Dec. 7, 1948. J. A. SWINDLE 2,455,533

COMBINED SAFETY AND SOUND-PRODUCING DEVICE FOR RADIATORS

Filed Jan. 26, 1948

Fig. 3.

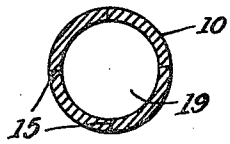

Fig. 1.

Fig. 2.

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Patented Dec. 7, 1948

2,455,533

UNITED STATES PATENT OFFICE

2,455,533

COMBINED SAFETY AND SOUND-PRODUCING DEVICE FOR RADIATORS

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Application January 26, 1948, Serial No. 4,323

3 Claims. (Cl. 116—67)

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This invention relates to a safety and signaling device for water-cooling radiators and the like, and deals more particularly with such a device for operative association with the radiator of an automotive vehicle.

When the cooling system of an automotive vehicle becomes clogged becaused of accumulations in the capillary tubes of the radiator or for other reasons, cooling of the water is inefficiently accomplished and, therefore, steam is generated. Such steam seeks egress through an overflow tube but presents a hazard to a person seeking to remove the cap of the radiator for the purpose of both relieving the steam pressure and replacing water that has been boiled off. Burns to the hands, or worse, are common under the above adverse conditions.

An important object of the present invention is to provide means that will apprise a person that there is steam in the cooling system so that due care may be taken.

Another object of the invention is to provide an aural signal that is sounded by the steam in the cooling system to warn persons of that fact.

Another object of the invention is to provide means that also automatically hastens relief of steam pressure so that the radiator cap can safely be removed.

My invention also has for its objects to provide such means that are positive in operation, convenient in use, easily installed in a working position and easily disconnected therefrom, economical of manufacture, relatively simple, and of general superiority and serviceability.

The invention also comprises novel details of construction and novel combinations and arrangements of parts, which will more fully appear in the course of the following description. However, the drawings merely show, and the following description merely describes, one embodiment of the present invention, which is given by way of illustration or example only.

In the drawings, like reference characters designate similar parts in the several views.

Fig. 1 is a fragmentary partial side elevation and partial sectional view, showing the novel combination of a radiator and safety and signaling device contemplated herein.

Fig. 2 is an end view of the signaling means of the invention.

Fig. 3 is a cross-sectional view as taken on line 3—3 of Fig. 1.

A conventional water cooling radiator 5 having a cap 6 closing the filling opening thereof, is provided with the usual overflow tube 7. When

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said radiator is filled to its capacity, any overflow will pass off through the end 8 of tube 7. Also, should the radiator fill with steam, said steam will pass out through said tube.

According to the present invention, the radiator is provided with combined safety and sound-producing means 9 that are mounted on said end 8 of tube 7. Said means, generally, comprise a tubular extension 10, and a whistle 11 carried by the latter.

The extension 10 has one end that is slipped over tube end 8 and is preferably cemented in place, and an opposite end that is outwardly flared at 12 and then formed with an inwardly angularly directed flange 13 that terminates in an annular opening 14 considerably larger than the passage of tube 7.

The tubular extension 10 is preferably resilient and is suitably formed of molded rubber to also be elastic. Intermediate its length, said extension is provided with one or more slits 15 that are normally closed, but are adapted to open under pressure within said extension.

The whistle 11 can best be described as a conventional tin whistle and is here shown as consisting of oppositely domed thin metallic discs 16 that are each provided with a relatively small opening 17 and define a sound chamber 18 therebetween. The whistle, thus provided, is readily slipped in place across the passage 19 of extension 10 by suitably stretching flange 13 and forcing the whistle into the annular seat 20 formed at the line of jointure of flare 12 and flange 13.

It will be evident that excess water in the radiator can readily drain off through openings 17; that, upon steam being generated in said radiator, said steam will sound the whistle by vibrating domed discs 16 to warn that the system, of which the radiator forms a component, is under steam pressure; and that, should said steam pressure become too excessive for free passage through the whistle, the slits 15 will open to provide additional egress openings to relieve said pressure. It will further be evident that the whistle will sound, when steam passes therethrough, whether or not the slits have been forced open, and that the slits are self-closing and are normally closed.

While I have illustrated and described what I now regard as the preferred embodiment of my invention, the construction is, of course, subject to modifications without departing from the spirit and scope of my invention. I, therefore, do not wish to restrict myself to the particular form of construction illustrated and described, but desire

to avail myself of all modifications that may fall within the scope of the appended claims.

Having thus described my invention, what I claim and desire to secure by Letters Patent is:

1. The combination with a conventional water-cooling radiator having an overflow tube, of a sound producing device carried by the end of said tube and having an opening for passing water overflowing in said tube and also passing steam generated in the radiator, said device comprising oppositely curved relatively thin disc-like elements that define a chamber therebetween in communication with said opening, and a resilient tubular member connecting the overflow tube and the sound producing device, the latter member having self-closing slits formed therein and adapted to open under excessive pressure of steam to relieve said pressure and thereby reduce the period during which the device sounds.

2. Safety and signaling means for association with the overflow tube of a water-cooling radiator, said means comprising a whistle carried by the tube and adapted to be sounded by steam generated in the radiator and seeking egress through said tube, and a resilient tubular member connecting the whistle to the end of the overflow tube, the latter member being formed with

self-closing slits that open under excessive pressure of steam moving toward the whistle.

3. In a device of the character described, a resilient tubular member adapted to be connected to and form an extension of the overflow tube of a water-cooling radiator, the free end of said member being flared and terminating in an inwardly directed flange, and a whistle retained in position across the opening of said member by said flange and adapted to sound under pressure of steam generated in the radiator and seeking egress through the tubular member and through the whistle, said tubular member having normally closed slits formed in the wall thereof and adapted to open under excessive pressure of steam to hasten reduction of pressure of steam in the radiator.

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The following references are of record in the file of this patent:

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