Jan. 15, 1952 M. N. MIKULIC 2,582,880

CLEANING ACCESSORY FOR RADIATOR SYSTEMS

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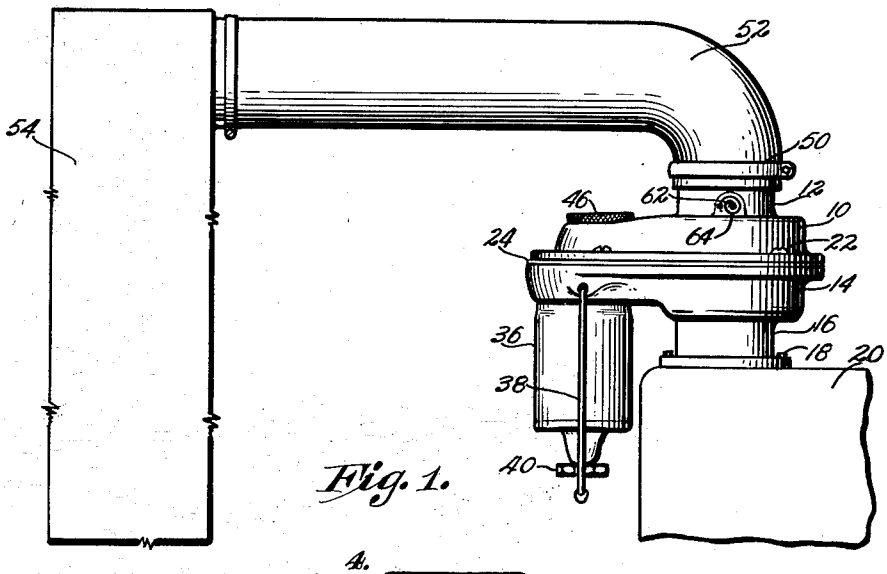


Fig. 1.

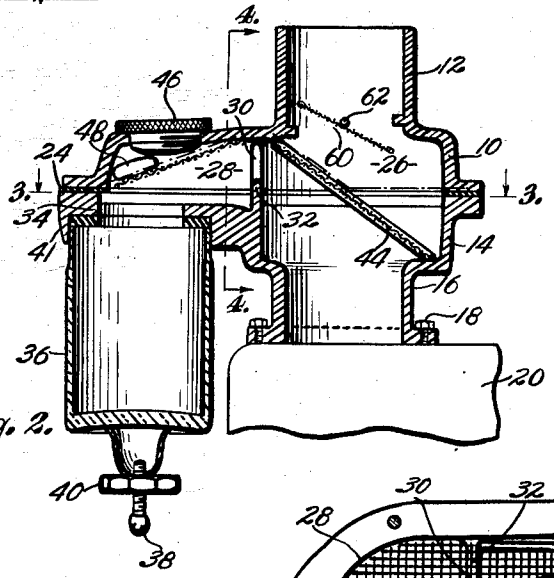


Fig. 2.

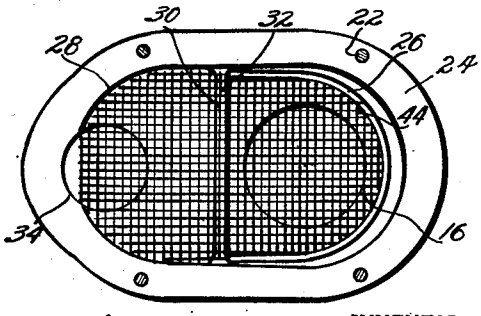


Fig. 3.

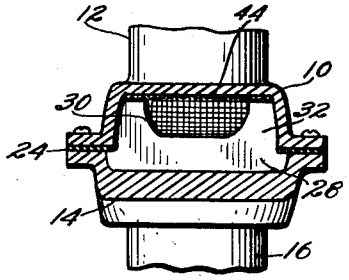


Fig. 4.

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CLEANING ACCESSORY FOR RADIATOR SYSTEMS

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1 Claim. (Cl. 210—165)

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The present invention relates to devices designed to remove foreign matter from the circulating medium of heating or cooling systems, such as the radiator equipment of automobiles and the like, with a view to promoting the efficiency of the function as regards the elimination of dirt, rust and other foreign matter or ingredients which obstruct the normal functioning of this type of equipment.

Accordingly, the primary object of the present invention is to provide a device of the character indicated having more effective means for the elimination of the objectionable foreign ingredients from the circulating flow or medium, and which is adapted to be conveniently assembled in operative relation between the motor and the radiator unit of the system to which the device is to be applied.

With the foregoing general object in view, the invention will now be described by reference to the accompanying drawing illustrating one type of construction of the device which has been found to be particularly efficient for the accomplishment of the purposes of the proposed improvements, after which those features and combinations deemed to be novel and patentable will be particularly set forth and claimed.

In the drawing:

Figure 1 is a view in elevation, illustrating the present improved type of device in its relation to an automobile engine and radiator assembly;

Figure 2 is a vertical sectional view of the device, as illustrated in Figure 1—on a larger scale; and

Figure 3 is a plan view of the parts of the structure looking down from the section line 3—3 as indicated in Figure 2; and

Figure 4 is a detail sectional view taken on the line 4—4 of Figure 2 and looking to the right in said Figure 2.

Referring now to the accompanying drawing in detail, the improved accessory appliance is illustrated as comprising a two-part casing structure, viz., an upper hollow casing member 10 formed with an outlet neck portion 12, and a lower casing section 14 formed with an intake neck portion 16 which is adapted to be attached—as indicated by screws 18, directly to the outlet of the cooling system of an automobile motor 20—as represented in Figure 1.

The casing sections 10—14 are secured together by means of screws 22, with an intervening gasket element 24, and together form a screening chamber 26 (Figure 2). The said casing sections 10—14 are also constructed to form an overflow chamber 28 communicating with

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the chamber 26 by way of a passage 30 overlying a baffle partition 32 projecting upward from the casing section 14 at one side of the chamber 26.

The overflow chamber 28 is provided with an outlet opening 34 for discharging waste matter accumulating in said chamber into a waste-receiving receptacle 36 which may be of glass or transparent material and adapted to be supported in receiving relation to said opening 34, by means of a suitable yoke device 38 and adjusting screw device 40—the upper ends of said yoke being detachably engaged in a conventional manner with the side margins of the casing section 14—as indicated in Figure 1—a suitable washer 41 being interposed between the upper margin of the receptacle 36 and said opening 34 as shown.

The baffle partition 32 serves as a support for the intermediate portion of a screen element 44, of appropriate gauge and designed to be positioned in oppositely inclined relation across the main liquid flow chamber 26 and the overflow chamber 28—as represented in Figure 2. The casing section 10 is further provided with a screw closure plug 46 to afford access to the chamber 28, as for the purpose of introducing a chemical tablet 48 (to serve as an anti-rust agent), as indicated in Figure 2.

In the illustrated construction, the outlet neck portion 12 of the device is designed to be secured (as by the conventional form of hose clamp 50) to the hose 52 leading to the usual radiator unit 54 of the power assembly.

In the circulation of the cooling medium through the improved device, from the motor to the said radiator unit, the liquid is effectively screened by the screen element 44 for the removal of impurities or other foreign matter, which is accordingly bypassed from the chamber 22 over the baffle partition 32 and through the bypass passage 30 into the overflow chamber 28 for discharge into the waste-receiving receptacle 36. At the same time the liquid flow medium is treated with the chemical agent by the dissolving of the chemical tablet 48 carried by the portion of the screen element 44 supported within said chamber 28—the resulting solution from which of course permeates both of the chambers 28 and 26, as a consequence of the circulation of said circulating medium.

Thus an efficient form of accessory unit is provided for accomplishing the desired purposes of the device, in connection with which it is found that a more effective operation is attained due to the angular position of the screening elements, which not only effectively intercept the liquid

flow by the screening action—i. e., for obstructing the passage of foreign matter, but also completely overcome the tendency of the screen mesh to become clogged with said foreign matter which in the usual position of the screen, at right angles to the direction of said flow, completely obstructs and stops further screening action and thus correspondingly interfering with any proper or efficient circulation of the liquid cooling medium.

Consequently, the operation of the improved construction not only serves to separate and completely remove the objectionable foreign material, but promotes the continuous normal and efficient operation of the fluid cooling medium without the intermittent interruptions for servicing attention as commonly experienced in installations employing the conventional type of screening and dirt-removing devices.

As waste matter accumulates in the waste-receiving receptacle **30**, this may be conveniently detached from time to time to dispose of the foreign material and restored to operative position in an obvious manner.

As illustrated in Figures 1 and 2, the present accessory device further makes use of a screen element **60** mounted on a transverse axis **62** across the neck portion **12** of the casing section **10** and associated with a conventional thermostatic control element **64**, whereby the angular or effective screening position of said element **60** is regulated automatically in accordance with the temperature conditions of the liquid cooling medium. Thus a secondary screening action is carried out automatically, in a manner supplemental to that effected by the action of the primary screening operation already described—in connection with the flow of the liquid cooling medium in its course from said accessory unit to the radiator unit **54**.

It will thus be apparent that I have devised a practical and efficient arrangement and construction for the embodiment of the various features of my invention as above set forth; and while I have illustrated and described what is now regarded as the preferred form of embodiment of the proposed accessory unit, I desire to be understood as reserving the right to make such changes and modifications therein as may fairly fall within the spirit and scope of my invention as defined by the appended claim.

What I claim is:

An accessory device for removing foreign matter from heating or cooling systems employing a liquid circulating medium, comprising means providing a screening chamber having a screening element positioned therein at an angle of less than ninety degrees to the main direction of the flow of the circulating medium through said chamber and also an overflow chamber communicating with said first chamber and provided with a discharge outlet for waste material and a similarly inclined screening element overlying said discharge outlet, said overflow chamber also having a closure-opening for the introduction of a chemical agent into said overflow chamber above the screening element therein.

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