J. D. HARRIS.

RADIATOR CAP.

APPLICATION FILED APR. 9, 1917.

1,277,918.

Patented Sept. 3, 1918.

Fig. 1

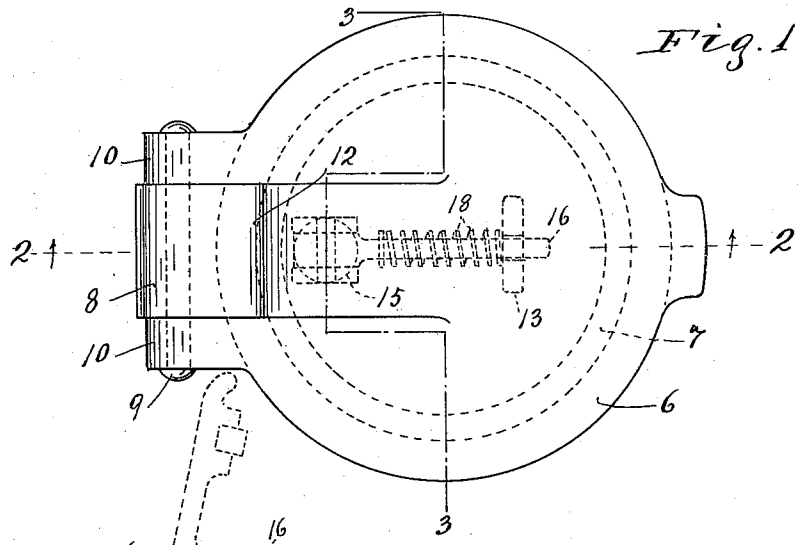


Fig. 2

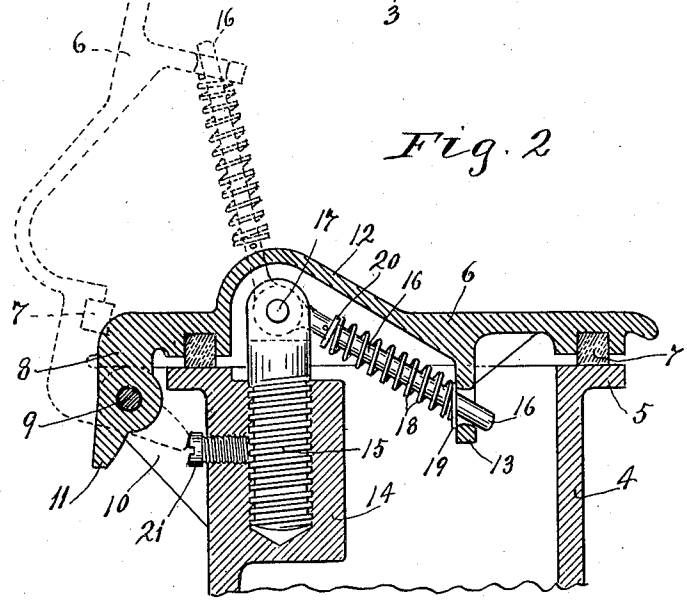
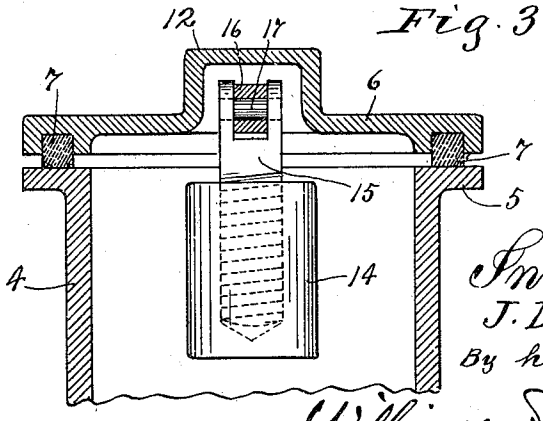


Fig. 3



Witnesses.
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Inventor.
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By his Attorneys
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UNITED STATES PATENT OFFICE.

JOSEPH D. HARRIS, OF DETROIT, MICHIGAN, ASSIGNOR TO McCORD MANUFACTURING COMPANY, OF DETROIT, MICHIGAN, A CORPORATION OF MAINE.

RADIATOR-CAP.

1,277,918. Specification of Letters Patent. Patented Sept. 3, 1918.

Application filed April 9, 1917. Serial No. 160,682.

To all whom it may concern:

Be it known that I, JOSEPH D. HARRIS, a citizen of the United States, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Radiator-Caps; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention has for its object to provide an improved cap or cover for the filler necks of automobile radiators, and to such end, generally stated, the invention consists of the novel construction and combinations of parts hereinafter described and defined in the claims.

In the accompanying drawings, which illustrate the invention, like characters indicate like parts throughout the several views.

Referring to the drawings:

Figure 1 is a plan view of the invention;

Fig. 2 is a vertical section taken on the line 2—2 of Fig. 1; and

Fig. 3 is a transverse section taken approximately on the irregular line 3—3 of Fig. 2.

The numeral 4 indicates the filler neck which may be made of a separate piece soldered or riveted to the top of the upper tank, or cast integral therewith, or formed in any other way so far as this invention is concerned, but provided preferably with an outstanding flange 5 at its upper end, the upper surface of which is flat so that it affords an annular gasket seat.

The cap or cover 6 has an annular gasket 7 adapted to be tightly seated on the upper surface of the flange 5, and the said cover at the back is provided with a depending hinge lug 8 which by hinge bolt or pin 9 is connected to laterally spaced lugs 10 on the back of the neck 4. The lug 8 is provided with a depending stop 11. The top of the cap 6 is upwardly bulged at 12, and at its under side it is provided with a depending perforated ear or flange 13.

The neck 4 at its back is provided with an internal inward projection 14 that is internally threaded to receive the threaded end of a thrust post 15. The post 15 as preferably constructed has a bifurcated upper end, and to this bifurcated upper end a rod 16 is pivotally connected by a pin 17. The free end of this bolt 16 works freely through the perforation of the ear 13. A coiled spring 18 is placed on the bolt 16 and re-acts against the lug 13 and the said bolt 16, as shown. One end of the spring 18 directly engages a washer 19 that is thereby pressed against the ear 13, and the other end of said spring reacts against a washer 20 that is anchored to the bolt 16 by a pin or otherwise.

A set screw 21 which works through the back of the filler neck 4 impinges against the threads of the post 15, and securely holds the same in properly set adjustment.

By reference to Fig. 2 it will be noted that when the cap is in its closed position indicated by full lines, the spring 18 will exert a downward force on the cap, tending to keep the gasket 7 thereof tightly seated on the upper end of the filler neck. It is also evident that when the cap is in its open position indicated by dotted lines, the spring will securely, but yieldingly, hold the lid in its open position. In fact, whenever the rod 16 is turned below a line that intersects the pivots 9 and 17, it will exert a force that will automatically close the lid, and whenever the said rod is above said line, it will exert a force which will throw the lid into its extreme open position, indicated by dotted lines.

The said line noted is, therefore, the dead center portion of the spring device and the cap is movable to throw this spring device from one side to the other of said dead center. It is also important to note that the pivot 17 is above the plane of the top of the filler neck and that the perforation of the lug 13 is below said plane when the cap is in a closed position, so that when the cap is in the closed position, the line of force of the spring obliquely intersects the above noted plane and has a downward seating action on all portions of the cap, and for this reason, it is desirable to leave a little clearance between the pivot pin 9 and its seat in the lug 8. In its said extreme open position, the stop 11 engages with the head of the set screw 21, but it might engage with any fixed part on or of filler neck.

Obviously, the cap may be very easily and quickly opened, and very easily and quickly closed, and when closed will insure a tight joint between the gasket and the upper end of the filler neck.

What I claim is:

1. The combination with a filler neck having an approximately horizontal annular upper face and a hinge lug at the rear thereof, of thrust post or lug within said tube at the rear thereof, projecting above the annular face of said tube, of a cap hinged to said hinge lug and provided with a perforated ear that depends into said neck when said cap is in a closed position, a rod hinged to said thrust post or lug and working freely through the ear of said cap, and a coiled spring surrounding said thrust rod and re-acting against the same and said ear, said cap having a movement from open to closed position that carries said spring from one side to the other of its dead center.

2. The combination with a filler neck and a thrust post located therein and projecting above the upper surface thereof, said post being vertically adjustable, of a cap hinged to the back of said filler neck and provided with a perforated ear that depends into said neck when said cap is in a closed position, a rod hinged to the upper end of said thrust post and working freely through said ear, and a coiled spring surrounding said rod and re-acting against the same and against said ear, said cap having a movement from open to closed position that carries said spring from one side to the other of its dead center.

3. The combination with a filler neck and a thrust post located therein and projecting above the upper surface thereof, of a cap hinged to the back of said filler neck and provided with a perforated ear that depends into said neck when said cap is in a closed position, a rod hinged to the upper end of said thrust post and working freely through said ear, and a coiled spring surrounding said rod and re-acting against the same and against said ear, said thrust post having threaded engagement with said neck whereby it may be vertically adjusted.

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

JOSEPH D. HARRIS.

Witnesses:
F. J. KOSTAT,
P. S. MORRIS.