No. 846,903. PATENTED MAR. 12, 1907.

F. A. BRADBEER.

CARBURETER.

APPLICATION FILED JAN. 15, 1906.

2 SHEETS—SHEET 1.

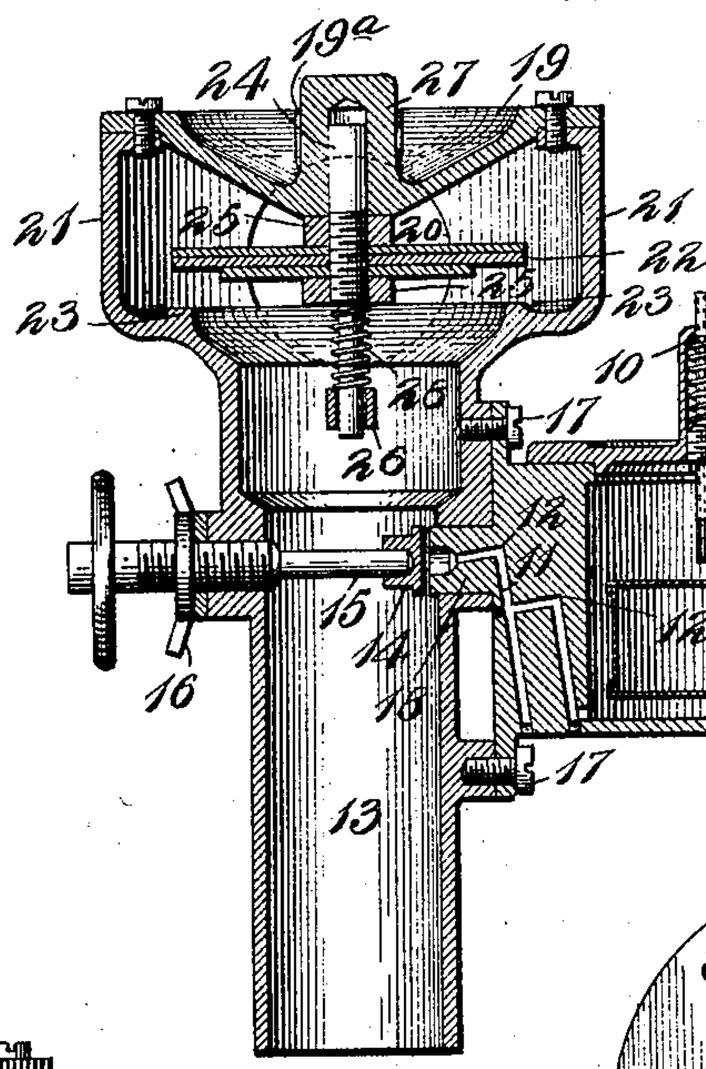


Fig. 1.

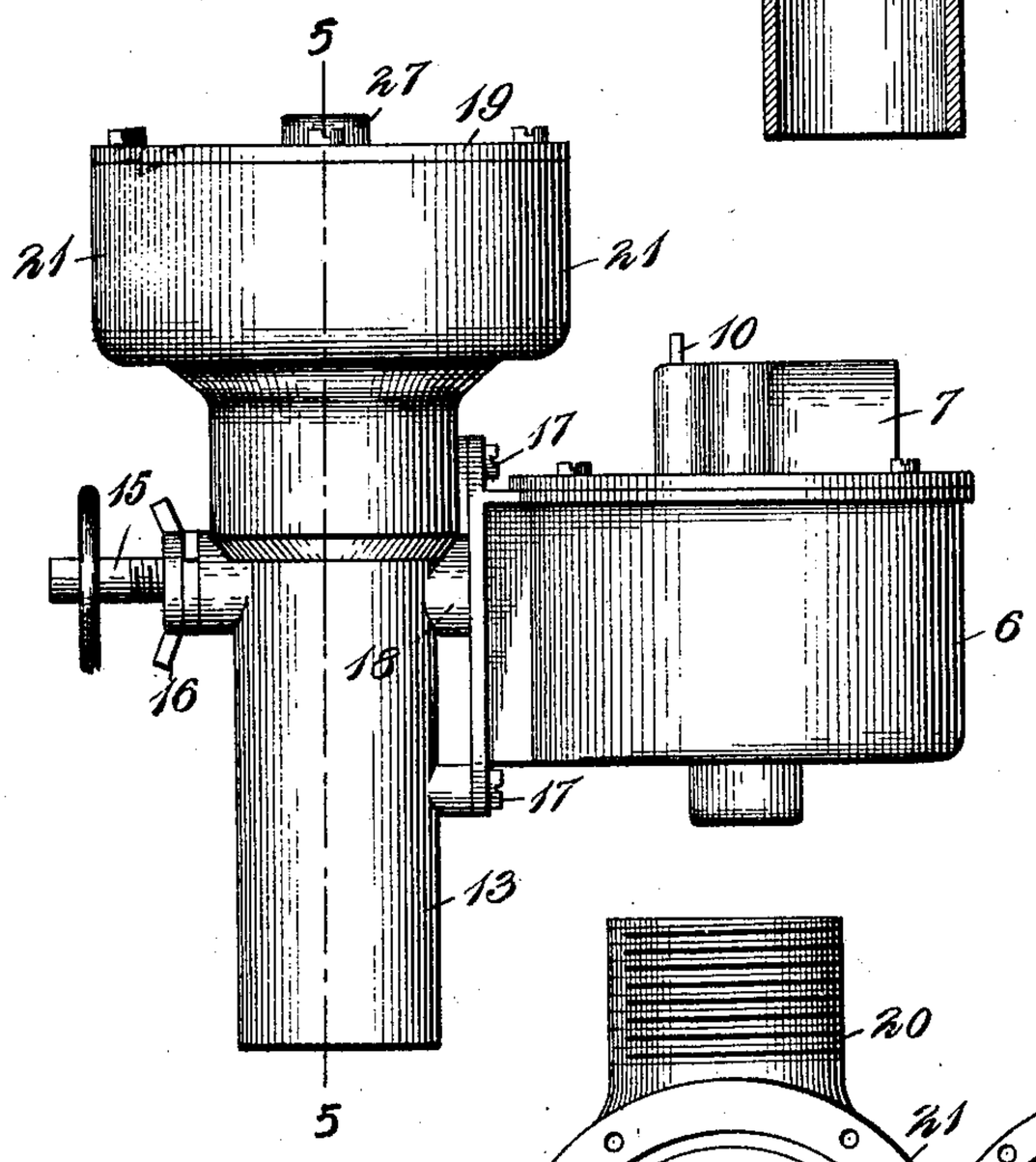


Fig. 2.

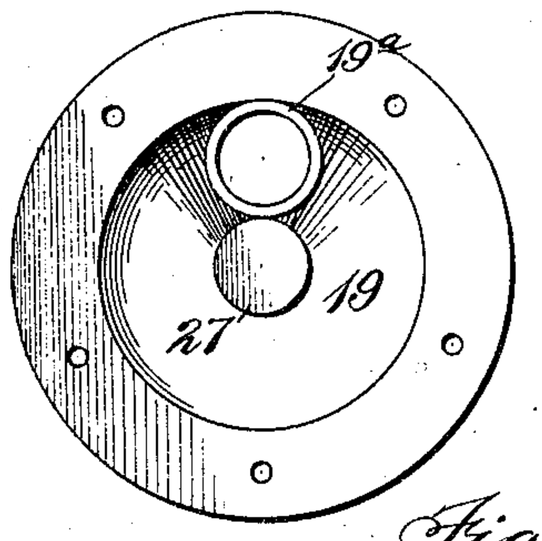


Fig. 4.

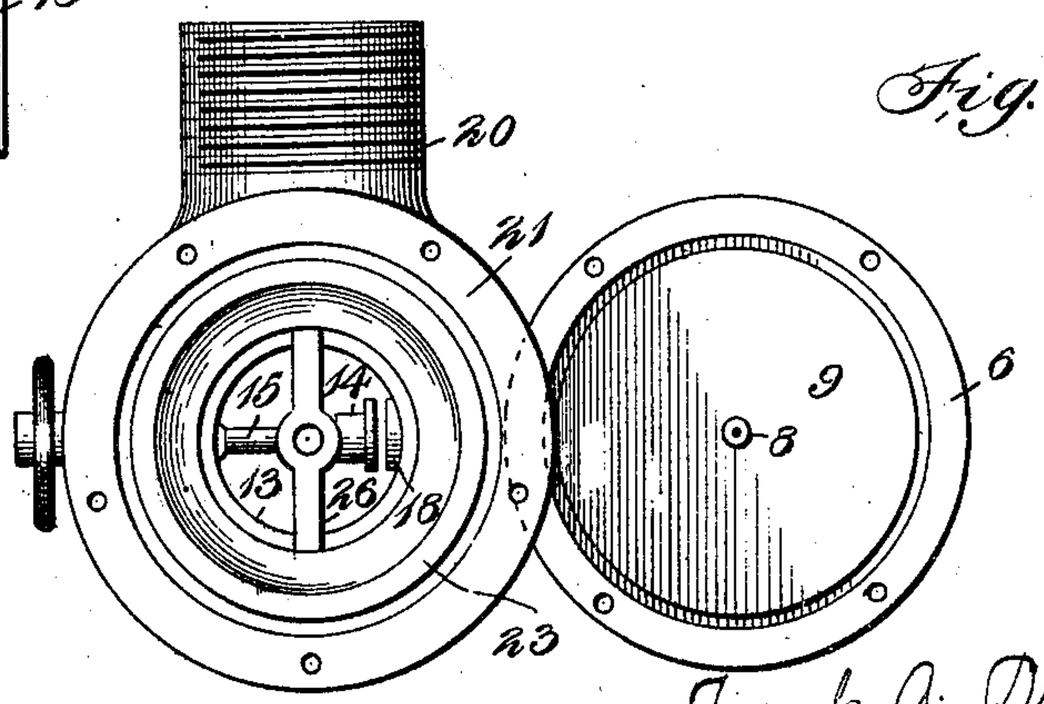


Fig. 3.

Witnesses
W. A. Durand.
Geo. E. Dew

Inventor
Frank A. Bradbeer,
By Mills B. Stevens & Co.,
Attorneys

No. 846,903. PATENTED MAR. 12, 1907.

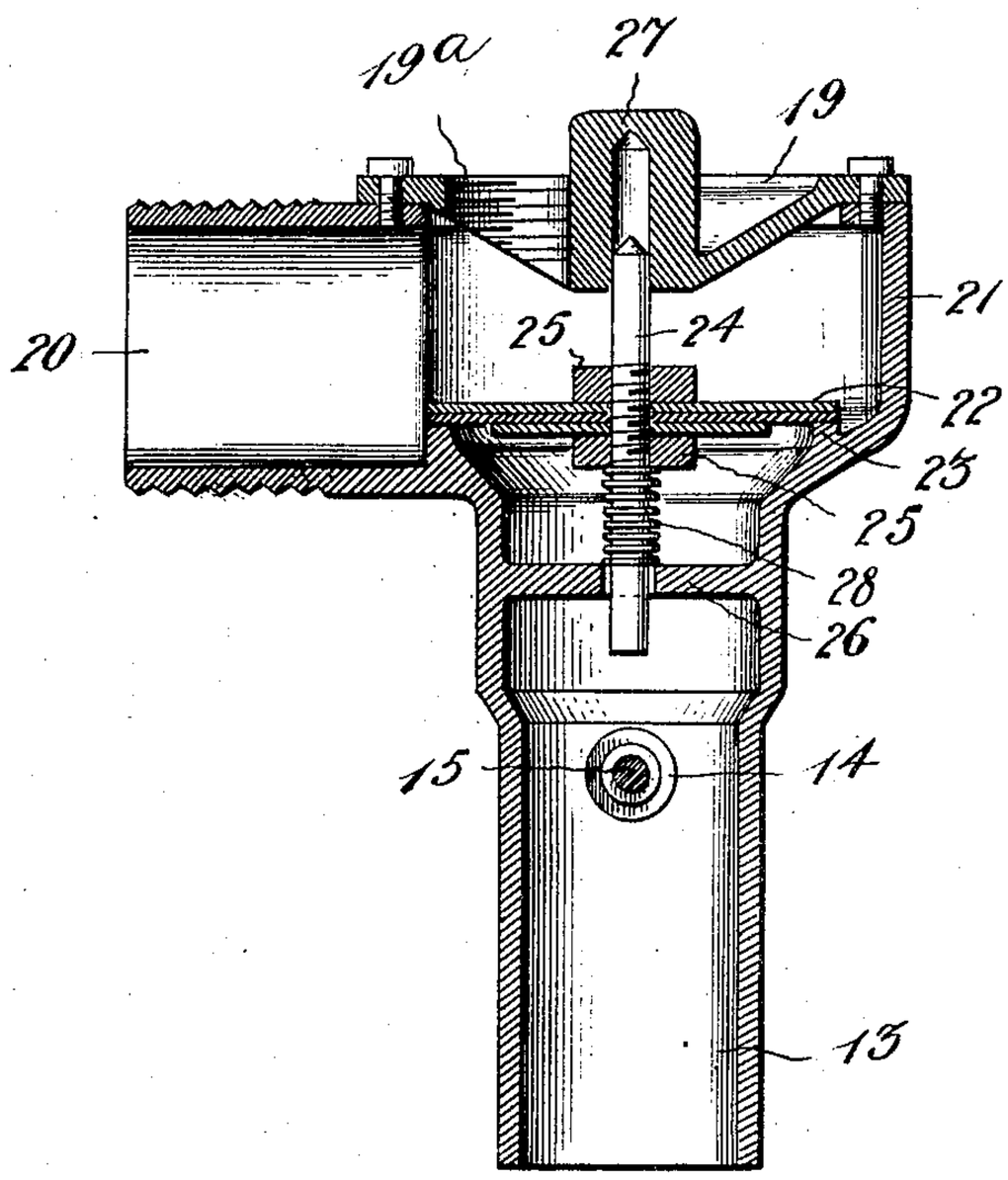
F. A. BRADBEER.

CARBURETER.

APPLICATION FILED JAN. 16, 1906.

2 SHEETS—SHEET 2.

Fig. 5.



Witnesses

Jas. A. Koehl.

Geo. E. Dew

Frank A. Bradbeer.

Inventor

By Miller & Stevenson.

Attorneys.

UNITED STATES PATENT OFFICE.

FRANK A. BRADBEER, OF DETROIT, MICHIGAN.

CARBURETER.

No. 846,903. Specification of Letters Patent. Patented March 12, 1907.

Application filed January 15, 1906. Serial No. 296,125.

To all whom it may concern:

Be it known that I, FRANK A. BRADBEER, a citizen of the United States, residing at Detroit, in the county of Wayne and State of Michigan, have invented new and useful Improvements in Carbureters, of which the following is a specification.

This invention is a carbureter particularly adapted for supplying an explosive mixture to an explosion-engine.

The chief objects of the invention are to provide an improved valve for preventing back flash or blow through the carbureter from the cylinder and to provide improved ports for supplying the gasolene from the oil chamber or vessel to the mixing-pipe.

The construction shown herein is particularly adapted for two-cycle engines, but may be applied to other kinds, if desired.

In the accompanying drawings, Figure 1 is a vertical sectional view of the carbureter. Fig. 2 is a side elevation. Fig. 3 is a top plan view, the cover to the mixing-chamber and the valve thereunder being removed. Fig. 4 is a top plan view of the cover to the mixing-chamber. Fig. 5 is a vertical section on the line 5 5 of Fig. 2.

The device is formed in two parts or castings, one comprising the mixing-chamber and the valves associated therewith, and the other comprising the oil vessel or chamber and a float-valve and allied parts contained therein.

At 6 is indicated the oil chamber or vessel. This receives a supply of liquid fuel through the port 7 in the top, and this port is controlled by a needle-valve 8, carried by a float 9, whereby the liquid in the chamber is held at practically constant level.

10 is a priming-pin. This pin is tubular, forming a vent when flushing the oil-chamber.

The outlet from the oil vessel consists of ports 11, bored in the wall thereof. These ports are of distinctive shape, consisting of two nearly vertical or upwardly-inclined bores connected by a downwardly-inclined bore at a right angle thereto and finally delivering through another downwardly-inclined or angular bore. This construction produces a passage with two elbows, as indicated at 12, the purpose and effect of which is to cause eddies in the stream of oil flowing therethrough, which serve to resist or prevent a too free flow of oil through the port, and consequently to prevent "flooding" of the mixer and engine at high speed. The elbows or tortuous passage serve to prevent the too free flow and flooding incident to a short or straight passage when the engine is at high speed, and this construction produces the desired result without the use of any valve or device liable to stick or become clogged. The passage, although crooked, is always clear.

The passage discharges into the mixing-tube 13, the discharge being controlled by the valve 14, the stem 15 of which is threaded and extends through the opposite side of the tube, where it has a jam-nut 16 to hold it at adjustment. The castings forming the oil vessel and mixing-tube are fitted together and held by screws 17, the former casting having a nipple 18, which fits through a hole at the side of the tube, the port 11 being drilled in said nipple. The face of the nipple is flat and so is the face of the valve 14, and the jet of oil impinging against the latter is sprayed into the tube. This causes an effective spray and also a broad contact at the valve, which serve to prevent leak when closed, the faces being ground true and practically without wear.

The air-inlet is in the lower end of the mixing-tube. The upper end is closed by a cap 19, the outlet to the cylinder being at one side, as at 20. The head of the tube is enlarged, as at 21, to form a chamber for the suspended valve 22, a seat 23 being formed at the top of the pipe, against which the valve seats on occasion. The valve consists of a brass disk faced with leather and carried on a stem 24 between two nuts 25, the stem being supported and guided at the bottom by a cross-piece 26 and at the top by a socket 27 in the cap. A spring 28, coiled around the stem under the valve, normally lifts the latter from its seat and holds it in suspended position, so that the passage from the mixing-tube to the cylinder is normally clear.

When the engine takes a base or irregular explosion, which causes a back pressure, the valve is forced to its seat against the tension of the weak spring 28. This prevents the burning gases from blowing back through the tube 13 and out into the boat, vehicle, room, or other place where the engine is running. As soon as the back pressure is gone the valve lifts to its original position, where it offers practically no resistance to the flow of the explosive mixture from the mixing-tube. The suspended valve has the advan-

tage that the passage is normally open. In fact, when the controlling-valve 14 is open there is no normally closed valve between the oil-chamber and the outlet to the cylinder. There are thus no valves to be lifted or parts to be operated by the suction, the supply of oil being entirely automatic with the operation of the engine.

The cap 19 has a threaded hole 19ª to receive a lubricator, which may be screwed on.

I claim—

1. A carbureter having a normally open mixing-chamber, an outlet therefrom, and a valve between said chamber and the outlet, arranged to close under back pressure.

2. A carbureter for explosive-engines having a normally open safety-valve located between the mixing-chamber and the outlet to the engine-cylinder, and arranged to close under back pressure.

3. A carbureter for explosive-engines, having a mixing-tube with a valve-chamber at the head and an outlet to the cylinder from said chamber, and a suspended normally open valve in said chamber arranged to close the mixing-tube under back pressure from the cylinder.

4. A carbureter for explosive-engines having a mixing-tube with a valve-seat and chamber at the head thereof and an outlet from the chamber, and a spring-supported disk suspended in the chamber in open position above the seat and arranged to close against the same under back pressure.

5. In a carbureter, an oil vessel having a float-valve controlling the inlet thereto, and a tubular priming-pin extending through the top of the vessel, forming a vent.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

FRANK A. BRADBEER.

Witnesses:
ELIZABETH J. PRICE,
JESSIE A. GORDON.