Nov. 6, 1923. 1,473,162

B. SAGE

QUICK ACTING CLOSURE FOR RECEPTACLES

Filed Nov. 17, 1921

Fig. 1.

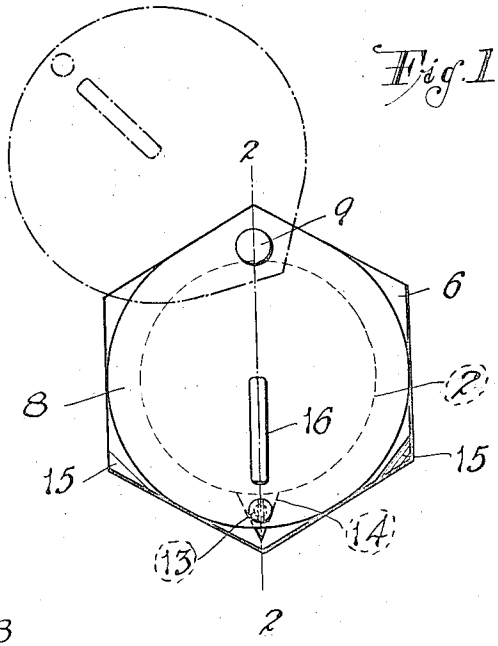


Fig. 6.

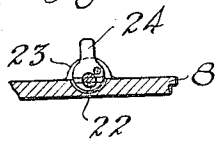


Fig. 2.

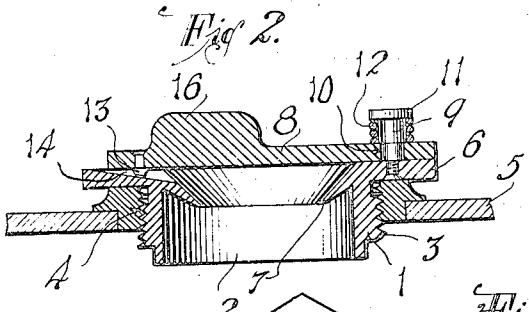


Fig. 3.

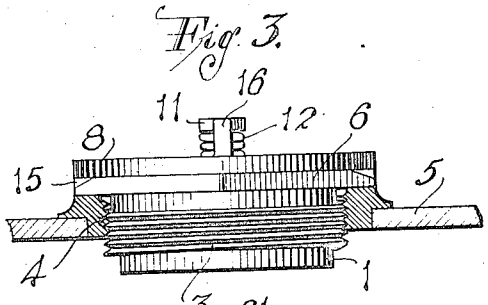
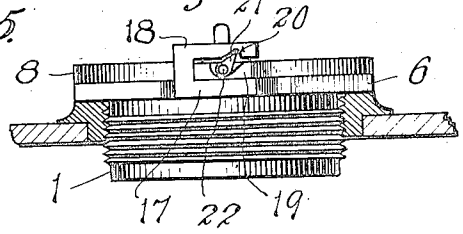


Fig. 5.



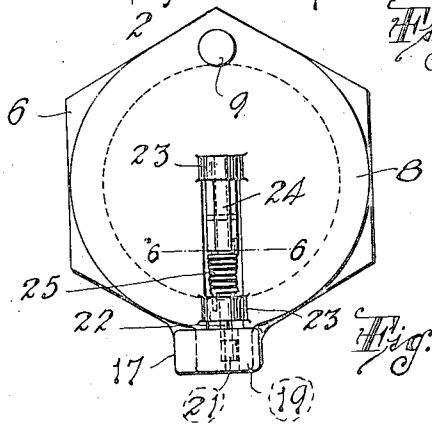


Fig. 4.

INVENTOR

Bright Sage,

BY

Everett & Rook,

ATTORNEYS.

Patented Nov. 6, 1923. 1,473,162

UNITED STATES PATENT OFFICE.

BRIGHT SAGE, OF EAST ORANGE, NEW JERSEY.

QUICK-ACTING CLOSURE FOR RECEPTACLES.

Application filed November 17, 1921. Serial No. 515,795.

To all whom it may concern:

Be it known that I, BRIGHT SAGE, a subject of the King of Great Britain, and a resident of East Orange, in the county of Essex and State of New Jersey, have invented new and useful Improvements in Quick-Acting Closures for Receptacles, of which the following is a specification.

This invention relates in general to receptacle closures and more particularly to a filling opening closure for automobile gasolene tanks.

The objects of the invention are to provide a closure of the character described embodying novel features of construction which is quick acting and eliminates screwing the closure into and unscrewing it from the opening to close and open the same; to provide a closure including a body portion adapted to be permanently fitted in the opening and having an opening therethrough normally closed by a quick opening and closing cover; to provide such a closure having the cover pivotally mounted on the outer end of the body portion whereby the opening in the body portion can be opened and closed by swinging the cover on its pivot; to provide a closure of this character in which the cover is adapted to swing transversely of the body portion and slidably engage the outer end thereof; to provide means for maintaining the cover in snug engagement with the outer end of the body portion to tightly close said opening; to provide means for automatically limiting movement of said cover into and holding the same in closed position; to provide improved latch mechanism including a finger piece for holding the over in closed position which is automatically released as the finger piece is pushed to swing the cover into open position; and to obtain other results and advantages as may be brought out by the following description.

Referring to the accompanying drawings in which like numerals of reference indicate the same parts throughout the several views,

Figure 1 is a top plan view of a closure embodying my invention;

Figure 2 is a transverse vertical sectional view taken on the line 2—2 of Figure 1, showing the same mounted in the filling opening of a tank;

Figure 3 is a front elevation of the closure as shown in Figure 2;

Figure 4 is a plan view of a modified form of my invention;

Figure 5 is a side elevation thereof similar to Figure 3, and

Figure 6 is a transverse sectional view through the cover taken on the line 6—6 of Fig. 4.

In the drawings I have shown my invention embodied in a closure for the filling opening of an automobile gasolene tank, the closure comprising a cylindrical body portion 1 having an axial opening 2 therethrough and exteriorly threaded as at 3, so as to be screwed into the filling opening 4 of a gasolene tank 5, as shown in Figure 2. The outer end of the body portion 1 is substantially flat and formed with a polygonal flange 6 to be engaged by a wrench for screwing the closure into the filling opening. The body portion 1 is of sufficient length to project a considerable distance into the tank beyond the interior wall thereof to prevent the liquid in the tank from splashing out of the opening 2, and at the outer end of the opening 2 is formed an inwardly projecting baffle flange 7 for the same purpose.

A cover 8, shown in the present instance in the form of a substantially circular plate, is pivotally mounted as at 9 to the outer end of the body portion 1 so as to swing transversely thereof and slidably engage the flat outer end of the body portion so as to close the opening 2 when in the position shown by solid lines in Figure 1 and open the opening 2 when in the position shown by dot and dash lines in Figure 1. The pivot 9 may be of any desired construction, but in the present instance I have shown it as a stud threaded into the end of the body portion 1 and passing loosely through an opening 10 in the cover plate 8, the outer end of the pivot being formed with a head 11 in spaced relation to the top of the cover 8.

For the purpose of yieldingly holding the cover plate 8 in snug engagement with the end of the body portion 1 to tightly close the opening 2, I utilize a helical compression spring 12 between the cover plate and the head 11, and to limit the swinging of the cover plate 8 into closed position the cover plate is preferably provided on its under side with a projecting stud 13 adapted to engage a groove 14 in the outer end of the

body portion. The loose connection of the cover plate 8 with the stud 9 will permit the cover plate to be swung upwardly sufficiently to remove the stud 13 from the groove 14 to swing the cover in either direction into open position, and the pressure of the spring 12 will cause the stud 13 to snap into the groove 14 when the cover is swung into closed position. The stud 13 and the spring pressure thus maintain the cover in closed position against vibration of the tank. To facilitate the stud 13 passing the edges of the body portion 1, I may cut away the edges of the body portion as indicated at 15, and to facilitate in manipulating the cover I may provide the same with an upwardly projecting finger piece 16.

A modified construction is shown in Figures 4–6 inclusive in which a latch mechanism is shown for positively holding the cover in closed position, the said latch mechanism being automatically released when the finger piece is pushed to swing the cover into open position. The flange 6 of the body portion is provided with an extension 17 on which is formed an upwardly projecting inverted L-shaped keeper 18, under which is adapted to slide a projection 19 on the cover. The under side of the keeper 18 is formed with a notch 20 to be engaged by a pawl 21 rigidly mounted on a shaft 22 journaled in bearings 23 formed on the cover 8.

The finger piece 24 is rigidly mounted on the shaft 22 for actuating the pawl 21 out of the notch 20. A helical spring 25 is mounted on the shaft 22 and has one end thereof connected to the cover 8 and the other end to the finger piece 24, the said spring normally holding the pawl 21 in the notch 20. With this construction the cover can be swung in only one direction, the keeper 18 limiting swinging thereof in the other direction, and when it is desired to open the cover the finger piece 24 is pushed which causes oscillation of the shaft 22 and moves the pawl 21 out of the notch 20 against the influence of the spring 25. When the cover is swung into closed position, the spring 25 automatically snaps the pawl 21 into the notch 20 to lock the cover. The keeper 18 serves to prevent the cover from being swung upwardly, this construction being particularly adapted for use on automobile radiator caps where the pressure in the radiator might tend to raise the cover and allow the escape of water.

It will be observed that with my invention the filling opening can be easily and quickly opened and closed by mere swinging of the cover 8, thereby eliminating the necessity of unscrewing the closure from the filling opening to open the same and screwing the closure into the filling opening to close the same as is now customary. The frictional engagement of the cover with the smooth flat outer end of the body portion provides a tight joint between the cover and the body portion, said frictional engagement being maintained by the spring 12.

While I have shown and described one possible embodiment of my invention, it will be understood that this is only for the purpose of illustrating the principles thereof, and that many modifications and changes can be made in the detail construction of my invention without departing from the spirit or scope thereof.

Having thus described the invention, what I claim is:

1. A device of the character described including a body portion having an opening therethrough and adapted to be fitted into an opening in a receptacle or the like, said body portion having a flat outer end, a cover having a flat surface frictionally engaging said flat end of the body portion, said cover and body portion having a cooperating recess and projection, a headed pivot stud for pivotally connecting said cover at one side of said opening to said body portion to swing transversely of said opening to close and open the same, and a spring interposed between said cover and the head of said pivot stud to maintain said cover in engagement with said body portion and automatically cause engagement of said recess and projection when the cover is swung into closed position.

2. A device of the character described including a body portion having an opening therethrough and adapted to be fitted into an opening in a receptacle or the like, a cover mounted on said body portion and slidable transversely of said opening to close and open the same, a finger piece for operating said cover, a pawl to engage said body portion to hold said cover in closed position, and means for automatically releasing said pawl when the finger piece is forcibly engaged to open the cover.

3. A device of the character described including a body portion having an opening therethrough and adapted to be fitted into an opening in a receptacle or the like, a cover pivotally connected at one side of said opening to the body portion to swing transversely of said opening to close and open the same, a keeper on said body portion opposite said pivot to receive said cover in closed position beneath itself, said keeper having a notch on the underside thereof, a shaft journaled in said cover and having a pawl rigidly connected thereto to engage said notch to hold the cover in closed position, a finger piece rigidly mounted on said shaft for swinging the cover, so that said pawl is released from said notch when said finger piece is pushed to swing the cover, and a spring for normally holding said pawl in engagement with said notch.

BRIGHT SAGE.