

939,856.

R. PAPANTI.
CARBURETER.
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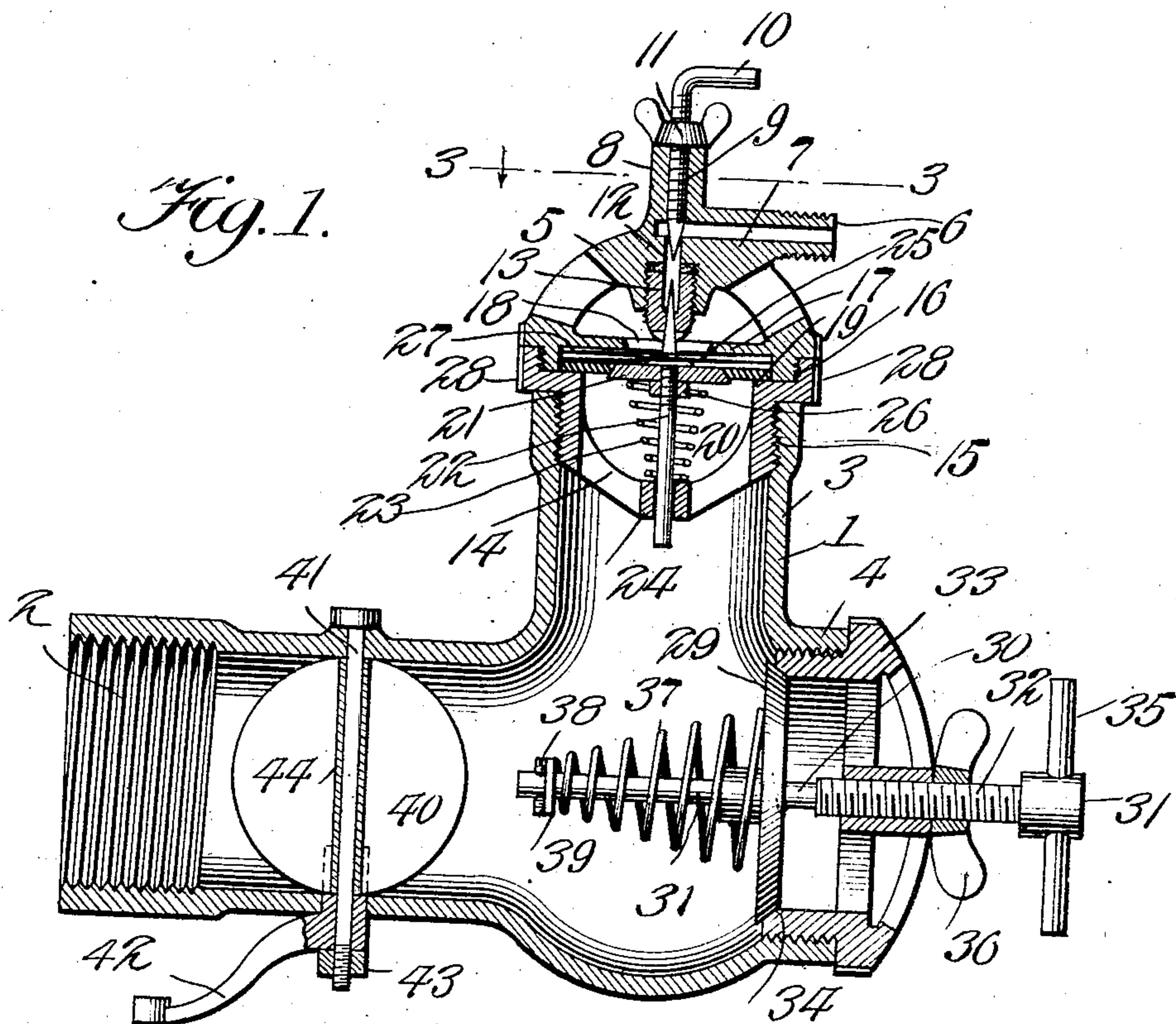
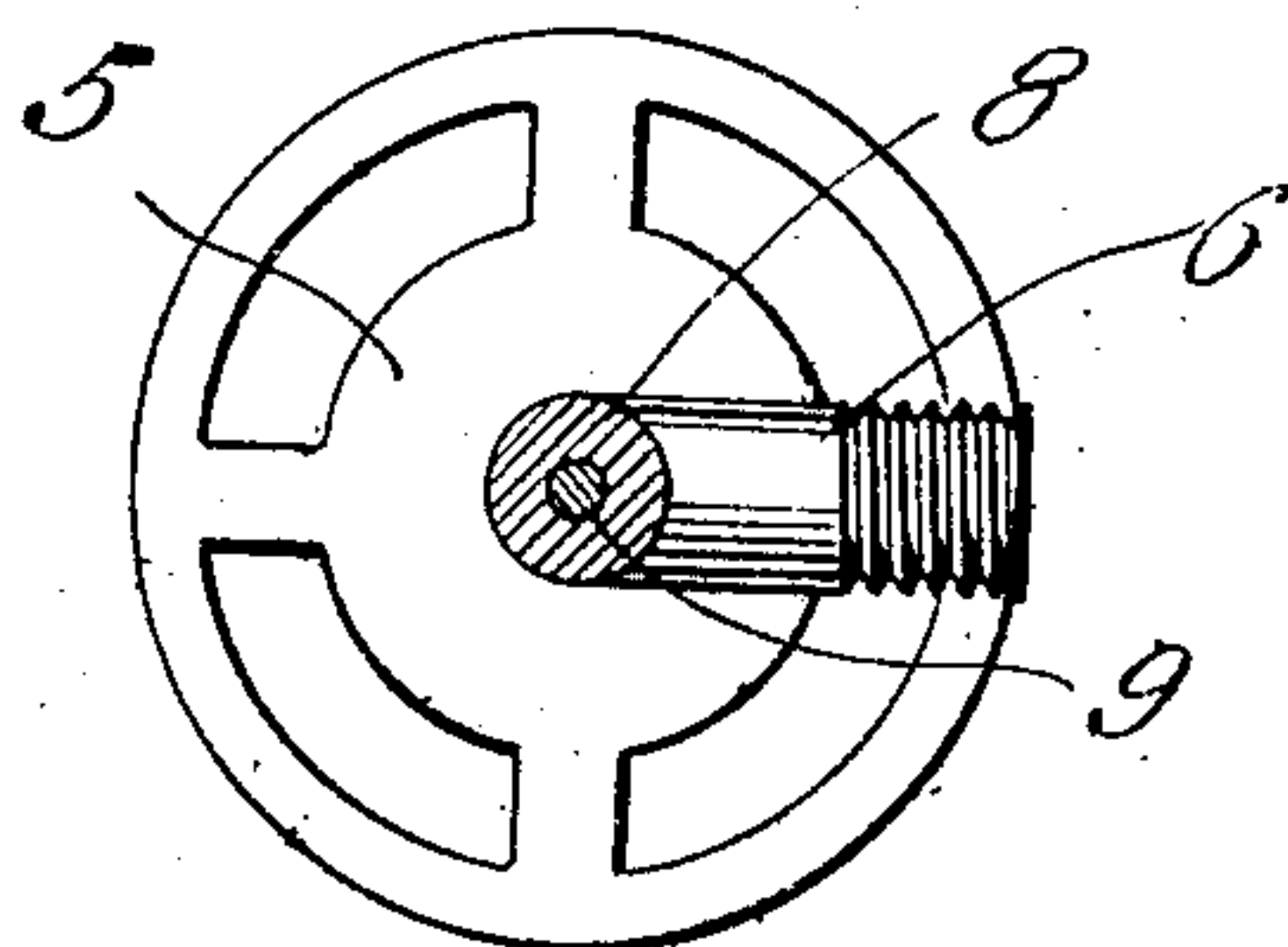
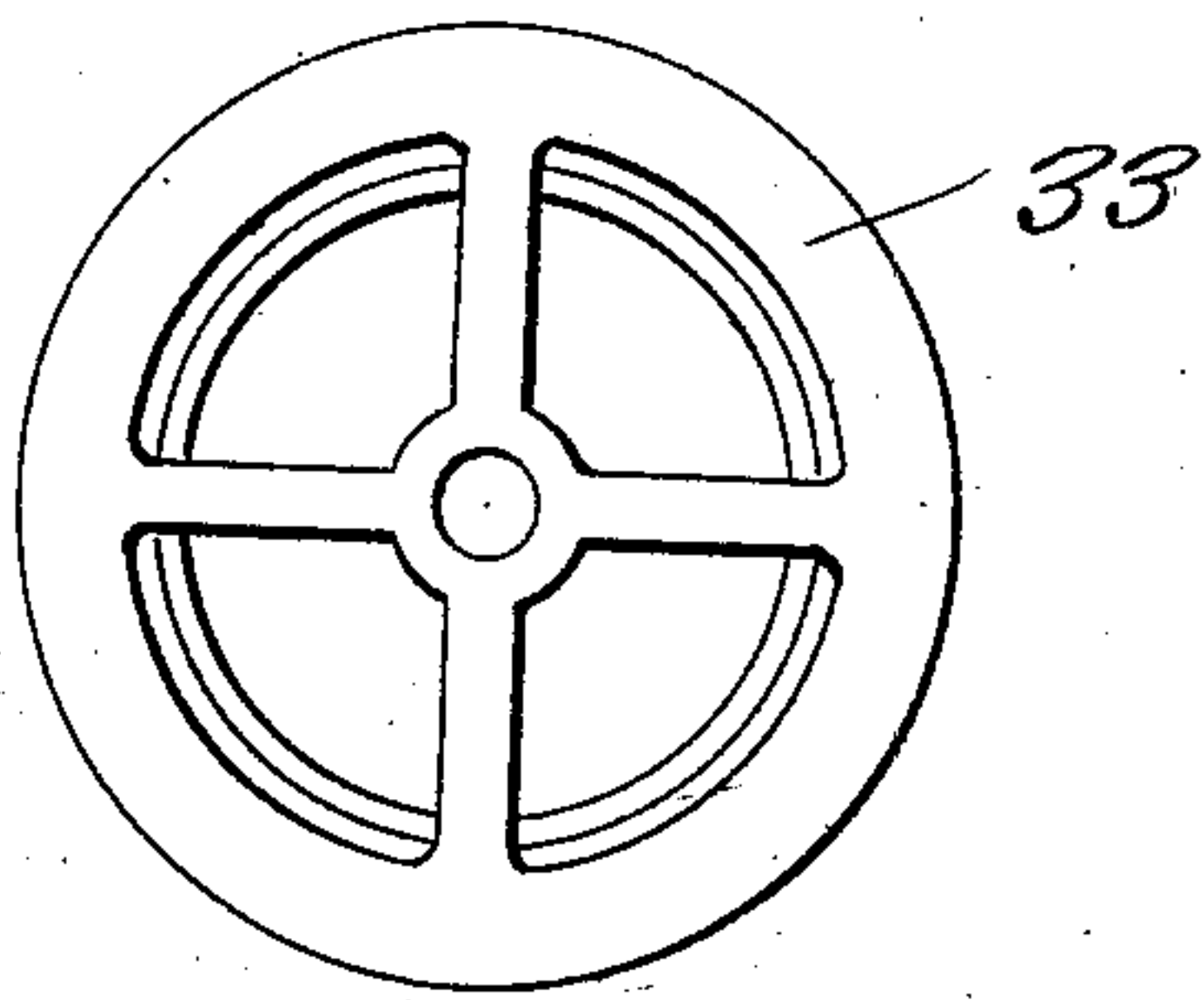


Fig. 1.

Fig. 2.

Fig. 3.



Witnesses
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CARBURETER.

939,856.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, RALPH PAPANTI, a citizen of the United States of America, residing at Springfield, in the county of Hampden and State of Massachusetts, have invented new and useful Improvements in Carbureters, of which the following is a specification.

This invention relates to carbureters designed more particularly for use with automobile motors or motors for launches or boats, and one of the principal objects of the invention is to provide a carbureter in which the adjustment of the valves is accomplished by positive means which cannot readily become displaced during the movements of the motor.

Another object of the invention is to provide a carbureter in which the ordinary float is dispensed with and in which the valves are adjusted by positive means to thus prevent flooding of the carbureter.

In the movements of automobiles passing over rough roads the carbureter is often flooded by the movement of the float in the carbureter of the usual construction and in a carbureter which is not provided with positive means for adjusting the valves.

It is one of the principal objects of my invention to provide a carbureter which will operate in any position and which will operate uniformly under all conditions and positions of the valves.

These and other objects may be attained by means of the construction illustrated in the accompanying drawing, in which,—

Figure 1 is a central vertical section taken through a carbureter made in accordance with my invention. Fig. 2 is an end view of the air valve cap. Fig. 3 is a detail sectional view taken on the line 3—3 of Fig. 1, and looking in the direction indicated by the arrow.

Referring to the drawing, the numeral 1 designates the casing which may be of any suitable size and material, depending upon the character of the motor to which the same is to be attached, said casing having an internally threaded end 2 for attachment to the motor cylinder, a vertical branch member 3 to which the feed valve and mixing valve are connected and a projecting threaded portion 4 to which the air valve is connected. The feed valve cap 5 is of skeleton form and is provided with a projecting threaded nip-

ple 6 to which the feed pipe for the fuel is connected, said nipple having a feed duct 7 which leads into and beyond the center of the cap. A boss 8 extends upward from the cap and is provided with a threaded opening in which is fitted the threaded needle valve 9, said needle valve having an angular stem 10 by means of which said valve may be adjusted in the boss 8 to regulate the feed, a winged nut 11 being fitted to the valve to hold the same in its adjusted positions. The pointed end of the feed valve 9 is seated in the upper end of a vertical duct 12. Fitted in a recess in line with the duct 12 is a threaded spray nozzle 13, said spray nozzle having a duct in line with the duct 12 and a flaring valve seat in its lower end. This nozzle may be renewed when found necessary.

The mixing valve support 14 is provided with a threaded connection 15 fitted into the threaded end of the member 3, said support having an internally threaded portion 16 to which the threaded lower end of the feed valve cap 5 is fitted. A partition 17 is formed in the cap 5 and provided with an opening 18, and a detachable valve seat ring 19 is seated on the valve disk 21. The stem of a needle valve 22 projects through the valve 21 and is held to the seat 19 by means of a spring 23 bearing at its upper end against said valve and at its lower end against a boss 24 on the support 14. The stem of the needle valve extends through said boss and is provided with a threaded portion 25 upon which the valve 21 is held in position. A lock nut 26 is provided for holding the needle valve in position from working loose when in operation. A convolute spring 27 made of flat spring wire and composed of two or three convolutions is disposed above the valve seat 19 to hold said seat down in place. The pointed end of the needle valve fits the flaring valve seat in the spray nozzle. The outer surfaces of the support 14 and the cap 5 are checked or roughened, as at 28, to permit the support 14 and the cap 5 to be readily detached from the member 3 for repairs and renewals.

The air valve 29 is permitted to slide freely upon the unthreaded portion 30 of a valve stem 31, said valve stem having a threaded portion 32 mounted for adjustment in a cap 33 fitted into the member 4 of the casing and provided with a beveled

valve seat 34. On the outer end of the stem 31 is a handle 35, and a winged nut 36 is mounted on the threaded portion 32 for adjusting the valve 29 against the tension of a spring 37 encircling the inner end of the stem 31, said spring bearing at one end against the valve 29 and the opposite end being adjustably connected to the stem by means of a screw 38 and a washer 39. The coils of the spring 37 are reduced in diameter from the outer to the inner end of said spring.

A throttle valve disk 40 is connected to a bolt 41 extending through the casing at a point near its connection with the cylinder, said bolt having a lever 42 connected to one end thereof by means of a nut 43. The valve disk 40 is provided with a tubular bearing 44 for the bolt 41.

The operation of my carbureter may be briefly described as follows:—The needle valve 22 and the disk valve 21 are unseated by the suction stroke of the motor, and the air valve 29 is also operated by the suction to admit the required proportion of air and fuel to the mixing chamber, said valves being seated after each suction stroke by the springs connected thereto. The feed valve 9 may be quickly adjusted to permit the required quantity of fuel to be fed through the spray nozzle and into the mixing chamber. The valve 21 and the needle valve are self adjusting to feed the fuel to the mixing chamber, said valves being held closed by means of the spring 23. The air valve may also be regulated so that the exact amount of air commensurate with the amount of fuel may be admitted to the mixing chamber. The air which enters the mixing chamber during the time the valve 21 is unseated atomizes the fuel, while the air admitted when the valve 29 is unseated mixes with the atomized fuel to expand the same. It will be understood that the relative positions of these valves will not alter the uniform action of the carbureter. In other words, should the motor vehicle or boat assume an abnormal position the carbureter would operate just the same and would not

feed an undue quantity of fuel to the mixing chamber nor an undue amount of air.

My invention is of comparatively simple construction, will operate efficiently under varying conditions, can be quickly taken apart for repairs and renewals and can be accurately adjusted whenever desired.

I claim:—

1. A carbureter comprising a casing, a valve support connected to the casing, a skeleton cap fitted to the valve support, a nipple formed on said cap and provided with a feed duct, a valve adjustably mounted in the cap, a spray nozzle removably fitted in said cap, a partition formed in the cap and provided with a central opening, a valve seat ring disposed between said partition and a shoulder on the valve support, a needle valve for the spray nozzle, a disk valve secured to the shank of the needle valve, a convolute spring interposed between said partition and said valve seat ring, a spring for seating the disk valve, and an air valve connected to the casing.

2. In a carbureter, the combination of a casing, a spring seated air valve removably connected to the casing, a valve support having a threaded connection with the casing, a skeleton cap having a threaded connection to said valve support, a nipple formed on the cap and provided with a feed duct, a valve adjustably mounted in the cap, a spray nozzle removably fitted in said cap, a partition formed on said cap and provided with a central opening, a valve seat ring disposed between said partition and a shoulder on the valve support, a needle valve for the spray nozzle, a disk valve secured to the shank of the needle valve, a convolute spring interposed between said partition and valve seat ring, and a spring for seating the disk valve and the needle valve.

In testimony whereof I affix my signature in presence of two witnesses.

RALPH PAPANTI.

Witnesses:

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ALFRED L. LANGE.