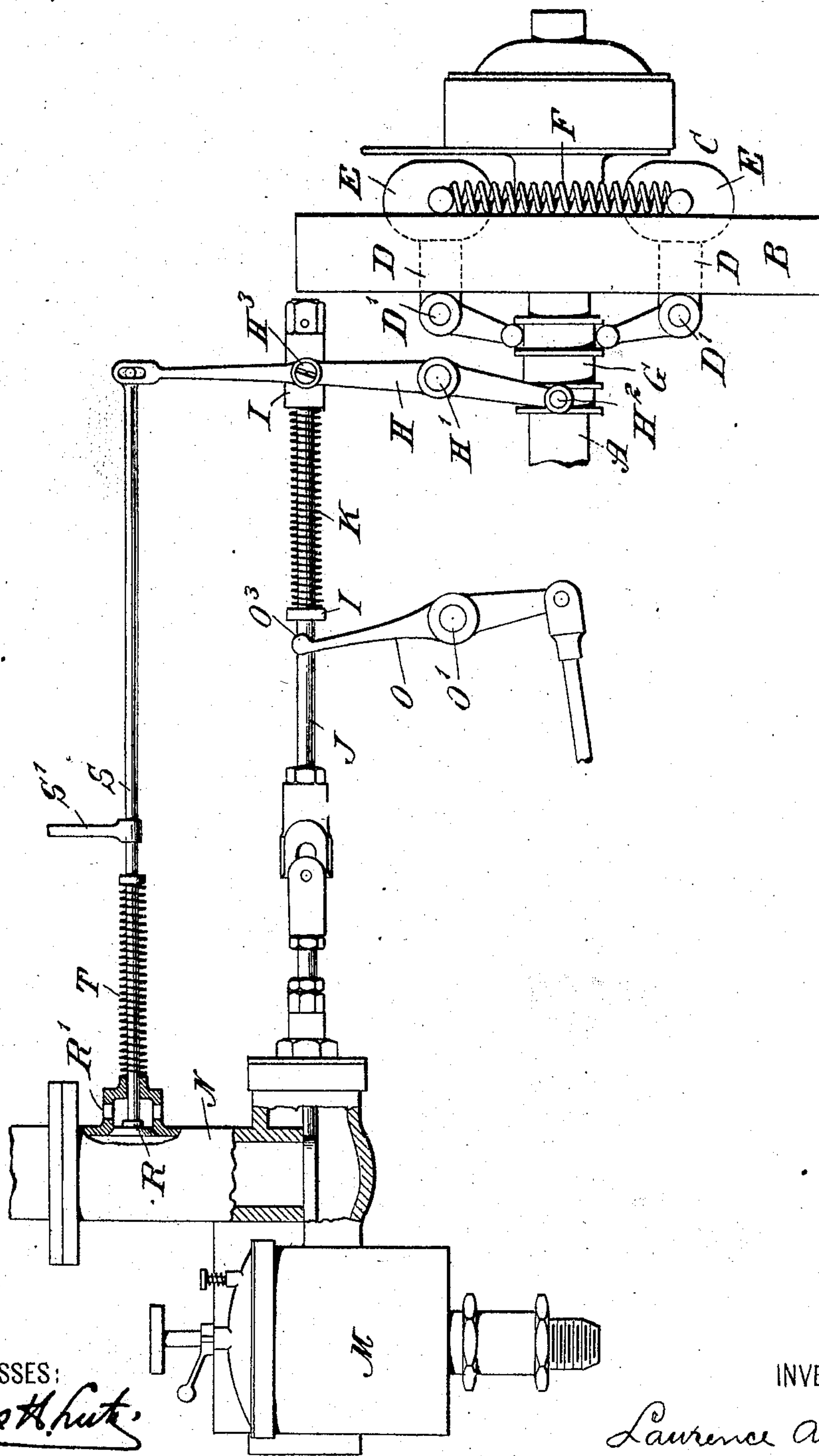


No. 806,512.

PATENTED DEC. 5, 1905.

L. ABRAHAM.  
CARBURETER FOR HYDROCARBON ENGINES.  
APPLICATION FILED APR. 1, 1904.



WITNESSES:

WITNESSES:  
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# UNITED STATES PATENT OFFICE.

LAWRENCE ABRAHAM, OF NEW YORK, N. Y.

## CARBURETER FOR HYDROCARBON-ENGINES.

No. 806,512.

Specification of Letters Patent.

Patented Dec. 5, 1905.

Application filed April 1, 1904. Serial No. 201,088.

*To all whom it may concern:*

Be it known that I, LAWRENCE ABRAHAM, a citizen of the United States, and a resident of the borough of Brooklyn, county of Kings, city and State of New York, have invented certain new and useful Improvements in Carbureters for Hydrocarbon-Engines, of which the following is a specification.

My invention relates to carbureters, chiefly for automobiles and engines. It has been found that when running at a high rate of speed with the ordinary construction of carbureter an insufficient quantity of air is admitted into the mixing-chamber, resulting in great waste of fuel and energy.

The object of my invention is to provide a simple and efficient device for overcoming this difficulty.

Other objects of the invention will appear from the description following hereinafter, and the features of novelty will be pointed out in the appended claims.

The drawing represents a diagrammatic view of a carbureter and governor of an automobile with my invention attached thereto.

A is the power-shaft, connected with the engine in any suitable manner, on which is mounted the fly-wheel B.

C is a centrifugal governor controlling the speed of the engine, and consists of two bell-cranks D, pivoted at D' to supports forming part of or secured to the web of the fly-wheel B. To the one end of each of said bell-cranks C are attached the governor-weights E, connected by a spring F. The other end of each of said bell-cranks engages a sliding sleeve or collar G on the shaft A.

H is a lever suitably pivoted at H' to a stationary support, (not shown,) its one end engaging the sleeve G, as at H<sup>2</sup>. The said lever H is connected at H<sup>3</sup> with a sleeve or collar I, loosely mounted on the throttle-rod J, connected with the throttle-valve.

K is a coil-spring mounted on said throttle-rod, one end of which spring abuts against the sleeve I, while the other end abuts against a collar L, secured to the throttle-rod J.

M is the float-chamber of a carbureter of any approved construction, and N is the inlet-pipe leading to the inlet-valve of the engine. The throttle-valve may be of the usual sliding type and is interposed between the mixing-chamber of the carbureter and the inlet N.

O is a lever suitably pivoted to a stationary support at O' and pivotally connected at O<sup>2</sup>

with a rod P, leading to the front of the vehicle in such a position as to be easily accessible to the operator. The end O<sup>3</sup> of said lever O is arranged under certain conditions to engage the collar L.

R is a valve in the inlet-pipe N, secured to a stem S, suitably supported in a bearing S', said valve R being normally closed to the atmosphere by a coil-spring T.

R' is an air-inlet communicating with the atmosphere and also having connection with the pipe N. The free end of the valve-stem S' is connected to an extension of the lever H by a pin-and-slot connection S<sup>2</sup>.

It will be understood that all the parts described are suitably supported upon stationary parts of the machine, which I have not deemed necessary to illustrate.

The operation of the mechanism described is as follows: As the speed of the engine increases the governor-weights E are forced outward from the shaft A by centrifugal force, and this motion is transmitted to the bell-cranks D and through the said bell-cranks to the sliding sleeve or collar G. The motion transmitted to the said sleeve G will swing the lever H on its pivot H', and through its connection will move the collar I to the left against the tension of the spring K, compressing the said spring, which will, after a certain degree of compression has been attained, move the collar I and with it the throttle-rod J also to the left, thus closing the throttle-valve and limiting the speed of the engine. If now it be desired to continue to run the engine at a high speed, or, in other words, to overcome the action of the governor and its connected parts just described, the operator moves the rod P to the left, swinging the lever O on its fulcrum O' and bringing the end O<sup>3</sup> into engagement with the collar L, and thus preventing the compressing of the spring K from closing the throttle-valve. As the governor-weights are now moved away from the shaft A by centrifugal force, (the engine continuing to run at a high speed,) the lever H will be swung on its pivot, as before described, and motion to the left will be transmitted to the stem S, thus opening the air-inlet valve R, admitting an extra quantity of air to the engine, and thus insuring a mixing of the air and fuel in correct proportion to obtain the best results while running at a high speed. It will be understood that as long as the operator continues to hold the projection O<sup>3</sup> against the collar L the action of the governor will have



no effect on the throttle-valve, but will hold the valve R open.

Various modifications may be made without departing from the nature of my invention.

5 What I claim as new, and desire to secure by Letters Patent, is—

1. The combination of a carbureter, a connection for conducting the explosive mixture, including air, from such carbureter to the engine, a throttle-valve in said connection, and  
10 a separate valved inlet for the admission of air only in said connection, between said throttle-valve and the engine and means for automatically moving said air-inlet valve as  
15 described.

2. The combination of a carbureter, a connection for conducting the explosive mixture from said carbureter to the engine, a throttle-valve in said connection, a separate air-inlet  
20 valve located in said connection between the throttle-valve and the engine, a governor operated by the engine and an operative connection from said governor to the separate inlet-valve, to allow air to join the explosive  
25 mixture after it has passed the throttle-valve in case of higher speed.

3. The combination of a carbureter, a con-

nection for conducting the explosive mixture from said carbureter to the engine, a throttle-valve, a governor for closing said valve as the  
30 speed increases, means under the control of the operator for holding the throttle-valve open notwithstanding the action of the governor, an air-inlet valve in said connection, and means operated by the governor for open-  
35 ing said air-inlet valve when the speed increases and the throttle-valve is held open.

4. The combination of a carbureter, a connection for conducting the explosive mixture from said carbureter to the engine, an air-in-  
40 let in said connection, a valve controlling said inlet, a throttle-valve, a governor controlled by the engine and operative connections from the governor to the throttle-valve and to said  
45 air-inlet valve to cause the throttle-valve to close and the said air-inlet to open when the speed of the engine increases.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

LAWRENCE ABRAHAM.

Witnesses:

JOS. J. DUHAMEL,  
HENRY WILHELM.