

No. 747,786.

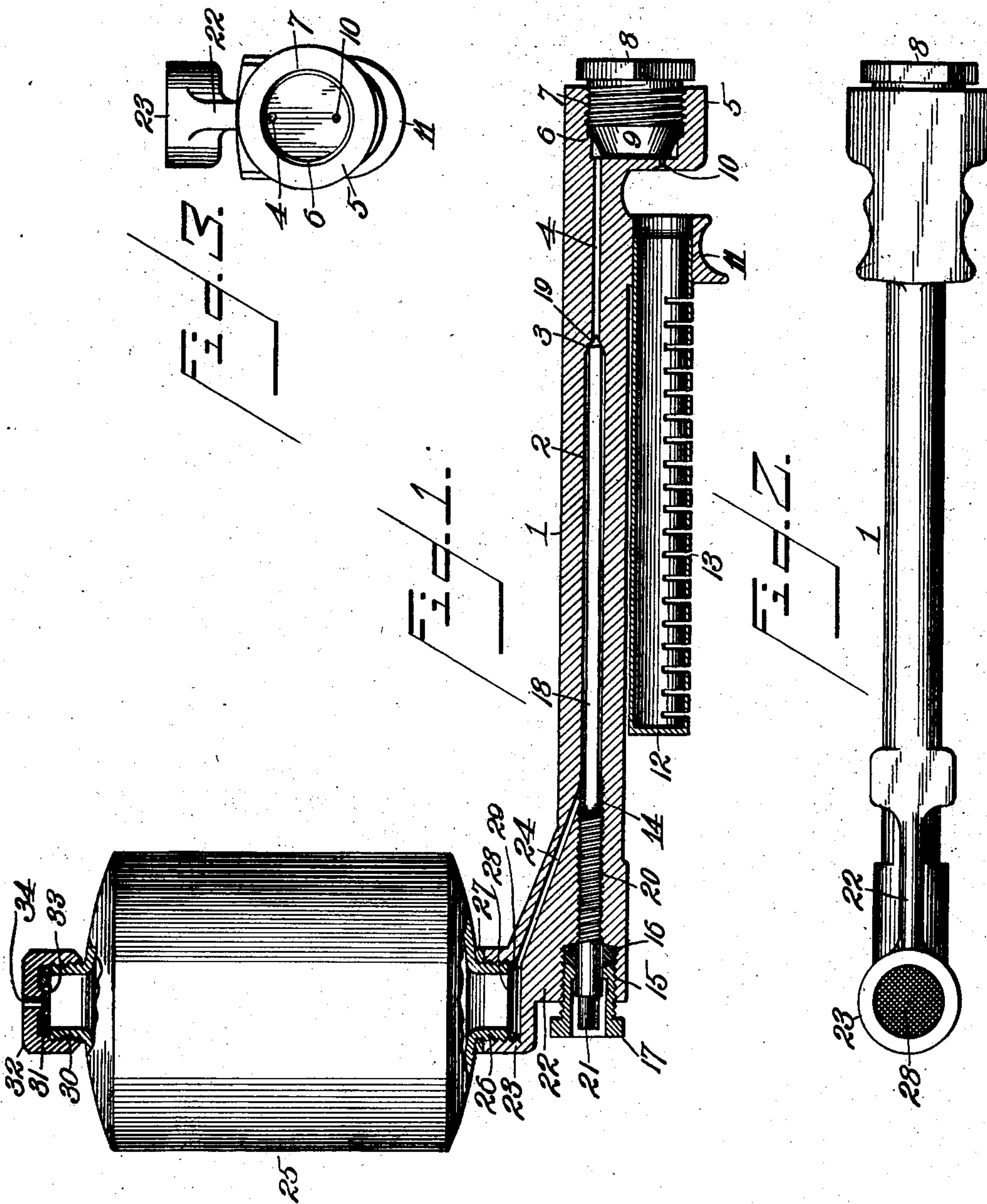
PATENTED DEC. 22, 1903.

B. C. SMITH.

## GASOLINE GENERATING APPARATUS.

APPLICATION FILED FEB. 7, 1903.

NO. MODEL.



*Witnesses:*

A. M. Arthur  
H. M. Carthy

*Inventor:*

*Barton C. Smith*

By George F. Thorpe  
Atty.



# UNITED STATES PATENT OFFICE.

BARTON COOPER SMITH, OF OMAHA, NEBRASKA.

## GASOLENE-GENERATING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 747,786, dated December 22, 1903.

Application filed February 7, 1903. Serial No. 142,423. (No model.)

*To all whom it may concern:*

Be it known that I, BARTON COOPER SMITH, a citizen of the United States, residing at Omaha, in the county of Douglas and State of Nebraska, have invented certain new and useful Improvements in Gasolene-Generator Apparatus, of which the following is a specification.

My invention relates to gasolene-generator apparatus, and more especially to that class used as a heating medium for a self-heating sad-iron; and my objects are to produce a generator of this character provided with a fusible plug to eliminate the danger of explosion, which eliminates foreign substances from the oil before it reaches the vaporizing part of the generator, and which is provided with a tailing-plug-controlled chamber in direct communication with the vaporizing-passage and the vapor-jet orifice to enable such parts to be easily and quickly cleaned.

A still further object is to produce a generator from a single casting, so as to avoid leakage by way of joints loosened from expansion and contraction.

To these ends the invention consists in certain novel and peculiar features of construction and organization, as hereinafter described and claimed, and in order that it may be fully understood reference is to be had to the accompanying drawing, in which—

Figure 1 is a central vertical longitudinal section of the generator portion of the apparatus. Fig. 2 is a top plan view of the same with the supply-tank omitted. Fig. 3 is a rear end view of the same with the tailing-plug omitted.

Referring now to the drawing in detail, it will be noticed that the generator proper is cast in a single piece and comprises the following parts: 1, a cylindrical vaporizing portion having an axial passage 2 extending the greater portion of its length and terminating at its rear end in a conical valve-seat 3, said valve-seat communicating with a smaller passage 4, extending in alinement with passage 2 and communicating at its rear end with a large chamber formed in the rear end and depending portion 5 of the casting. This chamber is diametrically increased to provide an inwardly and rearwardly disposed shoulder 6 and rearward of the latter is in-

ternally threaded, as at 7, to receive the tailing screw-plug 8. Said plug is provided with a frustum-shaped end 9 to bear against the circular shoulder 6 and make a joint between said parts which is absolutely oil and vapor tight, it being obvious that it becomes more perfect with use.

10 designates a vapor-jet orifice leading from the tailing-plug chamber and adapted to discharge vapor through the tubular lug 11, depending from the casting and into the burner-tube 12, said tube having its front end closed, as shown, and its burner-openings, as at 13, formed in its lower half.

The front end of vaporizing-passage 2 registers with an aligned threaded passage 14, and said passage in turn at its front end registers with a larger threaded passage 15, wherein is removably secured a packing 16 and a packing-box 17, the latter being tubular, as shown.

18 designates the needle-valve, the same extending longitudinally through and almost filling passage 2, so as to also form a vaporizing-rod. Said valve terminates at its rear end in a conical valve-point 19 to control the passage of oil or vapor from passage 2 to passage 4, and at its opposite end it is enlarged and has a bearing in the packing-box 17, and a threaded portion 20, engaging passage 14, its extreme front end terminating in an angular head 21 within the packing-box and adapted to receive a wrench by which it may be turned for the purpose of seating or unseating the valve.

Vertically over passage 14 the casting is formed with a rib 22, terminating at its upper and front end in an internally-threaded pocket 23, the bottom of said pocket being connected by downwardly and rearwardly extending passage 24 to the front end of vaporizing-passage 2.

25 designates the supply-tank, the same being of size to continuously operate the generator for three or four hours. This tank has a tubular depending neck 26, which screws in the cup, a copper or equivalent washer 27 being disposed between the upper edge of the cup and the bottom of the tank to make a perfect joint, and in order that particles foreign to the oil shall not pass with the latter to the vaporizing-tube I provide a fine-wire screen 28 as a strainer, this screen being sup-



ported upon a shoulder 29, formed near the bottom of the cup.

30 designates the externally-threaded neck at the top of the tank and forming the filling-opening thereof, and engaging said neck is the internally-threaded cap 32, said cap containing the lead or compressible metallic gasket 31 to fit upon the upper edge of the neck and make a perfect joint therewith. The bore 33 of said gasket registers with the plug 34 of the cap, said plug being composed of metal which will fuse at a lower temperature than that which the tank must attain before the pressure generated therein gets dangerously high.

The tank being charged with oil and the filling-opening cap secured tightly thereon, the generator proper may be inserted from above into the globe of a lighted lamp and there remain until it has attained a temperature sufficiently high to vaporize the small quantity of oil in passage 2. It is then removed from the lamp, placed in a suitable sad-iron, (not shown,) and its needle-valve unseated to permit such vapor to pass through passage 4 into tailing-plug chamber and be forcibly discharged therefrom into the burner of tube 13, the vapor as it rushes into said tube drawing with it sufficient air to support combustion and produce a gas which will burn with a blue flame, this flame impinging on the iron referred to and soon raising the latter to the necessary degree of heat and incidentally maintaining the vaporizing-tube at a temperature which transforms the oil into vapor before it can reach the rear end of passage 2. The flame 2 is extinguished when desired by simply reseating the valve. When it is desired to thoroughly clean the device, the valve and tailing-plug are removed, and a piece of wire or its equivalent is inserted in said passages and jet-orifice 10 and ma-

nipulated in a manner suitable for the purpose. Passage 24 may also be cleaned in a similar manner after first removing the strainer.

From the above description it will be apparent that I have produced a gasolene-generator apparatus embodying the features enumerated as desirable in the statement of invention and that it may be modified in minor particulars without departing from its spirit and scope or sacrificing any of its advantages.

Having thus described the invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In an apparatus of the character described, a generator, comprising a casting having a vaporizing-passage 2, a short passage 4, of smaller diameter communicating at its front end with and forming a substantially undeviating extension of said passage 2, and a cylindrical chamber longitudinally aligned with said passages and communicating with the rear end of the smaller one; said casting being formed with a circular shoulder within the chamber and with a jet-orifice in the base of said chamber, in combination with a plug fitting in said chamber and having a frustum-shaped portion forming a tight joint with said shoulder.

2. In a vapor-generator apparatus, a tank having a threaded neck surrounding its filling-opening, a cap screwed upon said neck and provided with a fusible plug and a metallic washer in said cup and upon said neck, and provided with a central opening to expose the fusible plug.

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

BARTON COOPER SMITH.

Witnesses:

ALBERT G. KNIGHT,  
WM. ALTHEN.