

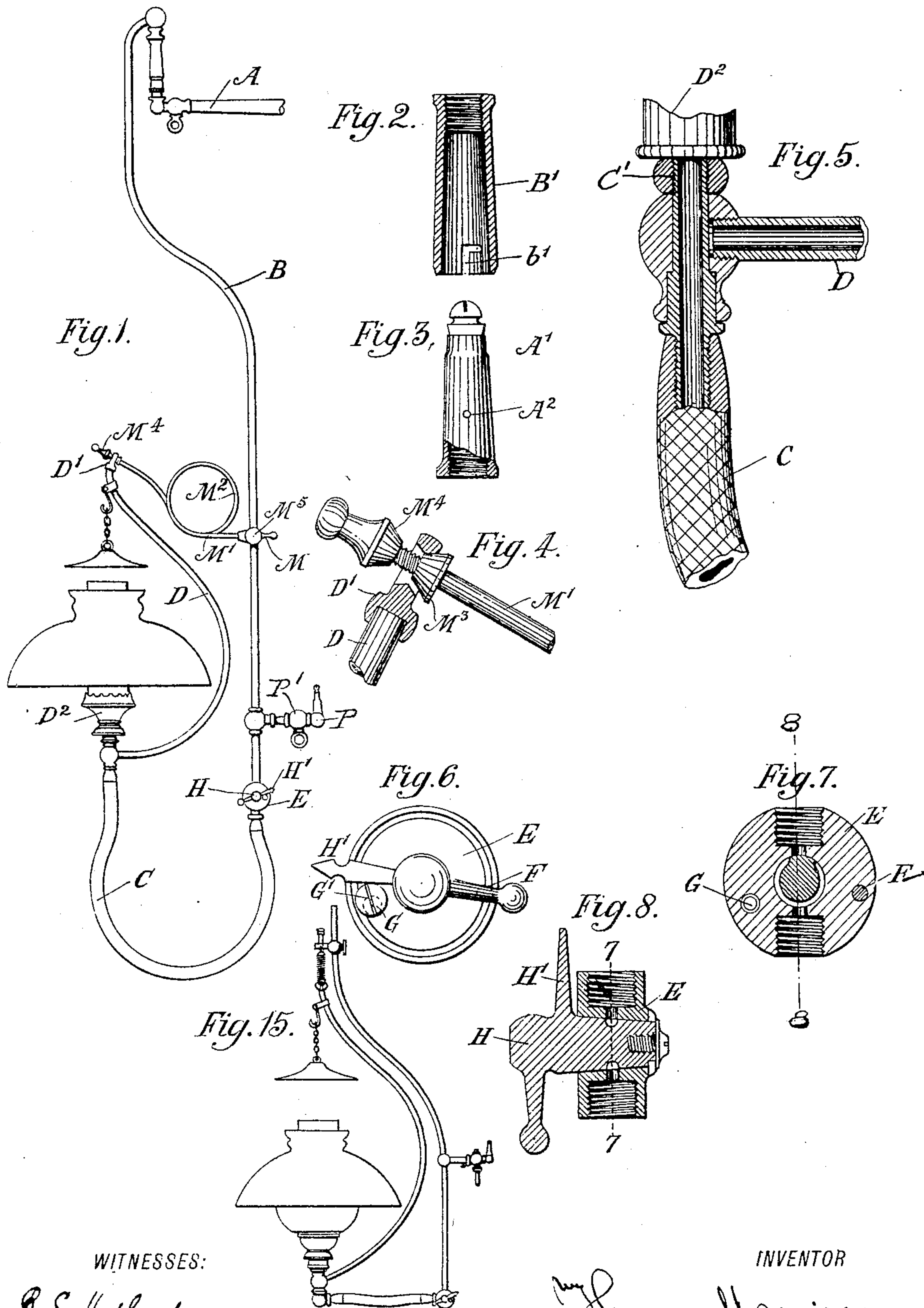
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PATENTED NOV. 7, 1905.

T. MAGUIRE.
GAS LIGHT.

APPLICATION FILED JULY 5, 1904.

2 SHEETS—SHEET 1.



WITNESSES:

R. S. Hubbard.

A. E. W. Frazer.

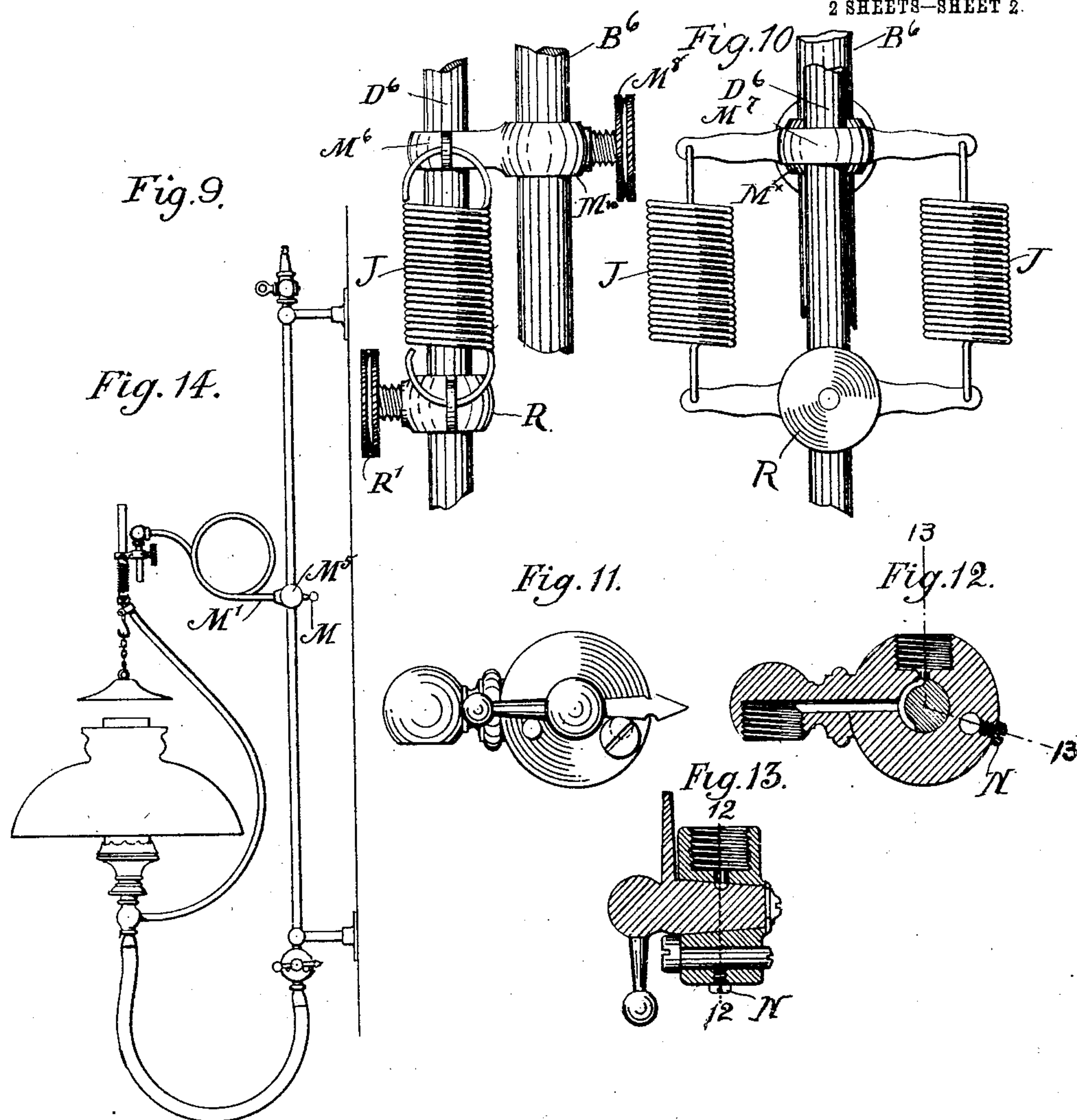
INVENTOR

Thomas Maguire
Thomas Drew Stetson
ATTORNEY

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Thomas Maguire
BY
Thomas D. Stetson
ATTORNEY

UNITED STATES PATENT OFFICE.

THOMAS MAGUIRE, OF NEW YORK, N. Y., ASSIGNOR TO STAR LAMP COMPANY, OF NEW YORK, N. Y.

GAS-LIGHT.

No. 803,837.

Specification of Letters Patent.

Patented Nov. 7, 1905.

Application filed July 5, 1904. Serial No. 215,234.

To all whom it may concern:

Be it known that I, THOMAS MAGUIRE, a citizen of the United States, residing in the borough of Manhattan, in the city and State of New York, have invented a certain new and useful Improvement in Gas-Lights, of which the following is a specification.

The improvement may be used with advantage in connection with other kinds of lights; but I will first describe it as used in a drop-light with what are known as "Welsbach mantles." These pervious incombustible casings are desirable for important reasons, but are so fragile that they are liable to be broken by even the slight concussions to which lights suspended in the ordinary manner are subjected by movements on the floor above. I will describe my drop-light as adapted to be used with an ordinary gas-tip on a stationary bracket in the long-approved manner—a rigid tube extending down from the permanent gas-fixture above and equipped with a coupling which is easily connected and disconnected by hooking onto the stationary gas-burner and unhooking therefrom. I provide a loop of flexible hose in the connection which supplies the gas, adapted to allow a liberal range of adjustments in the height of the light, and I provide easily-operated means for instantly adjusting the light in higher or lower positions to any required extent and holding it in the required condition by gravity. I provide means in addition to gravity for still further insuring the reliability of the adjustment. I provide for easily locking and again liberating the engagement of the drop-light on the permanent tip, so that the slight amount of force required to lift and lower cannot, except by intentional turning, ever disengage the drop-light, and I provide means for allowing the controlling-cock to be turned into the open position and also to be closed or manipulated with freedom and dash to set it, as is frequently required, in the partially-closed condition just sufficiently open to maintain the flame without unnecessary waste.

The following is a description of what I consider the best means of carrying out the invention.

The accompanying drawings form part of this specification.

Figure 1 is a general side elevation showing the drop-light hooked onto a stationary

burner. Figs. 2, 3, 4, 5, 6, 7, and 8 show details on a larger scale. Fig. 2 is a central vertical section. Fig. 3 is a side view partly in central vertical section. Fig. 4 is a side view partly in section. Fig. 5 is a side view partly in section. Fig. 6 is a front view of a cock which gives some peculiar advantages. Fig. 7 is a vertical section on the line 7 7 in Fig. 8, and Fig. 8 is a vertical section on the line 8 8 in Fig. 7. The remaining figures show modifications. Fig. 9 is a side view showing a modification in the provisions for adjusting the vertical height and the substitution of two separately-formed springs for the spring-arm before shown. Fig. 10 is a corresponding front view. Fig. 11 is a face view of the cock applied at an angle in the pipes. Fig. 12 is a corresponding section on the line 12 12 in Fig. 13. Fig. 13 is a section on the angular line 13 13 in Fig. 12. Fig. 14 is a side view of my invention applied to a wall-bracket. Fig. 15 is a side view of the lower portion of a drop-light, showing a modification.

Similar letters of reference indicate corresponding parts in all the figures where they appear.

Referring to Figs. 1 to 8, inclusive, A is an ordinary arm of a stationary gas-fixture, A' the burner, and A² a pin projecting from the side of the burner. B is a gracefully-curved pipe adapted to convey the gas, extending down with a straight portion, which is utilized for a considerable range of vertical adjustment of the light, as will presently appear. B' is a cap carried on its upper end, adapted to fit on A', having an inverted-L-shaped slot b'. After the drop-light is hooked on the burner A' it may be turned or partially rotated in the horizontal plane, so that the pin A², which has been received in the vertical part of the slot b', will be engaged in the horizontal part of the slot. This connection, sometimes termed a "bayonet-joint," insures that when a lifting force is afterward applied in the adjustments to be effected in the parts below the burner A' is certain to remain positively connected until the pendent parts are partially revolved horizontally back to the disengaging position.

M is a slide fitting loosely on the straight portion, and M' an arm of stout hard brass wire extending laterally therefrom, having a coil M² formed therein, which gives it much

elasticity. Its free end is screw-threaded and inclines upward and is equipped with a conical collar M^3 and carries an adjustable nut M^4 , coned in the opposite direction. These
 5 take hold with any required degree of tightness of the eye D' , formed on the upper end of the curved suspension-rod D , which carries the burner D^2 . This rod may be for convenience or artistic effect a tube of about the
 10 same size as the gas-tube B ; but its tubular structure is not important, its function being simply that of a support for the burner, the gas being furnished through the flexible tube C below, which maintains the connection between the lower end of B and the burner D^2 ,
 15 with a wide range of changes in the elevation of the latter.

The slide M is so short and the arm M' is so long that the weight depending from the
 20 arm by its effort to turn the slide causes it to "bind" strongly on the pipe B .

E is the body or casing of a stop-cock controlling the flow of gas through the pipe B . It gives, besides the ordinary facilities for turning the gas on and off at will, provisions for
 25 stopping its revolutions in either of two exactly-predetermined positions. This is especially important in insuring instant and exact adjustment in a partially-closed condition
 30 when required. The general form of the body of this cock is a short cylinder. It is connected to the pipes above and below in the ordinary manner.

H is the plug. It has two rigid arms H' H^2 ,
 35 the first near the body E and serves to make contacts with the two stops to be presently described. The second may serve as an operating-lever set at a greater distance from the body E , so that it may be moved freely
 40 over and past the stops.

F is a plain ordinary screw set in one face of the circular body and projecting from the face to serve as a stop on turning the gas off entirely when required. G is a screw set in
 45 another part of the same face of the cock, peculiar in the fact that it has a large head G' set eccentrically on its body. By partially turning the screw the position of the head may be changed, so that it will stop the arm
 50 H' in different positions. Mounted in the axis of the body E is a plug H , provided with an arm H' , which when the plug is turned into position which gives a small quantity of gas, only sufficient to maintain the flame, strikes
 55 the eccentric head G' and is arrested. When it is required to make a change so as at each subsequent operation to increase or diminish the supply of gas in this slightly-opened condition, it is necessary simply to turn the eccentrically-headed screw G a little in one direction or the other, so that the plug will be
 60 arrested earlier or later in its turning.

No care is required to open the cock except to turn it until the arm H' is approximately
 65 vertical. The form of the passage in the

plug allows a considerable range of position in this regard without affecting the flow.

No care is required to close the cock except to turn the arm H' to the right until it strikes the stop F . 70

No care is required to set the cock exactly in some previously-determined partially-closed position except to turn the cock in the opposite direction—the left—until the arm H' strikes the eccentric head G' . 75

One advantage is that the cock can be turned without any precaution either into the closed or partially-closed condition. Turning it to the right, with or without any excess of force, until it strikes the screw F leaves the gas-
 80 passage tightly stopped, and turning it to the left until it strikes the stop G' leaves it with the small flow, which is often desired to maintain the flame, but with a very small consumption of gas. 85

N , Figs. 12 and 13, is a pinching-screw adapted to hold the stop G G' with great firmness in any position in which it has been set.

P is what I will term an "emergency-burner." It may be an ordinary gas-burner
 90 receiving gas from the same pipe B as the principal burner controlled by the cock P' . This should be an ordinary tip adapted to endure concussion. Its chief use is to serve in case of accident to any portion of the principal
 95 parts. It may be also of service in rare cases when two lights shall be needed. Under ordinary conditions the cock P' is kept closed.

Modifications may be made without departing from the principle or sacrificing the advantages of the invention. There may be an ordinary globe, shade, &c. (not shown on the stationary fixture) adapted to serve as usual when my drop-light is removed. Instead of
 100 a long arm M' from the adjustable slide M , with the elasticity in a coil M^2 in the arm itself, the invention may be worked with other provisions for supporting the light at different levels and giving elastic action. In Figs.
 105 9 and 10 there is a very short arm M^6 , having little or no elastic action in itself, and the drop-rod or its equivalent D^6 , corresponding to D of Fig. 1, plays up and down through an eye in the arm M^6 , and the support is obtained through two helical springs J J , one on
 110 each side, connecting short lateral arms M^7 (see Fig. 10) with corresponding arms on a slide R , which embraces the drop-rod D^6 and is held in place by a screw R' . The arm M^6 is carried in the slide M^{10} , which latter is held
 115 on the tube B^6 by a binding-screw M^8 . 120

Figs. 10, 11, and 12 show the cock in an angle in the pipes.

Parts of the invention may be used with some success without others. 125

Instead of the long pendent loop shown in Fig. 1 the flexible tubular connection may be much shorter and nearly horizontal, as shown in Fig. 15. Such will accommodate the elastic support, which is an important quality of the
 130

invention, but is not as good as the loop form in providing for great changes in the level of the light.

Instead of applying to a detachable drop-light the elastic and adjustable qualities may be developed by attaching the connections with the desired elasticity and adjustability on a permanent upright tube adjacent to a wall—what may be called a “bracket-light.” (Such is shown in Fig. 14).

The general form shown in Figs. 1 and 14 is preferable to that in Fig. 15, for the reasons, among others, that it is simpler, cheaper, and less liable to derangement to have the elasticity in the arm itself and that the considerable length of arm in said earlier figures gives it a leverage which causes the short slide M to bind on the tube B, so as to retain its place reliably under all ordinary conditions without ever tightening the binding-screw M⁵. The latter may be used only for still greater security in any case. To adjust the height of the light in the form shown in Figs. 1 and 14, touch the slide M with a finger of one hand and the nut M⁴ with a finger of the other hand, lifting the latter more than the former, the arm is inclined more than shown, and the short slide M relaxes its grip on the pipe B. If the binding-screw M⁵ has not been previously slackened, that should now be done, and the slide and its attachments may be raised or lowered. When such movement has proceeded sufficiently, the binding-screw M⁵ may be tightened, or in most cases the support by the finger may be relaxed under the nut M⁴ and the adjustment of the binding-screw may be dispensed with, and the slide M and its attachments will be sufficiently held up by the grip by which the slide will take hold of the upright simply by its tendency to assume an inclined position.

It will usually be found in putting the parts together that the bend of the supporting-rod D does not lie in the same plane as the drop-tube B. In such case the connection of the parts should be turned by seizing them with pliers and applying a sufficient force. C' is a coupling which, it will be understood, extends up into the burner D², adapting the invention to be used with different makes of burners. I have in my experiments set this coupling down gently at first and tightened it after the parts have been turned into their true positions; but it will serve well if set moderately tight and left so that it can be turned at any later period, if desired; but it should be set so tightly as to stay with sufficient force to avoid accidental displacement.

I claim as my invention—

1. In a gas-burner of the class described a yielding support adapted both to serve at different elevations and to relieve concussions, comprising a short slide M engaged loosely on a fixed gas-pipe and a long arm M' rigidly connected thereto adapted to be set free by

tilting and to be instantly shifted to different levels and to hold itself at different heights all substantially as herein specified.

2. In a gas-burner of the class described a yielding support adapted both to serve at different elevations and to relieve concussions, comprising a short slide M engaged loosely on a fixed gas-pipe and a long arm M' rigidly connected thereto adapted to be set free by tilting and to be instantly shifted to different levels and to hold itself at different heights thereon, in combination with a flexible hose C forming a pendent loop arranged to supply the gas at a wide range of elevation all substantially as herein specified.

3. In a gas-burner of the class described a yielding support adapted both to serve at different elevations and to relieve concussions, comprising a short slide M engaged loosely on a fixed gas-pipe and a long arm M' rigidly connected thereto adapted to be set free by tilting and to be instantly shifted to different levels and to hold itself at different heights thereon, in combination with a flexible hose C forming a pendent loop a support A adapted to serve also as an ordinary burner and locking means b' for engaging and disengaging relatively to the latter all substantially as herein specified.

4. In a gas-burner of the class described a yielding support adapted both to serve at different elevations and to relieve concussions, comprising a short slide M engaged loosely on a fixed gas-pipe and a long arm M' rigidly connected thereto adapted to be set free by tilting and to be instantly shifted to different levels and to hold itself at different heights thereon, in combination with a flexible hose C forming a pendent loop and with a binding-screw M⁵ adapted to make the holding more secure when required all substantially as herein specified.

5. In a gas-burner of the class described a yielding support adapted both to serve at different elevations and to relieve concussions, comprising a short slide M engaged loosely on a fixed gas-pipe and a long arm M' rigidly connected thereto adapted to be set free by tilting and to be instantly shifted to different levels and to hold itself at different heights thereon in combination with a flexible hose C forming a pendent loop and with a cock-body carrying stops F and G and a cock-plug H having an arm H' to play against such stops all arranged for joint operation substantially as herein specified.

6. In a gas-burner of the class described a yielding support adapted both to serve at different elevations and to relieve concussions, comprising a short slide M engaged loosely on a fixed gas-pipe and a long arm M' rigidly connected thereto, adapted to be set free by tilting and to be instantly shifted to different levels and to hold itself at different heights thereon, in combination with a flexible hose

C forming a pendent loop and with a cock-body carrying stops F and G and a cock-plug H having an arm H' arranged to play against such stops provisions by the eccentric-
5 ally-set head G' for adjusting the position of the stop G and means for holding such stop reliably in adjustment all substantially as herein specified.

In testimony that I claim the invention above set forth I affix my signature in presence of 10 two witnesses.

THOMAS MAGUIRE.

Witnesses:

THOMAS DREW STETSON,
ANNE E. W. FRAZER.