

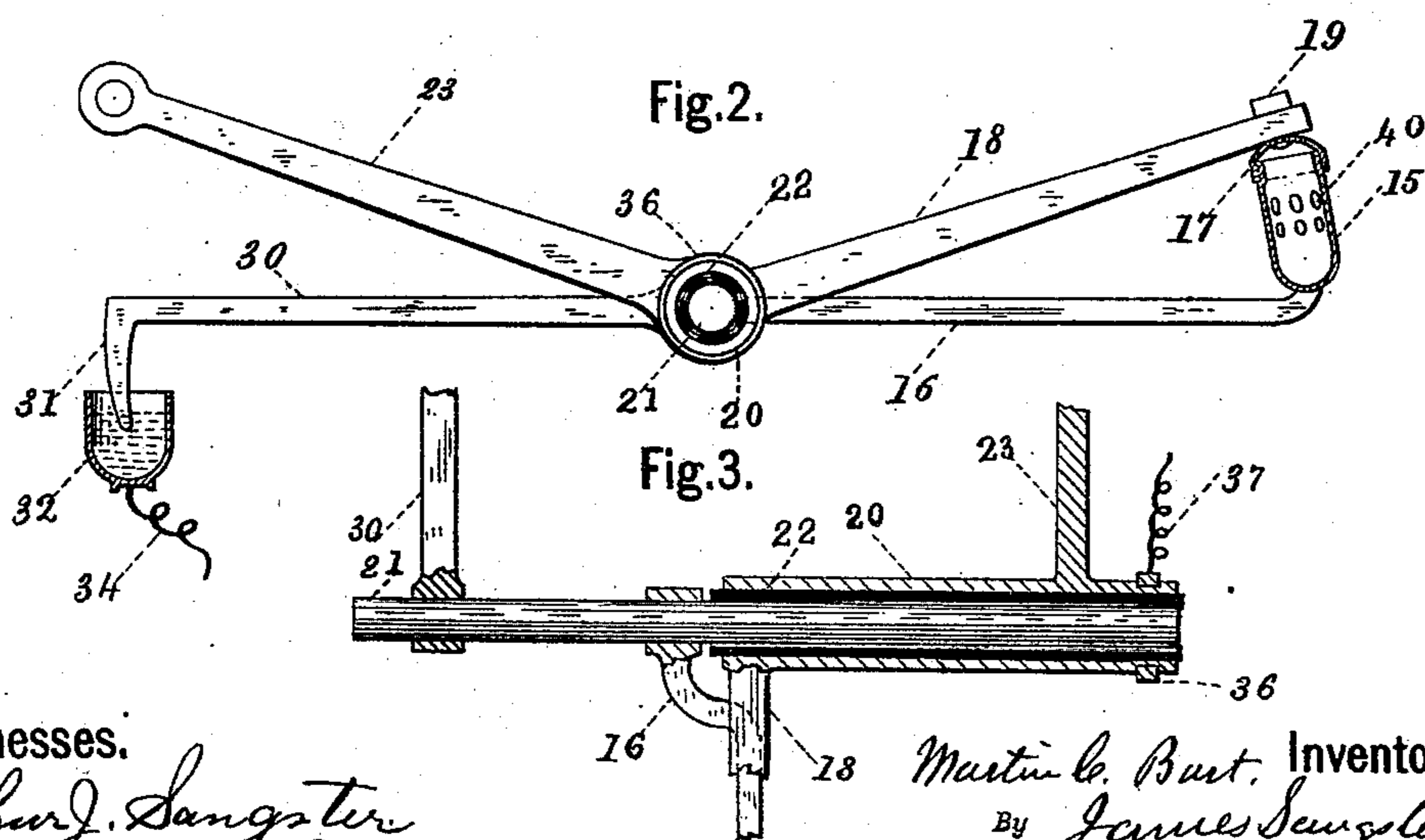
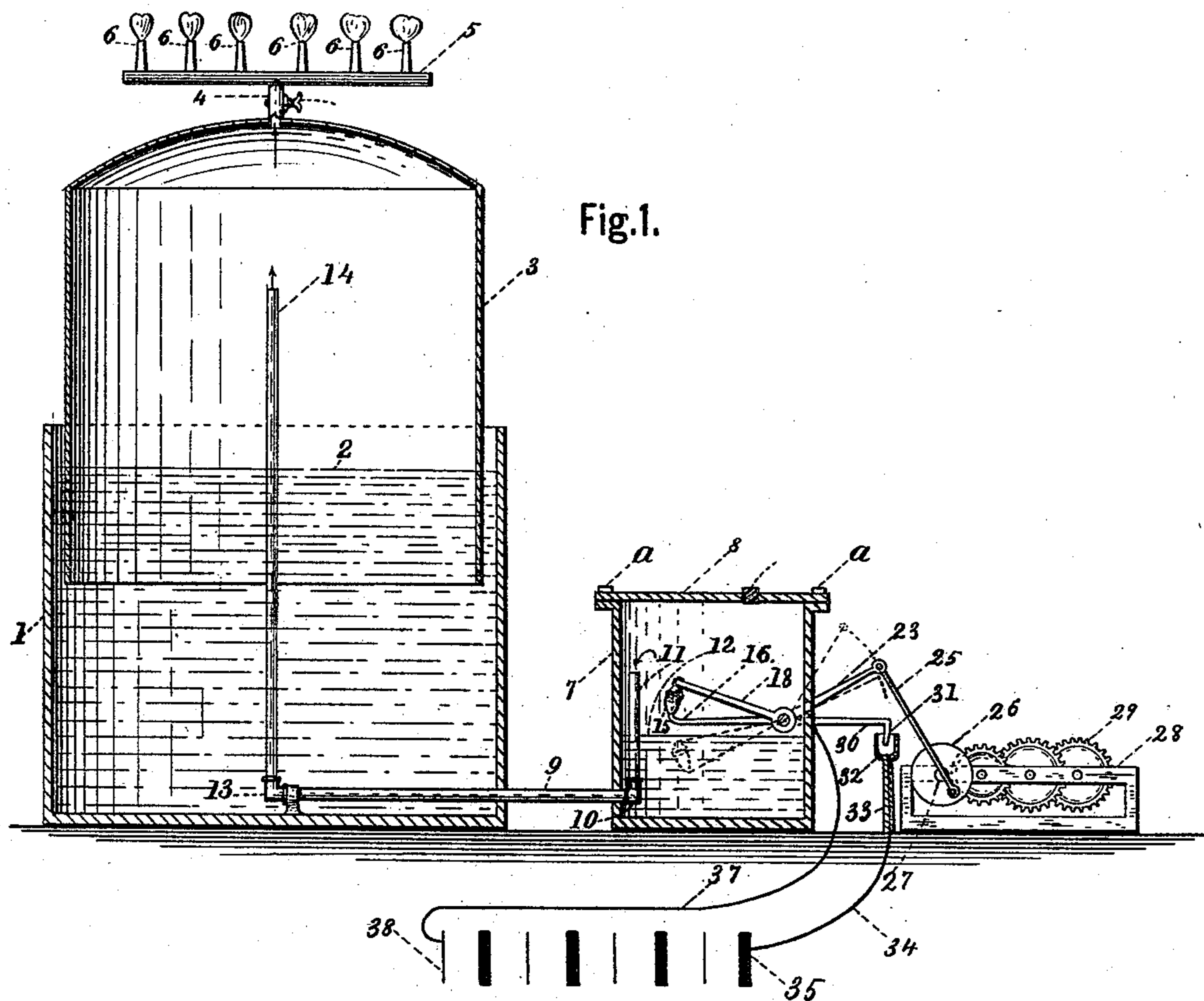
(No Model.)

M. C. BURT.

APPARATUS FOR THE MANUFACTURE OF GAS.

No. 418,550.

Patented Dec. 31, 1889.



Witnesses:
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UNITED STATES PATENT OFFICE.

MARTIN C. BURT, OF LAKE VIEW, ILLINOIS.

APPARATUS FOR THE MANUFACTURE OF GAS.

SPECIFICATION forming part of Letters Patent No. 418,550, dated December 31, 1889.

Application filed June 19, 1889. Serial No. 314,782. (No model.)

To all whom it may concern:

Be it known that I, MARTIN C. BURT, a citizen of the United States, residing at Lake View, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Apparatus for the Manufacture of Gas, of which the following is a specification.

This improvement relates to the manufacture of gas for heating and illuminating purposes by means of a current of electricity, and will be fully and clearly hereinafter described and claimed, reference being had to the accompanying drawings, in which—

Figure 1 is a vertical longitudinal section through the principal portion of the apparatus. Fig. 2 is a detached side elevation of that portion of the apparatus through which the electric current is transmitted to and through the retort, the retort being in section Fig. 3 is a cross-sectional elevation through a portion of Fig. 2.

In Fig. 1, I have shown an ordinary water-tank 1, filled with water up to or about the point 2, more or less, in which is placed an ordinary gasometer 3, having an outlet-pipe 4 for the gas to pass through. To the pipe 5 may be attached a series of gas-burners 6, or it may lead to a distance to supply other gas-burners, or for other purposes.

The oil-tank 7 is shown as a cylindrical vessel provided with a removable top 8, secured to it by bolts *a*; but it may be made in any other suitable form, and is constructed, preferably, of sheet metal or cast-iron. Between the oil-tank and the gasometer-tank is a pipe 9, rigidly secured to each, and as it passes into the oil-tank it is provided with an elbow 10 and a vertical portion 11, projecting up through and above the level of the oil 12. The opposite end of the pipe 9, which passes into the gasometer-tank 1, is provided with an elbow 13 and a vertical pipe 14, projecting up through the level 2 of the water and up into the gasometer, which may be constructed in any suitable way. The object of this pipe is to receive the gas as it is generated in the oil-tank and conduct it to and into the gasometer.

The apparatus for generating the gas consists of a small retort 15 of some suitable ma-

terial—platinum, for instance, answers a very good purpose. It is rigidly secured at the bottom to the arm 16, and at the top it is provided with a screw-cap 17, which is secured to the end of the arm 18 by a screw or bolt 19. (See Fig. 2.) The arm 18 is rigidly fastened to a sleeve 20, and the arm 16 is secured rigidly in any well-known way to the shaft 21. The arms 16 and 18 are preferably made of copper or other good conducting material. I do not confine myself to the precise mechanism shown for moving the retort into and out of the oil, as any well-known means may be used for this purpose. The sleeve 20 is also securely fastened to the same shaft; but a suitable non-conducting material—hard rubber, for instance—is interposed between it and the shaft, so that the shaft 21 and the sleeve 20 are entirely insulated from each other. Near the outer end of the sleeve 20 is an arm 23, rigidly secured to it. At the opposite end of the arm 23 is pivoted by a pin 24 a connecting-rod 25, having its opposite end pivoted to a crank-disk 26. (See Fig. 1.) This crank-disk 26 is mounted on a shaft 27, set in bearings in the frame 28, and is connected by a train of gearing 29, the gearing being operated by a spring constructed and arranged in any well-known way for giving a reciprocating motion to the arm 23, and consequently the retort 15, for purposes which will be more clearly hereinafter shown.

On the shaft 21 is secured by a key or other well-known means an arm 30, having a hook portion 31, and below the hook 31 is a cup 32, in which is placed a quantity of mercury for forming or breaking an electric circuit by the movement of the hook in and out as the arm 30 vibrates or swings back and forth. If required, the mercury in the cup may be dispensed with and the hook 31 may be made to slide close to the side of the cup as it comes down, and thus make the contact, in which case the cup 32 should be made of copper or other good conducting material. The cup 32 is secured to a post 33, and is connected by a wire 34 with the pole 35 of an electric battery or other source of electricity. (See Fig. 1.) The sleeve 20 and arm 18 are also connected with the battery by means of a ring 36, which turns loosely on the shaft, and is

provided with a wire 37, which connects with the opposite pole of the battery.

The operation of the invention is as follows: Any suitable oil or liquid material—petroleum, for instance—is put into the tank 7 by removing the plug 39 and then returning it after sufficient oil has been put in. The crank-disk 26 is then set in motion either by means of the train of gearing 29, operated by a spring
 10 in any well-known way, or by a connection with a steam, water, or other suitable engine for driving it. By this means the retort 15 is alternately moved into and out of the oil, and when immersed in the oil a portion of
 15 oil passes into the retort through the perforations 40, so that it carries up a portion of oil at every upward movement. When the retort leaves the oil, the arm 30 at the opposite side of the shaft 21 is moving down, and
 20 the hook 31 dips into the mercury and completes an electric circuit, the electricity passing from the pole 35 of the battery along the arm 30 and shaft 21, and then along the arm 16 through the platinum retort 15, then along
 25 the arm 18, sleeve 20, and from there to the ring 36 and wire 37 to the opposite pole 38 of the battery, or in lieu of the battery shown a dynamo-electric machine made in any well-known way may be used, and on a large scale

would be preferable, as being the cheapest 30 source for the electric current. This operation instantly heats the retort 15 to a red heat or to the required degree to decompose the oil within it and thereby form a fixed gas. By this means any degree of heat required in 35 practice may be given to the retort (which is comparatively very small) by increasing or diminishing the source of the electric current.

I claim as my invention—

In an apparatus for the manufacture of gas 40 for illuminating or heating purposes, the combination of a vessel for holding the liquid from which the gas is made, a retort mounted on a movable frame, a means, substantially as described, for causing it to be alternately im- 45 mersed and removed from the liquid, a generator of electricity connected by wires with the frame-work and retort, and a means for forming and breaking the electric circuit, whereby the retort as it emerges is heated 50 sufficiently to convert the liquid carried up by it into a fixed or permanent gas, substantially as described.

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