

No. 772,530.

PATENTED OCT. 18, 1904.

J. A. McGEE.
CARBURETER FOR GASOLENE ENGINES.

APPLICATION FILED JUNE 6, 1904.

NO MODEL.

2 SHEETS—SHEET 1.

Fig. 1.

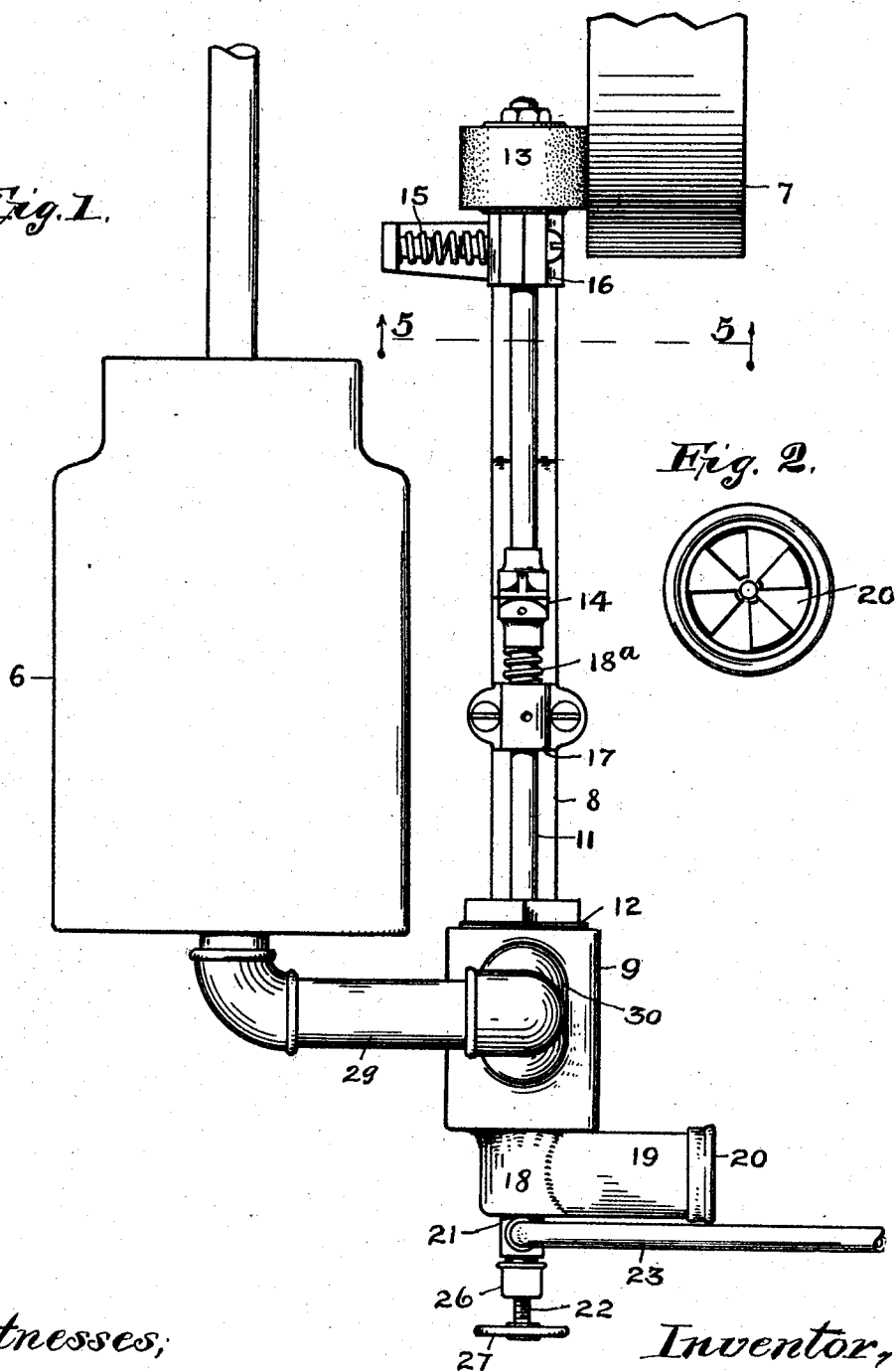


Fig. 2.

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2 SHEETS—SHEET 2.

Fig. 3.

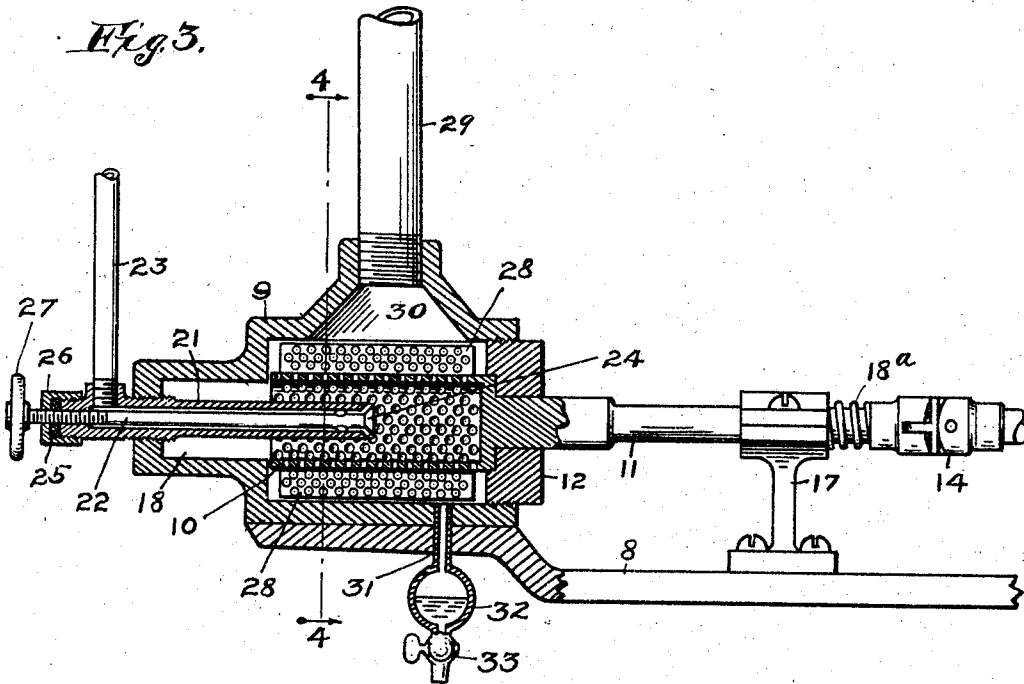


Fig. 4.

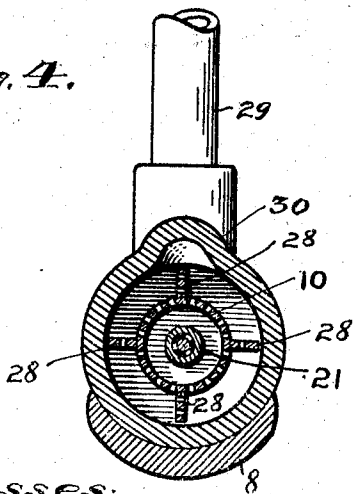
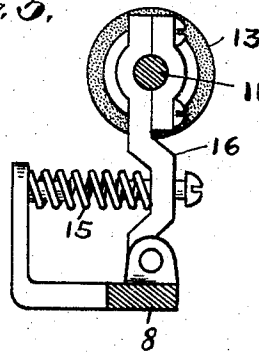


Fig. 5.



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UNITED STATES PATENT OFFICE.

JOSEPH A. MCGEE, OF BIG SPRING, INDIANA.

CARBURETER FOR GASOLENE-ENGINES.

SPECIFICATION forming part of Letters Patent No. 772,530, dated October 18, 1904.

Application filed June 6, 1904. Serial No. 211,352. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH A. MCGEE, a citizen of the United States, residing at Big Spring, in the county of Boone and State of Indiana, have invented certain new and useful Improvements in Carbureters for Gasolene-Engines, of which the following is a specification.

The object of this invention is to thoroughly mix the hydrocarbon vapors and air required in an explosive-engine before it is admitted to the explosion-chamber.

I accomplish the objects of the invention by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a plan view of my device applied to an engine; Fig. 2, a detail in elevation showing the damper for regulating the air-inlet; Fig. 3, a longitudinal vertical section of the mixing-chamber of my device; Fig. 4, a transverse section on the dotted line 4 4 of Fig. 3, and Fig. 5 a section on the line 5 5 of Fig. 1.

Like characters of reference indicate like parts throughout the several views of the drawings.

6 is the engine-cylinder, and 7 a portion of the fly-wheel, of any suitable and well-known construction.

8 is the base or bed of my improvement, which is fastened to the bed of the engine in any convenient manner.

9 is the mixing-cylinder, in which a perforated drum 10 is mounted. This drum has the stem or shaft 11, which passes through and is journaled in a suitable opening in the head 12. The shaft 11 has the end friction-pulley 13, which makes running contact with the side of the fly-wheel 7. The shaft 11 has the universal joint 14 to permit of an adjustment of the pulley 13 to compensate for any untruthness of said wheel, and the requisite contact with the wheel is insured by the pressure of a spring 15. The outer journal for the shaft

11 is on the end of a hinged standard 16, which permits of the free adjustment of the pulley 13. Between the joint 14 and the cylinder 9 is the fixed standard 17, having a box in which the shaft 11 is additionally journaled, so that by means of this box and the head 12 the shaft

from drum 10 to joint 14 is held against lateral displacement. A spring 18^a, between the box on standard 17 and a shoulder on joint 14, holds the drum in its seat in the head 12. The end of the drum 10 opposite the head 12 is open toward the air-chamber 18, which receives its supply of air through the pipe 19. The end of the pipe has the damper 20, by which the quantity of air is regulated by regulating the size of the opening to the pipe. Screwed into the end of the chamber 18 in line with the axis of the drum 10 is the tubular nozzle 21, having a valve-seat at its inner end and a threaded opening in its otherwise solid outer or opposite end.

22 is a valve-stem which is screwed into the nozzle. It is enough less in diameter than the diameter of the bore of the nozzle to provide clear space around it for the inflow of gas which is admitted through the pipe 23. The inner end of the stem is provided with the conical valve 24, which is seated in the seat in the end of the nozzle in order to cut off the gas-supply, and the flow of gas through the nozzle is regulated by the distance of the valve from its seat. Leakage at the outer or threaded end is prevented by the packing 25, which is held in place by the cap 26. The hand-wheel 27 provides means for rotating the stem to screw it in or out of the nozzle and regulate the valve-opening.

The bore of the drum 10 is filled with unmixed air and gas which by passing through the perforations in the walls of the rapidly-rotating drum are thrown together and mixed. This mixing is added to by the action of the perforated flanges 28, which stir up the particles in their travel to the pipe 29, through which the mixture is conveyed to the engine-cylinder. The pipe 29 will have the elongated collector 30.

The drawings show a self-feed—that is, a mechanism in which the flow is due to the normal suction from the engine-piston; but obviously a force feeding device could be used, if so desired.

When gasolene is used to supply the hydrocarbon vapors or gas, the mixing-cylinder 9 has the drain 31 into the bowl 32, and a discharge from the latter has the drip-cock 33 to pre-

vent flooding of the cylinder of the engine, which is especially important in starting the engine. Obviously my device is operative when the engine is running ahead or in reverse

5 direction.

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

1. In a device for the purposes specified, a
10 rotating drum with perforated walls, an air-conduit discharging into said drum and a nozzle discharging gas into the drum.

2. In a device for the purposes specified, a
15 rotating drum with perforated walls, an air-conduit discharging into said drum and a nozzle discharging gas into the drum, said nozzle having a valve-regulated outlet.

3. In a device for the purposes specified, a
20 mixing-cylinder having an air-inlet at one end, a drum mounted within the cylinder having perforated walls and an open end toward the air-inlet and an opposite closed end and a nozzle discharging gas into said drum through its open end.

4. In a device for the purposes specified, a
25 mixing-cylinder having an air-inlet at one end, a drum mounted within the cylinder having perforated walls, longitudinal flanges outside of said walls and said drum having an open
30 end toward the air-inlet and an opposite closed end, means for rotating the drum and a nozzle discharging gas into said drum through the open end of the latter.

5. In a device for the purposes specified, a
35 mixing-cylinder, a rotating drum mounted therein said drum having perforated walls and an open and a closed end, an air-chamber through which a supply of air is delivered into the open end of the drum, a nozzle en-
40 tering the open end of the drum and discharging gas into the latter, a valve regulating the

discharge of gas from said nozzle, and a discharge from the mixing-cylinder.

6. In a device for the purposes specified, a
45 mixing-cylinder having a discharge to the cylinder of an explosive-engine, a drum mounted in the mixing-cylinder said drum having perforated walls and an open and a closed end, a shaft projecting from the closed end outside of the mixing-cylinder, a friction-pulley
50 mounted on the outer end of the shaft and contacting with the engine fly-wheel, an air-chamber through which a supply of air is delivered into the open end of said drum, a nozzle
55 entering the open end of the drum and discharging gas into the latter, a valve regulating the discharge of gas from said nozzle and means for adjusting the valve from the outside.

7. In a device for the purposes specified, a
60 mixing-cylinder having a discharge to the cylinder of an explosive-engine which discharge is expanded longitudinally of the mixing-cylinder, a drum mounted in the mixing-cylinder having perforated walls and an
65 open and a closed end, a shaft from the closed end projecting outside of the mixing-cylinder, said shaft having a friction-pulley and a universal joint between said pulley and the drum, an air-chamber through which a sup-
70 ply of air is delivered into the open end of the drum, a nozzle entering the open end of the drum and discharging gas into the latter and a valve regulating the discharge of gas from said nozzle.

In witness whereof I have hereunto set my hand and seal, at Indianapolis, Indiana, this 24th day of May, A. D. 1904.

JOSEPH A. MCGEE. [L. s.]

Witnesses:

F. W. WOERNER,
JOHN B. SHERWOOD.