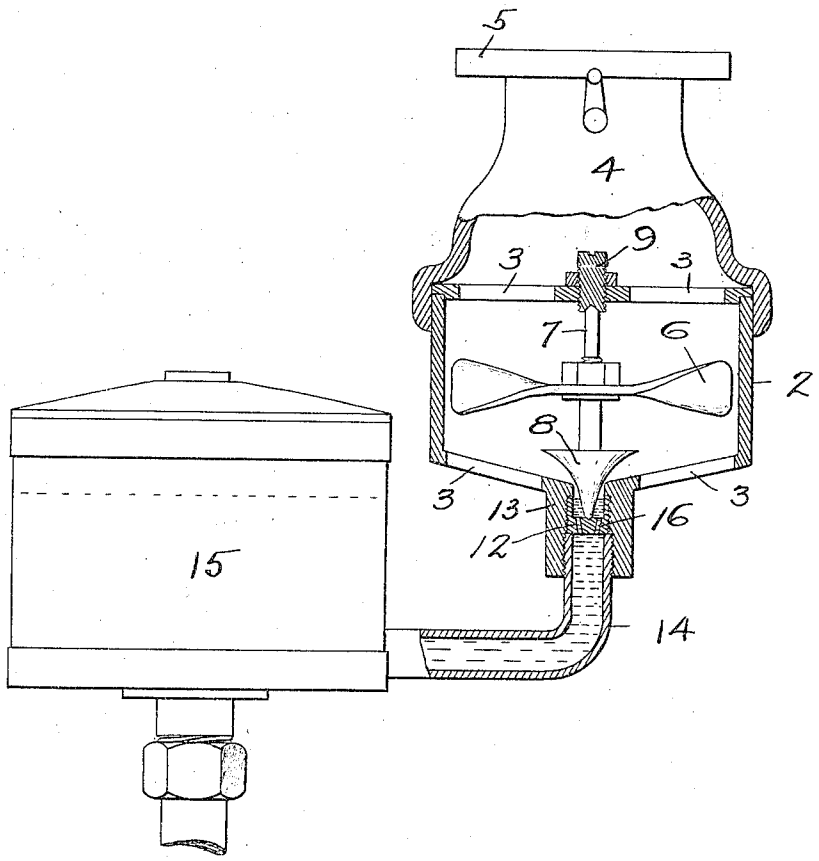
A. M. SANBORN.

CARBURETER.

APPLICATION FILED MAY 11, 1912.

1,092,953. Patented Apr. 14, 1914.



WITNESSES

W. G. Frost.

H. A. Scholten.

INVENTOR

A. M. SANBORN.

BY Miller & White

his ATTORNEYS

UNITED STATES PATENT OFFICE.

AUGUSTUS M. SANBORN, OF STANFORD UNIVERSITY, CALIFORNIA.

CARBURETER.

1,092,953. Specification of Letters Patent. Patented Apr. 14, 1914.

Application filed May 11, 1912. Serial No. 696,734.

To all whom it may concern:

Be it known that I, AUGUSTUS M. SANBORN, a citizen of the United States, and a resident of Stanford University, county of Santa Clara, and State of California, have invented certain new and useful Improvements in Carbureters, of which the following is a specification.

The invention relates to devices for vaporizing liquids and particularly to carbureters which are used in connection with internal combustion engines for vaporizing hydrocarbons.

The object of the invention is to provide a carbureter in which the hydrocarbon is mechanically projected into the air current.

Another object of the invention is to provide a carbureter in which the hydrocarbon is projected in a circumferential spray into the air current.

Another object of the invention is to provide a carbureter in which the feed of the hydrocarbon is positive and varies with the speed of the air current passing therethrough.

A further object of the invention is to provide a carbureter which is efficient in operation and which eliminates the use of the needle valve.

The invention possesses other advantageous features, which, with the foregoing will be set forth at length in the following description where I shall outline in full that form of the invention selected for illustration in the accompanying drawing, which illustrates one form of the carbureter of my invention partly in section.

The carbureter consists of a casing 2, preferably cylindrical in form, having apertures 3 in the top and bottom walls thereof to allow the passage of air therethrough. These apertures are arranged intermediate between the center and periphery of the top and bottom walls, thereby forming solid portions at the center. Secured to the casing, or formed integral therewith is the cap 4 provided with the customary valve for regulating the flow of the air therethrough and with a flange 5 by means of which the carbureter is attached to the manifold of the engine.

Arranged within the casing 2 is a fan 6 which is rotated by the air current passing therethrough, the speed of the fan being proportionate to the speed of the air current. The fan is fixed on a shaft 7 which is provided on its lower end with an inverted cone-shaped element 8. The upper end of the shaft 7 revolves in a bearing 9 centrally arranged in the top wall of the casing and the apex of the cone bears in the bearing 12 arranged in the boss 13 which is placed centrally in the bottom of the casing. The hydrocarbon supply pipe 14 connecting the carbureter with the float chamber 15 is secured in said boss and the bearing 12 is provided with apertures 16 to permit the hydrocarbon to pass therethrough. The float chamber is arranged so that the hydrocarbon stands up in the supply pipe to such a height that the lower end or apex portion of the cone is immersed in the liquid.

The cone is preferably formed with concave sides flaring outward at the base, which for convenience will hereinafter be termed a concave cone. The sides of the cone-shaped element are spaced apart slightly from the inner edges of the boss or upper end of the supply pipe so that the hydrocarbon may pass upward over the face of the cone.

As the fan and consequently the cone is revolved by the current of air, the hydrocarbon is forced along the face of the cone through the medium of capillary attraction and centrifugal force and is projected in a fine circumferential spray into the air current where it readily becomes atomized. The base of the cone being a complete circle, the hydrocarbon is projected from all parts thereof into the air current in the form of a sheet of fine spray. As the position of the valve is varied to vary the speed and power of the engine, the speed of the air current is varied and consequently the supply of hydrocarbon thereto is varied. The hydrocarbon is therefore, positively fed into the air current in a fine circumferential spray which readily atomizes and the amount of hydrocarbon projected into the air current depends upon the speed of the current.

I claim:

1. In a carbureter, a fan arranged in the path of and adapted to be rotated by the air current and a conical shaped member partly immersed in hydrocarbon operatively connected to said fan and adapted to project the hydrocarbon in a circumferential spray into the air current.

2. In a carbureter, a chamber provided with apertures for the passage of air there-

through, a fan arranged in said chamber in the path of said air and adapted to be rotated thereby, an inverted cone connected to said fan, the apex portion of said cone being adapted to be immersed in the hydrocarbon and the base of said cone lying within the chamber.

3. In a carbureter, a vaporization chamber provided with apertures for permitting the passage of air therethrough, a hydrocarbon feed pipe connected to said chamber, means for maintaining the hydrocarbon at a constant level in said pipe, an inverted concave cone in said chamber having its apex portion extending into the feed pipe below said level, and a fan in the chamber adapted to be rotated by the air current, connected to said cone.

In testimony whereof, I have hereunto set my hand at Stanford University, Calif., this 4th day of May, 1912.

AUGUSTUS M. SANBORN.

In presence of—
THOMAS SANBORN,
R. E. ROBERTS.