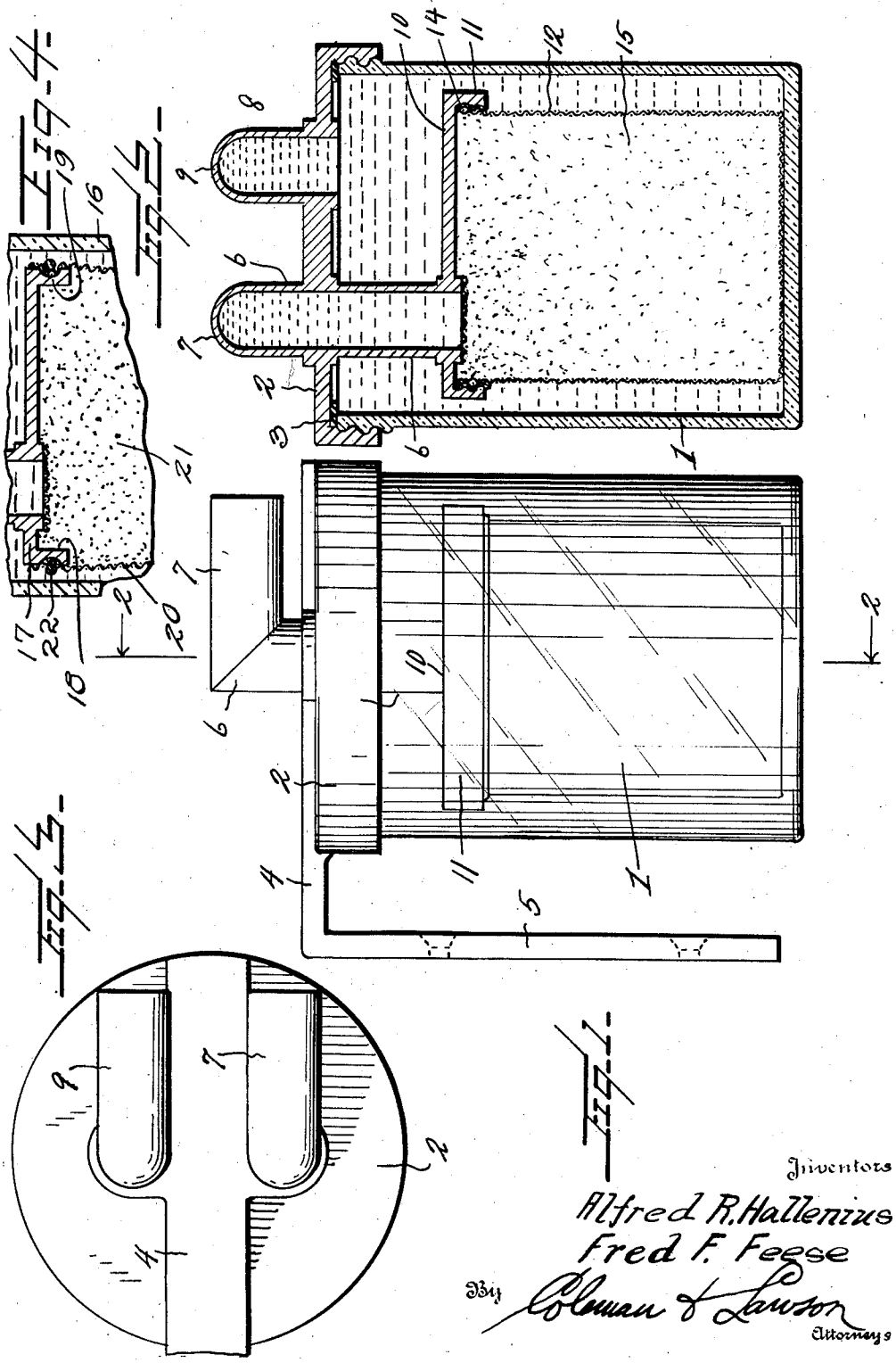
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WATER FILTER

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WATER FILTER

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This invention relates to a water filter, and has relation more particularly to a device of this kind for use in connection with an internal combustion engine, and it is primarily an object of the invention to provide a filter which operates to prevent rust, grease, dirt and other foreign matter from accumulating in the cooling system with resultant obstruction of the flow of the water through the system which would result in overheating of the engine.

It is also an object of the invention to provide a filter of this kind which includes the use of a water softening sand as a filtering media, and which sand effectively removes lime from the water and thereby eliminates deposit of lime in the radiator core passages, cylinder head, and water jacket which would otherwise obstruct the flow and which deposits would also impair the efficiency of the cooling action due to the fact that such lime deposits would constitute heat insulation.

The invention also has for an object to provide a filter of this kind which can be readily and quickly applied and which with equal facility can be effectively cleaned when desired.

The invention consists in the details of construction and in the combination and arrangement of the several parts of our improved water filter whereby certain important advantages are attained, as will be hereinafter more fully set forth.

In order that our invention may be the better understood, we will now proceed to describe the same with reference to the accompanying drawing, wherein—

Figure 1 is a view in side elevation of a filter constructed in accordance with an embodiment of our invention;

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

Figure 3 is a view in top plan of the device as illustrated in Figure 1 with a part broken away; and

Figure 4 is a fragmentary sectional view illustrating a modified form of invention.

As disclosed in the accompanying drawing, 1 denotes a container of desired capacity and which preferably constitutes a conventional glass jar having its top open and which open top is closed by a cover or top member 2. As herein disclosed, this cover or top member 2 threads upon the open end portion of the container 1 and within the cover or top member 2 is arranged a gasket 3 for contact with the open or top edge of the container 1 whereby is assured a water-tight seal when the cover or top member 2 is applied to the container 1.

The cover or top member 2 has formed therewith and extending outwardly and radially therefrom an arm 4 of desired length, and which arm 4 terminates in a depending bracket arm 5 whereby the filter as a unit may be readily mounted on the engine sides of the dash of a motor vehicle, on the engine or such other location as may be preferred. It is also to be stated that the cover or top member 2 and the arms 4 and 5 are preferably made of non-rusting material or plastic although, of course, we do not wish to limit ourselves in this respect.

Extending through the central portion of the cover or top member 2 and herein disclosed as integrally formed therewith is an outlet pipe 6. This pipe 6, when the cover or top member 2 is applied, extends a material distance within the container 1 and the outer end portion of the pipe 6 is continued by an angularly disposed pipe extension 7 to which is adapted to be coupled a hose which is also adapted to be coupled to the inlet of a water pump. This pipe 6 constitutes the outlet for the filter.

The cover or top member 2 to one side of the pipe 6 has disposed therethrough, and also disclosed as integrally formed therewith, a second or inlet pipe 8. This pipe 8 has its inner or under end terminating a material distance inwardly of the corresponding end of the pipe 6. The outer extremity of this pipe 8 is also provided with an angularly disposed pipe extension 9 to which is adapted to be coupled a second hose which is also adapted to be coupled to the rear water outlet on the cylinder head of an internal combustion engine. This pipe 8 constitutes the inlet for the filter. At this time it is to be stated that the source of water supply to which the pipe extension 9 is coupled or the point of delivery with which the pipe extension 7 is coupled forms no particular part of the invention as it is only necessary that such assembly be such as to allow for the desired flow of the water through the filter and, of course, through the cooling system.

The under portion of the pipe 6, at a point beyond the under free end of the pipe 8, is disposed through, and herein disclosed as integrally formed with, a circular plate or screen cover 10, the peripheral portion of which being defined by a continuous annular flange 11. The plate or cover 10 and flange 11 provide an inverted cup structure into which threads the upper or open

end portion of a filter bag 12. This bag 12 is of desired dimensions and is preferably made from a very fine mesh copper or brass screen. The upper or open end portion of this bag 12 has secured thereto a surrounding annular member 14 which has desired threading engagement with the flange 11 whereby the bag 12 is detachably yet effectively mounted.

The bag 12 is filled with a filtering media 15 which is preferably a water softening sand, the purpose of which being to remove lime from the water so that such lime will not be allowed to form in the radiator core passages, the cylinder head and the water jacket. By preventing such lime formation, which is a heat insulation, water is allowed to come in closer contact with the hot engine parts and thus much better dissipate the heat. Also, by removing the lime from the water, the water pump will last longer because the lime will not collect in the pump packing to cut the shaft with a resultant leak.

From the foregoing it is believed to be readily apparent that the filter as herein disclosed may be readily and quickly removed and applied, and that with equal facility the parts may be separated when it is desired to cleanse the filter or to recharge the bag 12.

It is also believed to be obvious that the filter as herein disclosed will operate effectively to remove grease and other foreign particles from the water, thereby eliminating the liability of the passages in the radiator core from becoming obstructed and the circulation of the water stopped. Also by removing the grease from the water the life of the water hoses is materially prolonged.

It is also to be pointed out that by using a water softening sand as the filtering media, there will be effected a scouring of the bag 12 by continuous shifting of the sand, and thus keeping the mesh of the bag 12 open.

In the embodiment of the invention as illustrated in Figure 4 of the drawing the container 16 is similar to the container 1 hereinbefore referred to, while the plate or cover 17 is also similar to the plate 10 except that the depending parallel flange 18 is provided therearound in its outer surface with a groove or channel 19. The open mouth portion of the cloth bag 20 for the filtering media 21 is engaged over the depending flange 19 and held thereto by the cord 22 or kindred flexible member.

From the foregoing description it is thought to be obvious that a water filter constructed in accordance with our invention is particularly well adapted for use by reason of the convenience and facility with which it may be assembled and operated.

We claim:

1. A filter unit including an outer receptacle and an inner strainer receptacle and a cast unitary structure comprising two superposed concentric cover plates, the upper plate being of greater diameter than the lower plate and adapted for detachable connection with the top of the outer receptacle to close the latter, the lower plate being extended into the outer receptacle to close the filter receptacle, a pipe forming a connecting means between the plates and opening through the lower plate into the receptacle and extending through the upper plate and a second pipe secured to the upper plate and opening therethrough into the outer receptacle and a mounting bracket joined to the upper plate and maintained in spaced relation with the outer side of the outer receptacle.

2. A filter unit comprising a receptacle, a top detachably secured thereto, an inlet pipe and an outlet pipe joined to and opening through the top, the outlet pipe extending through the top a substantial distance into the receptacle, a circular plate disposed within the receptacle and having the extended inner end of the outlet pipe secured thereto and opening therethrough, said circular plate having an encircling depending flange, a foraminous strainer receptacle having an open top disposed within and detachably secured to said plate flange, and the top, pipes and circular plate being cast as an integral unit.

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