

J. & G. KEITH.
GAS LAMP SUSPENSION.
APPLICATION FILED FEB. 9, 1912.

1,035,881.

Patented Aug. 20, 1912.

3 SHEETS—SHEET 1.

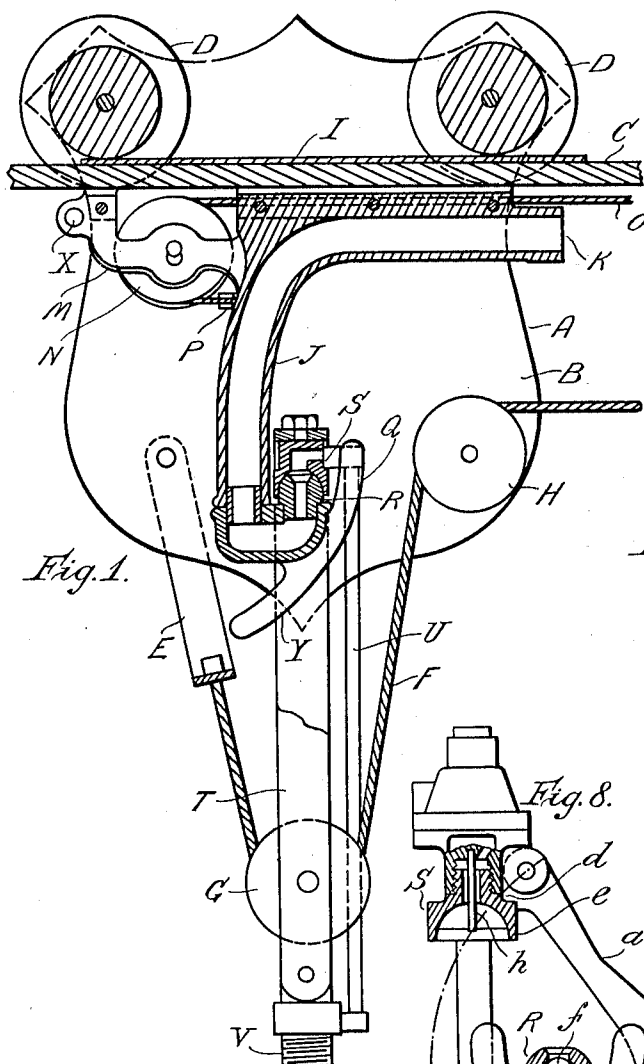


Fig. 1.

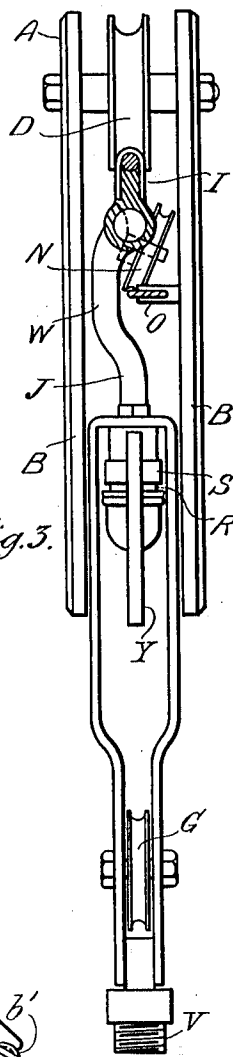


Fig. 3.

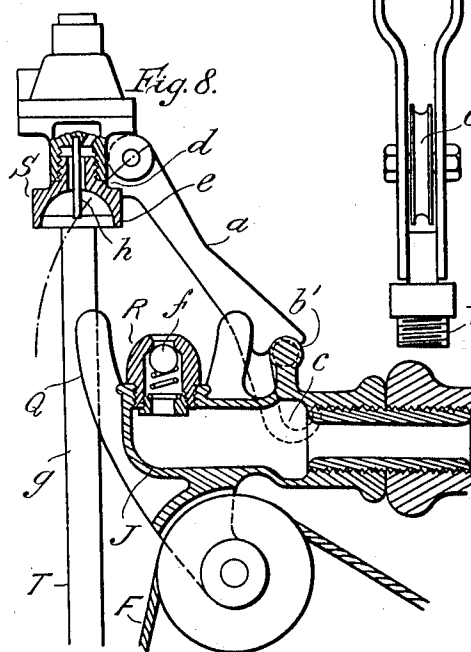


Fig. 8.

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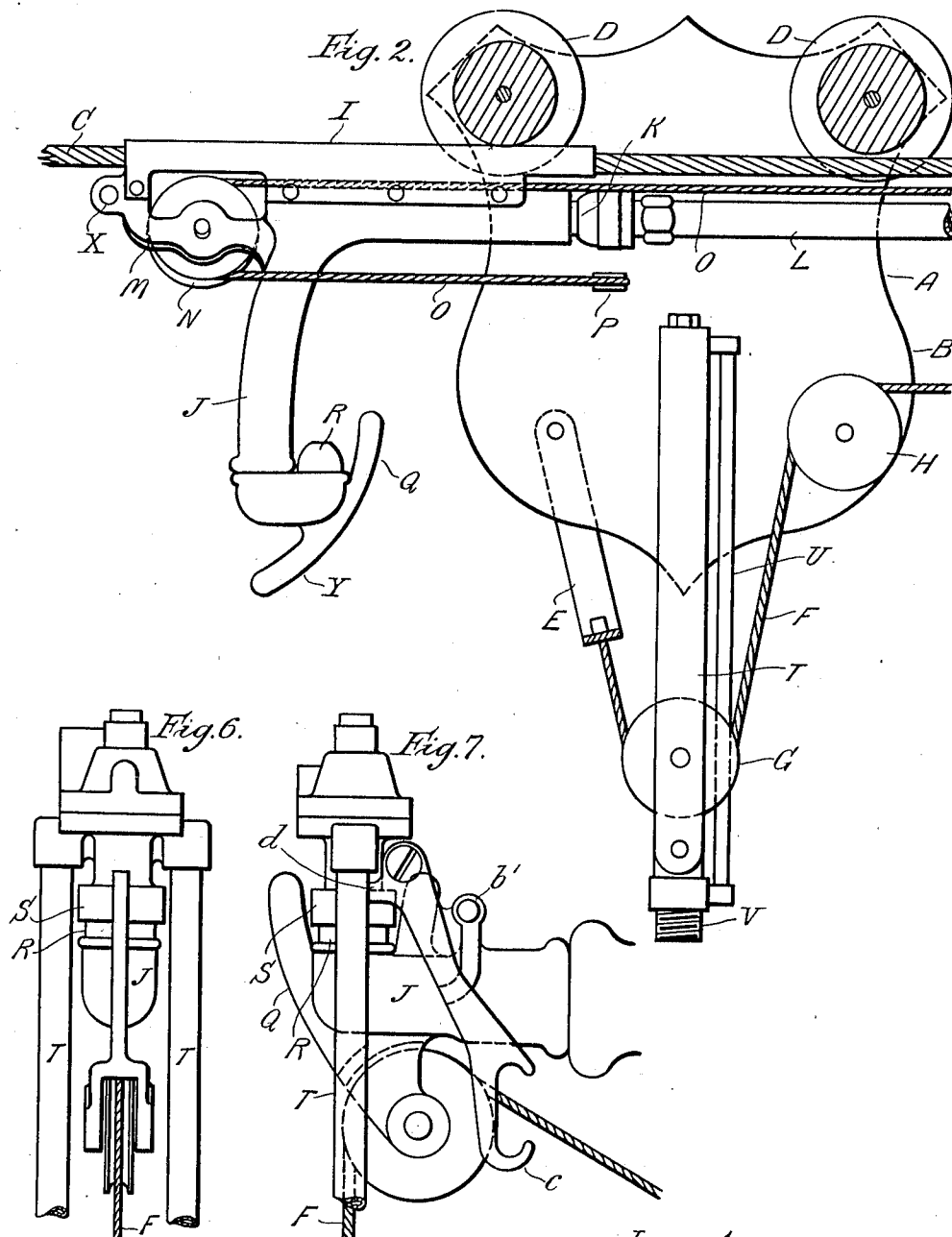
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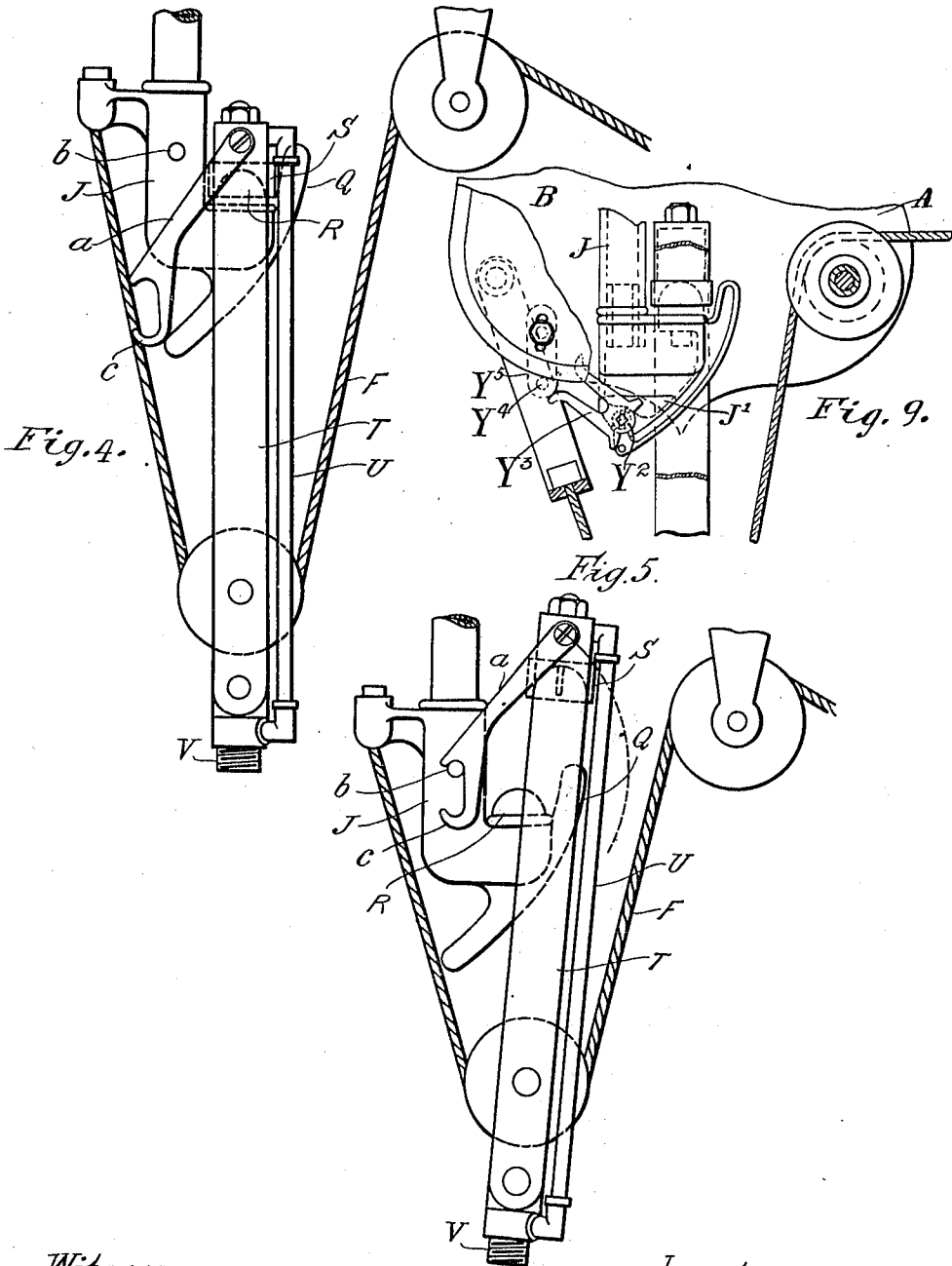
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3 SHEETS—SHEET 3.



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UNITED STATES PATENT OFFICE.

JAMES KEITH AND GEORGE KEITH, OF LONDON, ENGLAND.

GAS-LAMP SUSPENSION.

1,035,881.

Specification of Letters Patent.

Patented Aug. 20, 1912.

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To all whom it may concern:

Be it known that we, JAMES KEITH and GEORGE KEITH, subjects of the King of the United Kingdom of Great Britain and Ireland, and residing at London, England, have invented a certain new and useful Improvement in Gas-Lamp Suspension, of which the following is a specification.

This invention relates to gas supply connections for gas lamps equipped with gear for raising and lowering the lamp, with or without traversing gear.

Heretofore a lamp of the type adapted to be traversed and raised and lowered was usually suspended from a carriage provided with pulleys adapted to run on a wire rope or the like, and the gas supply was conducted to the lamp by means of a flexible tube or jointed tube.

The primary object of the invention is to dispense with the said tube, to which end provision is made for making and breaking a gas tight joint between the lamp and a source of supply and at the same time affording a safety catch for supporting the lamp when in position, independently of the running wire rope or the like.

The invention is illustrated in the accompanying drawings in which—

Figures 1 and 2 are part elevations, part vertical sections showing in operative and inoperative positions devices applicable to gas lamps provided with traversing and raising and lowering gear; Fig. 3 is an elevation, partly in section, at right angles to Fig. 1; Figs. 4 to 9 show modifications hereinafter referred to.

Like reference characters denote similar parts in the several figures of the drawings.

Referring to the construction shown in Figs. 1, 2 and 3, for traversing the lamp there is employed a carriage A preferably provided with a pair of downwardly extending wings or shields B disposed on opposite sides of a stretched wire rope C or the like and having a pulley or pulleys D adapted to run on said rope or the like; connected to said carriage A is a shackle E or the like to which the raising and lowering rope F is attached. The rope F passes around a pulley G connected adjacent the top of the lamp to a stirrup piece or the like which supports the lamp, and around a pulley H or pulleys, mounted on the carriage A.

On the rope C or the like, adjacent the point from which the lamp is normally sus-

ended, is fixed a hanger I connected at its lower end to a hollow bracket member J which is fixed to the rope C or the like and through which the gas supply passes at K from a supply pipe L which maintains an unbroken connection between the bracket and the main supply, said pipe L being connected at its ends by suitable ball unions or like joints to the hollow bracket member J and to a junction with the main supply, the said pipe L being preferably supported at intervals from said rope C or the like.

The hollow bracket member J is provided with an extension M near its upper end for carrying a guide pulley N around which passes the traversing rope O or the like connected to the carriage A, as at P; at its lower end the bracket terminates in a horn or hook-like part Q to which is fitted a preferably detachable seat R preferably of spherical form having a ground joint with a preferably detachable member S preferably of cup-like form at the upper end of a stirrup piece T which is so fitted that it tends to assume a vertical position, and the lower end of which is connected to the top of the lamp, as aforesaid. A short gas supply tube U couples the member S with a connection V for attachment to the upper end of the lamp. The guide pulley N is preferably inclined to permit the top portion of the traversing rope C to clear the side of the bracket member J and the pipe L, the bracket-member J being kinked or off-set, as shown at W, Fig. 3, to permit the rope O to pass freely when the carriage A is being traversed.

Assuming the lamp to be suspended in normal position and the main gas supply shut off, the rope F is pulled to raise the lamp, and with it the stirrup piece T and member S, to such an extent that the last mentioned parts will clear the hook or horn-like part Q on the bracket member J. The carriage A is then traversed in the usual way by paying out the traversing rope O and winding in the hoisting and lowering rope F, and the lamp brought to the desired position at which it is to be lowered. When the lamp is to be replaced, it is first raised and the carriage A traversed until it engages with a pin X or other stop device on the bracket member J, in which position the lamp is lowered into place; the member S engages with its seat R, being guided into position by the stirrup-piece coöperating

with the lower part of the bracket member J.

The part Q of the bracket member J is carried downward in such manner as to form a deflecting guide as at Y, so that when the lamp is moved to its normal position, the stirrup piece T being located below the hook-like part Q, the lamp can be raised and the stirrup-piece will be deflected laterally by the guide Y and pass up over the prong of the hook; as soon as the stirrup piece has passed said prong, it will assume a vertical position with the member S immediately above the member R and is positively guided in its downward movement to make the joint aforesaid.

The termination of the bracket J may be enlarged to form a receptacle J' (Fig. 9) for water of condensation, etc., provided with a discharge opening normally closed by a plug cock y^2 , one end of which is fitted with a lever y^3 so arranged that a pin y^4 carried by means of a strap adjustably secured to one of the shields B will enter the fork of the lever y^3 and move the cock in one direction or the other when the carriage is moved.

In modifications shown in Figs. 4 to 8, applicable more particularly to the case where the lamp is suspended from a column of swan-neck or like type or from a bracket or roof and raising and lowering gear only is provided there being no occasion for providing devices for traversing the lamp, means are employed to assist the member S to clear the horn Q when the lamp is to be unshipped, said means comprising an arm or arms a pivoted to the top of the stirrup piece T so that when raised sufficiently it or they engages or engage with a pin or pins or a projection or projections b (Figs. 4 and 5) or abutments b' , Figs. 7 and 8, and when the lamp is again lowered, the arms a take a fulcrum from the said pins or abutments, the stirrup piece T being swung outward so that the member S clears the horn Q. The unshipping operation is thus effected without interference with the ordinary shipping operation, as the arms a do not come in contact with the pins or abutments until the stirrup T has been raised higher than is necessary to pass the member S inward over the horn Q; the arms a are each provided with a hook-part, as at c , which prevents the stirrup piece T from being raised too far by engaging with said pins or abutments, and said arms are prevented from dropping beyond a predetermined point by means of stops, such as indicated at d , Figs. 7 and 8; but they are free to swing upward as high as is necessary. The stirrup piece T is preferably formed of two tubes, and the member S is formed with a projecting lip e (Fig. 8) extending beyond the ground portion of said member so

that the said ground portion may not be damaged by scraping over the horn Q.

In the arrangement shown in Figs. 6, 7 and 8, the lamp is adapted to be raised and lowered by a single purchase rope. In the case where a number of lamps, each working with an automatic lighter (which, of course, is carried by the lamp, and moved along with the same) are controlled from one point by the operation of starting or stopping a compressor, there would ordinarily be a free blow through of low pressure gas from the seat R for the member S, as soon as the lamp was removed. To avoid this, we fix a valve, *e. g.*, a ball valve f , in the aperture of the seat R, which valve tends to shut by the action of a spring g , as soon as the lamp is removed. On the member S is provided a pin h (Fig. 8) of sufficient length to insure that the valve f will be pushed off its seat when the member S is seated on the part R, the pin h being also of such a length that it is protected from damage in passing the horn by the projecting lip e on the member S. In the example shown in Figs. 6, 7 and 8, where the stirrup piece T is formed of two tubes, an automatic lighter may be fixed on the top of the stirrup piece, one of the tubes serving to carry the by-pass supply, and the other tube serving to carry the main supply.

Having now described our invention, what we claim and desire to secure by Letters Patent of the United States is:—

1. The combination with means for raising and lowering a gas lamp, of cooperating gas conducting members having a gas conduit, and devices operatively connected with the raising and lowering means for making and breaking a joint between said members by the operation of the raising and lowering means.

2. In combination with means for raising and lowering a gas lamp, a bracket member having a gas conduit in communication with a source of gas supply, said bracket member being formed adjacent its gas outlet end with a part affording a seat, a member having a gas connection with the lamp and operatively connected with said raising and lowering means so as by the operation of said means to make and break a joint with said seat, substantially as described.

3. In combination with means for raising and lowering a gas lamp, a bracket member having a gas conduit in communication with a source of gas supply, said bracket formed with a seat and including a horn-like guiding part, a member having a gas connection with the lamp and adapted to form a gas tight joint with said seat, and a device connecting said last mentioned member with said raising and lowering means and adapted to be guided by said horn-like part.

4. In combination with means for raising

and lowering a gas lamp, a bracket member having a gas conduit in communication with a source of gas supply, said bracket formed with a seat, said bracket being also formed with a receptacle for water of condensation, a member having a gas connection with the lamp and adapted to form a gas tight joint with said seat, and a device connecting said last mentioned member with the raising and lowering means.

5. In combination with means for raising and lowering a gas lamp, a bracket member having a gas conduit in communication with a source of gas supply, said bracket member formed adjacent its gas outlet end with a part affording a seat, a projection on the bracket member, a stirrup piece connectible to the lamp and having an arm adapted to engage said projection and to take a fulcrum from said projection when the lamp is being lowered, a member carried by said stirrup piece and adapted to form a joint with said seat, said last mentioned member having a gas connection with the lamp.

6. In combination with means for raising and lowering a gas lamp, a bracket member having a gas conduit in communication with a source of gas supply, said bracket member formed adjacent its gas outlet end with a part affording a seat, a valve adapted normally to engage said seat, a member having a gas connection with the lamp and adapted to form a joint with said seat, and to disengage the valve from the seat, and devices connecting said last mentioned member with said raising and lowering means, substantially as described.

7. In combination with means for raising and lowering a gas lamp, a bracket member having a gas conduit in communication with a source of gas supply, said bracket member formed with a part affording a seat, a projection on the bracket member, a stirrup piece composed of two tubes, said stirrup piece being connectible to the lamp and to the raising and lowering means and having an arm adapted to engage said projection and to take a fulcrum from said projection when the lamp is being lowered, and a member carried by said stirrup piece and adapted to form a joint with said seat, substantially as described.

8. In combination with means for raising and lowering a gas lamp, a bracket member having a gas conduit in communication with a source of gas supply and formed with a part affording a seat, a stirrup piece composed of two tubes and connectible to the lamp and to the raising and lowering means, and a member carried by said stirrup piece and adapted to form a joint with said seat.

9. The combination with a traveling carriage, of a bracket member having a gas conduit in communication with a source of gas supply and formed adjacent its gas out-

let end with a part affording a seat, means for traversing the carriage in relation to said bracket member, means connected to said carriage for raising and lowering a gas lamp, and a member having a gas connection with the lamp and operatively connected with the raising and lowering means so as by the operation of said raising and lowering means to make and break a joint with said seat.

10. In combination with means for raising and lowering a gas lamp, a bracket member having a gas conduit in communication with a source of gas supply, said bracket formed with a seat and with a guiding part, a member having a gas connection with the lamp and adapted to form a gas tight joint with said seat, and a device connecting said last mentioned member with said raising and lowering means and adapted to be guided by said guiding part.

11. In combination with a traveling carriage, means connected with said carriage for raising and lowering a gas lamp, a bracket member having a gas conduit in communication with a source of gas supply, said bracket formed with a seat and with a receptacle for water of condensation, means for traversing the carriage in relation to the bracket member, means for discharging said receptacle on movement of the carriage, a member having a gas connection with the lamp and adapted to form a gas tight joint with said seat, and a device connecting said last mentioned member with the raising and lowering means.

12. In combination with means for raising and lowering a gas lamp, a bracket member having a gas conduit in communication with a source of gas supply, said bracket member formed with a hook-like catch and with a part affording a seat, a stirrup piece connectible to the lamp and adapted to engage said catch, and a member carried by said stirrup piece and adapted to form a joint with said seat, said last mentioned member having a gas connection with the lamp.

13. In combination with means for raising and lowering a gas lamp, a bracket member having a gas conduit in communication with a source of gas supply, said bracket member formed with a part affording a seat, a projection on the bracket member, a stirrup piece composed of two tubes, said stirrup piece being connectible to the lamp and to the raising and lowering means and having an arm adapted to engage said projection to prevent the stirrup piece from being raised too far, and a member carried by said stirrup piece and adapted to form, a joint with said seat, substantially as described.

14. The combination with means for raising and lowering a gas lamp of a bracket member having a gas conduit in communica-

- tion with a source of gas supply and formed with a seat and with a hook-like catch, a tubular stirrup piece connectible to the raising and lowering means and adapted to engage said catch, and a member carried by said stirrup piece and adapted to form a joint with said seat, said last mentioned member having a gas connection with the lamp.
15. The combination with means for raising and lowering a gas lamp, of a member having a gas conduit in communication with a source of gas supply and formed with a part affording a seat, a catch, a member having a gas connection with the lamp and adapted to form a joint with said seat, and a device adapted to be engaged by said catch, said device connecting said last mentioned member with the raising and lowering means.
16. The combination with means for raising and lowering a gas lamp, of a bracket member having a gas conduit in communication with a source of gas supply and affording a seat, a catch serving as a guide, a member having a gas connection with the lamp and adapted to form a joint with said seat, and a vertically movable device connecting said member with the raising and lowering means, said device being guided in its upward movement by said catch and adapted to be lowered into engagement with said catch.
17. The combination with means for raising and lowering a gas lamp of a bracket member having a gas conduit in communication with a source of gas supply and affording a seat, a catch, a member having a gas connection with the lamp and adapted to form a joint with said seat, a projection on the bracket member, a device connecting said last mentioned member with the raising and lowering means and adapted to engage said catch, said device having an arm adapted to engage said projection and to take a fulcrum from said projection when the lamp is being lowered so as to clear said catch.
18. The combination with means for raising and lowering a gas lamp, and means for traversing the said lamp, of coöperating gas conducting members, and devices operatively connected with the raising and lowering means for making and breaking a joint between said members by the operation of the raising and lowering means.
19. The combination with means for raising and lowering a gas lamp, and means for traversing said lamp, of a bracket member having a gas conduit in communication with a source of gas supply, said bracket member being formed adjacent its gas outlet end with a part affording a seat, and a member having a gas connection with the lamp and operatively connected with said raising and lowering means so as by the operation of said raising and lowering means to make and break a joint with said seat, substantially as described.
20. In combination with means for raising and lowering a gas lamp, of means for traversing the same, a bracket member having a gas conduit in communication with a source of gas supply, said bracket formed with a seat and including a horn-like guiding part, a member having a gas connection with the lamp, and adapted to form a gas-tight joint with said seat, and a device connecting said last-mentioned member with said raising and lowering means and adapted to be guided by said horn-like part.
21. In combination with means for raising and lowering a gas lamp, and means for traversing the said lamp, a bracket member having a gas conduit in communication with a source of gas supply, said bracket member formed with a seat and with a receptacle for water of condensation, a member having a gas connection with the lamp and adapted to form a gas-tight joint with said seat, and a device connecting said last mentioned member with the raising and lowering means.
22. In combination with means for raising and lowering a gas lamp, and means for traversing the said lamp, a bracket member having a gas conduit in communication with a source of gas supply, said bracket member formed with a seat and with a receptacle for water of condensation, a member having a gas connection with the lamp and adapted to form a gas-tight joint with said seat, a device connecting said last mentioned member with the raising and lowering means, and means for discharging the receptacle on the operation of the traversing means.
23. In combination with means for raising and lowering a gas lamp, and means for traversing said lamp, a bracket member having a gas conduit in communication with a source of gas supply, said bracket member formed adjacent its gas outlet end with a part affording a seat, a valve adapted normally to engage said seat, a member having a gas connection with the lamp and adapted to form a joint with said seat, and to disengage the valve from the seat, and devices connecting said last mentioned member with said raising and lowering means, substantially as described.
24. The combination with means for raising and lowering a gas lamp, of means for traversing said lamp, coöperating gas conducting members, and devices operable by the act of raising and lowering the lamp for breaking and making a joint between said members.
25. The combination with means for raising and lowering a gas lamp, of means for traversing said lamp, a bracket member having a gas conduit in communication with a

source of gas supply and formed with a part affording a seat, and a member having a gas connection with the lamp and adapted to be raised and lowered, so as to break and make a joint between said members by the act of raising and lowering the lamp.

26. The combination with means for raising and lowering a gas lamp, of means for traversing the said lamp, a member having a gas conduit in communication with a source of gas supply and provided with a seat, a member having a gas connection with the lamp and adapted to make a joint with said seat, and a device connectible to the lamp and to the raising and lowering means whereby said joint is broken when the lamp is lowered.

27. In combination with means for raising and lowering a gas lamp, means for traversing said lamp, a bracket member having a gas conduit in communication with a source of gas supply, said bracket member being provided with a detachable seat, a member having a gas connection with the lamp and operatively connected with said raising and lowering means so as by the operation of said means to make and break a joint with said seat, substantially as described.

28. In combination with means for raising and lowering a gas lamp, means for traversing said lamp, a bracket member having a gas conduit in communication with a source of gas supply, said bracket formed with a seat and with a guiding part, a member having a gas connection with the lamp and adapted to form a gas tight joint with said seat, and a device connecting said last mentioned member with said raising and lowering means and adapted to be guided by said guiding part.

29. In combination with means for raising and lowering a gas lamp, and means for traversing said lamp, a bracket member having a gas conduit in communication with a source of gas supply, said bracket member formed with a hook-like catch and with a part affording a seat, a stirrup piece connectible to the lamp and adapted to engage said catch, and a member carried by said stirrup piece and adapted to form a joint with said seat, said last mentioned member having a gas connection with the lamp.

30. In combination with means for raising and lowering a gas lamp, means for traversing said lamp, a bracket member having a gas conduit in communication with a source of gas supply, said bracket member formed adjacent its gas outlet with a part affording a seat, a valve adapted normally to close said outlet, a member having a gas connection with the lamp and adapted to form a joint with said seat, and fitted with a pin to disengage the valve from the outlet, and devices connecting said last men-

tioned member with said raising and lowering means, substantially as described.

31. In combination with means for raising and lowering a gas lamp, a bracket member having a gas conduit in communication with a source of gas supply, said bracket member having a part affording a seat, a projection on the bracket member, a member connectible with the lamp, and having a part adapted to engage said projection to prevent said member from being raised too far, and a member carried by said last mentioned member and adapted to form a joint with said seat, substantially as described.

32. The combination with means for raising and lowering a gas lamp, and means for traversing the same, of coöperating gas conducting members, one of which affords a catch, and devices operatively connected with the raising and lowering means for making and breaking a joint between said members by the operation of the raising and lowering means.

33. The combination with means for raising and lowering a gas lamp, and means for traversing said lamp, of a member having a gas conduit in communication with a source of gas supply and formed with a part affording a seat, a catch, a member having a gas connection with the lamp and adapted to form a joint with said seat, and a device adapted to be engaged by said catch, said device connecting last mentioned member with the raising and lowering means.

34. The combination with means for raising and lowering a gas lamp, and means for traversing said lamp, of a bracket member having a gas conduit in communication with a source of gas supply and affording a seat, a catch serving as a guide, a member having a gas connection with the lamp and adapted to form a joint with said seat, and a vertically movable device connecting said member with the raising and lowering means, said device being guided in its upward movement by said catch and adapted to be lowered into engagement with said catch.

35. The combination with means for raising and lowering a gas lamp of a bracket member having a gas conduit in communication with a source of gas supply and affording a seat, a catch, a member having a gas connection with the lamp and adapted to form a joint with said seat, a projection on the bracket member, a device connecting said last mentioned member with the raising and lowering means and adapted to engage said catch, said device having an arm adapted to engage said projection on upward and downward movement of said device, so as to prevent excess upward movement and to take a fulcrum from said projection on its downward movement.

36. The combination with a rope, a gas
conducting pipe suspended from said rope,
a fixed bracket member having a gas con-
duit in communication with said pipe and
5 provided with a seat at its outlet end, a car-
riage, means for causing said carriage to
travel along said rope toward and from said
bracket member, means connected to said
carriage for raising and lowering a gas
10 lamp, and a gas conducting member con-
nectible to the lamp and to said raising and
lowering means and adapted to make a joint
with said seat.

37. The combination of a bracket member
15 having a gas conduit in communication with
a source of gas supply and formed with a
seat, a carriage adapted to travel in rela-

tion to said bracket, a pulley on said car-
riage, a stirrup piece, a pulley on said stir-
rup piece, a rope connected to said carriage 20
and passed around both said pulleys, and
a member carried by said stirrup piece and
adapted to form a joint with said seat, said
last mentioned member having a gas con-
nection with the lamp.

In testimony whereof we have signed our
names to this specification in the presence
of two subscribing witnesses. 25

JAMES KEITH.
GEORGE KEITH.

Witnesses:

WALLACE CRANSTON FAIRWEATHER,
JOHN McCLEARY.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."