Oct. 2, 1928. 1,685,846

W. R. HESLEWOOD

MOTOR METER

Filed Oct. 25, 1926

Fig. 1.

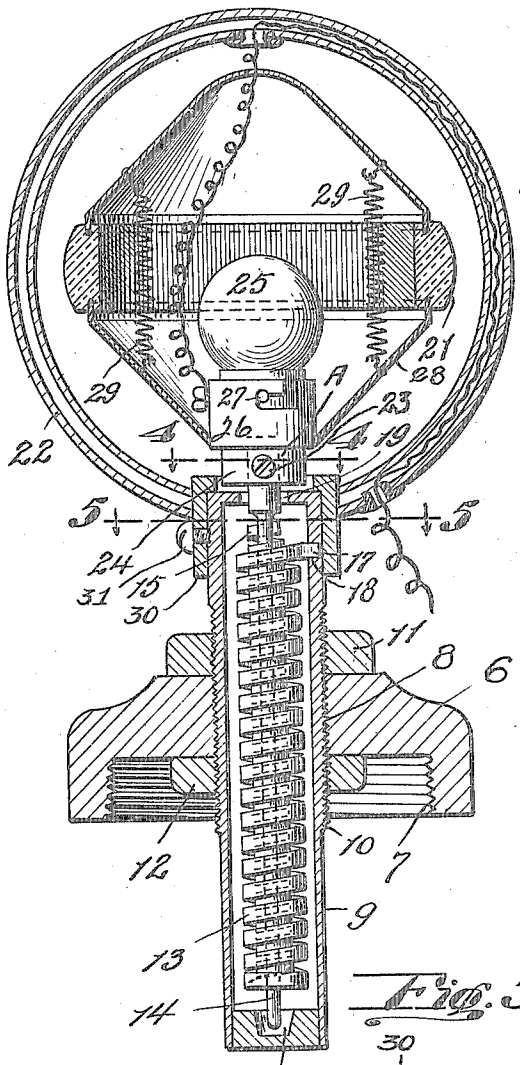


Fig. 2.

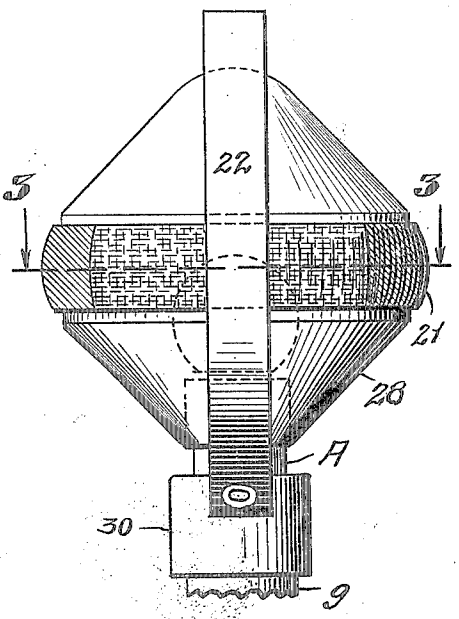


Fig. 3.

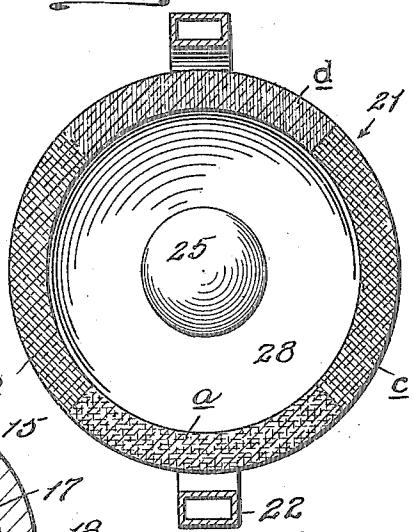


Fig. 4.

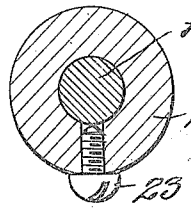
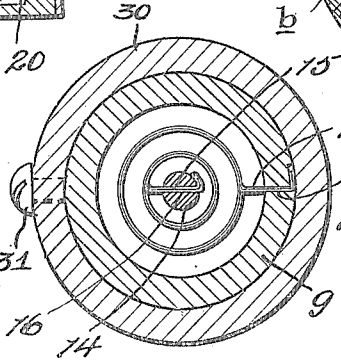


Fig. 5.



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UNITED STATES PATENT OFFICE.

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MOTOR METER.

Application filed October 25, 1926. Serial No. 143,961.

This invention relates to improvements in motor meters and more particularly to a device for use in connection with a water cooled, internal combustion, engine for indicating the temperature of the water.

The device of my invention is especially designed for employment upon automobiles and for installation in substitution for the ordinary cap at the filling opening of the radiator, where the device, as a whole, is best visible from the driver's seat and where the thermo-motive element, involved, may be most effectively located in the water cooling system.

Among the objects of my invention is to provide a device for indicating the temperature of the engine, which device is of simple, durable and inexpensive construction, and includes an indicia bearing element which is movable by thermostatic action and a fixed index device, both of which are fully exposed, and uncovered, whereby maximum legibility is obtained and whereby fouling as in glass encased instruments, is prevented.

My improvements consist in the novel construction, arrangement and combination of parts as hereinafter fully, clearly and concisely described, definitely pointed out in my claims, and illustrated by the accompanying drawing, (1 sheet) in which—

Fig. 1, is a vertical sectional elevation of a motor meter constructed in accordance with my invention.

Fig. 2, is a rear elevation of the device, as viewed from the driver's seat, or observing point.

Fig. 3, is a sectional plan-view as taken on the line 3—3 of Fig. 2.

Fig. 4, is an enlarged sectional plan-view as taken on the line indicated 4—4 of Fig. 1.

Fig. 5, is an enlarged sectional plan-view as taken on the line indicated 5—5 of Fig. 1.

Referring more specifically to the drawing 6 designates the supporting element for the device, as a whole, which is employed in substitution for the ordinary radiator cap, and to this end is provided with internal screw-threads, 7 for securement over the filling spout of a radiator. Centrally through the supporting element 6 there is formed a bore, or opening, 8 through which there is extended a barrel 9 which is fixed to the element 6 as by the external screw-threads 10 and retaining nuts 11 and 12.

Within the barrel 9 is a thermostatic element 13, which, as shown, and by preference, is constructed of two tapes, or ribbon-like metallic parts, which are relatively united; possess different co-expansive efficiencies and wound in a single length to form outer and inner helices, by which expedient there is obtained maximum deflection in a minimum of space.

Extended through the innermost helix, or coil, is a stem 14 to which the end 15, of the inner helix, is secured as by the extension of the end through a slot, or hole 16, formed through the stem. Similarly the end 17 of the outer helix is secured to the barrel as by its extension through a hole 18 formed through the barrel.

At the ends of the barrel there are guides 19 and 20, both of which loosely fit the stem and whose sole function is to limit lateral or non-aligned movements of the stem relative to the barrel.

Carried by the stem and rotatable therewith is an indicia bearing element 21 and secured to the fixed barrel is an index 22.

In order to adjustably set the indicia bearing element, relative to its thermostatically operated supporting stem, whereby compensation may be affected for uniform performance in varying climatic conditions, such for example as different altitudes, I provide a carrier A for the indicia bearing element which may be rotated about the stem and held in selected position as by a set-screw 23, as best shown in Fig. 4.

By preference, and as shown, the recited carrier A consists of a base element, or socket, 24 for an electric light bulb 25, a sleeve 26 secured to the socket as by a bayonet joint 27 and a cup-shaped, preferably of inverted frusto-conical form, shade, or screening casing 28, for the light bulb.

As best shown in Fig. 1, the complete screen-casing, or shade is sectional, that is comprises two cup-shaped parts of substantially identical configuration, whose contiguous margins form a holding means for the indicia bearing element and which casing elements are relatively secured as by the contractile coil springs 29.

By preference, and as shown the indicia bearing element 21 is formed as a translucent annulus, such as a ring of glass, having uniformly dimensioned sectors which are rendered relatively distinguishable as by colors. For example the sector *a*, which is normally

next the index 22 is colored orange, the next adjacent sectors *b* and *c* are colored green and the remote sector *d*, that is the one diametrically opposite the sector *a* colored red.

The index by preference, and as shown, comprises a sleeve, 30, for fitment over the fixed barrel, enclosing the thermostatic element, which sleeve is secured to the barrel, against rotation, as by a screw 31, and which carries, or supports, a substantially ring-shaped element which serves as the index and a protecting guard for the indicia bearing element. As shown the index and guard element may be a tubiform in which the wires for the light bulb may be strung.

For use upon automobiles the proportioning of the vari-colored sectors of the indicator is such that the lengths of the sector *a* will cover the range of temperature when the engine is idle, the lengths of the sectors *b* and *c* cover normal temperatures, when the engine is running and the length of the sector *d* provides a graded signal for the dangerous, "boiling" or overheated engine condition.

I claim:

1. A motor meter comprising a horizontally revoluble and hollow member consisting of separably secured sections and a translucent horizontal annulus, having readily distinguishable sectors, an illuminant within the hollow member, a thermostat for revolving the member, a fixed vertically disposed ring encircling said member constituting an index, and an electrical conductor carried by said ring and leading therefrom into said member at the top and axially thereof and connecting with said illuminant.

2. In a motor meter, a hollow indicator consisting of a translucent horizontal annulus having readily distinguishable sectors, said annulus having seats in its upper and lower sides respectively, concavo-convex shells adapted to seat in said seats and thus to co-operate with said annulus to form a hollow rotatable body, and means for detachably holding said shells in said seats.

3. In a motor meter, a hollow indicator consisting of a translucent horizontal annulus having readily distinguishable sectors, said annulus having seats in its upper and lower sides respectively, concavo-convex shells adapted to seat in said seats and thus to co-operate with said annulus to form a hollow rotatable body, and a tension spring within said hollow body having one end secured to one of said shells and the other end to the other shell normally to hold said shells seated in said seats.

In testimony whereof, I have affixed my signature.

WILLIAM R. HESLEWOOD.