Oct. 16, 1923. 1,471,071

J. H. SMITH

RADIATOR CAP ATTACHMENT

Filed Sept. 11, 1920

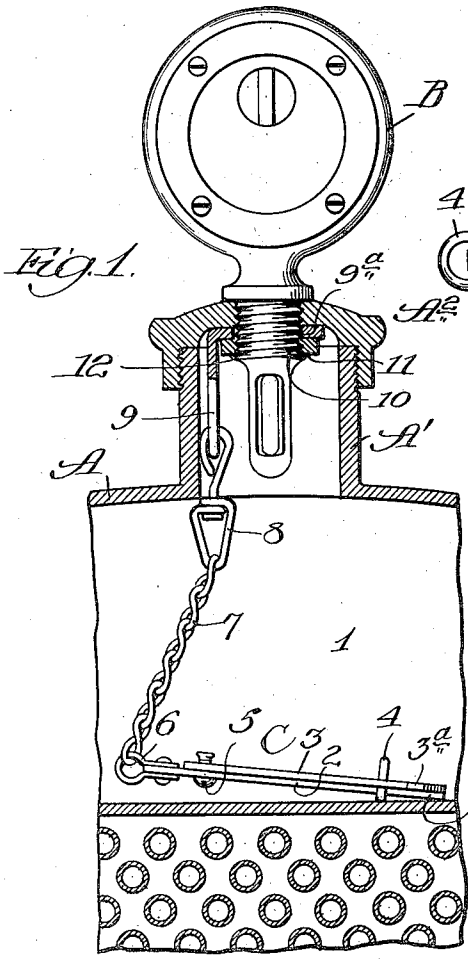


Fig. 1.

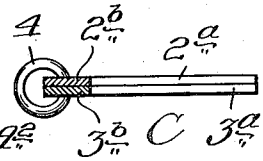


Fig. 4.

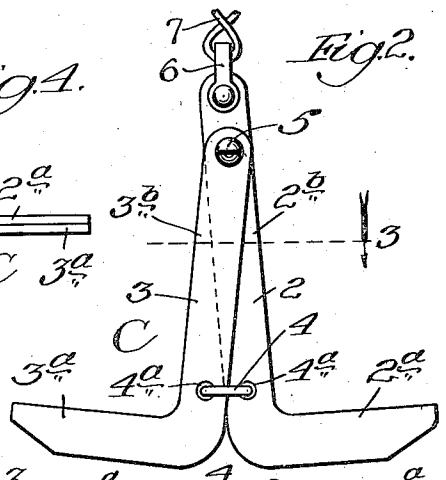


Fig. 2.

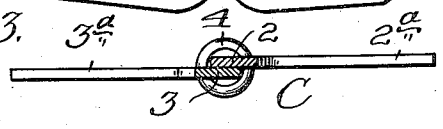


Fig. 3.

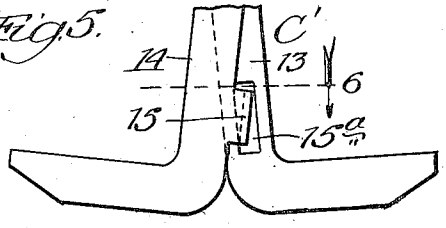


Fig. 5.

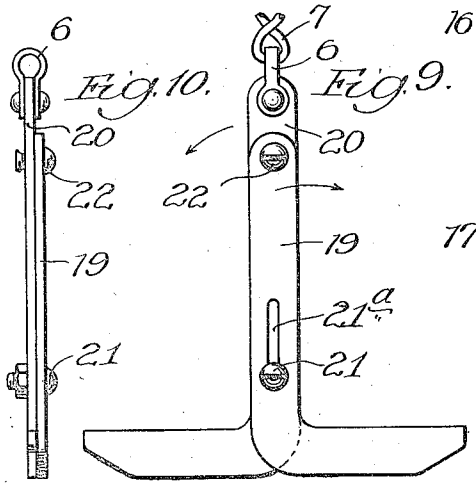


Fig. 10. Fig. 9.

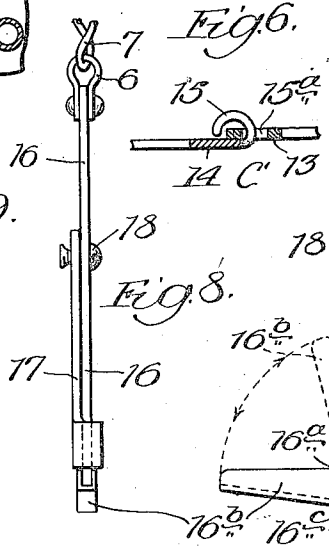


Fig. 8.

Fig. 6.

Fig. 7.

Inventor:
Joseph Higgins Smith,
By Dyrenforth, Lee, Chritton & Wiles,
Atty's.

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UNITED STATES PATENT OFFICE.

JOSEPH HIGGINS SMITH, OF CHICAGO, ILLINOIS.

RADIATOR-CAP ATTACHMENT.

Application filed September 11, 1920. Serial No. 409,635.

To all whom it may concern:

Be it known that I, JOSEPH HIGGINS SMITH, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Radiator-Cap Attachments, of which the following is a specification.

This invention relates particularly to a device for anchoring a radiator-cap to the radiator of a motor vehicle in such manner as to permit the cap to be readily removed, the device serving to prevent the cap from being lost or stolen. A further object of the invention is to anchor a radiator-cap and an attachment carried thereby, such as a motometer, or other useful or ornamental device, in such manner as to prevent theft.

The invention is illustrated, in its preferred embodiment, in the accompanying drawing, in which—

Fig. 1 represents a broken sectional view of a motor-vehicle radiator having the improved device applied thereto; Fig. 2, an elevational view of the collapsible anchor employed, showing the same in permanently extended condition; Fig. 3, a section taken as indicated at line 3 of Fig. 2; Fig. 4, a similar section, showing the anchor in collapsed condition; Fig. 5, a broken elevational view showing a modification of the anchor; Fig. 6, a broken sectional view taken as indicated at line 6 of Fig. 5; Fig. 7, an elevational view of another modification of the anchor; Fig. 8, an edge view of the same; Fig. 9, an elevational view of another modification; and Fig. 10, an edge view of the same.

Referring to Figs. 1 to 4, inclusive, A represents a motor-vehicle radiator equipped with a nipple A′ and a cap A^2; B, an ornament applied to the radiator-cap, this ornament being in the form of a temperature-indicating device, known to the trade as a motometer; and C, an anchor located in the chamber 1 at the upper portion of the radiator and securely joined by a flexible connection to the radiator-cap and the ornamental device mounted thereon.

The anchor C is made collapsible, or capable of being folded, so that it can be introduced through the nipple or neck of the radiator, and is provided with means for permanently maintaining the anchor in extended condition after it has been inserted. The device C comprises a pair of L-shaped members 2 and 3, having relatively short anchoring arms 2^a and 3^a, respectively, and having longer shank-arms 2^b and 3^b, respectively. These members are connected at their elbows by means of a circular link or ring 4 which extends through perforations 4^a. The connection is such as to enable the members 2 and 3 to be turned so that the grappling arms will be brought into coincidence, as illustrated in Fig. 4; or the members may be so turned that the grappling arms will point in opposite directions, as indicated in Fig. 2. The upper portion of the shank 3^b is connected with the shank 2^b near its upper end by means of a screw or rivet, 5. Preferably, a screw is employed and the threaded end of the screw is upset or rivetted after the connection is made. This may be effected by means of a pair of pliers.

The upper end of the shank 2^b is shown equipped with a small clevis 6 which is rivetted to the shank. This clevis is connected, by a flexible connection, such as the chain 7, to a link or connection 8, which is secured to one arm, of an angle member, 9, whose other arm is provided with a perforation 9^a which receives the threaded shank 10 of the device B. The shank of the device B passes through a central perforation in the cap A^2 in the usual manner and is equipped interiorly with a lock-nut 11. The thread of the shank 10 may be upset or rivetted, as indicated at 12, to prevent detachment.

The radiator-cap A^2 is shown provided with threaded engagement with the nipple A′ in the customary manner. In the use of the anchoring device, the members 2 and 3 are turned so as to be in the relation shown in Fig. 4. The grappling arms 2^a and 3^a are sufficiently short, when the parts are in this position, to enable them to be inserted through the nipple, after which the members are turned to the position shown in Fig. 2, and the upper ends of the shanks are permanently secured together by the connection 5. The chain is of sufficient length to enable the cap A^2 to be freely removed from the nipple, and the cap may then be allowed to dangle over the front of the radiator while the radiator is being filled with water. By the employment of this device, there is no danger of the cap being forgotten or lost, or of the cap and its ornament being stolen.

In the modification illustrated in Figs. 5 and 6, the anchor is designated C'. The construction is similar to the construction already described, except that, instead of the members 2 and 3, there are employed similar members 13 and 14, the member 14 being equipped near its elbow with an integral projection 15 which is passed through a perforation 15[a] with which the member 13 is equipped near its elbow. The projection 15 is formed with an eye, which serves the function of the curved link 4 in the first-described construction.

In the modification illustrated in Figs. 7 and 8, the device comprises a vertical shank or bar 16 having pivotally connected with its lower corners, by means of rivets 16[a], the grappling arms 16[b]; and a vertically slidable bar 17 mounted on the bar 16 and adapted to lock the grappling arms 16[b] in the extended position shown by the full lines in Fig. 7. After the anchor has been inserted and the grappling arms extended, the bars 16 and 17 are permanently secured together by means of a screw or rivet 18, thus locking the grappling arms in the extended position. It will be noted that the grappling arms are provided with shoulders 16[c] which abut against each other when the arms are in the extended position shown in Fig. 7, so that the grappling arms cannot swing below the full-line position shown in Fig. 7. By raising the slidable bar 17 on the bar 16, the grappling arms 16[b] may be collapsed, as indicated by the dotted lines in Fig. 7. The arms are thus collapsed during insertion, after which the rivet 18 is employed to permanently connect the bars in the full-line position shown in Fig. 7.

In the modification shown in Figs. 9 and 10, 19 represents one angle-form bar, and 20 represents another angle-form bar. One of these members is equipped near its elbow with a pivot 21 which is movable in a slot 21[a] with which the other member is provided. The upper ends of the shank-arms are adapted to be connected by a rivet, or upset screw, 22. Before this connection is effected, the members 19 and 20 may be swung in opposite directions about the pivot 21, as indicated by the small arrows in Fig. 9, thus sufficiently collapsing the device to enable it to be inserted through the nipple of the radiator. If necessary to the insertion, the pivot 21 may slide in the slot 21[a]. After the insertion, the members are permanently connected by the connection 22.

As is well known, there are in use in the United States millions of automobiles having removable radiator-caps with no provision to prevent loss or theft; and very many users have the caps of the radiators equipped with motometers or with other ornamental devices. Motometers are expensive, and, in many instances, where motometers are not employed, the radiator-caps are equipped with very expensive ornamental attachments. The improved device provides reasonable protection against theft, in such cases.

The foregoing detailed description has been given for clearness of understanding only, and no unnecessary limitations should be understood therefrom.

What I regard as new, and desire to secure by Letters Patent, is—

1. The combination with a motor-vehicle radiator provided with a nipple and cap, of an anchor comprising a pair of angle bars, connecting means between the elbow portions of said bars enabling the bars to be turned for collapsing the device, means for securing the upper portions of said bars together when the grappling arms are in extended position, and a flexible connection securing the upper portion of the anchor to the radiator-cap.

2. A device of the character set forth, comprising a collapsible anchor adapted to be inserted through the nipple of a radiator opening, means for securing the anchor in permanently extended condition after insertion, a chain connected with the shank of the anchor, and a connection secured to said chain and adapted to be secured to an attachment-shank which extends through the radiator-cap.

3. A device of the character set forth, comprising a pair of angle-form bars having grappling-arms and shank-arms, a link connecting the elbow portions of said bars, means for permanently connecting the upper end portions of the shank-arms together, and a flexible connection secured to one of the shank-arms and equipped with means for attachment to a radiator-cap.

JOSEPH HIGGINS SMITH.