No. 614,131. Patented Nov. 15, 1898.

H. V. R. READ.

CAPSULE OR RECEIVER FOR CONTAINING LIQUEFIED OR HIGHLY COMPRESSED GASES.

(Application filed Mar. 7, 1898.)

(No Model.)

Fig. 1.

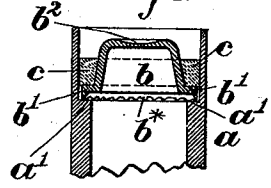


Fig. 2.

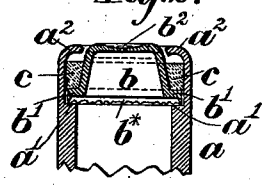


Fig. 3.

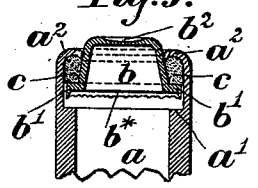


Fig. 4.

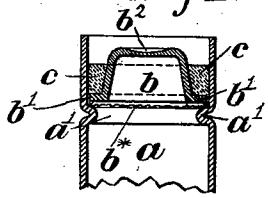


Fig. 5.

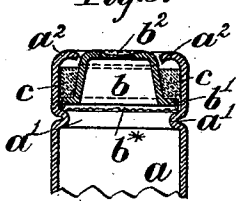


Fig. 6.

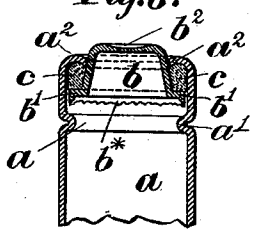


Fig. 7.

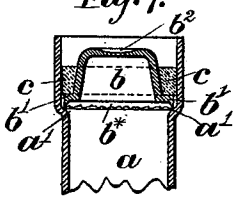


Fig. 8.

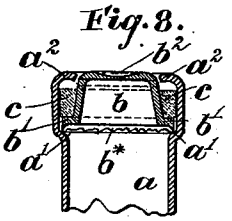


Fig. 9.

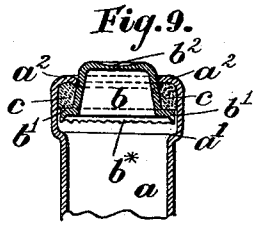


Fig. 11.

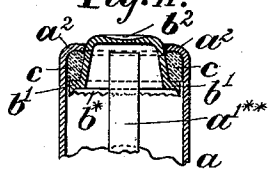


Fig. 12.

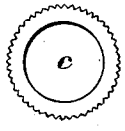
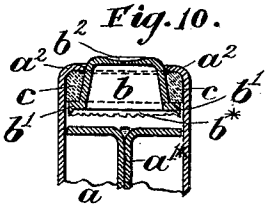


Fig. 10.



Witnesses.
E. A. Finnell
Nellie Callahan.

Inventor.
Harry Vaughan Rudston Read.
by Wm. F. Finnell
his Atty.

UNITED STATES PATENT OFFICE.

HARRY V. RUDSTON READ, OF LONDON, ENGLAND.

CAPSULE OR RECEIVER FOR CONTAINING LIQUEFIED OR HIGHLY-COMPRESSED GASES.

SPECIFICATION forming part of Letters Patent No. 614,131, dated November 15, 1898.

Application filed March 7, 1898. Serial No. 672,943. (No model.)

To all whom it may concern:

Be it known that I, HARRY VAUGHAN RUDSTON READ, a subject of the Queen of Great Britain, residing at London, England, have invented certain new and useful Improvements in Capsules or Receivers for Containing Liquefied or Highly-Compressed Gases, of which the following is a full, clear, and exact description.

The invention relates to an improved valve capsule or receiver for containing liquefied or highly-compressed gas, said capsule being provided with means whereby the closure is completed by the internal pressure and with a safety-valve.

I will describe my invention by the aid of the accompanying drawings, in which—

Figure 1 is a section, drawn to an enlarged scale, of the upper part of a capsule or receiver and its closing means previous to the charging of said capsule or receiver with gas and the closing thereof. Fig. 2 is a similar section after the charging and closing have been effected, but before the capsule or receiver has been removed from the charging and closing machine. Fig. 3 is a similar section of a capsule or receiver after it has been charged, closed, and removed from the charging and closing machine. Figs. 4, 5, and 6 are similar views to Figs. 1, 2, and 3, except that the closing-cap is shown differently supported for the charging and closing operations. Figs. 7, 8, and 9 are similar views to the above, showing another slight modification in the form of the capsule or receiver. Fig. 10 is a vertical section of the upper part of a capsule or receiver, showing another method of supporting the closing-cap. Fig. 11 is a vertical section of the upper part of a capsule or receiver, showing another method of supporting the closing-cap. Fig. 12 is a plan of the packing-washer separately.

a represents the upper portion of my improved capsule or receiver.

a' is a seat or bearing-surface for the cap or cover b, such seat or bearing a' being formed, as shown at Figs. 1, 2, and 3, by boring the part a, or, as shown at Figs. 4, 5, and 6, by an annular indentation in the part a, or, as shown at Figs. 7, 8, and 9, by making the part a of the capsule or receiver of slightly-larger diameter than the lower part, while at Fig. 10 the closing-cap is shown supported during the filling of the capsule or receiver by a carrier a'^*, extending to and supported by the bottom of the capsule. At Fig. 11 the closing-cap is shown supported during the filling of the capsule or receiver by a rod or tube a'^{**}, extending to and supported by the bottom of the capsule.

The cap or cover b has left around its edge or flange b' the bur b^*, formed by the punch or die when the disk from which such cap or cover is made is cut out from the metal sheet, such bur b^* leaving sufficient openings between the cap or cover b and its seat a' to permit of the entrance and exit of the gas in the filling and discharge of the capsule or receiver.

The cap or cover b has its top thinned, as shown at b^2, to such an extent as, while sufficient to resist the pressure of liquefied gas at the normal temperature, will, in the event of undue pressure caused by the expansion of the gas by an increase of temperature, be broken away, thus acting as a safety-valve and preventing damage from the possible bursting of the body of the capsule or receiver.

Around the body of the cap or cover b is placed an exteriorly serrated or corrugated packing-ring c, of vulcanized rubber, vulcanite, or other suitable material.

The seat a' is made at such a distance below the edge of the part a of the capsule or receiver that when the latter is charged and the part a is turned over by the closing-die, as shown at a^2, Figs. 2, 3, 5, 6, 8, 9, 10, and 11, there will be left space sufficient to permit of a short motion of the cap or cover b and packing-ring c between the seat a' and the turned-over part a^2. Thus when the capsule or receiver is charged and the part a^2 is turned over the internal pressure will force the cap or cover b and packing-ring c up against the turned-over part a^2, as shown at Figs. 3, 6, 9, 10, and 11, and effect a tight closure.

In using my improved capsule or receiver I slightly push down the cap or cover b by any suitable form of apparatus and the gas is discharged into a bag, bottle, or other suitable container.

I would here remark that I do not broadly claim a capsule or receiver provided with a closing cap or cover and packing-ring secured

by turning over the upper part of the capsule or receiver; but

What I do claim is—

1. A capsule or receiver for containing liquefied or highly-compressed gas, provided with a seat or bearing in its filling-opening, a closing cap or cover having a burred or serrated flange adapted normally to rest upon said seat or bearing, and an exteriorly serrated or corrugated packing-ring surrounding said cap or cover, the said capsule or receiver being adapted to be turned over at its upper edge, thereby loosely confining said cap or cover and its packing-ring between said turned-over portion and the seat or bearing, whereby by internal pressure said cap or cover is forced from its seat against said turned-over portion to form a tight closure, substantially as described.

2. A capsule or receiver for containing liquefied or highly-compressed gas, provided with a seat or bearing in its filling-opening, a closing cap or cover having a burred or serrated flange adapted normally to rest upon said seat or bearing, and also having its top thinned, and an exteriorly serrated or corrugated packing-ring surrounding said cap or cover, the capsule or receiver being adapted to be turned over at its upper edge, thereby loosely confining said cap or cover and its packing-ring between said turned-over portion and the seat or bearing, whereby by internal pressure said cap or cover is forced from its seat against such turned-over portion to form a tight closure, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

H. V. RUDSTON READ.

Witnesses:

FREDERICK CHARLES BULL,

H. SEYMOUR MILLS.