

L. C. VAN RIPER.  
 SELF CLOSING RECEPTACLE.  
 APPLICATION FILED JUNE 20, 1908.

985,955.

Patented Mar. 7, 1911.

2 SHEETS—SHEET 1.

Fig. 1.

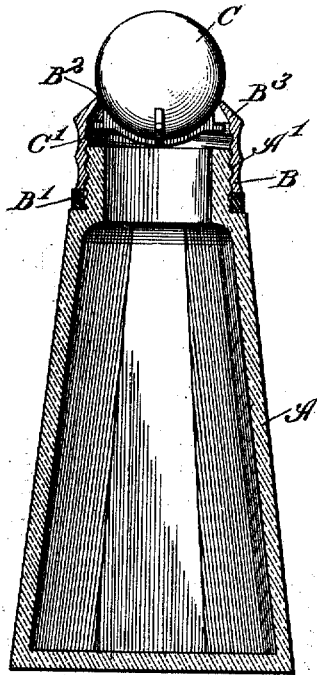


Fig. 2.

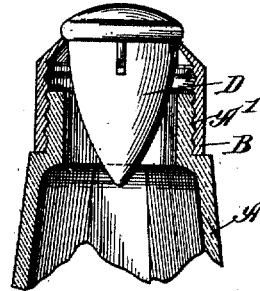


Fig. 3.

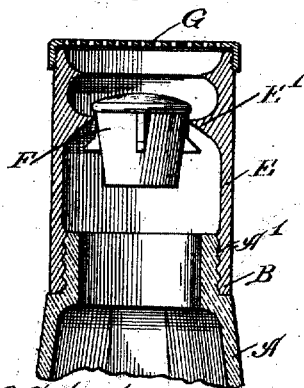
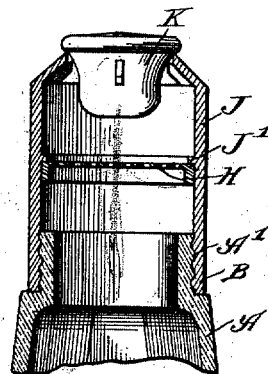


Fig. 4.



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# UNITED STATES PATENT OFFICE.

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## SELF-CLOSING RECEPTACLE.

985,955.

Specification of Letters Patent.

Patented Mar. 7, 1911.

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*To all whom it may concern:*

Be it known that I, LEWIS C. VAN RIPER, a citizen of the United States, residing at New York city, in the borough of Manhattan and State of New York, have invented certain new and useful Improvements in Self-Closing Receptacles, of which the following is a specification.

My invention relates to self closing receptacles and has for its object to provide a closing device for bottles or other receptacles, and particularly for receptacles such as salt shakers, which device will open to allow the material to be delivered or shaken out of the receptacle when the receptacle is tilted, and will close automatically and by gravity when it is in upright position, so as to protect the contents of the receptacle from dampness and the impurities of the air.

My invention has for further object to provide a receptacle, particularly for salt and the like, which shall be a substitute for and an improvement upon the ordinary salt shaker, and which shall be cheap to manufacture, easily kept clean, which will deliver the salt freely and protect the same against dampness and impregnation by impurities and deterioration which results from exposure to the air.

The closing device of my invention might, of course, be applied to other receptacles than salt shakers.

The invention is illustrated in certain preferred embodiments in the accompanying drawings, wherein—

Figure 1 is a vertical section through an ordinary salt cellar with the closure of my invention applied thereto. Fig. 2 is a partial sectional view of a modified form of closure. Figs. 3 and 4 are similar views of the closure of my invention applied to receptacles having perforated caps. Fig. 5 is a vertical section through another form of receptacle, the closing device being shown in elevation. Fig. 6 is an enlarged section through the closing device of Fig. 5. Fig. 7 is a plan view of this receptacle; and Figs. 8 and 9 are details in perspective of the closing device.

Like characters of reference indicate like parts in the several figures of the drawings.

Referring first to Fig. 1, this is an ordinary salt bottle, which has the screw-threaded neck A', on which is screwed a preferably metal cap B. I prefer to interpose a washer B' between the cap and the bottle, so as to

make the joint air tight. The cap has a circular opening B<sup>2</sup> and around this a slightly inturned flange B<sup>3</sup>.

Seated in the opening B<sup>2</sup> is a spherical closing device C, which fits down into the opening so as to close the same tightly. On the lower side of this ball are formed ribs or projections C' which, by their engagement with flange B<sup>3</sup>, retain the ball in the opening, but nevertheless permit it to unseat when the receptacle is tilted or turned up-side-down.

It will be obvious that this arrangement will provide for tightly closing the bottle when it is in upright position, so as to exclude dampness and such impurities as may be in the air. In this way the salt is kept from deterioration and impregnation by impurities and from becoming so moist that it will not easily be delivered from the shaker. When the shaker is tilted, the salt will flow out of the annular opening between the ball and the cap-piece and will be spread by the ball. I thus secure a freer delivery of the salt by keeping the same dry and, at the same time, protect the salt from deterioration.

In Fig. 2 a different form of closing device is shown, the closing device D, in this case, being conical, instead of spherical.

In Figs. 3 and 4 I have shown a gravity closure applied in two different ways to a receptacle, which delivers, in the customary way, through a perforated cap, thus combining the advantageous features of the closure of my invention with the advantages, if any there be, in delivering the salt or other material through perforations. In Fig. 3 the cap-piece E has an interior flange E', which forms a seat for the closing device F. Over the top of the cap-piece is a screen or sieve G, which may be screwed thereon, as shown. In Fig. 4 the screen or sieve H is secured within the cap-piece J, as, for example, against the rib J', the cap-piece having an opening in the top in which is seated the gravity closing device K.

Figs. 5 to 9 inclusive illustrate another form of closure, in which the closing device or gravity valve is provided with a series of radiating fingers which divides the annular space into relatively small perforations. This arrangement, when applied to a salt shaker, sifts out the salt in the usual manner, while providing an effective means for keeping the salt dry and clean. The

continual impact back and forth between the closing device and the cap effectively prevents any tendency of the salt to clog. Referring now to these figures, L represents the receptacle having thereon a screw-threaded band *l*, on which is screwed the cap M. The closing device or valve consists of a flattened ball N, the shape, however, of which is a matter of little moment, to which is attached the disk O, by means of a screw P. The disk is preferably concaved and slit so as to form the fingers *o*. The ball N is preferably provided with the guides *n* which keep the closing device from having too much lateral play. Fig. 8 shows the under side of the ball with the disk detached. Fig. 9 shows the disk. By this latter arrangement it will be seen that an effective valve is provided for protecting the contents of the receptacle from moisture and the impurities of the air by a very simple and inexpensive modification of the ordinary salt shaker. Besides closing the receptacle, the valve or closing device affords means, by its movement back and forth, for keeping the perforations free from clogging.

It will be noted that the cap is so formed as to constitute a rim around the delivery orifice and that the valve or closing device is seated on the edge of this rim. Preferably this edge is placed at an angle approximating a right angle to the surface of the closing ball or valve, and the edge is preferably sharpened. In this way the salt or other material cannot lodge between the valve and its seat even when the material is more or less sticky and granular. It will likewise be noted that the closing device is of such construction that it is guided in its movements back and forth, so that the annular delivery orifice is substantially the same on both sides. In the device of Figs. 5 to 9 inclusive this is accomplished by providing the under side of the ball with the plurality of wings *m* which come close enough to the edges of the rim to make the movement of the closing device practically in a straight line. In order to economize space and provide a seat for the retaining means on the inside of the valves, I preferably, as shown in Figs. 3, 4 and 6, bevel the rims around the delivery orifices to correspond with the slant of the retaining means.

Preferably I provide the closing device with a considerable number of projecting parts, such as the parts *o* in Fig. 9, which serve not only to retain the valve, but also divide the annular delivery orifice into comparatively small holes, thus forming a sifter for the material discharged.

I do not wish to be limited to these particular devices, constructions and arrangements shown. For example, different forms of closing device might be used. I have shown the ribs *C'* as secured to the closing device. These ribs might, of course, be made integral therewith. The receptacle of my invention has particular advantages, as above suggested, when it is used as a salt shaker. It might, of course, be used for other purposes.

I claim:

1. The combination with a receptacle having an opening and a rim part around said opening, of a closing device for the same which seats on the edge of said rim part and opens and closes by gravity, said edge being beveled, and retaining devices on the under side of said closing device which do not close said opening, the upper surface of which corresponds to the bevel of the rim.

2. The combination with a receptacle having an opening in the top, of a cap-piece provided with an opening and an inwardly projecting rim portion, and a closing device which seats in said opening in the cap-piece on said rim and is provided within said cap-piece with a plurality of projecting parts which serve as means for retaining the closing device in said cap-piece and which divide the annular orifice between the cap-piece and the closing device, when the latter is unseated, into a series of relatively small discharge perforations.

3. The combination with a receptacle having an opening in the top, of a gravity closing device which seats over the opening so as to close the same, guide wings on the under side of said closing device, and a plurality of projecting devices on the under side of said closing device, substantially as described.

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Witnesses:

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