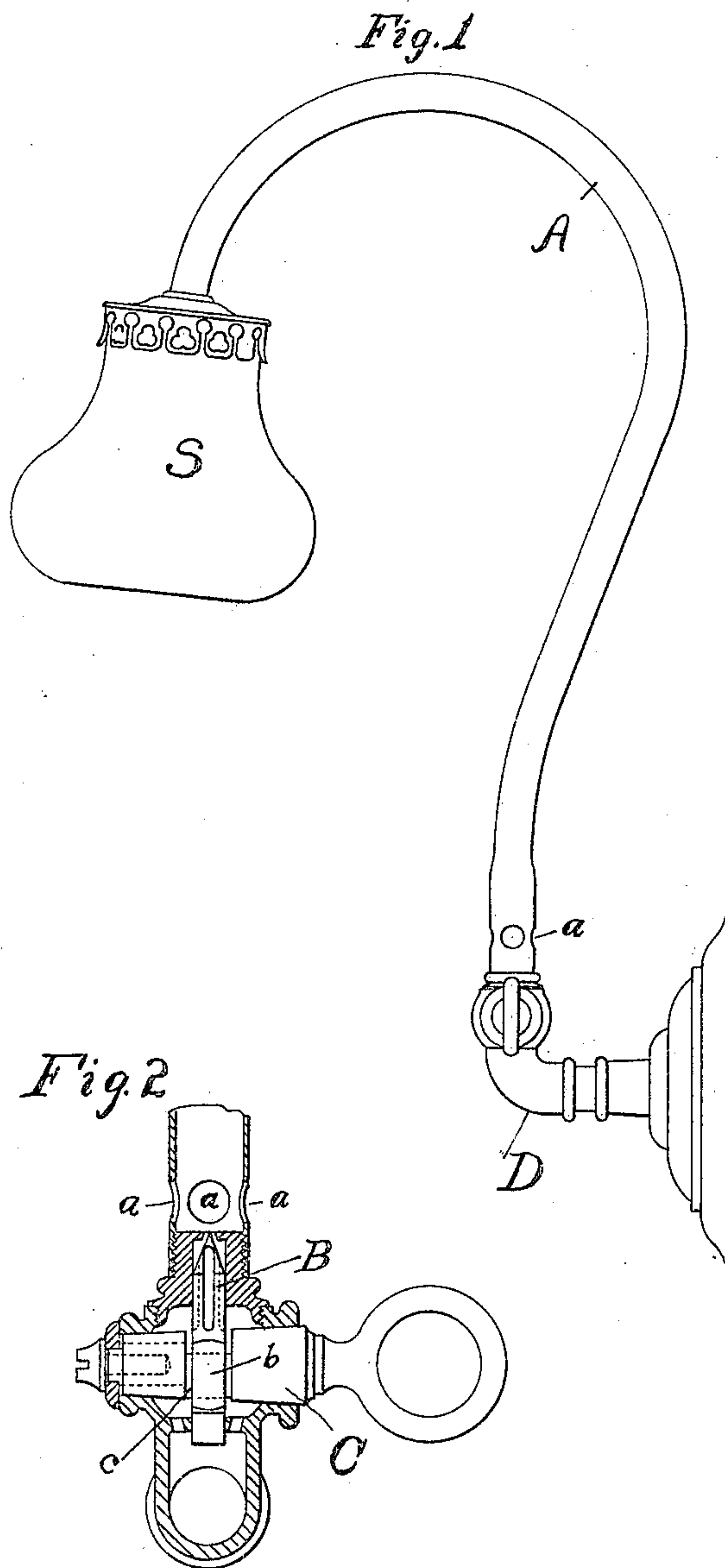


No. 822,353.

PATENTED JUNE 5, 1906.

W. T. DONNELLY.
INCANDESCENT GAS FIXTURE.
APPLICATION FILED DEC. 20, 1904.



Witnesses
R. J. Higgins
E. R. Jones

Inventor
William T. Donnelly
By his Attorney C. A. Collins

UNITED STATES PATENT OFFICE.

WILLIAM T. DONNELLY, OF NEW YORK, N. Y., ASSIGNOR TO GENERAL
GAS APPLIANCE COMPANY, OF NEW YORK, N. Y., A CORPORATION
OF NEW JERSEY.

INCANDESCENT GAS-FIXTURE.

No. 822,353.

Specification of Letters Patent.

Patented June 5, 1906.

Application filed December 20, 1904. Serial No. 237,622.

To all whom it may concern:

Be it known that I, WILLIAM T. DONNELLY, a citizen of the United States, residing in the borough of Brooklyn, city of New York, county of Kings, and State of New York, have invented certain new and useful Improvements in Incandescent Gas-Fixtures, of which the following is a specification.

My invention is applicable generally to that class of gas-lighting devices in which the light is produced by the incandescence of a heated mantle, though it has certain special advantages when used in connection with what is known as an "inverted burner"—*i. e.*, one in which the burner and mantle are placed at the lower end of a downwardly-extending gas-pipe. As is well known, such lighting devices are operated by the combustion of a mixture of air and gas to produce a heating flame, the air being drawn in through air-ports by means of a jet of gas from a needle-valve. In view of the variations in the quality and pressure of illuminating-gas some means of regulating the quality of the mixture of air and gas supplied to such burners is essential. Such regulation cannot be accomplished by means of the ordinary gas-plug, since in case of an increase in the richness of the gas supplied a partial shutting off of the gas-plug reduces the gas-pressure, with a consequent reduction of the velocity of the gas at the needle-valve and of the amount of induced air. Hence while the gas-plug has heretofore been retained as the means for admitting the gas to or shutting it off from the burner it has been necessary to employ a supplementary means for regulating the quality of the gas. The devices employed for this purpose, whether acting on the gas or air supply, have been of such a character that their use is not readily understood by the ordinary user familiar only with the common gas-plug and have possessed the additional disadvantage that by being located in close proximity to the burner, where the metal, especially in the case of inverted burners, becomes intensely heated, their manipulation while the burner is in operation is not convenient. To the end of obviating these disadvantages and providing a gas-regulator which is simple in construction and can be readily and efficiently operated by the ordinary user and

securing also a thorough admixture of the mixed gas and air supply I do away entirely in connection with incandescent burners of the ordinary gas-plug as a gas-stop and utilize it as a means for operating a regulating needle-valve, which also serves to shut off the gas-supply. The regulating-valve and the air-ports may thus be located at a point remote from the burner—*i. e.*, where the gas-plug is usually located—with the advantages incident thereto, and a means of regulating the gas, as indicated, by inspection of the incandescent mantle is provided, which will be readily and naturally operated in the proper manner by any one accustomed to the use of an ordinary gas-burner.

My invention will be best understood by reference to the accompanying drawings, in which the same letters of reference indicate corresponding parts throughout.

Referring to the drawings, Figure 1 shows an elevation of a gas-fixture constructed in accordance with my invention, and Fig. 2 is a section showing the details of the valve arrangement.

A indicates the gas-pipe of the fixture, leading to a burner of any usual or well-known form, (as shown on inverted burner,) indicated by the shade S.

C is a gas-plug arranged to permit the gas to pass freely thereby and mechanically connected with a needle-valve B in such manner that the rotation of the plug will operate to advance or retract the needle to the point, if desired, of entirely closing the port of the needle-valve. In the arrangement shown the movement of the needle-valve is effected by means of an eccentric *c*, forming a part of the plug C, which engages a loop *b*, forming the rear of the needle B.

In the pipe A, leading to the burner, are induction air-ports *a a* in operative proximity to the port of the needle-valve, so that when the valve is open and gas is passing there-through air will be drawn in through the air-ports.

The gas-plug C can be located at substantially the same point in the gas-pipe where the plug is usually placed, so that the needle-valve is remote from the burner and can be freely manipulated at all times for the regulation of the gas without interference by reason of the heating of the ports. The com-

paratively long run of pipe from the needle-valve to the burner also insures a thorough admixture of the air and gas before reaching the burner. The function of the ordinary gas-plug of turning on or shutting off the gas is performed by the needle-valve, which also serves to regulate the quality of the gas, and the gas-plug simply performs the office of operating the needle-valve. At the same time it presents to the user the appearance of the ordinary gas-plug and is manipulated in the same manner to effect the turning on or shutting off of the gas as well as for regulating the flow thereof.

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

An incandescent gas-light fixture, including among its members, a hollow body having a screw-threaded extension on one side provided with a gas-inlet aperture, a gas-outlet and opposite bearing-apertures of different diameters, a longitudinally-movable needle-valve mounted within said hollow body

and engaging a seat therein to regulate and also act as a cut-off for the burner, a tapered plug fitting said bearing-apertures gas-tight, extending through the hollow body, a space being formed within said hollow body laterally of said plug, for the passage of the gas thereby, said plug having an external hand-operating device, operative connections between said plug and valve, a hollow fixture-arm of considerable length connected to the gas-outlet of said body, an incandescent burner connected with the outer end of said fixture-arm, said fixture being provided with air-inlet apertures adjacent to said needle-valve, whereby the use of an additional cut-off valve is obviated, substantially as described.

In testimony whereof I have hereunto subscribed my name this 16th day of December, A. D. 1904.

WILLIAM T. DONNELLY.

Witnesses:

CLARKSON A. COLLINS,
WILLIAM J. KINDGEN.