

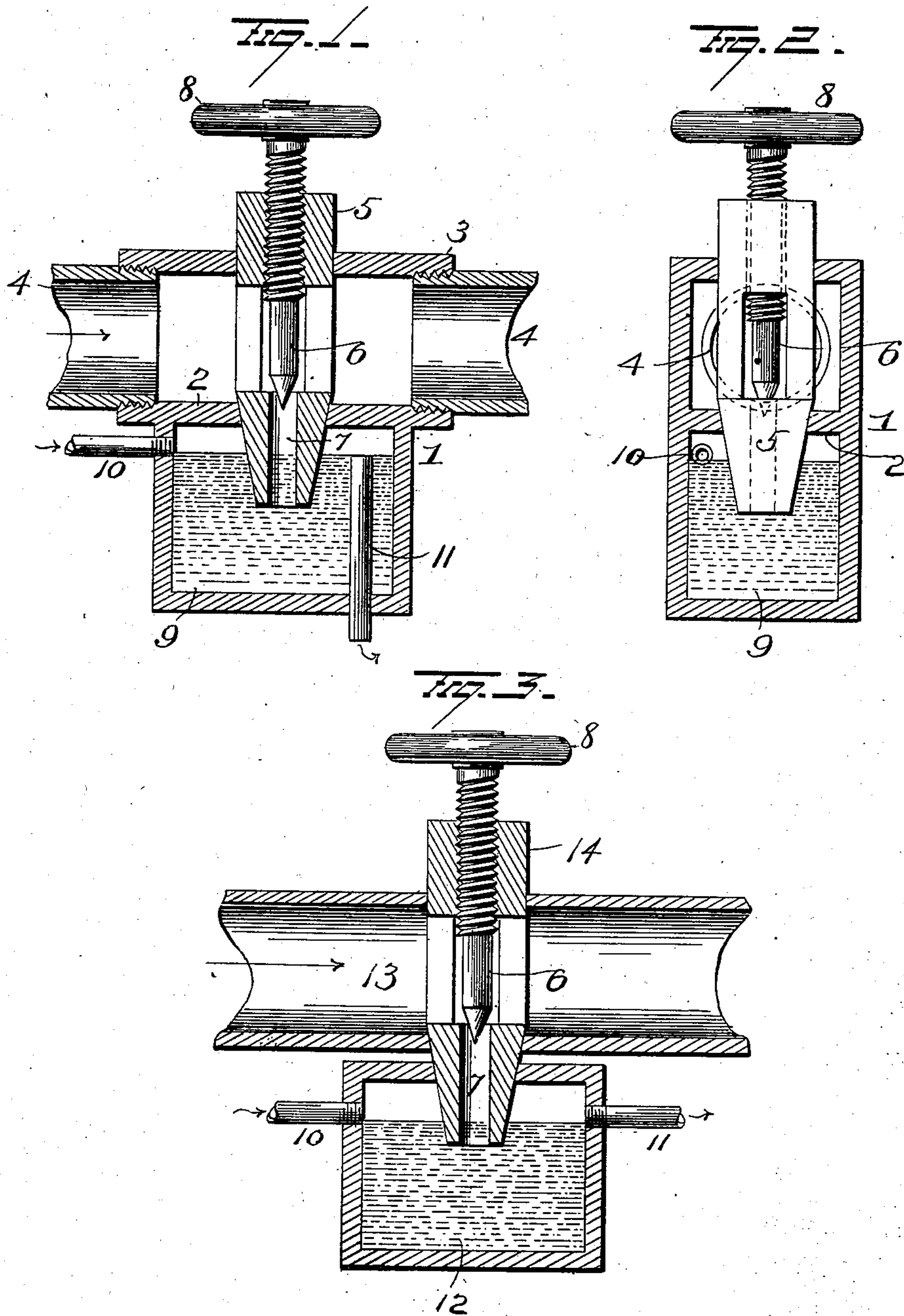
No. 724,648.

PATENTED APR. 7, 1903.

A. M. ZIMMERMAN.  
VAPORIZER FOR GAS ENGINES.

APPLICATION FILED JUNE 14, 1902.

NO MODEL.



WITNESSES  
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# UNITED STATES PATENT OFFICE.

ABRAHAM M. ZIMMERMAN, OF NEW HOLLAND, PENNSYLVANIA.

## VAPORIZER FOR GAS-ENGINES.

SPECIFICATION forming part of Letters Patent No. 724,648, dated April 7, 1903.

Application filed June 14, 1902. Serial No. 111,735. (No model.)

*To all whom it may concern:*

Be it known that I, ABRAHAM M. ZIMMERMAN, a resident of New Holland, in the county of Lancaster and State of Pennsylvania, have  
5 invented certain new and useful Improvements in Vaporizers for Gas-Engines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to  
10 which it appertains to make and use the same.

My invention relates to an improvement in vaporizers for gas-engines, the object of the invention being to provide simple and efficient means for regulating the supply of vapor to  
15 the engine commensurate with the speed of the engine.

With this object in view the invention consists in certain novel features of construction and combinations and arrangements of parts,  
20 as will be more fully hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view in longitudinal section, illustrating my improvements. Fig. 2 is a view in cross-section of the same, and Fig. 3 is a modification.  
25 1 represents a rectangular casing divided by a horizontal partition 2 and having its ends above said partition made with internally-screw-threaded bosses 3 to receive sections of

30 the air-suction pipe 4, and thus provide a free air-suction passage to the engine.

Through the top of casing 1 and partition 2 a plug 5 is projected and preferably beveled or tapered at its lower end, as shown.  
35 This plug is slotted or cut away at its intermediate portion in the air-suction passage, and its upper portion is made with a screw-threaded bore to receive a threaded needle-valve 6, the lower end of which latter being  
40 sharpened and alining with a duct 7 in the lower end of the plug and adapted to close or open the same at will, a suitable handhold 8 being provided on the upper end of the valve to facilitate its operation.

45 The lower section of casing 1 below partition 2 comprises a gasoline or other hydrocarbon-liquid tank 9, into one side of which the liquid is supplied by a pipe 10, and an overflow-pipe 11 projects up through the bottom of the tank to a point above the lower  
50 end of plug 5 to always maintain the latter submerged in liquid.

In operation air is sucked through pipe 4 by the engine and the requisite amount of hydrocarbon vapor drawn into the same  
55 through duct 7 when valve 6 is opened, the size of the opening in said duct being governed by the position of the valve and the amount of vapor drawn into the air being  
60 governed by the speed of the engine.

In Fig. 3 I have shown a slightly-modified form of my invention, in which the gasoline-tank 12 is entirely separate from air-suction pipe 13. The slotted plug 14 projects through  
65 suction-pipe 13 and into tank 12, and the inlet and overflow pipes are shown communicating with opposite sides of the tank. The operation of this form of my invention is precisely like that described in connection with the preferred form.  
70

A great many other changes might be made in the general form and arrangement of parts described without departing from my invention, and hence I do not limit myself to the precise construction set forth, but consider  
75 myself at liberty to make such slight changes and alterations as fairly fall within the spirit and scope of my invention.

Having fully described my invention, what I claim as new, and desire to secure by Letters  
80 Patent, is—

1. The combination with the air-suction pipe of an engine, of a hydrocarbon-chamber below said suction-pipe and in direct communication therewith, a hollow slotted plug  
85 projecting through the suction-pipe and into the hydrocarbon-chamber and a valve in said plug.

2. The combination with the suction-pipe of an engine, of a hydrocarbon-chamber below said pipe and in direct communication therewith, a slotted hollow plug projecting through the suction-pipe and into said hydrocarbon-chamber, and a needle-valve in said  
90 plug.

3. The combination with the suction-pipe of an engine, of a hydrocarbon-chamber below the same, means for maintaining a hydrocarbon-level in said chamber, a slotted hollow plug projecting through the suction-pipe  
95 and into the hydrocarbon in said chamber and terminating below the normal level of fluid in said chamber, and a threaded needle-valve in said plug.  
100

4. The combination with a casing divided  
by a horizontal partition into a suction-cham-  
ber and a hydrocarbon-tank below the same,  
of a slotted hollow plug projecting through  
5 the suction-chamber and into the hydrocar-  
bon-tank said plug terminating below the  
normal level of fluid in said chamber and a  
valve in said plug to regulate the communi-  
cation between the suction-chamber and  
10 tank.

5. The combination with the suction-pipe  
of an engine, of a hydrocarbon-chamber be-

low the same, a tubular plug submerged in  
the hydrocarbon in said chamber and com-  
municating with the suction-pipe, and a 15  
threaded valve in said tubular plug to open  
and close the passage through the same.

In testimony whereof I have signed this  
specification in the presence of two subscrib-  
ing witnesses.

ABRAHAM M. ZIMMERMAN.

Witnesses:

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