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J. S. REID

1,866,818

CLOSURE

Filed Feb. 27, 1928

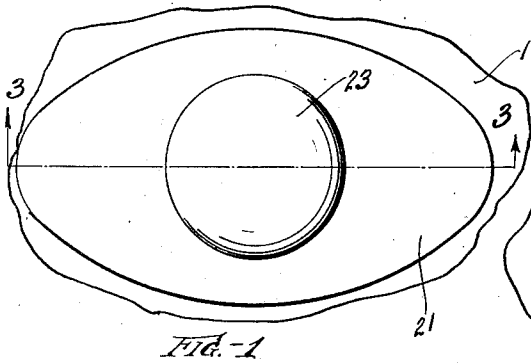
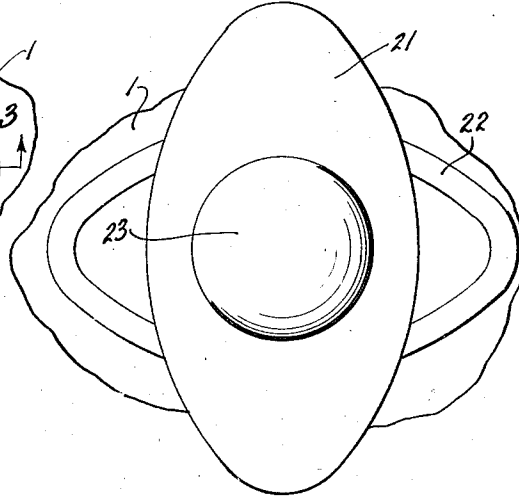
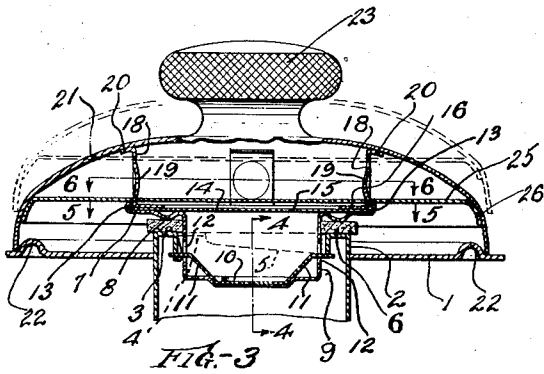


FIG. 2

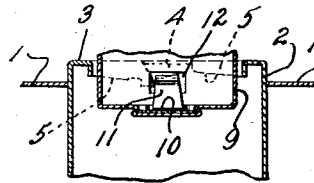


FIG. 4

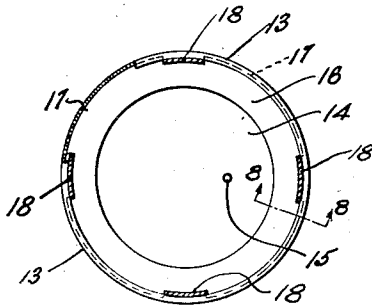


FIG. 5

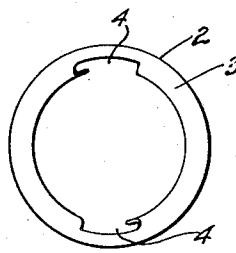


FIG. 6

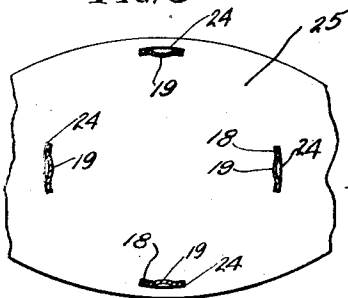


FIG. 7

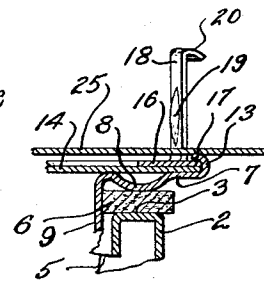


FIG. 8

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UNITED STATES PATENT OFFICE

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CLOSURE

Application filed February 27, 1928. Serial No. 257,383.

This invention relates to closures for receptacles and particularly to that type of device used in connection with radiators, dust pans, gasoline tanks and other like parts of motor vehicles.

In the automobile industry, manufacturers and other designers spend much time, money and effort upon the particular shape and design of the caps used on the radiators, the dust pan at the front for the crank, the gasoline tank and in other places where caps or closures are to be used. The design and shape and construction of these parts change quite frequently, usually with the change of a model each year. It is not necessary to set down the reasons for these changes, but the fact remains that such changes are made from time to time. For some time these closures for the main part have been round in configuration, thereby lending themselves very nicely to closure structures where the cap or closure itself is applied and removed by rotation, the particular securing means for the cap being either threads or bayonet cam arrangements.

Recently there has been a desire, among those interested, in this particular art, to have shapes which are oval or something other than round and, in most instances, it is necessary when employing such shapes to have them seat down over a bead upon the adjacent part. For example, the radiator cap must fit down over a bead on the combing or shell of the radiator. This arrangement obviously prevents rotation of the cap for application and removal.

In view of the foregoing, the present invention relates to a closure structure for use in connection with radiators, dust pans and the like wherein the radiator shell or pan is provided with a bead, oval or otherwise, to conform to the ornamental cap and engaging within the edge or skirt of the cap when the same is applied. It also contemplates the use of other inner cap means suitably carried and arranged in conjunction with the ornamental cap portion so that when the cap is in place, the main cap portion seals the filler neck or other part to which the cap is applied.

The specific arrangement is one where the

main or internal cap structure is connected to the filler neck, for example, by the now well known bayonet-like arrangement, while the ornamental cap structure is so mounted upon this main cap structure that it may be moved relative thereto or raised so that in removal the entire cap structure, as a whole, may be rotated for removal and application of the main cap structure to the filler neck or other part.

Other features of invention will be brought out in the following description, drawing and claims.

In the drawing, Fig. 1 represents a top plan view of the closure; Fig. 2 shows it shifted to position for removal; Fig. 3 is a section upon the line 3—3, Fig. 1; Fig. 4 is a section on the line 4—4, Fig. 3; Fig. 5 is a section upon the line 5—5, Fig. 3; Fig. 6 is a section upon the line 6—6, Fig. 3; Fig. 7 is a top plan view of the neck; and Fig. 8 is a section on the line 8—8, Fig. 5.

In the drawing, 1 represents the dust pan or radiator shell, which is provided with a suitable neck 2 provided with an inner flange 3 interrupted at 4 and having inwardly extending cams 5 for cooperation with the cap lock to be described. Where necessary, the flange 3 forms a seat for a gasket 6. The arrangement just described is substantially that prevailing at the filler opening of the radiator, the crank dust guard opening and the gasoline tank and it is in conjunction with this and like mechanism that the present invention has been devised.

Cooperating with this neck structure is a main inner cap structure including a seat flange 7 provided with a bead 8 for engagement with the gasket 6 when used. This seat 7 is provided with an integral inwardly extending pilot boss 9 which is hollow and receives a locking member 10 having oppositely extending spring fingers 11 projecting through opposed slots or openings 12 in the sides of the boss 9 where they may engage with the cams 5 in the formation of the bayonet lock with the neck. So far, the construction is similar to that which is already present in the prior art and it is referred to here for the purpose of clarity and for the purpose of

forming a basis for whatever combinations may be pertinent to this invention. Beyond the filler neck the seat or flange 7 is beaded over, as at 13, around the edge of a disk or circular plate 14 which forms a closure for the opening in the boss 9 and therefore completes the closure of the main inner cap or closure structure. If necessary, this plate may be provided with a vent opening 15 where the device is used on a gasoline tank. Engaging in the bead 13 is a ring 16, preferably of spring stock and provided with four outwardly extending flange skirt portions 17 within the bead 13 and four upstanding lugs or arms 18 each provided with an inwardly extending rounded projection 19 for a purpose to be described. The ends of the upstanding arms or lugs 18 are provided with outwardly bent foot portions 20 adapted to engage the inner face of the ornamental cap portion or skirt 21. This ornamental cap skirt portion 21 extends down and around a bead 22 formed on the shell or pan 1, when the skirt portion 21 is in engagement with the foot portions 20. The central part of this skirt or ornamental cap is provided with a suitable knob or other ornamentation 23 which may be grasped by the operator.

The arms or lugs 18 extend up through suitable slots 24 in an insert plate 25 provided with a flange 26 spotted or otherwise secured to the inner face of the skirt portion 21. With the cap in place, as in Fig. 3, the operator grasps the knob 23 and presses upon it laterally, preferably at the front. This causes the ornamental cap structure, as a whole, to move up upon the lugs or arms 18 which spring back and permit the plate at the slots 24 to engage above the projections 19. The ornamental structure is then pulled up in the opposite direction when the low side will move above the projection 19. In this way the ornamental cap structure is moved up relative to the main cap structure and to a position where the lower edge of its skirt 21 is above the bead 22 on the radiator shell or pan. The entire cap structure may then be rotated to release the lock, when removal is possible. The foregoing arrangement is especially useful where the ornamental cap structure is other than round in configuration and where it fits down over a bead or other formation which prevents rotation when in final assembled position.

In application, the ornamental cap structure is in the upper position and the main cap structure is applied to the neck locked in place and the ornamental cap structure forced down to final position.

What I claim is:

1. A closure for a receptacle neck extending through a surrounding member, comprising an inner member provided with locking means adapted for releasable assembly with said neck by rotation relative thereto, an

outer member having a transversely extending wall portion therein provided with a plurality of openings, and a plurality of arms connecting said inner and outer members whereby said inner member may be rotated by said outer member, said arms being movable in said openings to permit axial movement of said outer member relative to said inner member whereby said outer member may be moved into and out of engagement with said surrounding member.

2. A closure for a receptacle neck extending through a surrounding member, comprising an inner member provided with locking means adapted for releasable assembly with said neck by rotation relative thereto, an outer member having a transversely extending wall portion therein provided with a plurality of openings, a plurality of upstanding arms connecting said inner and outer members whereby said inner member may be rotated by said outer member, said arms being movable in said openings to permit axial movement of said outer member relative to said inner member whereby said outer member may be moved into and out of engagement with said surrounding member; and latch means on said arms restricting their movement in said openings.

3. A closure for a receptacle neck extending through a surrounding member, comprising an inner member provided with locking means adapted for releasable assembly with said neck by rotation relative thereto, an outer member having a transversely extending wall portion therein provided with a plurality of openings, a plurality of resilient arms connecting said inner and outer members whereby said inner member may be rotated by said outer member, said resilient arms being movable in said openings to permit axial movement of said outer member relative to said inner member whereby said outer member may be moved into and out of engagement with said surrounding member, and latch means on said arms intermediate their ends for restricting their movement in said openings.

In testimony whereof I hereby affix my signature.

JAMES S. REID.