interior opening of the same diameter as the exterior diameter of the syringe-tube 1.

8 8 8 are the eduction-holes, and 9 is a conical-shaped projection at the inside of the outer end adapted to fit within the inner end of the tube 1 when the latter is pressed firmly home, so as to thereby cut off the entire supply of water from the eduction-holes 8 8 8.

In Figs. 2 and 4 I have shown a novel venting-connector 4, which is of tubular form and made, preferably, of very hard glass or metal and provided with radially-disposed arms 5, as shown, so arranged with relation to each other as to constitute openings 6 for the outflow of water around the connected end of the siphon-tube 1. This form of the invention is used as follows, the parts being put to-

gether in the manner shown in Fig. 2 and attached to the faucet in the manner shown in Fig. 1.

The nozzle 3 is withdrawn to the position shown in Fig. 3 and held by the user over the basin, after which the water is turned on at the faucet until the desired pressure is attained, the water running at the same time through the vent-openings 6 of the venting-connector 4 and the eduction-openings 8 of the nozzle into the basin, as shown.

When the desired pressure is reached, the user then forces the nozzle 3 backward over the end of the tube 1, so that the entire flow of water through the eduction-holes 8 is cut off. All of the water then flows through the vent-openings 6 into the basin in the same manner as pointed out in the before-named patent. The syringe is then ready for use, and the flow may be regulated by adjusting the nozzle 3 upon the end of the tube 1, so as to expose more or less of the eduction-holes 8. In this form of the invention the rubber tube 1 should be of sufficient hardness to readily permit of its being inserted freely into and withdrawn from the nozzle 3, and for this purpose, if preferred, the free or outer end of said tube may be vulcanized to a point of relatively much greater hardness than the tube itself.

In the modified form of the nozzle shown in Fig. 5 said nozzle is composed of two telescoping parts 3 and 10, the part 10 being of hard rubber or metal and provided with the usual outer connecting end for securing it to the free end of the siphon-tube 1, this form of the nozzle being the preferred one, for the reason that it is not always possible with the soft-rubber tube and hard-rubber nozzle 3 to obtain the best possible results, although reasonably good action is had.

With the form shown in Fig. 5 an accurate adjustment may be had between the two telescoping parts 3 and 10, such that the user may move it to any desired point, and with such an arrangement also I am enabled to pack the nozzle in smaller space, as the telescoping parts when in use are withdrawn, so as to increase the length of the nozzle.

In Fig. 6 I have shown a still further modified form of the nozzle in which the outer shell 3 is composed of two parts screw-threaded together, and the inner telescoping part 10 fits accurately therein after the manner of a piston within said outer shell, the operation being obvious on inspection of the drawings. With this form of the invention there is little danger of losing the two parts by reason of their becoming separated. It is obvious that instead of effecting the operation of cutting off the flow through the eduction-holes by the telescopic action of the two parts 3 and 10 moving longitudinally the same might be effected by rotary movement, both tubes being provided with open-

ings or the inner tube with slots longitudinally arranged, such a modified form being obviously within the scope of my invention. If it be desired to use the invention upon the principle of a siphon, it only becomes necessary to coil the entire tube within the body of the basin when the same is full of water, having first removed the nozzle 3 from the outer end of the tube.

After all the air-bubbles have been forced out of the immersed tube, and hence the latter is full of water, the nozzle is forced firmly home, so as to cut off all supply of air, and the tube is then quickly withdrawn from the basin and the weight of the connector 2 and the metal or glass venting-connector 4 is sufficient to retain the short leg of the siphon within the basin, the long leg having been withdrawn to a point where the nozzle is to be used and below the level of the water in the basin. Of course this use of the invention may be applied with a basin, bucket, or other open-mouthed vessel, and I make no claim hereinafter to this feature, as the same constitutes the subject-matter of still another application filed by me on the 22d day of July and bearing serial number 270,881.

I do not limit my invention to the especial details of construction shown in the drawings and hereinbefore described, as a number of the features thereof may be departed from and still come within the scope of my claims hereinafter made.

I am aware that a syringe has heretofore been devised in which there are two telescoping connecting parts to the inner connecting part of which is directly secured a nozzle, said inner connecting part being closed at its inner end and provided with a cut-off hole or opening near its longitudinal center, the eduction-hole being at the other end of the nozzle, which is attached directly to the inner telescoping part, the arrangement being such that when said telescoping parts are extended the flow of water is suspended, as disclosed in German Patent No. 60,877, of August 18, 1891, and I make no claim hereinafter broad enough to include such a device, the limiting feature of my claims in relation to my improved nozzle being to the utilization of the eduction-holes themselves when combined with a telescoping sleeve or part whereby said eduction-holes may be either wholly or partially closed as desired by the telescoping action of the parts.

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

1. In a syringe of the fountain type a faucet-connector, a flexible tube and a venting-connector provided with radially-disposed vent-openings for permitting of the passage of water between the faucet-connector and the end of the tube, substantially as described.

2. In a syringe of the fountain type a faucet-connector, a flexible tube, a nozzle, and a venting-connector for connecting the flexible tube to the faucet-connector, the weight of the faucet and venting connectors being sufficient to hold or secure the short leg of the tube within a basin or stationary supply of water when used upon the siphon principle, substantially as described.

3. A syringe of the fountain type embracing a faucet-connector, a flexible tube, a venting-connector for connecting the latter to the faucet-connector, and a nozzle, substantially as described.

4. A syringe of the fountain type embracing a faucet-connector, a flexible tube, a venting-connector for connecting the tube to the faucet-connector, and a two-part telescoping nozzle, one of said telescoping parts being provided with eduction-holes or openings, and the other adapted to cut off the flow of water therethrough, substantially as described.

5. A syringe-nozzle embracing two telescoping parts, one of which is provided with eduction holes or openings at its free end and both of which combined are adapted to cut off all the flow of water through the eduction-holes by sliding one over the other and over said eduction-holes, substantially as described.

6. A syringe-nozzle embracing two telescoping parts, one of which is provided with two or more sets of eduction-holes arranged in groups near its free or outer end, said telescoping parts having movement the one over the other and over said eduction-holes, and in such manner that either a part or all of the flow of water through the eduction-holes may be cut off, substantially as described.

7. A syringe-nozzle embracing two telescoping parts and a series of eduction holes or openings, the outer part being provided with a conical-shaped projection adapted to fit within the free end of the inner part in such manner as to absolutely close the flow of water to the eduction-holes, substantially as described.

8. A syringe-nozzle embracing two telescoping parts adjustable in the direction of their length and a series of eduction-holes radially disposed near the end of the outer part, the arrangement being such that when the two parts are fully telescoped the eduction-holes are all closed and the supply of water cut off, and when withdrawn the number of holes left open is regulated to suit the convenience of the user, substantially as described.

9. Means for utilizing water flowing from faucets, consisting of a flexible faucet-connector, a flexible tube and a venting-connector adapted to connect the faucet-connector and the flexible tube together, substantially as described.

10. Means for utilizing water flowing from faucets, consisting of a flexible faucet-connector adapted to surround or grip the mouth of the faucet; in combination with a flexible tube and a venting-connector provided with one or more vent holes or openings, said parts being secured together, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHARLES J. KINTNER.

Witnesses:

M. TURNER,

M. F. KEATING.