

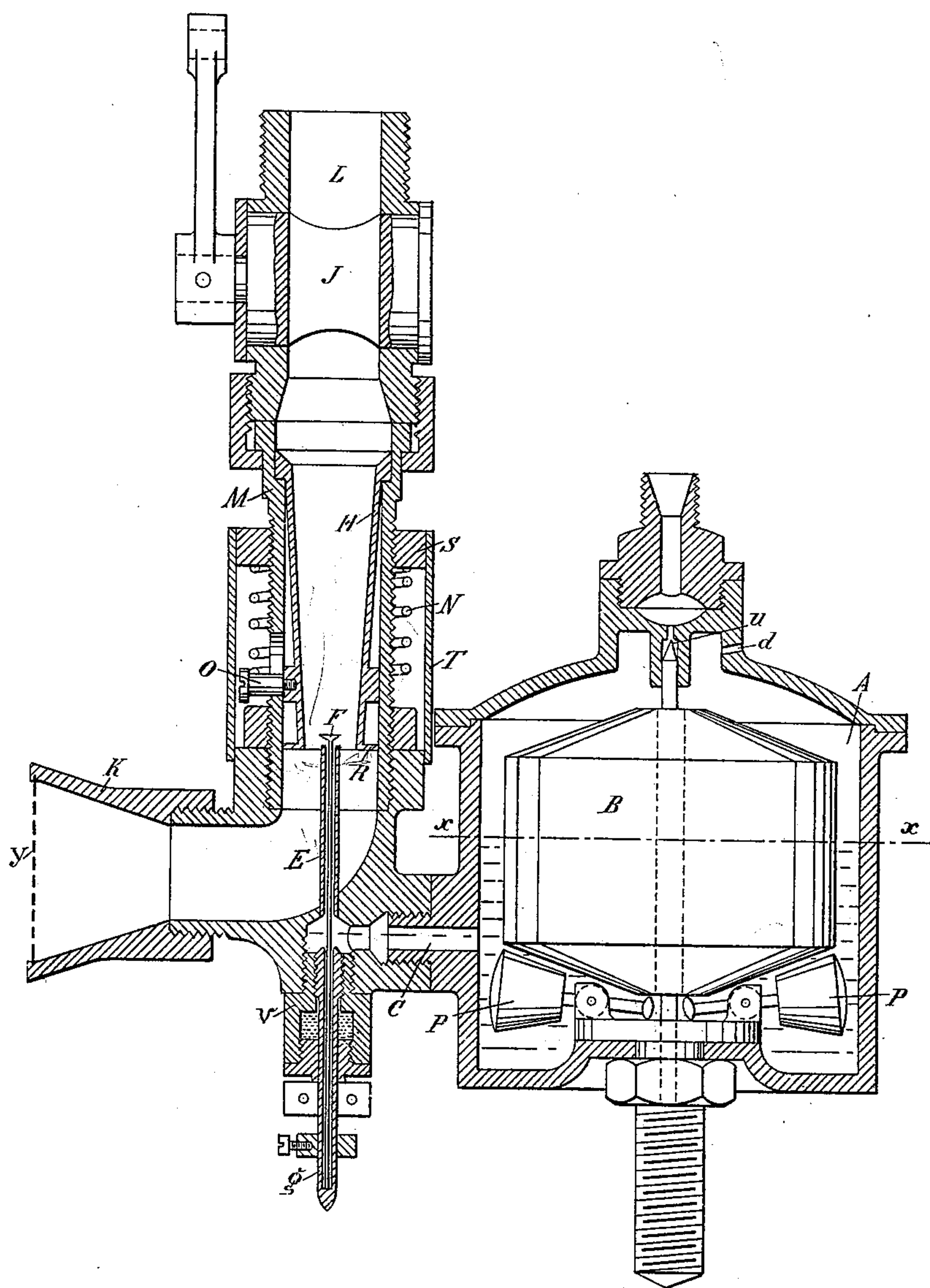
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Patented Aug. 21, 1900.

A. & L. LUMIÈRE.
CARBURETER FOR PETROLEUM OR OTHER ENGINES.

(Application filed Mar. 27, 1900.)

(No Model.)



WITNESSES:
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UNITED STATES PATENT OFFICE.

AUGUSTE LUMIÈRE AND LOUIS LUMIÈRE, OF LYONS, FRANCE.

CARBURETER FOR PETROLEUM OR OTHER ENGINES.

SPECIFICATION forming part of Letters Patent No. 656,197, dated August 21, 1900.

Application filed March 27, 1900. Serial No. 10,339. (No model.)

To all whom it may concern:

Be it known that we, AUGUSTE LUMIÈRE and LOUIS LUMIÈRE, citizens of France, residing at Lyons, France, have invented a new and useful Carbureter for Petroleum or other Carbureting Liquid Motors, of which the following is a full, clear, and exact description, and for which we have made application for patent in France, dated November 11, 1899.

My said invention relates to improvements in carbureters for petroleum and like motors, and has for its object to insure the intimate mixture in definite proportions of the air with these liquids, and consequently to supply to the motor an explosive mixture of constant composition, the introduction of which into the cylinder requires only to be quantitatively regulated.

The apparatus also comprises a special arrangement for obviating the influence of vibrations in its application to motor-vehicles.

The arrangement of this apparatus is represented in the accompanying drawings in vertical section.

The petroleum or other carbureting liquid (hereinafter referred to only as petroleum, which may be supplied from any suitable reservoir, but not shown) is first delivered into a reservoir A, in which the level is constantly maintained by means of a float B, which shuts off the entrance of the liquid by the valve *u* as soon as the normal level is attained. The reservoir also communicates with the atmosphere by a small opening *d*. The float B, which is guided vertically by a central rod, is partly equilibrated by two or more counterbalance-weights P, completely immersed in the liquid in the reservoir A. Each counterbalance-weight is fixed to one arm of a small rocking lever, the other arm of which raises the float. This latter is thus rendered lighter and its action more sensitive to variations in the oil-level. In fact, all action tending to move the float in one or the other direction also tends to move the counterweights P in the same direction, and as these latter can only move in reverse direction to that of the float and as they are also held by the resistance of the liquid they oppose all sudden movements of the float. The petroleum in the reservoir A passes by the channel C to the interior of the vertical tube E, which is provided at its up-

per part with a conical valve F, the rod of which rests at the bottom of a closed tube *g*, screwed into the bottom of a stuffing-box *v* and by the aid of which the opening of the valve F can be regulated from the exterior. The valve opens a little above the level *xx* of the petroleum in the reservoir A into the center of a reversed truncated conical chamber H, the angle of which is from five to seven degrees.

The chamber H, which is of thin metal, may be moved vertically in a cylindrical casing M. It is held in its lowest position by a spring N, acting upon three studs O, which pass through the casing in elongated holes. The collar S, against which the spring presses, being screw-threaded on the casing M, enables the tension of this spring to be regulated. The larger end of the chamber H communicates by the tube L, provided with a cock J, with the suction-valve of the motor. The smaller end, which when at rest descends a little lower than the upper extremity of the tube E, communicates with a funnel K, provided with a sheet of perforated metal or wire-gauze *y*, serving for the suction of the air to be carbureted.

The working of the apparatus is as follows: When at rest, the valve F being at a level above *xx*, there is no flow. In work at each suction of the motor the petroleum passes the valve F in a thin conical sheet. The exterior air drawn in through the funnel K and filtered by the metallic cloths *y* encounters this sheet, atomizes it, mixes intimately with it in the conical chamber H, whence the mixture passes to the motor by the tube L, first passing through the regulating-cock J.

The angle of five to seven degrees of the chamber H has been found the most favorable for the suction of the air.

The composition of the mixture is regulated once for all, according to the speed of the motor and the nature of the carbureting liquid, by the opening of the valve F. It therefore suffices when working to regulate the speed of the motor by means of the cock J without touching the carbureter. When by accidental excess of speed the suction of the motor passes a certain limit, the suction of the petroleum will be increased; but in this case the pressure exerted on the flange R at the base of the chamber H raises this

chamber, compressing the spring N. The valve F therefore remains below the smaller end of the cone, and the suction of the petroleum is suspended until the speed having again become normal the chamber H again descends to the position shown in the drawings.

Having fully described our invention, what we claim, and desire to secure by Letters Patent, is—

1. In a carbureter for a motor, the combination of a reservoir having an oil-feed opening, a float within said reservoir, a valve connected with the float and controlling said feeding-opening, an opening in the upper part of said reservoir communicating with the outer air, a passage in the side of said reservoir, a vertical tube into the lower end of which such passage opens, a regulating-valve at the upper end of the vertical tube, and a little above the level of the liquid in the reservoir, a reversed truncated conical chamber into the lower end of which the vertical tube opens, a casing within which the conical chamber fits and is capable of sliding, a funnel-shaped air-entrance communicating with the lower end of the casing, studs on the conical chamber passing through vertically-elongated holes in the casing, a coiled spring surrounding the casing and acting on said studs, a tube inclosing the spring and screwed on the exterior of the casing to regulate the action of the spring, a tube above the larger end of the conical chamber communicating with the suction-valve of the motor and a regulating-cock in said tube, substantially as herein set forth.
2. In a carbureter for a motor, the combination of a reservoir having an oil-feed opening, a float in said reservoir, a valve connected with said float and cooperating with said feed-opening to control the feed of the carbureting liquid into the reservoir, an opening in the upper part of said reservoir communicating with the outer air, two or more counterbalanced weighted levers arranged below the float in the reservoir, the inner ends of which are in contact with the under side of the float, a passage in the side of said reservoir, a vertical tube into the lower end of which such passage opens, a closed regulating-tube below and in line with said vertical tube, a stuffing-box into which

such closed regulating-tube is screwed, a regulating-valve at the upper end of the vertical tube and a little above the level of the liquid in the reservoir, a rod carrying the said regulating-valve the lower end of which rests upon the bottom of the closed tube, a reverse truncated conical chamber into the lower end of which the vertical tube opens, a casing within which the conical chamber fits and is capable of sliding, a funnel-shaped air-entrance communicating with the lower end of the casing, studs on the conical chamber passing through vertically-elongated holes in the casing, a coiled spring surrounding the casing and acting on said studs, a tube inclosing the spring and screwed on the exterior of the casing to regulate the action of the spring, a tube above the larger end of the conical chamber communicating with the suction-valve of the motor and a regulating-cock in said tube, substantially as herein set forth.

3. In a carbureter for a motor, the combination of a reservoir, a passage in said reservoir, a vertical tube into which such passage opens, a regulating-valve at the upper end of the vertical tube, a reversed truncated conical chamber, a rim around the lower end of such chamber, a casing within which the conical chamber fits and is arranged to slide, a spring exerting tension upon such conical chamber and an air-entrance communicating with the lower end of the casing, substantially as set forth.

4. In a carbureter for motors, the combination of a vertical valve-tube with means for supplying carbureting liquid, a reversed truncated conical chamber into the lower end of which the valve-tube opens, an air-opening communicating with said chamber, a rim around the lower edge of such chamber, a casing within which the conical chamber fits, and is arranged to slide and a spring exerting tension upon such conical chamber, substantially as set forth.

In testimony whereof we affix our signatures in presence of two witnesses.

AUGUSTE LUMIÈRE.
LOUIS LUMIÈRE.

Witnesses:

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