

J. L. SWARTZ.
CUSHION TIRE AND PROCESS OF PRODUCING THE SAME.
APPLICATION FILED JULY 19, 1917.

1,268,298.

Patented June 4, 1918.

Fig. 1

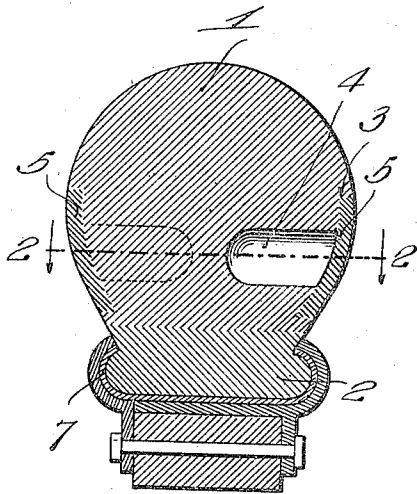


Fig. 2

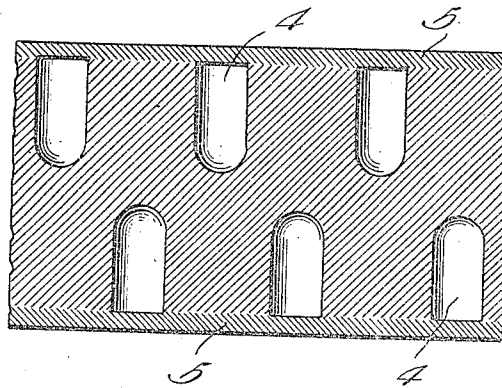


Fig. 3

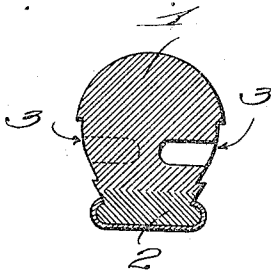


Fig. 4

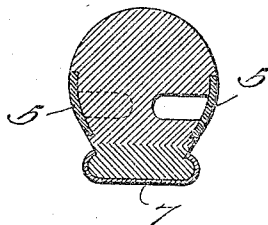


Fig. 5

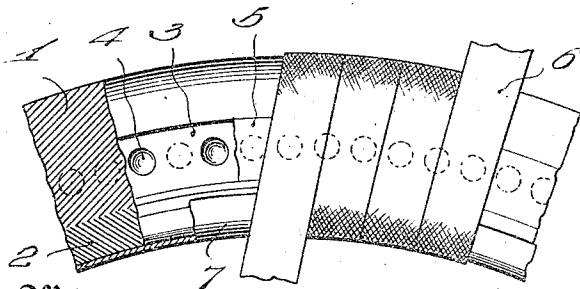
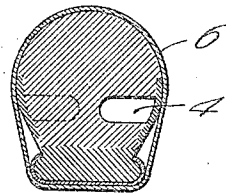


Fig. 6

Witness

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UNITED STATES PATENT OFFICE.

ALFRED THOMPSON, OF DETROIT, MICHIGAN, ASSIGNOR OF FIFTY-ONE ONE-HUNDREDTHS TO LORA E. BEAMAN, OF CHICAGO, ILLINOIS.

CARBURETER.

1,268,299.

Specification of Letters Patent.

Patented June 4, 1913.

Application filed August 14, 1916. Serial No. 114,767.

To all whom it may concern:

Be it known that I, ALFRED THOMPSON, a citizen of the United States of America, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Carbureters, of which the following is a specification, reference being had therein to the accompanying drawings.

The invention relates to carbureters of that type in which the feeding of the liquid fuel and the mixing of the same with air is controlled by a rotating member driven in timed relation to the engine. It is the object of the present invention to obtain a more uniform action under various conditions of operation and also to obtain other features of advantage as hereinafter set forth.

In the drawings:

Figure 1 is a vertical longitudinal section through the carbureter;

Fig. 2 is a cross-section, a portion of which is in the plane 2—2 Fig. 1 and another portion in the plane of the rotating distributor;

and Fig. 3 is a section on line 3—3 Fig. 1.

A is the carbureter casing, which as shown has an air inlet opening B at the top thereof and a laterally-extending outlet opening C for connection with the suction conduit of the engine. D is the main throttle-valve which is located in the opening C, and E is a valve in the opening B which is mechanically connected to the throttle through the medium of the rock-arms F and G and link H, so that both valves will be simultaneously operated.

I is a removable head for the lower end of the casing A, which carries a revoluble shaft J mounted in anti-friction bearings K and K'. Upon the upper end of this shaft is secured the hollow disk L provided with a series of peripheral discharge openings L' and also with a central aperture M in alignment with a recess N formed in the shaft J. O is a wall or partition in the casing A in a plane parallel and in close proximity to the upper face of the hollow disk L. At the periphery this partition O is segmentally slotted or cut-away at O', leaving comparatively small connecting and supporting portions O². P is a depending hub at the center of the partition O which extends downward through the aperture M and into the recess

N. Q is a rod slidably engaging the central bore in the hub and extending upward through the inlet opening B. This rod has a tapering slot or groove R formed therein, which forms a connecting passage of variable restriction between the recess N and a supply passage S for the liquid fuel, the latter being formed in the partition O and connected with a suitable source of supply. T is a depending flange or skirt upon the disk L which surrounds the bearing K.

With the construction as thus far described in operation, the shaft J is revolved through connection with some driven member of the engine mechanism, and therefore its speed of rotation is proportional to the engine speed. The rotation of the hollow disk L will set up a centrifugal action, which will cause a slight suction or reduction in internal air pressure sufficient to draw the liquid fuel above its normal level through the passage S into the recess N and upward through the clearance around the hub P into the hollow disk. Any liquid thus entering the disk will be thrown outward centrifugally, and will be discharged through the peripheral jet openings L', where it will cross the path of the air traveling through the casing and the segmental slots O'. There will also be a suction of air between the disk L and partition O, which will enter through the central aperture M and will be commingled with the liquid fuel to be discharged through the jet openings L'. Inasmuch as centrifugal action is proportional to the velocity of rotation it is evident that the faster the shaft and disk L revolve the greater will be the discharge of the liquid fuel, so that the supply will be automatically increased in proportion to the demand. On the other hand, the speed of the engine is controlled by the throttle, and where the throttle is in open position the unrestricted admission of air will be disproportionate to the admission of liquid fuel which has a greater inertia factor. This objection I have overcome by decreasing the restriction to the flow of the liquid fuel as the throttle is opened, preferably by the following construction: U is an arm on the rod Q, extending laterally therefrom. V is an anti-friction roll upon the valve E, which is so arranged that when this valve is moved toward open position it will lift the arm U, thereby raising the rod Q and

opening into said channels, and flat rubber rings filling said channels and vulcanized to the entire area of the sides and bottoms thereof to seal the outer ends of said pockets.

- 5 2. The method of constructing a one piece cushion tire having sealed transverse air pockets, consisting in so molding the tire body from rubber as to provide said body with shallow circumferential channels in its
10 sides and with transverse air pockets opening into said channels, inserting flat rub-

ber rings in the channels, and vulcanizing said rings to the entire area of the bottoms and edges of said channels.

In testimony whereof I have hereunto 15 set my hand in the presence of two subscribing witnesses.

JOHN L. SWARTZ.

Witnesses:

JACOB HEDDESHEIMER,
RUTH HEDDESHEIMER.

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ing slot or channel therein, and means actuated by the movement of said second valve for raising and lowering said rod.

7. In a carbureter, the combination with
5 a casing having an air passage therethrough, of a horizontally arranged partition extending across said passage and provided with a peripheral slot, a head detachably engaging the lower end of said casing, said head
10 having spaced journals respectively at its opposite ends, a vertical shaft mounted in said journals at a plurality of points, a hollow disk mounted on said shaft arranged adjacent to said partition and provided with
15 peripheral jet apertures, and means for feeding liquid fuel centrally into said hollow disk.

8. In a carbureter, the combination with

a casing having an air inlet at its upper end and a laterally extending outlet, of a partition extending horizontally across said casing between said inlet and outlet, said partition having a peripheral slot, a depending hub portion, and a liquid fuel passage discharging centrally downward through said
20 hub portion, a rotatable shaft journaled in said casing and recessed in its upper end in alinement with said downward discharge for the liquid fuel and receiving said depending hub portion, and a hollow disk
25 mounted on said shaft and surrounding said hub portion, said disk communicating with said recess and provided with peripheral discharge apertures.

In testimony whereof I affix my signature. 35
ALFRED THOMPSON.