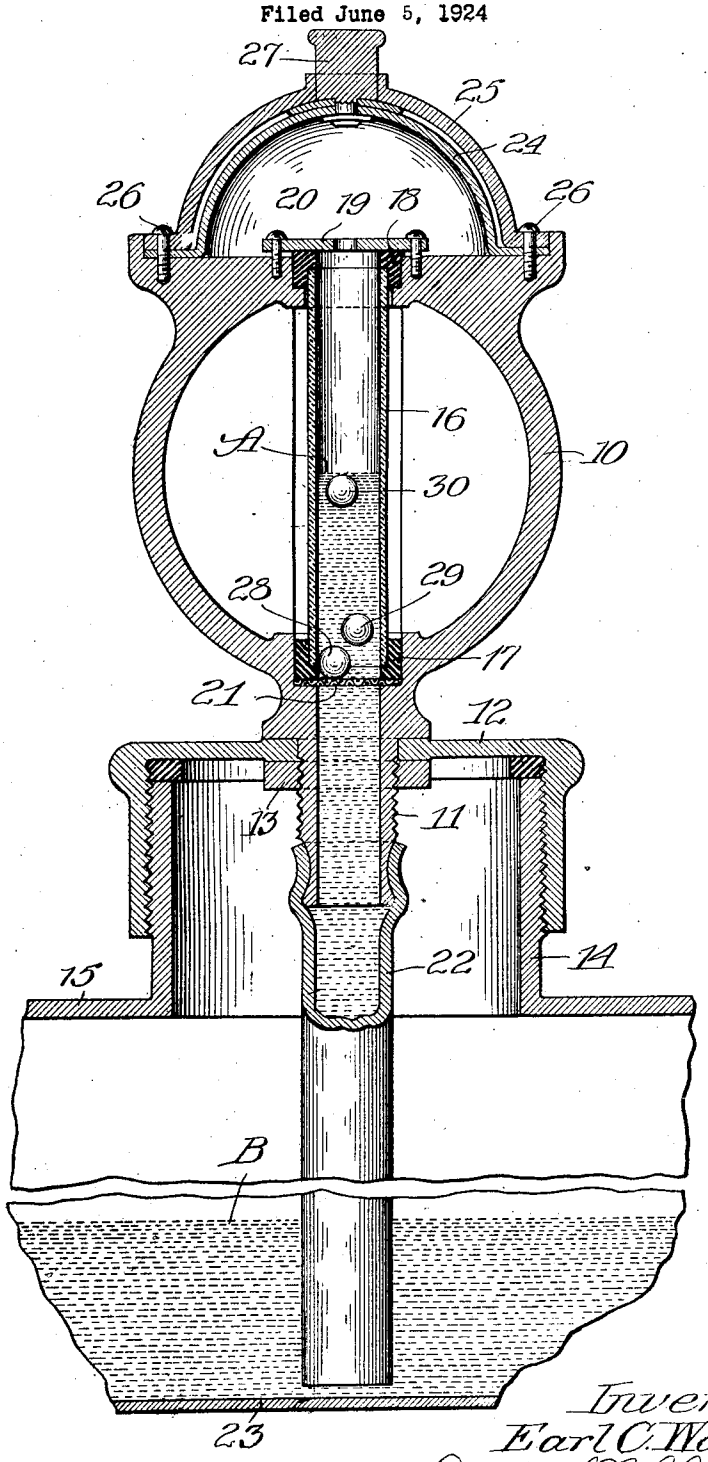
Oct. 6, 1925. 1,556,185

E. C. WALKER

INDICATOR FOR RADIATORS

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UNITED STATES PATENT OFFICE.

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INDICATOR FOR RADIATORS.

Application filed June 5, 1924. Serial No. 718,024.

To all whom it may concern:

Be it known that I, EARL C. WALKER, a citizen of the United States, residing at Canton, in the county of Fulton and State of Illinois, have invented a new and useful Improvement in Indicators for Radiators, of which the following is a specification.

This invention relates to an indicator for radiators and the like.

The primary object of the invention is to provide a means for indicating when the water in an automobile radiator falls below a predetermined level.

Another object is to provide a means for indicating when the water in the radiator is at or near the boiling point.

A further object is to provide a means for indicating the specific gravity of the cooling medium and more particularly to indicate approximately the percentage of alcohol in the mixture, all of these indicating means being distinctly visible to the driver while at his position at the wheel.

These and other objects are accomplished by this invention which is fully described in the following specification and shown in the accompanying drawing, in which—

The figure is a vertical section through the device as applied to the cap of a radiator.

The embodiment illustrated comprises a cast metal body 10 having a screw-threaded extension 11 passing through the radiator cap 12 and secured thereon by means of a nut 13. This cap is screwed on the nozzle 14 of the radiator 15.

The center of the body 10 is hollow and has a glass tube 16 secured therein, between rubber gaskets 17 and 18 so as to completely seal the joint between the ends of the tube and the metal frame, the upper gasket being secured by means of an apertured plate 19 and screws 20. A screen or perforated plate 21 is secured within the hollow body preferably beneath the gasket 17.

A tube 22 preferably of rubber is secured to the extension 11 and extends into the top of the radiator and terminates preferably just above the top 23 of the cooling core. A hemispherical rubber bulb 24 is secured to the upper portion of the body 10 by means of the guard 25 and screws 26 and has a button 27 secured thereto at its uper end which passes through an opening in the guard 25.

The operation of the device as described is as follows: With sufficient water in the radiator to come over the lower end of the tube 22, the operator may draw water up through the tube 22 and into the glass tube 16 by pressing on the button 27 so as to force air out of the tube 22, when on releasing the button water will be drawn up into the glass tube to a point indicated as A.

This water will remain in the tube until again discharged by pressure on the button 27 or until the water level B in the radiator falls below the lower end of the tube 22. Owing to the fact that this tube is made large enough so that capillary attraction will not retain the water in this tube, as soon as the water level falls below the end of the tube air will be admitted to the tube and the driver will be apprised of that fact by the sudden disappearance of the water from the glass tube 16.

If the water in the radiator is at or near the boiling point, more or less steam will be formed and this will be carried over into the top of the radiator in gulps which put variable pressures on the surface B of the water within the radiator, thereby causing the water level A to rise and fall rapidly. This will attract the attention of the driver and indicate to him that the engine is unduly hot.

A number of hydrometric floats or the like 28, 29 and 30 are placed in the glass tube above the screen 21. These are made with different specific gravities corresponding to definite mixtures of alcohol and water, such as commonly used as anti-freeze mixtures for automotive radiators. Thus the float 30 has a specific gravity corresponding to a mixture of 20% alcohol with water; the float 29 has a specific gravity corresponding to 30% alcoholic content, and the float 28 has a specific gravity corresponding to 40% alcohol.

It will thus be apparent that if all three floats sink in the fluid mixture or are submerged, the alcoholic content of said mixture is 40% or more; while if only one float, 28, is at the surface, the mixture contains between 30% and 40% alcohol; and if two floats, 28 and 29 are up while one, 30, is submerged, the alcoholic content is between 20% and 30%; but if all three floats are at the surface, it is an indication that the alcoholic content is 20% or less.

The freezing temperatures of water and

alcohol mixtures as specified above are approximately as follows:

20% alcohol freezes at 10° Fahrenheit.
30% alcohol freezes at 0° Fahrenheit.
40% alcohol freezes at −20° Fahrenheit.

The floats may be of different colors to assist in interpreting the readings.

It is understood that a standard hydrometer float, indexed for alcohol mixtures may be substituted for the floats if desired.

Aside from serving as hydrometers, these floats serve another purpose in that they make more visible the fluid in the indicator glass.

What I claim as new and desire to secure by Letters Patent is:

1. An indicator for automobile radiators comprising an open body for connection to the radiator, an indicator tube for communication with the cooling liquid of the radiator and for observation through the opening of the body, and a suction bulb marginally secured to the body adjacent the top thereof independently of the tube and outwardly of the latter and operable to elevate liquid from the radiator into the tube.

2. An indicator for automobile radiators comprising an open body for connection to the radiator, an indicator tube for communication with the cooling liquid of the radiator and for observation through the opening of the body, means providing a joint between the tube and body, a suction bulb marginally secured to the body adjacent the top thereof, independently of the tube and outwardly of the latter operable to elevate liquid from the radiator into the tube, specific gravity indicating means in said tube, and means secured at the said joint of said tube and body and maintained in place by the said joint to prevent displacement of the specific gravity indicating means from the tube.

EARL C. WALKER.