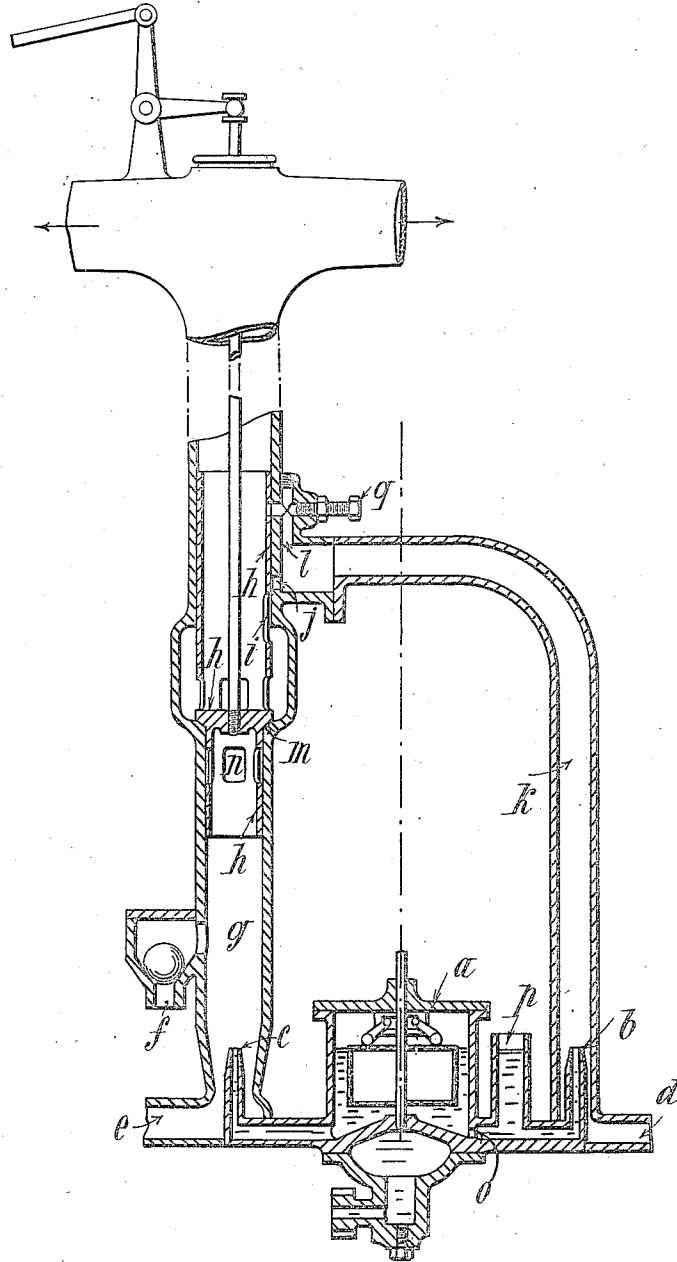


L. BOLLÉE.
CARBURETER.

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1,046,434.

Patented Dec. 10, 1912.



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UNITED STATES PATENT OFFICE

LÉON BOLLÉE, OF LE MANS, FRANCE.

CARBURETER.

1,046,434.

Specification of Letters Patent.

Patented Dec. 10, 1912.

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To all whom it may concern:

Be it known that I, LÉON BOLLÉE, a citizen of the French Republic, residing at Le Mans, France, have invented a certain new and useful Improved Carbureter, of which the following is a specification.

The present invention consists in a carbureting apparatus suitable for any speeds, comprising in combination a plurality of carbureters individually regulated, not, as hitherto proposed, a series of carbureters regulating each other or a series of carbureters with constant depression and carburization.

Each carbureter in the apparatus according to this invention presents a great flexibility of operation, the number of said successively operating carbureters in each apparatus being preferably restricted to two. In such an apparatus, in order to utilize all the advantages afforded by the regulating means which moreover can be of any desired form, it is preferable to choose for the carbureter which is the first to become operative (that insuring the starting or low speed) a carbureter with a fixed air inlet, thus avoiding all chances of leaks through the extensible or additional air inlet, and it is advisable to choose for the following carbureter or carbureters intended to make possible high speeds, a type of carbureter with additional air inlet, which is thus able to open the greater passage for the air, the quicker the engine is working.

By way of example, the only figure of the accompanying drawing shows diagrammatically a carbureter constituted by the combination of a first carbureter intended to insure alone slow or medium working, which is regulated by a progressive resistance at the petrol outlet with a second carbureter intended to make possible high speeds and regulated by an additional air inlet.

In that figure, *a* is a tank for the carbureting medium or fuel with a constant level, *b* is the sprayer of the first carbureter, the one insuring slow working, *c* is the sprayer of the second carbureter—that which becomes operative for high speeds,—*d* is the air inlet of the first carbureter, *e* is the air inlet of the second carbureter, *f* is the additional air inlet of the second carbureter, shown diagrammatically by a simple ball raised by the suction and enabling air to arrive at *g* at the same time as the air arriving through *e*. The carbureted air from the

first carbureter passes through a pipe *h* at an elongated opening *j* which is closed by the mixture throttling piston *k* when the latter rests on its seat *m*, but uncovered by the orifice *j* when the piston rises, thus enabling carbureted air from the first carbureter to be drawn in in ample quantity by the engine. When the piston *k* is resting on its seat *m*, it closes perfectly the second carbureter, nor can the carbureted air from the first carbureter be drawn in by the engine (the orifice *j* being closed) except through a branch *l* constituted by a simple passage that can be more or less throttled by means of a screw *q* enabling the minimum passage for the lowest speed to be regulated in the most accurate manner. During the whole of the time occupied by the piston *k* in uncovering the orifice *j*, the piston *k* continues to close circumferentially the carbureted air from the second carbureter, the said admission becoming possible only when the piston *k* has been raised to a sufficient extent to enable the openings *n* of the piston to pass beyond the seat *m*, which takes place exactly when the opening *j* of the first carbureter is completely open.

The opening of the different passages takes place therefore in the following order: 1. The piston *k* being completely lowered, there is no other opening except the branch *l* of the first carbureter. 2. On the piston *k* being raised, the first carbureter becomes fully operated through the opening *j* being fully uncovered. 3. The second carbureter becomes operative as soon as the openings *n* of the piston pass beyond the seat *m*; the admission of air, owing to the suction is then effected through *e* by drawing in the carbureting medium at *c*. 4. The suction or partial vacuum becoming sufficiently great in the second carbureter, the additional air inlet *f* is opened, and the air from the same also passes through the openings *n* at the same time as the air which is admitted at *c*.

The first carbureter obtains its carbureting medium from an auxiliary chamber *p* supplied through an orifice *o* of suitable dimensions and sufficiently small to bring about the sinking of the level in the auxiliary chamber *p* when the output of the sprayer *b* becomes great. In fact when a relatively great suction takes place, as the orifice *o* has a smaller section than the outlet conduit of the auxiliary chamber *p*, the liquid contained in the latter flows off more

rapidly than the liquid in the main reservoir and consequently a lowering of the level at p takes place. The loss of head due to the said lowering of the level of the liquid, regulates automatically the carbureting of the said first carbureter, while the additional air inlet f of the second carbureter automatically regulates the carburization of the latter.

10 The means indicated for reducing the outlet or escape of the liquid from the first carbureter, or for producing an additional air inlet in the second carbureter, are given merely diagrammatically and by way of example. The example given comprises only 15 two carbureters, but for large engines it may be advisable to use more carbureters when those already utilized no longer afford sufficient range.

20 What I claim as my invention and desire to secure by Letters Patent is:—

In carbureting apparatus comprising a

plurality of carbureters the combination with a main carbureter, an inlet pipe and a throttle valve therein adapted to isolate 25 the main carbureter from the inlet pipe, and an additional air inlet in said pipe, of an auxiliary carbureter comprising an open feed chamber adapted to regulate automatically the supply of carbureting medium, a 30 normally open conduit connecting said auxiliary carbureter with the inlet pipe and means on said throttle valve for increasing the outlet area of said conduit when the 35 throttle valve is opened to allow the operation of the main carbureter.

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

LÉON BOLLÉE.

Witnesses:

GRANGER CONSTANT MARIE,
HÉRIN LÉON.