

G. M. FULLER.
 AUTOMOBILE RADIATOR CAP.
 APPLICATION FILED MAR. 12, 1920.

1,369,646.

Patented Feb. 22, 1921.

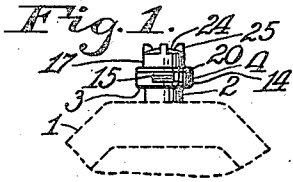


Fig. 2.

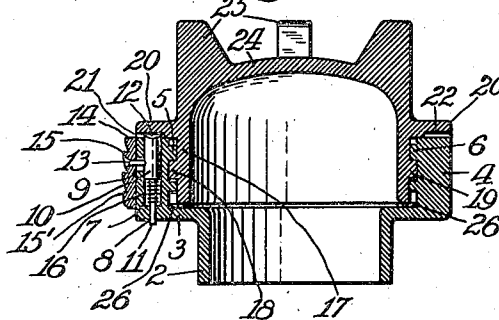


Fig. 3.

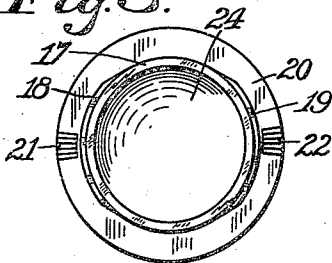


Fig. 4.

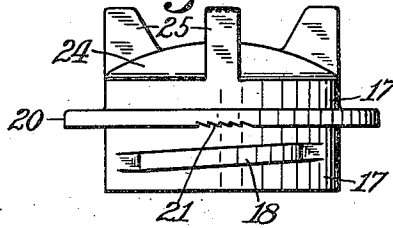


Fig. 5.

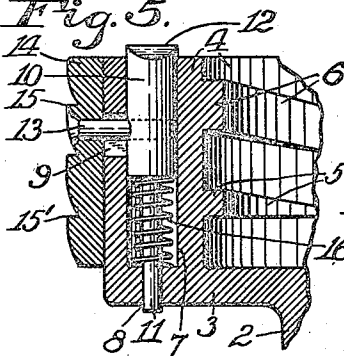


Fig. 6.

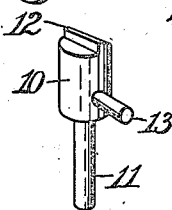


Fig. 7.

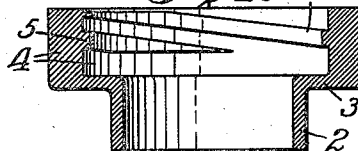


Fig. 8.

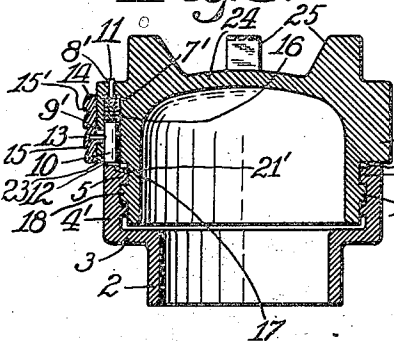


Fig. 10.

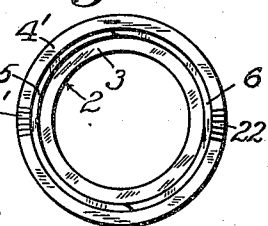
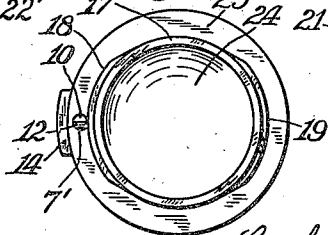


Fig. 9.



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UNITED STATES PATENT OFFICE.

GARLE MANNING FULLER, OF KIRKSVILLE, MISSOURI.

AUTOMOBILE-RADIATOR CAP.

1,369,646.

Specification of Letters Patent.

Patented Feb. 22, 1921.

Application filed March 12, 1920. Serial No. 365,133.

To all whom it may concern:

Be it known that I, GARLE MANNING FULLER, a citizen of the United States, residing at Kirksville, in the county of Adair and State of Missouri, have invented a new and useful Automobile-Radiator Cap, of which the following is a specification, reference being had to the accompanying drawings and to the letters and figures of reference marked thereon.

This invention relates to a closure for vessels or containers and especially for automobile radiators and fuel tanks, the invention having reference more particularly to a quick-action closure and one having a lock to prevent accidental unclosing operation thereof.

An object of the invention is to provide a time-saving closure appliance which shall be so constructed as to permit rapid operation thereof and without requiring the use of tools to effect operation.

Another object is to provide an improved quick-action closure which shall be so constructed as to operate effectively and not become loose in use although the parts thereof may not be forced tightly together, which closure shall be of simple and inexpensive construction, and which shall be durable and economical in use.

A further object is to provide a radiator or fuel tank cap which shall be so constructed as to be enabled to be securely locked in place against accidental dislodgment, and which shall be adapted to be manipulated easily and in a simple manner, and especially when the attendant is wearing gloves in cold seasons.

With the above-mentioned and other objects in view, the invention consists in a quick-action closure having novel features of construction embraced in two principal parts whereby one of the parts may be detachably connected quickly to the other part; and, the invention consists also further in the parts and combinations and arrangements of parts as hereinafter particularly described and further defined in the accompanying claims.

Referring to the drawings,—Figure 1 is an elevation of the improved closure as preferably constructed and in its relation to an automobile radiator indicated by broken lines; Fig. 2 is a vertical central section of the closure as preferably constructed; Fig.

3 is an inverted plan view of one of the principal parts of the closure as preferably constructed; Fig. 4 is a side view of the cap part of the closure; Fig. 5 is a fragmentary sectional elevation showing portions of Fig. 2 on an enlarged scale; Fig. 6 is a perspective view of a lock bolt for the closure as preferably constructed; Fig. 7 is a vertical central section of the neck and mouth part of the closure; Fig. 8 is a vertical central section of the closure slightly modified; Fig. 9 is an inverted plan of the cap part slightly modified as in Fig. 8; and, Fig. 10 is a top plan of the neck and mouth part of the closure as modified.

Similar reference characters in the different figures of the drawings indicate corresponding elements or features of construction herein referred to in detail.

In the drawings the numeral 1 indicates the upper portion of a vessel, more specifically an automobile radiator, and one principal part of the closure is suitably secured permanently thereto, being a neck and mouth part having an annular base portion 2 adapted to be secured to the vessel and having an outwardly extending flange 3 on which is an upright annular mouth portion or wall 4 which, as preferably constructed, has spirally arranged or inclined ribs 5 and 6 on the inner portion thereof. The upper end or top of the wall is flat to constitute a joint-face from which extends a guide bore 7, a relatively smaller guide bore 8 extending from the bore 7, and the wall has an aperture 9 extending from the surface to the guide bore 7. A cylindrical lock bolt 10 is provided which is guided in the bore 7 and preferably has a stem 11 thereon extending through the bore 8, the bolt having a beveled tooth 12 thereon that projects beyond the joint face of the wall. A lug pin 13 is movably arranged in the aperture 9 and secured to the lock bolt 10 and it has a finger plate or slide 14 secured thereto which is adapted to slide on the surface of the wall and has transverse teeth 15 and 15' to prevent the finger or thumb from slipping and to enable the slide to be pushed by a gloved hand, the finger piece being of ample dimensions so as to afford ample bulk for operation in the darkness of night and with a glove on the hand of the attendant. The lock bolt is automatically projected by means of a coil spring 16 seated in the bore

7 and against the inner end of the lock bolt, the spring encircling the stem 11 when the lock bolt is provided with the stem as preferred.

5 The cap part comprises an annular body portion or cylindrical wall 17 and, in case the wall portion 4 has the ribs on its inner side and is provided with the lock bolt, the body portion 17 is adapted to be received
10 within the portion 4 clear of the ribs and has inclined or spirally arranged ribs 18 and 19 on its outer side to engage the ribs 5 and 6, the portion 17 having an outwardly extending portion 20 adapted to constitute
15 a joint-face in which are two series of notches 21 and 22 in opposite portions of the joint-face to receive the beveled tooth 12, the tooth being adapted to operate in the notches with ratchet-like action to prevent
20 the cap part from turning backward if jarred loose by the vibrations of the automobile.

In some cases the arrangement above described may be reversed, in which case the
25 mouth part or wall 4' has no lock bolt but the joint face thereof has two series of notches 21' and 22' to receive the beveled tooth 12 of the lock bolt which is arranged in a guide bore 7' in a relatively thick wall
30 portion 23 with which the cap part is provided, a small guide bore 8' extending from the larger guide bore and the wall having an aperture 9' therein in which the lug pin 13 is arranged and having the finger plate
35 14 thereon. The cap part has a closure web 24 in its upper portion which has suitable lugs 25 thereon whereby to easily turn the cap part.

In some cases an elastic cushion ring 26
40 is arranged between the flange portion 3 and the body portion 17 of the cap part to prevent rattling in case the joint-faces are not solidly in contact when the ratchet tooth enters one of the lock notches, when the appliance is used as a radiator cap, or to operate as a packing in case an air-tight joint
45 is required.

In practical use the finger plate 14 is readily moved to retract the lock bolt and permit
50 the cap part to be turned, a portion of a complete revolution only being necessary to release the cap part from the mouth part of the closure. When it is desired to again apply the cap part it is readily connected
55 with the mouth part by reverse movement and becomes automatically locked when seated, so that it can not jar loose.

Having thus described the invention, what is claimed as new is—

1. In an automobile radiator cap, the combination, with two cooperating parts to be
60 rotatively connected together one upon the other, and ribs on the parts cooperating to hold the parts together, the upper one of the parts having a closure in its top, each part
65 having an annular joint-face to be engaged one by the other, the joint-face of one of the parts having notches therein, of a cylindrical lock bolt slidably inserted in the
70 other of said parts to be projected into one of said notches, the lock bolt having a rigid lug pin on one side thereof that extends laterally beyond the outer side of said part,
75 and a broad finger plate slidably arranged on the said outer side and secured to said lug pin.

2. In an automobile radiator cap, the combination of a neck and mouth part comprising an annular base portion, an outwardly-extending flange on said portion, an
80 upright cylindrical wall on said flange, the top of said wall being a joint-face and the wall having a guide bore extending from the joint-face and approximately to the plane of said flange, said wall having also a slot
85 extending transversely from said guide bore, a spring seated in said guide bore, a cylindrical lock bolt in said guide bore and upon said spring, the outer end of said bolt having a beveled tooth thereon, a lug pin fixed on
90 one side of said bolt and extending through said slot, two inclined ribs spaced apart on the inner side of said wall, and a broad finger plate arranged to slide on the outer
95 side of said wall and secured to said pin, the front of said plate having transverse teeth thereon; and a cap part comprising a cylindrical body portion to be removably
100 inserted in said wall and having an outwardly-extending portion adapted to constitute a joint-face to engage the joint-face on said wall, the joint-face of the outwardly-extending portion having transverse notches, a closure web in the top of said
105 body portion, lugs on the top of said web, and two separate inclined ribs on the outer side of said body portion.

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

GARLE MANNING FULLER.

Witnesses:

O. S. WHITEMAN,
E. T. SILVIUS.