Feb. 7, 1933. F. C. RUPPEL 1,896,330

CLOSURE FOR RADIATORS AND THE LIKE

Filed Dec. 23, 1929

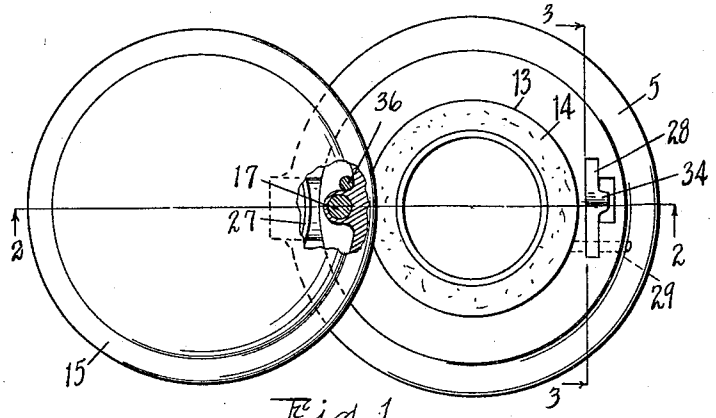


Fig. 1

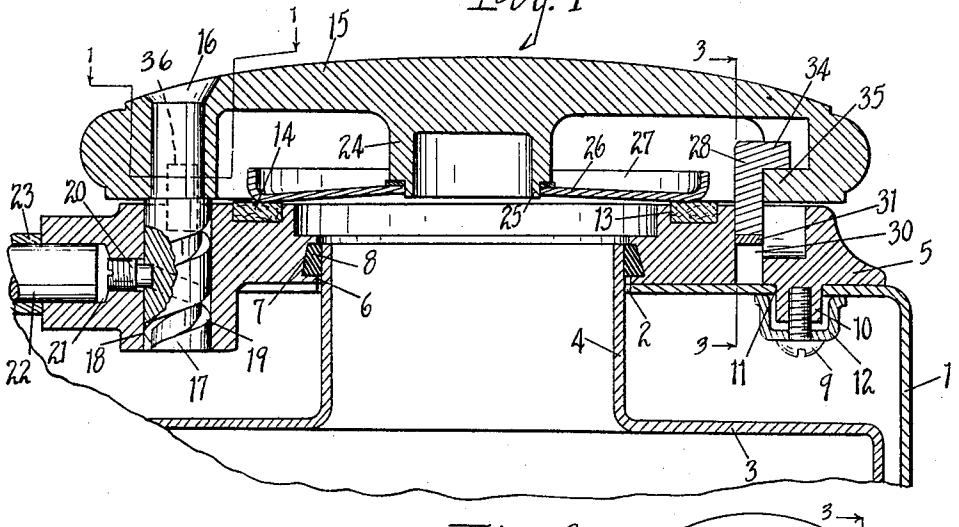


Fig. 2

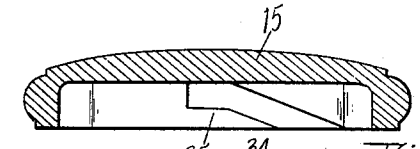


Fig. 3

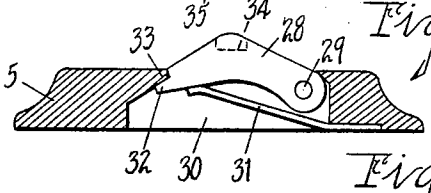


Fig. 4

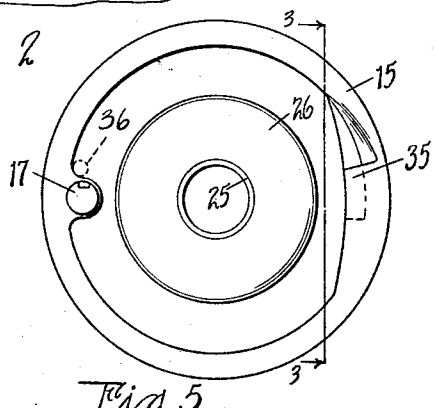


Fig. 5

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UNITED STATES PATENT OFFICE

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CLOSURE FOR RADIATORS AND THE LIKE

Application filed December 23, 1929. Serial No. 415,884.

The main objects of this invention are:

First, to provide an improved closure for radiators having a swinging or pivotally mounted cap which is very effective as a closure and at the same time is easily manipulated to open or close the same.

Second, to provide a closure having these advantages which is very compact.

Third, to provide a closure for radiator necks adapted as a supporting member for the engine hood.

Objects pertaining to details and economies of my invention will definitely appear from the description to follow. The invention is defined in the claims.

A structure which embodies the features of my invention is clearly illustrated in the accompanying drawing, in which:

Fig. 1 is a plan view of the closure removed from the radiator shell with the cap open.

Fig. 2 is a fragmentary view mainly in vertical section on a line corresponding to line 2—2 of Fig. 1 with the cap closed.

Fig. 3 is a detail section of the cap on a line corresponding to line 3—3 of Figs. 1, 2 and 5.

Fig. 4 is a detail section of the body member on a section line corresponding to that of Fig. 3.

Fig. 5 is an inverted view of the cap.

In the embodiment illustrated, 1 represents the shell of a radiator having an opening 2 therein. The radiator 3 is provided with a filling neck 4 projecting through this opening.

The body or base member 5 of the closure is provided with a central opening 6 adapted to receive the projecting radiator neck, and this opening has an inwardly facing annular grooves 7 therein supporting the gasket or packing 8 embracing the radiator neck and forming a closed joint between the body member and the radiator.

The body member is secured to the shell by screws, one of the screws being shown at 9. This screw is threaded into a boss 10 arranged through a hole 11 in the shell. The screw is provided with a cupped washer 12.

The member 5 has an upwardly facing gasket seat 13 embracing the opening in the body member. The gasket 14 is arranged in this seat.

The cap 15 is provided with a pivot 16 having a journal portion 17 arranged in the vertical bearing opening 18 in the body member. This bearing portion 17 of the pivot has a spiral groove 19 therein engaged by the pin 20 so that when the pivot is rotated it is also moved longitudinally in its bearings. The pin 20 is arranged in the bottom of the socket 21 adapted to receive the supporting rod 22 of the hood. A portion of the hood is indicated at 23.

The cap 15 has a depending central stud 24 shouldered at 25 to receive the dished resilient closure member 26. This closure member is of such dimensions that when the cap is closed the outer edge of the closure member rests upon the gasket.

The closure member has an upturned flange 27 at its outer edge merging into the closure member on curved lines, thereby presenting a rounded surface so that the closure slides freely over the gasket.

I provide a latch 28 which is mounted on a pivot 29 to collapse within a recess 30 in the body member disposed oppositely to the pivot. This latch is yieldingly held in projected position by the spring 31. The tip 32 of the latch engaging with the edge 33 of the recess limits the outward movement thereof. The latch has an outwardly projecting lug 34 adapted to coact with the keeper 35 on the cap. This keeper is formed on the inside of the rim of the cap so that when the cap is swung on its pivot it is automatically engaged and disengaged with the keeper.

As the cap is swung to its closed position the pivot is moved down at the same time that the cap is engaged with the latch so that the cap is urged downwardly to force its closure against the coacting gasket. The opening or swinging movement of the cap disengages the latch and also lifts the cap so that it not only swings clear of the body member but the gasket and closure members are relieved of sliding friction. The opening movement of the cap is limited by the stop pin 36 which projects upwardly from the body member at

one side of the pivot to be engaged by the flange of the cap, see Fig. 1.

My improved closure is very compact and at the same time is efficient in sealing the openings, easily operated and very durable.

I have illustrated my improvements in a very practical embodiment. I have not attempted to illustrate or describe various other adaptations or modifications as it is believed that this disclosure will enable those skilled in the art to embody or adapt the same as may be desired.

Having thus described my invention what I claim as new and desire to secure by Letters Patent is:

1. The combination with the radiator shell of an automobile having an opening in the top thereof, a radiator arranged within said shell and having a neck projecting through said opening, a closure body member mounted on said shell and having a vertical pivot bearing and a horizontally disposed hood supporting rod socket alined therewith, a cap having a central depending closure supporting stud, a pivot having a spiral groove therein disposed in said bearing for rotative and longitudinal movement, a pin disposed in the bottom of said hood supporting rod socket to engage said groove in said pivot, and a resilient closure mounted on said stud on said cap.

2. The combination with the radiator shell of an automobile, of a radiator arranged therein and having a filling opening, a closure body member mounted on said shell and operatively associated with said filling opening, said body member having a vertical pivot bearing and a horizontally disposed hood supporting rod socket alined therewith, a cap, a pivot for said cap having a spiral groove therein disposed in said bearing opening for rotative and longitudinal movement, a pin disposed in the bottom of said hood supporting rod socket to engage said pivot, and a hood supporting rod engaged in said socket.

3. The combination of a closure body member provided with an upwardly facing closure gasket, a cap, a closure mounted on said cap to coact with said closure gasket, a latch pivotally mounted on said body member, said body member being recessed to permit the collapsing of said latch therein, a spring for yieldingly supporting said latch in projected position, and a keeper on said cap engageable and disengageable with said latch by a swinging movement of the cap.

4. The combination of a closure body member provided with a closure gasket, a cap, a closure mounted on said cap to coact with said closure gasket, a latch pivotally mounted on said body member, said body member being recessed to permit the collapsing of said latch therein, a spring for yieldingly supporting said latch in projected position, and a keeper on said cap engageable and disengageable with said latch by movement of the cap.

In witness whereof I have hereunto set my hand.

FREDERICK C. RUPPEL.