

Sept. 16, 1924.

J. KOHUT

1,508,399

APPARATUS FOR PRODUCING GAS FROM LIQUID IN A COLD STATE

Filed Feb. 20, 1924

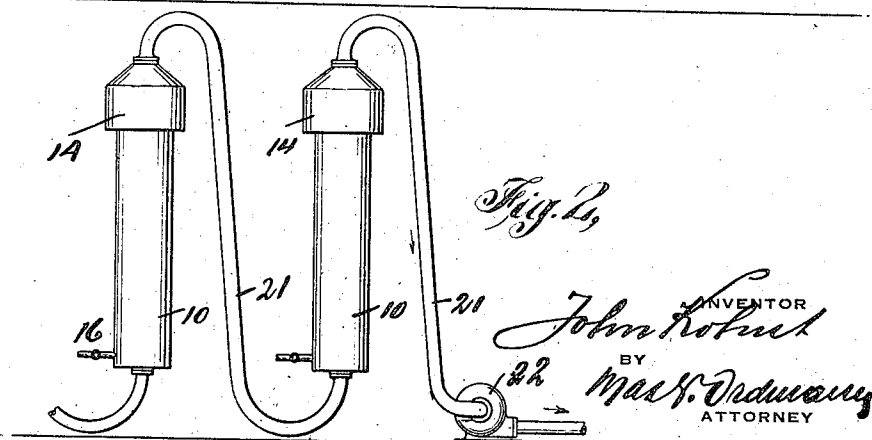
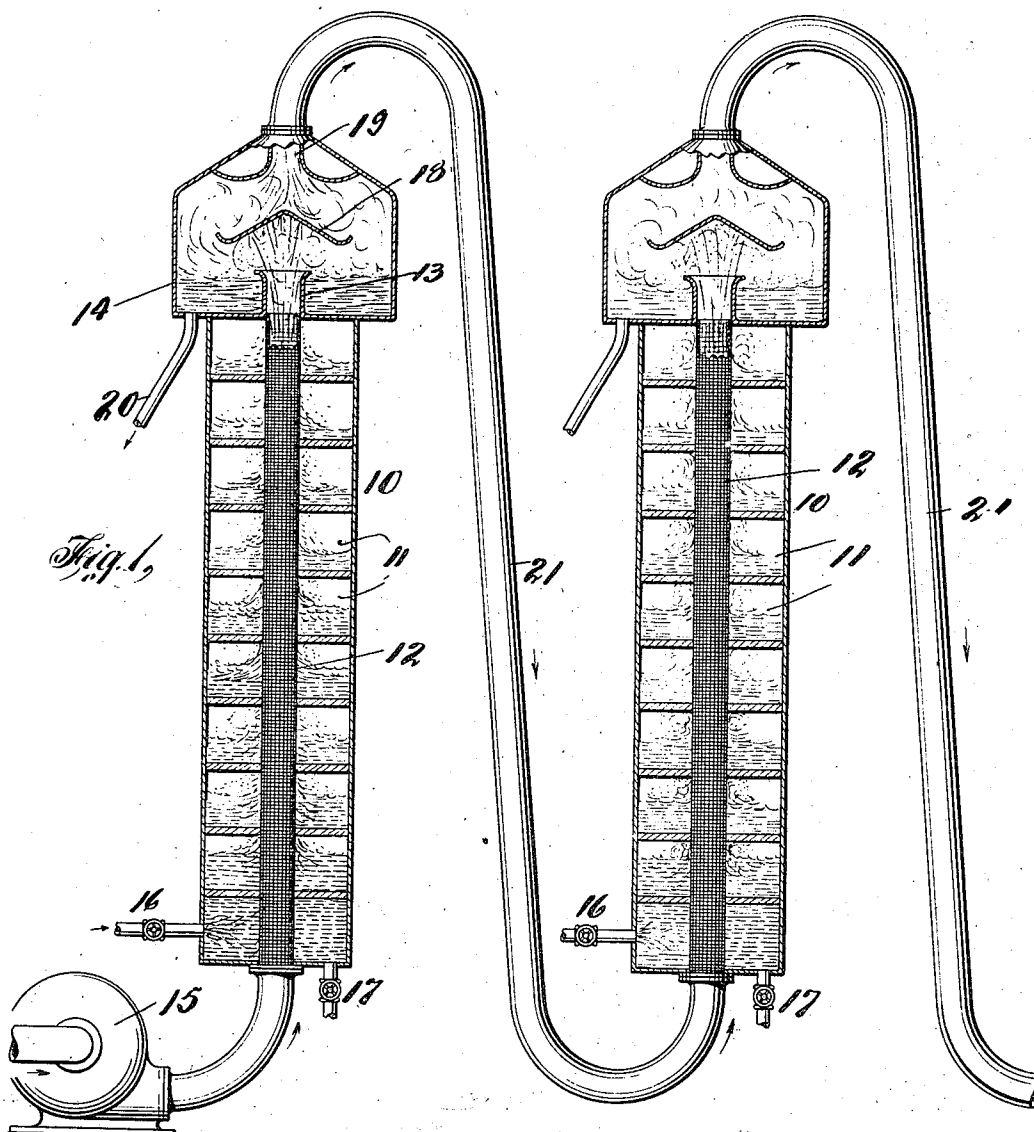


Fig. 2,

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Patented Sept. 16, 1924.

1,508,399

UNITED STATES PATENT OFFICE.

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APPARATUS FOR PRODUCING GAS FROM LIQUID IN A COLD STATE.

Application filed February 20, 1924. Serial No. 693,958.

To all whom it may concern:

Be it known that I, JOHN KOHUT, a citizen of Poland, residing at Boonton, in the county of Morris and State of New Jersey, have invented certain new and useful Improvements in an Apparatus for Producing Gas from Liquid in a Cold State, of which the following is a specification.

This invention relates to production of combustion gas and has for its object to provide an apparatus for converting crude oil or other liquid by a cold process into a fuel gas.

The new method consists in that from a suitable source of oil small oil particles or drops are, by suction, caused to be continuously drawn into and carried along with a strong current of air and evaporate therein forming a combustible gas mixture.

To carry out this method, I provide an oil tank through which longitudinally and centrally extends a tubing having very fine perforations on its circumference, which communicate with said tank. This tubing is connected to an air compressor or a suction pump, whereby a blast of air can be forced through it, in consequence of which the oil in the surrounding tank will be drawn into the current of air in small particles through the fine perforations and as these particles are carried along with the air, they become evaporated forming with the air a combustible gas mixture.

My invention will be more fully understood by reference to the accompanying drawing in which similar reference characters denote corresponding parts and in which Fig. 1 is a sectional view of one embodiment of my apparatus and Fig. 2 an elevation of a modification thereof.

10 denotes a vertical tank, which is divided longitudinally in a plurality of comparatively narrow compartments 11. Extending longitudinally and centrally through said tank is a tube 12 having very fine perforations in its circumference and preferably formed of wire mesh or porous material. The upper end of said tube terminates in a nozzle 13 formed on the bottom of a dome or chamber 14 mounted on top of the tank. The lower end of the tube is connected to an air compressor 15 or air pump of any suitable construction.

16 denotes a valve controlled oil inlet terminating in the lowermost compartment and

17 a drain pipe. The dome is provided with a baffle plate 18 suitably fixed therein above the nozzle 13 and with a gas discharge opening 19 at its top.

Leading from the bottom of the dome is a drain pipe 20, which may be suitably connected to the oil inlet.

The apparatus thus constructed forms a unit, so that if desired two or more units may be coupled together, as at 21, in the manner shown.

The mode of operation is as follows:—

Oil is charged into the lowermost compartment of the tank 10 through the inlet 16 forcing it through the perforation of the tube to partly or fully fill the superposed compartments. Thereupon a blast of air is forced through the tube 12. As the air current passes the different compartments, small oil particles will be drawn from the latter into and be carried along with the current of air. In this air current, they will be caused to quickly evaporate and to form with the air a combustible gas mixture. The oil particles, which on reaching the chamber 14 are still in liquid state, will, when thrust against the baffle plate 18, drop down to the bottom of the chamber 14 accumulating thereon and gradually dropping through the drain pipe 20 back into the lowermost compartment of the tank.

Instead of a compressor, a suction pump 22 may be used. In this case, the pump 22 will be connected to the discharge end of the apparatus or of the last unit, as shown in Fig. 2. In every other respect, the modification shown in Fig. 2 is the same as the first described construction.

In experimenting with my new method and apparatus, I have found that there are practically no losses and about a 100% pure gas can be produced from crude oil or the like and that the cost of production of the gas will be reduced to a minimum. My apparatus can be conveniently employed not only for heating purposes in stationary plants, but also on motor vehicles.

What I claim is:—

1. An apparatus for producing gas from liquid comprising a comparatively long tank containing liquid in cold state, a finely perforated tube extending throughout and communicating through its perforations with said tank and means for forcing a current of air through said tube, whereby small par-

ticles of liquid are drawn gradually from said tank into and along with the current of air and become evaporated therein.

2. An apparatus for producing gas from oil comprising a tank containing oil in cold state, divided longitudinally in a plurality of compartments, a tube extending longitudinally through said tank and having on its circumference fine perforations communicating with said compartments and means for causing a strong blast of air through said tube, whereby small oil particles will be drawn into and along with the air current and become evaporated therein.
3. An apparatus for producing gas from oil comprising a vertical tank divided longitudinally in a plurality of compartments to contain oil in cold state, a tube longitudinally and centrally extending through said tank and having fine perforations in its circumference communicating with said tank, a chamber on top of said tank in which said tube terminates, said chamber having a gas discharge and an oil drain, and means for forcing a blast of air through said tube, whereby small particles of oil are drawn into and with the current of air, to be evaporated therein and form a combustible gas mixture.
4. An apparatus for producing gas from oil comprising a vertical tank divided longitudinally in a plurality of compartments to contain oil in cold state, a tube longitudinally and centrally extending through said tank and having fine perforations in its cir-

cumference communicating with said tank, a chamber on top of said tank in which said tube terminates, said chamber having a gas discharge and an oil drain, a baffle plate in said chamber above said tube and means for forcing a blast of air through said tube, whereby small particles of oil are drawn into and with the current of air, to be evaporated therein and form a combustible gas mixture.

5. An apparatus for producing gas from oil consisting of a plurality of units, each comprising a tank divided into a plurality of compartments adapted to contain oil in a cold state, a tube having fine perforations and extending through said tank, said perforations communicating with the different compartments of said tank, a chamber on top of said tank having a discharge, the top of the chamber of one unit being coupled to and communicating with the bottom of the adjacent unit and means for forcing a blast of air through the perforated tubes of the several units, whereby small particles of oil will be drawn into and with the air current and become evaporated therein forming a combustible gas mixture.

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

JOHN KOHUT.

Witnesses:

MAX G. ORDMANN,
JOSEPH T. McMAHON.