

No. 750,540.

PATENTED JAN. 26, 1904.

S. W. HYATT.  
GAS LIGHT REGULATOR.  
APPLICATION FILED MAY 14, 1903.

NO MODEL.

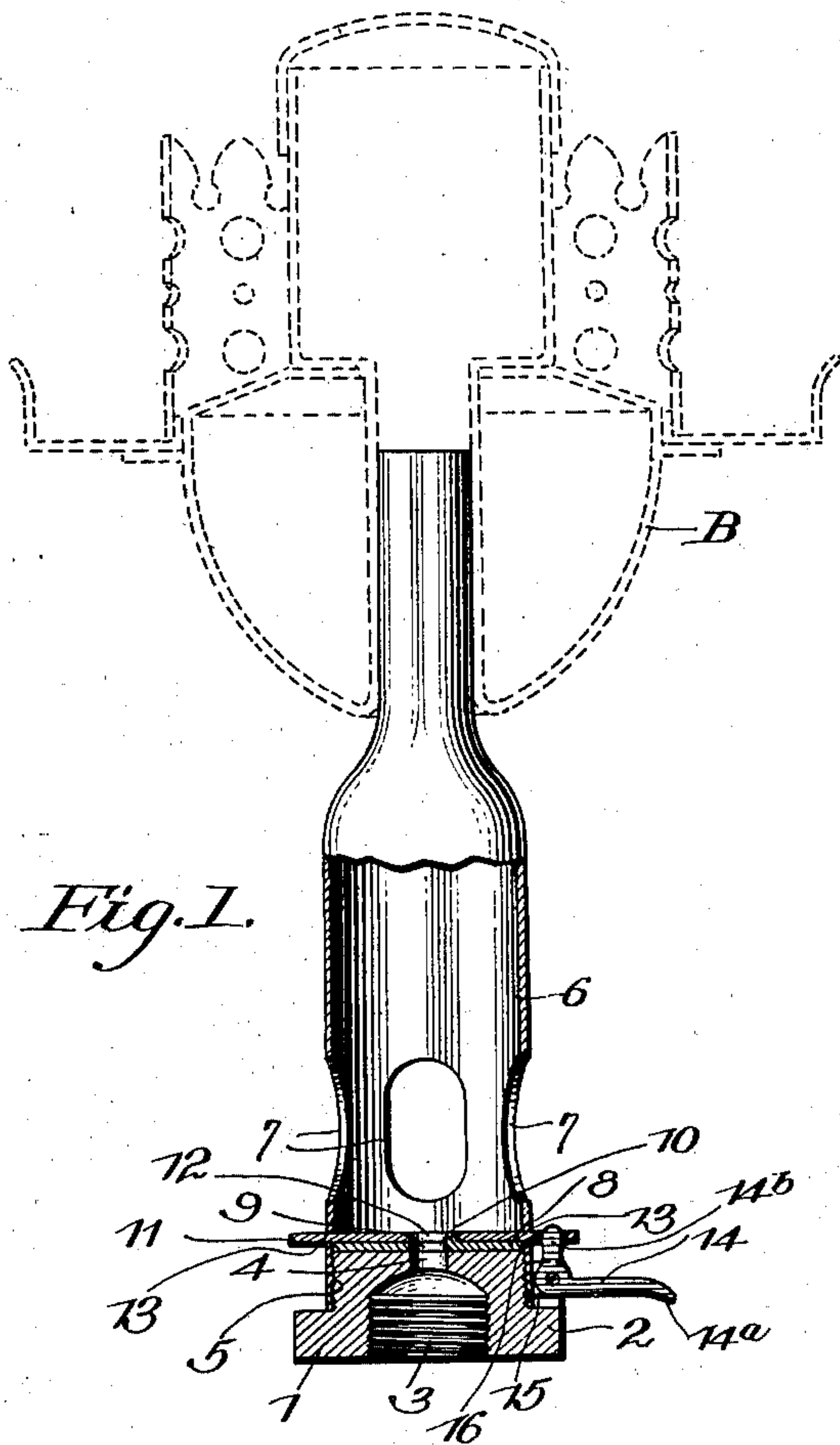


Fig. 1.

Fig. 2.

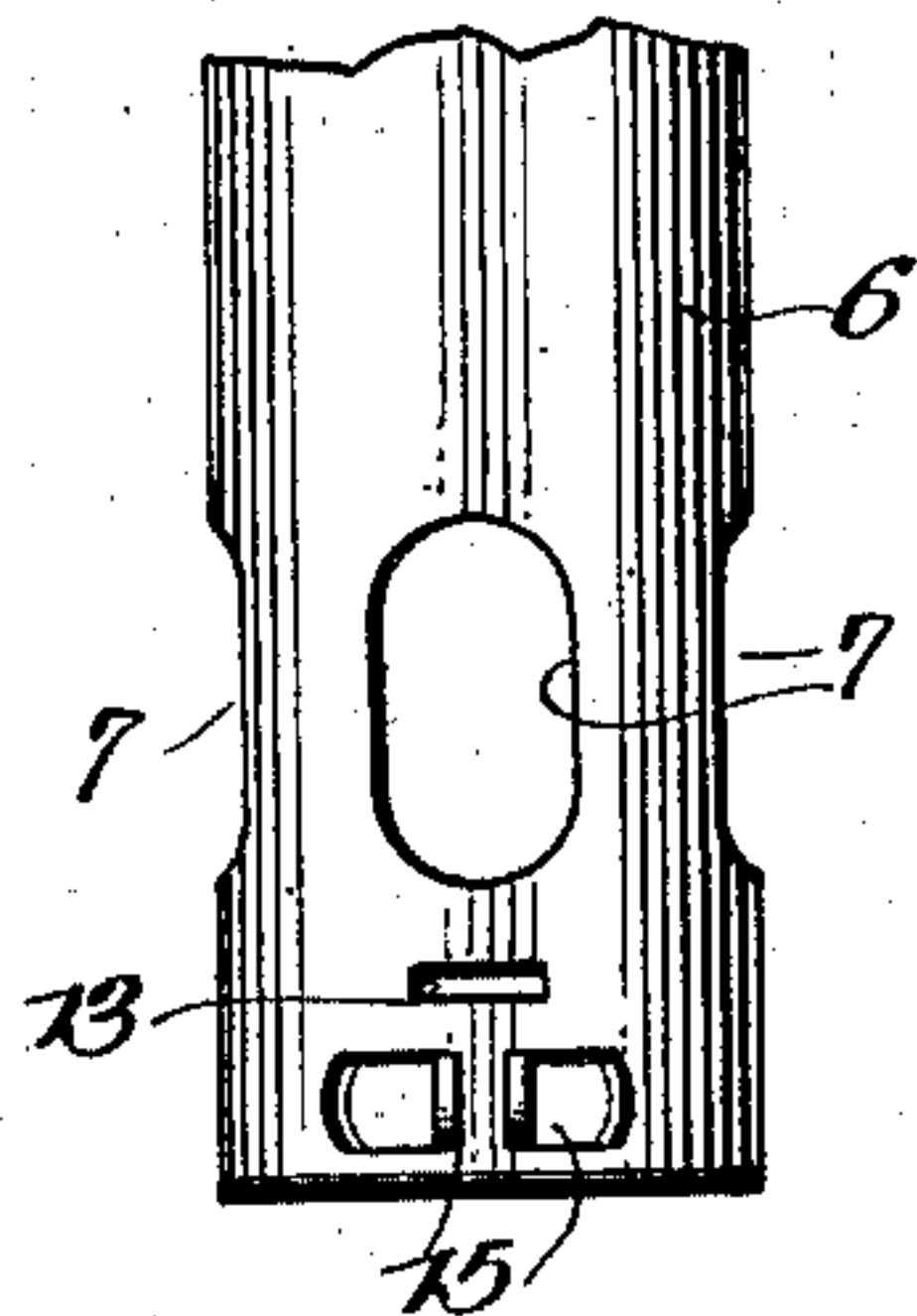


Fig. 3.

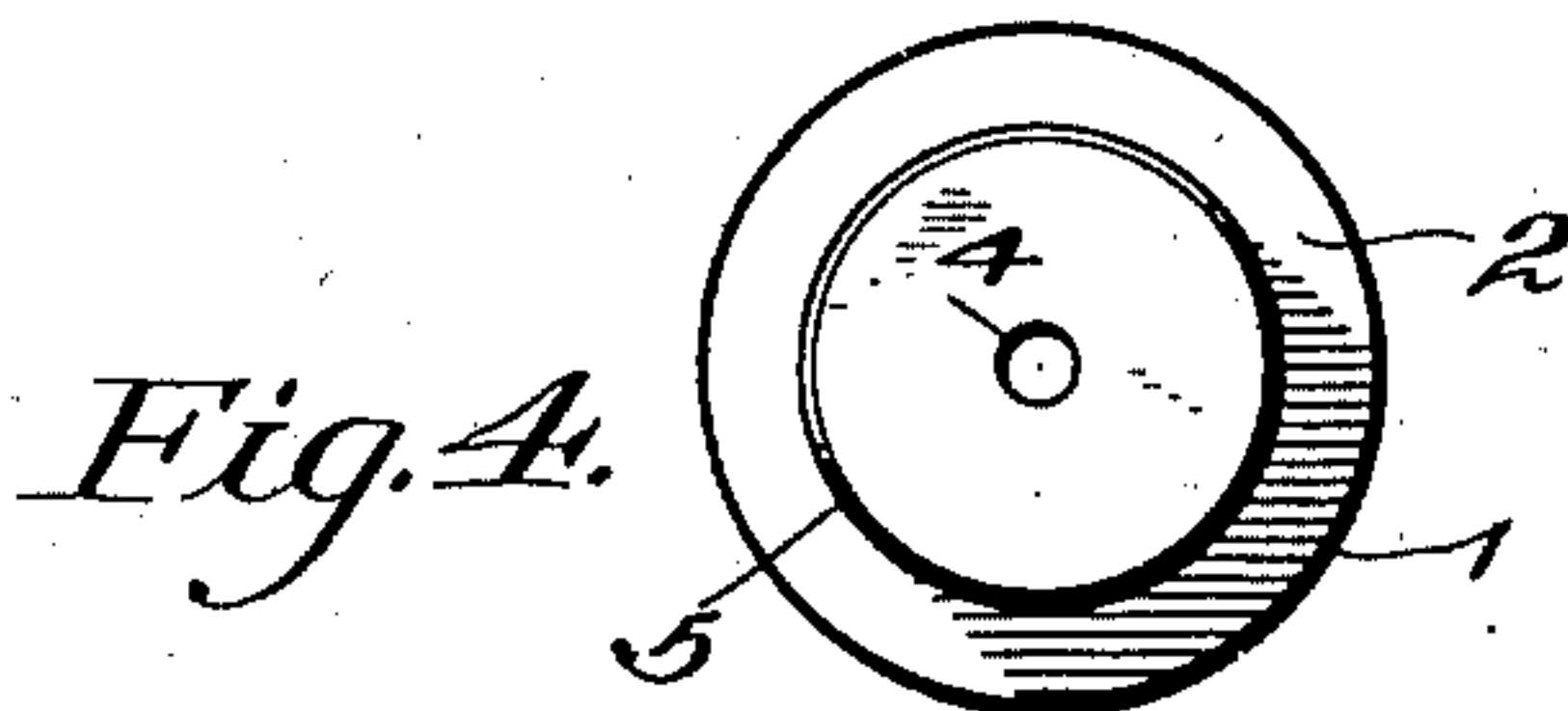


Fig. 4.

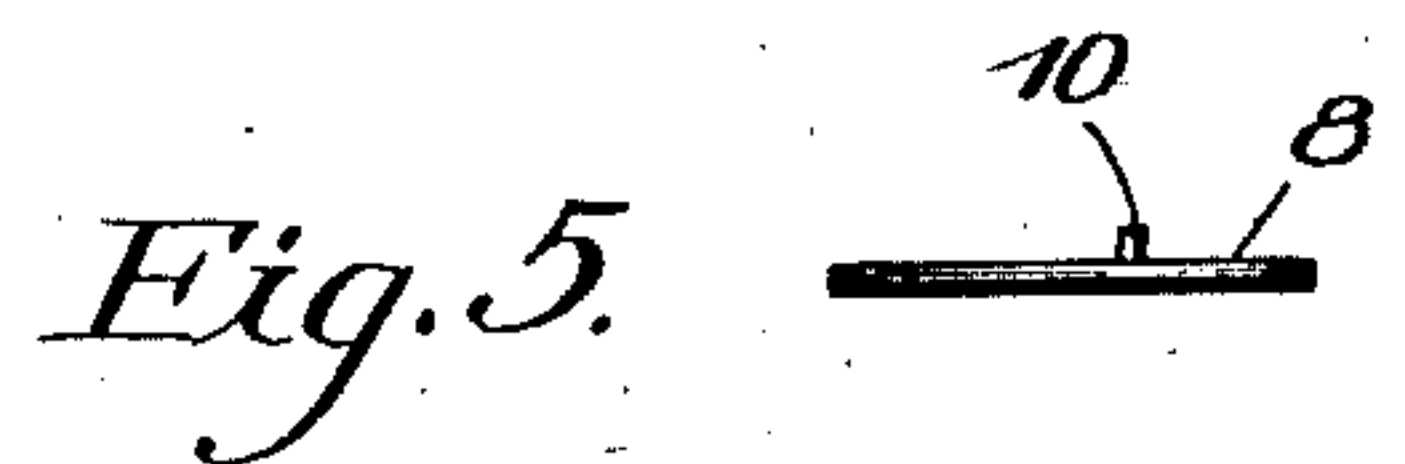


Fig. 5.

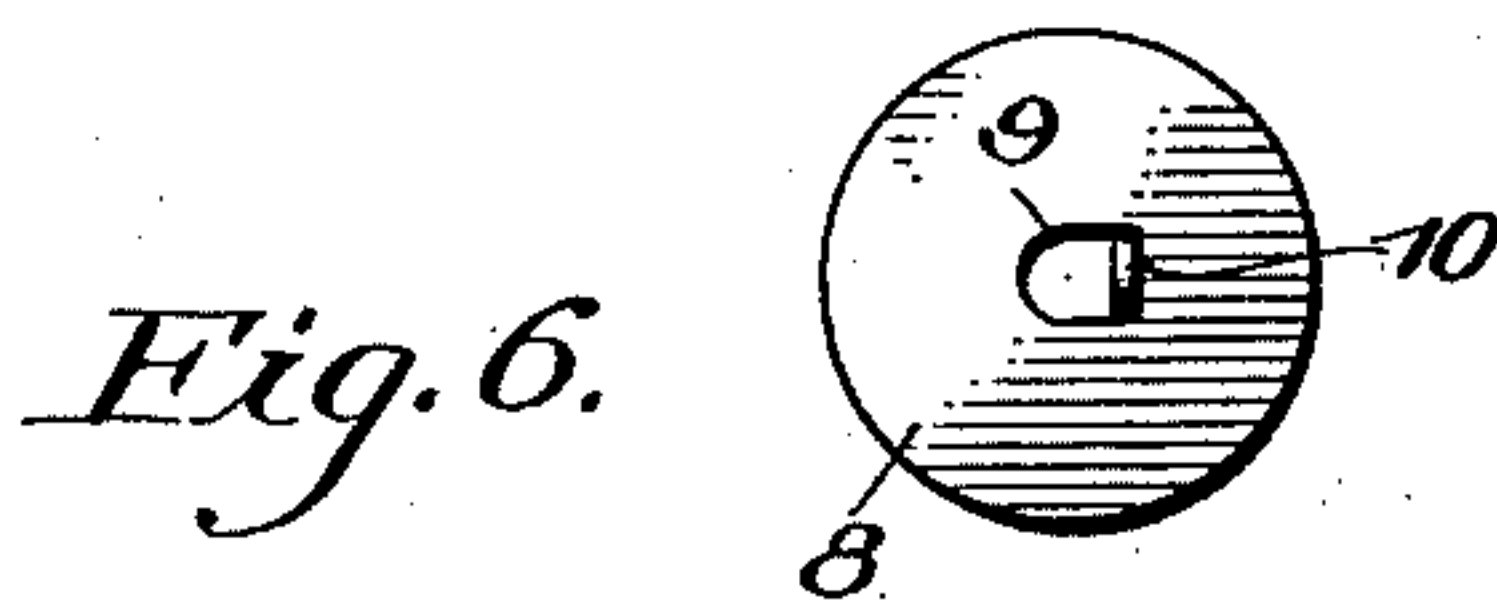


Fig. 6.

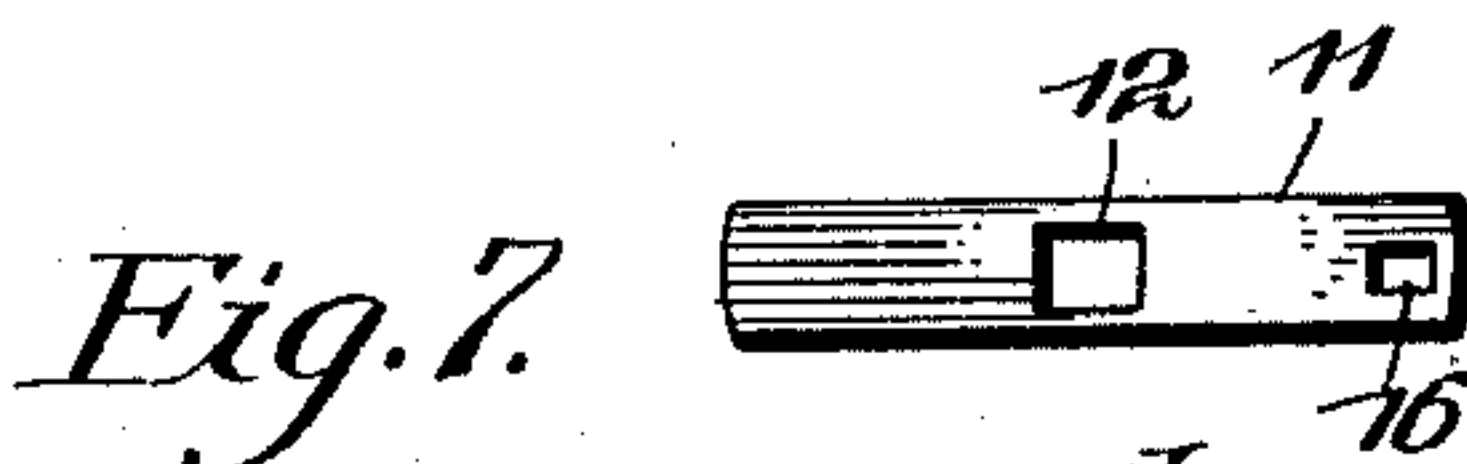


Fig. 7.

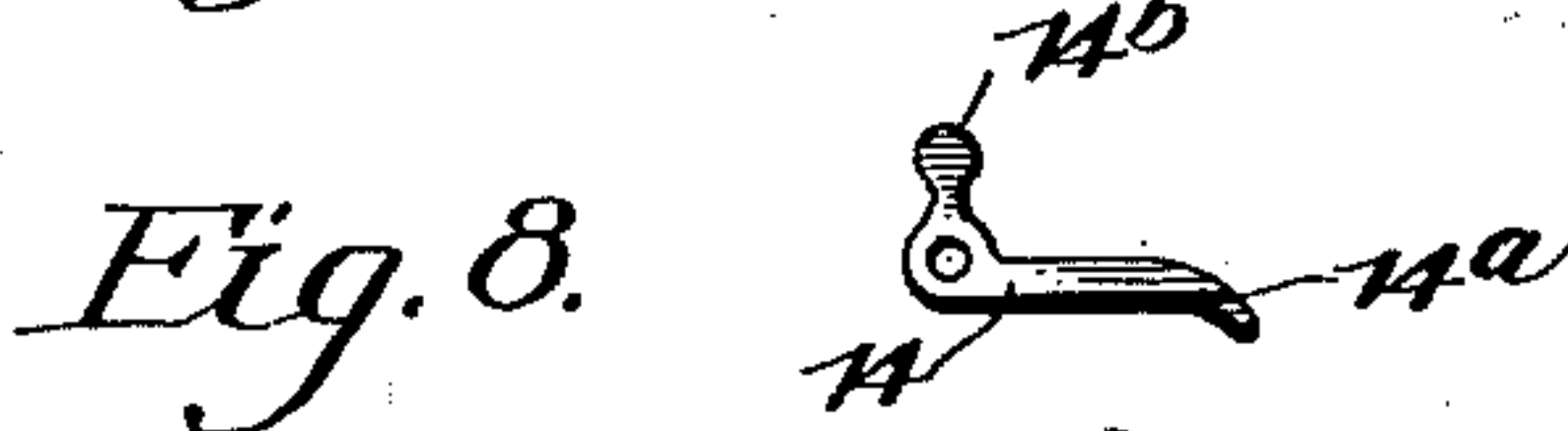


Fig. 8.

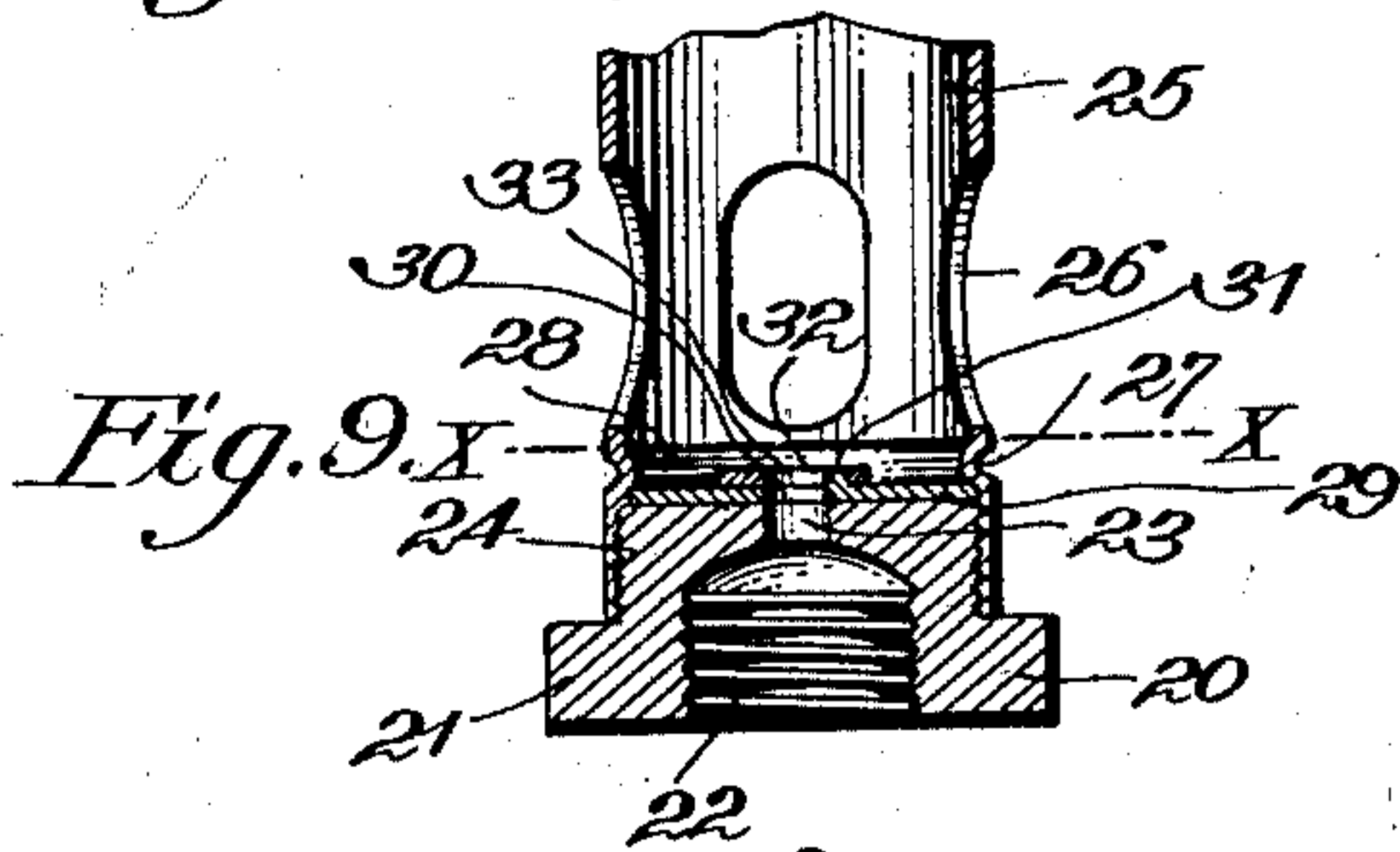


Fig. 9.

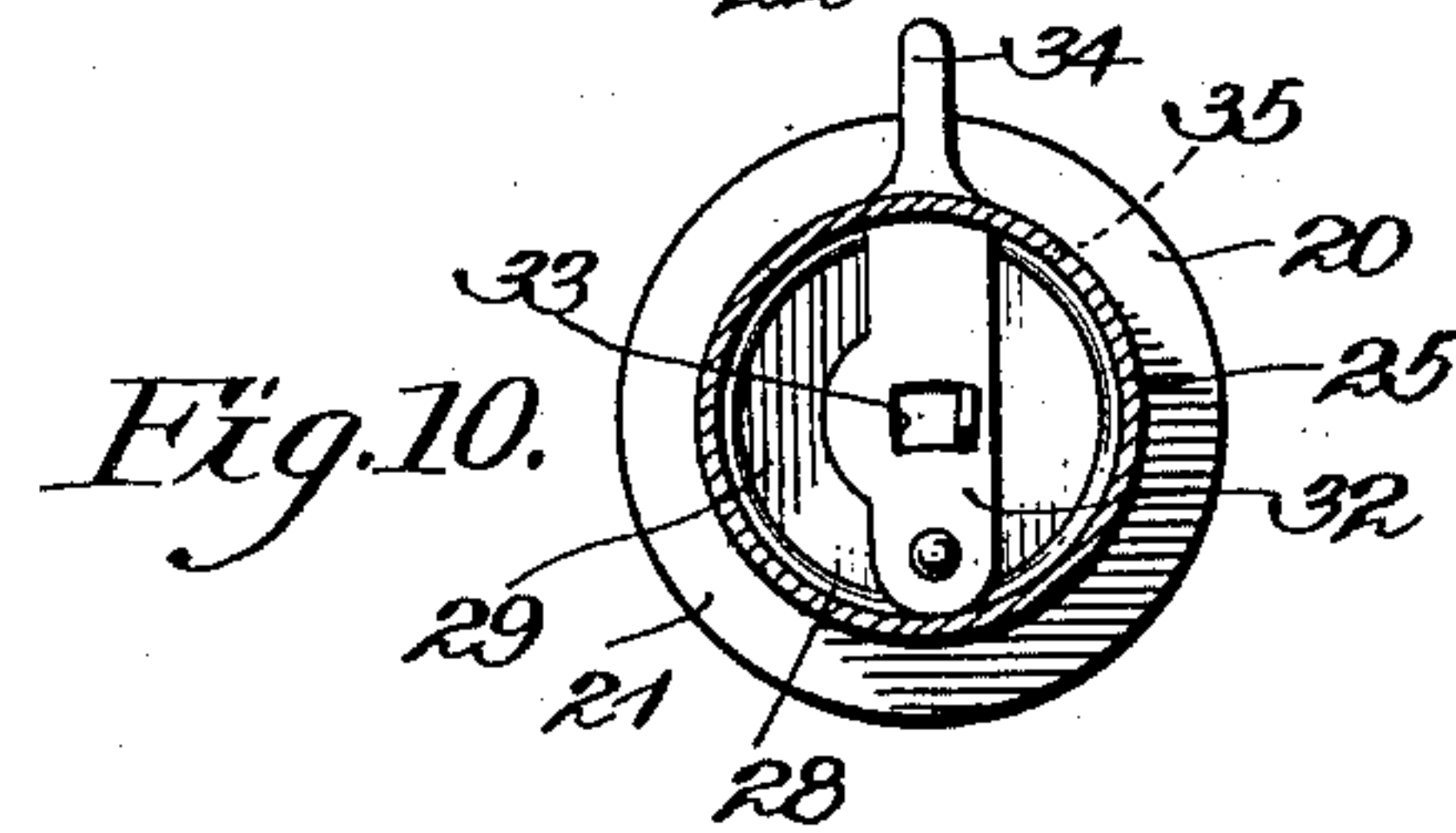


Fig. 10.

Witnesses  
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# UNITED STATES PATENT OFFICE.

SAMUEL W. HYATT, OF MOUNT VERNON, OHIO, ASSIGNOR OF ONE-HALF  
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## GAS-LIGHT REGULATOR.

SPECIFICATION forming part of Letters Patent No. 750,540, dated January 26, 1904.

Application filed May 14, 1903. Serial No. 157,174. (No model.)

*To all whom it may concern:*

Be it known that I, SAMUEL W. HYATT, a citizen of the United States, residing at Mount Vernon, in the county of Knox and State of Ohio, have invented a new and useful Gas-Light Regulator, of which the following is a specification.

This invention relates to gas-light regulators.

The object of the invention is to provide in gas-burners of the type in which the gas is mixed with air before burning a regulating-valve by means of which the quantity of gas admitted to the mixing-chamber may be controlled and which will cause the gas at all times to pass into the mixing-chamber in the proper direction for effectual mixing with the air which enters the chamber.

In many of the regulating-valves for burners of the type mentioned the gas which is admitted to the mixing-chamber by the regulating-valve does not pass into the chamber in a vertical column, as is exceedingly desirable in such burners to secure the best results, but instead the gas is deflected from its vertical course by the valve or else is checked and impeded in such manner that perfect mixture with the air in the mixing-chamber does not occur.

In attaining the object above stated I make use of a regulator-valve consisting, essentially, of a base member having a port for the gas provided in the top thereof and a movable plate above the base provided with an opening of the same width but greater length than the port in the base. The opening in the movable plate is adapted to register with the port in the base member except at one side, where the opening in the plate permits the passage of a lug fixed above the base at one side of the port therein and forming an upward extension of the side wall of the port as far as the upper surface of the movable plate.

In describing the invention reference will be had to the accompanying drawings, forming a part of this specification, in which are shown two slightly-different forms of embodiment of the invention each capable of carrying the same into practical operation, it being under-

stood that changes may be made in the form, proportions, and mode of assemblage of the elements exhibited without departing from the spirit of the invention or sacrificing any of its advantages.

In the drawings, Figure 1 is a view, chiefly in section, of the regulator with an ordinary type of burner indicated in dotted lines upon the upper portion of the regulator. Fig. 2 is a view in side elevation of the lower portion of the mixing-tube. Fig. 3 is a side elevation of the base member. Fig. 4 is a plan of the base member. Fig. 5 is an edge view of a disk which rests on top of the base member. Fig. 6 is a plan view of the disk. Fig. 7 is a plan view of the regulator-slide. Fig. 8 is a side view of the slide-actuating lever. Fig. 9 is a view, chiefly in vertical section, of a slightly-modified form of regulator. Fig. 10 is a view in horizontal section on the line  $x x$  of Fig. 9.

Corresponding parts are designated by the same characters of reference throughout the various views in which they appear.

Referring to the drawings by reference characters, 1 designates the base member, provided at the bottom with an outwardly-projecting flange 2, preferably milled on the surface thereof, as shown. The base member 1 has in the bottom a threaded upwardly-disposed opening 3 for engagement with a thimble (not shown) on a gas-pipe. The opening 3 and the threads formed therein are to be of standard size, so that the base may be applied to ordinary gas-pipes in lieu of the common type of burner. At the top of the opening 3, which is dome-shaped, as shown, is provided a small gas-port 4, which is centrally placed, so as to present the stream of gas in proper relation to all of the air-admission openings in the mixing-tube. On the outer surface the base member 1 is provided with threads 5 for engagement with internal threads in the lower portion of an air-mixing tube 6, which is reduced in diameter at the upper end, as shown, and preferably is provided with a plurality of lateral openings 7 near the bottom thereof for the admission of air.

Immediately above the base member 1 is a



small disk 8, whose circumference is such that it will just enter the air-tube 6, as best seen in Fig. 1. The disk 8 is provided with a central opening 9, which registers with the port 4 and forms an upward continuation thereof. At one side of the opening 9 is provided an upwardly-projecting lug 10, formed by bending upward the material punched out of the plate 8 in forming the opening 9. The lug 10 projects upward only a short distance and passes through an opening 12 in a slide 11, which rests upon the disk 8 and projects through lateral openings 13 in the air-tube 6, as seen in Figs. 1 and 2. The opening 12 in the slide 11 is of such size that when one side thereof registers with the side of the opening 9 in the plate 8 sufficient space is provided at the opposite side of the opening 12 for the passage upward of the lug 10.

Movement to and fro in the guide-openings 13 is imparted to slide 11 by means of a bell-crank lever 14, pivotally mounted between a pair of laterally-projecting lugs 15, formed by upset portions of the material of the mixing-tube near the bottom thereof, as best seen in Fig. 2. The bell-crank lever 14 comprises a handle portion 14<sup>a</sup> and an operating portion 14<sup>b</sup>, which engages with an opening 16, provided in one end of the slide 11, as best seen in Fig. 1.

The gas-burner B (indicated in dotted lines in Fig. 1,) is of any ordinary construction and fits upon the reduced portion of the air-mixing tube in the usual way.

In Figs. 9 and 10 there is illustrated a modified form of the invention comprising a base 20, similar in all respects to the base 1 in the form of the invention previously described, having an external flange 21, an internally-threaded opening 22 in the bottom of the base member 20, a gas-port 23, external threads 24, an air-mixing tube 25 with a reduced upper portion, and lateral air-admission openings 26. The air-mixing tube 25 is provided a slight distance above the threads in the lower end thereof with an external groove 27, extending circumferentially around the tube and forming an internal annular projection 28, which serves to retain in position the disk 29. The disk 29 is provided with an opening 30, adapted to register with the gas-port 23, and an upwardly-projecting lug 31 at one side thereof.

Pivotally mounted upon the disk 29 is a regulator member 32, provided with a curved slot 33, adapted to register with the opening 30 in disk 29 and to permit the upward passage of lug 31 at one end of the slot. The pivoted regulator member 32 is provided at the free end thereof with a narrow extension 34, which projects through an opening 35 in the side of the air-mixing tube and which serves as the means for operating the regulator member in lieu of the bell-crank lever employed in the form of embodiment of the invention first disclosed.

In the main the operation of each form of embodiment of the invention above described is the same. In order to reduce the quantity of gas passing through the port, the regulator member is shifted in the direction permitted by the upwardly-projecting lug on the disk over the base-piece, motion being imparted to the regulator in the first form of embodiment of the invention by means of the bell-crank lever 14 and in the second form of embodiment of the invention by means of the reduced extremity 34 of the regulator member.

The lug provided on the disk at the top of the base forms, as stated in a preceding paragraph, an upward extension of the side wall of the opening in the disk as far as the top surface of the regulator member 1, which is movable over said disk. The object of this construction is to insure at all times the perpendicularity of the side walls of the opening through the regulator member, which serves to permit the upward passage of the gas into the air-mixing chamber. By preserving the perpendicularity of the side walls of said opening the gas is caused to enter the air-mixing chamber in a vertical column substantially at the center of the tube, and this facilitates the mixing of the gas and air in proper proportions for burning.

While the disk on top of the base member has been described as a separate structure in both forms of embodiment of the invention above disclosed, it is obvious that said disk may be rigidly secured to the base or that in lieu of the disk with its upwardly-projecting lug a lug may be formed upon the upper surface of the base member and secure the same results, so far as the operation of the mechanism is concerned. The use of a separate disk is, however, preferred, because the construction of the regulator is less expensive when a separate disk, with a lug formed thereon by a single operation when the opening in the disk is made, is employed.

Having thus described the construction and operation of my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination in a gas-light regulator, of a base having a gas-port, a regulator member having an opening adapted to register with the walls of said port, means for shifting the regulator member, and a prolongation upward of one side wall of the port.

2. The combination in a gas-light regulator, of a base member having a central gas-port, a lug projecting upward and forming an extension of the side wall of said port, a regulator member slidable above said base member and having an opening adapted to register with said port at one side thereof, and permitting the upward passage of said lug, and means for shifting said regulator member.

3. The combination in a gas-light regulator, of a base member having a gas-port, a lug projecting upward and forming an extension of



the side wall of said gas-port, a regulator member movably supported above said base member and having an opening adapted to register with one side of said gas-port and permit the passage of said lug, said lug being of such height that the top lies in the plane of the upper surface of said regulator member, and means for shifting said regulator member.

4. The combination in a gas-light regulator, of a base member having a gas-port in the upper surface thereof, an air-mixing tube mounted on said base member, a lug projecting upward at one side of said port and forming an extension of the side wall thereof, a regulator member movably mounted above said base member and having an opening adapted to register with said port at one side and to permit the passage of said lug at the other side, and means for imparting movement to said regulator member.

5. The combination in a gas-light regulator, of a base member having a gas-port in the top thereof, a disk adapted to rest upon said base and having an opening adapted to register with said gas-port, a lug projecting upward at one side of the opening in said disk and forming an extension of the side wall of

said port, a movable regulator member adapted to register at one side with the opening in said disk and at the other side to permit the passage of said lug, and means for shifting said regulator member.

6. The combination in a gas-light regulator, of a base member having in the bottom thereof an opening for engagement with the gas-pipe and a gas-port in the upper portion thereof, an air-mixing tube mounted upon said base member, a disk within said air-mixing tube and having an opening adapted to register with said gas-port, a lug on said disk projecting upward at one side of the opening therein, a movable regulator member resting upon said disk and having an opening adapted to register at one side with the opening in said disk and at the other side to permit the upward passage of said lug, and means external to said air-mixing tube for shifting said regulator member.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

SAMUEL W. HYATT.

Witnesses:

W. A. WANDER,

J. ALFRED SELLY.