H. E. WOODS.

INCANDESCENT GAS LAMP.

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913,088. Patented Feb. 23, 1909.

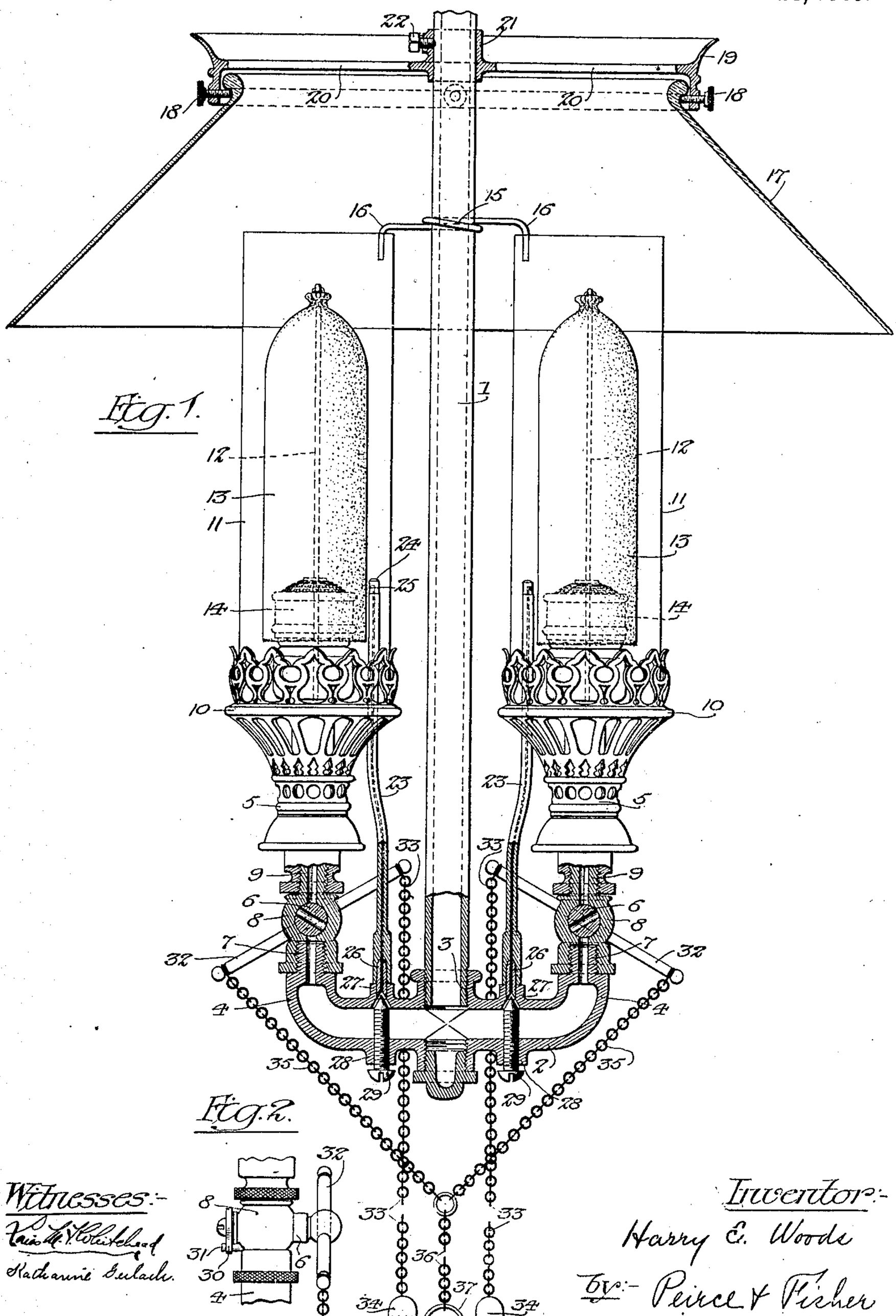

Fig. 1.

Fig. 2.

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INCANDESCENT GAS-LAMP.

No. 913,088. Specification of Letters Patent. Patented Feb. 23, 1909.

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To all whom it may concern:

Be it known that I, HARRY E. WOODS, a citizen of the United States, and a resident of Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Incandescent Gas-Lamps, of which the following is a specification.

The invention relates to incandescent gas lamps and seeks to provide a simple construction which may be inexpensively manufactured and which will give a maximum amount of illumination with a small gas consumption.

The invention consists in the features of improvement hereinafter set forth, illustrated in the accompanying drawings and more particularly pointed out in the appended claims.

In the drawings, Figure 1 is a side elevation of the improved lamp with parts shown in vertical section. Fig. 2 is a detail view of one of the controlling valves.

The improved lamp comprises a vertical supply pipe 1 which is adapted to be connected at its upper end to the gas main and serves as a support for the lamp. A short, horizontal pipe 2 is provided with a central, upwardly projecting, integral sleeve 3 into which the lower end of the supply pipe 1 is threaded. The horizontal pipe 2 is provided with integral upturned ends 4 upon which a pair of Bunsen burners 5, of ordinary construction, are mounted. These burners are arranged as shown, closely adjacent the vertical supply pipe 1 and each burner is provided with a controlling valve 6 which is preferably interposed between the lower end of the burner and the corresponding upturned end 4 of the horizontal pipe 2. As shown, each of the upturned ends 4 is provided with an externally threaded nipple 7 upon which the casing 8 of the valve is threaded. The valve in its turn is provided on its upper end with an externally threaded nipple 9 upon which the Bunsen burner 5 is threaded. Each of the burners is provided with a suitable chimney gallery 10 for supporting a chimney 11, and is also provided with a supporting-rod 12 which is adapted to carry an incandescent mantle 13 above the outlet end 14 of the burner. To hold the chimneys 11 steady, a ring 15 is slidably mounted upon the vertical supply pipe 1 and is provided with hooks 16 which are adapted to engage the upper edges of the closely adjacent chimneys 11. This device is conveniently formed of a piece of wire, the central portion of which is coiled to form the ring 15 and the ends of which are extended laterally and then bent down to form the hooks 16. A shade or reflector 17, for throwing the light downwardly, is arranged above the burners and about the upper ends of the chimneys thereon. This shade or reflector is secured at its upper edge by screws 18 to a supporting ring 19. Supporting arms 20 for the ring are secured to a central sleeve 21 which fits upon the vertical supply pipe 1 and is fixed thereto by a set screw 22.

A pair of by-pass pipes 23 lead from the upper side of the horizontal pipe 2 from points intermediate the central sleeve 3 and the upturned ends 4 of the horizontal pipe. These by-pass pipes extend upwardly from the horizontal pipe 2 through the chimney galleries 10 and between the chimneys 11 and burner outlets 14 and terminate closely adjacent the burner outlets and the lower edges of the mantles 13. The upper ends of these by-pass pipes are outside of the lower edges of the mantles 13 and are provided with lava tips 24 having small outlet openings 25 on their outer sides so that the pilot flames from these by-pass pipes are directed against the lower edges of the mantles 13. The by-pass pipes 23 preferably extend loosely through openings in the galleries 10 and are also preferably, detachably connected to the horizontal pipe 2. For this purpose, the by-pass pipes are provided with enlarged lower ends which fit over nipples 26 that are fixed within bosses 27 formed on the upper side of the horizontal pipe 2 between the central sleeve thereof and the upturned ends 4. By reason of this construction, the by-pass pipes or pilot tubes 23 may be readily renewed if they become plugged up or otherwise get out of order.

On its under side and directly below the bosses 27, the horizontal pipe 2 is provided with bosses 28 through which a pair of screw, needle valves 29 are threaded. The upper, conical ends of these needle valves coöperate with similarly shaped seats at the lower ends of the nipples 26 to control the flow of gas through the by-pass pipes or pilot tubes 23. By locating these valves in this manner they are readily accessible for adjustment. The separate valves 6, which control the flow of gas through the burners 5, are of the rotary plug type. Each of these

valves is provided at one end with a pair of stop-arms 30 which coöperate with a pin 31 on the valve casing 8 to position the valve in its open and closed positions. At its other end, each valve is provided with a cross arm 32. The valves 6 are so arranged that when they are closed, as shown in the drawings, the cross-arms 32 will be inclined in opposite directions. To the inner end of each arm is connected a chain 33 having a button 34 on its lower end. The outer ends of the arms 32 are connected to a pair of branch chains 35 which extend inwardly and are connected to a common chain 36 provided with a ring 37. By this arrangement either of the valves 6 may be opened independently by a pull upon one or the other of the chains 33 and either or both of the valves may be closed to turn out the burners by a pull upon the chain 36.

In the improved construction, the two burners are arranged closely adjacent the supply pipe 1 so that the gas is heated before it passes to the burners. The arrangement of the two burners diametrically opposite each other is such as to give a maximum amount of light, since neither burner interferes with the light thrown out by the other burner. The arrangement of separate chimneys on the burners, instead of a common globe such as is usually employed, also adds to the efficiency of the lamp. By employing separate by-pass pipes or pilot tubes which terminate closely adjacent the lower edges of the mantle and closely adjacent the outlets of the burners, the gas passing out of one or both of the burners will be ignited at once and without any shock or explosion, such as occurs when the pilot frame is at the upper end of the mantles and which tends to destroy the mantles. The horizontal pipe 2 with the integral sleeve 3, upturned ends 4 and bosses 27 and 28 is formed of a single casting and provides for all of the necessary connections of the supply pipe, burners and by-pass pipes. All of the other parts, except the chimney holder 15—16, are common stock pieces so that the lamp may be economically manufactured. As stated, the by-pass pipes 23 are removably mounted in position and may be readily renewed, and the controlling valves 29 therefor are in such position that they may be readily and conveniently adjusted.

The horizontal pipe 2 is preferably provided on its under side with a depending sleeve 38 which is internally threaded to receive a plug 39. By removing the plug 39 any soot or deposit that is apt to collect at the lower end of the supply pipe may be removed.

It is obvious that the details set forth may be varied without departure from the essentials of the invention as defined by the claims.

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

1. An incandescent gas lamp comprising a vertical supply pipe, a short, horizontal pipe threaded upon the lower end of said supply pipe and having an upturned end, a Bunsen burner mounted upon said upturned end closely adjacent said supply pipe, said burner having a controlling valve and a chimney gallery, and a by-pass pipe leading from the upper side of said horizontal pipe, extending upwardly through said chimney gallery and terminating adjacent the outlet of said burner, substantially as described.

2. An incandescent gas lamp comprising a vertical supply pipe, a short, horizontal pipe threaded upon the lower end of said supply pipe and having an upturned end, a Bunsen burner mounted upon said upturned end closely adjacent said supply pipe, said burner having a controlling valve and a chimney gallery, a by-pass pipe leading from the upper side of said horizontal pipe, extending upwardly through said chimney gallery and terminating adjacent the outlet of said burner, and a screw valve threaded through the under side of said horizontal pipe and arranged to control the flow through said by-pass pipe, substantially as described.

3. An incandescent gas lamp comprising a supply pipe, a horizontal pipe connected to said supply pipe and having an upturned end, a Bunsen burner mounted on said upturned end, said burner having a controlling valve, a chimney gallery, and means for supporting a mantle about the upper end, and a by-pass pipe leading from the upper side of said horizontal pipe, and extending upwardly through said gallery and between the outer rim thereof and the upper portion of said burner, said by-pass pipe terminating adjacent the outlet of said burner, substantially as described.

4. An incandescent gas lamp comprising a supply pipe, a horizontal pipe connected to said supply pipe and having an upturned end, a Bunsen burner mounted on said upturned end, said burner having a controlling valve, a chimney gallery, and means for supporting a mantle about the upper end, said horizontal pipe having a nipple on its upper side, a by-pass pipe detachably engaging said nipple and extending upwardly through said chimney gallery and between the outer rim thereof and the upper portion of said burner, said by-pass pipe terminating adjacent the outlet of said burner, and a needle screw valve threaded through the lower side of said horizontal pipe and arranged to control the flow through said by-pass pipe, substantially as described.

5. An incandescent lamp comprising a

vertical supply pipe, a horizontal pipe of cast metal having an integral, upturned end and an integral sleeve into which said supply pipe is threaded, a valve casing mounted on said end, a controlling valve in said casing, a Bunsen burner mounted on said valve casing closely adjacent said supply pipe, said burner having a chimney gallery, and mantle supporting means, a by-pass pipe leading from the upper side of said horizontal pipe between its sleeve and upturned end, extending upwardly through said chimney gallery and terminating adjacent the outlet of said burner and a screw needle valve threaded through the lower side of said horizontal pipe and arranged to control the flow through said by-pass pipe, substantially as described.

6. An incandescent lamp comprising a vertical supply pipe, a horizontal pipe of cast metal having an integral, upturned end and an integral sleeve into which said supply pipe is threaded, a valve casing mounted on said end, a controlling valve in said casing, a Bunsen burner mounted on said valve casing closely adjacent said supply pipe, said burner having a chimney gallery, and mantle supporting means, said horizontal pipe having a projecting nipple on its upper side between the sleeve and upturned end, a by-pass pipe detachably engaging said nipple, extending upwardly through said gallery and terminating outside of and closely adjacent the outlet of said burner, and a screw needle valve threaded through the lower side of said horizontal pipe and controlling the flow through said by-pass pipe, substantially as described.

7. An incandescent gas lamp comprising a vertical supply pipe, a short, horizontal pipe threaded centrally upon the lower end of said supply pipe and having upturned ends on diametrically opposite sides of said supply pipe, a pair of Bunsen burners mounted on said upturned ends and arranged closely adjacent said supply pipe, said burners having separate controlling valves and chimney galleries, and separate by-pass pipes leading from the upper side of said horizontal pipe, extending upwardly through said chimney galleries and terminating adjacent the outlets of said burners, substantially as described.

8. An incandescent gas lamp comprising a vertical supply pipe, a horizontal pipe connected to the lower end of said supply pipe and having upturned ends, Bunsen burners mounted on the upturned ends of said horizontal pipe and arranged closely adjacent said supply pipe, said burners having separate controlling valves, chimney galleries, and means for supporting mantles about their upper ends, separate by-pass pipes leading from the upper side of said horizontal pipe, extending upwardly through said chimney galleries and terminating adjacent the outlets of said burners, and screw valves threaded through the under side of said horizontal pipe and arranged to control the flow through said by-pass pipes, substantially as described.

9. An incandescent lamp comprising a vertical supply pipe, a horizontal pipe of cast metal having an integral central sleeve into which said supply pipe is threaded and integral, upturned ends on opposite sides of said supply pipe, valve casings mounted on said upturned ends, controlling valves in said casings, Bunsen burners mounted on said valve casings, said burners having chimney galleries and mantle-supporting means, separate by-pass pipes leading from the upper side of said horizontal pipe between the sleeve and upturned ends thereof, said by-pass pipes extending upwardly through said chimney galleries and terminating adjacent the outlets of said burners, and screw needle valves threaded through the lower side of said horizontal pipe and arranged to control the flow through said by-pass pipes, substantially as described.

10. An incandescent lamp comprising a vertical supply pipe, a horizontal pipe of cast metal having an integral upturned end and an integral sleeve into which said supply pipe is threaded, a controlling valve mounted on said upturned end, a Bunsen burner mounted on said valve, said burner having a chimney gallery and mantle-supporting means, a by-pass pipe leading from the upper side of said horizontal pipe and extending upward through said chimney gallery and terminating adjacent the outlet of said burner, a screw valve threaded through the lower side of said horizontal pipe and arranged to control the flow through said by-pass pipe, and a plug threaded into an opening on the under side of said horizontal pipe below the lower end of said vertical supply pipe, substantially as described.

11. An incandescent lamp comprising a vertical supply pipe, a horizontal pipe threaded upon the lower end of said supply pipe and having an upturned end, a Bunsen burner mounted on said upturned end closely adjacent said supply pipe and having a chimney gallery and mantle-supporting means, and a ring freely slidable upon said vertical supply pipe, said ring having a laterally projecting downturned hook arranged to extend within the upper end of the chimney on the gallery of the burner and engaging the inner edge portion thereof, substantially as described.

12. An incandescent lamp comprising a vertical supply pipe, a horizontal pipe centrally threaded upon the lower end of said supply pipe and having upturned ends on

opposite sides thereof, a pair of Bunsen burners mounted upon the upturned ends of said horizontal pipe and arranged closely adjacent said supply pipe, said Bunsen burners having chimney galleries and mantle-supporting means, and a ring freely slidable upon said vertical supply pipe, said ring being formed of a wire coil having laterally extended, downturned end portions forming hooks arranged to extend within the upper open ends of the chimneys on the galleries of said burners and engaging the inner edge portions thereof, substantially as described.

13. In a gas lamp, the combination with a pair of burners, of separate controlling valves for said burners, operating levers for said valves, stops for limiting the movement of said valves, a common pull chain having branch portions connected to one end of each of said levers and independent pull chains connected to the opposite ends of said levers, substantially as described.

14. In an incandescent gas lamp, the combination with a supply pipe, a pair of Bunsen burners communicating with said supply pipe, separate controlling valves for said burners and by-pass pipes leading around said valves, of operating levers connected to said valves, stop devices for limiting the movement of said valves, a common pull chain connected to one end of each of said levers, and independent pull chains connected to the other ends of said levers, substantially as described.

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