J. B. SCHUMACHER.

CARBON PREVENTION DEVICE.

APPLICATION FILED JULY 17, 1919.

1,354,580. **Patented Oct. 5, 1920.**

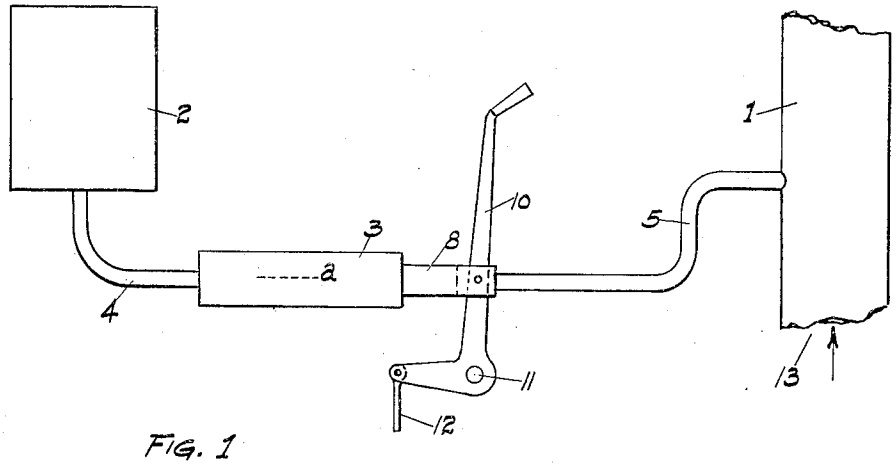


FIG. 1

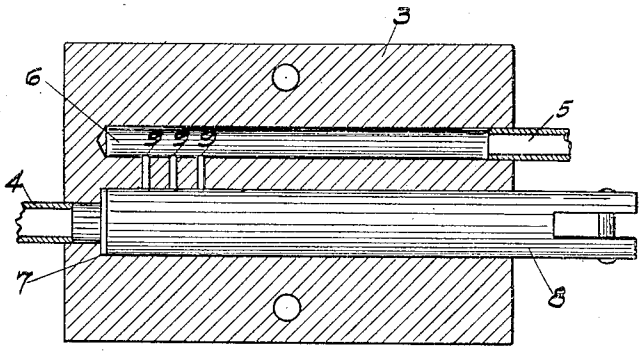


FIG. 2

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UNITED STATES PATENT OFFICE.

JAMES B. SCHUMACHER, OF CINCINNATI, OHIO.

CARBON-PREVENTION DEVICE.

1,354,580. Specification of Letters Patent. Patented Oct. 5, 1920.

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To all whom it may concern:

Be it known that I, JAMES B. SCHUMACHER, a citizen of the United States, residing at Cincinnati, Hamilton county, Ohio, have invented certain new and useful Improvements in Carbon-Prevention Devices, of which the following is a specification.

This invention, pertaining to gasolene engines, relates to a system for mingling water with the mixture before ignition, in order to prevent or lessen the deposit of solid carbon.

The invention will be readily understood from the following description taken in connection with the accompanying drawing in which:—

Figure 1 is a side elevation of a device exemplifying my invention: and

Fig. 2 a horizontal section, on an enlarged scale, in the plane of line *a* of Fig. 1, of the valve block.

In the drawing:—

1, indicates the intake pipe of a gasolene engine:

2, a water tank:

3, a valve block:

4, a pipe leading from the water tank to the valve block:

5, a water pipe leading from the valve block to the intake pipe 1:

6, a longitudinal passage in the valve block, communicating with pipe 5:

7, a longitudinal bore in the valve block, this bore communicating with pipe 4:

8, a valve plunger sliding in bore 7:

9, a longitudinal series of ports placing passage 6 in communication with bore 7, these ports being adapted to be opened and closed, one or more of them, by plunger 8:

10, a lever, which may be operated by hand or foot for adjusting the plunger 8:

11, a pivot on which lever 10 is mounted:

12, a connection from lever 10 adapted for connection with the throttle valve controlling the admission of mixture to the intake pipe, from the usual carbureter: and

13, the admission end of the intake pipe.

Tank 2 is to be supplied with water, and when the engine is inoperative then plunger 8 closes all of ports 9 and prevents the passage of water to the intake pipe. When lever 10 is moved to the right it opens the throttle (not shown) and admits the gaseous mixture to the intake pipe. Normally plunger 8 closes all of ports 9 and the initial motion of the lever to the right admits the gaseous mixture to the intake but does not uncover any of the ports 9. But the further movement of lever 10 uncovers the first of ports 9 and causes water to be drawn into the intake pipe to join the mixture, and a further movement of the lever opens another one of the ports 9 and increases the quantity of water, and similarly, the quantity of water supplied to the intake pipe is increased by further movement of the lever, the rate of water admitted to the intake pipe being thus proportioned to the degree of opening of the throttle. In practice I have found three graduations for the admission of water to the intake pipe to be sufficient, and this I provide for by means of the three ports 9. It is found in practice that the water thus drawn into the intake pipe by the suction of the engine joins with the mixture as a vapor and is instrumental in preventing the solid deposits of carbon in the engine, or in lessening the deposit, or in softening deposits already formed, the softened deposits blowing out of the engine with the exhaust.

It is to be understood that the drawing illustrates but a single exemplification of my invention, as it has been my intention simply to set forth the principle of the invention and the best means known to me for realizing that principle.

I claim:—

1. A carbon preventative device for internal combustion engines, comprising a valve block having a plunger bore therein, a second bore in said block parallel with the plunger bore, a plunger in said plunger bore, means whereby the plunger bore may be connected with a source of water supply, means whereby said second bore may be connected with the intake manifold of an engine, a plurality of ports disposed at right angles to and connecting the aforesaid bores, said plunger when in one position serving to cover all of said ports, and thereby prevent communication between said bores, together with means for moving said plunger to uncover said ports one after the other.

2. A carbon preventative device for internal combustion engines, comprising a valve block having a plunger bore therein, a second bore in said block, a plunger in said plunger bore, means whereby said plunger bore may be connected with a source

of water supply, means whereby the second bore may be connected with the intake manifold of an engine, a plurality of ports adapted to afford communication between said bores, said plunger when in one position serving to cover all of said ports, and thereby prevent communication between said bores, and means for moving said plunger to uncover said ports one after the other, said plunger being capable of a definite substantial movement in said plunger bore, before uncovering any of said ports, substantially as and for the purpose set forth.

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Witnesses:
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