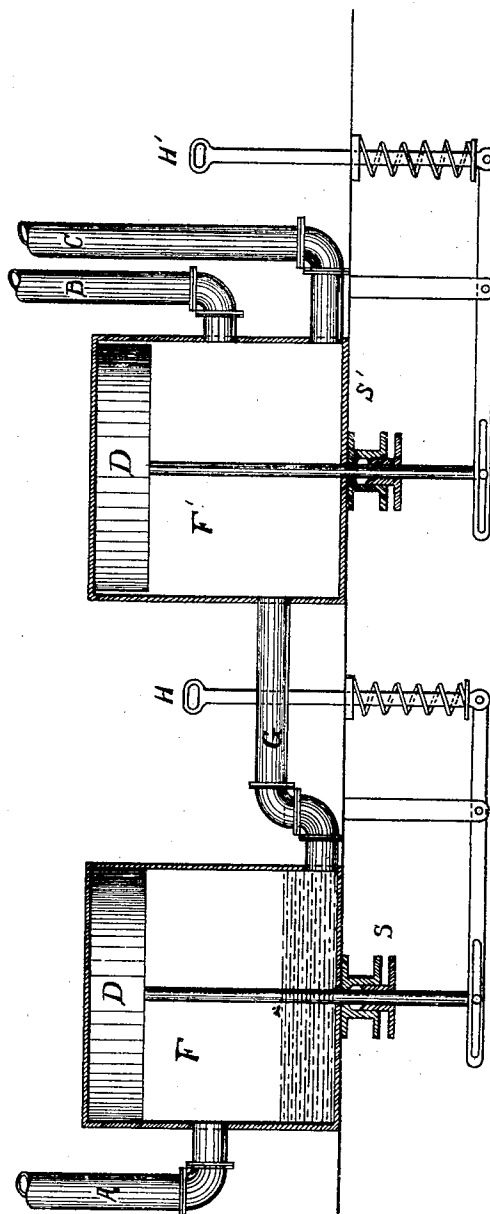


No. 809,339.

PATENTED JAN. 9, 1906.

G. M. S. TAIT.
FLUID SEALING DEVICE FOR GAS PRODUCERS.
APPLICATION FILED AUG. 17, 1905.



WITNESSES:

Warren E. Dixon.
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INVENTOR

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by
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Att'y.

UNITED STATES PATENT OFFICE.

GODFREY M. S. TAIT, OF MONTCLAIR, NEW JERSEY, ASSIGNOR TO
COMBUSTION UTILITIES COMPANY, OF NEW YORK, N. Y., A COR-
PORATION OF NEW YORK.

FLUID-SEALING DEVICE FOR GAS-PRODUCERS.

No. 809,339.

Specification of Letters Patent.

Patented Jan. 9, 1906.

Application filed August 17, 1905. Serial No. 274,639.

To all whom it may concern:

Be it known that I, GODFREY M. S. TAIT, a
subject of the King of Great Britain, and a
resident of Montclair, in the county of Essex
and State of New Jersey, have invented cer-
tain new and useful Improvements in Fluid-
Sealing Devices for Gas-Producers, of which
the following is a specification.

This invention relates to fluid-sealing de-
vices operating by displacement; and the ob-
ject of the invention is to produce a three-
way valve for power gas-producers which
automatically creates a vent for the producer-
gas into a chimney or elsewhere when the
flow of gas to the engine is stopped.

The invention consists of two or more
chambers arranged to form water seals to
their inlets and outlets by the movement of a
plunger or plungers contained therein which
displaces the water in said chambers.

One form of the device is shown in the
illustration herewith; but it is not essential
that this invention should consist of two
separate cylindrical chambers, as shown, it
being equally practical to build them square
or both together in one box with a division or
other similar arrangement.

Referring to the illustration herewith, F
and F' are two cylindrical chambers having
outlet and inlet pipes, as shown. These
chambers are provided with movable dis-
placement-plungers D and D', held in posi-
tion by means of springs or other devices.

S and S' are stuffing-boxes through which
the piston-rods pass. H and H' are the op-
erating-handles for same.

A and C are outlet-pipes, and B is the in-
let, while the pipe G connects the two cylin-
ders, as shown. A may be connected to a
stack, while C may be connected to a gas-en-
gine.

The plunger D' is preferably constructed
to work loosely in the chamber F' in order
that any tarry matter deposited by the gas
entering at B may not prevent the free op-
eration of said plunger.

The operation of the apparatus is as fol-
lows: Referring to the illustration, all gases
enter the chamber F' through pipe B and will
when the apparatus is in the position shown
flow out through pipe C as pipe G is sealed by
the water in chamber F. To change the
flow of the gas, it is only necessary to elevate

the handle H, and the plunger D descends in
space F, thereby displacing the water con-
tained in this chamber and causing same to
flow out through pipe G into the space F'.
As soon as the handle is released part D by
action of spring or other device resumes its
former position, as shown in the illustration.
F' now contains the water which was in F,
with the result that pipe C is water-sealed,
whereas pipe G is open on account of the re-
moval of water in chamber F. The flow of
the gas is therefore down pipe B, across the
surface of the water in chamber F', through
pipe G, through chamber F, and out through
pipe A to the stack. To reverse this connec-
tion, it is only necessary to pull handle H',
when part D' descends into space F', displac-
ing the water contained therein through pipe
G back into space F, as formerly, in which
case the flow of the gas will be, as in the first
instance, down pipe B, through space F', and
up pipe C.

My invention provides a hitherto unknown
means for automatically venting the pro-
ducer when the gas-flow is cut off at the en-
gine, and thus certainly prevents the trou-
blesome explosions, of frequent occurrence
in the past, through failure on the part of the
operator to properly vent the producer after
shutting off the gas at the engine.

What I claim is—

1. A fluid-sealing device for gases com-
prising two chambers adapted to contain wa-
ter; means for connecting the two chambers;
means for raising and lowering the water-
level in each chamber by displacement; and
ports in said chambers affording inlet and
outlet passages for the gas.

2. A fluid-sealing device consisting of two
connecting-chambers having ports opening
thereinto, and having displacement-plungers
adapted to close one or more ports solely by
the water-sealing thereof.

3. A fluid-sealing device, comprising the
chambers F and F' having the gas-inlet B and
the gas-outlets A and C; displacement-plun-
gers D and D'; and connecting-passage G.

4. A fluid-sealing device comprising a
chamber having a gas-inlet and two gas-out-
lets one or other of said outlets being at all
times sealed by a water seal; a second cham-
ber having connection with the first chamber
through one of said outlets; means for simul-

taneously opening one of said outlets and closing the other of said outlets by water displacement.

- 5 5. A fluid-sealing device comprising two chambers adapted to contain water; in the upper part of one chamber a gas-inlet in the lower part a gas-outlet and midway said inlet and outlet a second outlet connecting with the remaining chamber in its lower part;

means for alternately water-sealing either of 10 said outlets whereby one outlet is always open whenever the other outlet is closed.

Signed at New York, in the county of New York and State of New York.

GODFREY M. S. TAIT.

Witnesses:

CARLETON ELLIS,
JAS. K. CLARK.