

No. 650,429.

Patented May 29, 1900.

O. SMITH.
REFILLABLE GAS CAPSULE.

(Application filed Oct. 23, 1899.)

(No Model.)

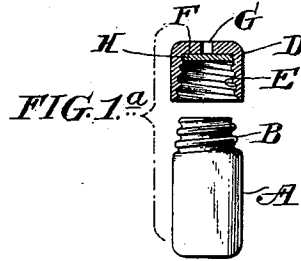
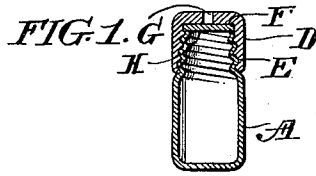


FIG. 2.

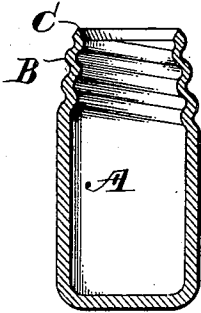


FIG. 3.

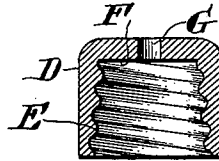


FIG. 4.



FIG. 5.

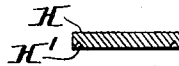


FIG. 6.



Witnesses:

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UNITED STATES PATENT OFFICE.

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REFILLABLE GAS-CAPSULE.

SPECIFICATION forming part of Letters Patent No. 650,429, dated May 29, 1900.

Application filed October 23, 1899. Serial No. 734,448. (No model.)

To all whom it may concern:

Be it known that I, OBERLIN SMITH, a citizen of the United States of America, residing in the city of Bridgeton, in the county of Cumberland and State of New Jersey, have invented a certain new and useful Improvement in Refillable Gas-Capsules, of which the following is a true and exact description, reference being had to the accompanying drawings, which form a part thereof.

My invention relates to capsules such as are used for holding highly-compressed or liquefied gas, which is liberated from the capsule by a perforation through one of its walls.

The object of my invention is to provide such a perforatable capsule which will be adapted for reuse and which will also be exceedingly strong and of cheap construction.

The nature of my invention will be best understood as described in connection with the drawings, in which it is illustrated, and in which—

Figure 1 is a longitudinal section through my capsule with its various parts secured together as they are when in use for containing gas. The proportion and size of the parts as shown in this figure are substantially the same as I have successfully used in practice. Fig. 1^a shows the same parts as are shown in Fig. 1 with the cap and plate detached and the body of the capsule shown in elevation. Fig. 2 is a longitudinal sectional view of the body of the capsule, shown on a larger scale. Fig. 3 is a similar sectional view of the cap portion of the capsule. Fig. 4 is a similar sectional view of the disk-shaped metal plate used between cap and body of the capsule. Fig. 5 shows this metal plate after it has been used for inclosing the gas, and Fig. 6 shows the condition of the metal plate after it has been perforated.

A indicates the body of the capsule, which is drawn from strong metal, such as iron, the walls being calculated to securely hold the pressure which it is contemplated to give the gas.

B is the neck portion of the capsule, which is threaded, preferably, with a roll-thread impressed on both sides of the metal, the threaded neck being also pressed, preferably, of frusto-conical form, as shown.

C indicates the edge of the neck portion,

which should be true and brought to a sharp edge, as shown.

D indicates the cap-shaped cover of the capsule, which is internally threaded to fit on the threaded neck B. Preferably the thread used in the cap D is incised on the inside of the cover instead of being rolled in, as in the case of the neck B. The roll-thread is sufficient in the case of the body of the capsule, because the pressure of the capscrewing upon it pushes it inward, where the cylindrical form of the metal sufficiently braces it. The pressure upon the cap, however, being outward I prefer to use the incised thread, making the walls of the cap thick enough to prevent expansion. The thread in the cap is indicated at E.

F indicates a seat for a metal disk, formed in the end of the cap and which of course should be perfectly true and parallel with the sharpened edge C of the body portion.

G indicates a perforation formed through the end of the cap.

H is a metal plate of disk form adapted to fit in the end of the cap, as shown, and when the cap is screwed upon the body portion to be pressed against the threaded edge C with such force that the sharpened edge will cut in it a circular groove, as indicated at H', Fig. 5. This disk is preferably made of a relatively-soft metal, and I may mention that I have found tin very well adapted for the purpose. The plate may be both thin and of, relatively speaking, weak metal, because it is fully supported by the cap, in the seat of which it rests, except immediately beneath the perforation G, which, however, is so small that the pressure on the metal disk at that point is not sufficient to break it.

The capsule is of course filled before the disk is applied to the body portion, and when the cap is screwed down and the disk indented by the sharp edge of the neck the contents is securely held.

When it is desired to use the gas contained in the capsule, a perforating-point of the usual character employed is thrust through the opening G into and through the plate H, as indicated at h² in Fig. 6. The gas then freely escapes from the capsule into the receptacle provided for it and the empty capsule can be returned to the manufacturer for

refilling, which only requires the use of a new disk H.

I prefer to use the frusto-conical threaded neck B both for convenience in manufacture and convenience in applying the cap. It is also useful in filling the capsule, which may be placed in the filling apparatus with the cap partly screwed down and the gas permitted to flow into the capsule through the spaces between the threads before they are fully screwed to place.

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

1. A reusable capsule for compressed or liquefied gas having a body A with threaded neck and sharpened edge at its open end in combination with a threaded cover screwing on the neck of the body part and having a perforation in its end and a metal plate fitting in the cover and clamped between it and the sharpened edge of the neck of the body.

2. A reusable capsule for compressed or

liquefied gas having a body A with a frusto-conical threaded neck and sharpened edge at its open end in combination with a threaded cover screwing on the neck of the body part and having a perforation in its end and a metal plate fitting in the cover and clamped between it and the sharpened edge of the neck of the body.

3. A reusable capsule for compressed or liquefied gas having a body A with a roll-threaded neck and sharpened edge at its open end in combination with a cap-shaped cover having a thread incised in its inner surface screwing on the roll-threaded neck of the body and having a perforation in its end and a metal plate fitting in the cover and clamped between it and the sharpened edge of the neck of the body.

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Witnesses:

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