

No. 658,107.

Patented Sept. 18, 1900.

F. J. GOTTLIEB.
NON-REFILLABLE BOTTLE.

(Application filed June 23, 1900.)

(No Model.)

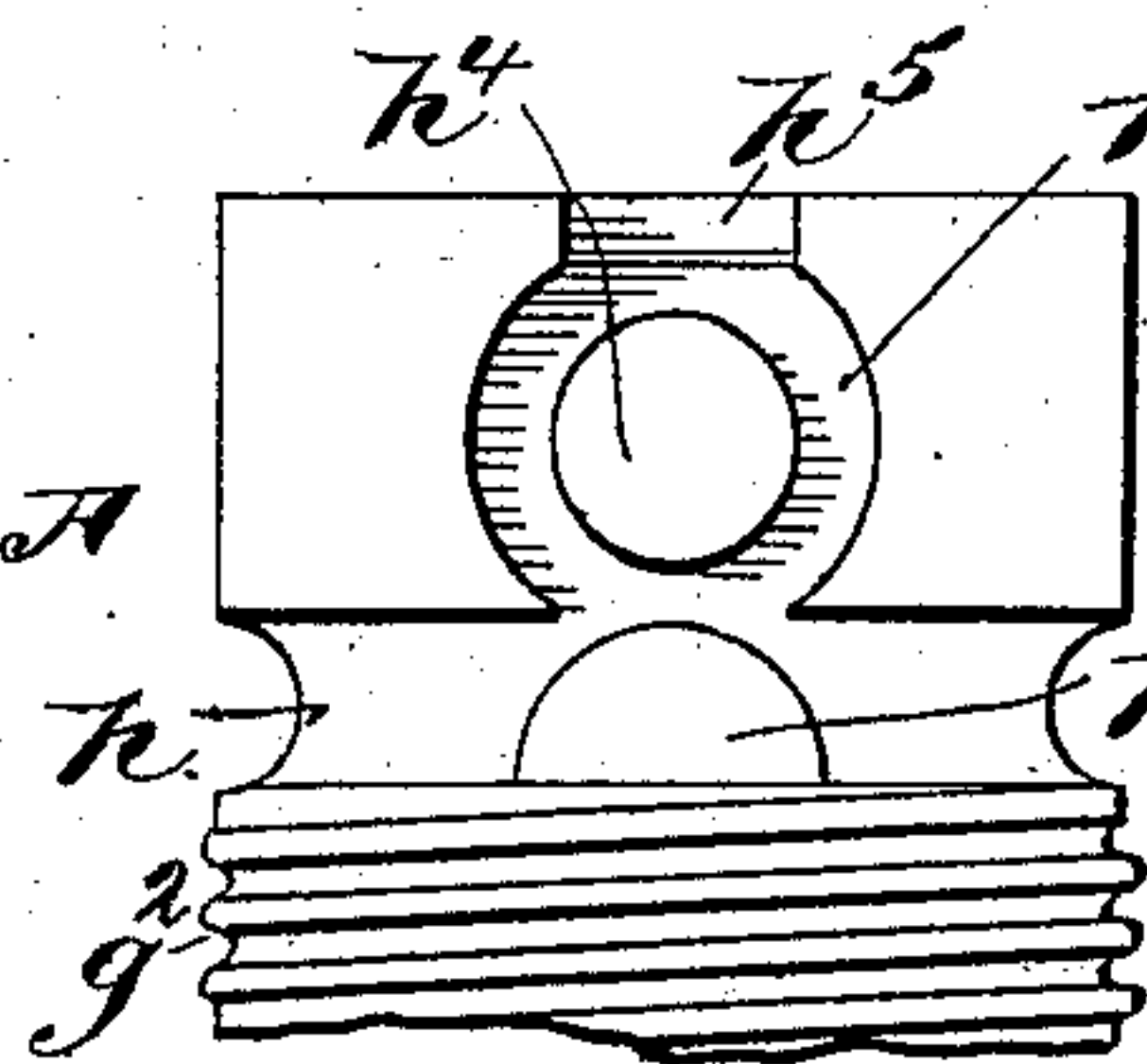
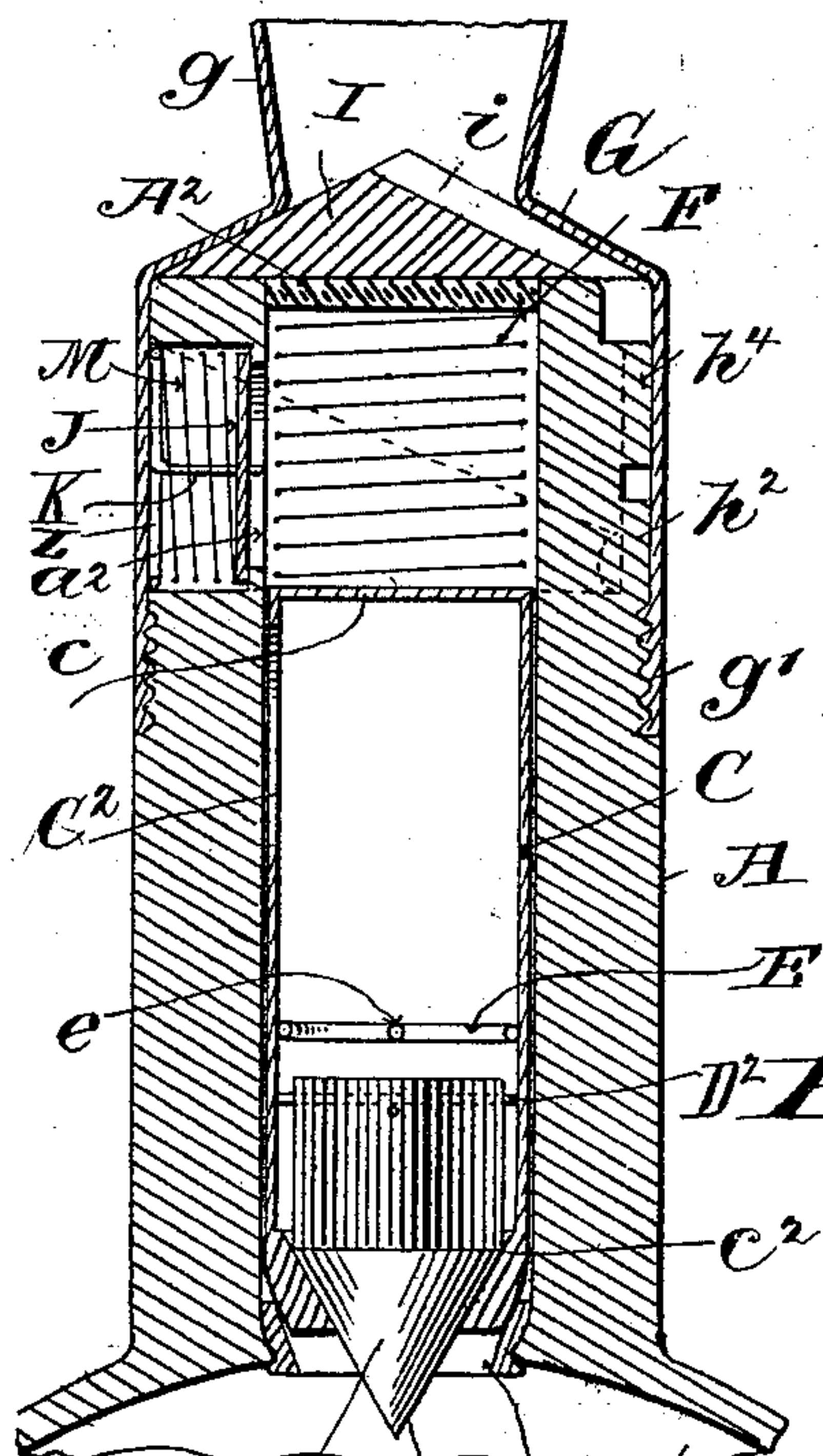


Fig. 2.

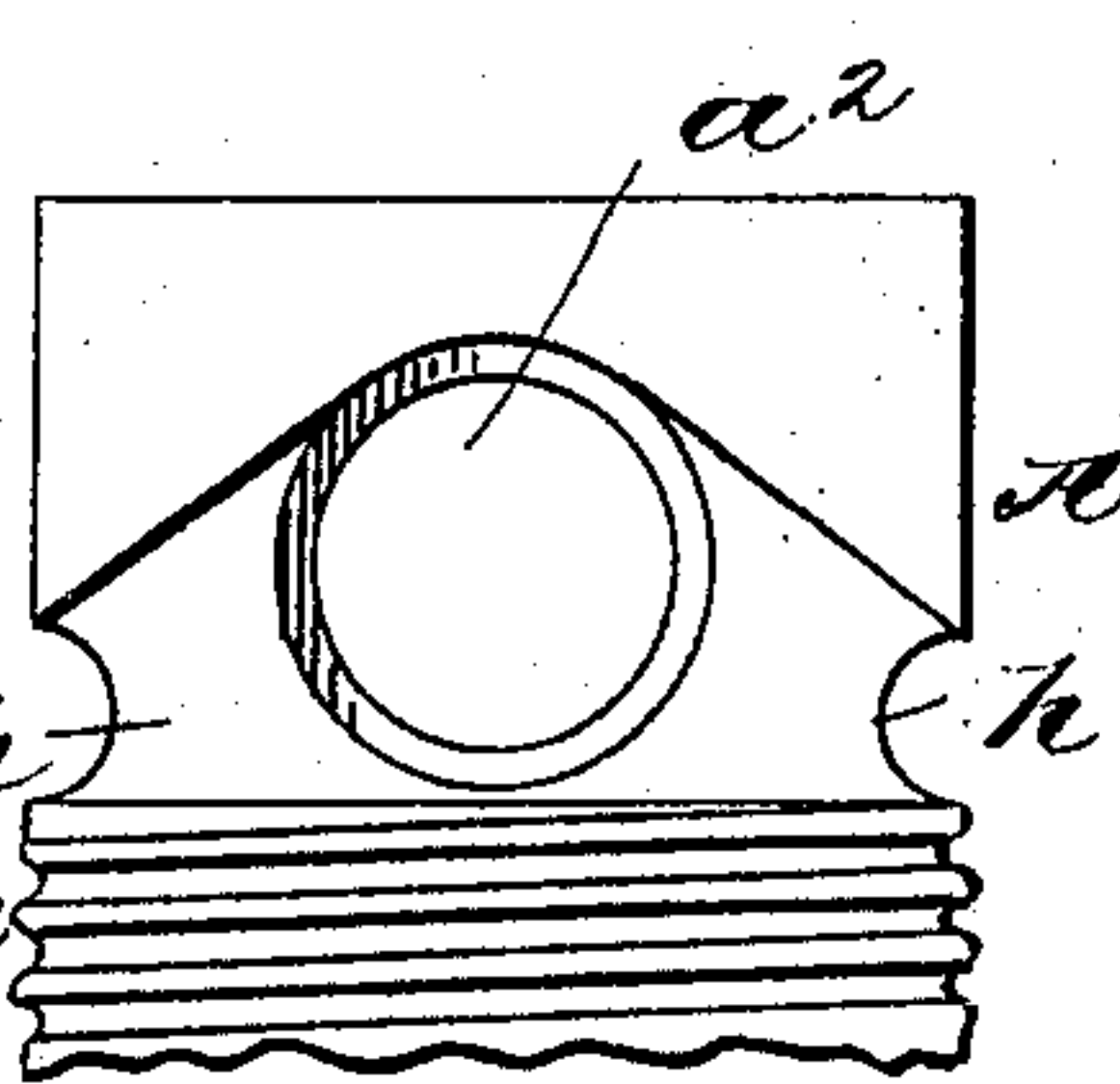


Fig. 3.



Fig. 4.

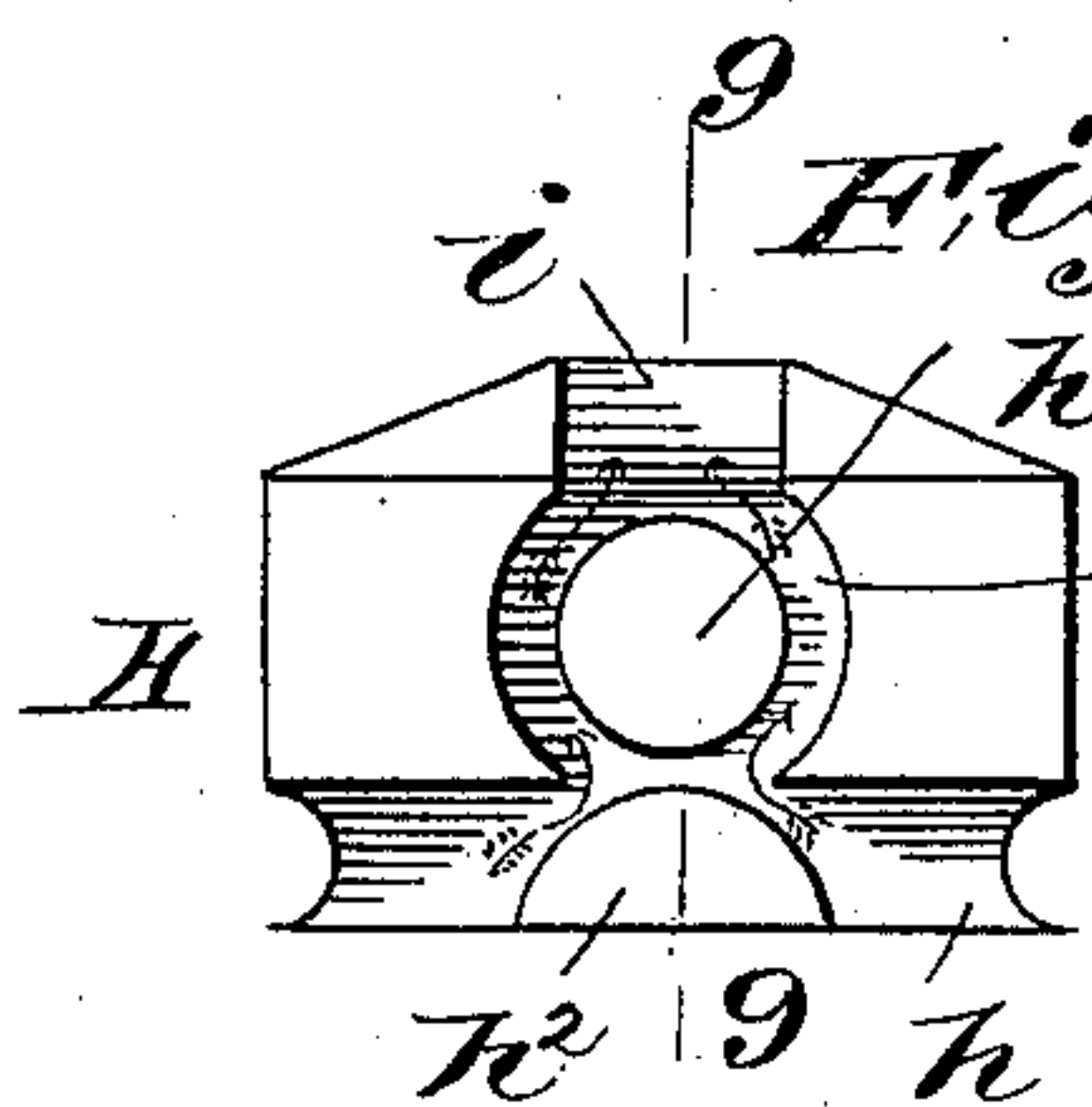


Fig. 6.

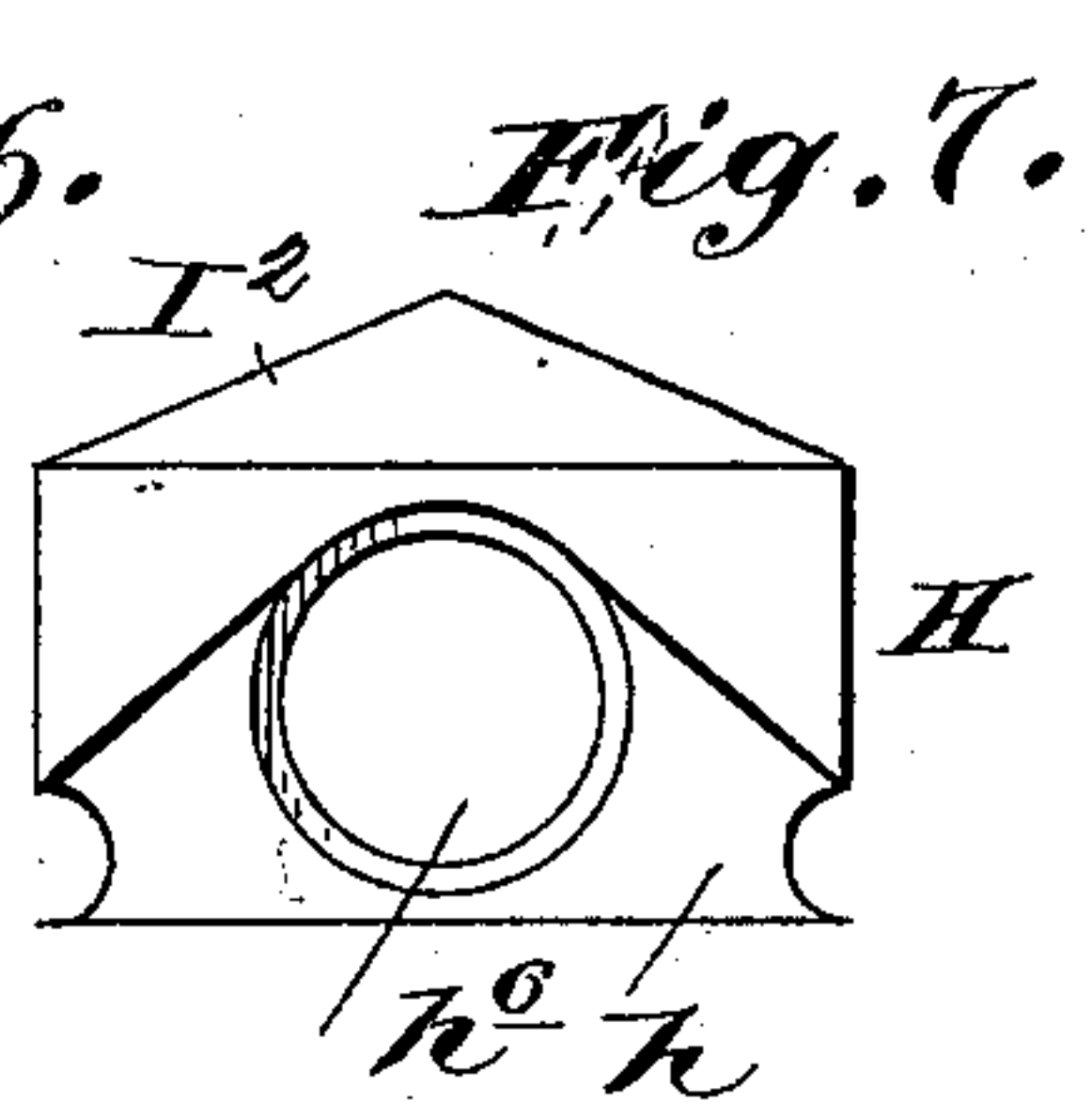


Fig. 7.

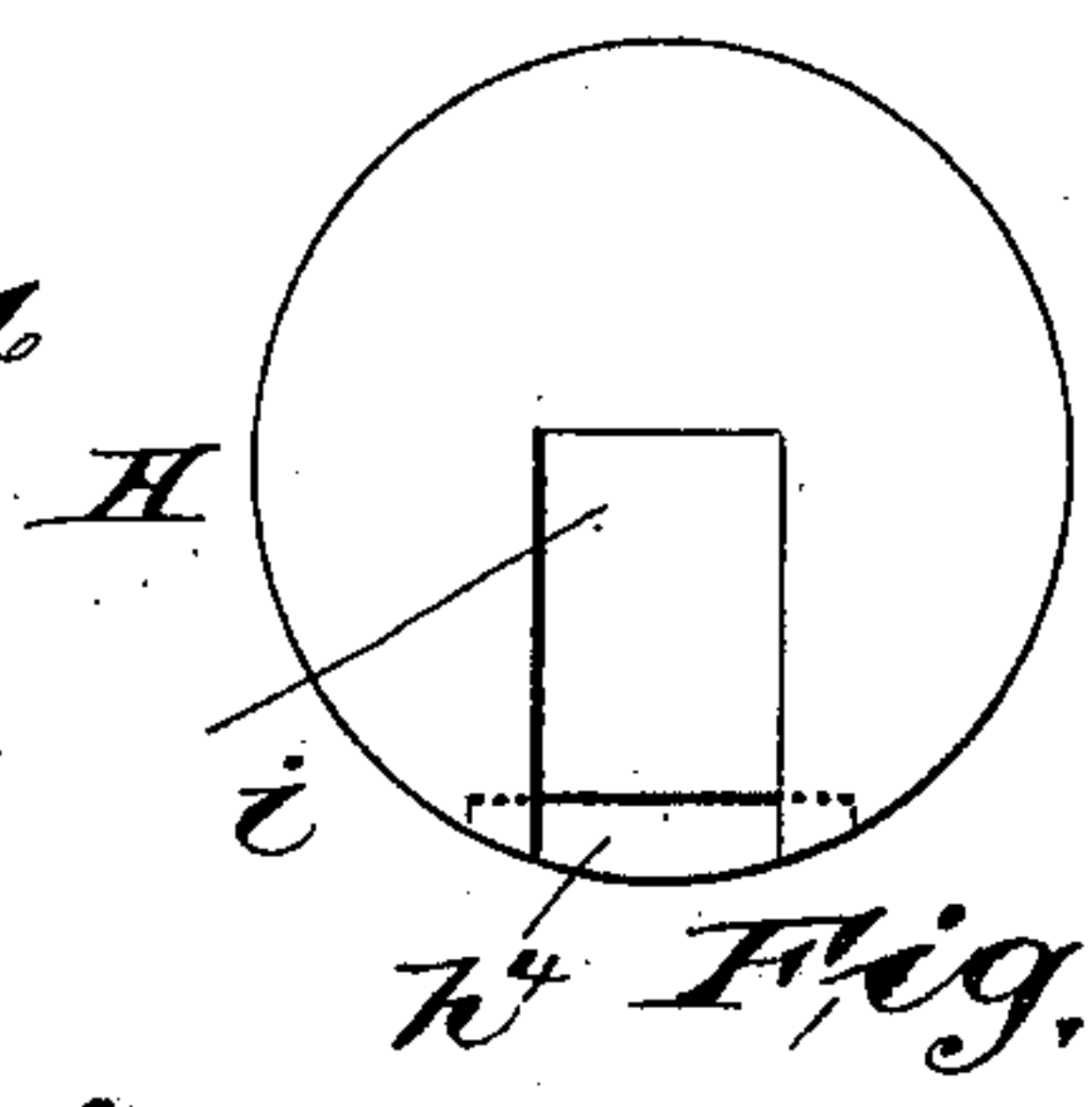


Fig. 8.

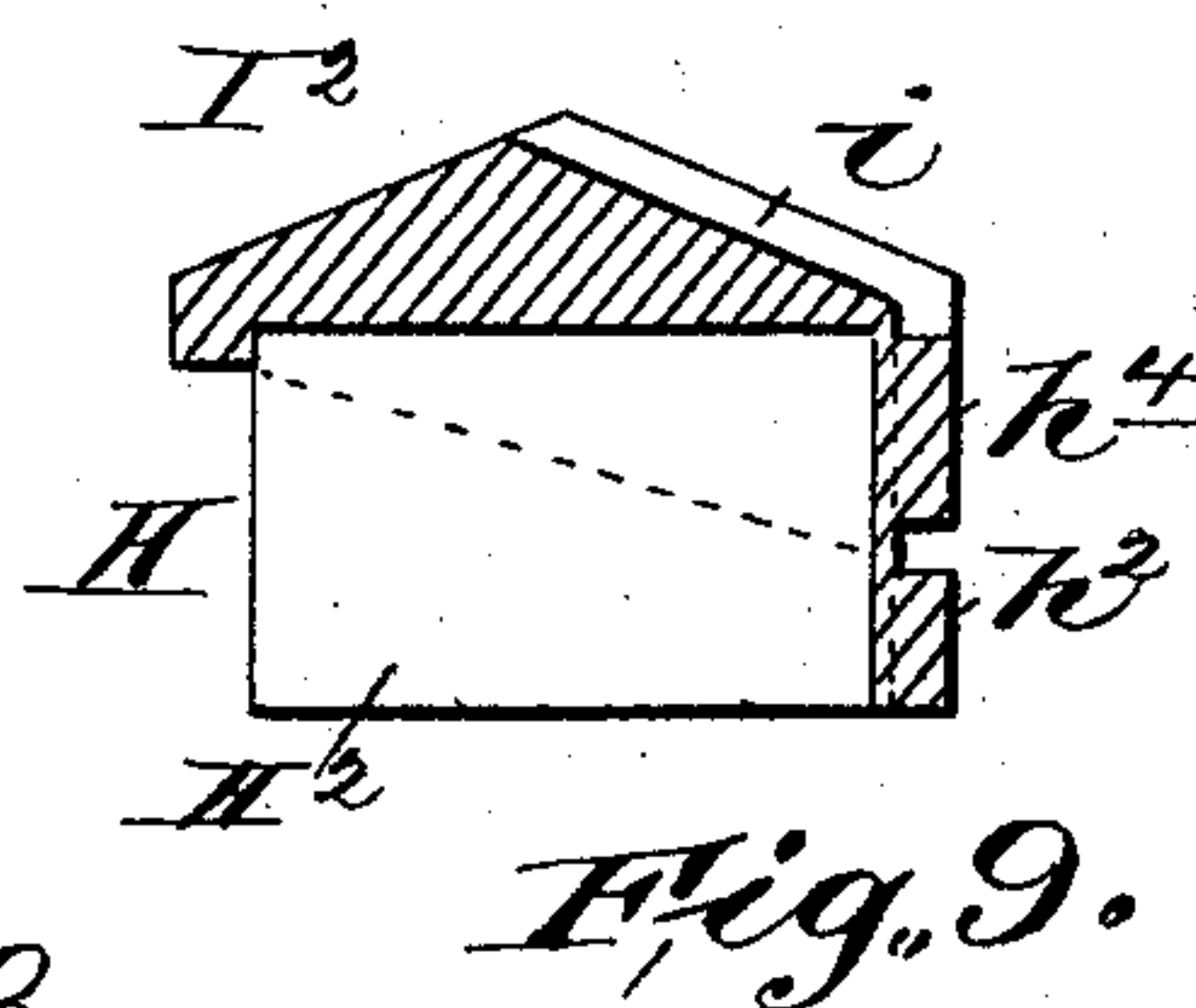


Fig. 9.

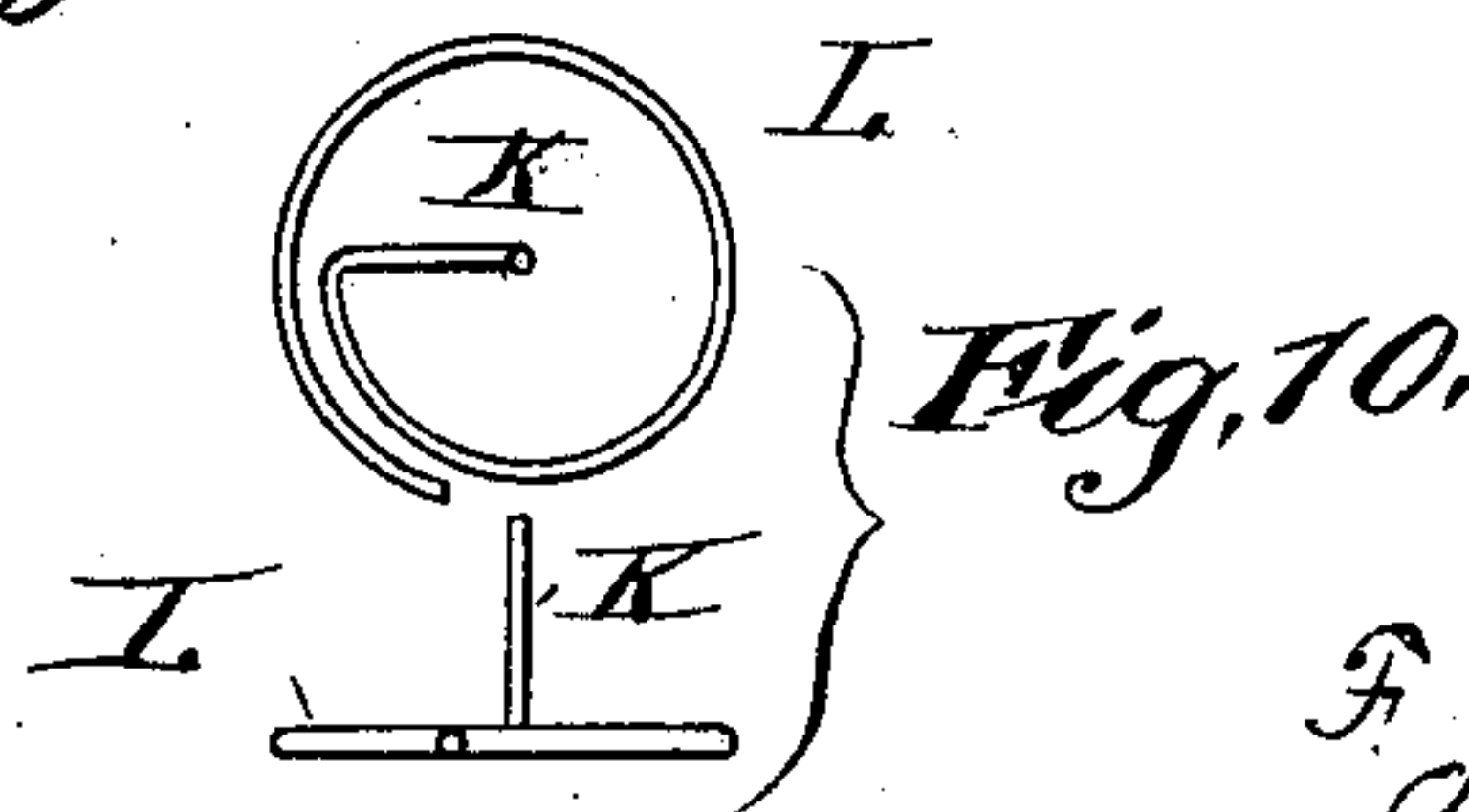


Fig. 10.

WITNESSES

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NON-REFILLABLE BOTTLE.

SPECIFICATION forming part of Letters Patent No. 658,107, dated September 18, 1900.

Application filed June 23, 1900. Serial No. 21,258. (No model.)

To all whom it may concern:

Be it known that I, FREDERIC J. GOTTLIEB, a citizen of the United States, residing in New York city, borough of Manhattan, State of New York, have invented certain new and useful Improvements in Non-Refillable Bottles, of which the following is a specification.

My invention relates to improvements in devices to prevent the refilling of bottles; and the invention consists in the novel details of improvement that will be more fully hereinafter set forth and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming part hereof, wherein—

Figure 1 is a vertical central section of a portion of a bottle provided with my improvements. Fig. 2 is a detail side view of the upper part of the bottle-neck looking from the right in Fig. 1. Fig. 3 is a similar view looking from the left in Fig. 1. Fig. 4 is a detail side view of a cap-piece. Fig. 5 is a view similar to Fig. 1 inverted, showing a modified form of part of the devices. Fig. 6 is a detail side view looking from the left in Fig. 5, illustrating the modification in Fig. 5. Fig. 7 is a similar view looking from the right in Fig. 5. Fig. 8 is a plan view of Fig. 6. Fig. 9 is a section on the line 9 9 in Fig. 6, and Fig. 10 is a detail of a valve-support.

Similar letters of reference indicate corresponding parts in the several views.

In the drawings the letter A indicates the neck or tubular outlet of a bottle B, and C is a tube fitting within neck A, so as to slide longitudinally therein with sufficient freedom to act as a valve. The outer end of neck A is closed, as by a cork disk or the like A², and the outer end of tube C is likewise closed at c. The tube C is a sliding valve, and its inner end is provided with a seat, shown as a constricted opening or passage c², adapted to be closed by a float or other stopper D, which is preferably made of cork. I have shown the float D provided with a reduced end d to fit snugly against the seat at the opening c²; but the parts c² and d may be suitably shaped for the purpose of closing the passage into the valve-tube C. E is a stop within tube C to limit the independent movement of float D within said tube, the stop E being shown in the form of a ring hav-

ing a cross-bar e to limit the movement of the float. The float D may have transverse pins D² to keep it central within tube C. The tube C has an outlet-opening C² in one side or wall at a suitable distance from the closure c, and the neck A is provided with an opening a², and the valve-tube C is adapted to have sufficient outward movement in tube A to enable its outlet C² to aline with the outlet a², as in Fig. 5. By preference I place a spring F in neck A between the closures A² and c, which is adapted to cause tube C to move inwardly and yet is of such light resistance as to enable tube C to move outwardly under the influence of the weight of liquid within said tube when the bottle is inverted sufficiently. At the inner end the neck A has a seat a³ in such position that the inner end of tube C can fit against it to close the inlet from neck A into the bottle when valve-tube C slides inwardly. The seat a³ may be a ring of cork or other suitable material. The valve-tube C is adapted to move inwardly sufficiently far to enable its end c to pass outlet a², so that liquid that may be forced inwardly through outlet a² may enter neck A beyond end c of tube C to force the latter inwardly to close the opening at a³. (See Fig. 1.)

Over the outer end of neck A, I place a hood or cover G, that is shown provided with a neck g to receive a cork or other stopper in well-known manner. The hood G may be secured upon neck A by screw-threads g' in the hood meshing with threads g² upon the neck, cement or other suitable means being provided to immovably secure said parts together. Within hood or cover G are one or more ducts or passages leading from outlet a² to neck g. In Figs. 1 to 4 I have shown said duct or passage formed in the periphery of the neck A and in a conical cap I, as follows: From outlet a² on one or both sides of neck A is a groove h, that leads around the neck to the opposite side, where h² is a protuberance, above which are vertically-extending grooves h³, that encircle a protuberance h⁴ and meet above the same at h⁵. When hood G is upon the neck, the grooves h h³ h⁵ form channels, interrupted by the protuberances h² h⁴. Upon the top of the neck, overlying and protecting cork A², is a cap or dome I, shown provided with a conical upper surface, against

which the correspondingly-shaped part of hood G bears. The cap I has a groove i , that leads to groove h^5 .

In Figs. 5 to 9 instead of making the ducts directly in the material of the bottle-neck they are made in a separate cap-piece H, that is provided with a bore H^2 to receive the reduced upper end of neck A beyond threads g^2 , the cap H fitting over stopper A^2 . (See Fig. 5.) The cap H also has an opening h^6 , alined with outlet a^2 , and a conical top I^2 , provided with groove i , the grooves h h^3 and protuberances h^2 h^4 corresponding to those shown in Figs. 1, 2, and 3, the hood G fitting over them in the same manner. The cap H may be cemented or otherwise secured on the neck A.

In addition to the tube C as a valve for the outlet a^2 I may provide a valve J, adapted to fit against a seat at the outlet a^2 to prevent ingress of liquid from neck g and adapted to open outwardly to permit the flow of liquid from the bottle. I have shown the valve J as mounted to slide upon a stem K, that projects from a support shown in the form of a coiled wire L, fitting in the outlet and held by spring tension or otherwise, and M is a light spring located between valve J and hood G to maintain the valve against its seat to assist in preventing refilling of the bottle, and yet will allow valve J to move back when liquid is to flow from the bottle.

The parts may be made of any suitable material and secured together to prevent detachment in any well-known or suitable manner. After the bottle is filled valve-tube C with its float D will be inserted in neck A, spring F and stopper A^2 applied, cap I or H attached, according to Fig. 1 or 5, and hood G secured over all. When liquid is to be poured from the bottle, it will first encounter the float D, which will allow the liquid to flow through passage c^2 into tube C, and the weight of the liquid in said tube will cause it to move outwardly against the resistance of spring F, thus bringing outlets C^2 and a^2 in alinement, as in Fig. 5. The liquid will thereupon flow through the passages into and from the neck g . If no liquid is in valve-tube C, the latter will move inwardly and prevent ingress into the bottle either through the influence of gravity or the assistance of spring F. If an attempt be made to force liquid into the bottle in an inverted position, the rising of the liquid in tube C (provided the liquid can pass valve J, if that be used) will cause float D to close against passage c^2 , and if pressure be applied to the liquid the float D will press against the passage c^2 and will act as an abutment, and the pressure of the liquid will cause tube C to slide inwardly so that its part c will pass the outlet a^2 and liquid will pass upon end c and will force the tube upon seat a^3 . The float D thus performs the double functions of closing passage c^2 and causing valve C to slide inwardly to close the inlets into the bottle at a^2 and a^3 . When the bottle is in the upright posi-

tion, tube C will sink to close the bottle at a^3 . The peculiar arrangement of grooves h h^3 h^5 and the protuberances h^2 h^4 provide a circuitous course and serve to prevent a wire or tool from operating upon valve J or tube C.

Having now described my invention, what I claim is—

1. The combination of a bottle-neck, a tube adapted to slide therein, said neck and tube each having an outlet to coact, the tube having an inlet-passage, a float within the tube adapted to close the same, and a hood or cover on the neck and communicating with the outlet of the latter, substantially as described.

2. The combination of a bottle-neck, a tube adapted to slide therein, said neck and tube each having an outlet, the neck being provided with an inner seat to receive the sliding tube, a float within the tube adapted to close the passage into said tube and to cause the tube to slide when pressure of liquid is applied to said float, and a hood or cover on the neck communicating with its outlet, substantially as described.

3. The combination of a bottle-neck, a tube, each having an outlet, the tube being adapted to slide inwardly to close the inward passage through the neck, a valve to prevent the flow of liquid into the neck, a hood or cover connected with the neck and communicating with its outlet, and a float within the tube adapted to close the passage into said tube and to cause the tube to slide when pressure of liquid is applied to said float, substantially as described.

4. The combination of a bottle-neck having the outer end closed and an outlet in one side, and having a seat at its inner end, a cover over the end of the neck and provided with an outlet-neck, a circuitous channel being provided between the neck and cover, a sliding tube within the neck having its outer end closed and provided with an outlet in one side, and a float within the tube adapted to close its inlet-passage, said tube being adapted to fit the inner seat in the neck, substantially as described.

5. The combination of a bottle-neck provided with an outlet and a groove leading therefrom around the neck to a protuberance and leading upwardly along another protuberance, a hood or cover over the neck and encircling the grooves, a tube within the neck having an outlet, a valve within the tube to close its inlet end, and a seat within the neck to receive said tube, substantially as described.

6. The combination of a bottle-neck provided with a side outlet, a stopper at its outer end, a cap, a hood or cover fitting over the neck and cap, the neck being provided with peripheral grooves forming a circuitous channel, the neck having an inner seat, a sliding tube in said neck adapted to engage said seat, and a float within said tube to close its inlet end, substantially as described.

7. The combination of a bottle-neck pro-
vided with a seat, with a tube adapted to slide
within the neck and provided with an outlet
and a seat, the tube being adapted to fit the
5 seat in the neck, and a float within the tube
adapted to fit its seat to close its inlet and to
cause the tube to slide inwardly when pres-

sure of liquid is applied to the float, substan-
tially as described.

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Witnesses:

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