No. 743,439. PATENTED NOV. 10, 1903.

J. A. BOWER.

CARBURETER FEED.

APPLICATION FILED DEC. 10, 1902.

NO MODEL. 2 SHEETS—SHEET 1.

Fig. 1.

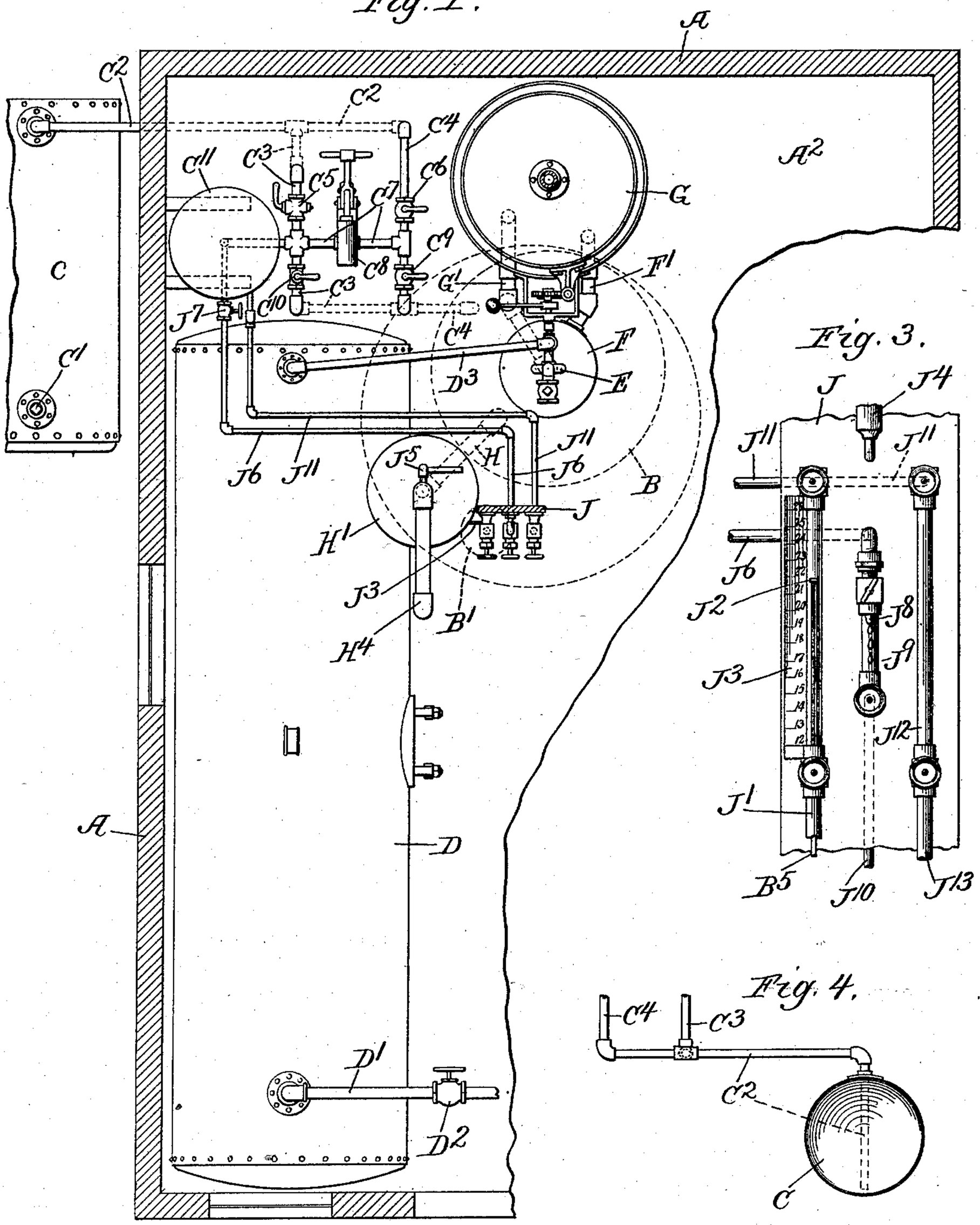


Fig. 3.

Fig. 4.

Witnesses:

Edward T. Wray.

Horace L. Kraft.

Inventor.

John A. Bower.

by Parker Carter & Co

Attorney's.

No. 743,439. PATENTED NOV. 10, 1903.

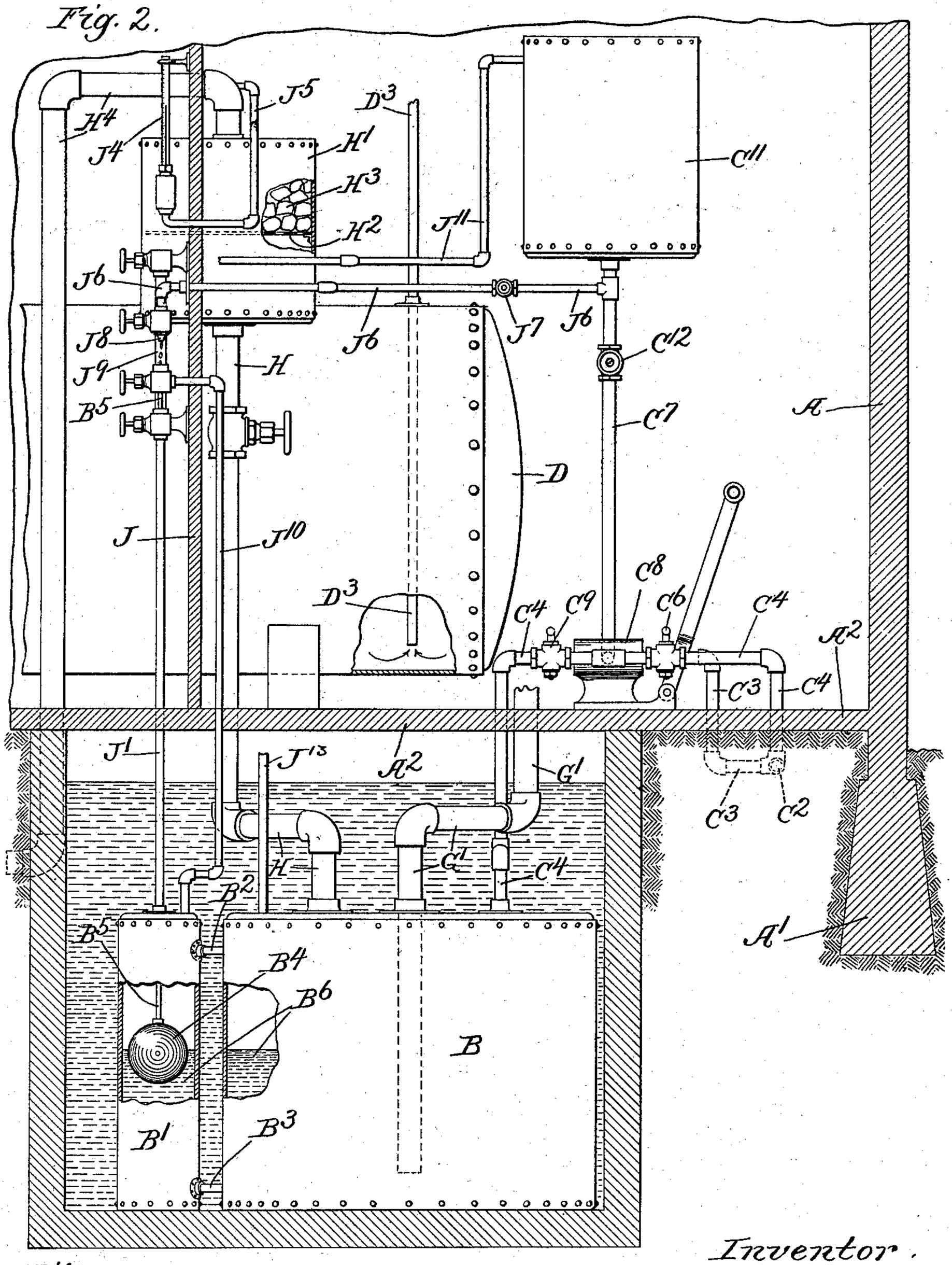
J. A. BOWER.

CARBURETER FEED.

APPLICATION FILED DEC. 10, 1902.

NO MODEL. 2 SHEETS—SHEET 2.

Fig. 2.



Witnesses.
Edward T. Wray.
Howard L. Kraft.

Inventor.
John A. Bower.
by Parker Carter
Attorney's.

No. 743,439. Patented November 10, 1903.

UNITED STATES PATENT OFFICE.

JOHN A. BOWER, OF NORTH CHICAGO, ILLINOIS, ASSIGNOR TO PRACTICAL GAS CONSTRUCTION COMPANY, OF NORTH CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

CARBURETER-FEED.

SPECIFICATION forming part of Letters Patent No. 743,439, dated November 10, 1903.

Application filed December 10, 1902. Serial No. 134,714. (No model.)

To all whom it may concern:

Be it known that I, JOHN A. BOWER, a citizen of the United States, residing at North Chicago, in the county of Lake and State of Illinois, have invented a certain new and useful Improvement in Carbureter-Feeds, of which the following is a specification.

My invention relates to storing and feeding oil to a carbureter for the purpose of manufacturing gas.

My invention is illustrated in the accompanying drawings, wherein—

Figure 1 is a plan view of the various features which combine to illustrate my invention with certain parts shown in cross-section. Fig. 2 is an elevation of a portion of the apparatus with parts shown in section and parts broken away. This section is supposed to be taken on a section-line drawn through Fig. 1, with certain parts, such as the parts G and F, removed. Fig. 3 is a part section and part elevation view of the airometer and air-condenser with parts broken away. Fig. 4 is a detail view showing the oil-storage tank and connections.

Like parts are indicated by the same letter in all the figures.

A represents the inclosing wall of the building, A′ the foundation thereof, and A^2 the floor.

B is the carbureter, which I have shown in a cylindrical form. I do not here show the interior construction of the carbureter, as of course any desired form of carbureter can be employed.

B′ is an auxiliary tank connected at B^2 and B^3 with the carbureter B and provided with a float B^4 on the end of the rod B^5.

B^6 indicates a quantity of oil or like substance within the carbureter and its auxiliary tank.

The oil-supply devices consist of an oil-storage tank consisting of connecting-pipes and pump and a gravity-tank.

C is the oil-storage tank, preferably located away from the main buildings and possibly underground. It is provided with a filling-opening C′. From this tank and preferably opening from the bottom thereof leads the supply-pipe C^2, which pipe is provided with two extensions—C^3, containing a valve C^5, and C^4, containing a valve C^6. Beyond these two valves the two extensions are connected by the cross-pipe C^7, between the two members of which is placed the pump C^8. The extension C^4 continues beyond the cross-pipe and opens into the carbureter B and is controlled by the valve C^9. The extension C^3 continues beyond the valve C^5 and opens into the pipe C^4 beyond the valve C^9 and is controlled by the valve C^{10}. The cross-pipe C^7 leads from its junction with the pipe C^3 to the gravity-tank C^{11}. It is controlled by the valve C^{12}. By this construction it is possible by a proper manipulation of the valves to perform the following functions: first, to pump oil from the tank through the pipe C^4, cross-pipe C^7, pump C^8, pipe C^3 to pipe C^4, and thence to carbureter; second, to pump oil from the oil-supply tank through pipe C^4, cross-pipe C^7, and extension thereof to the gravity-tank, and, third, to pump oil from the carbureter through pipe C^4, the pipe C^7, pipe C^3, and pipe C^2 back to the storage-tank.

I have shown a portion of an air-treating system which is more fully described in my former application, Serial No. 121,640½, filed August 30, 1902.

D represents an air-storage cylinder.

D′ is a pipe connected to the storage-tank leading from an air pump or compressor. (Not shown.)

D^2 is a valve controlling the pipe D′.

D^3 is a pipe which opens from within said tank and near the bottom thereof and is connected to an injector E, which injects air into the condenser F and thence through the pipe F′ into the airometer G. A pipe G′ opens from within the upper end of the airometer and leads thence to the carbureter and opens near the bottom thereof.

From the carbureter B leads the pipe H to the drier H′, which is preferably composed of the cylindrical shell, and when preferred diaphragm H^2 and a drying material above the diaphragm H^3. From this drier leads the pipe H^4 to the distributing-mains.

I will now describe the several elements which combine to make up the gage-board.

J is a board properly positioned in the op-

erating-room. The rod B^5 preferably passes upwardly through a tube J′, being properly packed, and terminates in the pointer J^2, associated with the scale J^3, which scale is properly supported on the board. Thus the height of the oil in the carbureter is indicated upon the board.

J^4 is a pressure-gage of any desired form connected, by means of the pipe J^5, with the outlet or gas mains.

J^6 is a pipe which leads from the bottom of the gravity-tank or from the upper part of the pipe C^7 and is controlled by the valve J^7. This pipe projects beyond the surface of the board and terminates in the nozzle J^8 within a sight-feed glass J^9, from which leads the pipe J^{10} to the carbureter. Thus the oil can be fed from the gravity-tank to the carbureter through the sight-feed, which will enable the operator to gage the rapidity with which he is feeding.

J^{11} is an overflow-pipe which leads from the upper part of the gravity-tank to the gage-board. On the gage-board it is provided with a glass section J^{12}, whence leads the pipe J^{13} down to the carbureter.

It will be understood of course that I have shown various parts and features here which might be greatly changed and altered without departing from the spirit of my invention. I have not attempted to describe in the minutest detail the different connections and adjustments, because they are subject to so much modification and are so readily understood by those skilled in the art. I have endeavored in my drawings to furnish, as it were, a diagrammatic representation of my invention and wish the drawings to be so taken and understood.

The use and operation of my invention are as follows: The carbureter is provided with a pipe which supplies it with air from the airometer. It is also provided with a pipe by which oil can in certain cases when desired be directly forced into it from the storage-tank. It also has associated with it a side or auxiliary chamber connected at top and bottom and provided with an oil-inlet pipe which feeds to said chamber a continuous current of oil, and thus indirectly or through the auxiliary chamber supplies the carbureter with its oil for vaporization. The oil is preferably contained in an interior tank, and my pipe system and pump are so combined with such oil-storage tank and carbureter and with the elevated gravity-tank as that I can pump the oil from the storage-tank directly to the gravity-tank or directly to the carbureter or from the carbureter back to the storage-tank or back to the gravity-tank, if desired. The gravity-tank is a convenient means by which a suitable quantity of oil can be steadily supplied to the carbureter when the pumping apparatus is at rest.

My gage-board is intended to furnish the operator with a convenient means of ascertaining the condition of the several apparatuses. The gage with the vertically-moving pointer shows the depth of oil in the carbureter. The gage with the rotating pointer indicates the pressure in the gas-mains. The sight-feed in the pipe which opens from near the bottom of the gravity-tank shows what quantity of oil is being supplied to the carbureter, and the sight-feed glass in connection with the overflow-pipe in the top of the gravity-tank shows when the pumping apparatus has sufficiently filled the gravity-tank. As previously suggested, the arrangement of the several parts of my apparatus might be greatly altered and some might be dispensed with without departing from the spirit of my invention.

I claim—

In a machine for manufacturing gas from oil, the combination of a low-level oil-storage tank, with a high-level oil-tank, a carbureter, a pump, and connections from the high-level tank to the carbureter and from the pump to the carbureter and the high-level tank, and controlling-valves whereby the oil may flow by gravity from the high-level tank to the carbureter and may be pumped from the carbureter to the high-level tank.

JOHN A. BOWER.

Witnesses:
HOMER L. KRAFT,
EDWARD T. WRAY.