

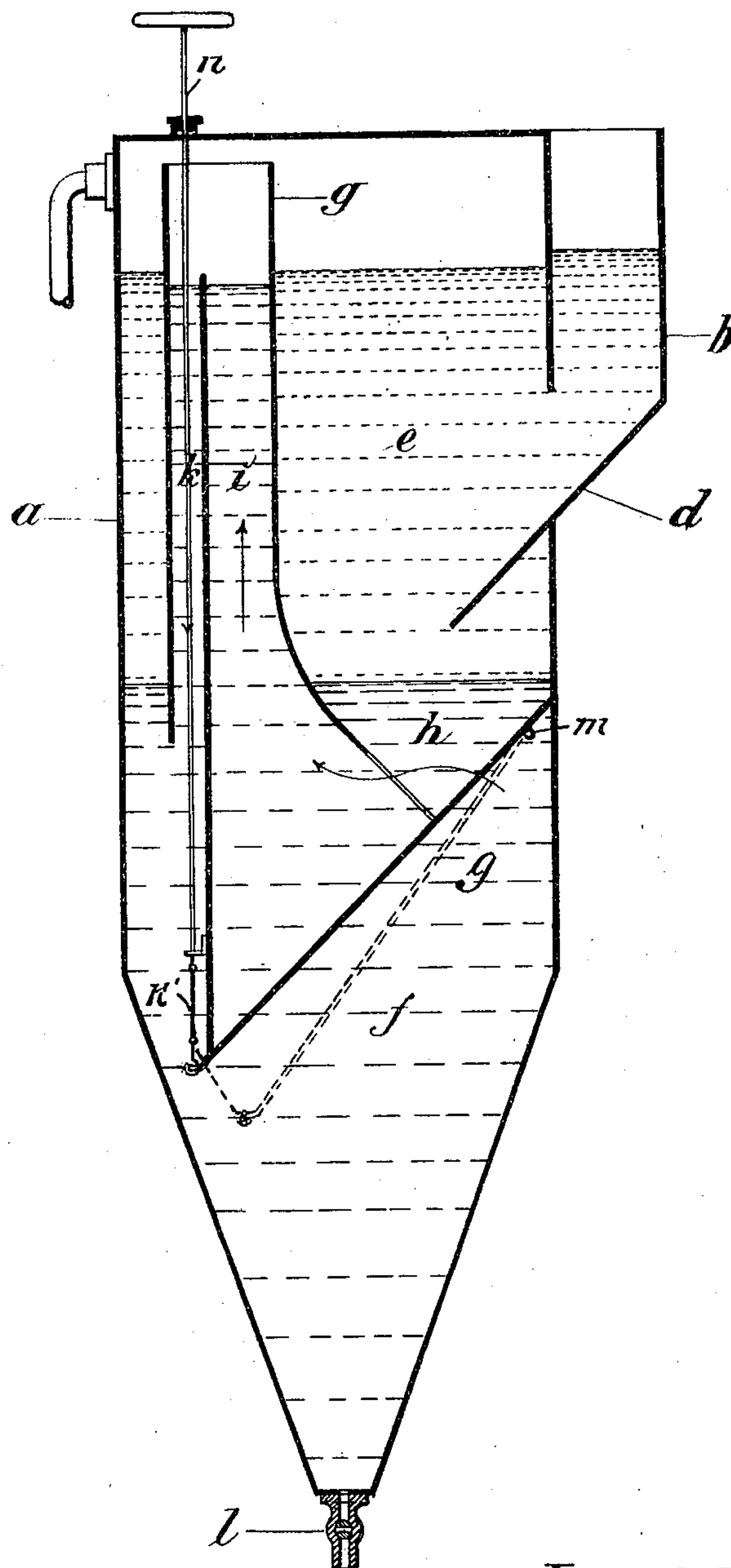
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Patented June 27, 1899.

K. G. GUSTAFSSON.
ACETYLENE GAS GENERATOR.

(Application filed Oct. 10, 1898.)

(No Model.)



Witnesses:

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UNITED STATES PATENT OFFICE.

KARL GUSTAF GUSTAFSSON, OF STOCKHOLM, SWEDEN.

ACETYLENE-GAS GENERATOR.

SPECIFICATION forming part of Letters Patent No. 627,747, dated June 27, 1899.

Application filed October 10, 1898. Serial No. 693,139. (No model.)

To all whom it may concern:

Be it known that I, KARL GUSTAF GUSTAFSSON, mechanical engineer, of 4 Sibyllegatan, Stockholm, Sweden, have invented an Improvement in Acetylene-Gas Generators; and I do hereby declare the nature of my invention and in what manner the same is to be performed to be particularly described and ascertained in and by the following statement.

10 In apparatus for producing acetylene gas where the carbid is allowed to drop into the gas-generator through the free surface of the liquid it is necessary in order to prevent the generation of gas commencing before the car-
15 bid has had time to sink to the place where the generation of gas is intended to take place to let the carbid pass through a sufficiently deep layer of a liquid—such as oil, for instance—which floats on the water and does
20 not generate gas with the carbid and, moreover, does not retard the generation of gas too much on the introduction of the carbid in the water. As, however, the bubbles of gas formed cause considerable disturbance of the
25 liquid as they rise to the surface, an emulsion of the oil and water is soon formed which is unable to protect the fresh carbid fed in from generating gas prematurely, said gas in this case gaining access to the room or other space
30 wherein the gas apparatus is located.

The object of the present invention is to so arrange apparatus of the kind referred to that the above-mentioned inconveniences are avoided.

35 In the accompanying drawing is shown a longitudinal vertical section of the gas-generating chamber proper of an acetylene-gas apparatus or gas-generator arranged in accordance with the present invention.

40 *a* is the water and oil reservoir, and *b* the feed-passage for the carbid which falls along an inclined plane *d* into the water *f*, which is covered by a layer of oil *c*. The improved arrangement consists in placing in the gas-
45 generating chamber *a* a chimney or flue *g*, the lower end of which reaches below the surface of the water, while its upper end projects somewhat above the layer of oil. The said flue or chimney is closed at the bottom except
50 in one place, (at *h*,) where the carbid descending along the inclined plane can enter into it. Moreover, by means of a partition *i* there is

formed in the said flue a passage *k*, the upper end of which terminates about on a level with the surface of the layer of oil, while its
55 lower end terminates in the water at the bottom of the flue. Evidently the said passage can be replaced by a special pipe communicating at the top with the flue *g*.

When the carbid is fed into the apparatus, 60 it slides at once along the inclined bottom into the lower part of the leg *g*, and the generation of gas commences as soon as the water has had time to penetrate through the adhering film of oil, when the rising bubbles of
65 gas communicate an ascending motion to the body of water in the flue *g*. Should there be any oil floating on the water in the flue *g*, this oil is forced to accompany the current of water which flows down over the edge of the
70 partition *i* through the passage *k* and finally issues at the bottom of the flue, where the oil rises to the layer of oil situated above, while the water again flows into the flue *g* through the aperture *h*. By this means a circulation
75 of the water is brought about, which results in that, on the one hand, the flue *g*, as a rule, always remains filled with pure water only, not with water and oil, and, on the other hand, that bubbles of gas cannot find their way out
80 through the aperture *h*. Consequently in the generation of gas no emulsion of the oil and water is formed, the oil remaining unaltered.

The supplemental bottom of the leg *g* is hinged, as at *m*, and is provided with a suitable operating-rod *k'*, extending up through
85 the top of the casing, the lower end of the operating-rod being linked to the free end of the cover to permit its being dropped into the position shown in dotted lines.

90 The lime formed by the chemical reaction accompanies the circulating water and settles at the bottom of the apparatus, whence it can be removed by means of a cock *l*.

Finally it should be added that the pas-
95 sage *k* can be omitted altogether, in which case the water thrown up over the upper edge of the flue *g* is allowed to sink through the layer of oil outside of the flue.

Having now particularly described and as-
100 certained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is—

1. An acetylene-gas apparatus comprising

a closed chamber adapted to contain water and oil, a vertical leg within said chamber depending below the water-line and having two compartments or passages, said compartments or passages communicating with each other slightly above the oil-level, and an inclined movable supplemental bottom closing the lower end of one of the compartments and serving to direct the carbid through an opening in the leg below the water-line into said closed compartment, and means for operating said movable bottom, substantially as described.

2. An acetylene-gas apparatus comprising a closed chamber adapted to contain oil and

water, a vertical leg provided with a bottom within said chamber and depending from above the oil-surface below the water-line, said leg below the water-line having an opening *h* for the carbid fed into the leg, and a passage *k* leading from the interior of said leg slightly above the oil-surface to the outside of it below the water-line.

In witness whereof I have hereunto set my hand in presence of two witnesses.

KARL GUSTAF GUSTAFSSON.

Witnesses:

H. TELANDER,
BIRGER LINDH.