

July 16, 1929.

E. BUGATTI

1,721,331

FLOAT VALVE FOR AUTOMOBILE RADIATORS

Filed Sept. 27, 1928

Fig. 2

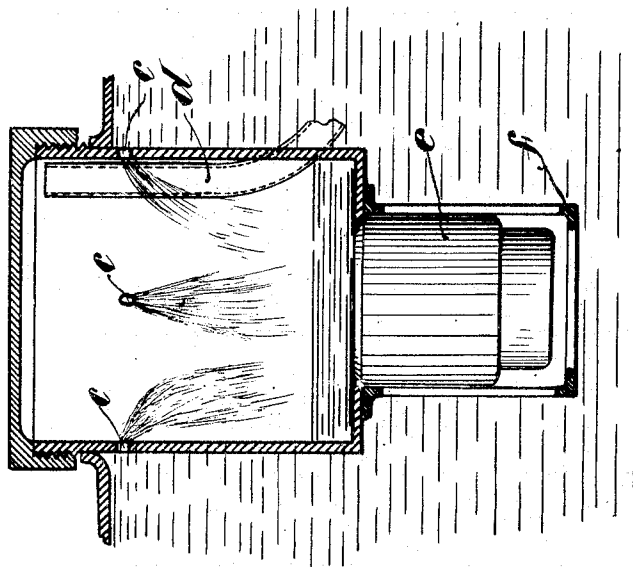
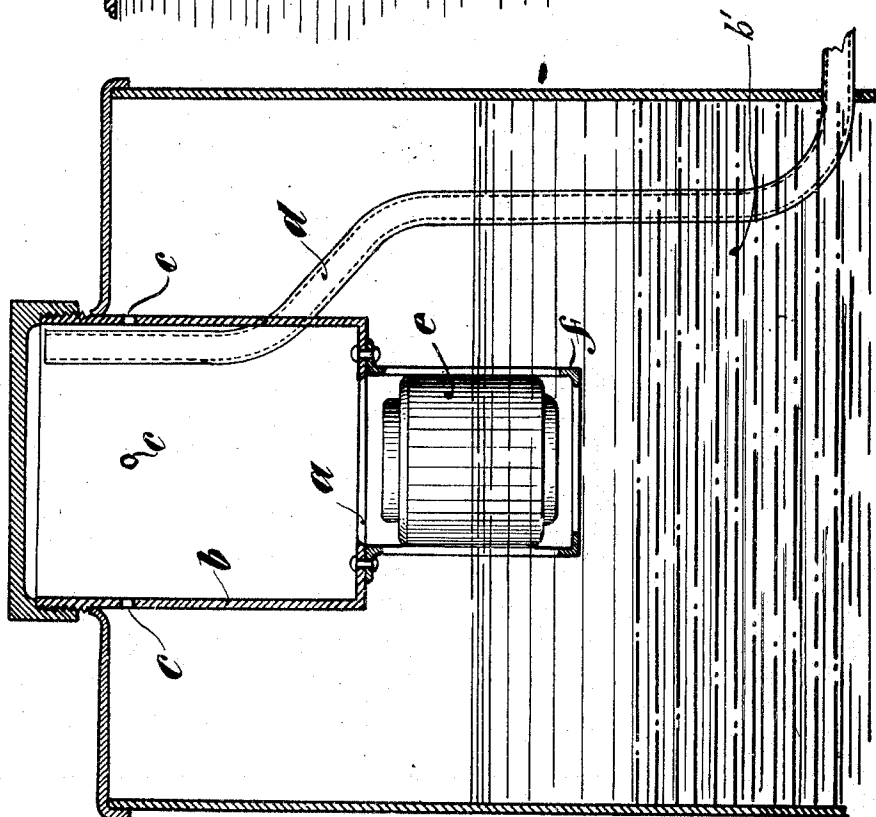


Fig. 1



Inventor: -
Ettore Bugatti
By Mauro & Lewis
Attorneys

UNITED STATES PATENT OFFICE.

ETTORE BUGATTI, OF MOLSHEIM, FRANCE.

FLOAT VALVE FOR AUTOMOBILE RADIATORS.

Application filed September 27, 1928, Serial No. 308,741, and in France November 24, 1927.

My invention relates to a device for automatically controlling the water in radiators for internal combustion engines.

As is known in the art, almost all automobile radiators are arranged in such a way that they cannot build up pressure in the interior of the radiator and for this purpose they are provided at their upper part with an overflow pipe from which the expanding water or steam when it forms is enabled to escape.

When an automobile is running at very high speed and the brakes are applied, the water in the cylinders by its inertia, becomes suddenly thrown to the front of the radiator. Furthermore, when the brakes are applied, the gas is turned off and the clutch disengaged, and since the motor suddenly slows up and the water circulating pump nearly comes to a stop, the water which is above the pump continues its movement by its kinetic energy and accumulates in the lower part of the radiator, which no longer responds to the suction produced at its upper part by the pump, which suction aided the water to pass quickly through the honey-comb sections.

All these phenomena taking place simultaneously, produce a sudden congestion in the upper part of the radiator in such a way that the water tends to flood the over-flow pipe, and since these phenomena are frequently repeated during a trip, considerable loss in water takes place.

My invention has for an object to eliminate this disadvantage entirely and consists essentially in providing a water controlling device with a float acting as a valve suitably disposed at the upper part of the radiator.

The following description when taken in connection with the accompanying drawing, by way of example, will readily reveal to those skilled in the art how the invention is carried into practice.

In the drawing—

Fig. 1 is a fragmentary section through a radiator with my invention applied; and

Fig. 2 is a sectional detail similar to Fig. 1 showing the position of the parts during water congestion.

According to my invention, the water filling neck or spout *b* is provided at its lower end with a large opening *a*, through which filling of the radiator takes place, the cooling elements, such as a honey-comb section, being represented conventionally at *b*¹ in the form of dot and dash lines, (Fig. 1). Beneath said opening *a* is disposed a float *c*, guided by a

perforate housing *f*. At *d* is shown the over-flow pipe for placing the radiator in communication with the atmosphere and which also serves the purpose of evacuating steam when it forms.

Near the top of the spout *b* are provided small holes *e* which establish communication between the interior of the spout and the radiator and hence communication between the radiator and the atmosphere.

As long as the level of water is normal (Fig. 1), the float *c* leaves the communication *a* of spout *b* open. When a congestion of water is produced (Fig. 2), the level of water rises suddenly to the top of the radiator and establishes immediate closure of the opening *a* through the float *c* which thus serves as an automatic valve.

Under these conditions, the water cannot enter the spout *b* through the opening *a* and consequently is prevented from leaving through the over-flow pipe *d*. The holes *e* prevent the communication between the radiator from becoming cut off and allow water to escape into the spout *b*, but since the holes *e* are relatively small and the period of the congestion is rather brief, the level in the spout *b* will never attain the over-flow pipe and as soon as the equilibrium is reestablished in the water of the radiator, the float *c* will drop and allow the slight amount of water accumulated in the spout to enter the radiator.

While I have described what I deem to be the preferred form of my device I do not wish to be limited thereto as there might be various changes made in the arrangement and construction of parts without departing from the spirit of my invention as comprehended within the scope of the appended claims.

Having described my invention, what I claim as new and desire to secure by Letters Patent is—

1. A safety device for radiators of the type described, comprising a filling spout, an over-flow pipe extending into said spout, a plurality of small openings formed in said spout adjacent the top thereof adapted to establish communication between the interior of said radiator and said spout, and means responsive to the rise of water in said radiator for cutting off communication of said spout with said radiator for the purpose disclosed.

2. A safety device for radiators of the type described, comprising a filling spout, an over-flow pipe extending into said spout, a plurality of small openings formed in said spout ad-

5 jacent the top thereof adapted to establish communication between the interior of said radiator and said spout, and a float valve adapted to close the end of said spout upon a rise of water in said radiator for the purpose disclosed.

10 3. A safety device for radiators of the type described, comprising a filling spout extending into said radiator, an over-flow pipe extending into said spout, a plurality of small openings formed in said spout adjacent the top thereof adapted to establish communication between the interior of said radiator and said spout, and a float valve adapted to close
15 the end of said filling spout upon a rise of water therein for the purpose disclosed.

4. A safety device for radiators of the type described, comprising a filling spout extending into said radiator, an over-flow pipe extending into said spout, a plurality of small openings formed in said spout adjacent the top thereof adapted to establish communication between the interior of said radiator and said spout, a perforate sleeve secured beneath said spout, a valve seat formed in the lower end of said spout, and a float slidably mounted in said perforate sleeve adapted to contact with said valve seat upon a rise of water in said sleeve for the purpose disclosed.

In testimony whereof I have signed this specification. 30

ETTORE BUGATTI.