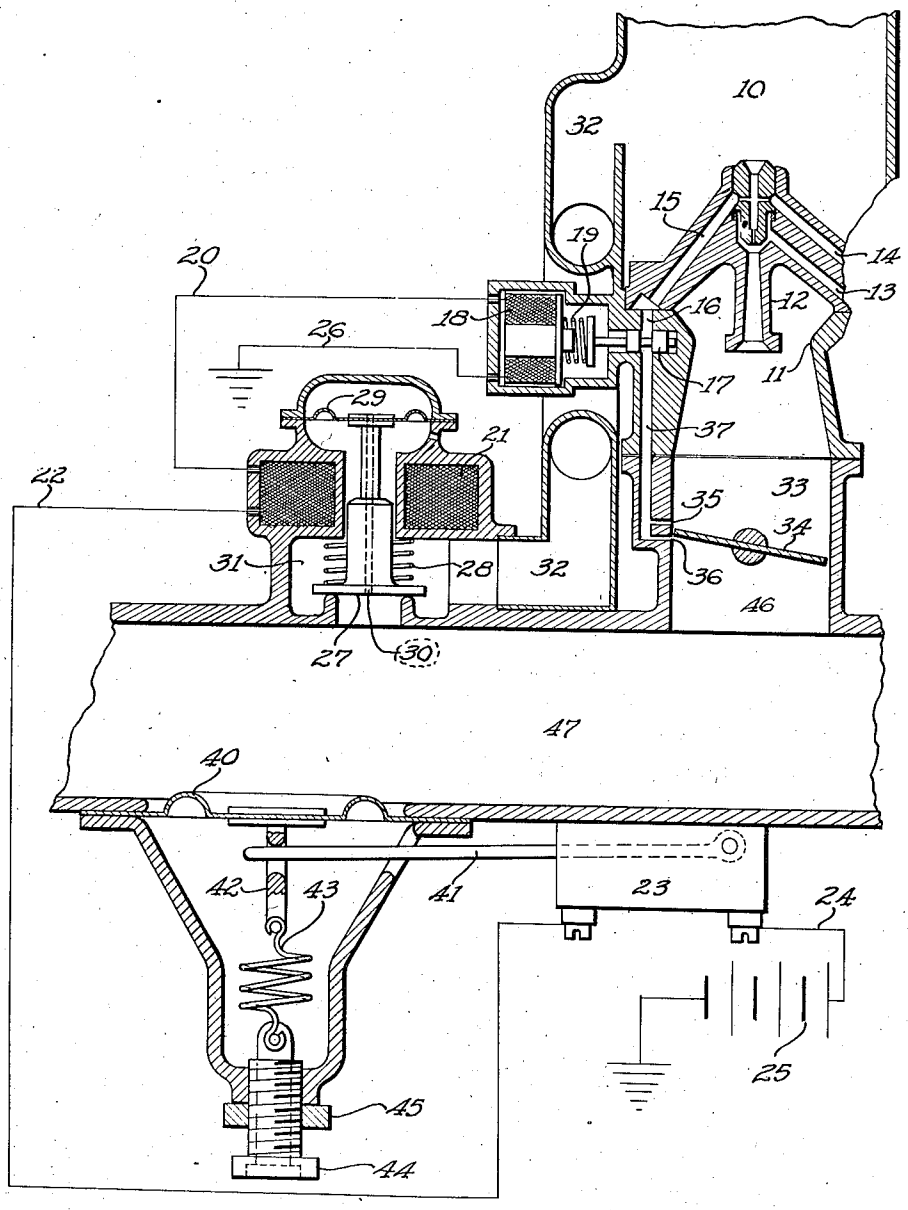
Oct. 9, 1945. E. OLSON 2,386,340

DECELERATOR

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DECELERATOR

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1 Claim. (Cl. 123—124)

The object of this invention is to admit air and positively prevent the admission of fuel during the deceleration of an automobile engine when the engine is driven by the car. The figure shows the preferred form of my invention.

In the figure, 10 is the air entrance leading to a venturi 11, into which discharges a nozzle 12, which is supplied with fuel from a passage 13. Low speed fuel is supplied from a passage 14, passage 15, passage 16 and is interrupted by a valve 17, controlled by an electro-magnetic solenoid 18, which is grounded through a conductor 26. A spring 19 pushes the valve 17 into the open position shown, which permits the fuel to flow freely to the passage 37. The main fuel nozzle 12 discharges into outlet 33 below the venturi 11, which is controlled by a butterfly throttle 34, the upstream lip of which controls the low-speed outlets 35—36 from passage 37, which discharges into mixture outlet 46.

An electric conductor 20 connects the first solenoid 18 with a second solenoid 21, which in its turn is connected through a conductor 22 to a differential micro switch 23, which is connected through a conductor 24 to a battery 25, which is grounded. The solenoid 21 attracts a balanced air valve 27, which is held on its seat by a spring 28. The valve 27 is balanced by means of a diaphragm 29 and an air passage 30 drilled in the center of the valve 27. An air passage 32 connects the air entrance 10 with the chamber 31 surrounding valve 27.

Diaphragm 40, located in the inlet manifold 47, engages with the arm 41 of the micro switch 23 through a slotted rod 42, which is connected by a spring 43 with an adjustment 44, which is locked in place by a lock nut 45.

Operation

During deceleration, when the throttle 34 is closed far enough so that the car drives the engine and when the suction exceeds 21'' Hg approximately, then the diaphragm 40 moves the slotted link 42 far enough to engage with the rod 41 and to operate the micro switch 23. The solenoid 18 then draws the valve 17 to the left and blocks the path from 16 to 37, and the low speed fuel ceases to flow. Meanwhile, the solenoid 21 draws the valve 27 upwards and admits air to the manifold 47.

Air continues to flow into the inlet manifold 47 until the suction has fallen to 14'' Hg approximately when the diaphragm 40 moves far enough to reverse the switch 23. Then the spring 19 moves the valve 17 to the right and the spring 28 closes the valve 27 as both solenoids cease to act.

What I claim is:

In an internal combustion engine having a carburetor and an inlet passage, a mixture outlet, a throttle valve therein, a low speed fuel passage, a valve in said passage, an auxiliary air entrance located on the engine side of said throttle, a valve in said auxiliary entrance, electro-magnetic means for opening said valve and closing the valve in the low speed fuel passage, a differential switch in series with said electro-magnetic means, vacuum responsive means adapted to move said switch so as to energize said electro-magnetic means at suction greater than a predetermined suction and to release said electro-magnetic means at a substantially lower suction, yieldable means for closing the air valve in the air entrance and for opening the valve in the low speed fuel passage.

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