W. R. JOHNSTON.

ATTACHMENT FOR AUTOMOBILE RADIATORS.

APPLICATION FILED JUNE 2, 1916.

1,275,441. Patented Aug. 13, 1918.

Fig. 1.

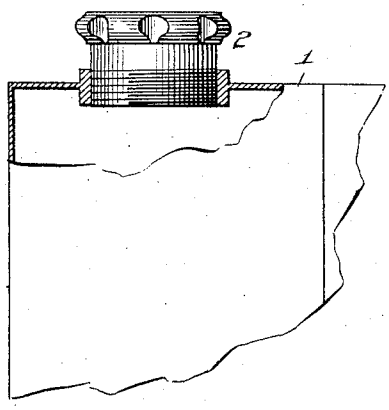


Fig. 2.

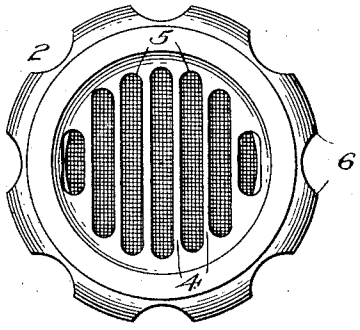


Fig. 3.

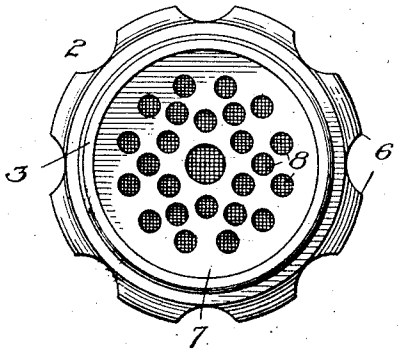
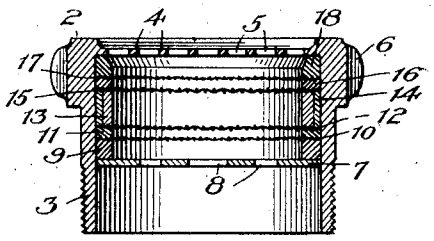


Fig. 4.



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ATTACHMENT FOR AUTOMOBILE-RADIATORS.

1,275,441. Specification of Letters Patent. Patented Aug. 13, 1918.

Application filed June 2, 1916. Serial No. 101,389.

To all whom it may concern:

Be it known that I, WILLIAM R. JOHNSTON, a citizen of the United States, residing at Eagle Rock, in the county of Los Angeles and State of California, have invented certain new and useful Improvements in Attachments for Automobile-Radiators, of which the following is a specification.

The object of this invention is to provide an attachment or vent device to be applied to the unchanged common radiators of water-cooled automobiles for rapidly eliminating heat, thus avoiding overheating the water and the many disagreeable and dangerous possible consequences. The device involves substituting for the usual cap for the filling opening a device which at all times allows rapid escape of gaseous fluid while practically preventing the passage of liquid.

It is, of course, well known that a great amount of heat becomes latent in the conversion of water at 212° F. into steam at nearly the same temperature, and by discharging this steam as fast as it is formed a great amount of heat is eliminated, pressure in the radiator is prevented, and if at the same time water is prevented from passing there is no possibility of serious burns such as often follow unscrewing the cap of an overheated radiator.

In the accompanying drawings,

Figure 1 shows my devices in position on a radiator.

Fig. 2 is a plan view of the vent device.

Fig. 3 is a bottom plan view of the same devices.

Fig. 4 is a diametrical section of the devices.

In these figures, 1 represents a portion of a common radiator, and 2 my vent device.

The body of the device consists of a tube 3 threaded at its lower end for engagement with the radiator as the ordinary cap engages, the threads in this instance being shown as external. Across the upper or outer end of the tube extend parallel bars 4, spaced to form slots 5. The outer end of the tube is provided with a corrugated flange 6 to facilitate screwing it into place. Within the tube preferably slightly above the threaded portion is fixed a transverse metal plate 7 provided with numerous holes 8 whereby it is adapted to break up and neutralize largely the momentum of any body of water thrown against it. Above the plate and spaced from it by an annular washer 9 is a wire gauze diaphragm 10 upon which rests an annular washer 11 supporting a textile diaphragm 12, and upon the latter rests an inner tube 13 of metal, preferably separated from the body of the tube 3 by a fiber tube or sleeve 14. Upon the upper end of the tube rests a second fabric diaphragm 15 separated by an annular washer 16 from a second wire gauze disk 17 between which and the bars 4 lies an annular washer 18. All these diaphragms and intervening parts are firmly pressed together and secured in such manner that they cannot move or be separated except by design.

The outer wire gauze sheet lies a little within the plane of the bars 4 so that the latter do not obstruct any portion of it, and so that a brush may reach it. Any collected dust may be removed by detaching the structure from the radiator and brushing the outer gauze while the structure is inverted in water. This, however, is rarely necessary even in desert country where the device has been mostly used.

It is to be noted that the tube 3 is so large that under the very slight internal pressure steam and vapor at all times escape as fast as they are formed, the outlet never being closed and in fact without provision for closing, so that it cannot be closed by inadvertence. It may also be observed that for replenishing with water the vent is as easily removed as a cap. Water poured into the slots would, of course, slowly leak inward, but it is not practicable to refill in this manner.

What I claim is:

1. The combination with an automobile radiator provided with a large vent opening to the atmosphere, of a plurality of materially separated foraminous diaphragms extending across said opening and having their numerous passages of such size as to bar material escape of liquid from the radiator while allowing steam and vapor to pass out as fast as they may be formed therein, whereby steam and hot vapor are never long retained and hot water is never permitted to escape in any material quantity.

2. In vent devices for radiators of water cooled automobile engines, the combination with a radiator having a suitable opening above the water line, of a series of alternating wire gauze and filamentary diaphragms extending across the opening and adapted to allow steam to escape directly to the open

air as fast as it may form and to prevent the escape of any stream of water.

3. The combination with a radiator for water cooling automobile engines, of a large vent tube outwardly barred by heavy metal openwork, and a foraminous structure extending across the tube at some distance inward from the openwork and adapted to allow steam to escape as fast as it may form directly to the open air and to prevent the escape of any stream of water.

4. The combination with a radiator for water cooling automobile engines, of a large removable vent tube therefor, a series of alternating wire gauze diaphragms and filamentary diaphragms extending across the middle portion of the tube and adapted in size and character to permit steam to escape as fast as it may form and to bar the passage of any stream of water, a heavy foraminous metal sheet spaced from the inner of said diaphragms, and heavy metal bars spaced from the outer of said diaphragms and adapted to permit brushing it from the exterior.

In testimony whereof I affix my signature.

WILLIAM R. JOHNSTON.