

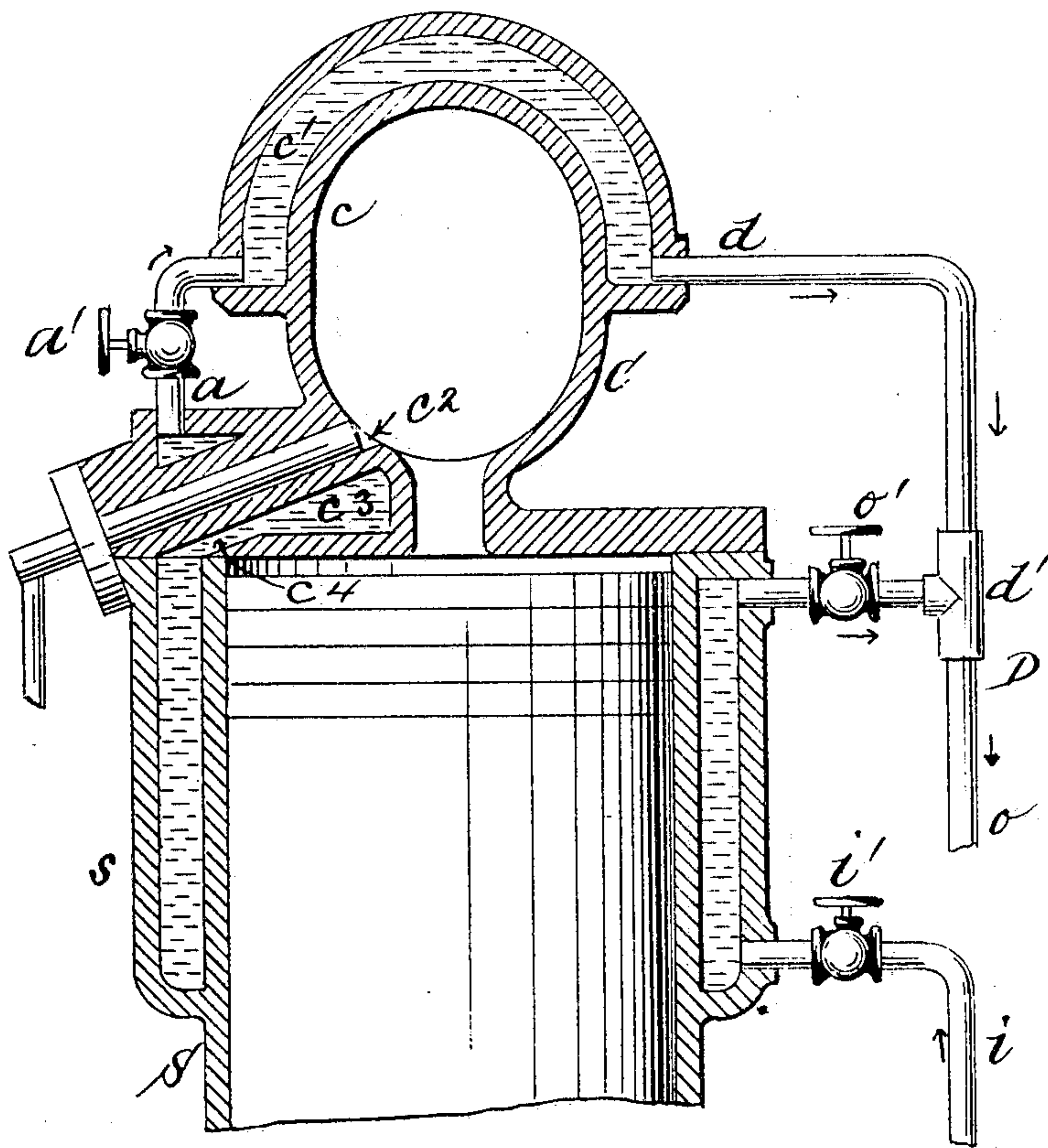
No. 775,321.

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A. WASSMANN.
VAPORIZER FOR HYDROCARBON MOTORS.

APPLICATION FILED NOV. 24, 1903.

NO MODEL.



Witnesses:
D. W. Gardner.
Chas. H. Waterman.

Inventor:
August Wassmann
By his Attorney
Geo. W. M. M. M.

UNITED STATES PATENT OFFICE.

AUGUST WASSMANN, OF ASTORIA, NEW YORK, ASSIGNOR TO ABBOT
AUGUSTUS LOW, OF HORSESHOE, NEW YORK.

VAPORIZER FOR HYDROCARBON-MOTORS.

SPECIFICATION forming part of Letters Patent No. 775,321, dated November 22, 1904.

Application filed November 24, 1903. Serial No. 182,455. (No model.)

To all whom it may concern:

Be it known that I, AUGUST WASSMANN, a citizen of the United States, residing at Hal-
letts Point, Astoria, Queens county, and State
5 of New York, have invented certain new and
useful Improvements in Vaporizers for Hydro-
carbon-Motors, of which the following is a
specification sufficient to enable others skilled
in the art to which the invention appertains
10 to make and use the same.

My invention relates to motors in which
kerosene or other liquid hydrocarbon is used
as a source of power, the oil being injected
into an ignition-chamber by which it is vapo-
15 rized and flashed.

My improvement relates particularly to the
ignition-chamber, and is designed to regulate
the temperature of the same to prevent car-
bonization of the hydrocarbon, to prevent de-
20 terioration of the metal of which the igniter-
chamber is formed, to insure the perfect com-
bustion and reduction of all the hydrocarbon,
and to prevent serious injury by reason of
accidental contact with the exterior of the ig-
25 nition-chamber.

I have heretofore found by experience that
if the igniter attains a very high temperature
there is a loss of power by reason of the car-
bonization of the oil on the interior surface
30 of the igniter or its reduction thereby to a
spheroidal state, in either of which conditions
it passes out through the discharge-port with-
out performing any work and is lost. As a
matter of fact, after a motor of this class has
35 been running for awhile and the ignition-
chamber has become heated to the maximum
degree its surface glows cherry red as seen
in the dark, and serious burns have resulted
from accidental contact therewith, aside from
40 the loss of power. As illustrating the latter,
I have found that after the preliminary start-
ing of the motor it becomes less effective with
the same charge of fuel. Thus at the start a
motor will run, say, six hundred revolutions
45 per minute and then fall off to five hundred
per minute after running awhile, the ignition-
chamber having attained and maintaining an
excess of heat over that requisite to vaporize
and explode the oil, as before stated. Another

serious trouble arising from the overheating of 50
the metal of which the igniter is formed is
that the metal deteriorates rapidly and under
certain conditions is liable to sudden fracture,
as by reason of contact with cold water or
from unexpected and abrupt reduction in tem- 55
perature, or the metal may become so weak-
ened as to be unable to resist the internal
pressure resulting from the explosion of a
charge or the exterior pressure resulting from
the succeeding vacuum created in the engine, 60
in which case either an explosion or collapse
of the chamber occurs.

I overcome these objectionable features and
insure a maximum of speed with a minimum
of fuel by means of my invention, which con- 65
sists, essentially, in regulating the tempera-
ture of the ignition-chamber by means of a
water circulation controlled by certain valves
arranged to be used in conjunction with a
water jacket or hood on the top of the igni- 70
tion-chamber, substantially as hereinafter de-
scribed and claimed specifically.

The accompanying drawing represents dia-
grammatically a sectional elevation of the parts
of a kerosene-oil motor essential to an under- 75
standing of my invention.

S is the piston-cylinder, formed with the
usual water-jacket *s*, having the inlet-pipe *i*
and valve *i'* and the outlet *o* and valve *o'*.

C is the ignition-chamber, formed with the 80
hood *c*, having the water-space *c'* surround-
ing the upper portion of the igniter-chamber
to a greater or less extent, as may be found
most expedient.

c² is the channel or inlet in which the end of 85
the fluid-feed injector is inserted. This inlet
c² is formed with a water-jacket *c³*, communi-
cating through the passage *c⁴* with the water-
jacket *s* of the cylinder S.

a is an auxiliary pipe or conduit by which 90
communication is established between the
water-space *c'* in the hood *c* and indirectly
through the jacket *c³* with the water-space *s*
of the cylinder S, a valve *a'* being interposed
in said pipe *a* for the purpose of regulating 95
and controlling the flow of fluid to the hood *c*.

d is a discharge-pipe connecting the water-
space *c'* with the main discharge-pipe D by

means of the T-joint d' , which also communicates with the outlet o and valve o' .

It is obvious that by closing the valve o' more or less and opening the valve a' more or less to correspond any desired amount of the water entering the water-space under pressure from the inlet-pipe i may be shunted or deflected through the water-spaces $c^3 c'$ and that the temperature of the ignition-chamber may thus be controlled with accuracy, so that the disadvantages hereinbefore enumerated may be avoided.

It is obvious that the valve o' may alone be relied upon to control the forced circulation of water through the igniter, since by shutting it off entirely the water in the jacket s passes in the injector, so that I do not limit myself to the use of the valve a' .

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a motor of the character designated, the combination of a piston-cylinder formed with a water-jacket, means for introducing water into said jacket, an ignition-chamber communicating with said piston-cylinder and formed with a hood having a water-space therein, means for admitting water from the said cylinder water-jacket to the said hood on the igniter, means for controlling the flow of water to said hood and means for discharging water from said hood for the purpose described.

2. In a motor of the character designated, the combination of a piston-cylinder formed with a water-jacket, means for introducing water into said jacket, means interposed between the main discharge-pipe and said water-jacket for controlling the direct discharge of water therefrom, an ignition-chamber communicating with said piston-cylinder and formed with a hood having a water-space therein, means for admitting water from the said cylinder water-jacket to the said igniter-hood, means for controlling the flow of water to said hood and means for discharging water from said hood, for the purpose described.

3. In a motor of the character designated the combination of a piston-cylinder formed with a water-jacket, means for introducing water into said water-jacket, an ignition-chamber communicating with said piston-cylinder, said ignition-chamber being formed with a water-jacket around the feed-injector inlet which feed-inlet water-jacket is in communication with the water-jacket of the piston-cylinder, said ignition-chamber being also formed with a hood having a water-space, means for conducting water from said feed-inlet water-jacket to the water-space in said hood and

means for discharging the water from said hood, for the purpose described.

4. In a motor of the character designated, the combination of a piston-cylinder formed with a water-jacket, means for introducing water into said water-jacket an igniter-chamber communicating with said piston-cylinder, said ignition-chamber being formed with a water-jacket around the fluid-injector inlet which feed-inlet water-jacket is in communication with the water-jacket in the piston-cylinder, said ignition-chamber being also formed with a hood having a water-space, means for conducting water from said feed-inlet water-jacket to the water-space in the said hood, means for controlling the flow of water to said hood, and means for discharging water therefrom for the purpose described.

5. In a motor of the character designated, the combination of a piston-cylinder formed with a water-jacket, means for introducing water into said jacket, means interposed between the main discharge-pipe and said water-jacket for controlling the direct discharge of water therefrom, an ignition-chamber communicating with said piston-cylinder, said ignition-chamber being formed with a water-jacket around the feed-injector inlet which feed-injector-inlet water-jacket is in communication with the water-jacket of the piston-cylinder, said ignition-chamber being also formed with a hood having a water-space, means for conducting water from said feed-inlet water-jacket to the water-space in said hood and means for discharging the water from said hood, for the purpose described.

6. In a motor of the character designated, the combination of a piston-cylinder formed with a water-jacket, means for introducing water into said jacket, means interposed between the main discharge-pipe and said water-jacket for controlling the direct passage of water therefrom, an igniter-chamber communicating with said piston-cylinder, said ignition-chamber being formed with a water-jacket around the feed-injector inlet which fluid-injector-inlet water-jacket is in communication with the water-jacket of the piston-cylinder, said ignition-chamber being also formed with a hood having a water-space, means for conducting water from said feed-inlet water-jacket to the water-space in said hood, means for controlling the flow of water to said hood, and means for discharging the water therefrom, for the purpose described.

AUGUST WASSMANN.

Witnesses:

GEO. WM. MIATT,
D. W. GARDNER.