

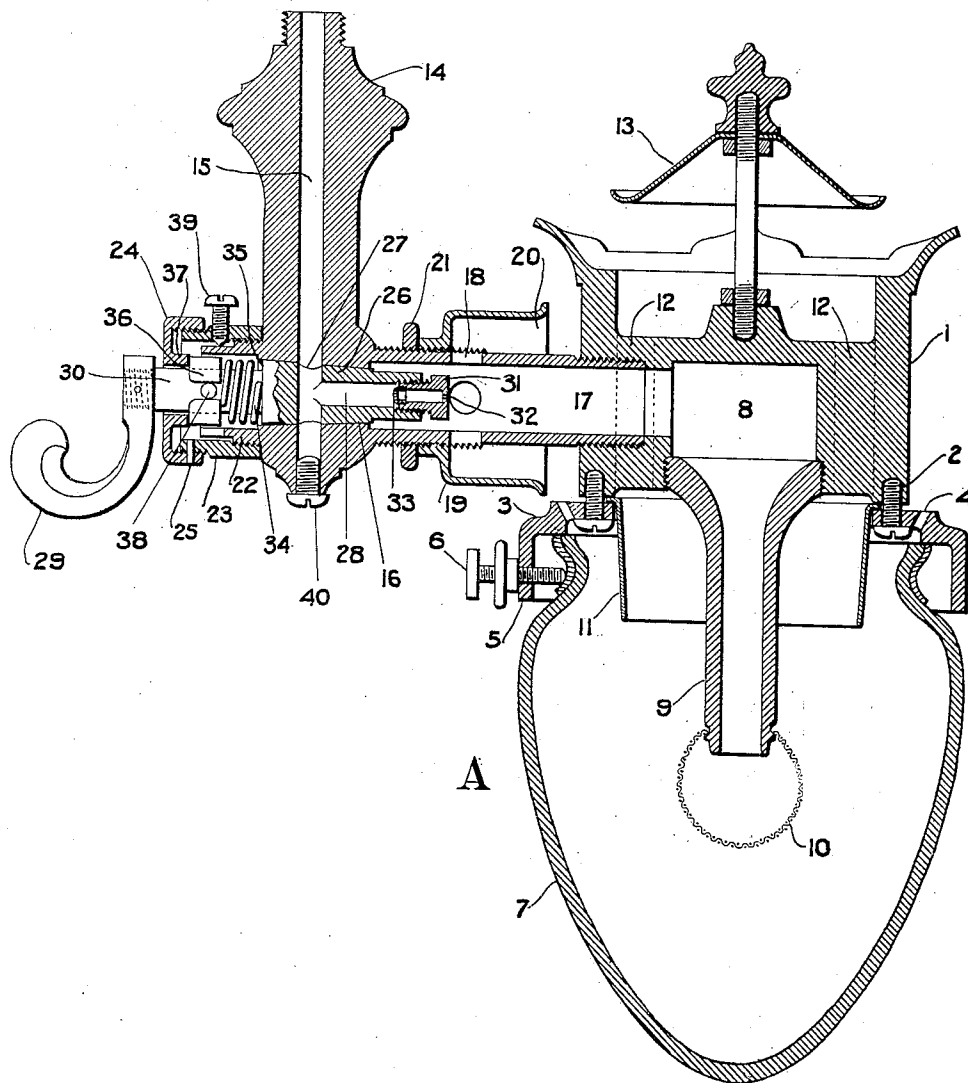
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R. M. DIXON.

GAS LAMP.

APPLICATION FILED MAY 6, 1905.



WITNESSES:

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GAS-LAMP.

No. 813,487.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, ROBERT M. DIXON, residing at East Orange, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Gas-Lamps, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to gas-lamps and the like, and is especially adapted for use in connection with car-lighting systems, although capable of use as to various features in a variety of relations. One of the objects thereof is to provide a practical device of this type wherein a gas-regulating cock may be easily and readily returned and secured in its proper position after being removed for cleaning, repairing, or renewal.

Another object is to provide a detachable inspirator-nozzle and screen for a gas-regulating cock so constructed as to be removable with said cock and easily detached therefrom when it is found necessary to clean, repair, or renew the same.

Another object is to so construct a lamp that the gas and air employed for purposes of combustion are thoroughly mixed before entering the burning-nozzle.

Other objects will be in part obvious and in part pointed out hereinafter.

The invention accordingly consists in the features of construction, combinations of elements, and arrangement of parts, which will be exemplified in the device hereinafter described and the scope of the application of which will be indicated in the following claims.

The accompanying drawing represents a vertical sectional view of one of various possible embodiments of my invention.

As tending to render better understood certain features of my invention, it may here be noted that I have illustrated a type of lamp in which an incandescent mantle is employed, and in such lamp it is desirable that the various operative parts be as readily detachable as possible in order that the mantle may not be disturbed or injured. In this connection it may be noted that in lamps of the above type the detaching and removing of the various parts must be performed with the greatest care in order to avoid injury to the fragile mantle, and as it is impracticable

to employ skilled labor to perform this work damage to the mantle is likely to result from the jarring or shock incident to the accomplishment of the above purposes. For this reason I have found it desirable that the gas-regulating means be so constructed as to be readily removed from the body of the lamp when cleaning, repairing, or renewal of any of the parts is necessary and that the assembling of said parts to their proper positions may be accomplished without the aid of a skilled workman. Lamps of this type consume in their operation a mixture of gas and air, and it is also desirable that the mixture be as complete as possible before the same reaches the burner-nozzle.

Referring to the drawing, the body 1 of the lamp A has mounted thereon and attached by suitable means, as the screws 2, a supporting member 3, provided with air-inlet openings 4 and a downwardly-projecting flange 5, to which is secured by suitable means, as in this instance set-screws 6, a translucent dome 7. A mixing-chamber 8 of substantial size is provided in the body of the lamp and is adapted to deliver a mixture of gas and air into a burner-nozzle 9, leading from the said mixing-chamber 8, and at the lower end of which is secured a mantle 10. By the term "burner-nozzle" as herein used in the specification and claims I mean that part of the device at which combustion takes place. An annular shell 11 is positioned between the supporting member 3 and the lamp-body 1 and is adapted to guide the products of combustion into the vent-openings 12 (shown by dotted lines) in the body 1 of the lamp, said products being conducted therethrough and thence out of said lamp to the atmosphere, passing under a deflector 13, suitably secured to said lamp-body. A fixture 14, comprising angularly-arranged gas-supply conduits 15 and 16 and a mixing-tube 17, provided with an air-inlet aperture 18, is secured to the lamp-body 1. The mixing-tube 17 leads into the mixing-chamber 8, preferably at an angle to or out of alinement with the burner-nozzle 9, and has mounted detachably on the exterior thereof a shield 19, having a bell-shaped mouth 20. This shield extends over the air-inlet aperture 18 and is adapted to conduct air thereto, being held in adjustment on said mixing-tube by means of the lock-nut 21.

Positioned on an externally-threaded extension 22 of the fixture 14 and engaging the wall thereof is a sleeve 23, externally threaded at one end, the opposite end being threaded internally for engaging the threaded extension 22, and having mounted thereon a flanged cap 24, said cap when the parts are in their proper position being adapted to be permanently secured to said sleeve 23 by means of a pin 25.

A gas-regulating cock 26, provided with openings 27 and 28, extends into the mixing-tube 17 and is adapted to be operated by means of a handle 29, attached to a shaft 30, extending from said gas-regulating cock. The opening 27 is adapted to register with conduit 15 of the fixture 14, and the opening 28 leads into a detachable inspirator-nozzle 31, threaded into the end of the gas-regulating cock 26 and arranged adjacent the air-inlet aperture 18 of the mixing-tube 17. The inspirator-nozzle is provided with a gas-exit aperture 32 and a screen 33, adapted to separate foreign matter from the gas passing therethrough. By the term "inspirator-nozzle" as herein used in this specification and claims I mean that part of the device adapted to project a jet of gas across an air-inlet aperture, thereby drawing in a proper proportion of air by inspiration to be mixed with said gas for the purposes of combustion. The spring 34 encircles the shaft 30 and engages at one end the shoulder 35 of the gas-supply cock and at the other end a split ring 36, located on said shaft, which in turn is engaged by a flange 37 on the cap 24. The split ring 36 has a sliding engagement with the shaft 30, but is compelled to turn therewith by means of the stud 38, extending from said shaft and engaging the lips of said ring. A set-screw 39, threaded through the sleeve and engaging the extension 22, maintains the parts in the operative position, as shown in the drawing. It will thus be seen that in making the initial adjustment of the gas-supply cock 26, the sleeve 23 having been adjusted to the position shown and secured by the set-screw 39, all that is required to be done is to adjust the flanged cap 24 on the sleeve 23 to bring the spring 34 under the required tension to maintain said gas-supply cock in its proper position and then insert the pin 25 to permanently secure the cap 24 thereon. This may be done by a skilled workman at the factory. When thereafter the parts are to be positioned by a porter or other ordinary workman in charge of the lamps, such work may be accomplished by simply screwing the parts together until the sleeve 23 abuts the wall of the fixture 14 in the position shown.

It is desirable to form a trap in connection with the gas-supply conduit which shall act to trap the foreign matter carried thereby. This may be conveniently and effectually ac-

complished, as in the construction shown, by extending the end of the conduit through the fixture 14 and closing the end thereof by a set-screw 40. Thus a trap is formed in a simple and convenient manner which may be cleaned by simply unscrewing the set-screw, thus obviating the necessity of a disturbance of other parts of the device.

While in the construction herein illustrated and described I have shown the inspirator located adjacent the lamp and within the effective zone or sphere of radiant heat emitted by said lamp, I desire it to be understood that I make no claim in this application to such feature of construction.

Having described my invention, its operation should be obvious. The gas-regulating means can be readily detached by simply unscrewing the set-screw 39, allowing the removal of said means in its entirety. The tension of the spring employed to automatically maintain the gas-supply cock in adjustment being once determined remains constant as long as the sleeve 23 engages the walls of the fixture 14. Through the provision of a mixing-chamber of substantial size and one into which the gas and air enter in a direction at an angle to or out of alinement with the burner-nozzle there is insured a more complete mixture and a steady stream at the burner-nozzle, resulting in a more thorough combustion.

It will therefore be seen that I have devised a lamp characterized by simplicity of construction and at the same time one in which the parts can be quickly and easily detached or assembled without disturbing the lamp itself, thus reducing to a minimum the likelihood of injury to the mantle. Obviously, however, various features of the invention may be used in a variety of relations with various types of lamps.

As many changes could be made in the above construction and many apparently widely different embodiments of my invention could be made without departing from the scope thereof, I intend that all matter contained in the above description or shown in the accompanying drawing shall be interpreted as illustrative and not in a limiting sense.

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

1. In a gas-lamp, in combination, a gas-supply cock, an inspirator-nozzle carried thereby, and a screen carried by the inspirator-nozzle.

2. In a gas-lamp, in combination, an adjustable gas-supply cock, an inspirator-nozzle carried thereby, and a screen carried by the inspirator-nozzle.

3. In a device of the class described, in combination, a mixing-tube, a gas-supply cock, an inspirator-nozzle, carried thereby, a screen carried by the inspirator-nozzle, and

means for adjusting the gas-supply cock in the mixing-tube.

4. In a device of the class described, in combination, a mixing-tube, a gas-supply cock, a shaft extending from said gas-supply cock, and means on the shaft for adjusting the gas-supply cock in the mixing-tube.

5. In a device of the class described, in combination, a gas-supply cock, a shaft extending therefrom, said gas-supply cock being provided with a shoulder, a spring located upon the shaft, a collar also located upon the shaft and fixed against rotation, and means coacting with the collar upon the spring to regulate the tension of the same to hold the gas-supply cock in adjustment.

6. In a device of the class described, in combination, a lamp-body, an incandescent mantle arranged therein, a fixture secured to the lamp-body and adapted to provide a gas-supply for the lamp, means located in the fixture for regulating the gas-supply, an extension on the fixture, a sleeve carried by the extension, and means carried by the sleeve for holding the gas-regulating means in adjustment in the fixture.

7. In a device of the class described, in combination, a lamp-body, an incandescent mantle arranged therein, a fixture secured to the lamp-body and adapted to provide a gas-supply for the lamp, means located in the fixture for regulating the gas-supply, an extension on the fixture, a sleeve located upon the extension, and a cap carried by the sleeve and adapted to maintain the gas-regulating means on the fixture.

8. In a device of the class described, in combination, a lamp-body, an incandescent mantle arranged therein, a fixture secured to the lamp-body and adapted to provide a gas-supply to the lamp, means located in the fixture for regulating the gas-supply, an extension on the fixture, a sleeve mounted upon the extension, a cap adjusted upon the sleeve and maintaining the gas-regulating means in the adjusted position.

9. In a device of the class described, in combination, a lamp-body, an incandescent mantle arranged therein, a fixture secured to the lamp-body and adapted to provide a gas-supply to the lamp, means located in the fixture for regulating the gas-supply, an extension on the fixture, a sleeve mounted upon the extension, a cap carried by the sleeve and adapted to be initially adjusted thereto to determine the adjustment of the gas-regulating means, and means for permanently securing the cap to the sleeve.

10. In a device of the class described, in combination, a lamp-body, an incandescent mantle arranged thereon, a fixture secured to the lamp-body and adapted to provide a gas-supply to the lamp, means located in the fixture for regulating the gas-supply, an extension on the fixture, a shaft carried by the

gas-regulating means, a collar slidably mounted upon said shaft, and means carried by the extension acting upon the collar located upon the shaft for holding said gas-regulating means in adjustment in the fixture.

11. In a device of the class described, in combination, a lamp-body, an incandescent mantle arranged therein, a fixture secured to the lamp and adapted to provide a gas-supply to the lamp, means located in the fixture for regulating said gas-supply, a shaft extending from said gas-supplying means, a collar encircling said shaft, a spring also encircling said shaft, and means on the fixture and operating upon the spring through said collar to regulate the tension thereof to maintain the gas-regulating means in adjustment in the fixture.

12. In a device of the class described, in combination, a lamp-body, an incandescent mantle arranged therein, a fixture secured to the lamp-body and adapted to supply gas to the lamp, means located in the fixture for regulating said gas-supply, a shaft extending from the gas-regulating means, a spring encircling said shaft, a split ring also encircling said shaft and adapted to slide thereon and engage the spring, and means carried by the fixture and coacting with said split ring to maintain the gas-regulating means in adjustment in the fixture.

13. In a device of the class described, in combination, a lamp-body, an incandescent mantle arranged therein, a fixture secured to the lamp and adapted to supply gas to the lamp, means located in the fixture for regulating said gas-supply, a shaft extending from said gas-regulating means, a spring and a ring encircling said shaft, an extension carried by the fixture, and means mounted upon the extension and coacting with the ring to regulate the tension of the spring, thereby maintaining the gas-regulating means in adjustment in the fixture.

14. In a device of the class described, in combination, a lamp-body, an incandescent mantle arranged therein, a fixture secured to the lamp-body and adapted to provide a gas-supply for the lamp, means located in the fixture for regulating said gas-supply, a shaft extending from the gas-regulating means, a spring and a split ring encircling said shaft, an extension on the fixture, a cap carried by the extension and adapted to be initially adjusted thereon to regulate the tension of the spring through the medium of said split ring to determine the adjustment of the gas-regulating means, and means for permanently securing said cap to said sleeve.

15. In a device of the class described, in combination, a lamp-body, an incandescent mantle arranged therein, a fixture secured to the lamp-body and adapted to provide a gas-supply to the lamp, means located in the fixture for regulating said gas-supply, a shaft

extending from the gas-regulating means, a spring and a split ring encircling said shaft, an extension on the fixture, a sleeve mounted upon the extension, a cap carried by the sleeve and adapted to be initially adjusted thereon to determine the tension of the spring, thereby maintaining the gas-regulating means in adjustment, means for permanently securing said cap to said sleeve after such initial adjustment, and means carried by the sleeve engaging the extension for securing all the parts in permanent adjustment.

16. In a device of the class described, in combination, a lamp-body, a mantle secured therein, gas-regulating means carried by the lamp-body, a detachable nozzle carried by the gas-regulating means and a screen carried by the detachable nozzle.

17. In a device of the class described, in combination, a lamp-body, a mantle secured therein, a fixture carried by the lamp-body and adapted to provide a gas-supply to the lamp, gas-regulating means located in the fixture, a detachable inspirator-nozzle carried by the gas-regulating means, a screen carried by the inspirator-nozzle, and means carried by the fixture for maintaining the gas-regulating means in adjustment in the fixture.

18. In a device of the class described, in combination, a lamp-body, a mantle arranged therein, a fixture secured to the lamp-

body and adapted to provide a gas-supply to the lamp, gas-regulating means located in the fixture, a detachable inspirator-nozzle carried by the gas-regulating means, a screen provided in the detachable inspirator-nozzle, means for maintaining the gas-regulating means in adjustment in the fixture, and single means adapted to be operated to allow the removal of the gas-regulating means, the detachable nozzle, and the adjusting means from the fixture.

19. In a device of the class described, in combination, a lamp-body, a fixture detachably connected thereto and adapted to conduct gas therein said fixture being provided with a gas-conducting conduit extending therefrom and being also provided with a second conduit intercepting the first-mentioned conduit above the lower end thereof to form a trap thereby in the lower end of said first-mentioned conduit adapted to collect foreign matter from the gas before the same enters the lamp-body, a gas-regulating cock arranged at the intersection of said conduits, and a detachable plug for closing the trap whereby the same may be cleaned without disturbing the other parts of the fixture.

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

ROBERT M. DIXON.

Witnesses:

ELMER E. ALLBEE,
F. P. WARFIELD.