Oct. 31, 1950 R. H. KELLOGG 2,528,372

THERMAL LOCKING RADIATOR CAP

Filed June 6, 1945

Fig. 1.

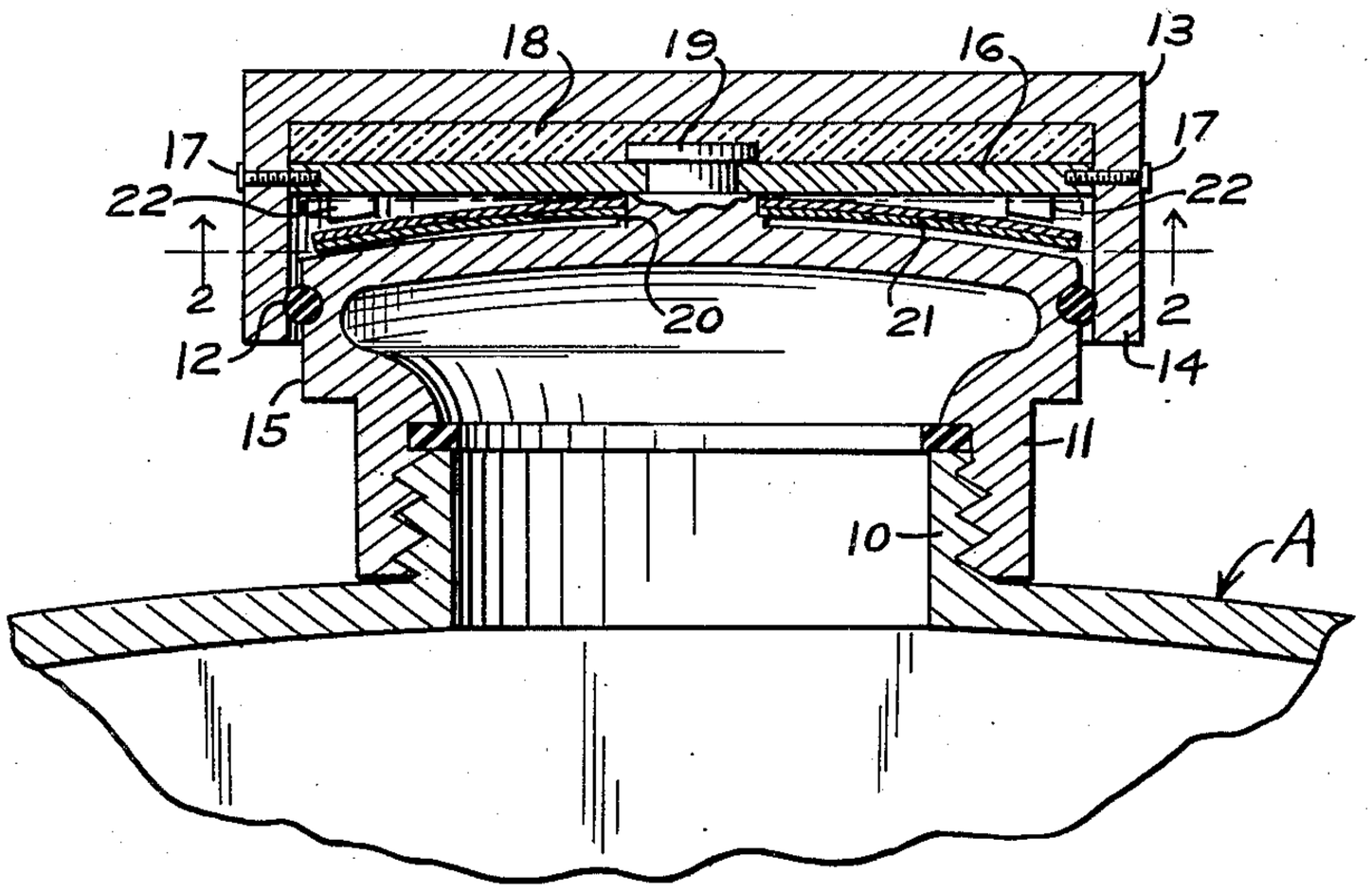
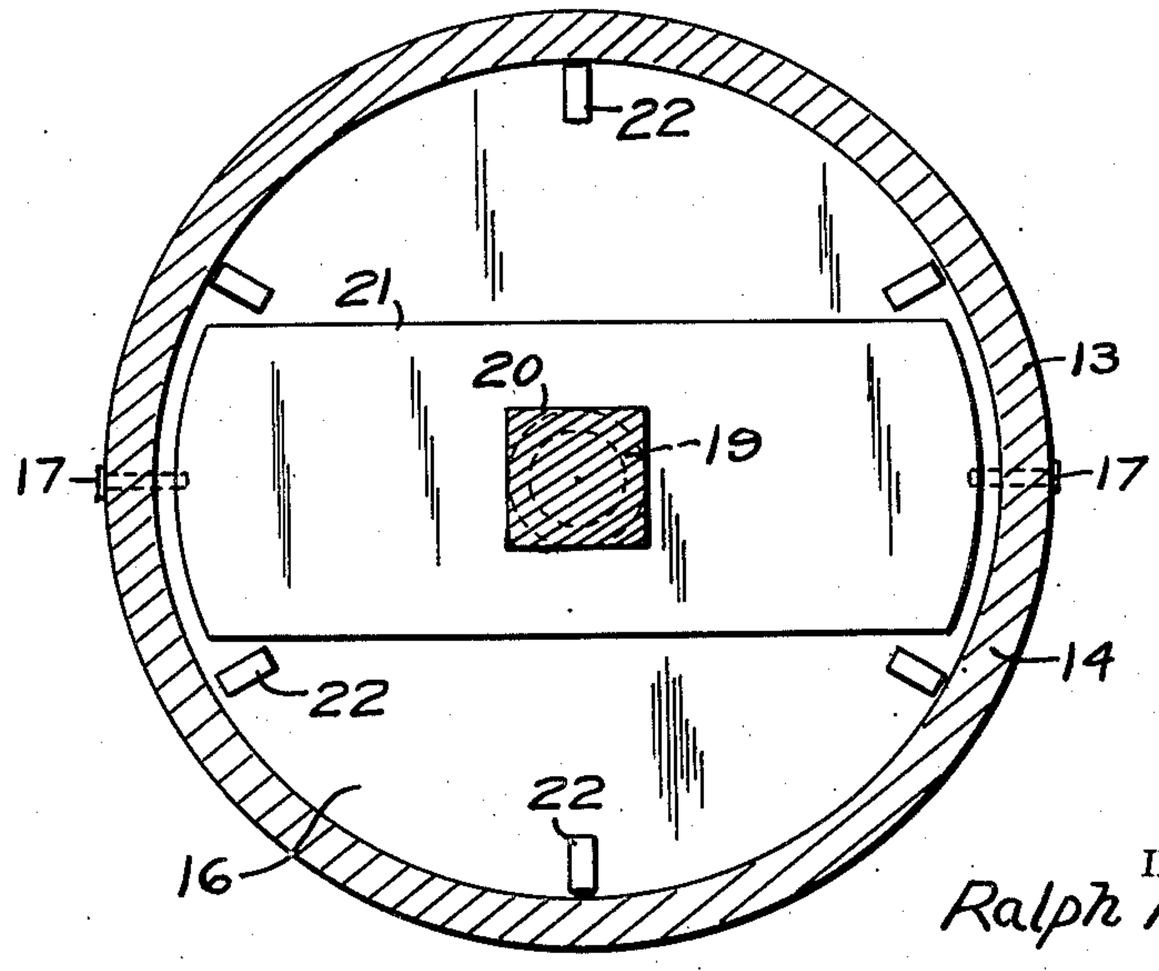


Fig. 2.



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THERMAL LOCKING RADIATOR CAP

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1 Claim. (Cl. 220—24)

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The invention relates to a radiator cap, and more especially to a thermo-locking radiator cap for automobiles.

The primary object of the invention is the provision of a cap of this character, wherein the water temperature within the radiator controls the locking of the cap on the latter until the water cools, and thereby protecting one from being burned by the hot water in an attempt to remove the cap from the radiator during the dangerous hot period of the water therein.

Another object of the invention is the provision of a cap of this character, wherein it is locked to the filling spout of the radiator under high water temperature therein, and in this manner eliminating removal of the cap during high temperature period, and thus avoiding resultant possible body injury to a person.

A further object of the invention is the provision of a cap of this character, wherein it is impossible to remove the same when high temperatures are present in a radiator, which might result in scalding, damage to the equipment of a motor vehicle or the like, the loss of cooling liquid, etc., and also eliminates the adding of cold liquid to an over-heated radiation system, thereby reducing the danger of cracking or damaging the cylinder heads, blocks or other parts of the vehicle, the cap being also useable as a closure member for a pressure cooling system in association with a pressure relief valve or the like.

A still further object of the invention is the provision of a cap of this character, which is simple in construction, thoroughly reliable and efficient in operation, strong, durable, neat in appearance, readily and easily applied, and inexpensive to manufacture and install.

With these and other objects in view, the invention consists in the features of construction, combination and arrangement of parts as will be hereinafter more fully described, illustrated in the accompanying drawing, which shows the preferred embodiment of the invention, and pointed out in the claim hereunto appended.

In the accompanying drawings:

Figure 1 is a fragmentary vertical sectional view through a radiator spout and screw cap therefor, showing the device constructed in accordance with the invention applied.

Figure 2 is a sectional view taken on the line 2—2 of Figure 1 looking in the direction of the arrows.

Similar reference characters indicate corresponding parts throughout the several views in the drawing.

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Referring to the drawing in detail, A designates generally a portion of a radiator, having as usual the externally threaded filling spout 10 fitted thereto, for a removable screw cap 11, which has seated in the inner periphery a ring-like gasket or packing band 12 of the resilient type. Adapted to be telescoped over this cap 11 is the device constituting the present invention.

The device forming the invention, comprises a capping body 13 having a marginal depending rim or flange 14 for encircling the outer peripheral edge 15 of the cap 11 carrying packing or band 12, effecting a fluid tight seal therebetween. This body 13 has within a locking plate or disk 16, which is secured fast for detachment by fasteners 17 to the rim or flange 14, while between this plate or disk 16 is a heat insulating packing 18, entirely covering such plate or disk.

Formed on the top of the cap 11 centrally thereof is a headed swivel lug 19, which rotatably couples the plate or disk 16 with the said cap, this lug 19 being formed with a flat-faced anchoring portion 20 next to the top of the said cap 11 for anchoring thereto of a bi-metal deflection catch or locking member 21 having a determined deflection ratio when subjected to heat, which under abnormal conditions is out of clutching engagement with keeper projections 22 formed on and depending from the lowermost face of the plate or disk 16, so that the capping body 13 is free for rotation independently of the cap 11, and thereby making it impossible to remove the latter from the spout. This unclutching action of the member 21 is brought about by high temperature existing within the radiator, and normally the said member is clutched with the said cap 11, so that by turning the body 13 the latter can be unscrewed or otherwise detached from the spout 10 for the removal of such cap.

The packing or band 12 does not interfere with the free rotation of the body 13 when the member 21 is unlatched or unclutched from the latter, but when this body 13 is locked or clutched with the cap 11 by turning the said body 13 the latter can be readily removed from the spout 10. The member 21 is temperature regulated for the locking and unlocking action thereof, it being flexed downwardly through high heat to release the same from the body 13 to free it from the cap 11, but this member 21 under low temperatures is locked with the said cap.

What is claimed is:

A device of the kind described, comprising a radiator cap, a central pivot means externally attached thereto, a cup-like body rotatably tele-

scoped onto the cap, a locking plate within and secured to said cup-like body and rotatably mounted on said pivot, projections on said plate, and depending from the lower face thereof, a thermo-controlled latch fixed to said pivot below said locking plate within said cup-like body and normally engaging said projections for preventing relative rotation between said cup-like body and said cap, but adapted to be disengaged from said projections when subjected to a predetermined temperature, thereby freeing said cup-like body for movement relative to said cap, a heat insulating layer within the body between the same and the locking plate, a packing means between said cap and said cup-like body, and means detachably securing said locking plate to said body.

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