

No. 652,526.

Patented June 26, 1900.

A. N. THOMAS.
VAPOR BURNER.

(Application filed Dec. 29, 1899.)

(No Model.)

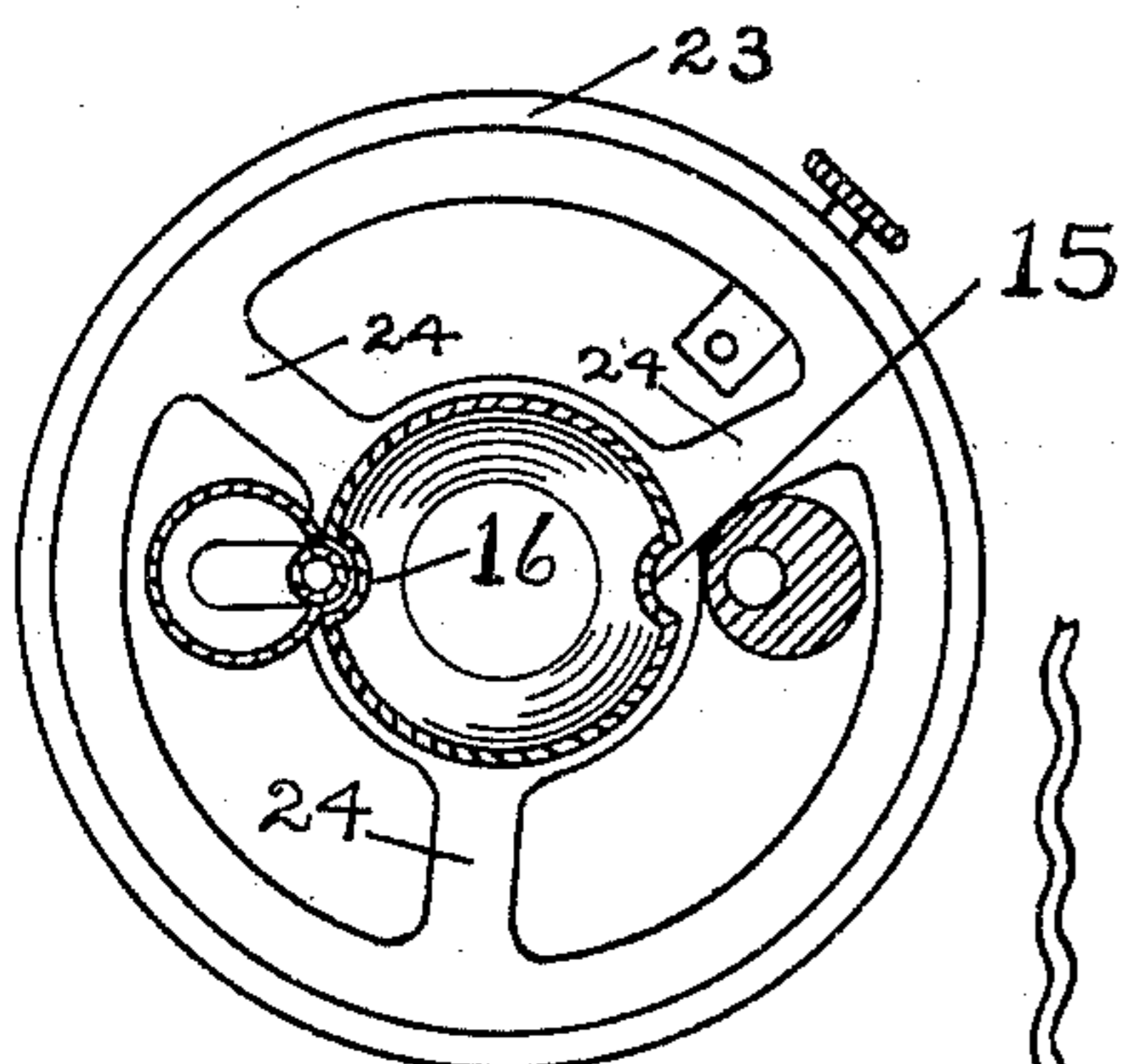


FIG. 5.

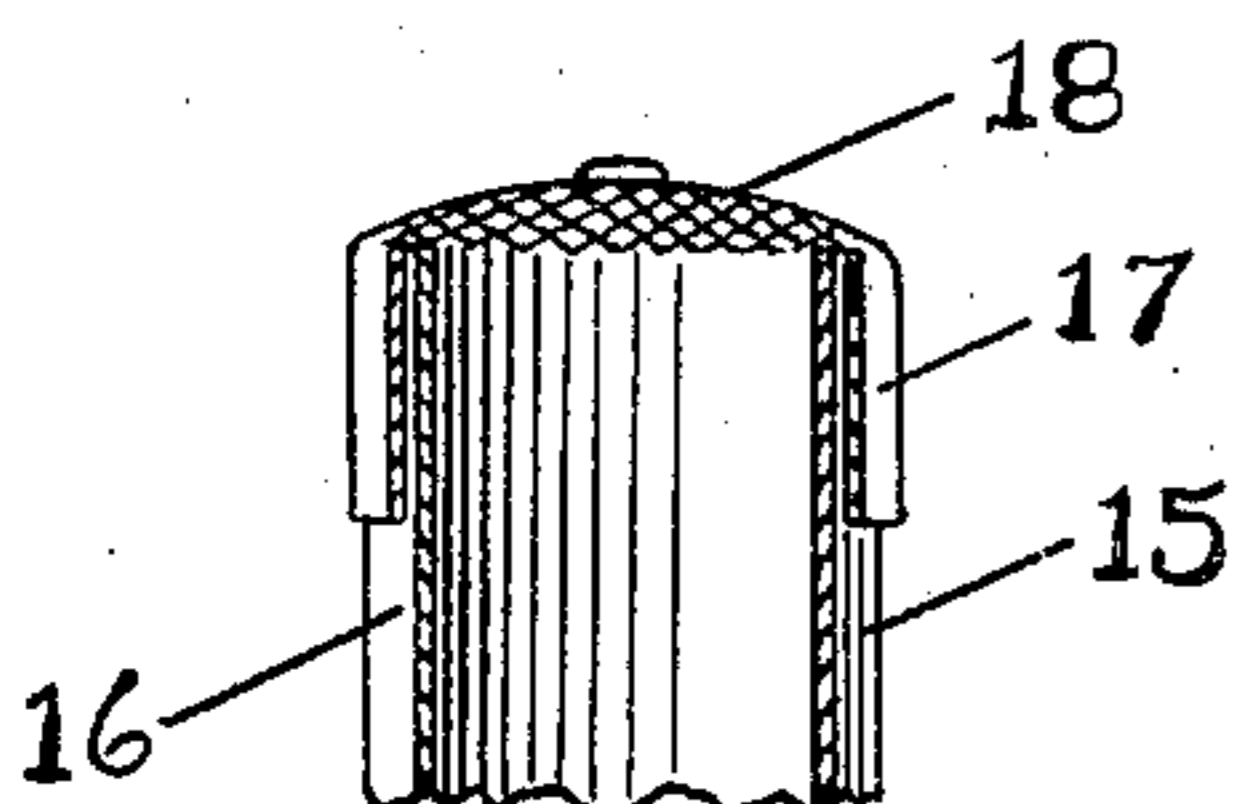


FIG. 6.

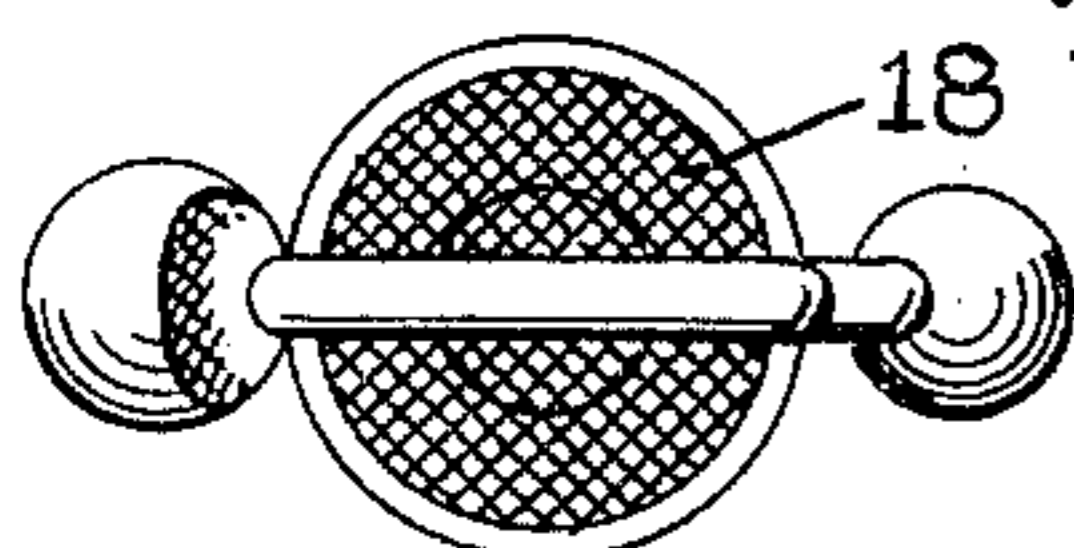


FIG. 7.

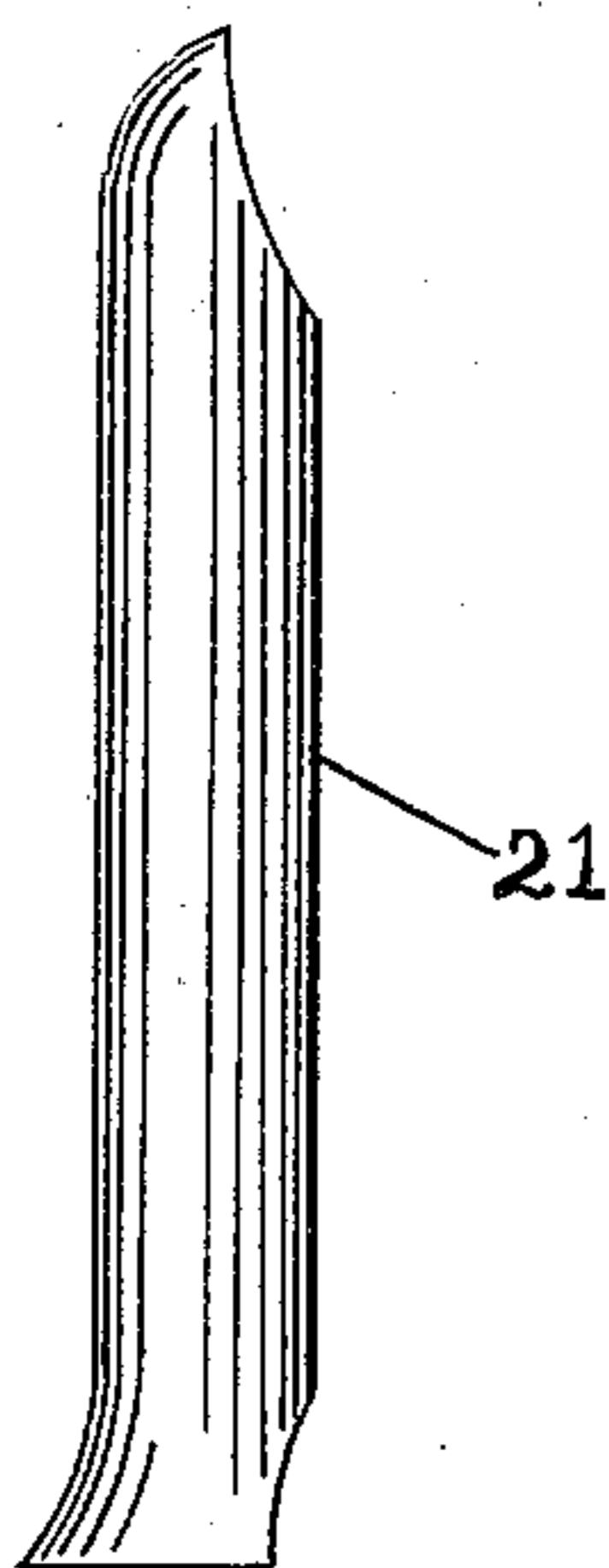


FIG. 3.

Witnesses
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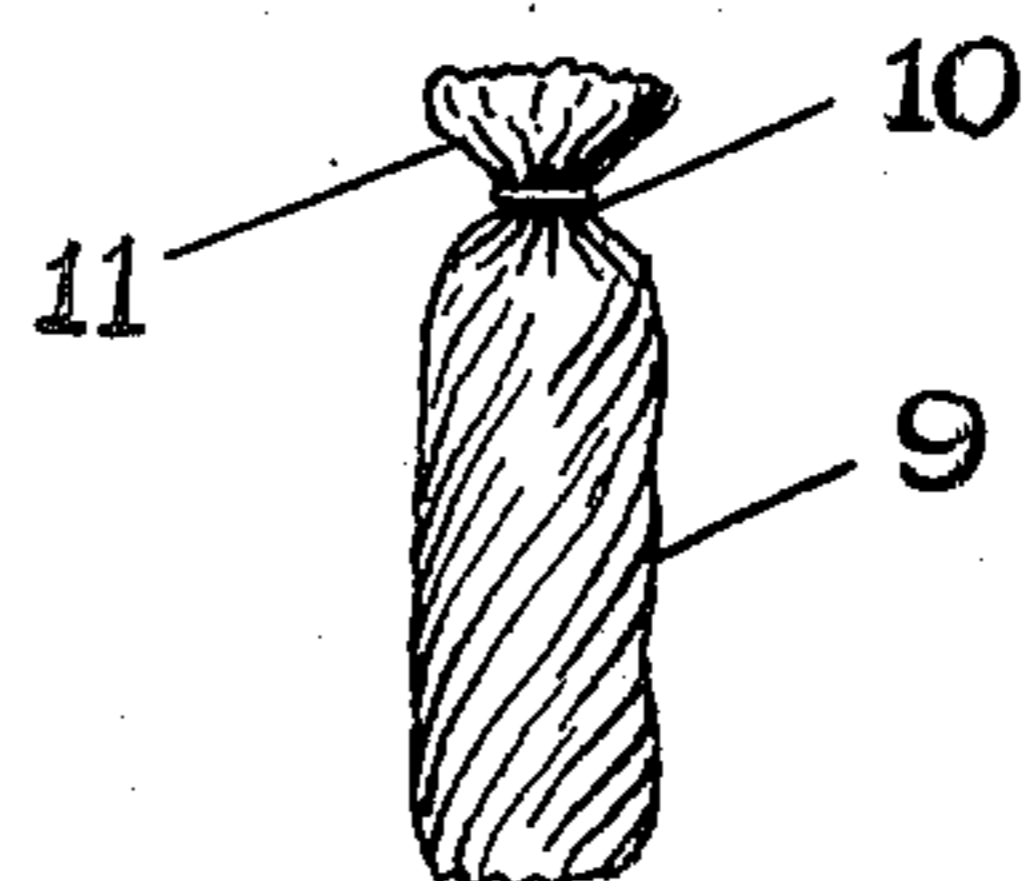


FIG. 4.

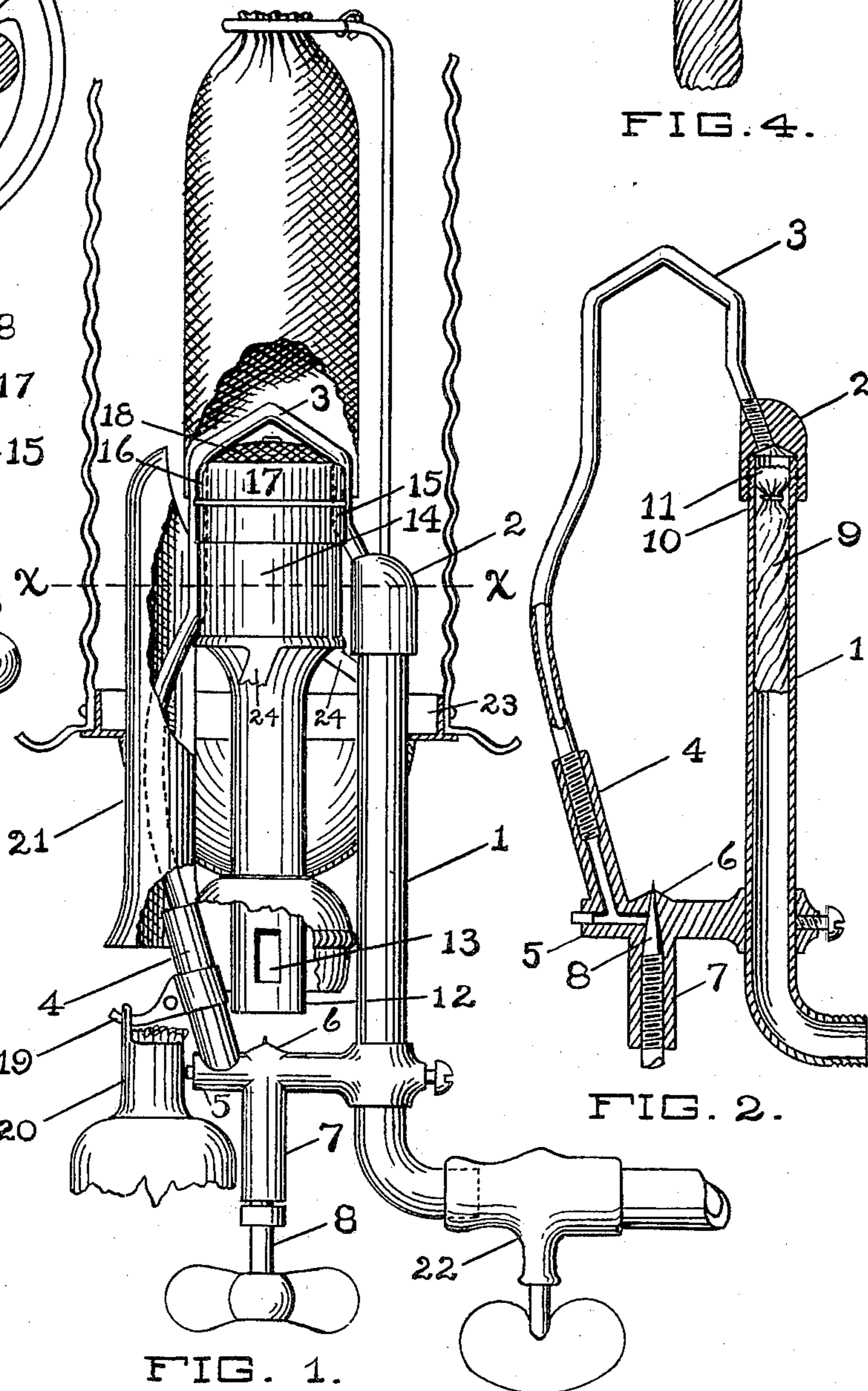


FIG. 1.

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UNITED STATES PATENT OFFICE.

ARVINE N. THOMAS, OF CANTON, OHIO.

VAPOR-BURNER.

SPECIFICATION forming part of Letters Patent No. 652,526, dated June 26, 1900.

Application filed December 29, 1899. Serial No. 741,887. (No model.)

To all whom it may concern:

Be it known that I, ARVINE N. THOMAS, a citizen of the United States, residing at Canton, in the county of Stark and State of Ohio, have invented certain new and useful Improvements in Incandescent Vapor-Burners; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, and to the figures of reference marked thereon, in which—

Figure 1 is a side elevation showing the different parts properly assembled and illustrating portions broken away. Fig. 2 is a view showing a portion of the feed-pipe in section and also showing the general arrangement of the vaporizing-pipe and the pipe having the needle. Fig. 3 is a detached view of the auxiliary flame-conveying tube. Fig. 4 is a detached view of the wick. Fig. 5 is a transverse section through line $x x$, Fig. 1. Figs. 6 and 7 are detached views of the generator-head.

The present invention has relation to incandescent vapor-burners; and it consists in the different parts and combination of parts hereinafter described, and particularly pointed out in the claims.

Similar numerals of reference indicate corresponding parts in all the figures of the drawings.

In the accompanying drawings, 1 represents a portion of the feed-pipe, which portion extends upward to within a short distance of the top or upper end of the generator or head. The top or upper end of the feed-pipe 1 is provided with the cap 2, which cap is so formed that it will come over the upper open end of the feed-pipe 1, substantially as illustrated in Figs. 1 and 2. To the cap 2 is attached the inlet end of the vaporizing-pipe 3, which vaporizing-pipe extends upward a short distance and thence laterally and thence downward, the upper portion of said vaporizing-pipe being curved or arched, substantially as illustrated in the drawings. The lower or outlet end of the vaporizing-pipe 3 is connected to the upward-extended portion 4 of the pipe 5, said pipe being provided with the gas-tip 6. Below the gas-tip 6 is located the

downward-extending pipe 7, said pipe being provided with the ordinary needle 8.

Within the feed-pipe 1 is located the wick 9, which wick is located so that its top or upper end will be nearly the top or upper end of the feed-pipe 1, substantially as illustrated in Fig. 2. The wick 9 at a point a short distance below its extreme top or upper end is compressed by means of a suitable tie band or cord 10, by means of which a head 11 is produced or formed upon the wick, which head is for the purpose hereinafter described.

The mixing-tube 12 is located directly above the gas-tip 6 and is held in proper upright position in any convenient and well-known manner, and, as shown, said mixing-tube is provided with the air-inlets 13, said inlets being located and arranged substantially as shown in the drawings. Upon the top or upper end of the mixing-tube 12 is located the cylinder-head 14, which cylinder-head may be formed integral with the mixing-tube, or it may be made separate and attached in any convenient and well-known manner. The cylinder-head 14 is provided upon its periphery with the grooves 15 and 16, which grooves are for the purpose hereinafter described.

The cap 17 is provided with the gauze disk 18, which gauze disk is connected to the cap 17 in any convenient and well-known manner. The cap 17 is placed over the top or upper end of the cylinder-head 14, and the portions of said cap located over the grooves formed in the cylinder-head are bent into the grooves, thereby forming grooves upon the outer sides of the cap.

In locating the vaporizing-pipe 3 the portions of said pipe coming directly opposite the grooves 15 and 16 are set in said grooves, by which arrangement a closer fit between the mantle and the cap is produced.

It will be understood that by my peculiar arrangement I am enabled to bring a portion of the vaporizing-pipe within the mantle and directly over the wire-gauze, which point is the one producing the most intense heat, thereby better vaporizing the fuel and at the same time burning out any sediment that may adhere to the inner surface of the pipe.

By providing the vertical portion of the feed-pipe 1 and locating a wick within said

vertical portion said wick will to a certain extent act as a filter, and by contracting the upper portion of the wick a head is produced upon the upper end thereof, so that when the
5 back pressure of the gas comes upon said head a resistance is produced, by which arrangement a steady flame is imparted to the burner.

To the upward-extending portion 4 is attached a hooked arm 19, which hooked arm is
10 for the purpose of holding the lamp 20, and for the purpose of guiding the flame of the lamp 20 upward and at the same time providing a means for heating the vaporizing-pipe 3 the tube 21 is provided and is located substantially as illustrated in the drawings, and for
15 the purpose of concentrating the flame of the lamp the bottom or lower end of the tube 21 is flaring, as illustrated in the drawings. For the purpose of providing a means for
20 lighting the burner proper the upper end of the tube 21 is cut away from its inner side, so as to allow the flame to come in contact with the gas, and thereby light the lamp proper, after which the lamp 20 can be removed.

25 It will be understood that the feed-pipe is to be provided with an ordinary cut-out valve, such as 22, which valve may be located at any desired point, reference being had to convenience in opening and closing the valve.

30 For the purpose of supporting the mixing-tube 12 and the cylinder-head 14, together with the parts belonging thereto, the plate 23 is provided, which plate is supported in the usual manner, and the arms 24 are so ar-

ranged that they will support and hold the burner-head in a true vertical position. 35

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

1. The combination of a feed-pipe, a vaporizing-pipe connected thereto and extended
40 over the burner and downward, a pipe provided with a passage leading to a gas-tip, a hooked arm and a lamp detachably connected thereto, and a tube located around the vaporizing-pipe and located above the detachable
45 lamp, substantially as and for the purpose specified.

2. The combination of a feed-pipe having located in the vertical portion thereof a wick,
50 said wick provided with a compressed portion near its delivery end, and a head at its delivery end, a cap secured to the upper end of the vertical portion of the feed-pipe, a vaporizing-pipe connected to the cap and extended
55 upward and over the burner and downward and connected to a pipe, passages leading from the vaporizing-pipe to a gas-tip and a needle located below the gas-tip, substantially as and for the purpose specified. 60

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

ARVINE N. THOMAS.

Witnesses:

CURTIS M. PEARSON,
J. A. JEFFERS.