

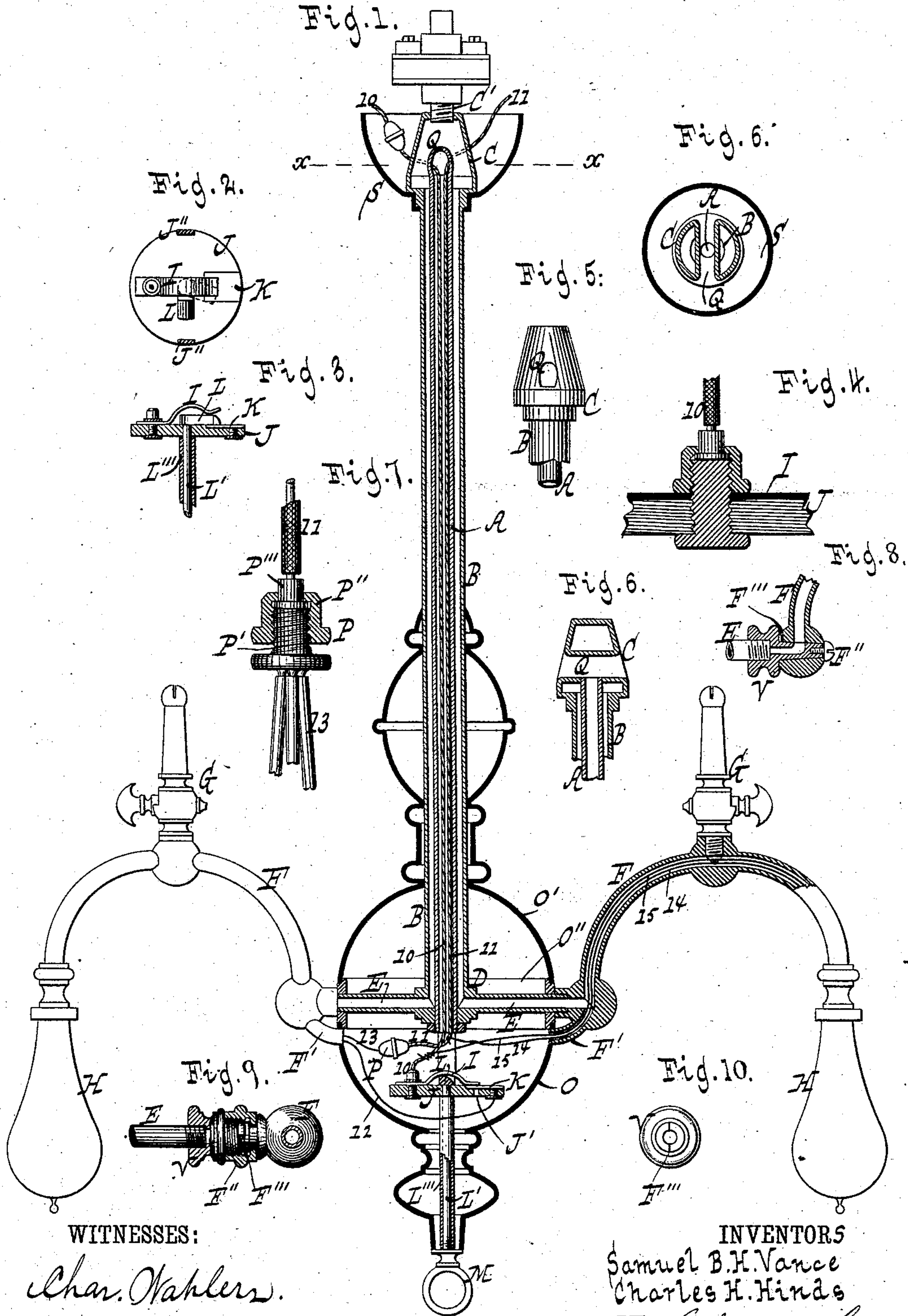
(No Model.)

S. B. H. VANCE & C. H. HINDS.

COMBINED GAS AND ELECTRIC LIGHT FIXTURE.

No. 290,152.

Patented Dec. 11, 1883.



WITNESSES:

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COMBINED GAS AND ELECTRIC LIGHT FIXTURE.

SPECIFICATION forming part of Letters Patent No. 290,152, dated December 11, 1883.

Application filed June 26, 1883. (No model.)

To all whom it may concern:

Be it known that we, SAMUEL B. H. VANCE and CHARLES H. HINDS, both citizens of the United States, residing at New York, in the county and State of New York, have invented new and useful Improvements in Combined Gas and Electric Light Fixtures, of which the following is a specification.

Our invention is especially adapted to those fixtures which are constructed with a view to permit the use of both gas-lights and electric lights; but it is also adapted in some of its features to fixtures in which the gas-lights are omitted.

The novel features of our invention will be hereinafter fully described in connection with the accompanying drawings, and the combinations then pointed out in the claims.

Figure 1 is a sectional side elevation, showing our invention applied to a chandelier. Figs. 2, 3, and 4 are detail views of a switch in the circuit of the electric current. Fig. 5 is a side elevation of a head supporting the fixture. Fig. 6 is a horizontal section thereof, the plane of section being indicated by the line *xx*, Fig. 1. Fig. 6* is a vertical section of the same, looking in an opposite direction to Fig. 1. Fig. 7 is a detail view of a coupling. Figs. 8, 9, and 10 illustrate modifications.

Similar letters indicate corresponding parts.

The letters A B designate tubes arranged one within the other to form the stem of a chandelier. Both these tubes connect at the upper end with a head, C, and at the lower end with the usual distributing-body, D, having laterally-projecting pipes E, which connect with arms F, for supporting the gas-burners G and electric burners or lamps H. The inner tube, A, is open at both ends, and through it extend the stem-wires 10 11, which connect at the lower end with arm-wires 12 13, one through the medium of a switch, I, so that these arm-wires may be brought into or out of the electric circuit by a proper adjustment of the switch, and they being concomitant to the lamp or lamps, the latter may be lighted or put out by that means.

In practice, the switch I is connected with the wires of a series of arms F, and hence with a series of lamps—namely, when the fixture comprises more than two arms—while the wires 14 15 of one such arm are connected di-

rectly to the stem-wires 10 11, as shown in Fig. 1, so that when the circuit through the switch is broken all the lamps except one are extinguished simultaneously. Said switch I is composed of a flat spring—as of sheet metal—which is attached to a board, J, at one end, and in its normal position bears at the other or free end against a link, K, of easily-fusible metal, the latter being also attached to said board, so that when the electric current rises in strength beyond a certain point this link is destroyed, thus automatically breaking the circuit. A hole, J', in the switch-board permits the escape of the fusible metal in the destruction of the link, said hole being opposite thereto. The carrying capacity of the fusible link K is graduated like that of a safety-catch, according to the number of lamps which are used, and it is obvious that the same may be used in conjunction with an ordinary switch-lever in lieu of the spring.

By the arrangement of the fusible link to form a contact-point for the free end of the switch, in distinction from being placed at the fixed end thereof, the switch is left unaffected by the fusing of the link, and it is only necessary to replace the latter, when destroyed, for restoring the continuity of the circuit.

With the switch-spring I is combined a lifting-lever, L, for withdrawing its free end from the contact-point K when desirable to break the circuit, it being understood that said spring closes by its inherent elasticity. This lifting-lever L is arranged on the switch-board J in the bight of the spring I, and is fixed to a vertical spindle, L', which thence extends downward through the switch-board, and is provided at the lower end with a finger-piece, M, in form of a ring or knob, for turning it, so that the lever may thereby be swung horizontally to the proper positions for acting on the switch-spring or releasing it, as the case may be. The switch-board J is hung to the distributing-body D by arms J'', Fig. 2, and from said board depends a tube, L'', forming a guide for the spindle. Said switch-board and its connections, together with the distributing-body D, are covered by the usual ornaments, the lower or pendent member, O, of which is held in place by the finger-piece M, the latter being, to this end, screwed on the spindle L' to impinge against it. This ornament O is thus.

practically supported by the switch-board, and it will be seen that by simply detaching the same access may be had to the switch and its connections. Both said lower ornament, O, and the upper ornament, O', are united—as by rabbets—with an intermediate ring, O'', which is supported on the pipes E of the distributing-body—namely, by the passage of said pipes through it—and by this means the ornaments are kept in symmetrical positions. The stem-wire 11 connects with the proper arm wire or wires by means of a coupling, P, which is composed of a metallic thumb-screw, P', (see Fig. 7,) a flanged nut, P'', which may or may not be metallic, and a flanged metallic head, P''', said stem-wire being attached to the flanged head, and the latter being held in contact with one end of the screw by the nut which is fitted on the screw, while the arm wire or wires are attached to the other end of the screw. It will be seen that this coupling is a convenient medium for connecting the stem-wire to as many arm-wires as may be necessary, since the arm-wires need only to be soldered or otherwise properly attached to the screw. If desired, the coupling may be inclosed in a casing of wood or other non-conducting material, as represented in Fig. 1, and a similar device may, if desired, be used to make the connections of the proper stem-wire or arm-wire, or both, with the switch ends, as shown in Fig. 1. The pipes E of the distributing-body communicate with the outer tube, B, of the stem, but not with the inner tube thereof, and the arms F communicate with said pipes, they being hollow, so that if gas is supplied to the outer tube it thence passes into the pipes, and through the hollow arms to the burners G. Each of the hollow arms F is provided on the inner end with a branch, F', of reduced diameter, which is curved inwardly to enter the lower ornament, O, at the free end, and through which the arm-wires 12 13 or 14 15 are conducted into said arms for their connection with the lamps H, the latter being on the outer ends of the arms, in distinction from the burners G, which are intermediate of the ends thereof. Said arm-wires extend entirely through the hollow arms F, and in order to prevent the passage of gas outward through the branches F', or beyond the burners G through the arms, a filling—as of plastic material—is introduced into said branches as well as into the arms at a point beyond the burners.

It is evident that plain holes may be used in lieu of the branches F' for admitting the wires of the hollow arms, such holes being properly closed when the wires have been introduced. By said arrangement of the arm-wires in the arms F, the latter are adapted to convey the gas to the burners in the proper manner, while the wires are concealed and protected.

When the fixture is used for electric lights, omitting the gas-burners, the branches F', or the holes substituted therefor, may be dispensed with, and the stem-wires 12 13 or 14

15 led into the hollow arms F, through the pipes E of the distributing-body, these pipes being provided with lateral openings for the introduction of the wires, and in that event a plug of the form shown in Fig. 8 may be used for connecting the hollow arms to the pipes.

The head C on the upper end of the tubes A B serves to connect the chandelier to its support C', consisting, in this example, of a gas-pipe, and also to supply gas to the outer or gas tube from said pipe, it being, to this end, made hollow and arranged to communicate with the outer tube, without, however, communicating with the inner tube. In this head C is formed, by a suitable web or partition, a transverse passage, Q, which is isolated from the interior of the head, but communicates with the inner or wire tube, A, at the upper end of the latter, so that the stem-wires 10 11 may enter this tube through said passage, as shown, and without impairing the other functions of the head.

It will be readily understood from the foregoing description that our invention can be applied to wall-brackets as well as to chandeliers.

In lieu of the plug shown in Fig. 8, we can use a plug of the form shown in Figs. 9 and 10. These plugs, however, are essentially alike, they being attached to the outer ends of the pipes E of the distributing-body, as at V, and the arms F being in turn secured thereto by a screw, F'', without turning the arms, a stop, F''', being used to hold the arms against turning. In the example shown in Fig. 8, the screw F'' is inserted in the outer end of the plug, the latter passing through the arm, and the screw has a head which bears against the outer portion of the arm. In said example, moreover, the stop F''' is composed of a pin secured to the plug to enter a notch in the arm, whereas in the example shown in Figs. 9 and 10 the screw is ring-shaped and engages adjacent edges of the plug and arm, while the stop is formed by interlocking segments on such edges.

In some cases the central tube, A, of the stem may be of glass, or may be lined with porcelain, to secure additional insulation.

What we claim as new, and desire to secure by Letters Patent, is—

1. The combination, with an electric lamp and its fixture, of a switch arranged in the electric circuit of said lamp, a fusible link forming a contact-point for the free end of said switch, and a switch-operating medium, substantially as and for the purpose described.

2. The combination, with an electric lamp and its fixture, of a switch arranged in the electric circuit of said lamp, a fusible link forming a contact-point for the free end of said switch, a switch-board having a hole opposite to said link for the escape of metal in the fusing thereof, and a switch-operating medium, substantially as and for the purpose described.

3. The combination, with an electric lamp and its fixture, of a switch arranged in the electric circuit of said lamp and composed of a flat spring, a lifting-lever arranged to act on

said switch, and a spindle for operating said lever, substantially as and for the purpose described.

4. The combination, with the distributing-body and its laterally-projecting pipes, of the switch-board hung to said body, the switch-spindle extending downward from said board, the ring supported on said pipes, and the finger-piece attached to the lower end of the spindle, substantially as and for the purpose described.

5. The combination of the inner and outer tubes composing the stem of the fixture, the distributing-body having both said tubes connected to it, the laterally-projecting pipes of the distributing-body, the hollow arms connected to said pipes, the gas-burners and electric lamps, both arranged on said arms, and the arm-wires extending into and through the hollow arms to the electric lamps, substantially as and for the purpose described.

6. The combination of the inner and outer tubes composing the stem of the fixture, the distributing-body, the laterally-projecting pipes of said body, the hollow arms connected to said pipes, and each provided with an inwardly-curved branch at the inner end, the gas-burners and electric lamps, both arranged on said arms, and the arm-wires extending into the hollow arms through said branches for their connection with the electric lamps,

substantially as and for the purpose described.

7. The combination of the inner and outer tubes composing the stem of the fixture, the hollow head having both said tubes connected to it and communicating with the outer tube, the transverse passage of said head communicating with the inner tube, the gas-burners and electric lamps, and their concomitants, substantially as and for the purpose described.

8. A coupling for electric-light fixtures, composed of a metallic thumb-screw, a flanged nut fitted to said screw, and a flanged metallic head which is held in contact with the screw by said nut, substantially as and for the purpose described.

9. The combination, with the distributing-body, its laterally-projecting pipes, and the hollow arms, each supporting an electric-light burner, of the plugs on the outer ends of said pipes, the screws for securing the hollow arms to said plugs, and the stops for holding the arms against turning.

In testimony whereof we have hereunto set our hands and seals in the presence of two subscribing witnesses.

SAML. B. H. VANCE. [L. S.]
CHARLES H. HINDS. [L. S.]

Witnesses:

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JAMES WYATT, Jr.