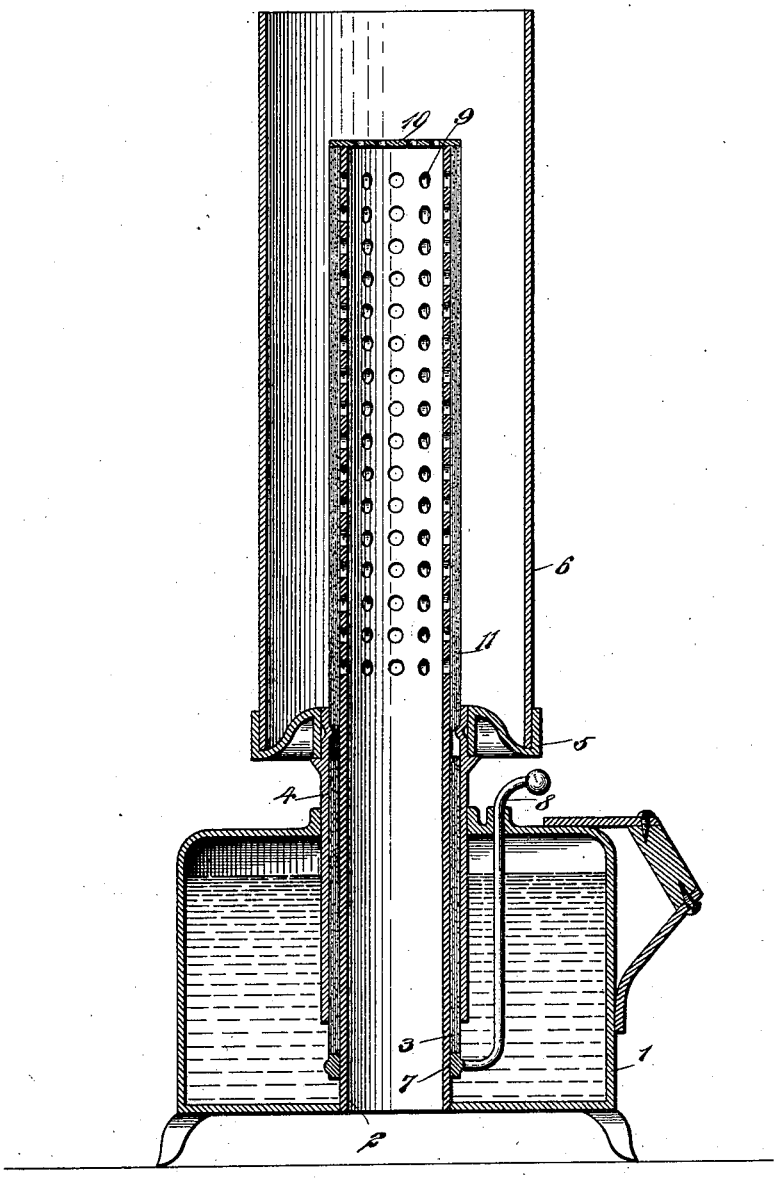
No. 648,790. Patented May 1, 1900.

S. RAUSCHENBERG.

FORMALDEHYDE LAMP.

(Application filed Apr. 27, 1899.)

(No Model.)



WITNESSES:

C. W. Smith

C. A. Ferguson

INVENTOR

S. Rauschenberg

BY

Munn & Co.

ATTORNEYS

UNITED STATES PATENT OFFICE.

SIDNEY RAUSCHENBERG, OF MOUNT VERNON, NEW YORK.

FORMALDEHYDE-LAMP.

SPECIFICATION forming part of Letters Patent No. 648,790, dated May 1, 1900.

Application filed April 27, 1899. Serial No. 714,748. (No model.)

To all whom it may concern:

Be it known that I, SIDNEY RAUSCHENBERG, of Mount Vernon, in the county of Westchester and State of New York, have invented a new and Improved Apparatus for Producing Formaldehyde, of which the following is a full, clear, and exact description.

This invention relates to an apparatus for producing formaldehyde.

In the usual practice formaldehyde is produced by passing air and methyl-alcohol vapor over glowing coke, platina, or copper, and in this method the process is not well under control, and hence there is danger of explosion of the alcohol-vapor, and, further, the resulting product is not of uniform purity.

The object of my invention, therefore, is to provide a simple means by which the pure formaldehyde may be quickly and easily produced.

I will describe an apparatus for producing formaldehyde embodying my invention, and then point out the novel features in the appended claims.

Reference is to be had to the accompanying drawing, forming a part of this specification, in which a sectional elevation of an apparatus embodying my invention is shown.

The process employed by me consists, broadly, in bringing methyl-alcohol vapor in the presence of air in contact with a red-hot absorbent medium, which I term a "converter." This medium consists of asbestos fiber or fabric or similar material that will carry liquid by capillary attraction. The asbestos fiber is prepared by charging it with either manganese oxide, copper oxide, iron oxide, barium oxide, or finely-subdivided platina, or a mixture of these oxides and metals. These agents when incandescent act on the methyl alcohol as dehydrogenizing agents. The methyl alcohol may be supplied to the converter either by capillary attraction by the asbestos acting as a wick, or it may be brought in contact with it in the form of vapor. The chemical reaction is as follows: The methyl-alcohol vapors, in combination with the regulated air-supply when brought in contact with the incandescent converting agent, give two atoms of hydrogen, which combine with one atom of oxygen from the air, producing one molecule of formaldehyde and one of water. Thus:

$$CH_3.OH+O=H.COH+H_2O.$$

Referring to the drawing, 1 designates a fount for containing methyl alcohol. Extended through the fount is a central draft-tube 2, which also forms an inner tube for a cotton wicking 3, which is surrounded by the outer wick-tube 4, extended through the tube of the fount and having at its upper end a support 5 for a chimney 6. The wicking 3 may be raised and lowered by means of a ring 7, which engages the lower end of the wick and has a rod 8 extended upward through the top of the fount. A portion of the central draft-tube within the chimney 6 is provided with a number of perforations 9, and on the top of the tube 2 is a perforated cap 10 for regulating the draft through the tube. Supported upon the perforated portion of the draft-tube 2 is a converter 11, consisting of asbestos treated with a dehydrogenizing agent.

The device shown in the drawing is designed more particularly for discharging formaldehyde into a room or other place desired to be purified. To start the production of formaldehyde after placing the methyl alcohol in the fount, the wick 3 is to be raised until its upper end comes in contact with the converter 11, so that the said wick by capillary attraction will carry the alcohol upward, which will also pass from said wick and upward through the converter 11 by capillary attraction. Upon removing the chimney 6 the alcohol at the lower portion of the converter is to be ignited and allowed to burn a few minutes until it is seen that a portion of the converter is aglow. Now blow out the flame and replace the chimney and formaldehyde will be produced as long as there is a supply of methyl alcohol in the fount. To stop the operation, the wick 3 must be moved downward out of engagement with the converter.

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

1. An apparatus for producing formaldehyde, on the principle of a lamp, comprising a fount for methyl alcohol, an asbestos con-

verter prepared with platina and metallic oxides, a wick for carrying the methyl alcohol to the converter, and a chimney, substantially as specified.

2. An apparatus for producing formaldehyde, comprising a fount for methyl alcohol, a central draft-tube extended through said fount and above the same where it is provided with perforations, a converter supported on the perforated portion of the tube and consisting of asbestos treated with a dehydrogenizing agent, a wick movable into engagement with the lower end of said converter, and a chimney surrounding the converter, substantially as specified.

3. An apparatus for producing formaldehyde, comprising a fount for containing methyl alcohol, a draft-tube extended upward through said fount and above the same where it is provided with perforations, a perforated cap on the upper end of the tube, a converter supported on the perforated portion of the tube, a wick movable into engagement with the lower end of said converter, and a chimney surrounding the converter, substantially as specified.

SIDNEY RAUSCHENBERG.

Witnesses:

EVERARD BOLTON MARSHALL,

C. R. FERGUSON.