Sept. 18, 1928. 1,684,412

L. A. REINER

RADIATOR CAP LOCKING DEVICE

Filed May 13, 1925

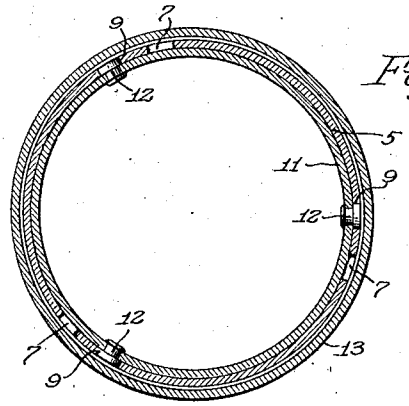


Fig. 3.

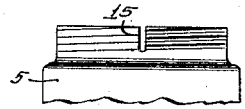


Fig. 9.

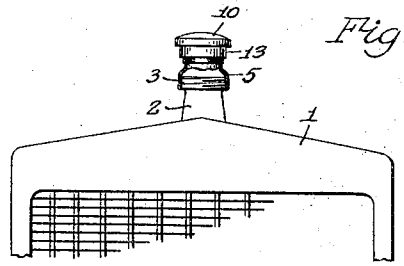
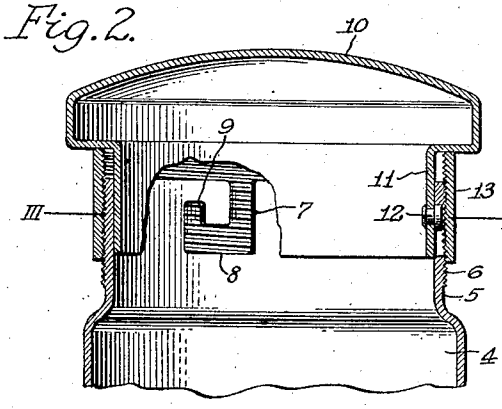


Fig. 1.

Fig. 2.



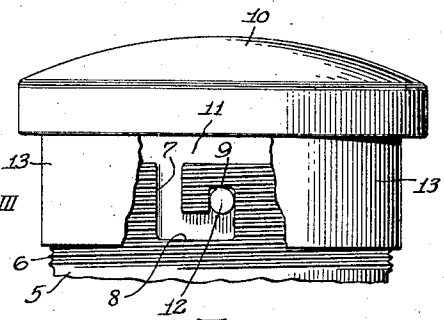
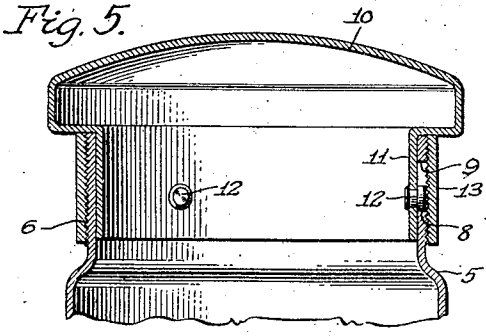


Fig. 4.

Fig. 5.



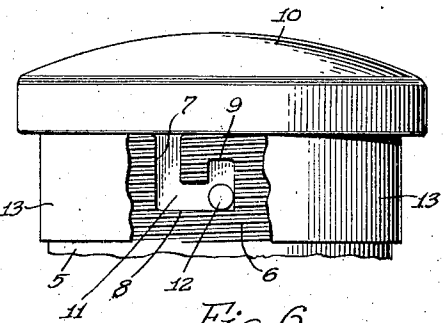


Fig. 6.

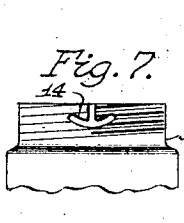


Fig. 7.

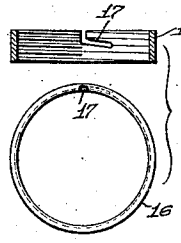


Fig. 8.

Inventor

Leo A. Reiner,

By

Attorneys

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UNITED STATES PATENT OFFICE.

LEO A. REINER, OF DETROIT, MICHIGAN.

RADIATOR-CAP-LOCKING DEVICE.

Application filed May 13, 1925 Serial No. 29,969.

This invention relates to an automobile radiator cap securing device and the primary object of my invention is to furnish a radiator filling connection with a cap held in place by bayonet slot and pin connections, with a securing ring adapted to be adjusted to hold the cap so that it cannot be surreptitiously removed.

Another object of this invention is to provide a cap and cap connection that may be substituted for an ordinary radiator cap, and the principle of my improved cap connection is applicable to various kinds of closures, for instance the lids of milk cans and other receptacles.

A still further object of my invention is to accomplish the above results by a simple, durable and inexpensive construction that will be hereinafter specifically described and then claimed.

Reference will now be had to the drawing, wherein

Figure 1 is a front elevation of a portion of the radiator provided with a cap connection and cap in accordance with this invention;

Fig. 2 is a vertical sectional view of the radiator filling connection provided with a cap in accordance with my invention;

Fig. 3 is a horizontal sectional view taken on the line III—III of Fig. 2;

Fig. 4 is a side elevation of a cap partly broken away and partly in section showing the cap in a secured position;

Fig. 5 is a view similar to Fig. 2 showing the cap partly engaged with the filling connection;

Fig. 6 is a side elevation of the same partly broken away;

Fig. 7 is a side elevation of a modified form of connection;

Fig. 8 shows views of a modified form of securing ring, and

Fig. 9 is a side elevation of another form of radiator connection for the securing ring shown in Fig. 8.

In the drawing, the reference numeral 1 denotes a portion of a radiator having a filling connection 2 which is exteriorly screw-threaded, as at 3, such being the usual and well known filling connection adapted to be closed by an ordinary screw cap.

When radiators are made the connection 2 may take the form of a connection 4, shown in Figs. 2 and 5, said connection having its upper end reduced as at 5, and exteriorly screwthreaded as at 6. The reduced end 5 of the connection 4 is provided with a plurality of bayonet or angle slots, each having a vertical portion 7, a horizontal portion 8 and a return or socket portion 9, so that each slot is substantially L or J shaped in elevation.

10 denotes a cap having a neck 11 adapted to fit in the reduced end 5 of the connection 4 and said neck is provided with outwardly extending studs 12 corresponding in number to the slots of the connection 4. When placing the cap 10 in engagement with the connection 4, the studs 12 enter the vertical portions 7 of the slots and when the cap has been pushed downwardly as far as possible, it is turned in a counter clockwise direction to carry the studs 12 through the horizontal portions 8 of the slots and place the studs in vertical alinement with the socket or return portions 9 of said slots.

Adjustably engaging the screw threads 6 of the connection 4 is a securing ring 13 and after the neck 11 of the cap 10 has been positioned, as mentioned above, the securing ring 13 can be adjusted to raise the cap 10 relative to the connection, thereby carrying the studs 12 into the sockets or return portions 9 of the slots, as shown in Fig. 4. The cap will be bound in place and cannot be partially rotated and removed, until the ring 13 is adjusted to recede from the cap and permit of the cap being lowered, partially rotated and then removed.

In order that my improvement may be used with the connection 2, the connection 4 may be made as a short sleeve, and interiorly screwthreaded to screw on to the connection 2, thus adapting my improvement to the usual construction, but when radiators are manufactured the connection 4 can be made an integral part thereof.

Instead of providing the radiator connection with one way slots, I may provide it with substantially inverted T-shaped slots 14 which will permit of the cap being turned in either direction and held in their position by the securing ring 13.

I may also provide a radiator connection with straight vertical slots 15 to receive the studs 12, and in the threaded wall of a securing ring 16 I may provide angular grooves 17 to receive the studs. The studs in such groove will necessarily limit radia-

tion of the securing ring 16, but permit of the screw threads of said securing ring to cause the ring to bind the studs in engagement with said ring, so that the radiator cap is firmly held in place.

From the foregoing it will be observed that the securing ring will anchor the radiator cap in place and prevent accidental displacement thereof when the studs or pins properly engage in the angle slots. The cap cannot be rotated when properly secured and in some instances the ring 13 may be tightened by using a suitable tool so that it cannot be rotated by hand, thus preventing the radiator cap or any instrument or ornamentation carried thereby from being stolen. For instance, my caps are provided with motormeters and the instance has been known where such caps are removed and the ordinary cap substituted therefor. This nefarious practice is growing and my invention aims to prevent surreptitious removal of a cap by securing it in such a manner that it cannot be conveniently removed.

While in the drawings there are illustrated the preferred embodiment of my invention, it is to be understood that the structural elements are susceptible to such variations and modifications as fall within the scope of the appended claims.

What I claim is:—

1. A radiator filling connection provided with a plurality of slots having return portions, a cap overlying said filling connection and having a neck to fit in the filling connection and cover said slots, outwardly extending studs carried by the neck of said cap and extending into the slots of said connection and adapted to engage in the return portions of said slots, and a ring screwed on said filling connection adapted to be shifted to cover said slots and engage under said cap to force said cap upwardly from said connection and hold said studs in the return portions of the connection slots.

2. A radiator filling connection provided with slots, a cap having a neck to fit in the filling connection and cover said slots, studs carried by the neck of said cap and extending into the slots of said connection, and a ring on said filling connection adapted to be shifted to cover said slots and secure said studs against movement relative to said filling connection.

In testimony whereof I affix my signature.

LEO A. REINER.