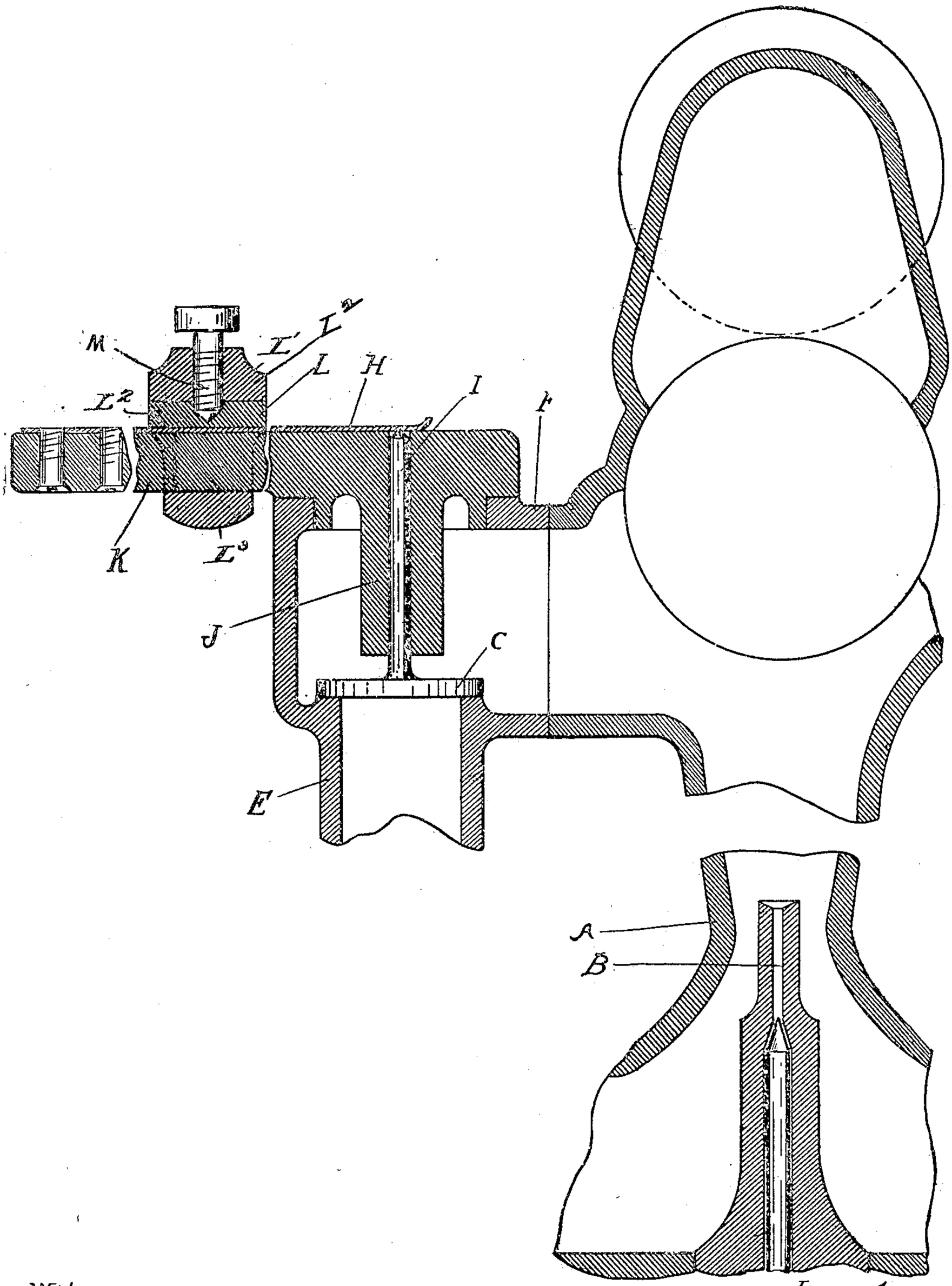
N. T. HARRINGTON.

CARBURETER.

APPLICATION FILED JAN. 27, 1908.

927,529. Patented July 13, 1909.



Witnesses
H. R. Ford
James O. Barry.

Inventor
Norman T. Harrington.
By Whittemore, Hubbard & Whittemore
Attys

UNITED STATES PATENT OFFICE.

NORMAN T. HARRINGTON, OF LANSING, MICHIGAN.

CARBURETER.

No. 927,529. Specification of Letters Patent. Patented July 13, 1909.

Application filed January 27, 1908. Serial No. 412,834.

To all whom it may concern:

Be it known that I, NORMAN T. HARRINGTON, a citizen of the United States of America, residing at Lansing, in the county of Ingham 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 has special reference to the construction by which the carbureter may be quickly adjusted for operation under varying conditions.

To this end the invention consists in the controlling means for the auxiliary or by-pass air valve, and, further, in the peculiar construction, arrangement and combination of parts as hereinafter set forth.

In the drawing the figure is a vertical longitudinal section through the carbureter.

My improvement is applicable to various types of carbureters, but, as shown, A is the tube or casing having a double taper through which the air to be carbureted is drawn, and B is the nozzle for the introduction of the liquid fuel, having its point of discharge in proximity to the point of greatest contraction in the tube A. It has been found in the operation of carbureters of this type that the passage of air through the double tapering tube will develop a partial vacuum at the discharge end of the oil nozzle which will cause the injection of oil into the air current, and it has also been demonstrated that within certain limits the discharge of oil is substantially proportional to the velocity of the air current. Thus a uniform quality of explosive mixture is obtained with varying quantities according to the demand of the engine. It is not however possible to pass through the restricted portion of the tube A in a given time interval as large a volume of air as is sometimes necessary to meet the demands of the engine, and an auxiliary air valve is provided to admit additional air into the large portion of the conduit A beyond its point of greatest restriction. This valve is normally held closed by a spring pressure or other resistance and only opens when the pressure in the tube A is reduced below atmosphere. It is the particular object of the present invention to provide means for controlling the automatic operation of this auxiliary valve so as to produce a more uniform quality of explosive mixture under varying demands of the engine than has been heretofore accomplished. Furthermore, it is an object to render the apparatus readily adjustable to meet the special conditions of an individual engine. Thus if the limits of variations in the demand of the engine are known the carbureter may be quickly adjusted to operate uniformly within these limits, this being accomplished by the following construction: C is the auxiliary valve, which is seated at D within a conduit E, which communicates at F with the casing A. H is a spring of variable resistance which, as shown, comprises a flat spring bar arranged outside of the casing E and contacting with the end of the stem I of the valve, this stem projecting through an aperture J in the casing. The spring H is anchored by attachment to the casing E, and preferably to a projecting arm K thereof, but the arrangement is such that the length of the free portion of the spring may be varied. This, as shown, is accomplished by a slidable yoke L′, having forks L^2 and L^3 which embrace the arm K and spring H, and the yoke is secured in different positions of adjustment by a shoe L and a set screw M.

With this construction it is evident that a very slight reduction in pressure in the conduit A will cause the opening of the valve C, but the increase in resistance, due to the tensioning of the spring, will limit the degree of opening. The ratio of the increase may be varied by an adjustment in the length of the spring, which, as described, is effected by sliding the yoke L′ along the arm.

What I claim as my invention is:

1. A carbureter comprising a mixing conduit, a conduit connecting laterally with said mixing conduit and having a valve seat therein, an auxiliary air valve engaging said seat, a stem for said valve passing out through an aperture in said conduit, a spring for opposing movement of said stem, being released from tension when said valve is seated, and means for adjusting the length of said spring to vary its tension.

2. A carbureter comprising a casing containing a mixing conduit and an auxiliary air inlet passage, a valve controlling said auxiliary air inlet having its stem passing out through an aperture in said casing, a flat spring arranged in the path of said stem, an arm on said casing to which said spring is secured and a yoke adjustable on said arm and bearing against said spring for changing the length thereof.

3. In a carbureter, the combination with a

casing, of an auxiliary air valve, a stem on said valve having its outer end free and passing out through said casing, a spring contacting with the outer end of said stem, and means for adjusting the length of said spring to offer variable resistance to the same degree of movement of said valve.

4. In a carbureter, the combination with a casing, of an auxiliary air valve, a stem in said valve passing out through said casing, a guide on said casing for the valve stem, a spring contacting with the outer end of said stem, and means for adjusting the length of said spring to offer variable resistance to the same degree of movement of said valve.

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

NORMAN T. HARRINGTON.

Witnesses:
NELLIE KINSELLA,
JAMES P. BARRY.