

No. 662,609.

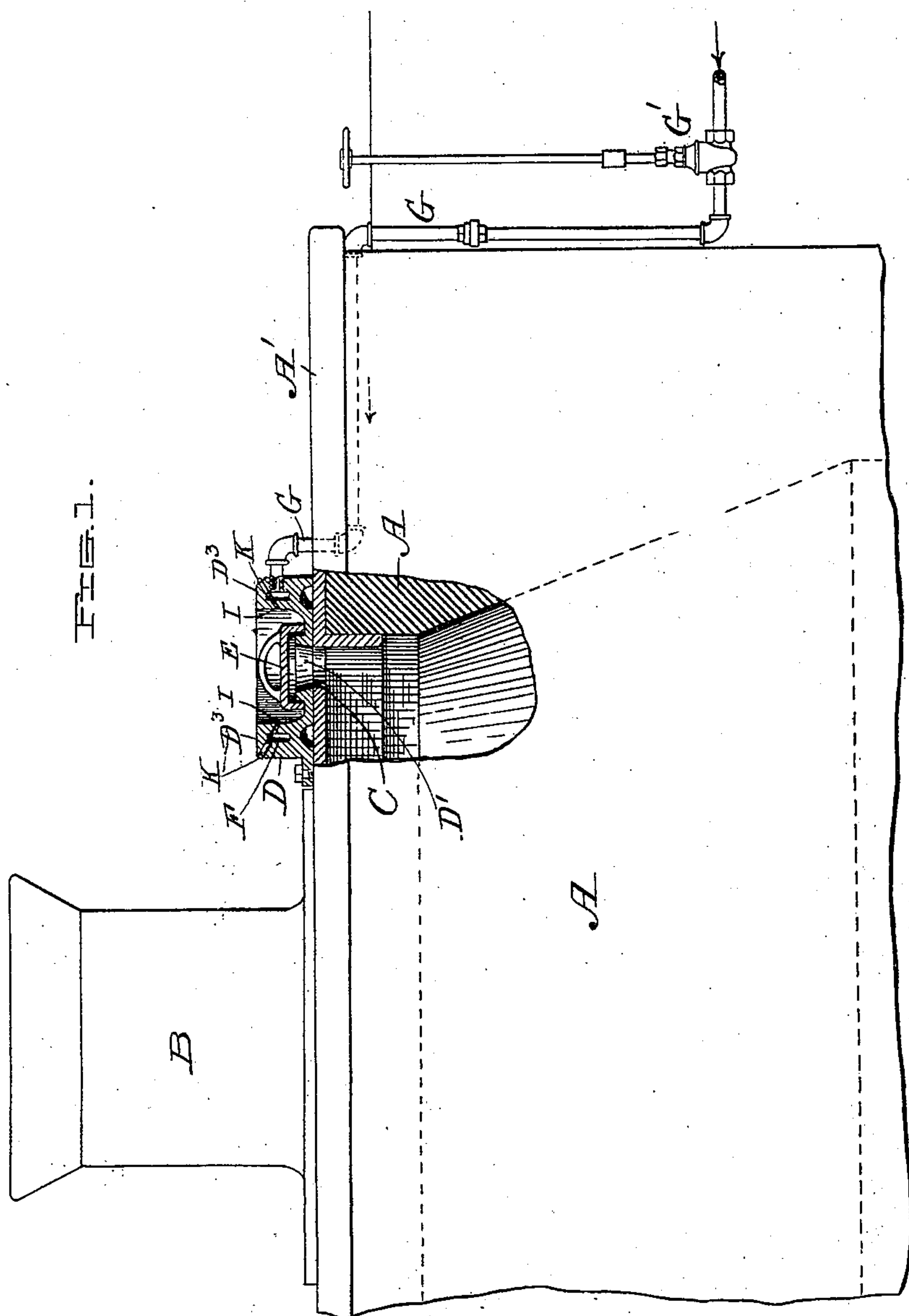
Patented Nov. 27, 1900.

J. O. E. TROTZ.
GAS PRODUCER.

(Application filed June 19, 1899.)

(No Model.)

2 Sheets—Sheet 1.



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BY A. A. Barker. Atty

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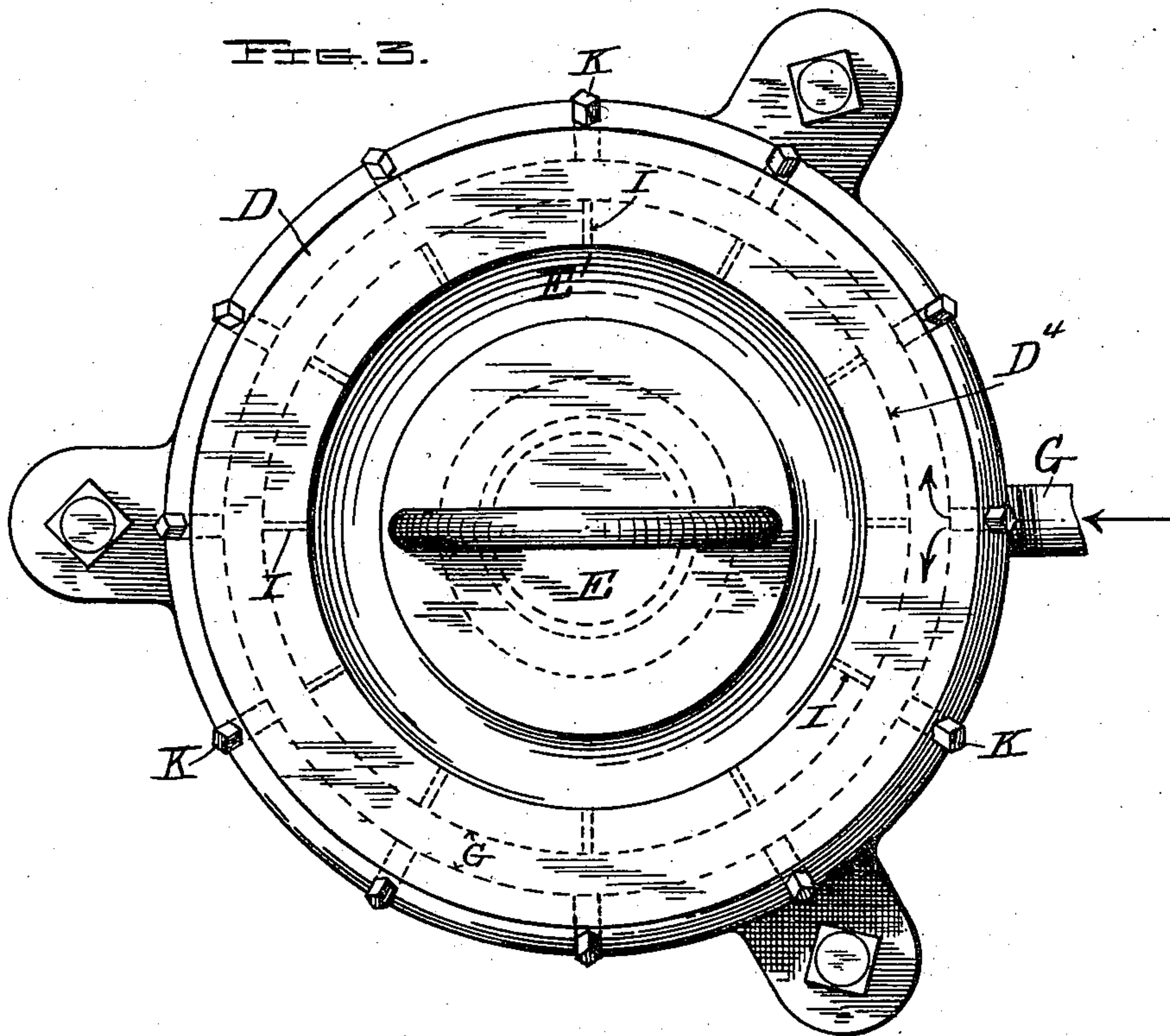
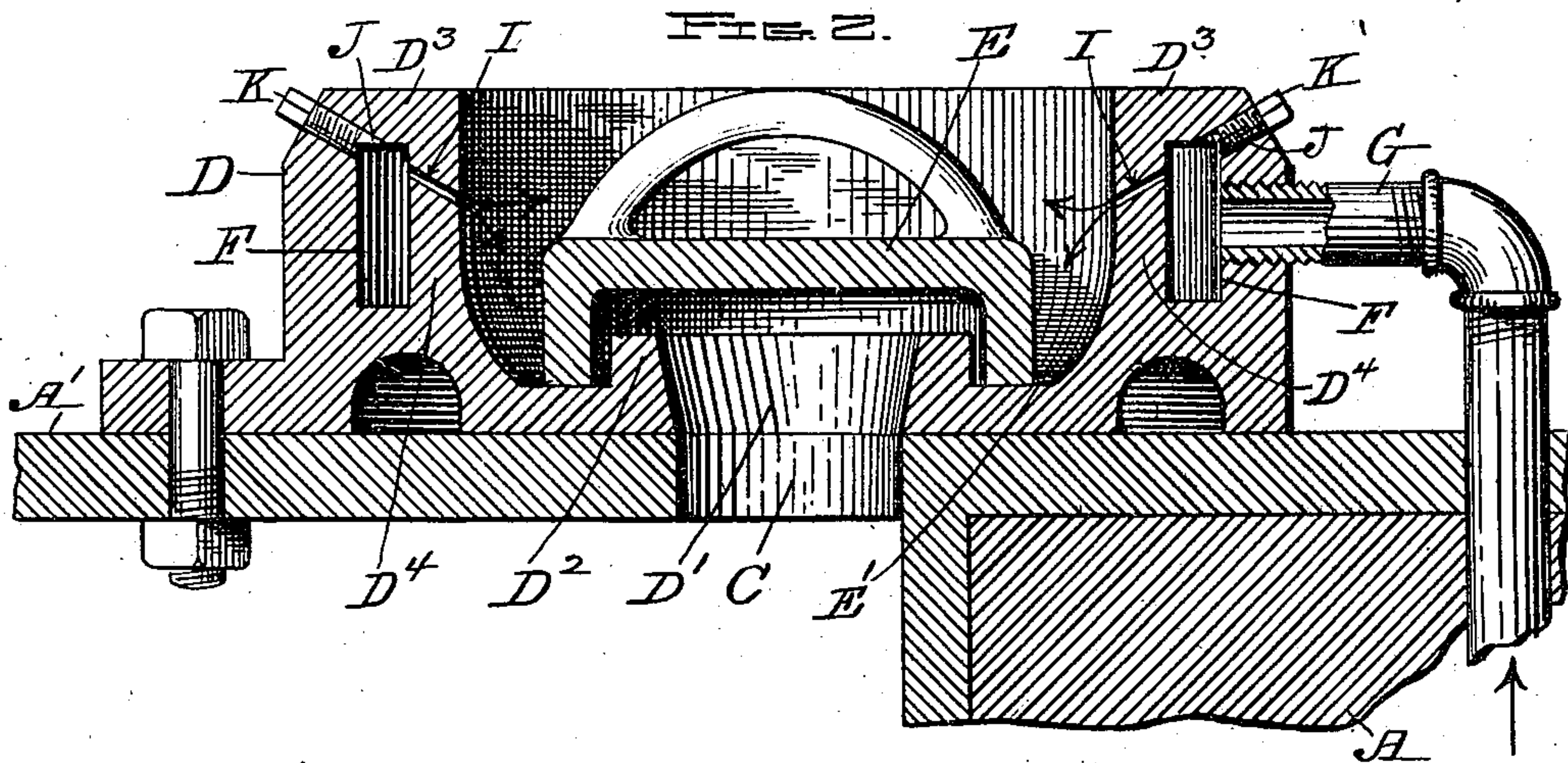
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2 Sheets—Sheet 2.



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UNITED STATES PATENT OFFICE.

JOHAN OTTO EMANUEL TROTZ, OF WORCESTER, MASSACHUSETTS.

GAS-PRODUCER.

SPECIFICATION forming part of Letters Patent No. 662,609, dated November 27, 1900.

Application filed June 19, 1899. Serial No. 721,040. (No model.)

To all whom it may concern:

Be it known that I, JOHAN OTTO EMANUEL TROTZ, of the city and county of Worcester, in the State of Massachusetts, have invented
5 certain new and useful Improvements in Gas-
Producers; and I hereby declare that the fol-
lowing is a full, clear, and exact description
thereof, reference being had to the accompa-
nying drawings, forming a part of this speci-
10 fication, and in which—

Figure 1 represents so much of the upper
part of a gas-producer as is necessary to illus-
trate my improvements, a vertical section be-
ing shown through the parts to which my said
15 improvements more particularly relate. Fig.
2 represents an enlarged view of the parts
shown in section in Fig. 1, and Fig. 3 is a top
or plan view thereof.

The object of my invention is to provide
20 means for preventing the escape of gas from
the producer through the poke-holes when
the covers are removed therefrom to poke or
stir the coal within said producer in the pro-
cess of forming the gas therein; and it consists
25 in combining with the cover of said producer
over each poke-hole a frame provided with a
central opening and with an annular cham-
ber having a series of ports opening there-
from and pointing toward said central open-
30 ing and poke-hole, a steam-pipe connected
with said frame for supplying steam to its
annular chamber, and a removable cover
adapted to fit against the frame over the poke-
hole, substantially as and for the purpose
35 hereinafter more fully set forth.

To enable others skilled in the art to which
my invention appertains to better understand
the nature and purpose thereof, I will now
proceed to describe it more in detail.

40 Referring to the drawings, A represents the
upper part of an ordinary gas-producer, hav-
ing the usual cover A', hopper B, into which
the coal is discharged to conduct it into the
chamber of said producer, and a series of
45 poke-holes C (only one of which is shown in
this instance) for reaching the interior of the
producer to poke or stir the coal during the
process of forming the gas therein. As pre-
viously stated, my invention relates to the
50 means employed for preventing the escape of
gas through said poke-holes when the covers
are removed therefrom to thus poke or stir

the coal. Said result is accomplished by forc-
ing a steam-blast from all sides into the poke-
hole when its cover is removed to poke the
55 coal, as aforesaid.

A device or apparatus for effecting the
above result I am aware is not broadly new,
and I therefore limit my invention to sub-
stantially the construction herein set forth, 60
and pointed out in the claims.

My improved device is constructed as fol-
lows: A frame D is fastened to the producer-
cover A', surrounding each poke-hole C, which
is recessed upon its upper side and provided 65
with a central vertical opening D', substan-
tially the size of and coming over said poke-
hole C. The frame is also provided around
said central opening D' with an external an-
nular flange D² for the removable cover E of 70
the poke-hole to fit over and also for the pur-
pose of forming an annular recess or recep-
tacle E' around opening D' to receive and
hold the water produced by the steam con-
densation forced from the steam-supply pipe 75
at each time the steam is let on, and thus
form a water seal between the bottom of the
removable cover E and frame D. Said frame
D is also provided with an annular chamber 80
F, extending around the vertical circular
part D³ thereof and connected with a steam-
pipe G for supplying steam to said chamber.
It is also provided with a series of ports or
steam-discharge openings I through the in-
ner walls D⁴ of the vertical circular part D³, 85
all pointing toward the central opening D'
and poke-hole C, as is best shown in Figs. 2
and 3 of the drawings, the size and number
of said ports being, of course, varied as de-
sired. 90

By the above-described construction it is
obvious that when the steam is let on and
discharged into the annular chamber F, the
ports being ranged around the poke-hole
opening, as aforesaid, a perfect flood of steam 95
is forced into said poke-hole from all sides,
forming a solid wall of steam around, over,
and in the same, which effectually cuts off
the escape of gas from the producer at said
point. This I have fully demonstrated to be 100
the fact in actual practice in the operation of
a gas-producer for several months having my
improved steam-sealer applied thereto.

In order that the steam-ports I may be

reached from the outside to clean the same, openings J are formed in the outer wall of the vertical circular part D⁸ of frame D, and said openings are provided with suitable removable plugs K.

The steam-supply pipe G is in practice connected, by means of suitable branches, with each poke-hole frame D; but as only one poke-hole is in this instance shown said branch connections are also not shown. Each branch is provided with a suitable valve G' for regulating the supply of steam to the frame and poke-hole.

The operation of shutting off the escape of gas from the producer to poke the coal therein is, in brief, as follows: The attendant first opens the valve G' to let on the steam, which causes the condensed steam between said valve and the frame to be forced therefrom into the receptacle E', formed around the bottom of the removable cover E, and produces a water seal around the same, as previously described. The vaporized steam now flowing in impinges against the cover E in an unbroken volume around and over the same, and the latter may now be removed by the attendant without danger of any of the gases in the producer escaping. Having been removed and the necessary poking performed, said cover is replaced and the steam-blast shut off by closing the valve G'. After said operations sufficient water produced by condensation remains in the frame around the bottom of the removable cover to form a tight seal against the escape of gas from the producer during the interval between one poking operation and another. Therefore my improved sealing device not only serves as an effectual check against the escape of gas when the poke-holes are open, but also to prevent the escape of gas around the removable covers thereof.

Having now described my invention, what

I claim therein as new, and desire to secure by Letters Patent, is—

1. In a gas-producer, a device combined with the cover thereof over each poke-hole, comprising a frame having a central, vertical opening therethrough and an annular chamber in the vertical, circular part thereof provided with a series of inclined ports through the inner, vertical wall of said chamber, arranged at short distances apart and pointing toward said poke-hole; said frame also being provided through the outer, vertical wall of its chamber with inclined openings, in alinement with the aforesaid ports, and provided with means for closing said inclined openings; the frame also having a steam-supply pipe connected with its annular chamber, and a suitable poke-hole cover, substantially as and for the purpose set forth.

2. In a gas-producer, a device combined with the cover thereof, over each poke-hole, comprising a frame having a central, vertical opening therethrough and an annular chamber in the circular, vertical, part thereof provided with a series of inclined ports through the inner vertical wall of said chamber, arranged at short distances apart and pointing toward said poke-hole; said frame also being provided through the outer vertical wall of its chamber with inclined openings, in alinement with the aforesaid ports and provided with means for closing said inclined openings; the frame also having a steam-supply pipe connected with its annular chamber, and an annular, upturned flange around its central opening to form an annular trough for the poke-hole cover to rest in, and said poke-hole cover as and for the purpose set forth.

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Witnesses:

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