No. 836,795. PATENTED NOV. 27, 1906.

F. J. WRIGHT.

CARBURETER.

APPLICATION FILED DEC. 18, 1905.

Fig. 1.

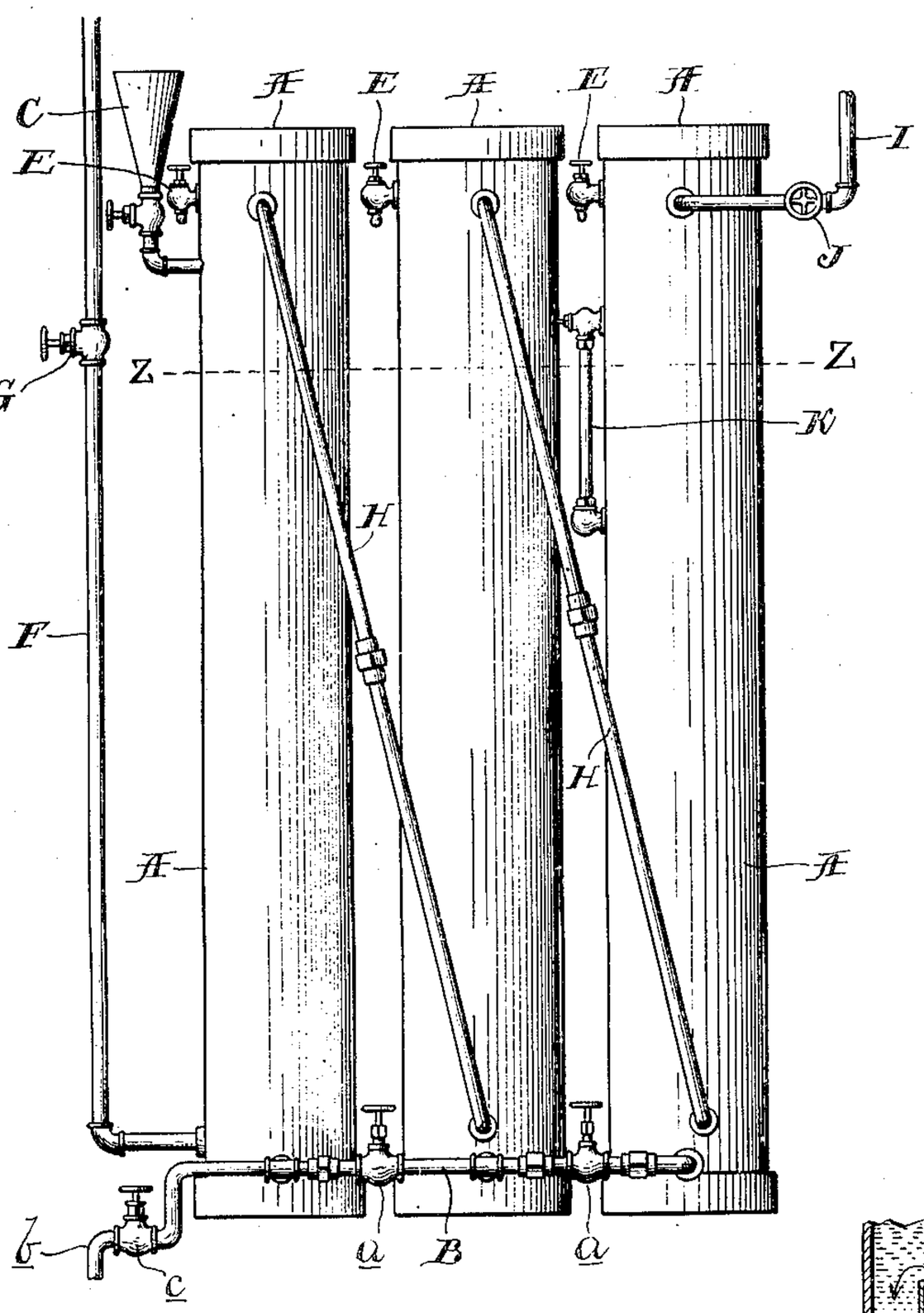


Fig. 3.

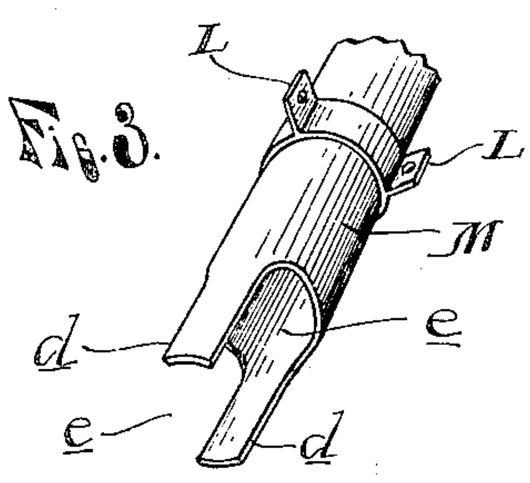
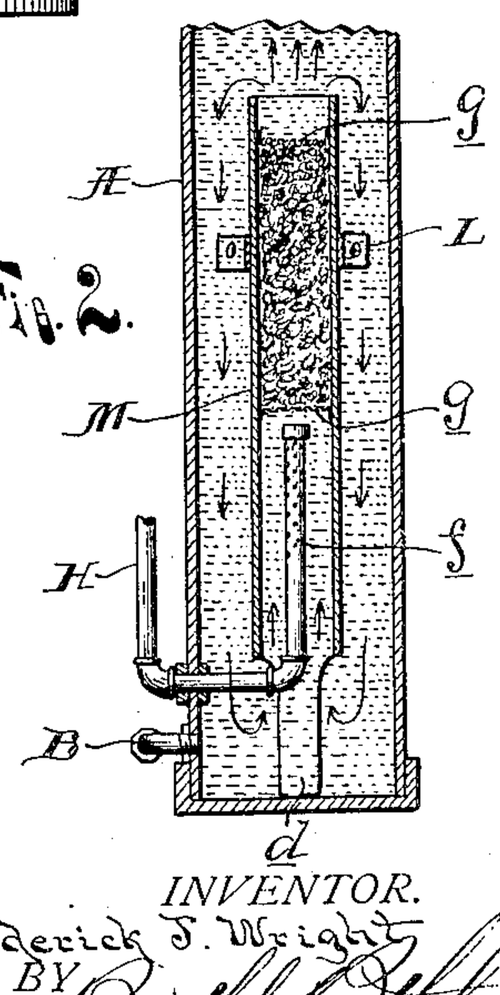


Fig. 2.



WITNESSES:

Olivier C. Barthel

Thos. G. Longstaff.

INVENTOR.

Frederick J. Wright

BY Barthel & Barthel

ATTORNEYS.

UNITED STATES PATENT OFFICE.

FREDERICK J. WRIGHT, OF FLINT, MICHIGAN.

CARBURETER.

No. 836,795. Specification of Letters Patent. Patented Nov. 27, 1906.

Application filed December 18, 1905. Serial No. 292,124.

To all whom it may concern:

Be it known that I, FREDERICK J. WRIGHT, a citizen of the United States of America, residing at Flint, in the county of Genesee and State of Michigan, have invented certain new and useful Improvements in Carbureters, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates more specifically to gas-machines in which air is carbureted by forcing it under pressure through a body of liquid hydrocarbon; and the invention consists in the details of construction and combinations of parts whereby the machine is of simple and substantial construction, easy to manipulate, and adapted to furnish a very uniform quality of gas, all as more fully hereinafter described, and specifically pointed out in the claims.

In describing my invention reference is made to the accompanying drawings, in which—

Figure 1 is an elevation of my improved gas-machine. Fig. 2 is a vertical central section through one of the tubes which hold the hydrocarbon liquid, and Fig. 3 is a detached perspective view of the lower end of the inner tube.

As shown in the drawings, A represents a plurality of iron tubes which are capped at top and bottom and form gas-tight tanks, which hold the liquid hydrocarbon.

B is an equalizing-pipe connecting the tubes at or near the bottom to distribute the hydrocarbon liquid in the tubes in filling. It is provided with controlling-valves *a* and with a waste-outlet *b*, controlled by a waste-valve *c*.

C is a fill-opening for charging the tubes with liquid hydrocarbon.

E represents vent-cocks in the top of the tubes A.

F is the compressed-air-supply pipe leading into the first tube at or near the bottom thereof under control of a valve G.

H represents pipes connecting the succeeding tubes for the passage of the compressed air from the top of one tube into the bottom of the next.

I is the gas-outlet pipe from the last tube, connecting it with the service-pipe or gas-holder.

J is a valve in the outlet-pipe.

K is a glass gage for indicating the height of the hydrocarbon liquid in the tubes, the normal height of the same being indicated by the line Z Z.

M is an open-ended inner tube, one within each of the tubes A. It is of less diameter than the tubes A and of a length to be entirely submerged within the body of the liquid therein.

I preferably support the tube M upon legs *d*, formed by cutting away portions of the sides of the tubes at the lower end to form openings *e*, through which the liquid in the tubes A has free access into the lower end of it, and to hold the tube M concentric within the outer tube I space it from the walls thereof by means of radial stays L, clamped upon the tube.

The compressed-air pipe F and its equivalents H enter into the tubes M at the bottom and terminate in a short vertical riser-pipe *f*, which is perforated for a portion of its length at the upper end and is closed at the top. The remaining portion of the inner tube above the riser *f* is filled with a suitable porous material—such as moss, curled hair, mineral wool, or the like—which material may be held in place by a screen or screens *g*.

In practice, with the machine constructed and arranged as shown and described, it will be seen that the compressed air in entering the first tube will be discharged from the riser *f* in small bubbles, which, owing to the deep immersion, will have great buoyancy and in rising upward and passing through the porous mass become further subdivided and practically fill the whole inner pipe with a constantly-moving stream of small bubbles. In this passage some of the hydrocarbon liquid will become vaporized and be absorbed by the air, but a large portion will be carried up mechanically, as the inner tube, which is wholly imperforate, acts like a draft-tube, and will therefore set up a lively circulation of the liquid hydrocarbon through the draft-tube and thence after passing out through the top thereof will cause a downward circulation in the space between the inner and outer tubes and through the openings *e* back into the inner tube, thus effecting practically a circulation of the whole body of the liquid in the tube A. This circulation not only prevents the formation of dead-air pockets, but, what is most important, the whole body of

the liquid will be uniformly deprived of its gas-making constituents and there is no waste of good material, as it all will be absorbed in time, which results in economy and in giving a more uniform quality of gas.

The partially-carbureted air after passing through the liqid hydrocarbon in the first tube A passes through the pipe H to the next one, and so on through the whole series, the same operation taking place in each one, and when it leaves the last tube it forms a rich gas.

My apparatus is very simple in its construction and consists practically of a series of like units, the number of which may be readily increased or decreased as circumstances may require.

Having thus fully described my invention, what I claim is—

1. A carbureter comprising a plurality of closed outer tubes to contain the liquid hydrocarbon, an equalizing-pipe connecting these tubes at the bottom, valves in said equalizing-pipe between the adjacent tubes, air-supply pipes connecting the tubes together in series, each air-supply pipe entering the bottom of the outer tube and terminating in a perforated riser-pipe extending centrally upward to a limited height in the body of the liquid hydrocarbon, and an open-ended inner tube removably supported within the outer tube around the riser-pipe and extending above it wholly within the body of the liquid to near the surface thereof, and means for diffusing the air in the portion of the inner tube above the riser-pipe, the portion of the inner tube around the riser-pipe being wholly free and unobstructed to the passage of the liquid and communicating freely at the bottom with the liquid in the center tube.

2. A carbureter comprising a plurality of closed outer tubes to contain the liquid hydrocarbon, an equalizing-pipe connecting these tubes for maintaining a constant level of the hydrocarbon therein, air-supply pipes connecting the tubes together in series, each air-supply pipe entering the bottom of the tube and terminating in a perforated riser-pipe extending centrally upward to a limited height in the body of liquid hydrocarbon, and an open-ended inner tube concentrically placed around each riser-pipe and extending above it within the body of the liquid hydrocarbon in the tube, the lower end of the tube being in open and unobstructed communication with the body of the liquid between the inner and outer tube and the portion of the tube above the riser containing means for diffusing the air in its passage through the liquid hydrocarbon therein.

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

FREDERICK J. WRIGHT.

Witnesses:
GEO. E. NEWALL,
B. J. MACDONALD.