

No. 657,755.

Patented Sept. 11, 1900.

A. BOUVIER.
AIR COMPRESSING AND CARBURETING MACHINE.

(Application filed Mar. 9, 1900.)

(No Model.)

Fig: 1.

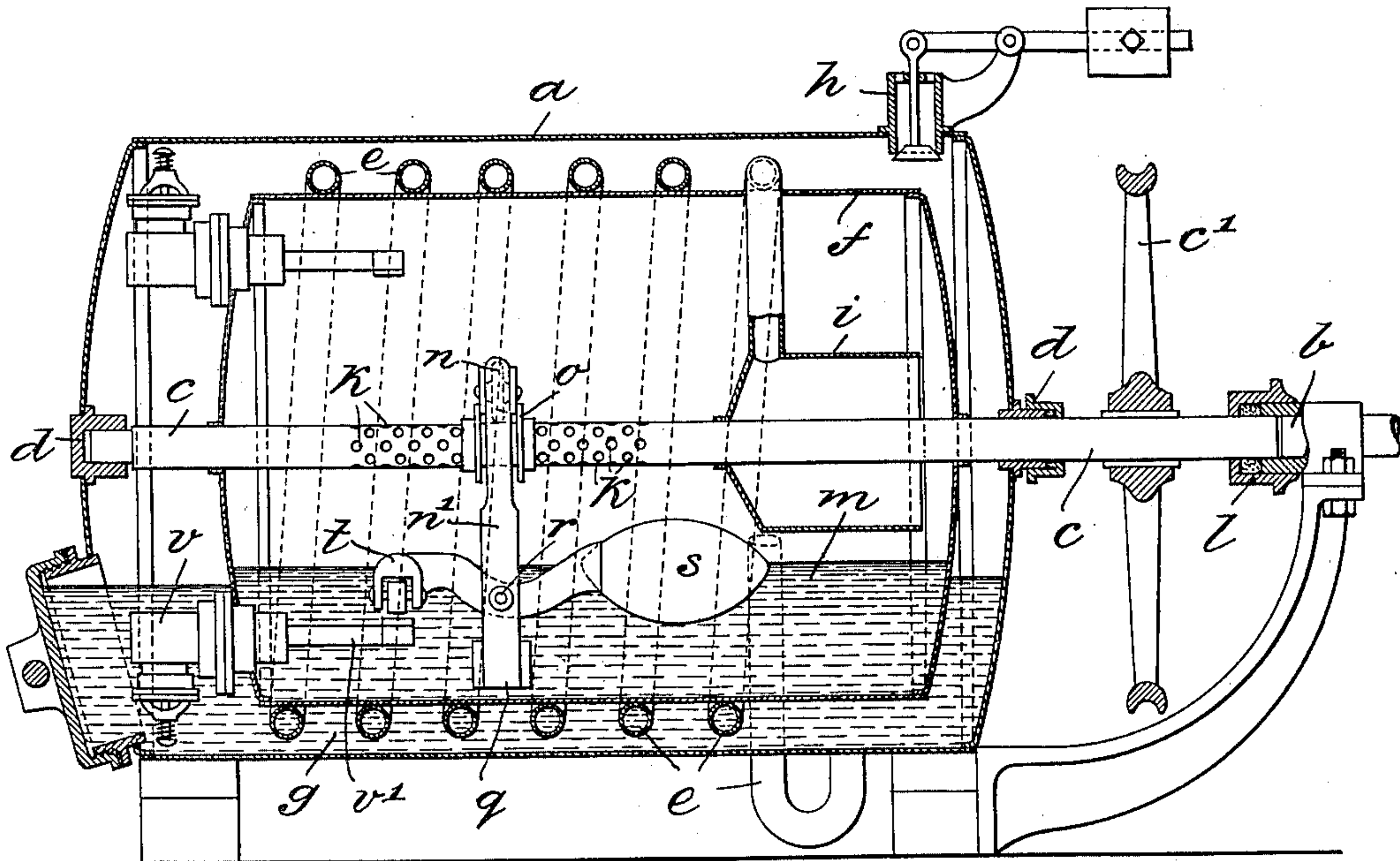


Fig: 2.

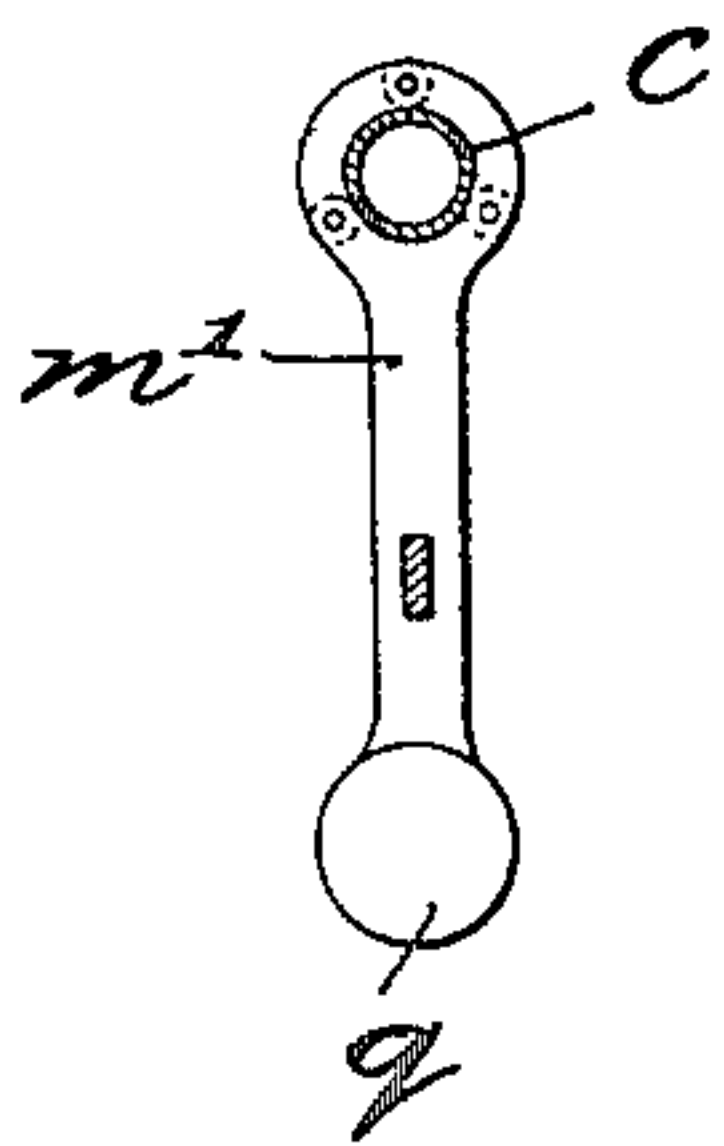
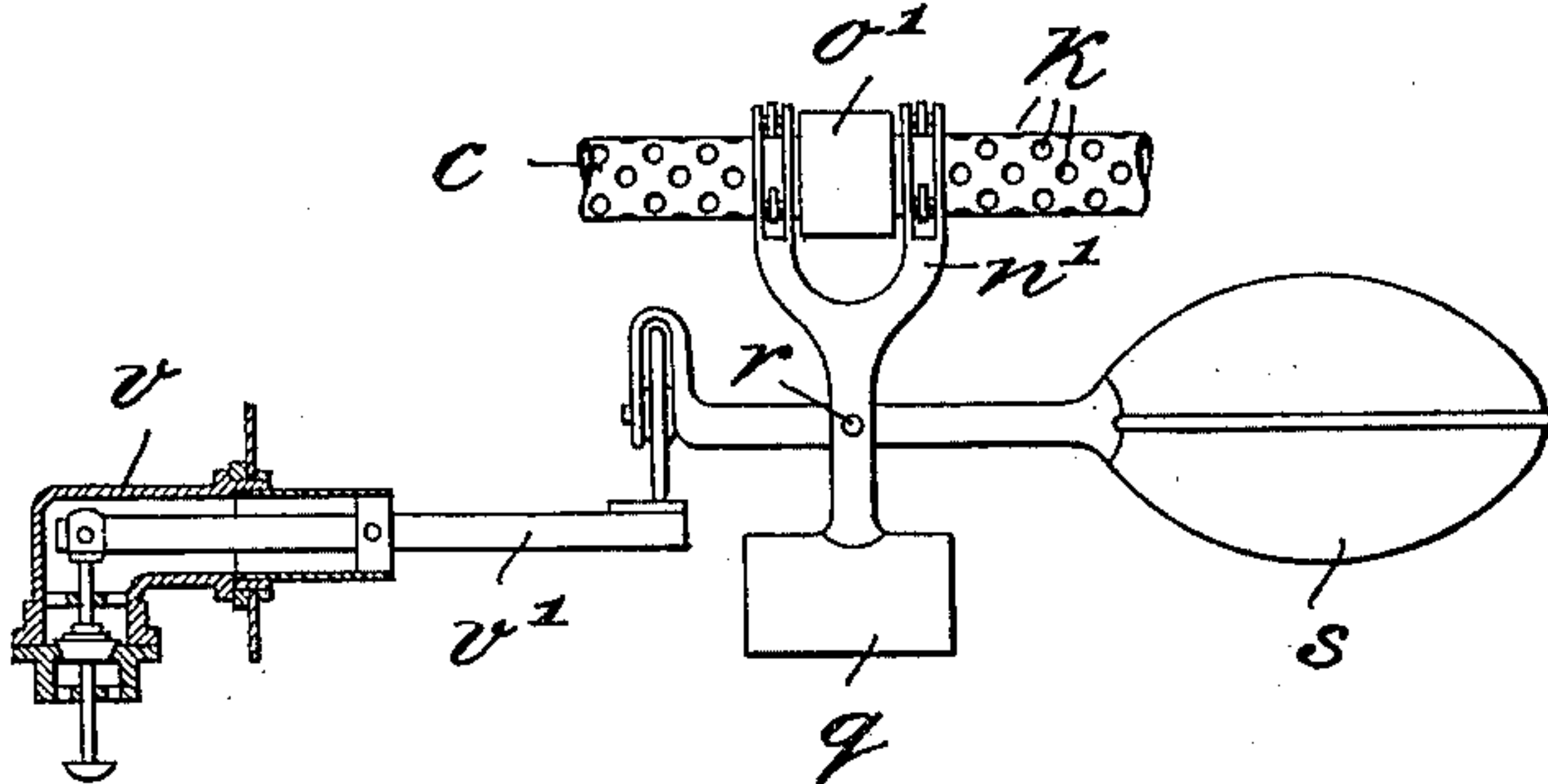


Fig: 3.



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UNITED STATES PATENT OFFICE.

ADOLPHE BOUVIER, OF LYONS, FRANCE.

AIR COMPRESSING AND CARBURETING MACHINE.

SPECIFICATION forming part of Letters Patent No. 657,755, dated September 11, 1900.

Application filed March 9, 1900. Serial No. 7,956. (No model.)

To all whom it may concern:

Be it known that I, ADOLPHE BOUVIER, a citizen of the Republic of France, residing at Lyons, France, have invented certain new and useful Improvements in Air Compressing and Carbureting Machines, of which the following is a specification.

My invention has relation to an improvement in carbureters of the general type or character illustrated in Letters Patent No. 604,948, granted May 31, 1898, to A. I. Van Vriesland; and in such connection it relates more particularly to the construction and arrangement of such a machine. In Letters Patent No. 604,948 a revolving hollow drum is inclosed in a hermetically-sealed chamber or receptacle and the connections between the drum and chamber require the use of at least two stuffing-boxes and the division of the chamber into two compartments.

The principal object of my present invention is to simplify the construction as well as to rearrange the parts of the carbureter of the patent referred to so that but a single stuffed joint between the carbureter-drum and the outside casing or receptacle will be required. This object is attained by a compressing and carbureting apparatus constructed and arranged substantially in the manner hereinafter described and claimed.

The nature and scope of my invention will be more fully understood from the following description, taken in connection with the accompanying drawings, forming part hereof, in which—

Figure 1 is a longitudinal central section of a carbureting and compressing apparatus embodying main features of my invention. Fig. 2 is a side elevational view of a slightly-modified form of float and valve for discharging excess fluid from the drum to the outer chamber, and Fig. 3 is an end elevational view of the rod supporting the float of Fig. 2.

Referring to the drawings, *a* represents a stationary cylinder or chamber traversed centrally and longitudinally by a hollow shaft *c*. This shaft *c* is adapted to rotate freely in bearings *d d*, carried by the ends of the cylinder *a*. Secured to the shaft *c* and rotating therewith is a drum *f*, wholly inclosed within the cylinder *a* and having on its exterior or per-

iphery a spiral tube *e* or sections of such a tube arranged in the form of an Archimedean screw. This tube *e* is adapted at one end to dip into the fluid *g* in the base of the cylinder *a* and to discharge said fluid as the drum *f* revolves into the interior of a drum-like enlargement *i*, located within the drum *f*. The revolution of this spiral or screw-shaped tube *e* also sucks up, in connection with the liquid *g*, air or gas entering the cylinder *a* through the check-valve *h*. The drum-like enlargement *i* of the spiral tube *e* empties into the interior of the drum *f* the fluid and gas or air which enter the enlargement *i* in a state of compression. A portion of the hollow shaft *c* is perforated, as at *k*, to permit of the entrance of liberated gas or air in the drum *f* into the hollow shaft *c*. At one end of the apparatus the shaft *c* terminates in a stuffing-box *l*, into which stuffing-box *l* also extends the gas-outlet or offtake-pipe *b*, forming an extension of the pipe or shaft *c*. When during the operation of the drum *f* the interior contains an excess or surplus of liquid *m*, such excess or surplus is readily discharged into the outer cylinder by means of the following preferred mechanism.

On the shaft *c* freely hangs the ring *n*, which is prevented, as illustrated in Fig. 1, from longitudinal movement on said shaft *c* by means of the collars *o*, located on said shaft. This ring *n* carries a vertically-disposed rod *n'*, suitably weighted, as at *q*, at its lower end, which weight serves to maintain the rod *n'* in vertical position as the shaft *c* rotates, with a fulcral point *r* on said rod always submerged in the liquid *m*. To the fulcrum *r* is pivoted a float *s*, having a free end or arm *t*. The drum *f* at one end is provided with one or more valves *v*, having a stem *v'* adapted to be operated to open said valve whenever the free end or arm *t* of the float *s* is depressed. This valve *v* controls the outlet of fluid from the drum *f* to the cylinder *a* and is only operated when the height of fluid in the drum *f* is sufficient to elevate the float *s* a required distance necessary to cause the arm *t* to operate the valve. In Figs. 2 and 3 a somewhat different construction of valve-operating mechanism is shown, in which the ring *n'* is bifurcated and a block *o'* takes the place of the

collars *o* illustrated in Fig. 1. In all other essential respects the two constructions are, however, similar. The shaft *c* may be rotated by turning the pulley or sprocket *c'* in any well-known way. If necessary, the outer cylinder *a* may be jacketed in any well-known manner, so as to maintain its contents at any desired temperature.

Having thus described the nature and object of my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In an air compressing and carbureting apparatus, the combination of a stationary outer cylinder or chamber, a hollow shaft traversing the same and having perforations in its walls, an inner drum secured to said shaft, means for rotating said shaft and drum, a spiral tube located on the periphery of said inner drum, a smaller drum located within the inner drum and forming an enlargement of one end of said spiral tube, said tube adapted to convey fluid from the outer cylinder to the inner drum, an offtake-pipe registering with the hollow rotatable shaft, and means for automatically discharging the surplus liquid accumulating in the inner drum into

the outer cylinder, substantially as and for the purposes described.

2. In an apparatus of the character described, a stationary outer receptacle, a hollow shaft traversing the receptacle longitudinally and having a portion of its walls perforated, an inner drum carried by said shaft and provided with a spiral tube adapted to feed the liquid in the outer receptacle to the inner drum, means for rotating said shaft and drum, a series of valves located in the walls of the inner drum and a float suspended from said shaft within said drum and adapted to open said valves successively during the rotation of the drum when the liquid in said drum reaches a predetermined height, substantially as and for the purposes described.

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

ADOLPHE BOUVIER.

Witnesses:

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MARIN VACHON.