Nov. 12, 1929. H. SCHLAICH 1,735,132

RETAINING DEVICE

Filed April 29, 1920

Fig. 1.

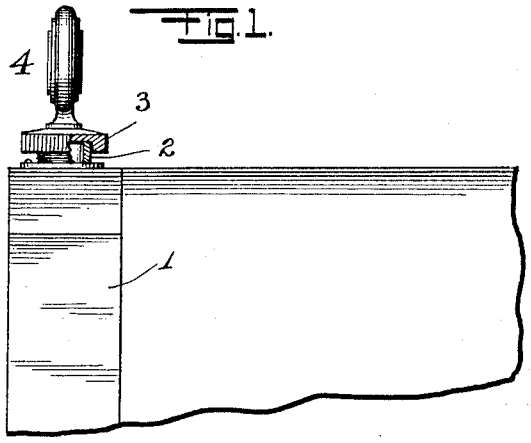


Fig. 4.

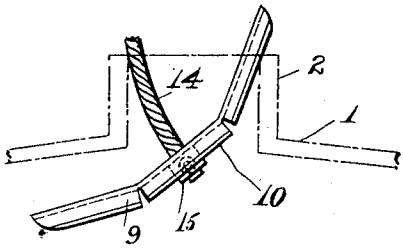


Fig. 2.

Fig. 5.

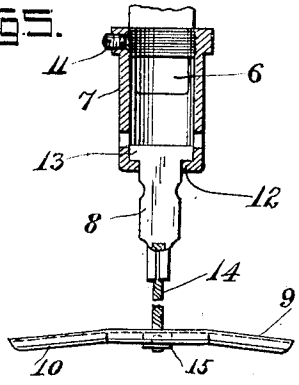


Fig. 6.

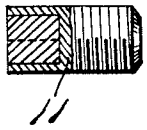
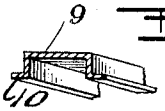


Fig. 3.



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Patented Nov. 12, 1929 1,735,132

UNITED STATES PATENT OFFICE

HERMAN SCHLAICH, OF BROOKLYN, NEW YORK, ASSIGNOR TO THE BOYMOTO COMPANY, INC., OF LONG ISLAND CITY, NEW YORK, A CORPORATION OF NEW YORK

RETAINING DEVICE

Application filed April 29, 1920. Serial No. 377,501.

My invention relates to an improved retaining device; especially a retaining device adapted to be utilized in connection with closures for vessels and containers of any kind; and particularly vessels and containers mounted upon, and forming part of, the equipment of automobiles and motor vehicles in general; such as the radiator, through which circulates the cooling water for the engine of the automobile, said radiator being supplied with an inlet opening or mouth, with a removable cover to enable the supply of cooling water to be replenished as often as is necessary.

An object of my invention is to provide a retaining device to prevent the cover or closure for the inlet opening of the radiator for the cooling water upon an automobile from being stolen. Such covers are often made in ornamental shapes, and often serve not only as closures for the mouth of the radiator, but also supports for certain accessories of the car. When of the character mentioned, such covers or closures are frequently quite expensive, and, owing to the ease with which they can be detached, they are a frequent source of temptation to the petty thief, and a frequent source of loss to the owner of the automobile, whenever the latter stores his car in a garage whose employees are dishonest, or leaves the car unattended in the street.

My invention further aims to prevent such theft and loss, by providing a retaining device which is quite inexpensive to make, easy to attach to the cover, and very efficient in preventing the removal of the latter, without interfering with the opening and closing of the radiator when the supply of cooling water is to be replenished or inspected.

Other objects and advantages of my invention will be apparent from the following description, taken in connection with the accompanying drawings, forming a part of same; and the novel features of my invention will be precisely defined in the appended claims. This disclosure, however, is explanatory only, and I may resort to modifications of structure not actually shown herein, but within the scope and spirit of my invention, as indicated by the general meanings of the terms in which the claims are expressed.

On the drawings:

Figure 1 is a side elevation of the front of an automobile, showing the radiator with a cover therefor, supporting an instrument for indicating the temperature of the cooling water, this view being partly in section;

Figure 2 is a similar view of what appears in Figure 1, illustrating the retaining device attached to the cover;

Figure 3 is a section on the line 3—3 of Figure 2;

Figure 4 is a view showing the manner in which the retaining device can be disposed in operative position in the radiator;

Figure 5 is a longitudinal sectional view, showing in full how the retaining device is secured to the closure or cover for the inlet or mouth of the radiator; and

Figure 6 is a view of the lock-screw partly in section to show the polygonal opening in one end thereof filled with metal or other sealing material.

The same numerals identify the same parts throughout.

The numeral 1 indicates a radiator, such as is commonly mounted on an automobile or truck; this radiator being provided at its top with a mouth or inlet opening 2. This mouth is in the form of an upstanding rim or flange forming a neck which is threaded to enable it to be engaged by a cap or closure 3, having mounted thereon in position to be supported above the front of the radiator, and on the outside of the same, an ornament or other device, as illustrated an indicating instrument comprising a casing 4, containing a thermometer 5. The casing 4 may be simply in the form of a circular band or ring, closed in front and back by panes of glass through which the thermometer can be seen, and the thermometer 5 therein extends downward through the cover or closure 3, into a projection 6, which houses the bulb of the thermometer. This projection, when the cover is in place, will be inside the radiator, and exposed to the heat of the contents of same, as the water from the engine circulates through the radiator. The operating condi-

tion of the engine will, therefore, be indicated by the thermometer 5.

To remove the cover 3 it is only necessary to unscrew the same from the mouth 2, and unless a retaining device is provided a petty thief can easily detach the cover 3, with the casing 4 thereon, drop it into his pocket, and make his escape. To prevent such theft, I attach to the cover 3 my improved retaining device, which is connected thereto by securing it to the projection 6. The retaining device is disposed inside the radiator, and it will permit the unscrewing of the cover and lifting of the same to a sufficient extent to enable the water inside the radiator 1 to be replenished, or inspected, without enabling the cover 3 with the casing 4 thereon to be permanently displaced and carried away. This retaining device comprises a perforated sleeve 7, which is affixed to the projection 6 and is joined by a connecting member 8 to a bar 9. This bar 9 has parallel ribs 10 along its opposite lateral edges, and may be formed by stamping it out of a sheet of metal and bending over the opposite longitudinal edges in the required manner; see Figure 3. After the bar is shaped in this way the ribs 10 are cut at opposite points on both sides, dividing each rib into successive smaller ribs, the adjacent ends of which abut each other to enable the bar to be bent, at the points where the ribs are cut, to the shape indicated in Figure 4 to enable the bar to be readily placed through the neck 2 and into the space between the said neck and the top of the cooling grids A. This rib construction enables bending from a substantially straight condition in one direction only, and will resist bending in the opposite direction because the ends of these ribs will then abut one another, and make the bar rigid. When the bar is properly disposed in the radiator 1, the ribs will extend downwardly from the top of the bar; thereby enabling the ends of the bar to be bent downward. After insertion the member 8 is pulled upward in such a manner as to cause the ends of the bar to engage the radiator on both sides of the inner end of the mouth 2, and be straightened out. Upon being straightened in this way, as soon as the ribs come into contact at their ends, the bar cannot be bent any further, and the retaining device is then capable of permanently preventing the removal of the cover 3, as will be understood, due to the fact that the bar has been distended by so bending it.

The sleeve 7 is hollow and preferably engages the projection 6 by being screwed thereon at one end; and to prevent detachment the sleeve is perforated to receive a nut or screw 11, which binds against the projection 6. This lock nut or bolt is very short, and its outer end should be flush with the upper end of the sleeve when it is turned home, and I prefer to make a polygonal opening at the outer end of the same, so that some other tool besides a screw driver will be required to remove it, so as to get the sleeve off the projection 6. In fact, the nut may be turned up tight, and the hole in its outer end may then be filled with solder or something else, so as to keep the sleeve on the projection 6 permanently. At its opposite end, the sleeve 7 is provided with an in-turned edge or flange 12; and the member 8, which is loosely received in said sleeve, so that it can both turn and move longitudinally therein, will have laterally extending projections 13 at both sides to engage the flange 12, and prevent the withdrawal of the member 8 from the sleeve. At its outer end the connecting member 8 grips a section of stranded wire cable 14, which passes through the middle of the bar 9, and carries a head on its lower end, secured to the cable in any feasible manner, so as to keep the bar from being pulled off the cable, and thereby anchor the cover to the radiator in the manner required.

In Figure 4 I illustrate how the bar 9 is inserted into the radiator through the mouth 2. To perform this operation one end of the bar may be bent upward slightly, and the other end is pushed downward through the mouth, and under the top of the radiator at one side, so as to permit the other end of the bar to be introduced into the radiator also. As soon as the other or bent end of the bar clears the inner end of the mouth 2, the bar is moved so as to carry the bent end under the top of the radiator, without making the opposite end clear the inner edge of the mouth 2, whereupon an upward pull will straighten out the bar, and prevent the same from being withdrawn. Of course the bar will be made of sufficient length so that the distance from the cable 14 to either end will be greater than the width of the mouth, and, therefore, this bar will always remain in position to engage both sides of the mouth at opposite points, and prevent the carrying off of the cover, as long as the sleeve 7 remains affixed to the projection 6.

With such a retaining device sufficient assurance against theft is afforded, for the reason that while the cover and the indicator thereon are sufficiently valuable to present a temptation for petty thieving, they are not of sufficient value to induce one, in most instances, to resort to careful use of tools to break the connection between the cover and the bar 9.

To adapt my retaining device for radiator mouths or necks of different heights from the cooling grids A, I attach the bar 9 to the cable 14 so that this bar can be adjustably suspended from the member 8. For this purpose the head on the lower end of the cable, indicated by the numeral 15, has a threaded bore in the side thereof to receive a nut or screw similar to the fastening element or

screw 11, above mentioned. By means of this screw, the head 15 can be made fast to the cable 14, at any point in the length of same and when this nut is turned up tight the head 15 is affixed to the cable in position to suspend the bar 9 at a greater or less distance below the member 8, as desired.

It should be understood that the terms "cap," "cover" and "closure" are used interchangeably herein and are not confined to the particular form of closure illustrated but that they are intended to be construed broadly as including any covering whereby the radiator is closed, whether such covering constitutes the entire means for closing the radiator opening or only a part of such means.

Having described my invention, what I believe to be new and desire to secure and protect by Letters Patent of the United States is:

1. A retaining device for the closure of a container, said device comprising a bar formed to enable it to be bent in a direction to permit the bar to be inserted into the mouth of the container but to resist bending in a direction which would permit the bar to be removed from the container, and a member to connect said bar with said closure.

2. A retaining device for the closure of a container, said device comprising a bar having successive ribs extending along its opposite lateral edges, said bar being adapted to be bent in one direction at points between said adjacent ribs, but resisting bending in the opposite direction due to the ends of adjacent ribs abutting each other, and a member to connect said bar to said closure.

3. A retaining device for the closure of a container, said closure having a projection, a sleeve engaging said projection, said sleeve having an in-turned edge, a member in said sleeve and projecting therefrom and having projections to engage said edge, and a bar connected to said member and extending transversely of the same.

4. As a retaining device, a bar having ribs along its opposite longitudinal edges, said ribs being cut at opposite points to permit the bar to be bent from a substantially straight shape, in one direction, and to cause the bar to resist bending from a substantially straight shape, in the opposite direction.

5. The combination with a cap adapted to close the filling neck of the radiator of an automobile, of an article mounted thereon and having a stem projecting through a hole in said cap, and a theft preventive device including a connecting member attached to said stem, and a distendable retaining member supported at the middle by said connecting member and adapted to be inserted through said neck into the radiator, the retaining member when distended being of such a length that the distance from the connecting member to either end of the retaining member is greater than the diameter of said neck and great enough to prevent the swinging of the retaining member about its point of support into a position to permit withdrawal of said retaining member from said neck.

6. The combination with a cap adapted to close the filling neck of the radiator of an automobile, of an article mounted thereon and having a stem projecting thru a hole in said cap, a theft proof retaining member adapted to be inserted thru the filling neck into the radiator and then to be changed into a form which positively prevents its removal, and a connection between said stem and said retaining member of sufficient length to permit limited separation of the cap from the neck for filling the radiator.

7. The combination with a cap adapted to close the filling neck of the radiator of an automobile, of an article mounted thereon and having a stem projecting thru a hole in said cap, and a theft preventive device including a connecting member attached to said stem, and a semi-rigid retaining device connected to said connecting member and adapted to be inserted thru the neck and into the radiator and to be changed in form after inserting to render it incapable of removal from the radiator while said connecting member is attached to said stem.

8. The combination with a cap adapted to close the filling neck of the radiator of an automobile, of an article mounted thereon and having a stem projecting thru a hole in said cap, and a theft preventive device including a connecting member adapted to be attached to said stem, means for locking said connecting member to said stem so as to prevent unauthorized removal therefrom, and retaining means attached to said connecting member and adapted to be inserted thru the neck into the radiator.

9. The combination with a receptacle having a small mouth and a closure for said mouth, of means for preventing the theft of said closure while permitting said closure to be displaced from said mouth to permit filling of the receptacle, said means comprising a retaining member capable of being collapsed sufficiently to permit its insertion through said mouth into the receptacle, and adapted to be distended permanently after introduction into the receptacle, and a yieldable member for suspending said retaining means from said closure, said retaining means being so positioned on the yieldable member as to be balanced thereon, the greatest dimension of said retaining member when distended, at either side of the point of support of said retaining member, being greater than the diameter of said mouth.

10. The combination with the radiator cap of an automobile, of an instrument mounted on said cap and having a stem projecting through a hole in the cap, and a theft pre-

ventive device including a member connected to said stem, and a retaining member having a swivel connection with said member connected to said stem, and means to lock said first named member to said stem.

11. The combination with the radiator cap of an automobile, of an instrument mounted thereon and having a stem projecting through a hole in said cap, a sleeve screwed on said stem below said cap, means for locking said sleeve to said stem so as to prevent an unauthorized removal thereof and retaining means carried by said sleeve.

12. The combination with a flanged radiator cap, of an instrument mounted thereon having a stem projecting through a hole in said cap, a sleeve screwed on said stem, a lock screw screwed through a hole in said sleeve into engagement with said stem so as to prevent unauthorized removal of said sleeve, the upper end of said sleeve and said lock screw being located inside of the flange on said radiator cap, and retaining means carried by said sleeve.

13. Retaining means of the character described including a screw threaded sleeve having a threaded socket in the side wall thereof, a lock screw having a polygonal socket in its head and adapted to screw into said threaded socket, a member depending from said sleeve, and a retaining device carried by said depending member.

14. The combination with a radiator cap, of an intrument mounted thereon having a stem projecting through a hole in said cap and a retaining device including a sleeve screwed on said stem, a lock screw mounted in said sleeve for preventing the same from being unscrewed from said stem, and means for sealing said lock screw in locking position.

15. The combination with a radiator cap of an automobile, of an instrument mounted on said cap and having a stem projecting through a hole in the cap, a sleeve to fit over said stem, a member extending through said sleeve and into said stem to fasten the sleeve to said stem, and means for preventing the ready removal of said fastening member.

16. Retaining means of the character described including a sleeve having a threaded socket, a lock screw having a recess at one end to receive a tool to screw it into said socket, a plug in said recess to obstruct unscrewing of said lock screw, and a retaining piece supported by said sleeve.

17. The combination of a cap for the filling neck of a container, a theft proof retainer insertable into said container through said neck, and a connecting element by which the cap is connected to the retainer, said retainer being permanently distendable after it is inserted into the container.

18. The combination of a cap for the filling neck of a container, a retaining element insertable into said container through said neck, and a connecting element by which the cap is connected to the retainer, said retainer being distendable after it is inserted into the container by an upward pull on the connecting element.

19. The combination of a cap for the filling neck of a container, a one piece retaining element insertable into said container through said neck, and a connecting element by which the cap is connected to the retaining element, said retaining element being collapsible to permit insertion into the container and permanently distendable after insertion to prevent removal from the container.

20. The combination of a cap for the filling neck of a container, a one piece distendable retaining element insertable into said container through said neck, and a yieldable connecting element by which the cap is connected to the retaining element, the latter being adjustably mounted on said connecting element.

21. In combination, an automobile radiator having a filling neck, a cap for said neck, an instrument mounted on said cap and extending therethrough, and an unseverable theft proof device within the radiator permanently shackling the instrument and the cap to the radiator.

22. In combination, an automobile radiator having a filling neck, a cap for said neck, and means permanently shackling the cap to the radiator comprising an anchor inescapably trapped in the radiator and unseverable means connecting the cap and the anchor.

23. In combination, an automobile radiator having a filling neck, a cap for said neck, a device within the radiator inseparable from the radiator and unseverable connecting means inseparably joined to said device and to the cap for permanently shackling the cap to the radiator, said connecting means being flexible and of sufficient length to permit the cap to be moved to uncover the filler neck.

24. In combination, an automobile radiator having a filling neck, a cap for said neck, said cap and neck being provided with interlocking means adapted for relative rotation to secure the cap in, and release it from, neck sealing position, and means permanently connecting the cap to the radiator with provision for relative movement to guard against accidental or willful removal of said cap from the radiator, while permitting the neck to be uncovered.

25. In combination, an automobile radiator having a filling neck, a cap for closing said neck, adapted to be secured in neck-closing position by rotary movement of the cap, a connecting device permanently holding the cap to the neck against accidental or willful separation therefom, said connecting device constructed and arranged to permit relative rotation of the cap and neck and also suffi-

cient movement of the cap away from the filling opening to enable the filling opening of the neck to be uncovered, and means permanently securing the connecting device to the cap.

26. In combination, an automobile radiator having a filling neck, a cap for closing said neck, a connecting device permanently holding the cap to the neck against accidental or willful separation therefrom, said connecting device constructed and arranged to permit sufficient translatory movement of the cap relative to the neck to enable the filling opening of the neck to be uncovered, means locking said device permanently to the radiator neck, and means locking the cap permanently to the connecting device.

27. The combination with a radiator cap of means for permanently securing the cap to the radiator of an automobile with provision for limited separation therefrom, comprising an anchor device insertable through the radiator neck, means connecting the anchor device to the cap, and means for adjusting the effective length of the connecting means.

28. In combination, an automobile radiator having a filling opening, a cap for said opening operatively associated with an instrument for indicating the operating condition of the automobile motor, the radiator cap and instrument being formed and provided with instrumentalities set by the applying manipulation of the parts to lock the cap and instrument permanently against removal thereof from the radiator structure, the construction and arrangement being such that the radiator can be filled through said opening without detaching the radiator cap and instrument from the radiator structure.

29. In combination, a radiator, a cap therefor, a retaining means inseparably secured to the radiator, and means within the cap locking the retaining means permanently to the cap.

30. In combination, a radiator, a cap therefor comprising a cover portion and a collar portion, retaining means for holding the cap to the radiator, and means for preventing separation of the cap and the retaining means comprising a member so situated in the collar portion of the cap that said collar portion will interfere with the rendering ineffective of such separation preventing means.

In testimony whereof, I have signed my name to this specification this 6th day of April, 1920.

HERMAN SCHLAICH.