

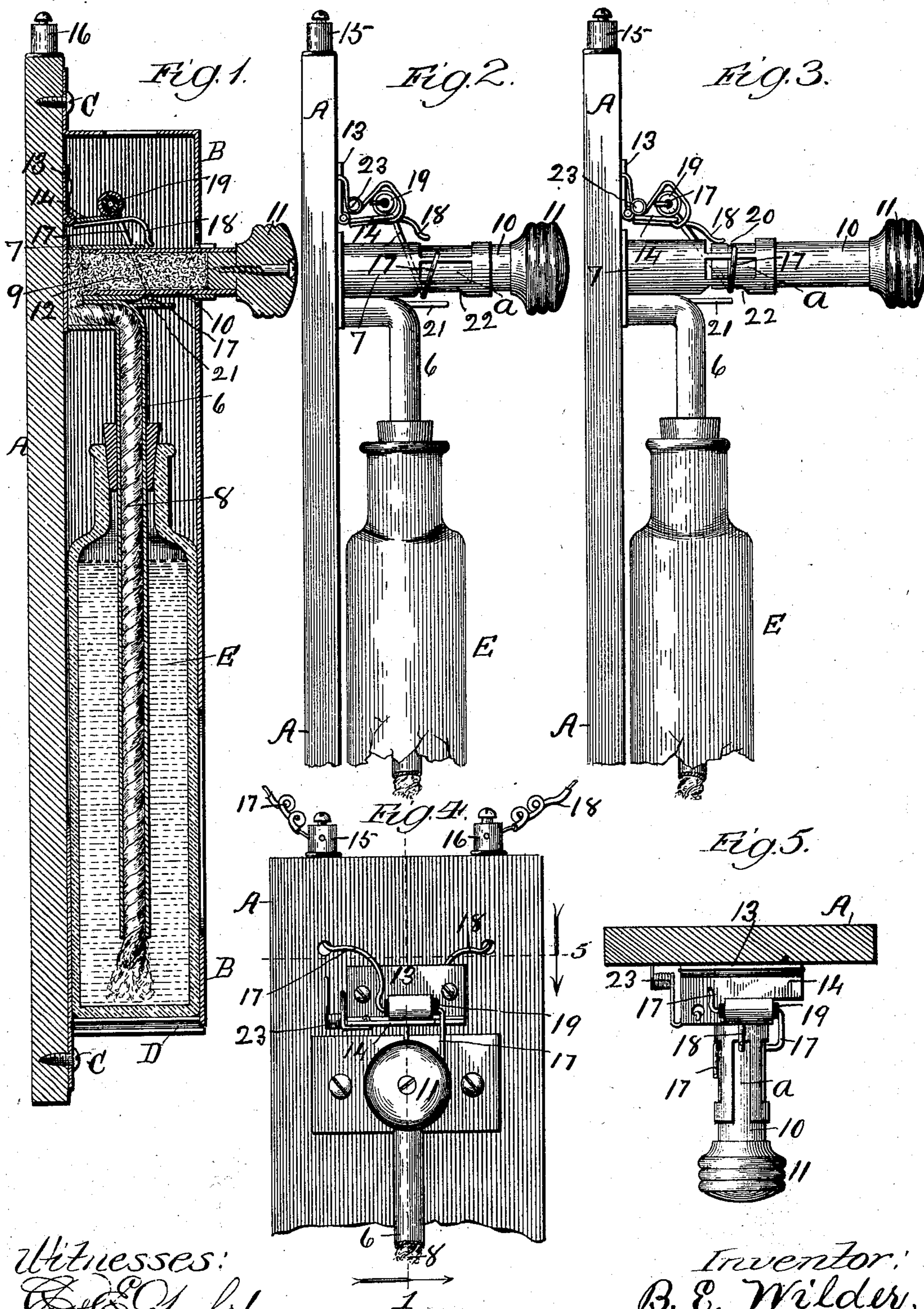
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B. E. WILDER.
ELECTRIC VAPOR LIGHTER.

(Application filed Dec. 20, 1901.)

(No Model.)



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UNITED STATES PATENT OFFICE.

BURTON E. WILDER, OF CHICAGO, ILLINOIS.

ELECTRIC VAPOR-LIGHTER.

SPECIFICATION forming part of Letters Patent No. 698,237, dated April 22, 1902.

Application filed December 20, 1901. Serial No. 86,679. (No model.)

To all whom it may concern:

Be it known that I, BURTON E. WILDER, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Electric Vapor-Lighters; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in electric vapor-lighters, and has for its object to provide a simple, convenient, and economical device of this character for the instantaneous production of a torch-light for igniting illuminating-burners, vapor stove-burners, as a cigar-lighter, and for use generally as a substitute for matches and the continuous-burning gas-lighters.

In the drawings, Figure 1 is a vertical longitudinal section on line 1, Fig. 4, looking in the direction indicated by the arrow. Fig. 2 is a broken-away side elevation, the inclosing case being omitted and the torch part shown in its inserted normal position with the electric circuit open. Fig. 3 is a similar view, with the difference that the torch is partially withdrawn to the igniting position, the circuit being closed. Fig. 4 is a broken-away elevation; and Fig. 5 is a transverse section and plan on line 5, Fig. 4.

The back plate A will be composed of any suitable non-conductive material and supports the lighting mechanism on the front side thereof, as shown in the different views of the drawings. In placing the device in its stationary position for use the back plate will be rigidly secured to the wall or other convenient object. A case B incloses the working parts and is removably secured to the back plate by a number of screws C. The bottom of the case consists of a removable slide D to provide convenient access for inserting or taking out the fluid-reservoir E, which will be charged with gasoline, alcohol, or other suitable inflammable substance. A wick-tube 6 is inserted in the reservoir, the lower end stopping short of the bottom thereof, as shown in Fig. 1. The upper outer end of the wick-tube opens into the lower closed bottom end of a sheath-tube 7, rigidly secured to the back plate. A wick 8 is inserted in the wick-tube

and projects from the respective ends, the upper shredded portion forming a soft absorbent layer 9 in the tightly-closed bottom end of the sheath-tube and provides means for conducting the contents of the reservoir to the sheath-tube in a usable quantity.

A lighting-torch, consisting of a tube part 10 and a closing head end 11, forming a finger-grasp, is adapted to be removably inserted in the sheathing-tube, the lower open end contacting the absorbent layer 9 when in its innermost normal position. (Shown in Figs. 1 and 2.) The torch-tube is provided with a filling 12, which will usually consist of cotton-waste or other like substance possessing absorbent qualities and is adapted to be charged through the wick connection with the fluid contents of the reservoir part of the apparatus by capillary attraction. The sheath-tube is provided in the outer part with a number of openings *a* for the admission of air in the operation of igniting the torch when it has been withdrawn to that point.

A hinge device is located convenient to the sheath-tube and has the member 13 thereof rigidly secured to the back plate, as best shown in Fig. 4. The movable hinge member 14 is normally positioned at approximately right angles with reference to the companion part and is adapted to have automatically a rocking movement toward and away from the sheath-tube when the torch is withdrawn from its telescoped position.

The binding-posts 15 and 16 are mounted on the back plate. The respective circuit-wires 17 and 18 form the usual positive and negative connections with the source of electrical energy. That portion of the wire 17 between its post and the apparatus passes through and is supported in an insulated core 19, mounted on the movable member of the hinge part of the device, and from thence runs to and is bent partly around the sheath-tube and has a loose frictional contact therewith and in position to temporarily engage an annular groove 20, Fig. 3, in the torch-tube each time that it is withdrawn in closing the circuit. The terminal sparking end of wire 18 stops adjacent to the torch and sheath-tube and in position to close the circuit therethrough. This wire is rigidly fastened to the movable member of the hinge

part and is normally held out of circuit-closing contact thereby, as shown in Fig. 2. It will be noted that the terminal end of wire 18 stops opposite one of the openings in the sheath-tube and when moved in the direction of comes in contact with the surface of the torch-tube through the opening. A guide 21 serves to prevent a lateral backing-away movement of the terminal part of circuit-wire 17. The sheath-tube is provided with a beveled shoulder 22 beyond the line of the guide 21, which serves to disengage the wire 17 from its engagement with the annular groove 20 in the torch-tube when the latter is being withdrawn. One end of a tension-spring 23 is inserted in the back plate and the other end attached to the movable member of the hinge part and returns said hinge member to its normal out-of-circuit position as the torch is withdrawn.

Assuming that the different parts of the apparatus are in a working condition, the operation of igniting the lighting-torch is very simple. The operator grasps the head end of the torch and withdraws the same, which movement has the effect of closing the circuit and igniting the combustible end thereof in the following manner: As the torch is being drawn out the positive circuit-wire engages the groove in the torch-tube and moves outward therewith, which has the effect of drawing the movable hinge part toward the sheath-tube and brings the sparking end of the negative wire in contact with the torch-tube and closes the circuit and lights the torch at the moment of contact. When the positive wire comes in contact with the beveled shoulder on the sheath-tube, it is forced back out of its engagement with the groove in the torch-tube and drops down to its reengaging position as the spring attachment returns the movable member of the hinge to its normal position, breaking the circuit. This operation is instantaneous, and all the parts remain in their normal position when the torch is reinserted after being used.

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

1. A lighting device, comprising a fluid-reservoir, a sheath-tube, means for supporting said reservoir and tube in their proper relative position, a torch removably telescoped in the sheath-tube, means for supplying the fluid contents of the reservoir to the sheath-tube in a usable quantity, and the electric connections for automatically igniting the torch as it is being withdrawn from its normal position, substantially as set forth.

2. In a lighting device of the kind described, the combination with a fluid-reservoir, of a torch sheath-tube, the capillary conductor connecting the reservoir and sheath-tube, the torch-tube adapted to be removably inserted in the sheath-tube, the circuit-wire held nor-

mally out of contact with the torch-tube but momentarily engaging the same on its outward movement, the companion circuit-wire, and means for bringing the sparking end thereof in contact with the torch and close the circuit; substantially as set forth.

3. In a lighting device of the kind described, the combination with a sheath-tube, having a saturated inflammable substance in the closed end thereof and provided with openings adjacent to its outer end, of a torch-tube, having an ignitable end and adapted to be removably inserted in the sheath-tube, and means for automatically lighting the torch each time that it is withdrawn from its normal position substantially as set forth.

4. In a lighting device of the kind described, the combination with a sheath-tube having a beveled shoulder and secured in a stationary position, of a lighting-torch, provided near its inner end with an annular groove and having a removable telescopic engagement with the sheath-tube, a hinge part, the positive circuit-wire having an insulated connection with the movable member of said hinge and extending therefrom to and around the sheath-tube in position to engage the annular groove in the torch when the latter is partly withdrawn, the negative circuit-wire secured to and moving with the movable member of the hinge part in closing the circuit and igniting the torch, and means for releasing the positive wire from its engagement with the torch at the proper time, substantially as set forth.

5. In a lighting device of the kind described, the combination with a fluid-reservoir, of a sheath-tube, secured in a stationary position, a wick-tube having one end inserted in the reservoir and the other end opening into the closed end of the sheath-tube, the capillary conductor running through the wick-tube, a torch removably extending into the closed bottom end of the sheath-tube, the electric connections, and means for closing the circuit in lighting the torch by the action of withdrawing the same, substantially as set forth.

6. A lighting device of the kind described, comprising a back plate, a fluid-reservoir, a sheath-tube, a tube and wick conducting the fluid contents of the reservoir into the closed bottom end of the sheath-tube, a lighting-torch, removably inserted in the sheath-tube, the inclosing case, the electric circuit connections and means actuated by the withdrawal of the lighting-torch in closing and breaking the circuit at the proper time, substantially as set forth.

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

BURTON E. WILDER.

Witnesses:

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