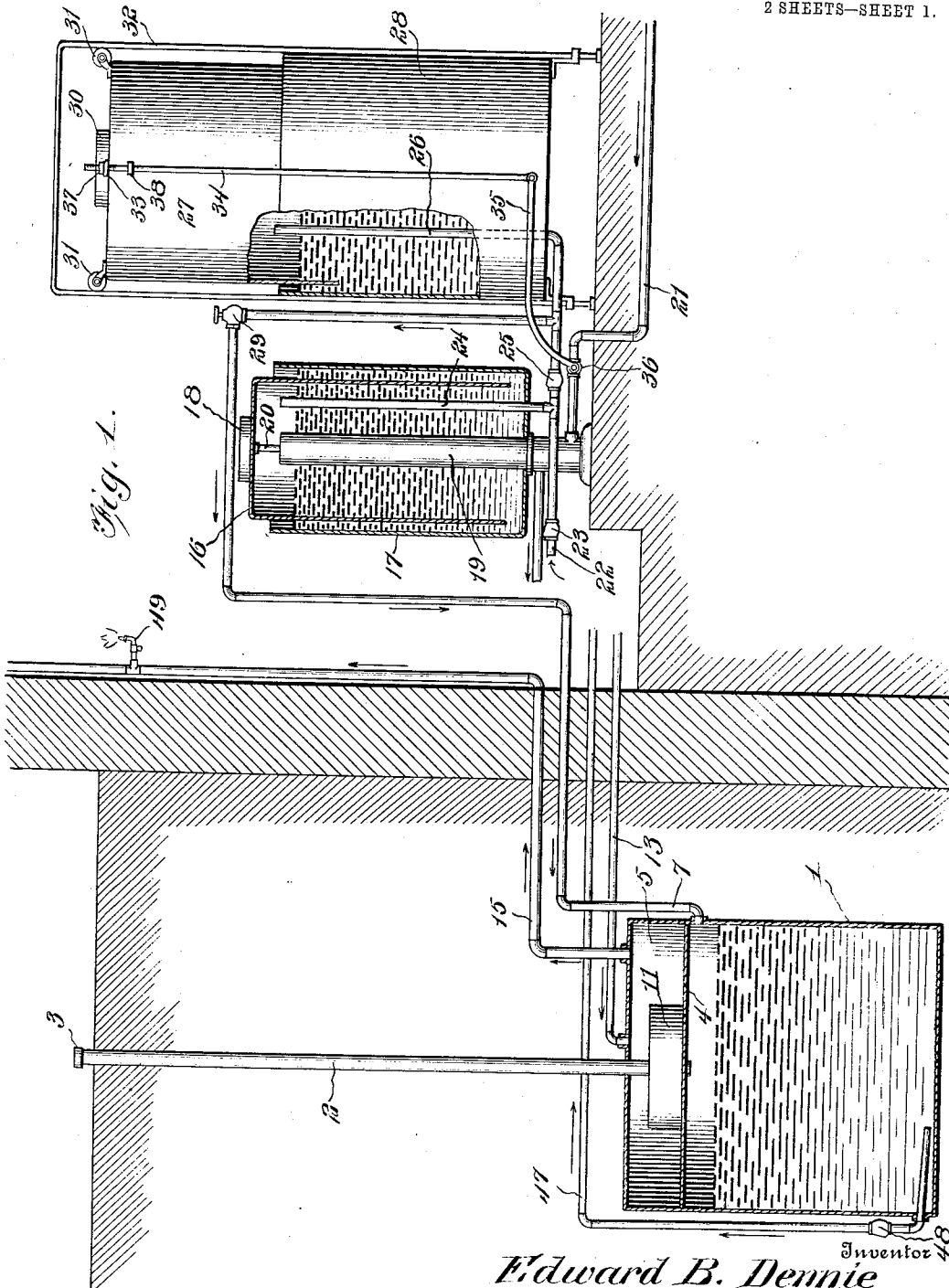


E. B. DENNIE.
CARBURETED AIR APPARATUS.
APPLICATION FILED MAR. 20, 1908.

933,064.

Patented Sept. 7, 1909.

2 SHEETS—SHEET 1.



Edward B. Dennie

Witnesses

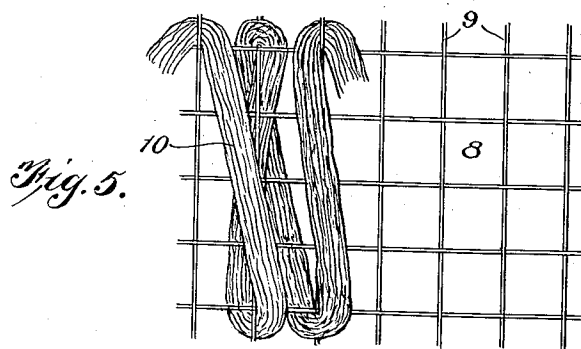
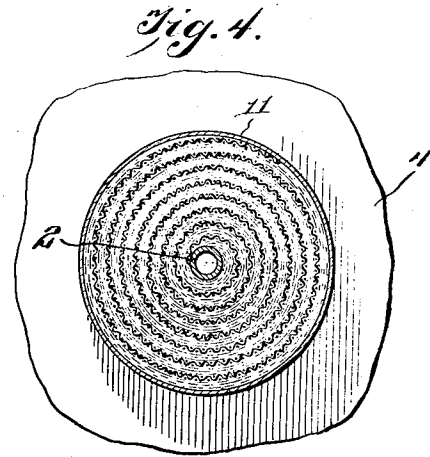
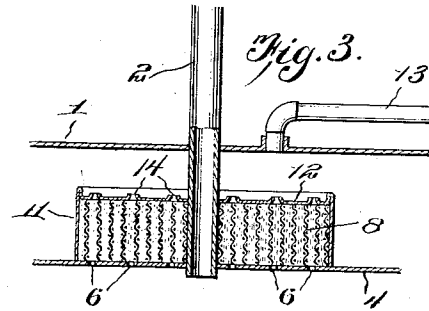
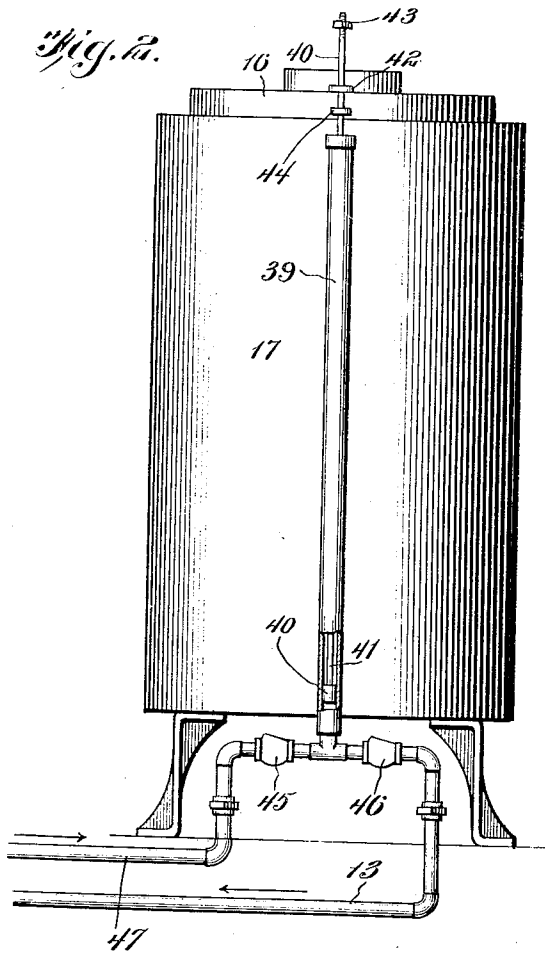
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UNITED STATES PATENT OFFICE.

EDWARD B. DENNIE, OF NEWPORT NEWS, VIRGINIA.

CARBURETED-AIR APPARATUS.

933,064.

Specification of Letters Patent.

Patented Sept. 7, 1909.

Application filed March 20, 1908. Serial No. 422,305.

To all whom it may concern:

Be it known that I, EDWARD B. DENNIE, a citizen of the United States, residing at Newport News, in the county of Warwick and State of Virginia, have invented new and useful Improvements in Carbureted-Air Apparatus, of which the following is a specification.

This invention relates to carbureted air apparatus designed for generating gasolene gas, the object of the invention being to provide a simple, reliable and safe machine which operates automatically and is maintained in operation by ordinary city water pressure, the machine automatically controlling the supply of water to the machine or apparatus which takes care of itself and effects the proper admixture of air and gasolene, delivering the same under the necessary pressure to the gas service pipe leading to the different parts of the building where the gas is to be utilized.

With the above general object in view, the invention consists in the novel construction, combination and arrangement of parts as herein fully described, illustrated and claimed.

In the accompanying drawing:—Figure 1 is a vertical sectional view of the complete apparatus. Fig. 2 is an enlarged elevation of the air supply tank or air pump, looking from the side opposite Fig. 1. Fig. 3 is an enlarged vertical sectional view of the carbureter, showing the parts adjacent thereto. Fig. 4 is a plan view of the carbureter. Fig. 5 is a detail view showing the reticulated former or core of the carbureter and the manner of applying the absorbent material thereto.

Referring to the drawing, 1 designates the gasolene supply tank which is ordinarily buried in the ground at a suitable depth, as shown in Fig. 1, 2 representing the filling pipe which extends from the tank upward to the surface of the ground where it is provided with a sealing cap 3.

In the upper portion of the tank 1 is placed a diaphragm 4 which divides off the upper portion of the tank into a carbureting chamber 5 which, as illustrated in Fig. 3,

is provided with a large number of perforations 6 just beneath the carbureter, which perforations allow the air in the tank to pass upward through the carbureter, 7 designating the air pipe which enters the tank 1 at a point below the diaphragm 4 as shown in Fig. 1. The diaphragm 4 is also provided with a central opening through which the filling pipe 2 passes as shown in Fig. 3 and indicated in Fig. 1.

The carbureter comprises a reticulated or meshed wire fabric former or core 8 with projecting points 9 for holding the absorbent material which is shown at 10. This material is preferably in the form of absorbent wicking as shown in Fig. 5, composed of any desired number of strands, the wick being wrapped around the projecting points 9 of the former which is primarily in the shape of a strip of any suitable length according to the finished size of the carbureter. After applying the wicking or absorbent material to the former or core, the latter is wrapped or rolled in the form of a coil as shown in Figs. 3 and 4, a central aperture being left for the passage of the filling pipe 2. The carbureter also comprises an encircling rim or casing 11 which is imperforate, and also a perforated cover 12 which acts as a distributing agent for the gasolene, the latter being conducted to and discharged upon the carbureter by the gasolene pipe 13 as shown in Fig. 3 which enters the tank 1 just above the carbureter. The perforations in the cover 12 are as shown formed by punching through the cover from the underside thereby leaving upstanding projections or nipples 14 which cause a certain quantity of the gasolene to be held on the cover until it finds its way simultaneously to all of the perforations, the effect being to distribute the gasolene to all parts of the carbureter so that the absorbent material 10 becomes saturated at all points of the gasolene. The air passing upward through the carbureter takes up the gasolene and the resultant gas or carbureted air passes out through a gas pipe 15 communicating with the top of the carbureting chamber 5 as seen in Fig. 1.

16 designates a bell which is mounted to

move up and down in a tank 17 arranged at a suitable point, the same being water sealed in the tank as shown and provided with a suitable depressing weight 18. Extending centrally upward within the bell 16 and tank 17, is a hydraulic bell lifting device comprising a tubular casing 19 in which operates a piston (not shown), the piston rod 20 of which extends through the upper end of the casing 19 and is connected to the bell, as shown in Fig. 1. Communicating with the base of the casing 19 is a water inlet pipe 21 connected with the city main so that water under pressure is supplied to the hydraulic lifting device 19, suitable valves, (not shown), being arranged in the base of the casing 19 which operates to alternately raise and lower the bell 16 until the water supply is cut off as will hereinafter appear.

Adjacent to the air inlet end 22 of the air pipe 7 there is arranged an air inlet check valve 23 which opens inward. When the bell 16 rises, it acts as a suction pump, drawing air in past the valve 23 and up through a vertical extension 24 of the air pipe which opens into the air space of the bell. As the bell 16 descends, the air drawn into the same is expelled through the extension 24 and passes by another check valve 25 and through another vertical extension 26 into the air space of a second vertically movable bell 27 constituting the air reservoir. The bell 27 of the air reservoir is mounted in a casing 28 and is water-sealed therein as shown in Fig. 1 and in the downward movement of the bell 27, the air under pressure in said reservoir is forced through the upstanding extension 26 into the air pipe 7 and through said pipe into the gasoline tank 1, the air being unable to get past the check valve 25.

29 designates an air regulating valve arranged at a suitable point in the air pipe 7. The bell 27 is provided with a suitable depressing weight 30 and is also shown as provided with guide rollers 31 which move in engagement with a guide frame 32 connected with the casing 28. The bell 27 is provided with a projecting arm 33 having an opening for a rod 34 which connects with the end of a valve lever 35 attached to the stem of a water control valve 36 in the water inlet pipe 21. The rod is provided with adjustable nuts 37 and 38 at opposite sides of the arm 33, acting as shoulders which strike against the arm 33, so that when the bell 27 reaches the upper limit of its movement, it pulls on the rod 34 and operates the valve 36 to cut off the water supply. As the bell 27 descends, it operates on the lower shoulder 38 to again open the water control valve 36, thus rendering the machine automatic in operation.

Connected with the casing 17 of the air supply tank or pump is a gasoline pump

comprising a tubular casing 39, a suction piston 40 working therein and a piston rod or stem 41 which passes out through the upper end of the casing 39 through an arm 42 carried by the bell 16, the stem rod 40 having adjustable shoulders 43 and 44 arranged at opposite sides of the arm 42 and adapted to come in contact therewith. The gasoline pipe 13 communicates with the lower end of the casing 39 as shown in Fig. 2 and is provided at opposite sides at the point of communication with check valves 45 and 46 which open in the same direction.

47 designates the suction portion of the gasoline pipe which communicates with the bottom of the gasoline supply in the tank 1 as shown in Fig. 1, said pipe being provided at a suitable point with a check valve 48 which prevents the return of the gasoline to the tank 1 through the pipe 47.

In the up-stroke of the bell 16, the piston 40 acts to draw the gasoline through the suction pipe 47 and in the down stroke said piston acts to force the gasoline through the section 13 of the gasoline pipe into the carbureting chamber upon the carbureter thus saturating the absorbent material of the carbureter. The air entering through the pipe 7 passes upward through the carbureter and the gas passes outward through the pipe 15 to the burners, one of which is shown at 49.

From the foregoing description it will be seen that the apparatus is entirely automatic, requiring no further attention than the mere filling of the gasoline supply tank 1. It will be observed that the bell 16, the tank or casing 17 and the air supply pipe extension 24, in connection with the hydraulic bell operating device constitute in effect an air pump which supplies the air reservoir bell 27, while the latter acts to force the air into the gasoline supply tank 1 under the requisite pressure to carry the gas through the service pipe to the points of use.

Having thus described the invention, what is claimed as new, is:—

In carbureted air apparatus, a gasoline storage tank closed on all sides and at top and bottom, a perforated diaphragm dividing off the upper portion of said tank to form a carbureting chamber which communicates with the storage compartment beneath the diaphragm, a carbureter embodying in connection with said perforated diaphragm a meshed wire former or core supported on the diaphragm and wound into the form of a coil having projecting points at top and bottom, absorbent wicking held between the convolutions of the coil and wrapped upon the points thereof, a perforated cover resting on said coil and having upstanding nipples around the perforations therein, an imperforate rim or casing en-

circling the carbureter and projecting above the cover to form an upstanding flange, means for discharging the gasoline on said perforated cover, and air supply and gas off-
5 take connections communicating respectively with the storage compartment and carbureting chamber.

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

EDWARD B. DENNIE.

Witnesses:

F. DENNIE,
EUNICE DENNIE.