

No. 795,642.

PATENTED JULY 25, 1905.

N. NELSON.

STOPPER.

APPLICATION FILED SEPT. 12, 1904.

Fig. 1.

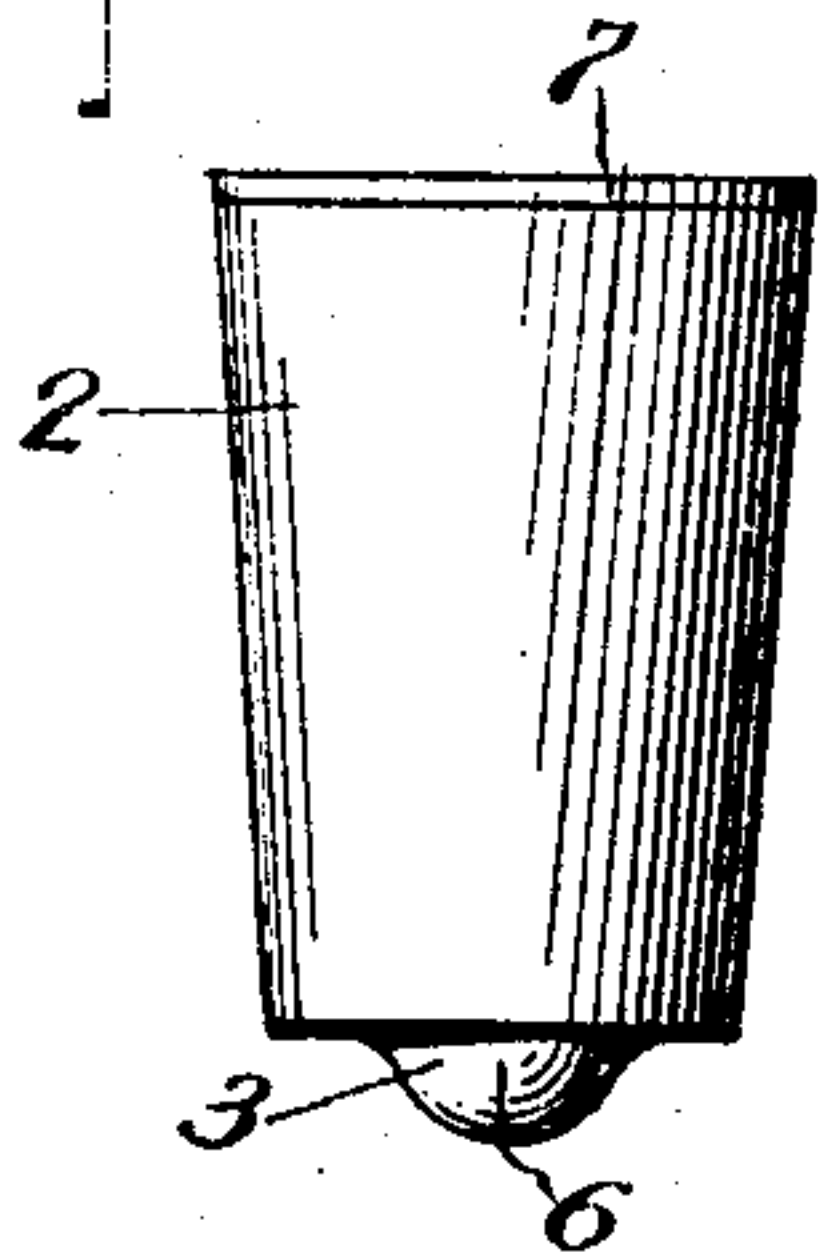


Fig. 2.

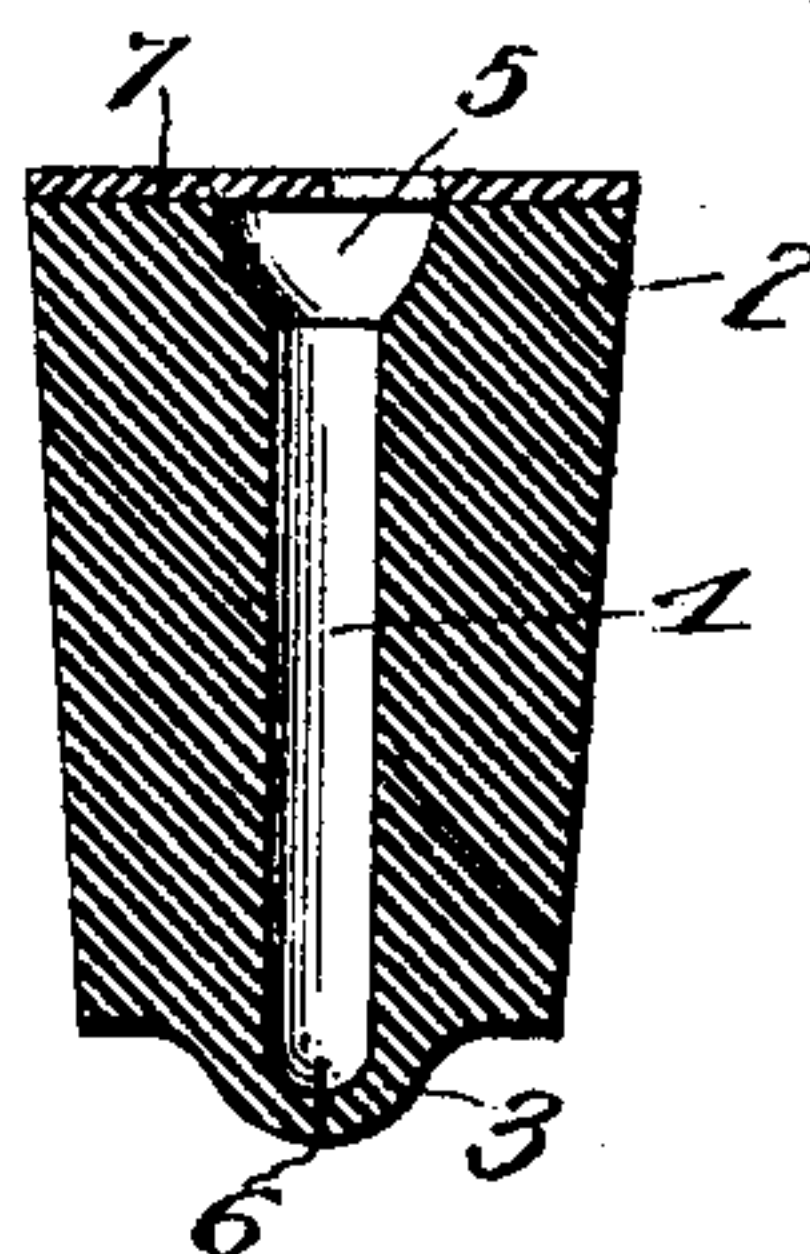


Fig. 5.

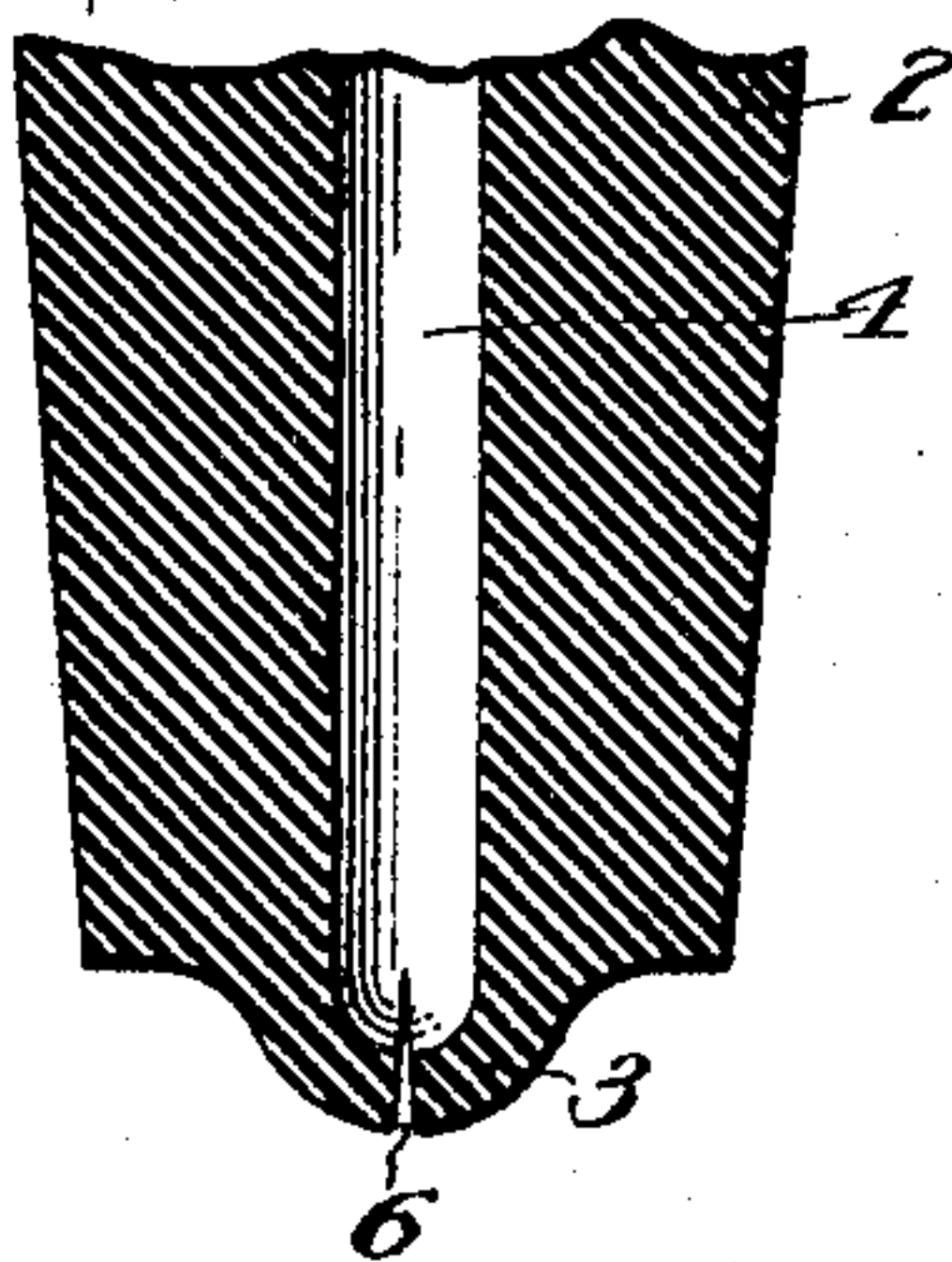


Fig. 4.

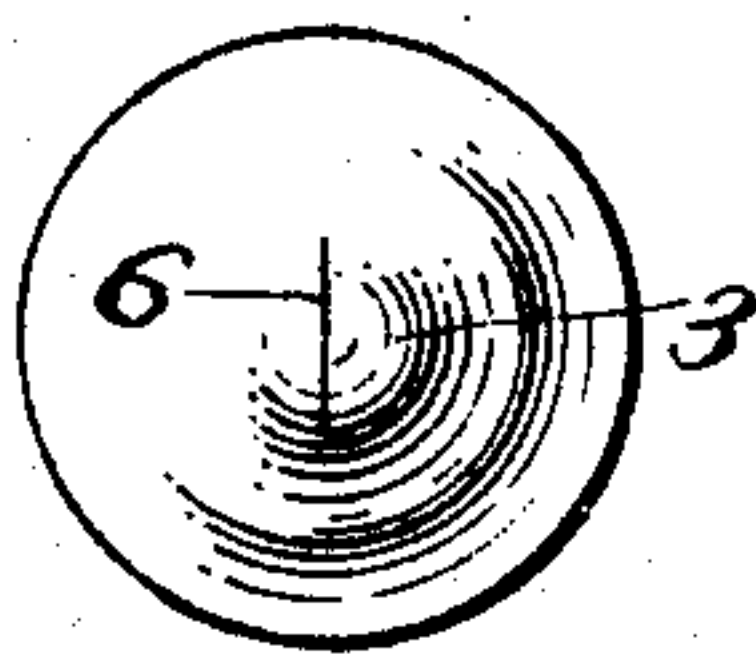


Fig. 3.

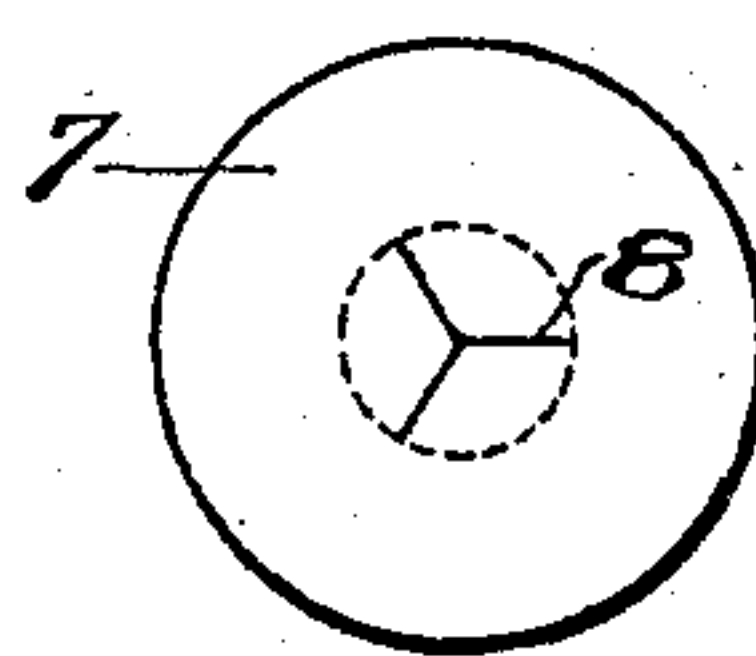


Fig. 6.

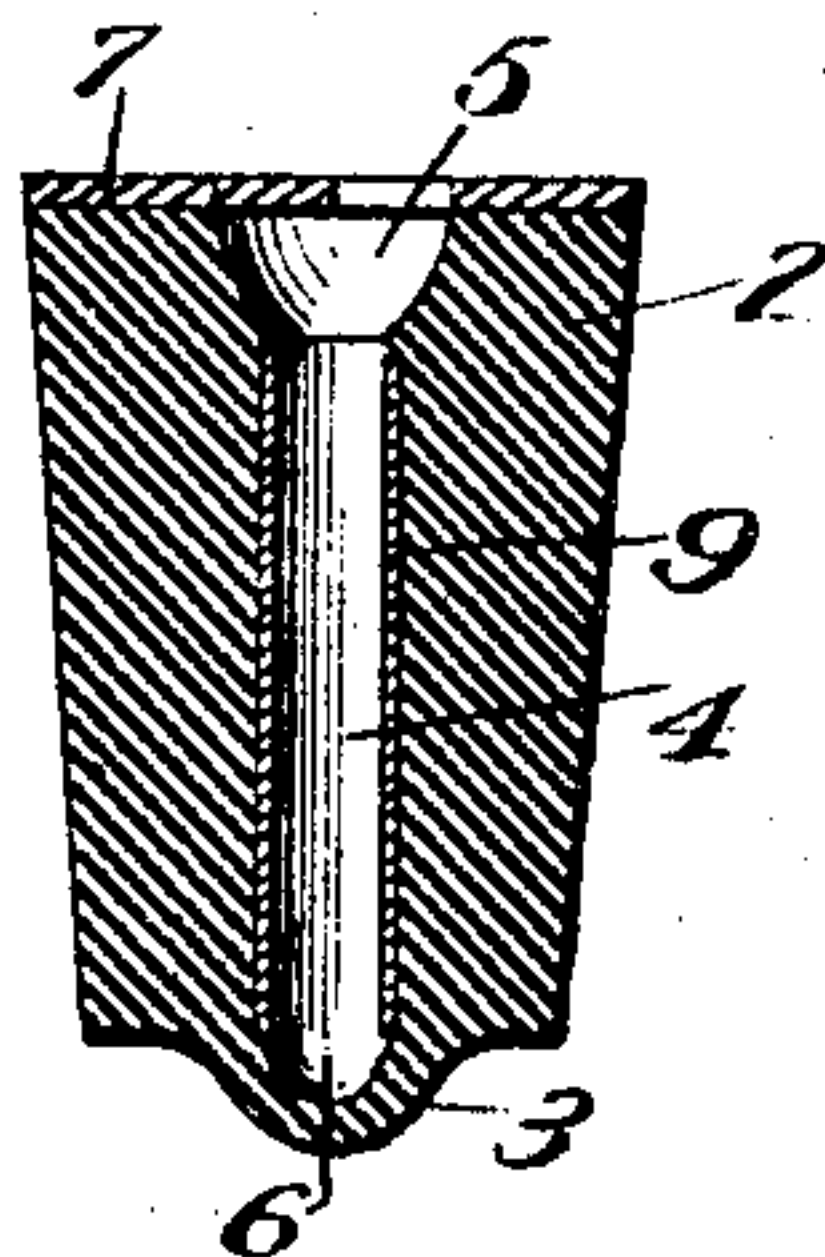
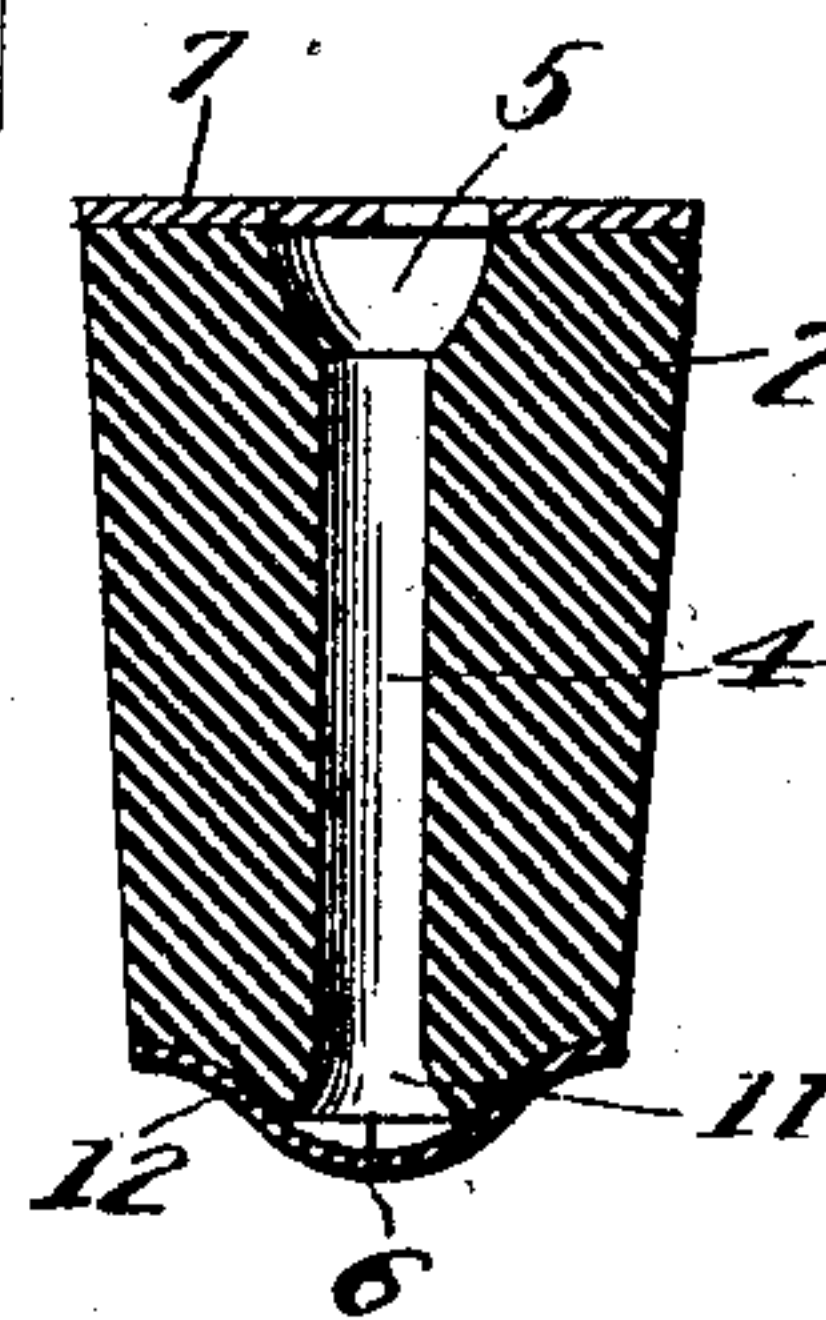


Fig. 7.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

NELS NELSON, OF NEW WESTMINSTER, CANADA.

## STOPPER.

No. 795,642.

Specification of Letters Patent.

Patented July 25, 1905.

Application filed September 12, 1904. Serial No. 224,118.

*To all whom it may concern:*

Be it known that I, NELS NELSON, a citizen of the Dominion of Canada, residing at New Westminster, in the Province of British Columbia, Canada, have invented a new and useful Improvement in Stoppers, of which the following is a specification.

My invention relates to an improved stopper for vessels within which it is desired to charge and maintain a moderate pressure of air or gas.

There are many liquids of a volatile or aerated character the quality of which can only be maintained by preventing the escape of the volatile elements of the liquids or the occlusion of any gas they may contain; and my stopper is designed to enable the bottle or other vessel containing such to be charged with compressed air or gas, the pressure of which on the surface of the liquid will check the volatilization or occlusion. In the first instance this surface pressure in a vessel is obtained in the corking, but after a certain portion of the liquid has been withdrawn the exposed area of the liquid is generally larger and the air-space greater, and the quality of the liquid rapidly deteriorates, because the evaporation or occlusion cannot be fully prevented.

The object of my invention has therefore been to provide a stopper which may be substituted for the original cork and through which an air or gas pressure can be charged into a bottle or other vessel and having in its structure a valve to retain that pressure.

Figure 1 is an elevation of a stopper; Fig. 2, a vertical section through the stopper; Fig. 3, a plan; Fig. 4, an inverted plan; Fig. 5, an enlarged vertical section showing the teat-valve as it opens to permit the vessel to be charged with air or gas under pressure, and Figs. 6 and 7 are vertical sections showing modified constructions.

The stopper in its simplest form consists of a body 2, which may be of rubber or other suitable elastic material and, as illustrated in the drawings, is made in the form of an ordinary cork; but its exterior form may be adapted to the means used for securing the stopper in the vessel. This body terminates at its lower end in a downwardly-projecting teat 3, and through the center of the stopper, terminating in the teat, is a passage 4, which at its upper end may have an enlargement 5 to form a seat for a nozzle through which compressed air or gas may be charged through the stopper into the vessel. Across the teat 3 is an

incision or slit 6, which divides it into two flexible sections which will be forced apart (see Fig. 5) by a pressure introduced into the passage 4 and permit the entrance into the vessel of the air or gas under such pressure, but which will tend together when the external pressure is removed and will be tightly closed by a pressure within the vessel acting on the external sides of the teat. To prevent flies or other insects crawling into the passage 4, a thin layer 7 of soft rubber may be cemented across the upper surface of the stopper, (see Figs. 2 and 3,) having multiple slits 8 over the enlargement 5. These slits will enable the charging-nozzle to be introduced into the enlargement 5. If the stopper is made of soft rubber, it may be found necessary to introduce a metal tube 9 (see Fig. 6) into the passage 4 to prevent it being closed when the stopper is pressed into the neck of a vessel.

The modified form shown in Fig. 7 may be adopted when the stopper is made of hard material. In this design the passage 4 is flared toward the lower end, as at 11, and the teat is formed by a disk of soft rubber 12 cemented to the downwardly-projecting lower end, and is slit, as before described.

The stopper may be used to seal a bottle or vessel containing spirits, wine, or aerated water or any liquid which is liable to deteriorate after a portion of the contents has been withdrawn, the stopper being substituted for the original cork, and after the stopper has been introduced and, if necessary, secured by a supplementary fastening, such as wire, the nozzle of an air-pump or gas-charging vessel is introduced into the central opening 4 and the bottle may be charged with air or gas under pressure, and when the nozzle is withdrawn the construction of the teat-valve at the lower end of the stopper will prevent any return and will maintain the pressure within the vessel and prevent the volatilization of the spirit or occlusion of the gas in the remaining contents.

I do not desire to be limited to the particular external form of the stopper, which may be modified to suit the requirements of the vessel; but

What I claim as new, and desire to be protected in by Letters Patent, is—

1. In a stopper of the class described a body portion of elastic material having a downwardly-projecting teat at its lower end and a passage through the center of the stopper terminating in such teat, said teat having a



slit across the same into the central passage, said stopper having an enlarged recess at the upper end of the passage, and a diaphragm of elastic material across said enlarged recess, having a slit or slits to permit the introduction of a nozzle.

2. In a stopper of the class described, a body portion formed of an elastic material and having a central bore passing downwardly there-through, an integrally-formed teat of elastic material formed at the lower end of said stopper and closing said bore, said teat having a slit across the same communicating with said bore, said stopper having an enlarged recess in the upper end thereof merging with said bore, and a diaphragm of elastic material across the top of said stopper and said enlarged recess and provided with slits to permit the introduction of a nozzle into the enlarged recess of the stopper, all being arranged substantially as shown and described.

3. In a stopper of the class described, a body portion of elastic material having a central bore and a downwardly-projecting teat at its lower end integrally formed therewith and having an enlarged recess in its upper face merging with said bore, said teat having a slit across the same to communicate with the central bore, and a diaphragm of elastic material arranged across the top of the body portion to close the enlarged recess, said diaphragm having a slit communicating with said recess to permit of the insertion of a nozzle into the enlarged recess, substantially as described.

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

NELS NELSON.

Witnesses:

ROWLAND BRITTAIN,  
ELLICE WEBBER.