R. H. BAKER & E. W. MASON.

CARBURETER.

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1,292,229. Patented Jan. 21, 1919.

Fig. 1.

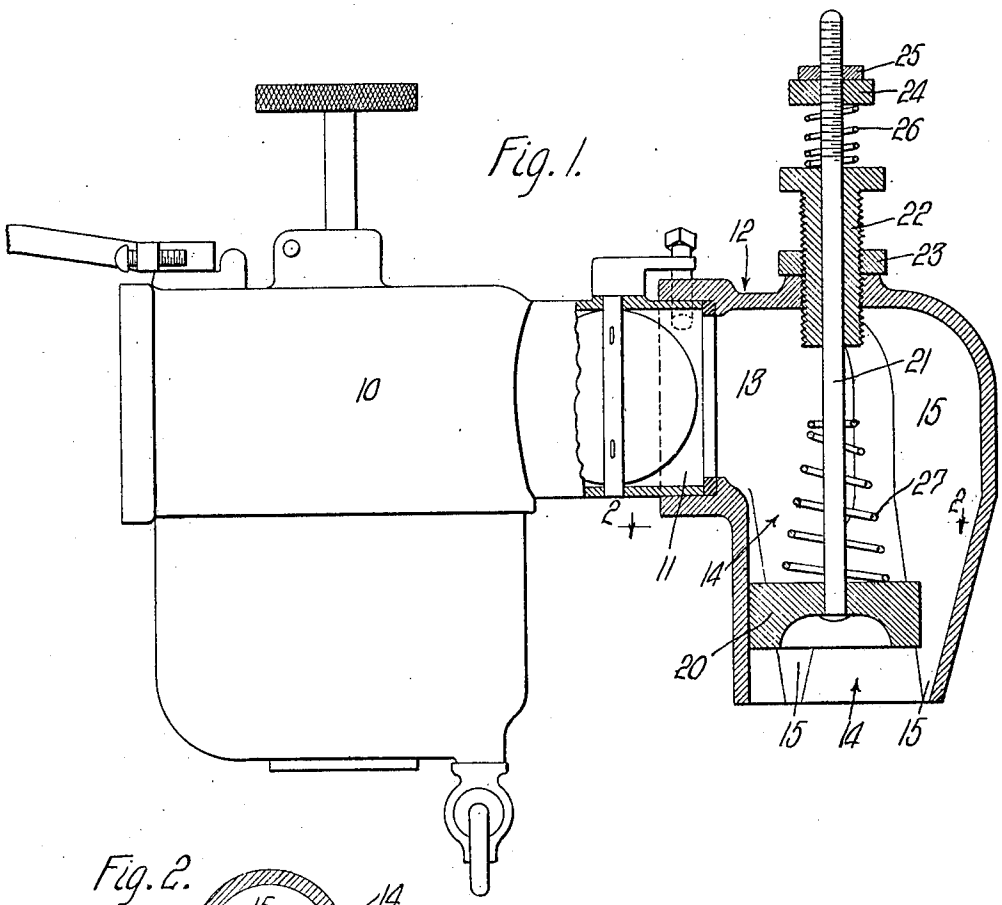
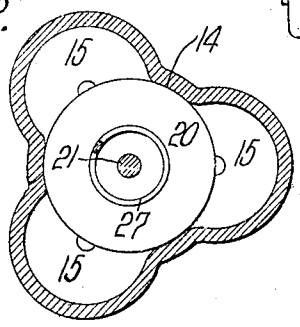


Fig. 2.



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THE HORKEL PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

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CARBURETER.

1,292,229. Specification of Letters Patent. Patented Jan. 21, 1919.

Application filed January 23, 1917. Serial No. 144,043.

To all whom it may concern:

Be it known that we, ROBERT H. BAKER and EARL W. MASON, citizens of the United States, residing at San Diego, in the county of San Diego, State of California, have invented new and useful Improvements in Carbureters, of which the following is a specification.

This invention relates to carbureters; and relates particularly to air inlet devices or air inlet control devices for carbureters.

We illustrate our invention as an attachment for a carbureter; but it will of course be understood that our invention may be made a part of the carbureter if so desired. It is an object of our invention to provide an air inlet control, automatic in its nature, which will supply the proper amount of air to keep the carbureted mixture uniform in quality throughout all variations in speed, from low speed to high speed. And it is an object of our invention to provide a device which may be attached to a carbureter, and one which may be adjusted, both as to high speed condition and as to low speed condition, so that it will operate efficiently in all cases.

Although our device is applicable to any kind of carbureter, its particular usefulness, as an attachment, is in connection with carbureters which have no air inlet control valve or other similar mechanism; and in the accompanying drawings we show a preferred form of device embodying our invention, applied as an attachment to a simple and well known form of carbureter, which normally has no air inlet control valve or the like.

In the accompanying drawings Figure 1 is a side elevation of a carbureter, showing our device in vertical longitudinal section; and Fig. 2 is a cross section taken as indicated by line 2—2 on Fig. 1.

In the drawings the numeral 10 designates a simple form of carbureter having an air inlet 11 through which air is moved by suction into and through the carbureter. Our device embodies a suitable casting 12 having a passage therethrough, which becomes, in effect, an extension of the air inlet 11. This passage through the casting 12 has a horizontal portion 13 and a vertical downwardly extending portion 14, as illustrated. On the sides of the vertical passage 14 we provide lateral openings 15 which are small at their lower ends and increase in size as they extend upwardly. In preferred form, these lateral passages 15 are of inverted cone shape. These lateral passages are, as illustrated, in free communication with the vertical main passage 14 at their inner sides; being in reality mere side extensions of the main vertical passage 14.

We provide a piston valve 20 of suitable weight, mounted upon the lower end of a vertical valve rod 21. This valve rod 21 passes upwardly through a screw threaded adjusting sleeve 22; which sleeve is screw threaded into the casting 12 and is provided with a lock nut 23 for setting it in any adjusted position. Above the sleeve 22 the rod 21 is provided with a nut 24 and lock nut 25; and a coiled spring 26 surrounds the rod 21 beneath nut 24 and rests on the adjusting sleeve 22. A coiled spring 27 rests upon the piston valve 20, this coiled spring being preferably conical in formation. When the piston valve 20 is moved upwardly by the suction of air through the passage 14, spring 27 strikes the lower end of adjustment sleeve 22 and thus forms a resilient stop to the upward movement of the piston valve. The spring 26 and adjusting nut 24 form a resilient stop to the downward movement of the piston valve 20. The nut 24 is adjusted in position so that when the piston valve is in its lowermost position, as shown in Fig. 1, then a sufficient amount of air may pass by the piston valve, through the side passages 15, to supply the carbureter for low speed operation. The position of adjustment sleeve 22 is set so that the piston valve 20 may rise sufficiently to supply the carbureter with sufficient air for high speed operation. When the carbureter is in operation at high speed, piston valve 20 moves freely upwardly (opposed only by gravity, which tends to move the piston valve downwardly), until the spring 27 strikes the lower end of adjustment sleeve 22; and then the spring 27 resiliently opposes further upward movement of the piston valve 20. The strength of this spring 27 is initially determined to suit the carbureter to which the device is attached; so that, in case of excessive high speed, the piston valve may move farther upwardly, opposed by the spring 27. The spring 26 forms a resilient stop to the downward movement of the piston valve; and the two springs together prevent any clacking or humming noise which would otherwise be

caused by the up and down vibration of the piston valve when the carbureter is in action.

It will be seen that our device may be adjusted first for high speed operation, by adjustment of sleeve 22, and then adjusted for low speed operation, by adjustment of the nut 24. The weight of the piston valve, and the strength of the spring 27 having been previously determined with due regard to the carbureter; then, when the proper adjustments are made, the device will automatically admit the proper amount of air to form a uniform mixture in the carbureter at all speeds. We have described a preferred form of device, with preferred adjustment means, etc., in some detail; but we do not consider our invention limited to this particular form, but consider it to include variations and changes as they are included within the scope of the following claims.

Having described a preferred form of our invention, we claim:

1. In combination with a carbureter having an air inlet, a gravity operated valve in the inlet, means comprising an adjustable member and a spring coöperating with the valve to allow the valve a limited amount of free opening movement, the spring opposing the opening movement of the valve after the free opening movement.

2. In combination with a carbureter having an air inlet, a gravity operated valve in the inlet, adjustable means comprising an adjustable member and a spring coöperating with the valve to allow the valve a limited amount of free opening movement, the spring opposing the opening movement of the valve after the free opening movement, and adjustable spring stop means for resiliently limiting the closing movement of said valve.

3. In combination with a carbureter having an air inlet with a downward extension through which air flows upwardly to the carbureter, the walls of said inlet extension having upwardly widening side passages, a weighted piston valve adapted to movably fit in said inlet extension, a valve rod extending up from the piston valve, a screw threaded adjustment sleeve in the upper part of the inlet wall and surrounding the valve rod, a coiled spring resting on the valve and adapted to strike the sleeve when the valve rises, an adjusting nut on the upper end of the valve rod, and a coiled spring between the nut and the upper end of the adjusting sleeve.

In witness that we claim the foregoing we have hereunto subscribed our names this 8th day of January, 1917.

ROBERT H. BAKER.
EARL W. MASON.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."