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1,887,985

RADIATOR AND ENGINE JACKET CLEAN-OUT DEVICE

Filed Nov. 27, 1931

2 Sheets-Sheet 1

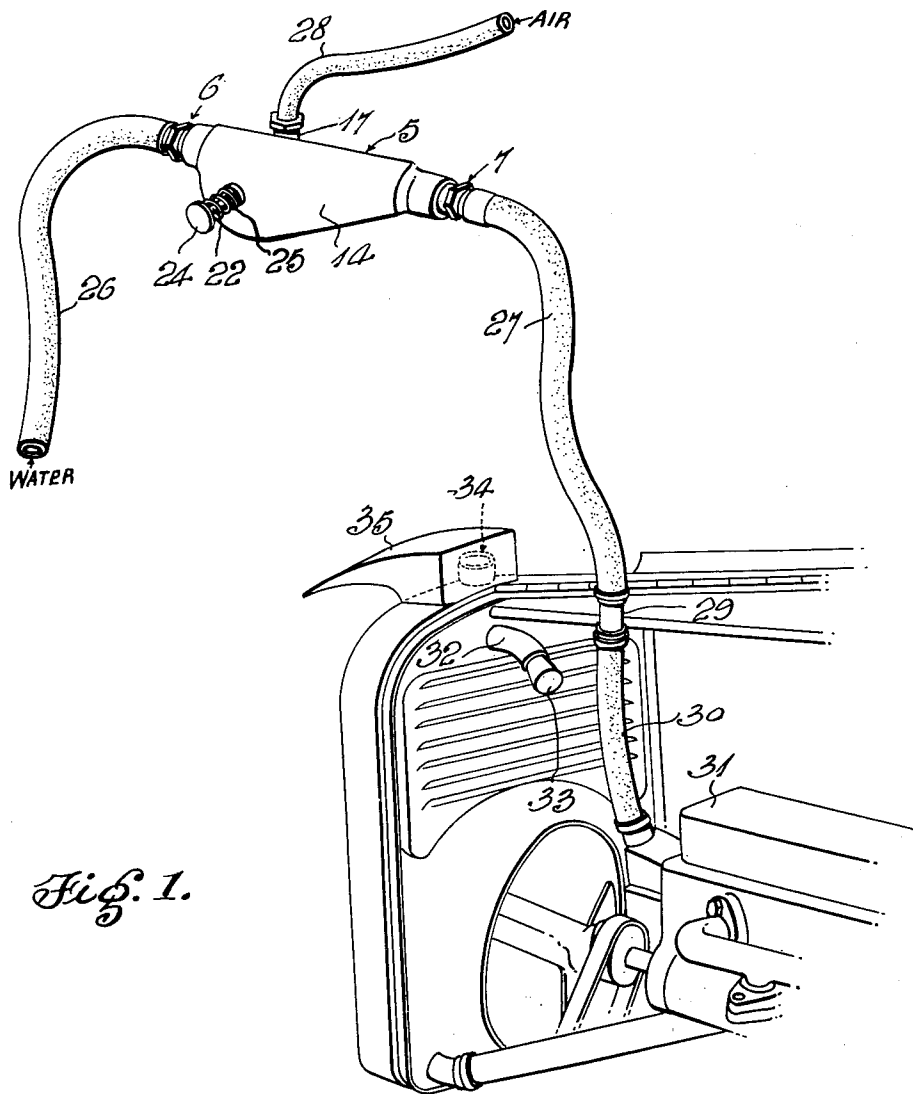


Fig. 1.

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Fig. 2.

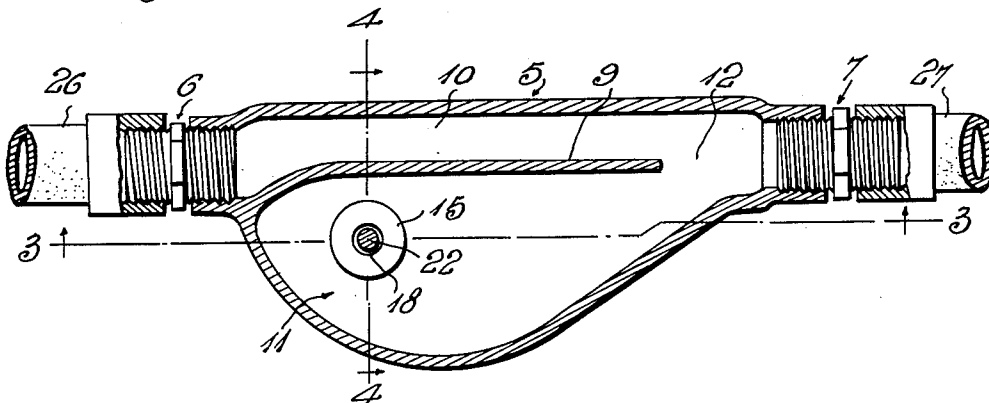


Fig. 3.

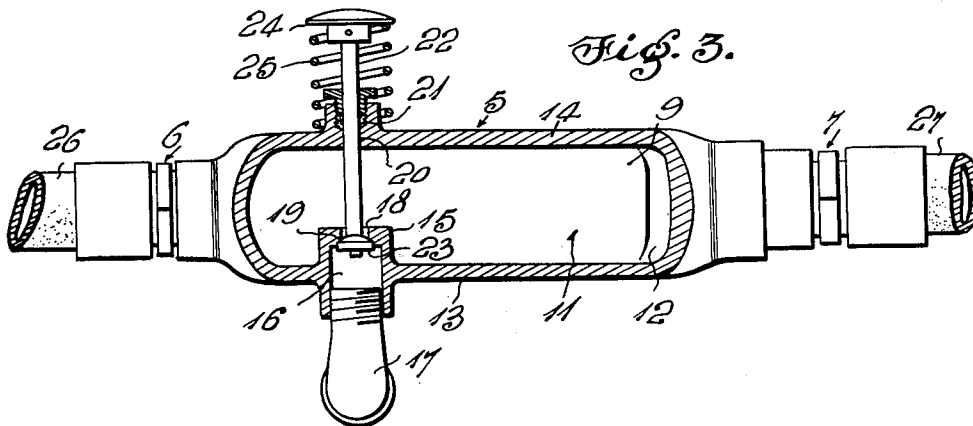
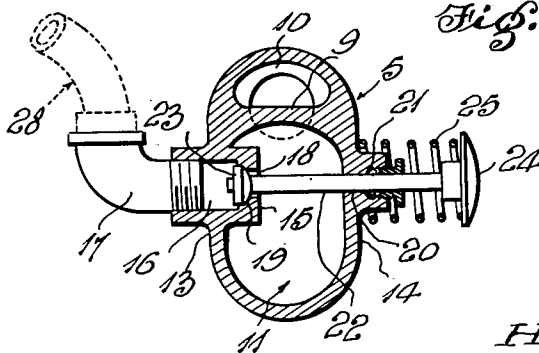


Fig. 4.



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UNITED STATES PATENT OFFICE

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RADIATOR AND ENGINE JACKET CLEAN-OUT DEVICE

Application filed November 27, 1931. Serial No. 577,828.

In cleaning the radiators and jackets of automobile and other internal combustion engines, it is customary to first place a quantity of scale loosening chemical in the water system and to later forcibly flush the system with water flowing reversely from the direction in which the water circulates in the cooling system, during use of the engine. While numerous guns and the like have been provided for directing the flushing water through the system under the influence of compressed air, the requisite amount of water pressure has been unobtainable with such contrivances. We have provided however, a novel device for attaining this end and such device has in practice proven much more efficient than pressure guns and the like which have heretofore been used. The present application seeks to protect the novel construction from which the advantages flow.

Fig. 1 is a perspective view showing the manner of using the improved device.

Fig. 2 is a longitudinal sectional view.

Fig. 3 is a longitudinal sectional view on line 3—3 of Fig. 2.

Fig. 4 is a transverse sectional view on line 4—4 of Fig. 2.

The exact construction illustrated, has proven to be advantageous from numerous standpoints, and while this construction is preferred and will be herein specifically described, it is to be understood that within the scope of the invention as claimed, minor variations may be made.

The gist of the invention resides in the construction of the elongated casing 5 and associated elements. This casing is preferably of semi-ovate shape, usually about ten inches long, four inches wide and two inches thick, said casing being cast in one piece, from aluminum or other desired metal. At its larger end, the casing 5 is provided with a water-admitting hose connection 6 and at its smaller end is provided with a water-emitting hose connection 7. The interior of the casing is divided by a longitudinal partition 9, into a water passage 10 and a relatively large water reservoir 11. The end of the passage 10 at the larger end of the casing 5, is in direct communication with the

water-admitting connection 6, while the corresponding end of the reservoir 11 is segregated from communication with said connection 6. The partition 9 terminates in inwardly spaced relation with the water-emitting connection 7, leaving an opening 12 through which the passage 10 and the reservoir 11 are in direct communication, at the ends thereof toward said hose connection 7. These ends of the passage 10 and reservoir 11 are in direct communication with the water-emitting connection 7.

The casing 5 is preferably provided with substantially flat side walls 13 and 14, and the wall 13 is provided near the end of the reservoir toward the connection 6, with an integral lateral enlargement 15 having an internal chamber 16. In the present showing, the enlargement 15 projects partly into the reservoir 11 and partly to the exterior of the casing 5. The outer end of this enlargement 15 is provided with a connection 17 for a compressed air line, and the inner end of said enlargement is formed with an opening 18 from the chamber 16 to the reservoir 11, and with an outwardly facing valve seat 19 around said opening. The side wall 14 is formed with an opening 20 in alignment with the opening 18 and preferably carries a stuffing box 21 at the outer end of said opening 20. A valve stem 22 passes snugly and slidably through the opening 20 and passes loosely through the opening 18, the inner end of said stem being provided with a valve 23 disposed in the chamber 16 and co-operable with the seat 19. A knob 24 is secured upon the outer end of the stem 22, and a coiled compression spring 25 acts at one end against said knob and at its other end against the casing 5, said spring serving to normally hold the stem 22 in the position which it occupies when the valve 23 is closed against the seat 19. By inwardly pressing upon the knob 24 however, the valve 23 may be easily opened.

A water supply hose 26 is coupled to the casing 5 by the hose connection 6, a water discharge hose 27 is coupled to said casing by the connection 7, and an air line 28 is coupled to the casing by the connection 17.

The free end of the hose 27 is provided with an adapter 29 receivable in the upper hose 30 of an internal combustion engine 31, when said hose 30 is uncoupled from the radiator neck 32. A suitable plug 33 is provided to close this neck after removal of the hose 30 therefrom, and as the reverse flow of water which is to be effected through the cooling system of the engine, will discharge through the conventional filling neck 34 of the radiator, a shield 35 is preferably employed to direct this water downwardly in front of said radiator. With the device connected with the engine as shown in Fig. 1, the water valve (not shown) controlling the hose 26, is opened, whereupon water flows through the hose 26, the casing 5 and the hose 27. Some of this water also fills the water reservoir 11 whose capacity may be substantially one pint. By now inwardly pushing upon the knob 24, the compressed air valve 23 is opened, with the result that the compressed air entering the reservoir 11, will forcibly discharge the water from the latter through the hose 27. This having been done, the valve 23 is allowed to close long enough for the reservoir 11 to refill, whereupon said valve is again opened. The water is thus caused to successively gush or lunge with unusual force, through the entire cooling system of the engine, and any sediment, scale or the like loosened by the previously used chemical, will be effectively discharged. The compressed air is of course at a much higher pressure than the water and hence while the air is discharging the water from the reservoir 11, the pressure holds back the water which would otherwise enter through the hose 26. This action is distinctly different from a number of guns which have heretofore been employed, in which a stream of compressed air has been employed to mix with and hasten the flow of water through the entire clean-out device, more or less of a spray of water which is relatively inefficient, being discharged by such guns.

What is claimed is:—

A radiator clean-out device comprising a straight horizontal top wall, a downwardly bowed lower wall and opposed side walls jointly forming a semi-ovate casing, a water-admitting hose connection in the larger end of said casing immediately under said top wall, a water-emitting hose connection in the smaller end of said casing immediately under said top wall, said connections being alined, a horizontal partition extending transversely throughout the width of the casing and extending longitudinally from a point immediately below said water-admitting connection to a point spaced inwardly from said water-emitting connection, said partition dividing the interior of said casing into an upper straight water passage

and a lower semi-ovate chamber adapted to fill with water from said passage, and a valved compressed air inlet into the larger end of said chamber.

In testimony whereof we affix our signatures.

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