July 17, 1923. 1,462,228

T. CROCE ET AL

SPRING ACTUATED CLOSURE

Filed Jan. 24, 1922

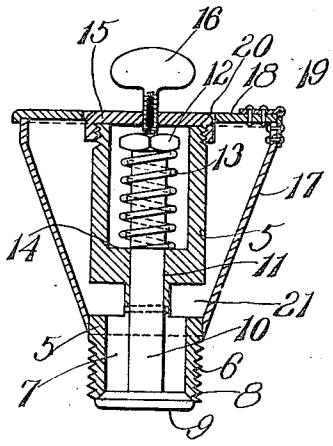



Fig. 1.

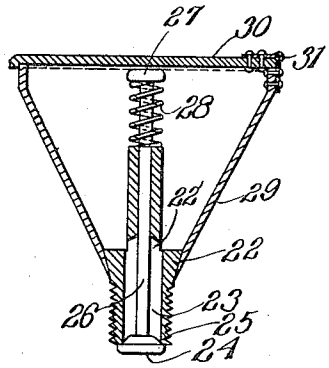



Fig. 2.

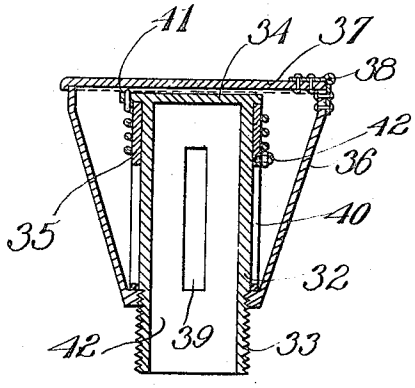



Fig. 3.

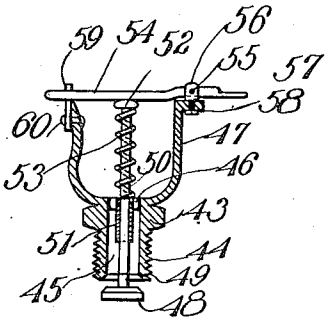



Fig. 4.

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# UNITED STATES PATENT OFFICE.

THOMAS CROCE AND DOMINICK MORABITO, OF EAST BOSTON, MASSACHUSETTS.

## SPRING-ACTUATED CLOSURE.

Application filed January 24, 1922. Serial No. 531,369.

*To all whom it may concern:*

Be it known that we, THOMAS CROCE, a citizen of the United States, residing at East Boston, county of Suffolk, and State of Massachusetts, and DOMINICK MORABITO, a citizen of the United States, residing at East Boston, in the county of Suffolk and State of Massachusetts, have invented new and useful Improvements in Spring-Actuated Closures, of which the following is a specification.

This invention relates to devices for quickly and securely closing an aperture in a receptacle for liquid such as gasoline.

The device of this invention is particularly adapted to be used in connection with the vacuum tank of an automobile in which a vacuum feed system is employed.

The object of the invention is to provide a device of the character hereinbefore set forth which will normally close the aperture in a receptacle but which can be easily manipulated to open said aperture and in which, means are provided whereby liquid can be guided to said aperture without danger of spilling and wasting the same.

The invention consists in the combination and arrangement of parts set forth in the following specification and particularly pointed out in the claim thereof.

Referring to the drawings:

Figure 1 is a vertical sectional elevation of one embodiment of our invention.

Fig. 2 is a vertical sectional elevation of another embodiment of our invention.

Fig. 3 is a vertical section of still another embodiment of our invention.

Fig. 4 is a vertical section of another embodiment thereof.

Referring to Fig. 1, 5 is the body portion of the closure, the lower end of which is screw-threaded at 6 to engage a similarly screw-threaded aperture in a receptacle to which it is desired to attach the closure. The body portion 5 is provided with a bore 7 which is open at its lower end and provided with a valve seat 8, the lower end of said body portion being adapted to be closed by a valve 9 which is provided with a valve stem 10 extending upwardly through the bore of the body portion and slidably mounted therein at 11. A head 12 is provided upon the upper end of the valve stem 10 and a spring 13 encircles said stem, the upper end of the spring 13 bearing against the head 12 and the lower end of the spring bearing against a shoulder 14 provided on the body portion 5. The upper end of the body portion 5 is closed by means of a cap 15 having screw-threaded engagement therewith. A thumb screw 16 having screw-threaded engagement with the cap 15 is arranged to bear against the head 12 of the valve stem 10 and by operating the thumb screw 16 the valve 9 may be opened or closed as may be desired. A funnel 17 is fastened at its lower end to the body portion 5 and has a cover 18 hinged thereto at 19. The cover 18 is provided with an opening 20 through which the cap 15 projects when the cover is closed. Communication from the lower portion of the bore 7 to the funnel 17 is secured by means of ports 21 provided in the wall of the body portion.

The general operation of the device hereinbefore described and illustrated in Fig. 1 is as follows:—The screw-threaded part of the body portion 5 is screwed into an aperture in the receptacle to which it is desired to attach the device, the cover 18 is thrown open and the valve 9 is opened by turning down on the screw 16. Gasoline is then poured into the funnel and passes from the funnel through the ports 21 into the lower portion of the bore 17 and outwardly from the bore past the valve 9 and through the aperture into the receptacle to which the device is attached. After the desired amount of gasoline has been thus poured into the receptacle the cover 18 is closed and the thumb screw is turned backwardly to allow the spring 13 to cause the valve 9 to contact with the seat 8 and thus close the lower end of the bore.

In the embodiment of our invention illustrated in Fig. 2, 22 is the body portion, 23 the bore, 24 a valve adapted to contact with a seat 25 provided upon the body portion. 26 is a valve stem which is provided with a head 27 at its upper end. A spring 28 encircles the valve stem 26 and at its upper end bears against the head 27 and at its lower end bears against the top of the body portion 22. A funnel 29 is fastened to the body portion and extends upwardly therefrom having a cover 30 hinged at 31 to its upper edge. Communication between the bore 23 and the interior of the funnel 29 is provided by ports 22′.

The operation of the device illustrated in Fig. 2 is substantially the same as that illustrated in Fig. 1, except that there is no screw

to open the valve and hold it open, this function being performed by the finger of the operator during the time that the liquid is being poured into the funnel.

Referring to Fig. 3, 32 is the body portion of the device screw-threaded at 33 to engage the orifice of the receptacle and having the upper end thereof closed by a top 34. A cylindrical valve 35 formed as a sleeve is rotatably mounted upon the body portion 32 and a funnel 36 is fastened to the body portion 32 and has a cover 37 hinged thereto at 38. The body portion 32 is provided with ports 39 and the cylindrical valve 35 is provided with ports 40. A torsional spring 41 surrounds the upper portion of the sleeve valve 35, the upper end of said spring being fastened to the body portion 34 and the lower end of the spring being fastened by a screw 42 to the sleeve valve 35. Normally this spring holds the ports 39 and 40 out of alignment with each other. When the device is operated, however, the sleeve valve 35 is turned by the operator against the action of the spring 41 until the ports 40 align with the ports 39 and then liquid poured into the funnel 36 will pass through the ports 40 and 39 and through the bore 42 of the body portion and into the receptacle to which the device is attached.

Referring now to Fig. 4, this embodiment of our invention is a priming cup for gasoline engines and consists of a body portion 43 provided with a screw-threaded shank 44 adapted to engage a screw-threaded aperture in the cylinder block. The body portion 43 is provided with a bore 45 which is open at the lower end and is connected by ports 46 to a funnel 47. The open lower end of the bore 45 is adapted to be closed by a valve 48 which engages a seat 49 formed upon the lower end of the body portion. A valve stem 50 extends upwardly from the valve 48 and is slidably mounted in a sleeve 51 forming a portion of the body portion 43. The upper end of the valve stem 50 has a head 52 thereon and a spring 53 encircles the upper portion of the valve stem between the head 52 and the sleeve 51. A lever 54 is pivotally mounted at 55 to ears 56 forming a portion of a swivel bracket 57 which is rotatably mounted upon an ear 58 forming a part of the funnel 47. The free end of the lever 54 is adapted to be positioned beneath a hook 59 which is fastened to the funnel 47 by a rivet 60.

The general operation of the embodiment of our invention illustrated in Fig. 4 is as follows:—When the parts are in the relative positions shown in Fig. 4 the valve 48 is open and when the different parts are in the relative positions shown in said figure, the lever 54 is locked beneath the hook 59 and engages the head 52 holding the valve 48 open against the action of the spring 53. When the valve is open gasoline may be poured into the funnel 47 downwardly through the ports 46 and bore 45 and into the cylinder of the engine to which the priming cup is fastened to prime the engine, or if it is not desired to prime the engine, the parts may be positioned as shown in Fig. 4 and the engine run to observe whether the spark plug operates. When it is desired to close the valve 48, the lever 54 is moved laterally by swinging the swivel bracket 57 and as soon as the lever is removed from engagement with the hook 59 and from engagement with the head 52, the spring 53 will operate to move the valve stem 50 and valve 48 upwardly until the valve 48 contacts with the seat 49 and closes the lower end of the body portion of the cup.

We claim:

A closure for a receptacle having, in combination, a body portion provided with a bore open at its lower end, a cap detachably fastened to the upper end of said body portion, said body portion being adapted to be fastened to a receptacle in alignment with a hole provided in said receptacle, a funnel fast to and concentric with said body portion, said body portion being provided with a port opening from said funnel into said bore, a cover for said funnel, a valve adapted to close the open end of said bore, a valve stem slidably mounted in said body portion, a head on said valve stem, a spring interposed between said head and body portion and adapted to normally hold said valve in position to close the lower end of said bore and a screw having screw-threaded engagement with said cap and adapted to bear against the head of said valve stem whereby said valve may be locked in open position, said screw projecting outwardly through an opening in said cover.

In testimony whereof we have hereunto set our hands in presence of two subscribing witnesses.

THOMAS CROCE.
DOMINICK MORABITO.

Witnesses:
FRANKLIN E. LOW.
CHARLES S. GOODING.