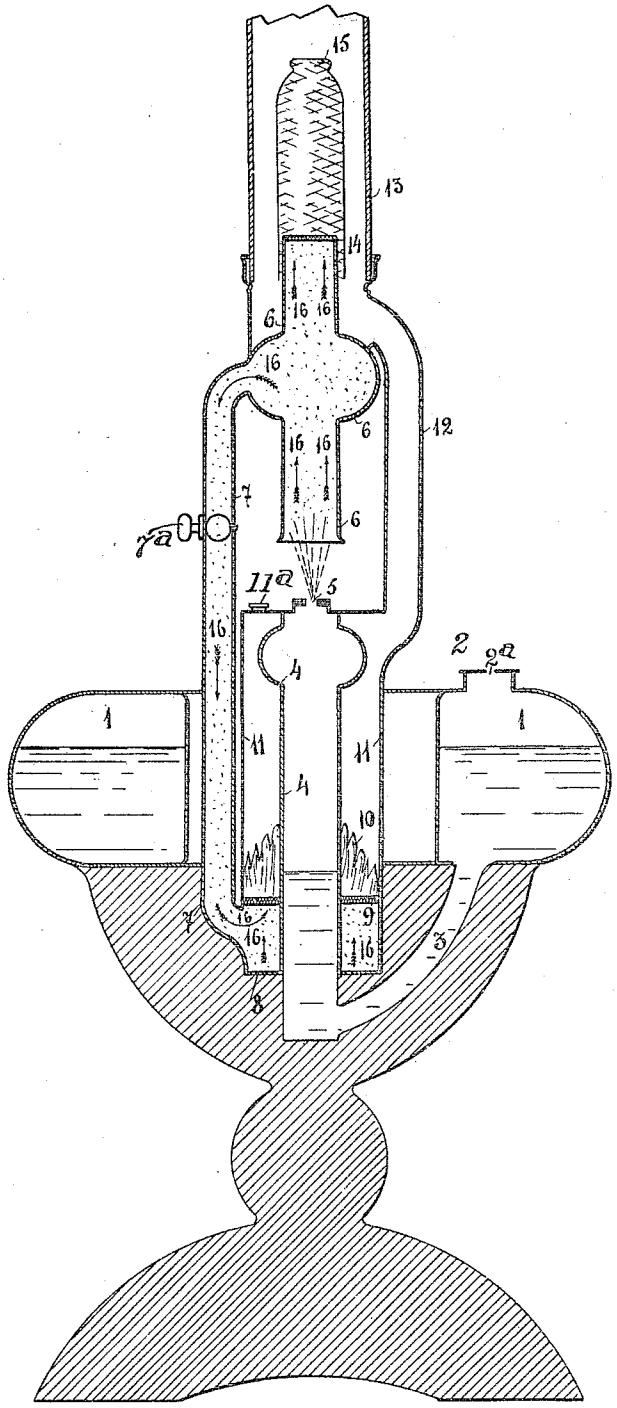
A. KRZYWIEC.

INCANDESCENT LAMP.

APPLICATION FILED MAR. 23, 1909.

957,612. **Patented May 10, 1910.**



WITNESSES;

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INCANDESCENT LAMP.

957,612. Specification of Letters Patent. Patented May 10, 1910.

Application filed March 23, 1909. Serial No. 485,245.

To all whom it may concern:

Be it known that I, ALEXANDER KRZYWIEC, a citizen of the Russian Empire, and resident of Warsaw, in the Kingdom of Poland, Russia, have invented a certain new and useful Improvement in Incandescent Lamps, of which the following is a specification, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to an improved incandescent lamp for the burning of vapor obtained from liquid without the application of artificial pressure.

The invention is preferably used with a mantle or net of known or convenient construction and the lamp can be advantageously made from steel or other metal and is practically fire proof.

The particular construction of the lamp as hereinafter described makes it especially suitable for domestic use although equally applicable for use in other ways.

In the accompanying drawing a simple example of the invention is shown in which a lamp base has a container 1 for the combustible liquid which is open to the air through the cap 2, by the orifice 2^a. A feed pipe 3 is carried downward from this container to the lower end of the vaporizer 4, the top of which vaporizer is furnished with a nipple 5 arranged below a mixing chamber 6. The vapor passing from the chamber 4 through the nipple 5 draws air with it into the mixing chamber, the mixed air and gas passing partly upward through the wire gauze 14 to the mantle 15 and partly downward by pipe 7 to the annular chamber 8 covered with wire gauze or other metal net 9 arranged around the vaporizer 4 and inside the chamber 11. The vapor passing through the gauze 9 is ignited as shown at 10 and the flame is used to automatically vaporize the liquid in the vaporizer 4. The lamp may be lighted by means of a piece of asbestos soaked in alcohol, for instance, attached to a wire, and inserted through the orifice 11^a, under the burner. The burned gases from the chamber 11 pass by means of pipe 12 into the chimney or exhaust 13 arranged around the mantle 15. The flow of the mixture is clearly indicated by the arrows 16.

It will be seen that the lamp shown in the drawings is wickless and that the vaporizer is arranged partly above and partly below the level of the liquid which is fed to it by gravity, sufficient pressure being obtained on the liquid in the vaporizer automatically from the supply in the receptacle 1. From this it will be seen that a perfect lamp and not a burner only is obtained and it will be obvious that a filtering or other device may be embodied in the invention for the purpose of purifying the vapor or the liquid and wicks can be used if necessary.

The lamp is worked in the following manner. The vaporizer 4 is first heated in any desired way, for example by means of alcohol through the orifice 11^a, as said above, and thus the vaporizing of the liquid in the chamber 4 is started and as long as the supply lasts it will automatically maintain itself, the vapor passing as above described through the nipple 5 into the chamber 6 and from there to both the mantle 15 and the tube 7. To extinguish the lamp any suitable means such as the valve 7^a of covering or stopping the passage 7 is sufficient.

It must be understood that the lamp can vary in form from that shown and the size and shape of the vaporizer altered to suit requirements and if wished the nipple 5 can discharge the vapor downwardly or otherwise instead of in an upward direction as shown. The particular construction of the lamp and the combination of the vaporizer which is partly above the level of the liquid and is heated on the Bunsen system enables a more compact and stronger lamp to be made than has been hitherto possible with the devices previously used and the dispensing with the artificial pressure hitherto necessary simplifies the construction and it will be clearly seen that the extension of the vaporizer above the level of the liquid entirely prevents the flow of the liquid out of the same.

What I claim and desire to secure by Letters Patent is:—

An incandescent lamp for burning combustible liquids comprising a container freely open to the air, a vaporizer communicating with said container and having one of its ends located below the container, and the other above, a nipple on the vaporizer, a heating chamber surrounding the vaporizer, a mixing chamber opening above the nipple and having at its top an incandescent mantle, a chimney forming a

chamber about the mantle, a pipe branching from the mixing chamber to the base of the chamber surrounding the vaporizer, and a separate conduit leading from the heating chamber surrounding the vaporizer to the chamber within the chimney, substantially as described.

In witness whereof I have hereunto set my hand in presence of two witnesses.

ALEXANDER KRZYWIEC.

Witnesses:
H. A. LOVIAGUINE,
E. FLEICREP.