H. A. HOOD.

RADIATOR FILLER CAP.

APPLICATION FILED JULY 6, 1915.

1,258,682. Patented Mar. 12, 1918.

Fig. 1.

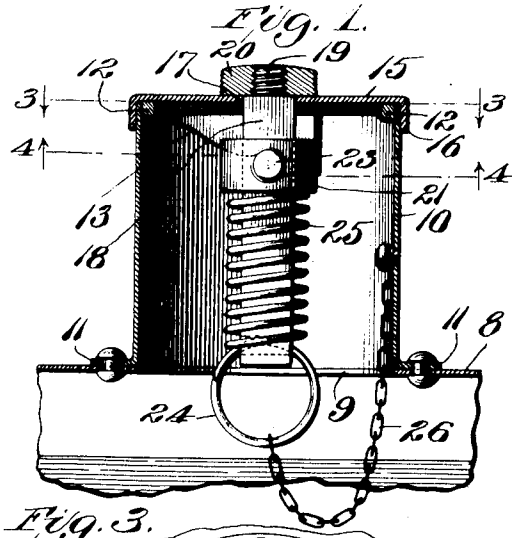


Fig. 2.

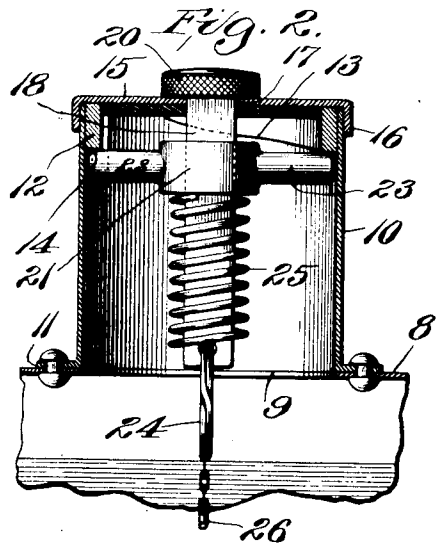


Fig. 3.

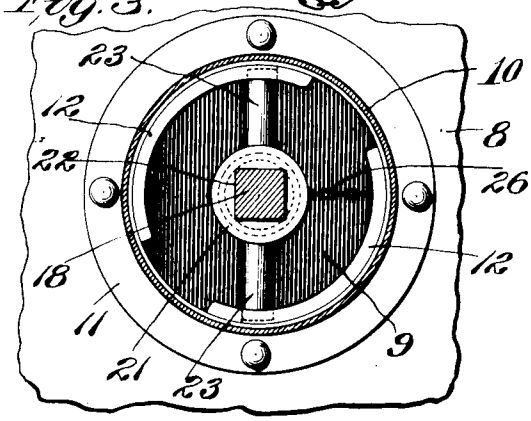


Fig. 6.

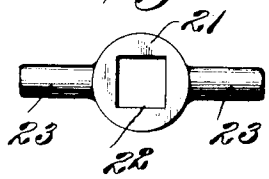


Fig. 5.

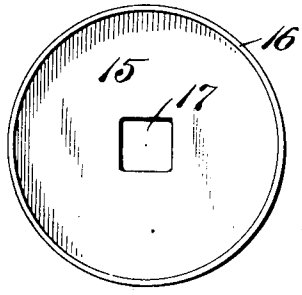


Fig. 4.

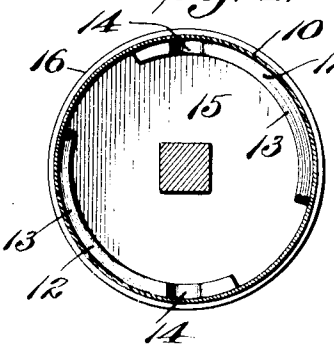
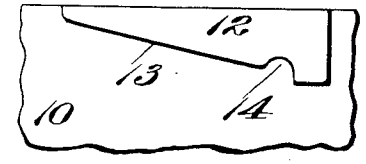


Fig. 7.



Inventor:
Harry A. Hood,
by Higdon & Logan attys.

UNITED STATES PATENT OFFICE.

HARRY A. HOOD, OF ST. LOUIS, MISSOURI, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, TO H. S. H. MANUFACTURING COMPANY, INC., OF ST. LOUIS, MISSOURI, A CORPORATION OF MISSOURI.

RADIATOR-FILLER CAP.

1,258,682. Specification of Letters Patent. Patented Mar. 12, 1918.

Application filed July 6, 1915. Serial No. 38,285.

To all whom it may concern:

Be it known that I, HARRY A. HOOD, a citizen of the United States, and resident of St. Louis, Missouri, have invented certain new and useful Improvements in Radiator-Filler Caps, of which the following is a specification containing a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention relates to improvements in radiator filler caps, and the object of my invention is to construct an inexpensive, durable and easily operated closure for the filling opening of an automobile radiator.

With the above object in view, my invention consists in certain novel features of the construction and arrangement of parts hereinafter fully described, specifically pointed out in my claims, and illustrated in the accompanying drawings, in which—

Figure 1 is a vertical sectional elevation of a device embodying my improvements;

Fig. 2 is a view similar to Fig. 1 and at right angles thereto;

Fig. 3 is a sectional plan taken on the line 3—3 of Fig. 1;

Fig. 4 is an inverted sectional plan taken on the line 4—4 of Fig. 1;

Fig. 5 is an inverted plan of the cap proper;

Fig. 6 is a plan of the movable locking element for the cap; and

Fig. 7 is a fragmental elevation showing one of the fixed cap locking elements.

Referring to the drawings by numerals:

8 designates the radiator having in its top an opening 9, and 10 designates a tubular filling spout having at its bottom a base flange 11 perforated at intervals whereby it may be secured by rivets or the like to the radiator surrounding the opening 9.

Secured to the inner perimeter of the spout next adjacent its upper end and at diametrically opposite points are the segmental plates 12, which plates taper from end to end as clearly shown in Fig. 7, to produce the cam faces 13, and in each of the faces 13 there is formed a seat or recess 14. By forming the seats or recesses 14 in the plates 12 a lug or projection is produced on one end of each plate (as shown in Figs. 3, 4 and 7) which lugs or projections answer as stops to limit the movement or rotation of the cap in locking or applying the same to the tube, and also serve as a means for limiting the rotation of the cap when rotated in a reverse direction to be removed from the tube.

The numeral 15 designates the cap proper, which is preferably made of sheet metal stamped into cup form to produce a flange 16 which surrounds the upper end of the spout 10, and has formed therein at its approximate center the non-circular opening 17.

The numeral 18 designates a non-circular stem having its end fitted into the non-circular opening 17 of the cap and having a threaded extension 19 to receive a retaining nut 20.

Mounted for axial movement upon the stem 18 is a collar 21 having the non-circular opening 22 whereby it may be rotated upon a rotation of the stem and having at diametrically opposite points the pins 23. In opposition to the collar I provide a split ring or key 24 between which and said collar I arrange an extensible coil spring 25, and by preference I secure the ring against losing by means of a chain or other flexible element 26 having its one end secured to the body of the spout 10.

As shown in Figs. 1 and 2, it will be observed that the cap 15 is spring-held over the spout and locked by reason of the pins 23 being rested in the seats 14 of the segmental plates.

The operation of removing the cap from this position requires only a rotation of the cap to unseat the pins, whereupon the pins will ride the cam faces 13, gradually relieving the spring pressure until the pins are brought to the ends of the cam, whereupon the cap may be bodily lifted from the spout.

In applying the cap it is fitted over the spout, its pins 23 being inserted downwardly between the ends of the segmental plates, and then turned to cause the pins to ride the cam faces against the pressure of the spring 25, gradually causing the cap to seat with increased pressure upon the end of the spout, and then the pins are rested in the seats 14 which lock the cap against removal, except upon a rotation in an opposite direction. Instead of the retaining nut shown, any ornate retaining element may be employed.

Having thus described my invention, what

I claim as new therein and desire to secure by Letters Patent of the United States is:

1. A radiator filler cap comprising a filling tube, a pair of oppositely disposed plates provided with cam faces continuously inclined from end to end in opposite directions carried by said tube the ends of said plates being spaced apart from each other and provided with curved seats and lugs disposed oppositely to each other, a cap having an angular opening formed therethrough adapted to close the end of the filling tube, an angular stem located in said opening, a nut carried by said stem to limit the inward or downward movement of the stem relative to the filling tube, a collar provided with an angular bore mounted on said stem, oppositely projecting arms carried by the collar, positioned below and adapted to move over the cam surfaces of said plates and to pass between the ends of said plates and movable with the cap, a spring mounted on said stem below the collar and having one end resting against said collar and its opposite end against a key mounted in said stem, whereby the expansive force of the spring maintains a yielding pressure between the ends of said arms and portions of the cam surfaces of the plates and the seats formed in said plates, and a flexible connection between the key and filler tube.

2. A radiator filler cap comprising a filling tube, a pair of oppositely disposed plates provided with cam faces inclined in opposite directions carried by said tube the ends of said plates being spaced apart from each other and provided with curved seats and lugs disposed opposite to each other, a cap adapted to close the end of the filling tube, an angular stem carried by said cap, a collar provided with an angular bore mounted on said stem and movable upwardly and downwardly thereon, oppositely projecting arms curved in cross section carried by the collar, said arms being positioned below and adapted to move over the cam surfaces of said plates and to be seated in and easily removed from the curved seats, and to pass between the ends of said plates, said cap, collar, and arms being movable together and removable from the tube, a spring mounted on said stem below the collar and having one end resting against said collar and its opposite end against a key mounted in said stem, whereby the expansive force of the spring maintains a constant and yielding pressure between the cap and upper end of the filling tube.

In testimony whereof, I have signed my name to this specification, in presence of two subscribing witnesses.

HARRY A. HOOD.

Witnesses:
E. L. WALLACE,
R. G. ORWIG.