

M. LAUX.
CARBURETER.

APPLICATION FILED DEC. 7, 1908.

932,478.

Patented Aug. 31, 1909.

2 SHEETS—SHEET 1.

Fig. 1.

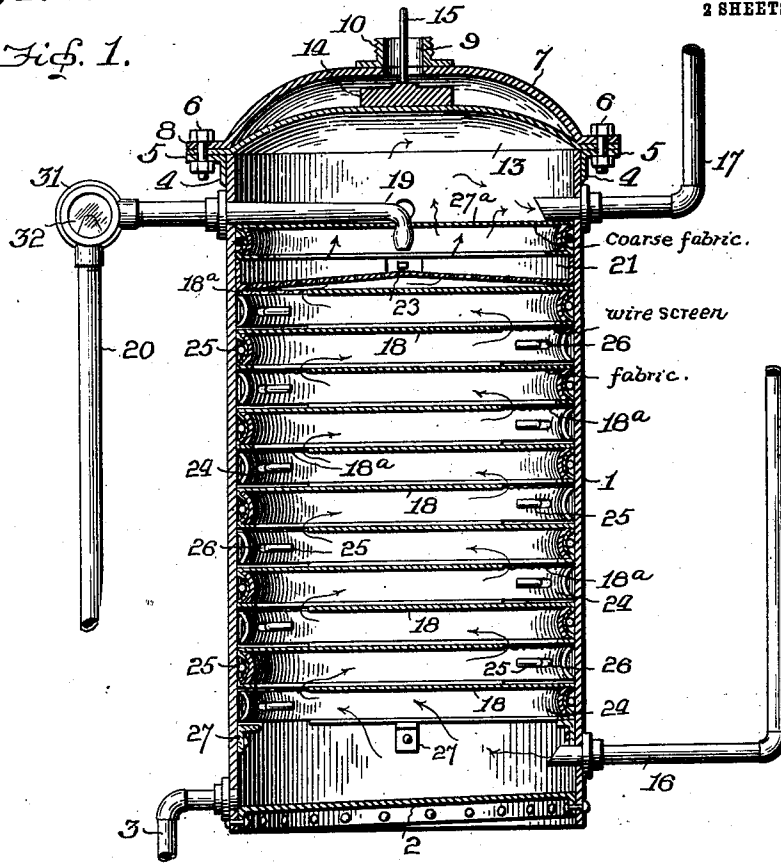
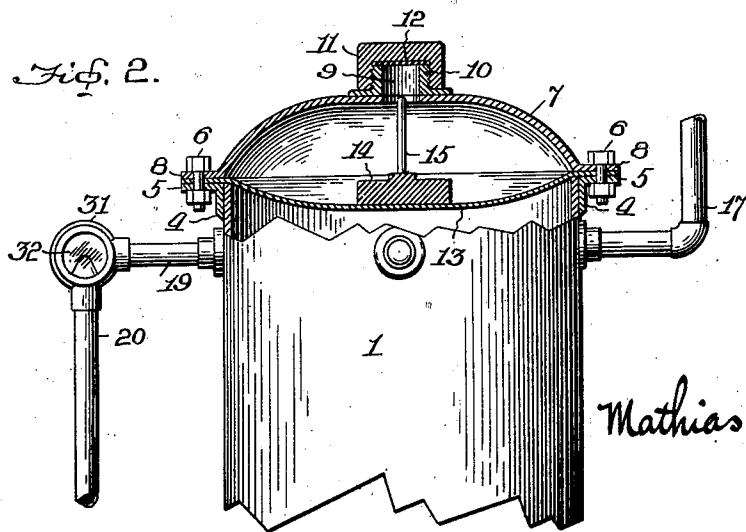


Fig. 2.



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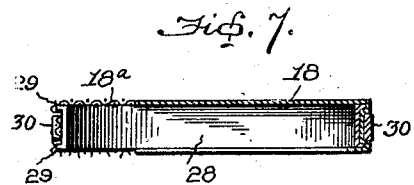
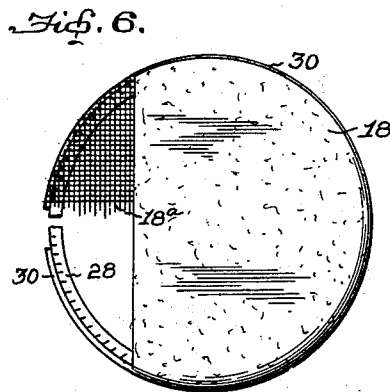
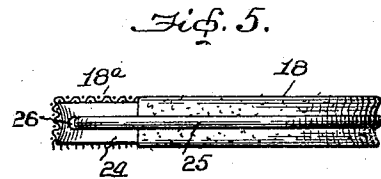
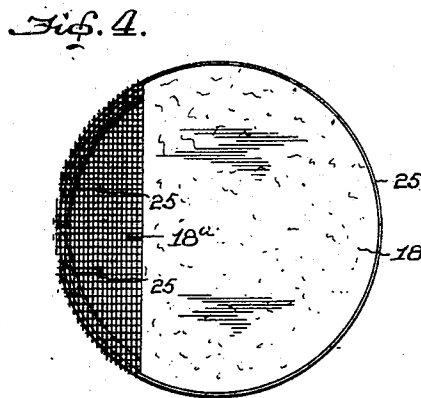
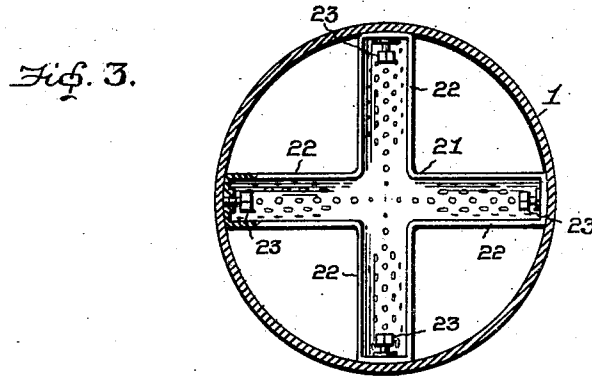
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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

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CARBURETER.

932,478.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, MATHIAS LAUX, a citizen of the United States, residing at Little Rock, in the county of Pulaski and State of Arkansas, have invented a Carbureter, of which the following is a specification.

My invention is an improvement in carbureters, and relates more especially to apparatus of this character which are employed in connection with a domestic plant for producing carbureted air for heating, cooking, and illuminating purposes.

The primary object of my invention is to provide a carbureter tank of improved construction in which the air passing through the tank will be mixed with the hydrocarbon or gasoline in proper proportions so as to produce a mixture effective for domestic purposes.

My invention consists in the provision of certain means for distributing the hydrocarbon or gasoline in such manner that it will thoroughly mix with the air as it passes through the tank from one end to the other, and more particularly to the devices for supporting fabric diaphragms adapted to hold some of the hydrocarbon or gasoline in suspension.

My invention consists further in the particular construction and arrangement of parts; all as will be hereinafter fully described and specifically set forth in the appended claims.

In the accompanying drawings, which form a part of this specification:—Figure 1 is a vertical longitudinal sectional view of a carbureter constructed in accordance with my present invention. Fig. 2 is a detail sectional view of the upper end of the tank, showing the application thereto of a closing cap hereinafter referred to. Fig. 3 is a detail plan view of a spreader employed for distributing the hydrocarbon or gasoline upon its discharge in the tank. Figs. 4 and 5 are detail views of the means for supporting the fabric and netting diaphragms the netting being broken away in Fig. 5 to show the connection of the binding wire to the split-ring. Figs. 6 and 7 are detail views, illustrating a modification of the supporting means for the diaphragms.

Like numerals of reference indicate like parts in all the figures of the drawings.

In carrying out my present invention I employ a cylindrical tank 1, which is closed

at its lower end by a bottom plate 2, disposed at an angle as shown so as to drain to one side of the tank and into a drain-pipe 3. Shrunk upon the tank, or otherwise secured thereto, at the upper end thereof, is a ring 4, having an outwardly-projecting flange 5 through which pass bolts 6 for attaching to the tank a dome-shaped head or cover 7, the latter having an attaching-flange 8 at its outer edge which overlies the flange 5 to receive the securing-bolts 6. At the apex of the dome-shaped head or cover is an opening 9, surrounding which is a collar 10, flanged for attachment to the head or cover and externally threaded to receive a closing cap 11 (Fig. 2), a washer, 12, being provided within the cap to insure a tight joint.

Disposed within the upper part of the tank, and secured at its edges between the flanges 5 and 8 is a flexible diaphragm 13, which I term an "equalizer", and preferably composed of raw-hide. This diaphragm or equalizer is provided centrally with a weight 14, from which rises a rod 15 adapted to normally project through the opening 9. As will be seen, the upper end of the tank is closed or sealed by means of the raw-hide diaphragm or equalizer, and when the latter is in perfect condition the rod 15, which projects through the opening in the dome will indicate the varying pressure within the tank. The office of this diaphragm is not only to indicate the varying pressure within the tank, but also serves to equalize or take up for pressure when the capacity of the tank is suddenly drawn upon, as hereinafter explained. In case this diaphragm should leak from any cause the top of the tank may be sealed by applying the cap 11, whereby the tank may be continued in use until a new diaphragm can be conveniently installed.

An air pipe, as 16, enters the lower end of the tank a slight distance above the bottom 2, and a service-pipe, 17, leads from the upper part of the tank, while disposed within the tank between the pipes 16 and 17 are fabric diaphragms 18, spaced apart and cut away at opposite ends alternately so as to provide a circuitous passage from the air inlet pipe to the service-pipe, and a netting or wire screen 18^a beyond the end of each fabric diaphragm, said diaphragms receiving the hydrocarbon or gasoline from a discharge pipe 19, connected to a feed pipe 20.

For the purpose of distributing the hydro-

carbon or gasoline discharged from the pipe 19 I provide a spreader device 21, consisting of radiating troughs 22, having perforated bottoms and thickened end walls, as shown in Fig. 3 of the drawings. This spreader device is securely held in place within the tank by means of set-screws 23, which are threaded in the thickened end walls and bind or impinge against the inner wall of the tank; said spreader also serving to hold in place the diaphragm supports hereinafter described.

As shown in Figs. 1, 4 and 5, the fabric and netting diaphragms are supported by means of split-rings 24, over which the fabric and netting composing the diaphragms are placed and secured by retaining-wires 25. The ring 24 is curved inwardly so as to provide a peripheral groove in which the edges of the fabric and netting are drawn and afterward secured by the retaining-wire. When the retaining-wire is drawn tight the ends thereof are bent through slots 26 in the ring near the ends of the latter. In placing the ring and diaphragms confined thereon in the tank the ends of the ring are lapped one over the other, so as to decrease the diameter of the ring, and after it is placed in the tank the expansion of the ring will cause the retaining-wire to press upon the fabric and netting and hold them tightly in place, it being understood that the outer edge of the wire is on a vertical plane slightly beyond the plane of the outer edges of the fabric and netting. In applying the ring the inwardly-projecting ends of the retaining wire provide a convenient means for handling the same. The lower diaphragm support rests upon lugs or brackets 27, and the others are stacked thereon, as shown in Fig. 1 of the drawings, the stack being confined by means of the spreader 21 which is secured in place by the set-screws 23, as hereinbefore described.

I prefer to locate a diaphragm above the discharge end of the nozzle which feeds the hydrocarbon or gasoline into the carbureter, and so as to prevent the liquid from being freely drawn into the upper part of the tank and into the service pipe when the capacity of the tank is suddenly drawn upon. This diaphragm, 27^a, extends entirely across the tank and is preferably made of a coarse fabric so that the carbureted air may pass through the same.

In the preferred form of construction of the support for the fabric diaphragms, and as shown in Figs. 4 and 5, the ring is made of metal. However, I also purpose to make the ring of wood, and also form the binding ring or band of wood, such a modification being shown in Figs. 6 and 7. In this instance the wooden ring or hoop, 28, is grooved leaving outwardly-projecting flanges 29, and in order to bend the wooden strip into the form of a hoop these flanges are provided with saw-kerfs, as is usual. With this ring is employed

a plain wooden hoop 30, which binds around the periphery of the hoop 28 and secures the edges of the fabric in a manner similar to the retaining-wire 25.

The feed-pipe for the hydrocarbon or gasoline is provided with a coupling-device 31, having a glass front 32, and the end of the pipe which leads from the supply-tank or force-pump terminates in this coupling device so that the flow of liquid can be seen.

The operation of the device will be readily understood by those skilled in the art to which it relates, for the air in passing through the tank from the inlet pipe 16 to the outlet or service pipe 17 takes a circuitous passage around the fabric diaphragms and through the netting or wire-screens and is thereby thoroughly charged with the hydrocarbon or gasoline that drips down through the tank from diaphragm to diaphragm; the spreader in connection with the particular arrangement of the fabric and netting diaphragms distributing the volatile liquid so that it will be readily taken up by the current of air and form a rich mixture suitable for illuminating and heating purposes.

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

1. A carbureter, comprising a tank having a dome-shaped head or cover with an opening at the center thereof, a threaded collar surrounding the opening, a diaphragm secured within the tank immediately below the head or cover, a weight on the diaphragm having a rod extending through the opening in the head or cover, and a cap adapted to be threaded on the aforesaid collar and close the opening in the head or cover of the tank; together with an air-inlet, an outlet, a discharge-pipe for the hydrocarbon or gasoline, and means for holding the gasoline temporarily in suspension as it passes down in the tank.

2. A carbureter, comprising a tank, an air-inlet, an outlet, a discharge-pipe for the gasoline, and fabric diaphragms disposed within the tank below the discharge-pipe; in combination with supports for the fabric diaphragms comprising a ring or hoop over which the fabric is placed, and a ring or hoop encircling the other hoop to confine the edges of the fabric diaphragm.

3. A carbureter comprising a tank, an air-inlet, an outlet, a discharge-pipe for the hydrocarbon or gasoline, and diaphragms disposed within the tank below the end of the discharge-pipe; in combination with supports for the diaphragms consisting of a ring having a groove in its periphery in which the edges of the diaphragms lie, and a retaining means binding the diaphragms within the groove.

4. In a carbureter, the combination with a tank having air inlet and outlet openings and

a discharge-pipe for the hydrocarbon or gasoline in the upper part thereof, of diaphragms disposed within the tank below the discharge-pipe and each supported by a
5 split-ring having a groove in its periphery into which the edges of the fabric are drawn, and a retaining-wire extending around the ring to bind against the edges of the fabric and confine the same within the groove, sub-
10 stantially as shown.

5. In a carbureter, the combination with a tank having an air-inlet, an outlet, and a discharge pipe for the hydrocarbon or gasoline, of fabric diaphragms disposed within the
15 tank below the discharge-pipe and each sup-

ported by a split-ring having a groove in its periphery in which the edges of the fabric lie and slots near the ends of the split-ring, and a retaining-wire extending around the ring to bind against the edges of the fabric and con- 20
fine the same within the groove, the ends of the retaining-wire being bent through the slots in the ring, substantially as shown.

In testimony whereof I have signed my name to this specification in the presence of 25
two subscribing witnesses.

MATHIAS LAUX.

Witnesses:

GEO. A. GABLE,

WILLIAM J. HUBERT.