

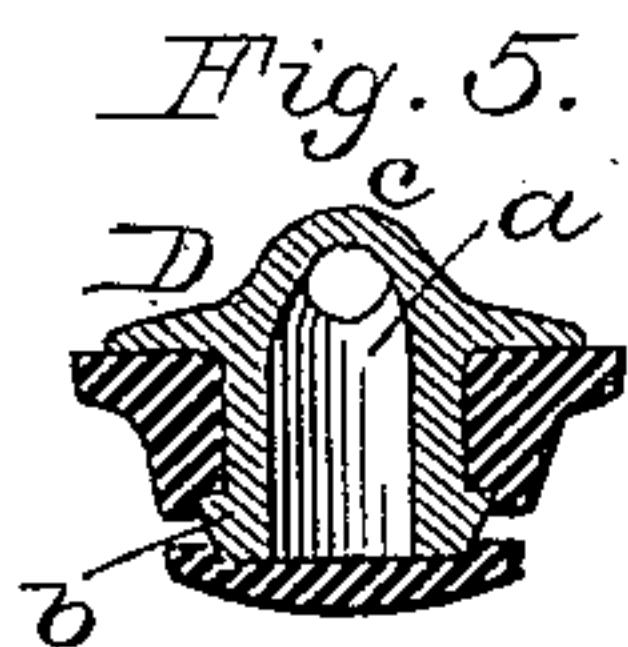
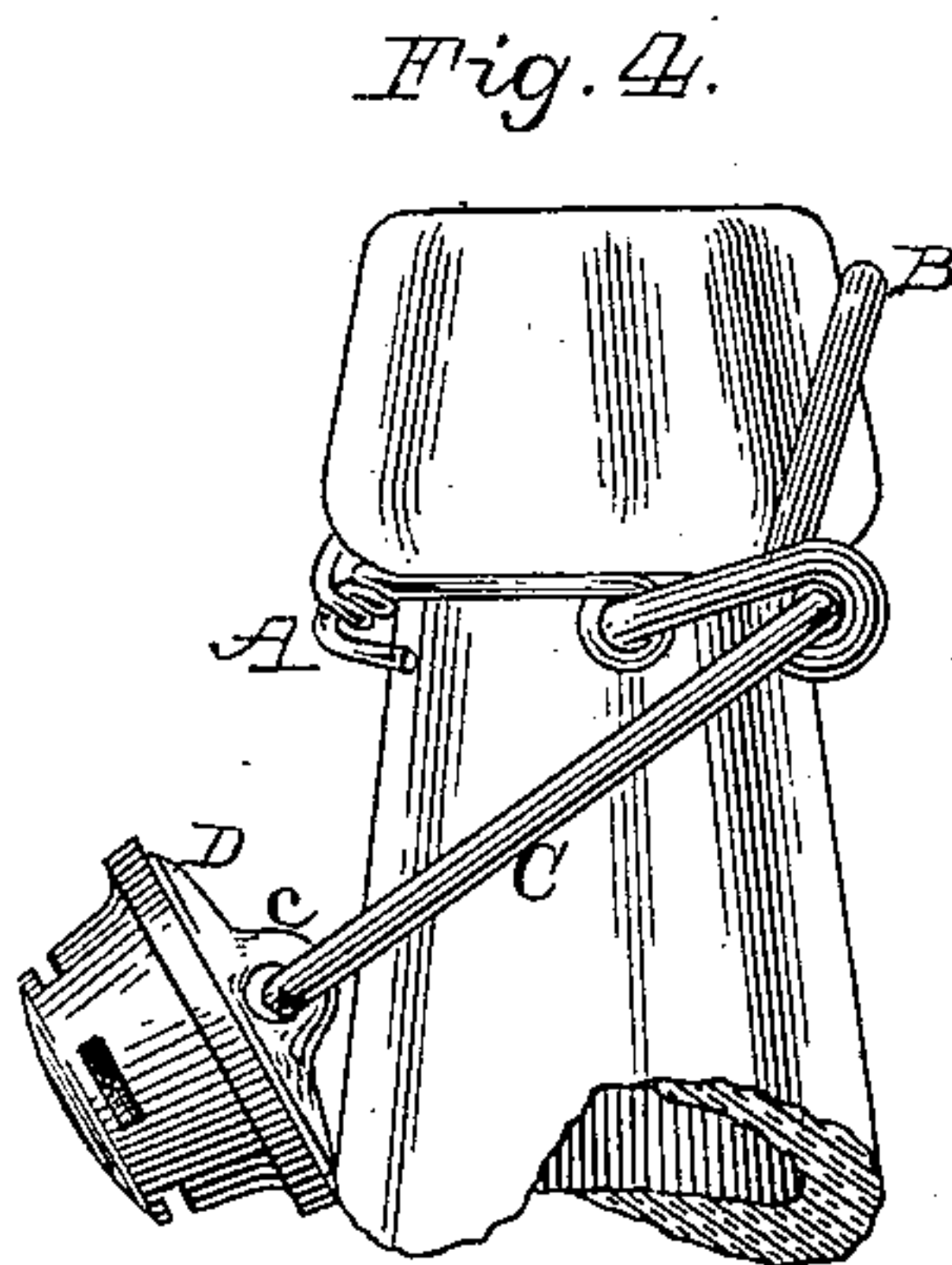
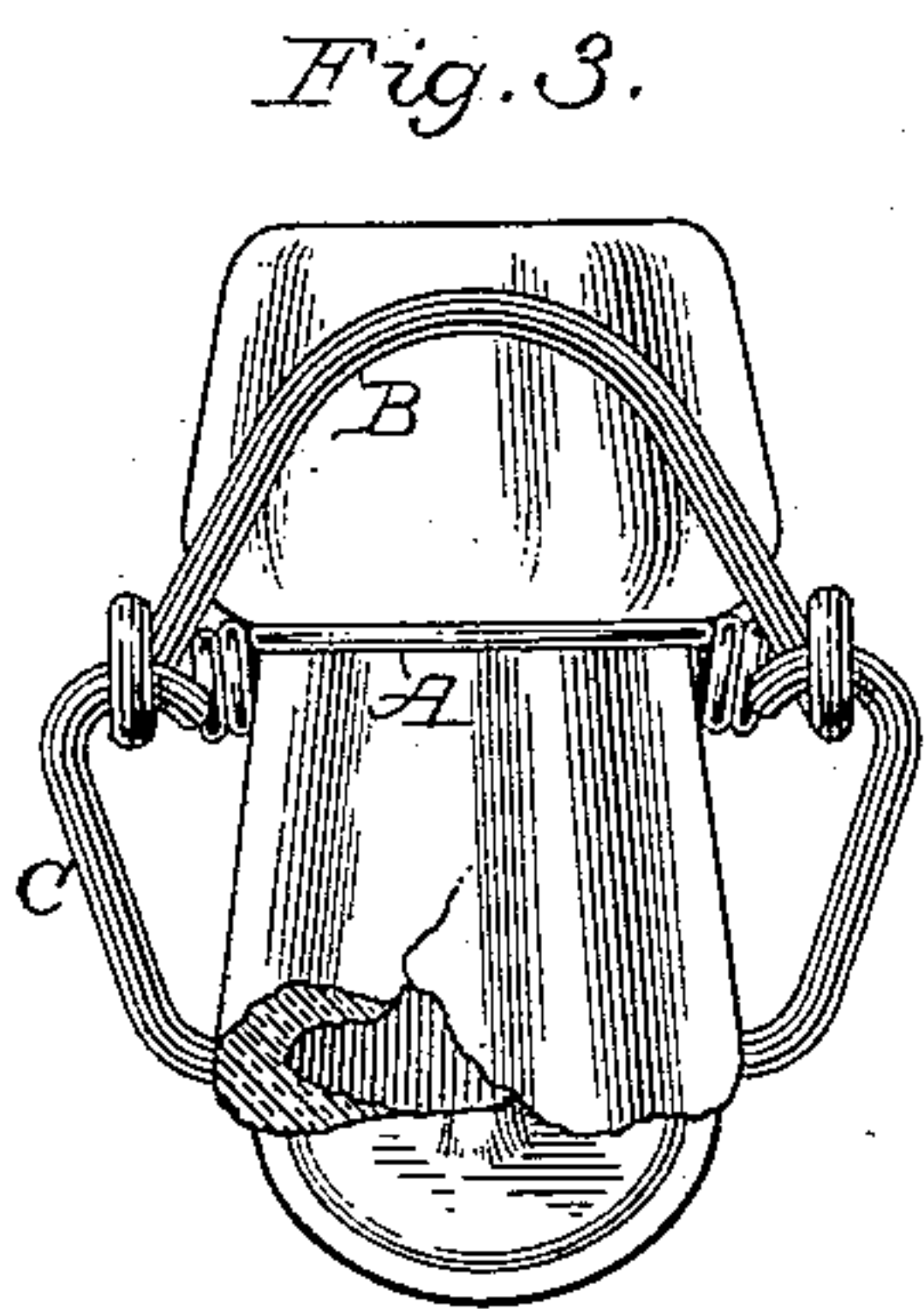
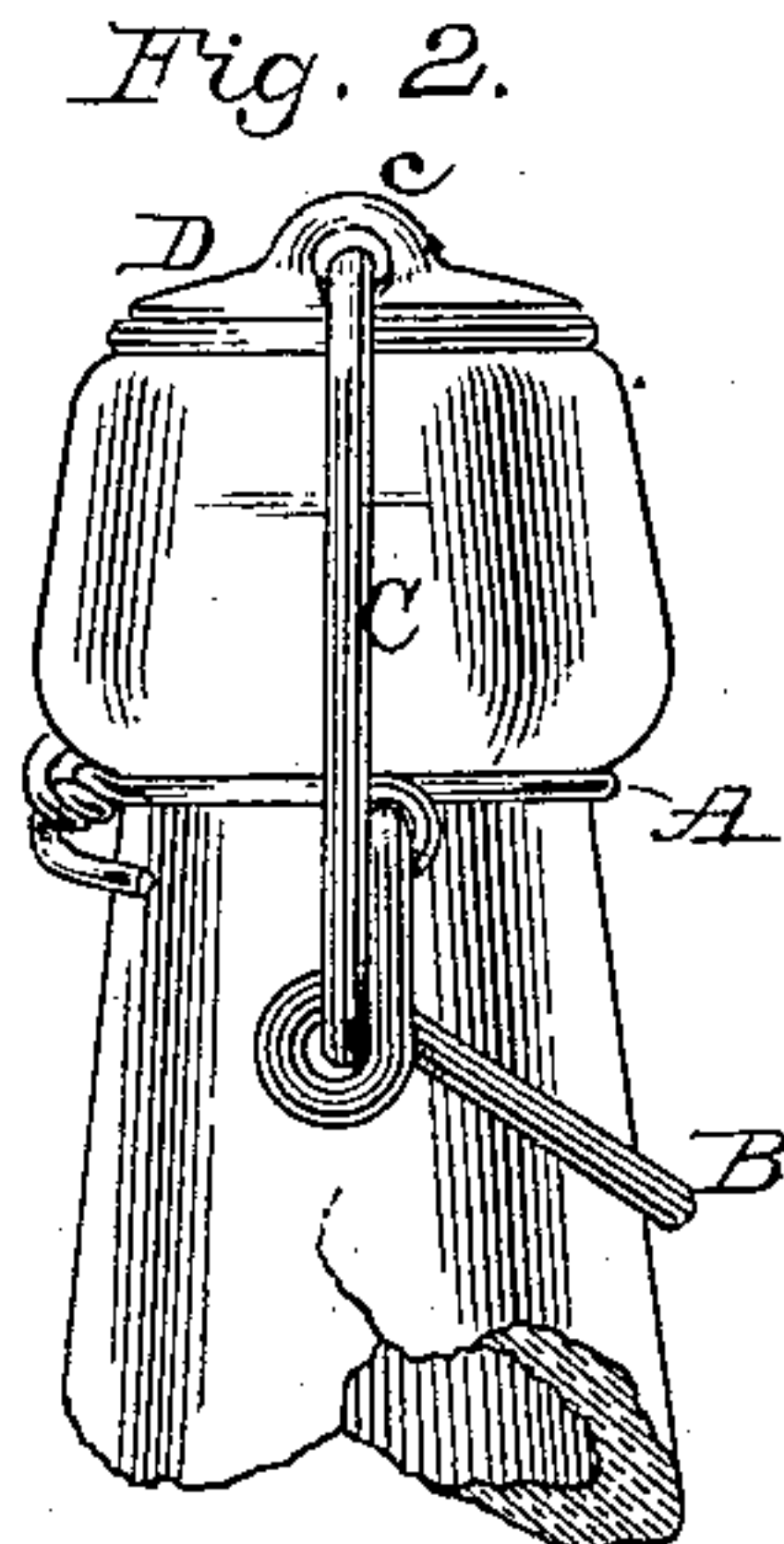
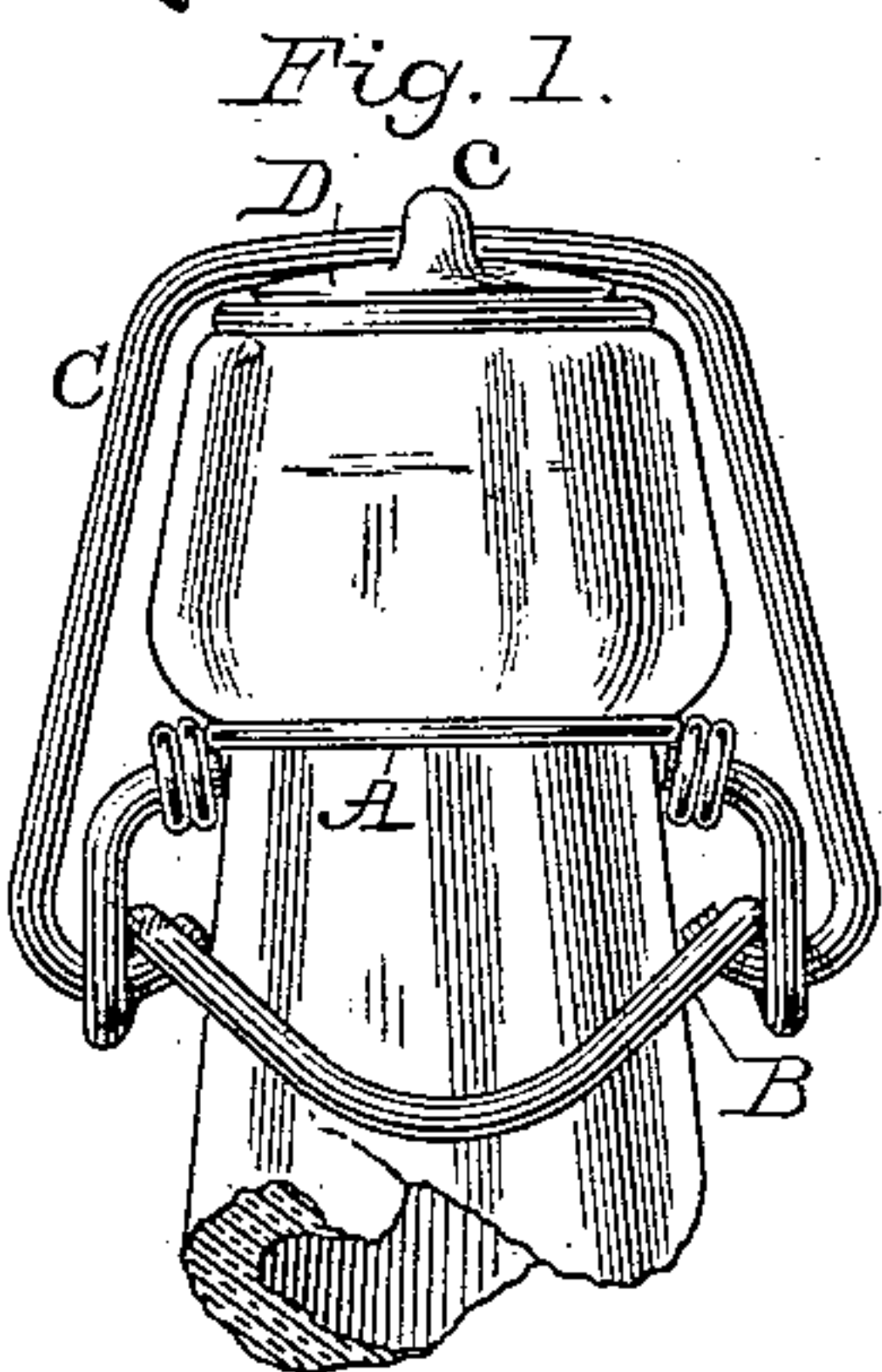
(No Model.)

J. W. JOHNSON & F. B. THATCHER.

BOTTLE STOPPER.

No. 344,278.

Patented June 22, 1886.



Attest:

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Inventor:

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# UNITED STATES PATENT OFFICE.

JOSEPH W. JOHNSON AND FREDERICK B. THATCHER, OF BRIDGEPORT,  
CONNECTICUT, ASSIGNORS, BY MESNE ASSIGNMENTS, TO THE ÆTNA  
STOPPER COMPANY, OF PAWTUCKET, RHODE ISLAND.

## BOTTLE-STOPPER.

SPECIFICATION forming part of Letters Patent No. 344,278, dated June 22, 1886.

Application filed November 5, 1883. Serial No. 110,909. (No model.)

*To all whom it may concern:*

Be it known that we, JOSEPH W. JOHNSON and FREDERICK B. THATCHER, both of Bridgeport, in the county of Fairfield and the State of Connecticut, have invented certain new and useful Improvements in Bottle-Stoppers; and we do hereby declare that the following specification, taken in connection with the drawings furnished and forming a part of the same, is a clear, true, and complete description of our invention.

Our said improvements relate to that extensive class of bottle-stoppers which involve the use of a perforated cap-plate and a valve so connected therewith that it will open under externally-applied pressure and allow the passage of gas and liquid into a bottle, but will close to resist their exit therefrom.

Heretofore stoppers of this class have been so constructed and organized that the contents of a bottle could be withdrawn by way of a draft-tube inserted into the unobstructed central opening in the cap-plate, so as to open the valve; but a bottle having a stopper as now devised by us is intended only to be wholly or partially charged by way of the cap-plate; and the object of our invention is to obtain with a perforated cap-plate and valve the well-known advantages of employing the old and widely-used, effective, and inexpensive bent lever, which is pivoted to opposite sides of a neck-band, and a yoke which at each side is pivoted to said lever, and extends diametrically over or across the top of the cap-plate, as heretofore employed in bottle-stoppers having a solid cap-plate and no valve.

Referring to the drawings, Figures 1 and 2 represent in two side views the neck of a bottle in a closed condition, and having our improvements applied thereto. Figs. 3 and 4 represent in similar views the same in an opened condition. Figs. 5 and 6 are two central vertical sections of the cap plate detached, either section being diametrically opposite to the other.

Now, it is to be understood that the neck-band A, the bent lever or thumb-lever B, pivoted at opposite points to said neck-band, and the yoke C, diametrically crossing the neck-band and pivoted at opposite sides to the

thumb-lever, are in no material respect unlike those heretofore employed with solid cap-plates. The cap-plate D differs from such as have heretofore been used with such yokes and levers in being centrally perforated at *a*, and having the hollow neck *b* and the combined elastic laterally-perforated plug and valve surrounding said neck and covering its inner end. The upper central portion of the yoke, which diametrically crosses the cap-plate, also crosses its central perforation, *a*, and said plate and yoke are pivotally connected by the central eye or staple, *c*, on said cap-plate, as is usual with non-perforated cap-plates. Our stopper, as described, can therefore be used precisely the same as those which have a non-perforated cap and no valve, not only in charging and discharging, but it is also possible with the stopper in its closed position to charge a bottle with gas and liquid; or the liquid may be entered without pressure while the cap-plate is thrown backward, and then gas under pressure can be supplied by means of a suitable bottling-machine, it being only requisite that said machine have its elastic nozzle so formed that it will afford a practically tight joint with the upper surface of the cap-plate, and with the adjacent portions of the yoke, and also be practically unobstructed by the staple *c*. It will also be seen that the advantages of this cheap, simple, and effective old combination of neck-band, thumb-lever, and a yoke which crosses the top of the cap-plate are coupled (as we believe for the first time) with a capacity for charging the closed bottle with gas, or with gas and liquid, or with liquid alone, thus providing for all the various requirements heretofore incident to bottling.

It will be readily understood that the gist of our invention neither relates to that variety of prior stoppers which embody a yoke passing through the body of a valved cap-plate, and which preclude either the union or the separation of the yoke and cap-plate without straightening the yoke, nor that other variety of prior stoppers which embody links or hooks which engage with the cap-plate or with lugs laterally projecting therefrom. With all of said prior devices the bottles may be charged and



discharged independently of the valve feature, and they also enable the bottle to be charged by way of the valve, like ours. Unlike ours, many of said prior devices admit of discharge  
 5 by way of the valve; but we know of no valved cap-plate prior to our invention which is crossed at its top by a yoke coupled to the opposite sides of a thumb-lever; nor do we know of any prior valved cap-plate which can be  
 10 applied to or removed from such a yoke without straightening the latter and rebending it to a degree jeopardizing its further utility.

One special advantage arising from our improvement is, that the perforated cap-plate  
 15 and its valve may be readily and cheaply applied to such yokes and bent levers as are already in extensive use on bottles, the old non-perforated caps being readily removable from the yoke by detaching the yoke-pivot at one  
 20 side from the thumb-lever.

Another valuable result of our invention is, that such solid or non-perforated cap-plates as have heretofore been used with these yokes

can be readily and cheaply converted into valved cap-plates by merely boring the solid  
 25 nipple and substituting for the solid elastic plug a combined plug and valve of substantially the character shown.

Having thus described our invention, we claim as new and desire to secure by Letters  
 30 Patent—

The combination, with a perforated cap-plate having the central eye or staple and provided with an elastic plug and valve, of the neck-band, the bent thumb-lever pivoted at  
 35 opposite points thereto, and the yoke pivoted at opposite points to said lever, and pivoted to and crossing the perforated cap-plate through said eye or staple, and readily separable therefrom, substantially as described, and for the  
 40 several purposes set forth.

JOSEPH W. JOHNSON.

FREDERICK B. THATCHER.

Witnesses:

JAMES H. SCRIBNER,

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