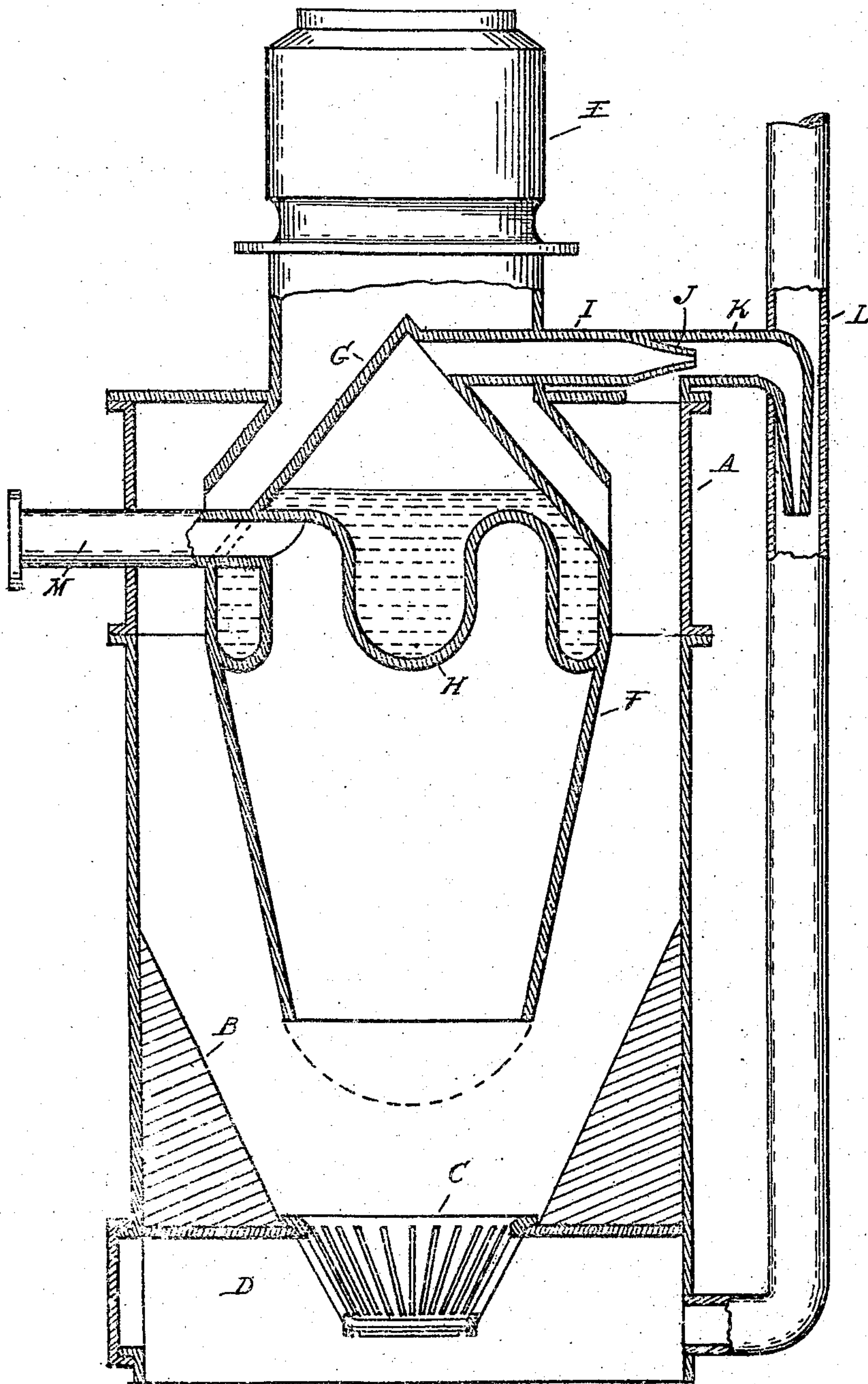


No. 824,359.

PATENTED JUNE 26, 1906.

R. HILPRECHT.
GAS PRODUCER.

APPLICATION FILED JUNE 17, 1905.



Witnesses
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UNITED STATES PATENT OFFICE.

ROBERT HILPRECHT, OF LANSING, MICHIGAN, ASSIGNOR TO AMERICAN
SUCTION GAS PRODUCER COMPANY, OF LANSING, MICHIGAN, A COR-
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GAS-PRODUCER.

No. 824,359.

Specification of Letters Patent.

Patented June 26, 1906.

Application filed June 17, 1905. Serial No. 265,778.

To all whom it may concern:

Be it known that I, ROBERT HILPRECHT, a
subject of the German Emperor, residing at
Lansing, in the county of Ingham and State
5 of Michigan, have invented certain new and
useful Improvements in Suction Gas-Pro-
ducers, of which the following is a specifica-
tion, reference being had therein to the ac-
companying drawing.

10 The invention relates to suction gas-pro-
ducers, and has for its object the obtaining of
a construction capable of being formed in
relatively small units.

In the present state of the art suction gas-
15 producers are usually formed with a casing
in which a mass of fuel is placed, the fuel be-
ing centrally fed into the casing and the suc-
tion for removing the gas being applied to
the sides of the mass. With the present con-
20 struction the fuel is fed into the chamber
from the sides, and the gas is drawn off at the
center. Furthermore, a relatively large
chamber is formed within the center of the
mass of fuel in which the gas generated is
25 collected, and the extended surface of this
chamber is utilized for absorbing the heat
from the gas and transferring it to the sur-
rounding mass of unburned fuel. A steam
or vapor generator is also arranged within
30 this central chamber.

In the drawing the producer is illustrated
in vertical central section.

A is an outer casing, the lower portion of
which is provided with a fireproof lining B,
35 which is of a conical or a downwardly-taper-
ing form. C is a grate at the lower end of
this lining, this being preferably of a bas-
ket form and depending into an ash-pit cham-
ber D.

40 E is a fuel-hopper at the upper end of the
casing.

Within the casing A is arranged a second
casing F, which at its upper end has a conical
portion G projecting upward toward the base
45 of the fuel-hopper E. Thus the fuel drop-
ping from the hopper E will be deflected lat-
erally by the cone G to the annular space be-
tween the inner casing F and the outer casing
A. The lower end of the casing F is some
50 distance above the grate, so as to permit the
fuel passing downward through the annular

space between the casings to spread over the
entire grate area.

At the upper end of the casing F is arranged
a water-receptacle H, and the steam gener- 55
ated therein by the heat of the gases will pass
upward in the conical casing G to a vapor-
discharge conduit I. This conduit is prefer-
ably provided with a discharge-nozzle J,
which is arranged as an injector within the 60
conduit K, which conduit is connected with
the upper end of the fuel-chamber between
the casings F and A. Thus any distilled
gases passing off from the fuel will be pro-
pelled by the jet from the nozzle J through 65
the conduit K, which leads downward to the
chamber D beneath the grate. This conduit
K also connects with the air-inlet conduit L,
which is mixed with the vapor and gas enter-
ing the ash-pit chamber. 70

With the construction described a rela-
tively small mass of fuel is held within the
casing A at any one time, and the device is
operative for the production of a relatively
small amount of gas, which has not proven 75
practicable with the constructions heretofore
used. The suction-conduit M, which con-
nects with the chamber within the casing F,
is connected with the engine, and whenever
suction is produced the required volume of 80
air, steam, and distilled gas is drawn into the
ash-pit chamber D and thence through the
grate and mass of incandescent fuel support-
ed thereon into the central chamber.

It will be noted that the casing F forms, in 85
effect, a suction-hood arranged above the
grate and that by reason of the tapering form
of the lining B the fuel is fed between said
hood and grate from the periphery thereof
toward the center. Thus the layer of fuel 90
between the hood and grate is maintained of
uniform thickness.

What I claim as my invention is—

1. A suction gas-producer comprising an
outer casing, an inner casing open at its lower 95
end and spaced from said outer casing to
form an annular fuel-chamber therebetween,
a grate beneath the opening of said inner cas-
ing, a vaporizer within said inner casing, a
fuel-hopper above said vaporizer, and a suc- 100
tion-conduit connected with the gas-cham-
ber within said inner casing.

2. In a suction gas-producer the combination with a grate, of a superposed suction-hood tapered toward both ends and a fuel-hopper upon the upper end of said hood, for the purpose described.

3. In a suction gas-producer, the combination with a grate, of a superposed suction-hood tapered at both ends, a casing surrounding said hood and tapering toward said grate, and a fuel-hopper upon the hood the space between said hood and casing forming a fuel-magazine from which the fuel is centrally fed between the hood and grate to maintain a layer of uniform thickness.

4. In a suction gas-producer, the combina-

tion with a grate, a superposed suction-hood, a casing surrounding said hood, a vaporizer in said hood, and a fuel-hopper upon said vaporizer, for the purpose described.

5. In a suction gas-producer, the combination with a grate, of a superposed suction-hood tapered at both ends, a casing surrounding said hood and tapering to said grate, and a vaporizer within said hood.

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

ROBERT HILPRECHT.

Witnesses:

M. W. MONTGOMERY,
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