

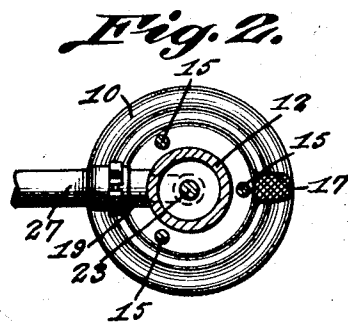
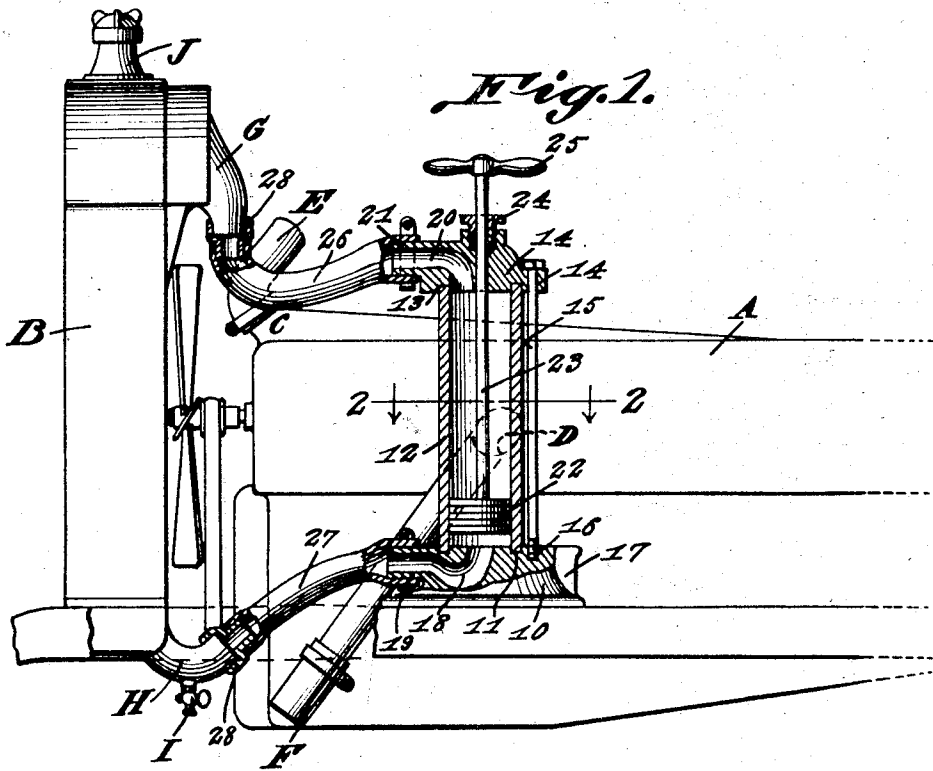
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ENGINE COOLING SYSTEM CLEANER

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ENGINE COOLING SYSTEM CLEANER

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This invention relates to accessories for use in connection with motor vehicles and the like and has for its general object the provision of a novel device by means of which water or a suitable cleansing solution may be positively forced through a radiator or water jacket of the engine of an automobile or the like for the purpose of removing sediment, scale and other encrustations which may form therein.

It is well known that after prolonged service the tubes or other water passages in a radiator and the water jacket of the motor, for instance in an automobile, become partly filled with foreign matter such as rust, dirt, scale and other similar deposits which, if left to remain, very frequently cause overheating of the motor on account of the fact that they interfere seriously with the water circulation and also occupy space which should properly be occupied by water itself.

Very frequently such foreign matter accumulates simply in the form of sediment in the water used. In other instances mud or the like accumulates owing to the use of dirty water under emergency conditions. At all times there is a certain amount of rust which forms and this rust will accumulate in time and occupy a sufficient portion of the space to detract from the circulation.

It is with all of the above facts in view that I have devised the present invention which has for an important object the provision of a pump device by means of which plain water or a chemical solution may be positively forced back and forth through the radiator and passages therein, or through the water jackets, without it being necessary to remove the radiator from the automobile.

An important object of the invention is to provide a device of this character which may be manufactured as a complete and separate entity and employed as an accessory simply by disconnecting the water inlet and outlet connections between the water jacket and the radiator and attaching the terminal elements which form a part of the device.

An additional object of the invention is to provide a device of this character which will be very simple and inexpensive to manufac-

ture, easy to use, positive in action, efficient and durable in service, and a general improvement in the art.

With the above and other objects and advantages in view, the invention preferably consists in the details of construction and the arrangement and combination of parts to be hereinafter more fully described and claimed, and illustrated in the accompanying drawings in which:—

Figure 1 is a vertical sectional view through the device, with certain parts thereof shown in elevation, illustrating it in applied position for effecting cleaning of an automobile radiator.

Figure 2 is a cross sectional view taken on the line 2—2 of Figure 1.

Referring more particularly to the drawing the letter A designates the engine of a motor vehicle and B represents the radiator. As is well known, the water jacket of the engine has an outlet and an inlet indicated at C and D respectively, these outlet and inlet connections being connected by hose members E and F with the inlet and outlet connections G and H of the radiator. The bottom connection H of the radiator, or the bottom portion of the radiator itself is customarily provided with a drain valve I.

In carrying out my invention I provide a pump device which includes a relatively heavy base 10 of any ordinary or preferred shape and here represented as provided in its top with an annular groove 11 receiving the lower end of a cylinder or barrel 12 which has its upper end similarly seated within a groove 13 in a cap or top piece 14. A plurality of vertically arranged tie rods 15 are provided passing through the edge portion of the cap or top 14 and threaded into suitable sockets 16 in the base. At one side the base is preferably provided with a projection or extension 17 upon which the operator may place his foot for the purpose of holding the device stationary during manipulation of the pump. The base is also formed with a passage 18 extending out through an extension 19 at one side, and the cap or top piece 14 is similarly provided with a passage 20 communicating with the interior of the cylinder or barrel and

extending out through a lateral extension 21. Reciprocable within the barrel or cylinder is a suitably packed piston 22 carried by a piston rod 23 slidable through the cap or top piece 14 and through an appropriate packing gland 24, the upper end of this rod having a handle 25 thereon of any desired size and shape.

Connected with the extension 21 is a flexible hose 26, and connected with the extension 19 is a similar hose 27, and both of these hose having detachably connected with the free ends thereof preferably soft rubber nipples 28 adapted to be frictionally engaged upon the inlet and outlet connections of the radiator or of the water jacket of the engine as the case may be.

In the use of the device, it is of course first necessary that the usual hose connections between the water jacket and the radiator be detached. The pump device is then placed in position with the terminal members 28 frictionally engaged upon the water inlet and outlet connections of the radiator or of the engine as the case may be. In the former instance, any desired solution or plain water may be introduced within the radiator through the usual filling neck J, subsequently to which the operator, while holding the pump down for example with his foot applied to the extension 17, grasps the handle 25 and reciprocates the piston 22. The result will be that the water or chemical solution within the radiator will be forced back and forth at every stroke of the piston 22. Quite naturally this will dislodge any accumulation of sediment, scale or other foreign matter so that after a very short time the valve I may be opened to permit the water and the foreign matter floating therein to drain off. In case it is desired to clean out the interior of the water jacket of the engine, the same action is followed except that the terminal members 28 must be connected with the inlet and outlet connections of the motor instead of with the radiator. While plain water is efficient it is of course obvious that there are many chemical solutions which will be more advantageous to use on account of the rapidity with which they dissolve or at least loosen scale and other foreign matter.

From the foregoing description and a study of the drawing it will be apparent that I have thus provided a very simple device by means of which undesired matter may be removed from automobile, truck and other radiators and from water jackets so that ample space will be left for the circulation of cooling water.

It is believed that the construction, operation, and advantages will be readily apparent to one skilled in the art without further explanation.

While I have shown and described the preferred embodiment of the invention, it should be understood that I reserve the right to make

all such changes in the form and construction of parts and the details, as well as the combination as will not depart from the spirit of the invention or the scope of the claim hereunto appended.

Having thus described the invention, I claim:—

An apparatus for cleansing an automobile radiator of accumulations by a repeated flow of cleansing fluid alternately in opposite directions in the radiator, which apparatus comprises a pump embodying a cylinder, a base supporting the cylinder in upright position and closing the lower end of the cylinder, a cap closing the upper end of the cylinder, a reciprocating piston fitting in the cylinder, a stem extending from the head of the piston through the cap and provided with a hand grip whereby the piston may be manually reciprocated, fluid conduits leading from the said base and the cap, a flexible hose connected at one end with each conduit, and means at the outer ends of the two hose for connection with the inlet and outlet connections of the radiator.

In testimony whereof I affix my signature.

JOHN J. LUDWIG.