No. 785,622. PATENTED MAR. 21, 1905.

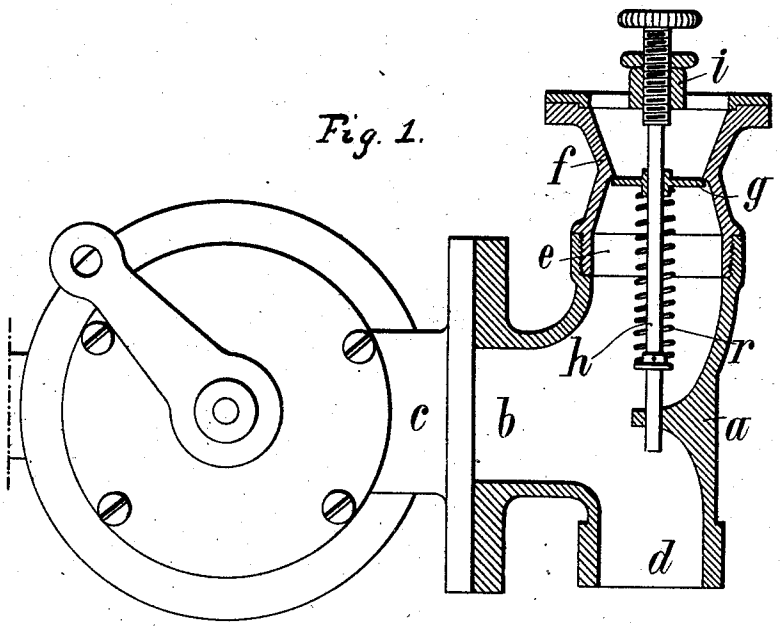
A. A., F. & G. LONGUEMARE.

CARBURETER FOR HYDROCARBON ENGINES.

APPLICATION FILED MAR. 4, 1904.

2 SHEETS—SHEET 1.

Fig. 1.



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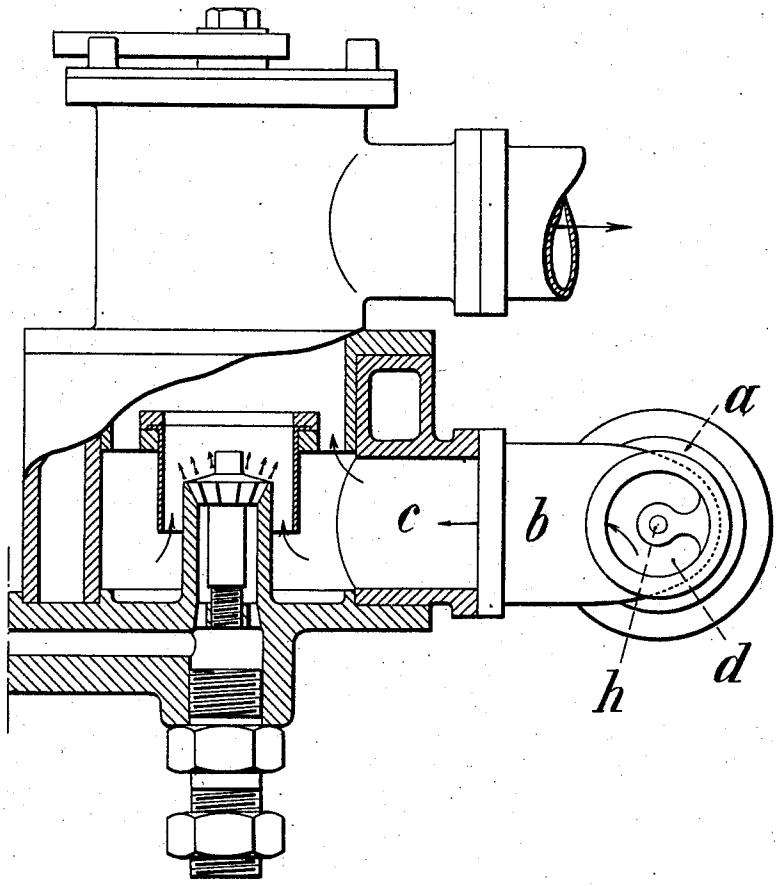
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CARBURETER FOR HYDROCARBON ENGINES.

APPLICATION FILED MAR. 4, 1904.

2 SHEETS—SHEET 2.

Fig. 2.



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No. 785,622. Patented March 21, 1905.

UNITED STATES PATENT OFFICE.

AMÉLIE ADÈLE LONGUEMARE, FERNAND LONGUEMARE, AND GEORGES LONGUEMARE, OF PARIS, FRANCE, ASSIGNORS TO SAID AMÉLIE ADÈLE LONGUEMARE.

CARBURETER FOR HYDROCARBON-ENGINES.

SPECIFICATION forming part of Letters Patent No. 785,622, dated March 21, 1905.

Application filed March 4, 1904. Serial No. 196,632.

To all whom it may concern:

Be it known that we, AMÉLIE ADÈLE LONGUEMARE, FERNAND LONGUEMARE, and GEORGES LONGUEMARE, citizens of the French Republic, residing in Paris, France, have invented certain new and useful Improvements in Carbureters for Hydrocarbon-Engines, of which the following is a specification.

This invention relates to an apparatus for the partial automatic regulation of the admission of air to the carbureter of an explosion-engine, the regulation in question being such that a variable supplementary volume of air, the proportion of which varies directly with the speed of the engine, is added to the volume of air admitted through an orifice of constant cross-section, which, however, is smaller than that of the suction-pipe of the engine.

In the accompanying drawings, Figure 1 shows a plan view of a carbureter, the air-regulating device being shown in section; and Fig. 2, a side elevation, partly in section, of the same.

The apparatus consists of a tube or casing *a*, provided with a branch *b*, which is connected to the ordinary device *c*, serving for the admission of air to the carbureter-chamber. One of the ends of the casing *a*—namely, the end *d*—is open, and the cross-sectional area of that opening *d* is smaller than that of the branch *b*. At the other end, *e*, of the casing *a* is arranged a two-cone tube *f*. The reduced portion of the cone *f* affords a seat for a valve *g*, constituted by a disk moving on a central rod *h*, which forms a guide for it.

A spring *r*, concentrically arranged on the rod *h*, serves to maintain the valve *g* applied to its seat, and consequently to cut off the passage to air through the cone. The adjustment of the tension of the spring *r* may be effected by screwing the rod *h* up or down in the spider *i*, through which it is mounted.

When the engine is running slowly, the air entering the carbureter passes only through the opening *d* of the casing *a*, the valve *g* remaining on its seat. If, however, the engine exceeds a certain speed, the frequency of the suctions of its piston produces a greater depression through the branch *b*, which depression tends to open the valve *g*, whereupon an additional volume of air enters through said valve.

It will be seen that owing to the conical form of the casing of the valve *g* the area of the passage for the admission of an additional volume of air gradually increases as the extent of opening of the valve increases, so that the supply of air to the carbureter is the greater the greater the speed of the engine.

What we claim as our invention, and desire to secure by Letters Patent, is—

1. An automatically-acting air-inlet device for carbureters comprising a three-way tubular connection comprising a normal air-inlet opening, an auxiliary automatically-adjustable air-inlet opening, a valve therein and an intermediate air-inlet conduit leading to the carbureting-chamber, substantially as set forth.

2. In an automatically-acting air-inlet device for carbureters a three-way connection comprising a normal air-inlet opening, an auxiliary automatically-adjustable air-inlet opening, a valve therein, and an intermediate air-inlet conduit leading to the carbureting-chamber of slightly-larger area than the normal air-inlet opening, substantially as set forth.

3. In an automatically-acting air-inlet device for carbureters a three-way connection comprising a normal air-inlet opening *d*, an auxiliary automatically-adjustable air-inlet opening *e*, a valve therein, and an intermediate air-inlet conduit *b* leading to the carbureter-chamber of slightly larger area than the normal air-inlet opening, substantially as described.

4. In an automatically-acting air-inlet device for carbureters a three-way connection comprising a normal air-inlet opening, an auxiliary automatically conical adjustable air-inlet opening, a valve therein, and an intermediate air-inlet conduit leading to the car-

bureting-chamber of slightly-larger area than the normal air-inlet opening, substantially as set forth.

5. Apparatus for the automatic regulation of the air-supply to a carbureter comprising a three-way casing, a conical valve-casing in one opening thereof, a valve therein, a spring-valve mounted thereon and means for regulating the tension of the valve-spring, substantially as set forth.

6. Apparatus for the automatic regulation of the air-supply to a carbureter comprising a three-way casing *a*, a conical valve-casing *f* in one opening thereof, a valve therein, a spring-valve mounted thereon and means for regulating the tension of the valve-spring, substantially as set forth.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

AMÉLIE ADÈLE LONGUEMARE.
FERNAND LONGUEMARE.
GEORGES LONGUEMARE.

Witnesses:
JEAN ROBELET,
HANSON C. COXE.