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J. R. ERIKSSON.  
VAPOR STOVE AND THE LIKE.  
FILED MAY 1, 1922.

Fig. 1

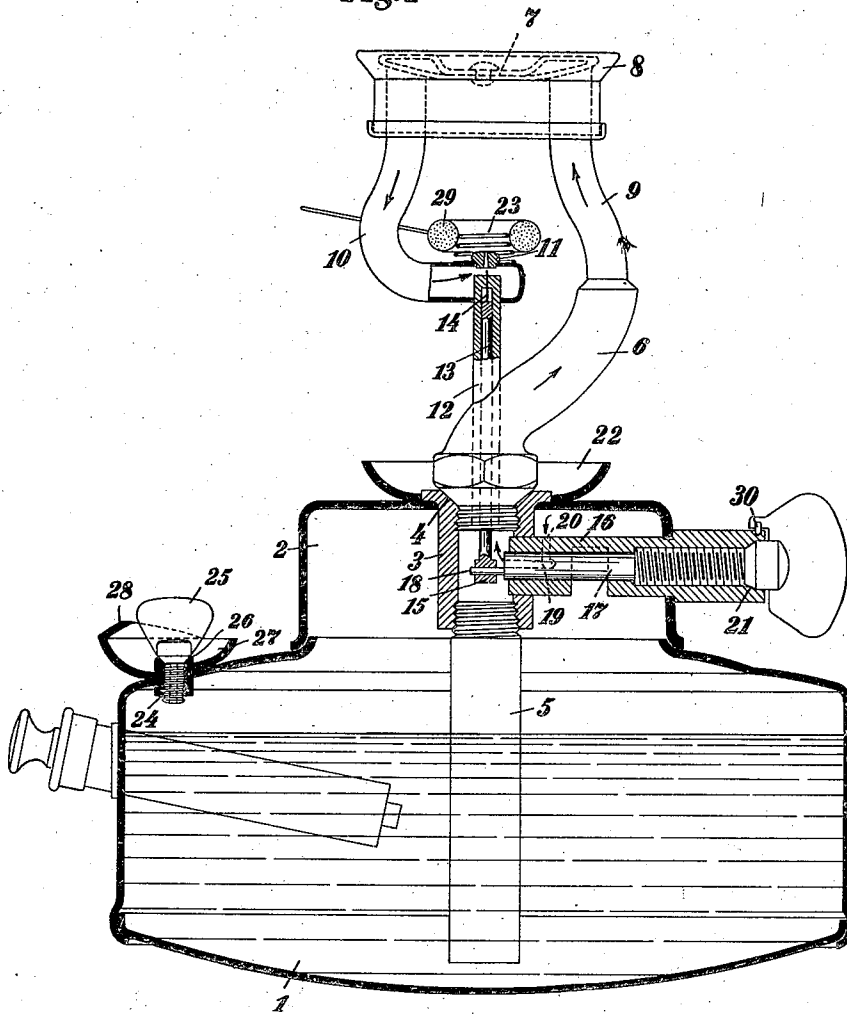
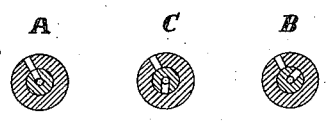


Fig. 2



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## UNITED STATES PATENT OFFICE.

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## VAPOR STOVE AND THE LIKE.

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*To all whom it may concern:*

Be it known that I, JOHN RICHARD ERIKSSON, a subject of the King of Sweden, residing at Stockholm, Sweden, have invented certain Improvements in Vapor Stoves and the like, of which the following is a specification.

The present invention relates to an apparatus for vaporizing the liquid fuel of vapor stoves and the like, and consists essentially in the provision of a valve for supplying compressed air from the fuel container to the nozzle so that the burner can be heated by means of the ordinary fuel for starting the evaporation, the valve being also adapted to operate a clearing pin so as to keep the nozzle continually in proper working condition.

In the accompanying drawings the invention is illustrated by way of example,

Fig. 1 representing a vertical section of the apparatus, and

Fig. 2, three cross-sectional views of the valve showing its different positions.

The fuel container 1 is surmounted by a dome 2 in the centre of which is held a vertical sleeve 3. At the upper end of the sleeve is a conical seat 4 against which is screwed the end of the burner support 6. A pipe 5 screwed to the lower end of the sleeve 3, feeds the fuel to the support 6 whence it is led through a pipe 9, through the burner head 8 and through a pipe 10 to the jet-producing nozzle 11. A flame spreader 7 is placed on the burner head 8 in known manner. A dish 22 is arranged about the burner support for the reception of smokeless fuel whereby the vaporization of the crude fuel can be started, if desired, in the usual manner.

According to the invention an arrangement is provided whereby the vaporization can be started by means of the fuel to be vaporized, for which purpose a sleeve 16 is fitted in the dome 2 at right angles to the sleeve 3 with which it communicates. In this sleeve a valve 17 is arranged which is controlled by a screw-thread and which has an elbow passage 19 whereby the dome space can be set into communication with the interior of the sleeve 3, the sleeve 16 having a transverse duct 20 with which the valve passage can be turned into register. The open position of the valve (Fig. 2 A) is determined by a stop 30 which is connected to the sleeve 16 and which engages a projec-

tion on the operating handle. The other end position (Fig. 2 B) of the valve is determined by the abutment of a cone 21 against a valve seat in the sleeve 16.

The nozzle 11 is surrounded by a coil 23 which serves as a holder for an asbestos ring 29. To light the stove by means of the ordinary fuel, the ring 29 is steeped in the liquid and ignited whereupon the valve 17 is opened and the air pump actuated so as to supply air to the flame through the nozzle 11, thereby effecting a complete combustion of the fuel and preventing the formation of soot deposits. When the burner, which is heated by the flame, is hot enough to vaporize the fuel, the valve 17 is closed. Fuel will then be forced from the container 1 to the burner where the vapor jet is spontaneously ignited.

The container 1 is fitted with the usual filling aperture which is closed by a screw-plug 25. The latter screws into a short sleeve 24 which is brought up through a funnel 27 surrounding the same. To the outer edge of the funnel a shield 28 is applied. When fuel is required for soaking the ring 29, the plug 25 is removed and the container is tilted for flooding the funnel in which sufficient liquid is retained by the projecting rim 26 of the sleeve 24 for soaking the ring, the latter being placed in the funnel for the purpose.

The valve 17 is also adapted to operate a clearing pin 14 arranged underneath the nozzle 11. The pin is connected to a spindle 13 which is fitted snugly in a guide sleeve 12 in which it can be reciprocated. One end of the sleeve 12 projects into the pipe 10 to which it is connected. The other end is connected to the support 6 and projects through this into the sleeve 3. A slotted head 15 at the lower end of the spindle 13 is engaged by a stud 18 connected eccentrically to the end of the valve 17. While the valve is turned from one to the other of its end positions, the clearing pin is pushed through the nozzle 11 and withdrawn from the same by the stud 18. When the valve is in the intermediate position (Fig. 2 C), the clearing pin is in the most advanced position. As the valve does not open until it reaches the end position, it is evident that the clearing pin can be operated by means of the valve while the stove is alight without admitting air to the burner tubes. The clearing pin may also be adjusted, while the

stove is alight, for closing the nozzle more or less, thereby regulating the supply of vapor to the jet.

The clearing pin is preferably made of square, twisted wire so as to be able to clear the nozzle effectively without completely closing the same.

As the screw-threaded portion of the valve 17 is preferably made of as small a diameter as possible, so that the cone 21 can be applied with sufficient force to its seat, it may be necessary to form the valve out of two separate parts.

I claim:—

1. In a vapor stove or the like, a fuel container formed with an air space, a valve arranged in said air space, a burner tube carrying a burner and communicating with said valve so that compressed air can be led from said air space to the burner for maintaining a starting flame, a clearing pin arranged in the burner, and means connecting the clearing pin with said air valve so that the pin is operated while the valve is turned from one to the other of its end positions, substantially as set forth.

2. In a vapor stove or the like, a fuel container formed with an air space, a valve arranged in said air space, a burner tube carrying a burner with jet nozzle and communicating with said valve so that compressed air can be led from said air space to the burner for maintaining a starting flame, a sleeve connected to the burner tube, a rod slidably guided in said sleeve, a clearing pin held by said rod under the nozzle, and means for connecting the rod to said valve so that the clearing pin is inserted into and withdrawn from the nozzle while the valve is turned from one end position to the other, substantially as set forth.

3. In a vapor stove or the like, a fuel container formed with an air space, a sleeve connected to the container so as to enter said air space, a valve stem threaded in said sleeve, a burner tube carrying a burner and communicating with said sleeve so that air can be led through the valve to the burner from the air space for maintaining a starting flame, a clearing pin arranged in the burner, a reciprocating rod controlling such clearing pin, and an eccentric stud connected to said valve stem and engaging said rod so as to operate the clearing pin while the stem is turned from one to the other of its end positions, substantially as set forth.

4. In a vapor stove or the like, a fuel container formed with an air space, a sleeve connected to the container so as to enter said air space, a valve stem threaded in said sleeve, a burner tube carrying a burner and being connected to said sleeve, the sleeve and the stem being formed with ducts

through which, in one end position of the stem, air can be led from the air space to the burner for maintaining a starting flame, a clearing pin arranged in the burner, and means connecting said clearing pin with the valve stem so as to operate the pin while the stem is turned from one to the other of its end positions, substantially as set forth.

5. In a vapor stove or the like, a fuel container formed with an air space, a sleeve connected to the container so as to enter the air space, a burner tube carrying a burner and being connected to said sleeve, a valve stem held in said sleeve by means of a narrow screw-threaded portion, a cone on the outer end of the stem for closing this end of the sleeve in one end position of the stem and the sleeve being provided with ducts which, in the other end position of the stem, set the air space in communication with the burner tube so as to supply air to the burner for maintaining a starting flame, a clearing pin arranged in the burner, and means connecting said clearing pin with the valve stem so that the pin is operated while the stem is turned from one end position to the other, substantially as set forth.

6. In a vapor stove or the like, a fuel container formed with an air space, a valve arranged in said air space, a burner tube carrying a burner and communicating with said valve so that air can be led from said air space to the burner for maintaining a starting flame, a clearing pin arranged in said burner, and means connecting the clearing pin with said air valve so that the pin is operated while the valve is turned from one to the other of its end positions, the clearing pin being formed of square, twisted wire so as to be capable of clearing the burner without completely closing the burner nozzle, substantially as set forth.

7. The combination with a vapor stove or the like of an asbestos ring, a fuel container having a filling aperture and an air space, a funnel arranged about the filling aperture, a shield connected to said funnel so that the latter can be flooded by a tilting of the container for soaking said asbestos ring with fuel, a burner tube with burner, a coil spring arranged on the burner for holding said asbestos ring in a suitable position for maintaining a starting flame, a valve for setting the burner tube in communication with the air space of the container so as to supply air through the burner to the starting flame, a clearing pin arranged in the burner, and means connecting the clearing pin with the valve so that the pin is operated while the valve is turned from one to the other of its end positions, substantially as set forth.

JOHN RICHARD ERIKSSON,