

J. LE PLAIN.
 AUTOMATIC DOUBLE AIR INLET FOR CARBURETERS.
 APPLICATION FILED MAR. 24, 1908.

906,039.

Patented Dec. 8, 1908.

FIG. 1.

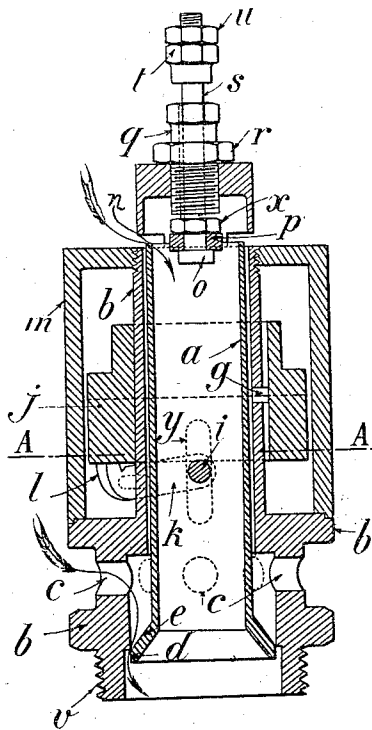


FIG. 2.

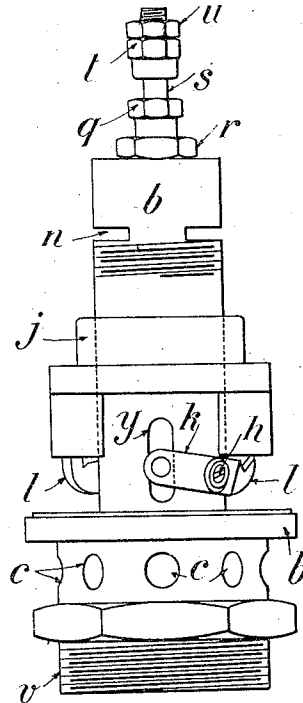
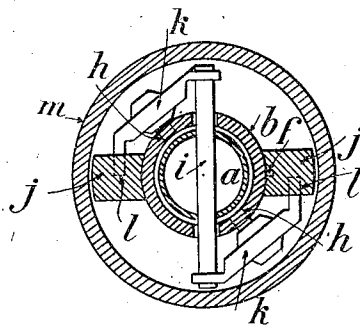


FIG. 3.



Witnesses:
 E. Louis Frauch
 Charles E. Nickles

Inventor
 Julien Le Plain
 by *[Signature]*
 his Attorney.

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UNITED STATES PATENT OFFICE.

JULIEN LE PLAIN, OF ANDOVERSFORD, ENGLAND.

AUTOMATIC DOUBLE AIR-INLET FOR CARBURETERS.

No. 906,039.

Specification of Letters Patent.

Patented Dec. 8, 1908.

Application filed March 24, 1908. Serial No. 428,008.

To all whom it may concern:

Be it known that I, JULIEN LE PLAIN, citizen of France, residing at Dowdeswell Court, Andoversford, R. S. O., Gloucestershire, England, have invented new and useful Improvements in Automatic Double Air-Inlets for Carbureters, of which the following is a specification.

This invention has for its object a system of air admission which when applied to carbureters with two air inlets plays the part of an additional automatically operating air inlet, and which when applied to carbureters with a single air inlet simultaneously plays the part of a permanently open air inlet and that of an additional automatically operating air inlet.

To this end the invention comprises an obturating cylinder which can be displaced longitudinally in a casing having openings at the level of the two ends of the obturator. A screw device with nuts and counter-nuts permits either of keeping the obturator at rest so that the two openings are closed in such manner as to permit of opening the same only automatically, or of arranging this obturator so that the upper opening is constantly open to a certain degree which may be previously regulated by hand, thus permitting the opening at the bottom to open automatically if the vacuum is sufficient. A counterweight balances the weight of the movable obturating cylinder and in consequence insures the rising of said cylinder when the vacuum has ceased. A metal bell incloses the mechanism.

In the annexed drawing is shown an embodiment of the apparatus.

Figure 1 is a vertical section through the axis of the apparatus. Fig. 2 is an exterior view of the apparatus, the bell being removed. Fig. 3 is a section following the line A A of Fig. 1.

The obturating cylinder *a*, open at both ends, carries at its upper opening a cross-piece *p* on which is bolted a stem *s* which carries at its upper end, which is screw threaded for this purpose, a nut and counter nut *u t*. This cylinder *a* is movable in the interior of a second cylinder *b*, the lower part of which, where are provided the openings *c*, is of a greater diameter than that of the upper part which is provided with openings *n*.

The cylinder *a* can obturate the orifices *n* by its upper edge and prevent communication between the orifices *c* and the interior of

the carbureter by its lower part which is widened to form a cone *e*. A screw *g* traverses the cover of the cylinder *b* through a screw-threaded hole and is retained immovable in desired position by a nut *r*. The cylinder *b* is secured to the carbureter by its screw threaded part *v*. Two small oscillating pieces *k* each supported in its middle part by a small axle *h* fixed on the exterior surface of the cylinder *b*, have loosely journaled in one end of each, one end of a spindle *i* which, traversing the cylinder *a* through two circular holes adjusted to its diameter, is solid with said cylinder, and which, traversing the cylinder *b* through two vertical elongated slots *y*, can follow the movements of the cylinder *a*. The other two ends *l* of the pieces *k* support a solid cylindrical block *j* which slides on the exterior surface of the cylinder *b* and is guided in this movement by a lug *g* and groove *f*.

When there is no vacuum in the carbureter or when the vacuum ceases, the cylinder *a*, aided by the counter weight *j* always tends to rise as high as possible. This course is limited by the abutment of the nut *x* on the end of the screw *g*, while the abutment of the nut *t* on the screw *g* limits the opposite movement. Thus, if the screw *g* is sufficiently low, so that the cylinder *a* at the top of its movement does not completely obturate the opening *n*, there will be permanent communication between the carbureter and the atmosphere through the hole *n*. This will be so when the apparatus is applied to a carbureter with a single air inlet. If the vacuum is sufficient, the obturator will be automatically moved towards the bottom and there will be an additional admission through the holes *c*. Inversely, if the screw *g* is sufficiently high, *n* and *c* are normally closed and will not open except at each vacuum; this corresponds to the case where the apparatus is applied to one of the inlets of a carbureter with two air inlets so as to regulate only the admission of additional air.

Having now described my invention, what I claim as new and desire to secure by Letters Patent is:

1. An automatic double acting air inlet for carbureters comprising in combination an obturating cylinder *a* open at both ends, a second cylinder *b* in which the obturating cylinder can move vertically, openings *n* provided at the upper end of said second cylinder and capable of being closed by the upper

edge of the obturating cylinder, an enlarged part formed at the lower end of said second cylinder and provided with air inlet openings *c*, a widened part *e* formed at the lower end of the obturating cylinder *a* and capable of closing the annular chamber into which lead the air inlet opening *c*, and yielding means adapted to keep the obturating cylinder at a certain height sufficient to close one or both of the series of air inlets in the cylinder *b*, substantially as described and for the purpose set forth.

2. An automatic double acting air inlet for carbureters comprising in combination an obturating cylinder *a* open at both ends, a cross piece *p* provided at the top of said obturating cylinder, a stem *s* bolted on said cross piece and having its upper end screw threaded, a nut and counter-nut *u t* screwed in the upper end of said stem, a second cylinder *b* which is provided with a top cover and in which the obturating cylinder *a* can move vertically, a screw *q* screwed through the top cover of the second cylinder *b* and provided with a central perforation through which passes loosely the stem *s*, openings *n* provided at the upper end of said second cylinder and capable of being closed by the upper edge of the obturating cylinder, an enlarged part formed at the lower end of said second cylinder and provided with air inlet openings *c*, a widened part *e* formed at the lower end of the obturating cylinder *a* and capable of closing the annular chamber into which lead the air inlet opening *c*, and yielding means adapted to keep the obturating cylinder at a certain height sufficient to close one or both of the series of air inlets in the cylinder *b*, substantially as described and for the purpose set forth.

3. An automatic double acting air inlet for carbureters comprising in combination an obturating cylinder *a* open at both ends,

a cross piece *p* provided at the top of said obturating cylinder, a stem *s* bolted on said cross piece and having its upper end screw-threaded, a nut and counter nut *u t* screwed in the upper end of said stem, a second cylinder *b* which is provided with a top cover and in which the obturating cylinder *a* can move vertically, a screw *q* screwed through the top cover of the second cylinder *b* and provided with a central perforation through which passes loosely the stem *s*, openings *n* provided at the upper end of said second cylinder and capable of being closed by the upper edge of the obturating cylinder, an enlarged part formed at the lower end of the said second cylinder and provided with air inlet openings *c*, a widened part *e* formed at the lower end of the obturating cylinder *a* and capable of closing the annular chamber into which lead the air inlet opening *c*, two small oscillating pieces *k* each supported in its middle part by a small axle *h* fixed on the exterior surface of the second cylinder, a spindle *i* traversing the obturating cylinder *a* through two circular holes adjusted to its diameter and connected to one of the ends of each oscillating piece, two vertical elongated slots *y* which are formed diametrically opposite each other in the second cylinder *b* and along which is adapted to move freely the spindle *i*, and a solid cylindrical block or counterweight *j* adapted to rest on the other free ends of the oscillating pieces *k* and to slide on the exterior surface of the second cylinder, substantially as described and for the purpose set forth.

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

JULIEN LE PLAIN.

Witnesses:

ANDREW R. DOWSEY,
H. D. JAMESON.