

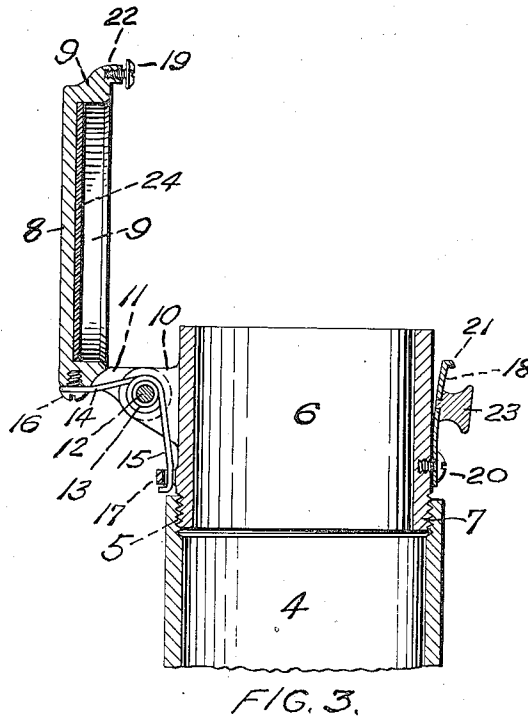
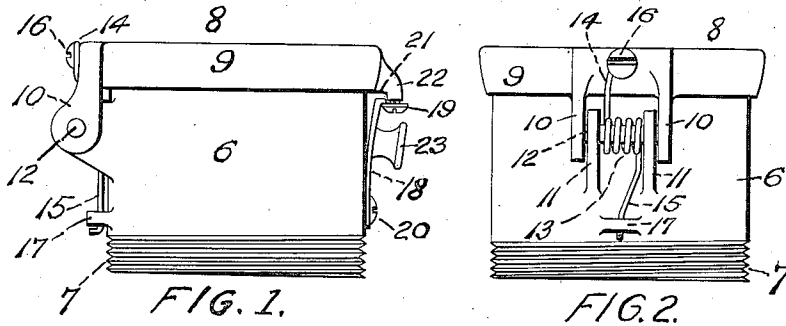
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1,503,187

F. FITCHETT

RADIATOR CAP FOR WATER COOLED AUTOMOBILE ENGINES

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RADIATOR CAP FOR WATER-COOLED AUTOMOBILE ENGINES.

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To all whom it may concern:

Be it known that I, FRANK FITCHETT, a citizen of the United States of America, and a resident of Cincinnati, in the county of Hamilton and State of Ohio, have invented a certain new and useful Improvement in Radiator Caps for Water-Cooled Automobile Engines, of which the following is a specification.

This invention relates to caps or closures for the water-filler opening that leads to the cooling-chamber of water-cooled radiators for automobile and other internal-combustion engines, and its prime object is to provide a hinged lid or closure for the inlet orifice or opening of the radiator feed pipe or tube and a snap or push-button catch for said lid to make it extremely convenient for the user or the attendant of the machine in filling his radiator, or in sighting the depth of its fluid-contents for keeping it cool, and in further obviating accidental removal or ordinary detachment of said lid from its place at the outer end of the said water inlet-orifice of the radiator, where heretofore the commonly-used detachable screw-cap has been more or less inconvenient and difficult to handle to and from closure position, especially when hot or when the screw-threads were faulty, easy to neglect to put in place after filling or sighting the interior of the radiator, thereby becoming lost or mislaid, or otherwise stealthily removed by unauthorized persons intent on its theft.

The details of structure will be fully hereinafter described in connection with the accompanying sheet of drawings, in which—

Figure 1 is a side elevation of the preferred form of device containing my invention, showing it in closed condition but unmounted; Fig. 2, a rear elevation of the same, taken on the hinge-side of the device, to show the automatic spring or "fly-open" feature; and Fig. 3, a central sectional elevation of the device, taken on a transverse line with the axis of the lid and the spring-catch diametrically opposite. (In this last view the upper, outer end of the radiator filler-tube is shown broken off and my device screwed into using-place therein.)

4 indicates the upper or outer end of the mouth of the filler-tube of the ordinary water-cooled radiator of an automobile or other internal-combustion engine, an internal screw-thread 5 being made in its orifice as customary in many types of radi-

tors, but otherwise adapted to be externally screw-threaded without affecting the merits of the invention herein that is not necessarily or essentially dependent on any screw-thread at all, for my lid and its hinge and spring-catch features can be readily applied to the mouth of the water-inlet tube direct and without the use of the tubular member or body-portion 6 of my preferred form of device as shown in the several views.

The tubular-member 6 has an external screw-thread 7 at its lower end for engagement with the said internal thread 5 in the mouth of the filler-tube 4, and it is my purpose to either solder the said member 6 in said mouth of the filler-tube after once properly positioned there, or indenting the threaded joint with a suitable peen tool or hammer, or the like, whereby the thread is upset or mutilated sufficient to prevent the accidental or surreptitious removal of the device from place and without materially marring the outward appearance of the device itself taken as a whole.

8 indicates a circular lid having a downturned flange 9 and provided with a pair of spaced lugs 10, 10, on its periphery, such lugs spanning a pair of corresponding duly spaced lugs 11, 11, projecting rearwardly from the face of the tubular-member 6, and a transverse pin or bolt 12 being inserted or passed through aligned holes pierced through said lugs 10 and 11 to form a pivot for the hinging of the lid on the outer face of the said tubular-member 6 and to allow it to seat in closing-position on the rim of the said tubular-member 6.

A spiral-spring 13 is wound on the said axial-pin 12, between the lugs 11, 11, and its opposite ends 14 and 15 are engaged with a screw 16 and a perforated lug 17, respectively, so that the winding of the coils of the spring under tension of its said ends may react upon the lid to cause it to instantly fly open or back on its hinge-connection unless held tightly closed or seated on the rim of the said tubular-member 6 by any suitable catch but preferably by means of an elastic or resilient spring-plate 18 and an adjustable screw 19. The spring-plate 18 is a vertical one, secured at its lower end by means of a screw 20 and projects outwardly at its upper end under resilient tension away from the face of the tubular-member 6 and it has a bevel-edged lateral projection 21 at its extreme upper

end for engaging-connection with the head of said adjustable screw 19 that is mounted in the lower face of the lug or projection 22 on the flanged rim 9 of the lid 8, as best shown in Fig. 1.

A press or push button 23 is mounted near the upper end of the spring-plate 18 for depressing the latter when it is desired to release the lid from holding-connection therewith and to let it instantly and automatically fly back, away from seating and closure engagement with the upper edge or rim of said tubular-member 6, when it is desired to inspect the filler-tube 4 for the liquid-contents of the radiator or to fill said radiator if needed.

A gasket 24 is inserted in the bottom of the chamber provided in the back of the lid by the presence of the flanged rim 9, as best shown in Fig. 3. This gasket is made of any desired or appropriate gasket or packing material to produce a tight closure or joint, proof against leakage of any kind. When the gasket becomes worn or compressed, or otherwise deep-grooved along the circle of its engagement with the upper edge or rim of the tubular-member 6, the adjustable screw 19 is turned inwardly sufficiently to compensate for such wear or compression of the gasket and to thereby cause proper catching-engagement of said screw with the projection 21, so as to draw downwardly on the edge of the head of said screw 19 in the proper seating of the lid. When the lid is first put into use the said adjustable screw 19 is turned outwardly about the distance shown in the drawings, somewhat spaced away from the lower face of the lug 22 on the lid flange, but, as the gasket becomes compressed, grooved, or worn in use, the said screw 19 can easily be turned up to suit the required seating-fit of the lid for due closure thereof.

Although not shown in the drawings, it is quite obvious that a central orifice could be made in the lid for the attachment of the usual water-gauge, in which event the center of the gasket would be orificed to correspond.

It will be readily seen that the device may be easily closed by snapping the lid down on the inlet-orifice of the radiator, the bevel-edge of the face of the adjustable screw 19 readily riding over the bevel-edge of the lateral projection 21 of the spring-catch 18.

I claim:—

A radiator closure-cap for the inlet-orifice of water-cooled automobile engines, such cap comprising an outwardly-extending tubular or cylindrical member adapted to be directly held or secured in said orifice, a pair of hinge-lugs provided on said tubular-member, a resilient catch-member having a push-button thereon and mounted on said tubular-member diametrically opposite the position of said hinge-lugs, an inwardly-flanged lid or closure-proper having a pair of hinge-lugs mounted on its periphery and registering with the said hinge-lugs on the tubular-member, a horizontal pin pivotally-connecting the said registering sets of hinge-lugs, a spiral spring mounted on the said horizontal pin and with its opposite ends in contact with the lid flange and the face of the said tubular-member, respectively, and adapted to automatically cause the outward opening or raising of said lid from closing or seating engagement with the upper edge of said tubular-member, a gasket within the lid, and an adjustable screw engaging said lid flange at a point diametrically opposite said hinge-lugs thereof and adapted to hold the lid in locked and releasable engagement with the said catch-member on the said tubular-member, substantially as shown and described.

FRANK FITCHETT.