

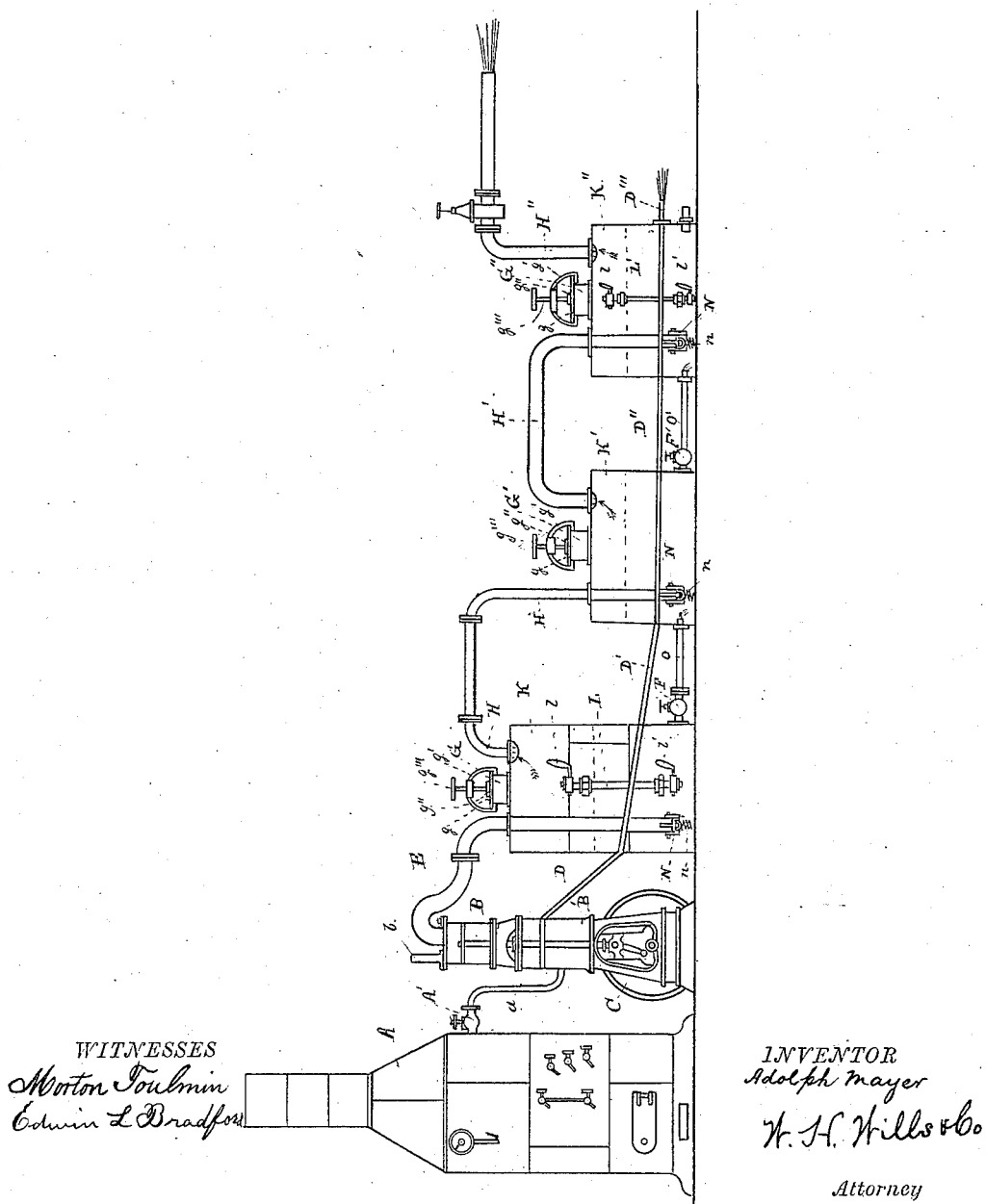
(No Model.)

A. MAYER.

APPARATUS FOR MANUFACTURING GAS.

No. 307,132.

Patented Oct. 28, 1884.



UNITED STATES PATENT OFFICE.

ADOLPH MAYER, OF HAZELTON, PENNSYLVANIA.

APPARATUS FOR MANUFACTURING GAS.

SPECIFICATION forming part of Letters Patent No. 307,132, dated October 28, 1884.

Application filed May 2, 1884. (No model.)

To all whom it may concern:

Be it known that I, ADOLPH MAYER, a citizen of the United States, residing at Hazelton, in the county of Luzerne and State of Pennsylvania, have invented certain new and useful Improvements in Apparatus for Manufacturing Gas, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to improvements in apparatus for the manufacture of gas from naphtha, and has for its objects to produce a gas of high illuminating power and of great purity at a comparatively low cost. These objects are attained by the mechanism illustrated in the accompanying drawing, forming a part of this specification, in which the figure represents an elevation of the apparatus.

The letter A indicates a boiler, which may be of any of the usual forms employed to supply engines with steam.

A' is a throttle-valve; *a*, the induction-pipe which conveys the steam from boiler A to a steam-engine, B', having a fly-wheel, C.

B is an air-pump, which I prefer to place directly over the steam-engine B', by which means the same piston-rod may be extended through one of the heads of the steam-cylinder and enter the cylinder of the air-pump and be connected with the piston-head thereof, and thereby compress the air in the air-pump B whenever the steam-engine is in operation.

The letter E indicates a pipe connected with the air-pump B, which carries the compressed air from the air-pump B into the top of a tank, K, (containing a supply of naphtha as high as the dotted line,) is thence continued downwardly to near the bottom of the tank where it is provided with a slide-valve, N, having a spring, *n*, the object of which will hereinafter appear.

F F' are globe-valves attached to the lower parts of the tanks K K' and connected to the pipes O O', which extend, respectively, from tank K to K', and from tank K' to tank K'', and serve the purpose to convey the naphtha from one tank to the other and to regulate the flow of the naphtha as well as adjust the quantity which it may be desired to introduce into the different tanks, any required number

of which may be placed in succession, one after the other.

G G' G'' are short vertical tubes or cylinders having tops *g* extending a little beyond the outer sides thereof, which are provided with a central opening which may be closed by means of a plate or valve, *g''*, which is attached to the bottom of a screw, *g'''*, which passes through a yoke, *g'*, having lugs which engage with the bottom of the top *g*, whereby the yoke *g'* is held down and is thereby enabled to withstand the downward pressure of the screw *g'''* when the opening in the top *g* is closed. This opening is intended for the introduction of naphtha.

D is a pipe which receives the exhaust-steam from the cylinder B' and passes through the lower part of tank K and each successive tank K' K'' and through the naphtha contained therein, whereby the proper temperature is maintained.

L L' are glass tubes secured, respectively, to the tank K and tank K''. These tubes have gage-cocks *l l'* at top and bottom and serve the purpose to show the height of the naphtha in the respective tanks, and are also intended to be provided with thermometers, by means of which the temperature of the contents of each tank may be indicated and thus enable the attendant to maintain any desired degree. The compressed air in the pipe E forces the valve N downward against the spring *n*, and as the valve opens the air rushes into the naphtha and passes through it and rises into the vacant space in the upper part of the tank, (above the naphtha,) which becomes filled with the gas absorbed by the air. The pressure being maintained, this gas follows the direction of the arrow, enters the pipe H, thence into the bottom of the tank K' through a similar valve, N, into and through the naphtha contained in said tank, whereby it absorbs a further supply of gas. It then passes through the pipe H', thence into the tank K'' through similar valve, N, into the naphtha contained therein, through the naphtha into the pipe H'', through which into another tank or directly into the gasometer, thence into the mains for distribution.

I have found by experiment that the illu-

minating power of the gas increases as it issues
from each successive tank—for instance, if
burners are placed on the pipes H H' H''
greater candle-power will be shown at H' than
5 at H, and at H'' than at H', and that a given
quantity of naphtha—say three gallons—will
produce one thousand feet of gas of twenty-
candle power. The spring *n* is intended to
close the valve N when the air-pressure is re-
10 moved and thus prevent the naphtha from
rising in either of the pipes E H H' H''.
The pipe *b* extends from the top of the air-
pump B as high as the tanks containing naph-
tha, (usually of four or five thousand gallons
15 capacity,) the object of which is to utilize the
vapor arising therefrom, which is drawn into
the air-pump B by means of this pipe *b* and

forced into the tanks K K' K'' through the
pipes E H H', together with or separately from
the atmospheric air hereinbefore described. 20

Having described my invention, what I de-
sire to secure by Letters Patent and claim is—

The combination of boiler A, the pipe *a*,
the engine B', air-pump B, pipe E, having
valve N, and pipes H H' H'', with tanks K K' 25
K'', and valves F F', and pipes O O', as de-
scribed, and for the purposes set forth.

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

ADOLPH MAYER.

Witnesses:

MARTIN TOULMIN,
W. H. WILLS.