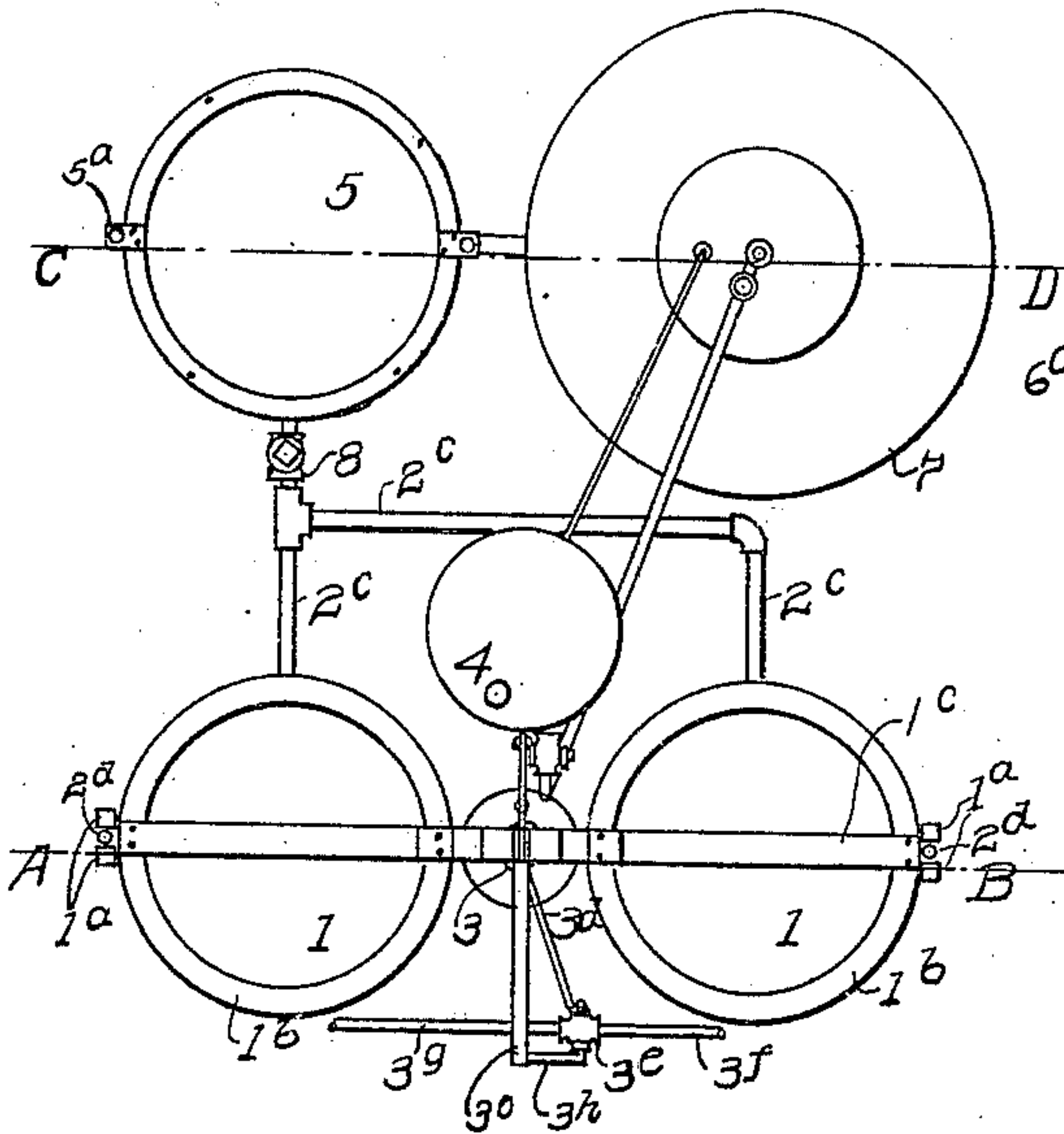


951,779.

Patented Mar. 8, 1910.

2 SHEETS—SHEET 1.

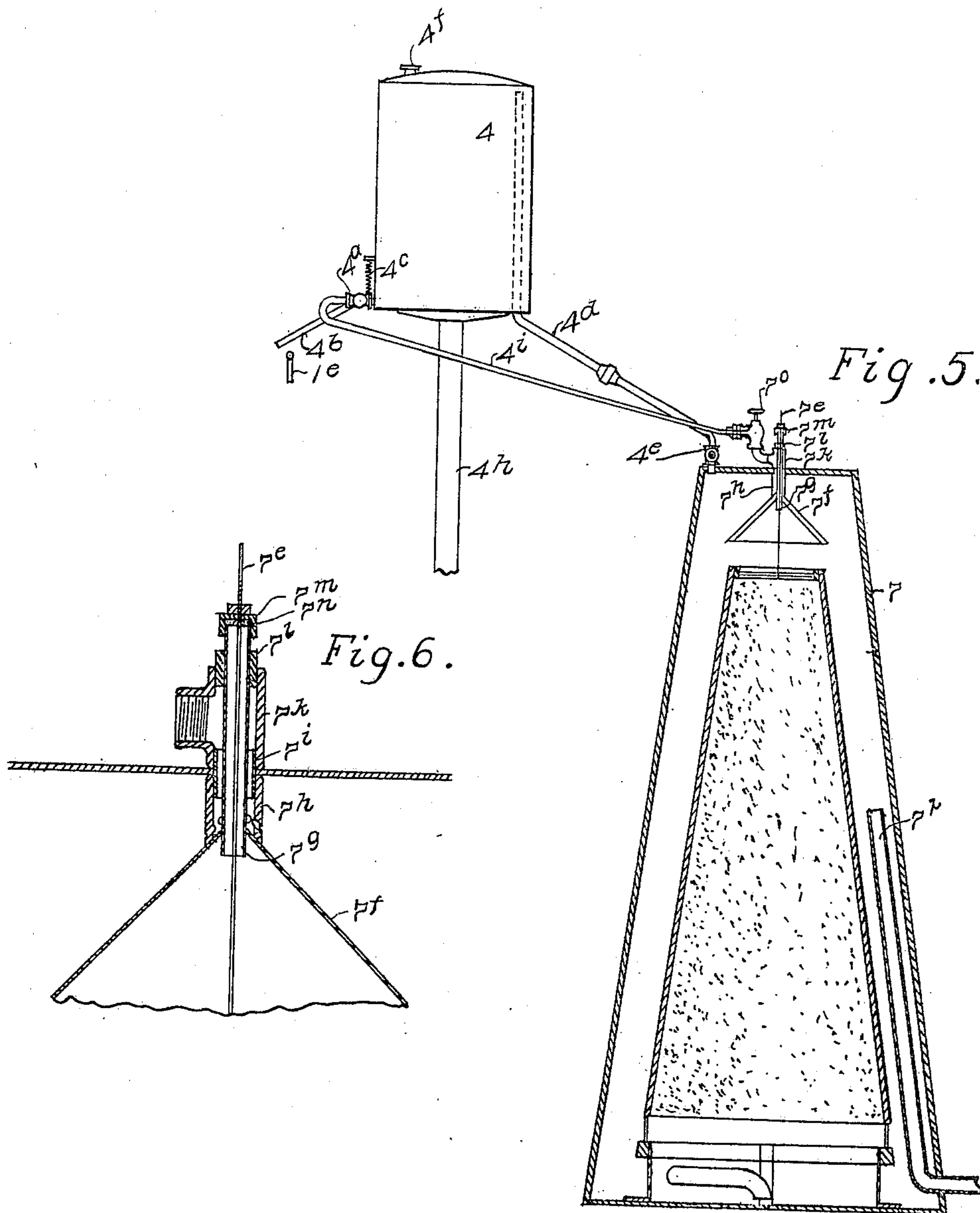
Fig. 1



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2 SHEETS—SHEET 2.



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# UNITED STATES PATENT OFFICE.

WILLIAM D. FRENCH, OF SAN DIEGO, CALIFORNIA.

CARBURETER.

951,779.

Specification of Letters Patent.

Patented Mar. 8, 1910.

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*To all whom it may concern:*

Be it known that I, WILLIAM D. FRENCH, a citizen of the United States, residing at San Diego, in the county of San Diego and State of California, have invented certain new and useful Improvements in Carbureters; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form part of this specification.

This invention relates to carbureted air generating and mixing apparatus, and more particularly to that class of carbureted air producing machines intended for individual or domestic use; and in which gasoline and other hydrocarbon fluid are used for light and fuel purposes; and it has for its object to provide an apparatus of the type referred to wherein compressed air is mixed with liquid hydrocarbon, the air being compressed by means of a hydraulic motor in connection with a double air compressor and for a further object to provide novel means for automatically throwing the apparatus into and out of operation, and for a further object to maintain a steady pressure of compressed air to the generator thus producing a steady and uniform heat or light.

To these ends my invention consists in the features and in the construction, combination and arrangement of parts hereinafter described, and particularly pointed out in the claim following the description, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a top view of the complete apparatus. Fig. 2 is a vertical section taken through A—B in Fig. 1. Fig. 3 is a vertical section taken through C—D in Fig. 1. Fig. 4 is a side elevational view of the motor controlling mechanism. Fig. 5 is an enlarged partial sectional and elevational view of the generator and fuel supply tank as connected. Fig. 6 is a detail section of the fuel entrance to the generator.

Similar characters of reference refer to similar parts throughout the several views.

Referring to the drawings the carbureter is composed of a double air compressor 1

and 2, a hydraulic motor 3, a fuel supply tank 4, an air supply tank 5 and 6 and a generator or mixer tank 7.

The double air compressor is composed of 2 tanks 2—2 filled with water set a short distance apart and are provided with central tubes 2<sup>a</sup>—2<sup>a</sup> which have covers 2<sup>b</sup>—2<sup>b</sup> said covers being composed of elastic material and hinged at one side and adapted to open and close by air pressure the other ends of tubes 2<sup>a</sup>—2<sup>a</sup> connect with the outside of the tank at the bottom. Said tanks 2—2 are also provided with exit pipes 2<sup>c</sup>—2<sup>c</sup> which are for the purpose of conveying the air from the compressor tanks 2—2 to the supply tank 6. Inside the compressor tanks 2—2 are bells 1—1 and adapted to rise and lower inside of tanks 2—2 and are guided by rods 2<sup>d</sup>—2<sup>d</sup> attached to said tanks and extending upward, said bell sections 1—1 being provided with rollers 1<sup>a</sup> which are attached to the bell sections and are for the purpose of reducing the friction on the rod 2<sup>d</sup> as the bells 1—1 ascend and descend. The bell sections 1—1 are provided with annular weights 1<sup>b</sup> which are fastened thereto by the means of bolts.

The bell sections 1—1 are connected by means of a flat piece of iron 1<sup>c</sup> extending across both bells and fastened to the weights 1<sup>b</sup>. Fastened to 1<sup>c</sup> is another flat piece 1<sup>d</sup> arched from one bell to the other so as to strengthen it between the bells.

The bells are operated so as to ascend and descend by means of a hydraulic motor 3 consisting of a pipe 3<sup>a</sup> screwed into a floor flange 3<sup>b</sup> at the bottom which is fastened to the foundation; the inside of said pipe is provided with a plug 3<sup>c</sup> into which is screwed a feed pipe 3<sup>d</sup> which connects with a three-way stop cock 3<sup>e</sup> said stop cock also connecting with inlet pipe 3<sup>f</sup> and outlet pipe 3<sup>g</sup> which are connected with a water supply and sewer respectively. The stop cock 3<sup>e</sup> is provided with a lever 3<sup>h</sup> which is in turn attached to a vertical rod 3<sup>i</sup>; said rod is provided with two adjustable collars between which is manipulated the slotted end 3<sup>k</sup> of a bellcrank; said bellcrank is pivoted in a bearing post 3<sup>l</sup> which is fastened to the foundation, the other portion of the bellcrank 3<sup>s</sup> extending upward and to the end of which is fastened two tension springs 3<sup>u</sup>, the other ends of said springs are attached



to the foundation; said springs are so set as to operate past the pivot point 3<sup>t</sup> thus manipulating the end 3<sup>k</sup> of the bellcrank upward and downward when the other end 3<sup>s</sup> is shifted sufficiently to throw the springs over the pivot point 3<sup>t</sup>.

To the end of the bellcrank is attached another vertical rod 3<sup>m</sup> to which is attached a guide rod 3<sup>n</sup> for rod 3<sup>i</sup>. Rod 3<sup>m</sup> is provided with two collars between which operates lever 3<sup>o</sup>; said lever is fastened to the arched piece 1<sup>d</sup> and rises and lowers with said piece.

The motor cylinder 3<sup>a</sup> is provided with a leather piston 3<sup>p</sup> connected to a piston rod 3<sup>q</sup> which passes through a cap 3<sup>r</sup> screwed on the top of the cylinder 3<sup>a</sup>. The top end of 3<sup>q</sup> is attached to the connecting pieces 1<sup>c</sup> and 1<sup>d</sup>. With the above description it can be seen that with water force in the pipe 3<sup>f</sup> and the stop cock 3<sup>e</sup> with the lever 3<sup>h</sup> down the water would flow through the stop cock 3<sup>e</sup> and pipe 3<sup>d</sup> into the cylinder 3<sup>a</sup> thus causing the piston to rise carrying with it the bell sections 1—1 and all parts connected thereto including lever 3<sup>c</sup>. Lever 3<sup>o</sup> will strike the upper collar on rod 3<sup>m</sup> causing said rod to ascend carrying with it the inner member of the bellcrank 3<sup>k</sup> which carries the springs over the pivot point 3<sup>t</sup> whereupon this quickly thrusts the inner member of the bellcrank upward striking the upper collar on rod 3<sup>i</sup> carrying it upward thus closing that feed portion of the stop cock and opening the exit 3<sup>s</sup> which empties the motor cylinder; the bells having no support will then descend thus compressing the air in said bells which has entered through air tubes 2<sup>a</sup> and valves 2<sup>b</sup> as the bells ascended. The tanks 2—2 being filled with water, making a water seal, the compressed air is forced through the pipes 2<sup>c</sup>, which are provided with a check valve 8 which allows the air to pass into tank 5 but prevents its return. As the bells descend carrying with them lever 3<sup>o</sup> said lever strikes the lower collar on rod 3<sup>m</sup> causing a thrust of the spring over the pivot which in turn causes a downward thrust of the bellcrank arm against the lower collar on rod 3<sup>i</sup> thus opening the feed in stop cock 3<sup>e</sup> which actuates the motor again.

The supply tank is composed of a tank 6 and a weighted bell section 5 which ascends and descends according to the air pressure therein and is guided by means of guide rods 6<sup>a</sup> over which slides a guide 5<sup>a</sup> attached to the bell section 5. The tank 6 is filled with water to form a water seal for said tank, said tank 6 is provided with an air inlet pipe 6<sup>b</sup> and another outlet pipe 6<sup>c</sup> which extend to the top of tank 6, pipe 6<sup>b</sup> is connected to check valve 8. The outlet pipe 6<sup>c</sup> is for conveying the air under pressure to the gener-

ator or distributing tank 7 entering it at the bottom on one side and extending to the center then turning down.

The generating tank is conical shaped being larger at the bottom than at the top and is provided with a cloth 7<sup>a</sup> of the same shape but smaller it being fastened to a wooden hoop at each end 7<sup>b</sup> and 7<sup>c</sup> by means of strings. Hoop 7<sup>c</sup> is fastened near the bottom by means of brackets 7<sup>d</sup> the upper hoop 7<sup>b</sup> is provided with crossbars which has a central rod 7<sup>e</sup> which extends out through the top and is used for tightening the cloth. Above said hoop 7<sup>b</sup> is a cone 7<sup>f</sup> attached to a pipe 7<sup>g</sup> and also to a larger pipe coupling 7<sup>h</sup> enough larger to allow the fuel to enter between the pipes 7<sup>g</sup> and coupling 7<sup>h</sup> which is provided with holes for the exit of the fuel down onto the cone. The coupling 7<sup>h</sup> is screwed onto a nipple 7<sup>i</sup> and on the other end of said nipple is screwed a tee 7<sup>k</sup>, the whole soldered to the top of the tank. In the top of the tee is a plug 7<sup>l</sup> soldered to the tee and pipe 7<sup>g</sup>. On the top of pipe 7<sup>g</sup> is a cap 7<sup>m</sup> fitted with a gasket 7<sup>n</sup> with a central hole for rod 7<sup>e</sup> a nut being placed above said cap this forms a gas tight arrangement and allows for tightening of the cloth. Into the tee 7<sup>k</sup> is fitted an elbow which connects with a needle valve 7<sup>o</sup> to which is connected a feed pipe 4<sup>i</sup> from a fuel tank 4 in said pipe is another valve 4<sup>a</sup> with a lever 4<sup>b</sup> which is adapted to be opened by means of an extending tee 1<sup>e</sup> on the top of arch 1<sup>d</sup> when the air compressor rises and is closed by a tension spring 4<sup>c</sup> attached thereto; said fuel supply tank is also provided with a pipe 4<sup>d</sup> extending from near the top through said tank and to the generating tank 7 this is for equalizing the pressure in the supply tank to allow the fuel to pass from said tank to said generating tank an intermediate valve 4<sup>e</sup> being placed in said pipe to be closed when filling the tank 4 through the inlet cap 4<sup>f</sup>. The supply tank is supported by a post 4<sup>h</sup>.

It can be seen that with tank 4 full, upon the opening of valve 4<sup>a</sup> by means of the tee on arch 1<sup>d</sup> the fuel will gravitate in the pipe 4<sup>i</sup> through needle valve 7<sup>o</sup> tee 7<sup>k</sup> nipple 7<sup>i</sup> through holes in 7<sup>h</sup> onto cone 7<sup>f</sup> then onto cloth 7<sup>a</sup> spreading on it toward the bottom and the compressed air entering at the bottom through pipe 6<sup>c</sup> will cause a thorough mixing of the air and fuel which is then ready for service through service pipe 7<sup>p</sup>. The supply tank 5 and 6 keeps a steady pressure in the generating tank thus making a steady gas flow.

Having thus described my invention what I claim is:

The combination in a carbureter, of a carbureter comprising a conical shaped tank, a conical shaped cloth therein, means for

tightening said cloth, a hood for distributing oil on said cloth, means for conducting said oil to said carbureter, means for conducting compressed air to said carbureter  
5 and an outlet for the carbureted air and means for compressing air, all substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM D. FRENCH.

Witnesses:

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DELMER Q. BOWMAN.