

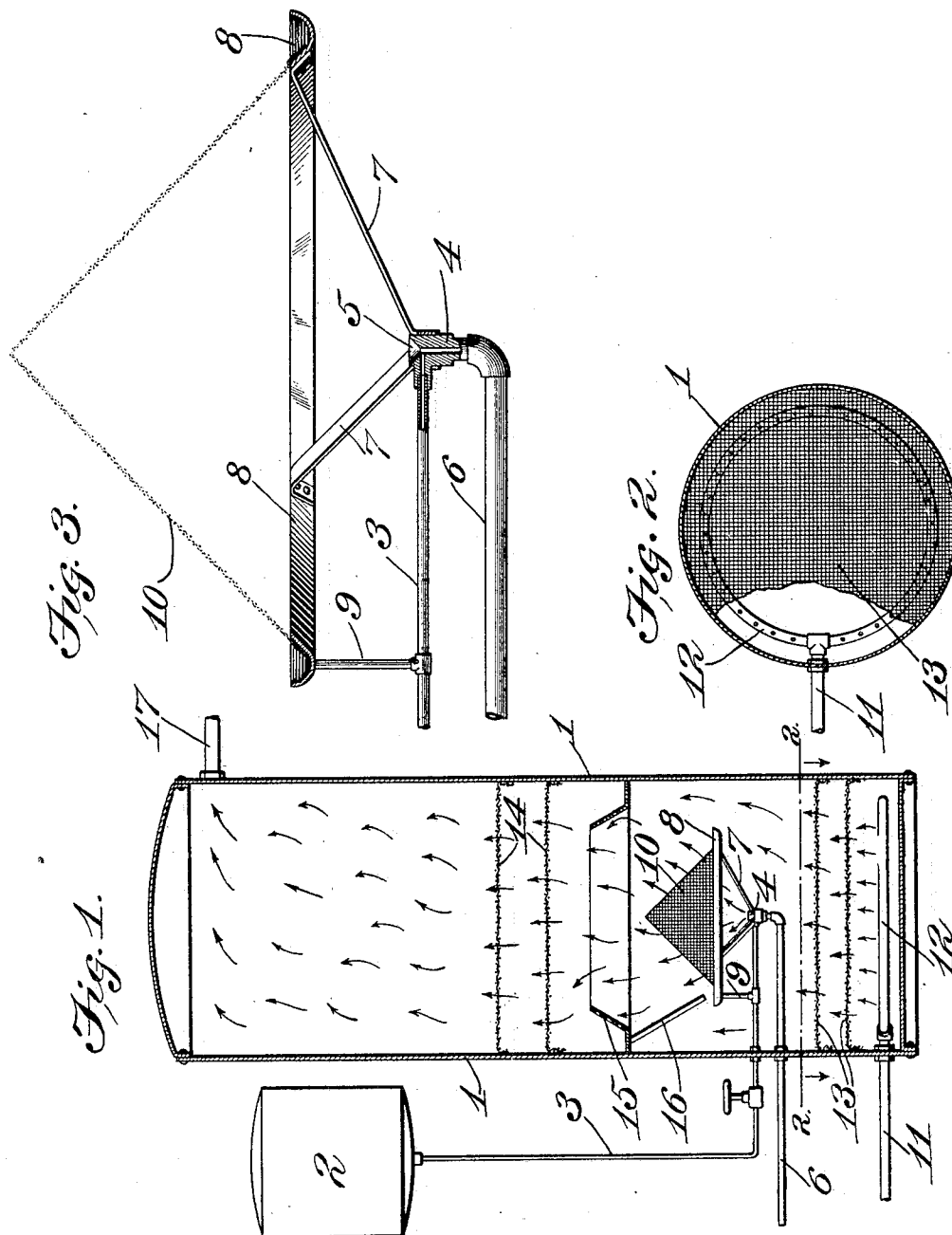
No. 758,789.

PATENTED MAY 3, 1904.

H. G. SLINING.
CARBURETER.

APPLICATION FILED OCT. 5, 1903.

NO MODEL.



Witnesses:
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UNITED STATES PATENT OFFICE.

HENRY G. SLINING, OF ST. LOUIS, MISSOURI, ASSIGNOR OF SEVENTWENTIETHS TO FRED SCHMITT, OF ST. LOUIS, MISSOURI.

CARBURETER.

SPECIFICATION forming part of Letters Patent No. 758,789, dated May 3, 1904.

Application filed October 5, 1903. Serial No. 175,802. (No model.)

To all whom it may concern:

Be it known that I, HENRY G. SLINING, a citizen of the United States, residing at St. Louis, Missouri, have invented a certain new and useful Improvement in Carbureters, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a vertical section through my improved carbureter. Fig. 2 is a cross-sectional view on the line 2 2 of Fig. 1, and Fig. 3 is a detail sectional view of the conical screen.

This invention relates to a new and useful improvement in carbureters, the object being to simplify the construction of devices of this character, so as to enable the same to be made cheaply and economically, the parts being so constructed as to reduce to a minimum the liability of getting out of repair.

The apparatus comprises a mixing-tank from which liquid fuel, such as gasoline, is supplied to an atomizer, which sprays the gasoline in an upward direction. The vapors pass through a conical screen, which acts as a collector, and in the event of an accumulation of unvaporized liquid on the screen the liquid trickles down into a collecting-gutter having a connection to the supply-pipe to the atomizer. The atomizer consists of a central vertically-disposed air-passage and a horizontally-arranged feed-inlet intercepting the air-passage at the base of a flaring mouth, which tends to spread the atomized liquid, the fine particles into which it is broken facilitating evaporation. The conical screen is centrally located above the atomizer and collects the unvaporized liquid and returns the same to the liquid-supply passage through the circular gutter and drain-pipe. Should any liquid pass through the conical screen and be deposited onto the sides of the tank, the same will be collected in the circular gutter and returned by an appropriate drain-pipe to the supply-pipe of the atomizer. An air-pipe is arranged at the bottom of the tank, which pipe is preferably circular and

perforated, the air being forced therethrough and passing upwardly through screens, which act as baffles, before coming in contact with the vapor. In this way the air is distributed throughout the tank. A plurality of mixing-screens are arranged above the conical screen for well-understood purposes.

In the drawings, 1 indicates a tank or shell, and 2 indicates a source of liquid-fuel supply. This source of supply is connected by a valve-pipe 3 to an atomizer 4. This atomizer has a flared mouth 5, into the base of which liquid fuel is discharged, preferably through a horizontal passage.

6 indicates an air-pipe connected to the atomizer and discharging through the bottom of the flaring mouth in a vertical direction. This pipe supplies air to the atomizer under pressure from any suitable source of compressed-air supply.

The pipes 3 and 6 where they enter the shell 1 and connect to the atomizer form a support from which extend brackets 7 for carrying a circular gutter 8, open at its upper side. This gutter is connected by a drain-pipe 9 to the supply-pipe 3.

10 indicates a conical screen whose edges are supported in the gutter 8.

11 indicates an air-pipe entering the bottom of shell 1 and terminating in a circular perforated ring-pipe 12 for distributing air over a considerable portion of the area of the shell. This pipe 11 is connected to a suitable source of compressed-air supply and is controlled by an appropriate valve, whereby the richness of the mixed air and gas can be regulated. Above this circular perforated pipe 12 are two screens 13, which serve practically as baffles to distribute the air from pipe 12 throughout the shell.

Above the conical screen 10 are two screens 14, which serve as mixing-screens, as is well understood. In the event that any particles of liquid fuel are caught on the screen 14 or projected therethrough against the side wall of the casing so as to trickle down the side wall said liquid fuel is caught in an annular gutter 15 and conducted by a drain-pipe 16 back to the supply-pipe 3.

In operation the valve in pipe 3 is open to admit gasoline or other volatile fluid in proper quantities to the atomizer and pressure through pipe 6 is permitted to atomize this volatile fluid, the spray passing upwardly and through the conical screen 10. Any accumulation of fuel on the conical screen 10 not evaporated by the air passing upwardly therethrough will be collected in the gutter 8 and returned by the drain-pipe 9 to the atomizer. The volume of air entering the pipe 6, together with the volume of air entering the pipe 11, which latter is distributed throughout the shell, will determine the richness of the fuel, of course depending upon the volume of fuel admitted through the pipe 3, and passing upwardly the air and gas become intimately mixed by the screens 14. The mixed air and gas finally escape through a pipe 17, leading to the point of consumption.

I am aware that minor changes in the construction, arrangement, and combination of the several parts of my device can be made and substituted for those herein shown and described without in the least departing from the nature and principle of my invention.

Having thus described the invention, what is claimed as new, and desired to be secured by Letters Patent, is—

1. In a carbureter, the combination with an atomizer having a flaring mouth, of a horizontal passage for the liquid fuel leading into the base of said mouth, a vertical passage for the air-blast discharging into the base of the mouth, and a conical screen for receiving the atomized spray; substantially as described.

2. In a carbureter, the combination with an atomizer, of a conical screen, and a gutter for collecting the liquid fuel from said screen; substantially as described.

3. In a carbureter, the combination with an atomizer and its liquid-supply passage, of a conical screen for receiving the atomized spray, a gutter for collecting the accumulated

liquid on the screen, and a drain-pipe leading from said gutter back to the fuel-supply passage of the atomizer; substantially as described.

4. In a carbureter, the combination with a casing, of an atomizer arranged therein, a conical screen arranged above the atomizer, a gutter arranged at the lower edges of said conical screen, a drain-pipe connecting said gutter with the fuel-supply passage of the atomizer, an air-inlet pipe arranged in the bottom of the casing below the atomizer, and screens 13 acting as baffles to distribute the air from the inlet-pipe; substantially as described.

5. In a carbureter, the combination with a casing, of an atomizer, a conical screen, a gutter surrounding the lower edge of said screen and connected to the fuel-supply passage of the atomizer, an air-inlet pipe in the casing, screens 13 interposed between said air-inlet pipe and said atomizer, and screens 14 arranged above said atomizer; substantially as described.

6. In a carbureter, the combination with a casing, of an atomizer, a conical screen, a circular gutter for supporting said conical screen above the atomizer, a connection between said gutter and the passage for supplying liquid fuel to the atomizer, an air-inlet pipe in the bottom of the casing, screens 13 and 14, the former being located between the air-inlet pipe and the atomizer, and the latter above the atomizer, a gutter 15, and a connection between said gutter 15 and the fuel-supply passage to the atomizer; substantially as described.

In testimony whereof I hereunto affix my signature, in the presence of two witnesses, this 29th day of September, 1903.

HENRY G. SLINING.

Witnesses:

FRED SCHMITT,
OTTO MEYER.