

J. C. DAVIS.
RADIATOR COOLING CAP.
APPLICATION FILED MAR. 29, 1920.

1,371,669.

Patented Mar. 15, 1921.

Fig. 1.

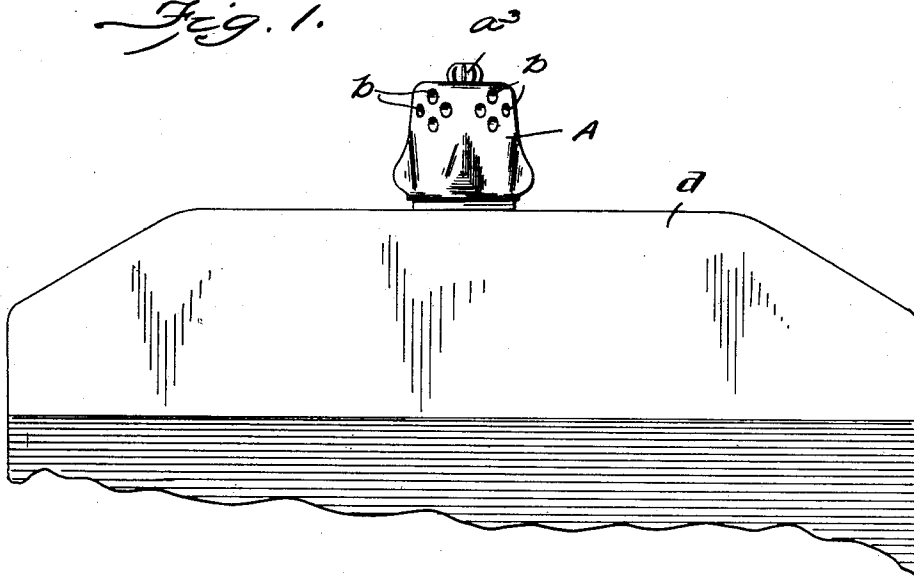


Fig. 2.

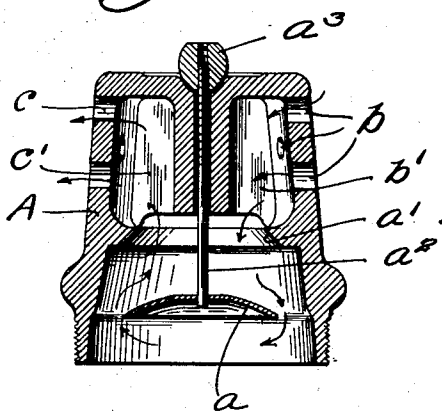
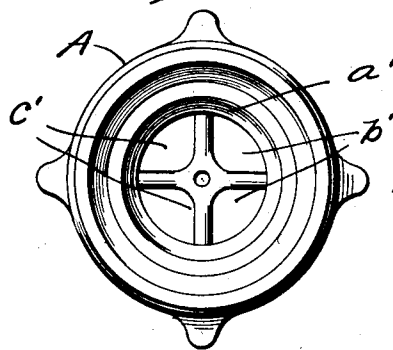


Fig. 3.



John C. Davis INVENTOR.

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UNITED STATES PATENT OFFICE.

JOHN CARSON DAVIS, OF OTTUMWA, IOWA.

RADIATOR COOLING-CAP.

1,371,669.

Specification of Letters Patent.

Patented Mar. 15, 1921.

Application filed March 29, 1920. Serial No. 369,777.

To all whom it may concern:

Be it known that I, JOHN CARSON DAVIS, a citizen of the United States, residing at Ottumwa, in the county of Wapello and State of Iowa, have invented certain new and useful Improvements in Radiator Cooling-Caps, of which the following is a specification.

My invention relates to improvements in radiator cooling caps.

The object of this cap is to provide means by which the water in the engine radiator of an automobile, truck tractor, aeroplane or the like, may obtain cool air and pass off hot air or vapor; thus keeping the water below the boiling point.

My device is so constructed that when operating, cool air enters at the front (direction in which radiator is passing through the air) by means of openings, provided for this purpose; descends through one or more passages, to the hot water in the radiator; cooling the said water and forcing out the hot air or vapor. As hot air, vapor and gases tend to rise, there have been provided one or more vertical passages for the ascension of said gases. There are openings in the back of the cap which enter said vertical passages, allowing the exit of the hot gases. The exit of the gases is accelerated by the vacuum-suction which always follows in the wake of a moving body (this vacuum becomes greater as speed is attained) and also by the descent of cool air previously mentioned and in addition by the well known rising propensity of gases.

This continuous stream of cool air into the radiator chamber tends to keep the water from boiling and steam from forming, thus the engine is kept from getting too hot and the water is not decreased in volume by boiling.

To prevent the water from being lost by splashing out I have provided a valve which is closed by a splash of water but which is so nicely arranged that it will reopen immediately thereafter (by gravity) so as to in no material way interfere with the above mentioned cooling entrance of air or exit of gases.

It will be seen from the above, that my device prevents the loss of water from the radiator by boiling or splashing out through the cap; at the same time adding greatly to the efficiency of the engine by keeping it at an even temperature.

In the accompanying drawings: Figure 1, represents an elevation of my device as applied to a radiator. Fig. 2, is a vertical cross section, showing interior construction of my cooling cap and Fig. 3 is a bottom plan view of the cooling cap with the splash valve removed.

Referring more particularly to the drawings: A, represents the cooling cap; *a* the splash valve; *a*¹ the splash valve seat; *a*² the splash valve stem; *a*³ nut on valve stem; *b* the intake opening or openings; *b*¹ the intake passage or passages; *c* the exit opening or openings; *c*¹ exit passage or passages and *d* the radiator. Arrows indicate the current of flow of the cooling air and the exit of hot gases.

From the above it will be seen that the splash valve *a* is normally in an open position; this valve being attached to a stem which passes vertically through the body of the cooling cap and supported in its normal open position by a nut *a*³ or other supporting attachment.

In cold weather the splash valve may be held closed by setting-up on the nut *a*³, thus excluding the cold air.

Claims:

1. A radiator cap for internal combustion engines comprising a body portion formed with two or more vertical passages; openings through said body portion direct to said passages for admission and exit of air and a splash valve to prevent the loss of water.

2. A radiator cooling cap containing a plurality of passages; openings into a radiator chamber and other openings respectively to the front and rear of said cap and a splash valve vertically suspended in a normally open position, operating to close said passages thereby preventing water loss through said passage.

3. A radiator cap having a series of lateral openings, a series of vertically disposed passages communicating with said openings, and a splash valve connecting said passage ways with the radiator said valve being normally open and operated to close by the splash of water.

In testimony whereof I affix my signature in the presence of two witnesses.

JOHN CARSON DAVIS.

Witnesses:

H. E. HANSEL,
DORRAN E. SMITH.