No. 851,999. PATENTED APR. 30, 1907.

D. P. SKELLENGER.

GAS REGULATOR.

APPLICATION FILED JAN. 29, 1906.

Fig. 1.

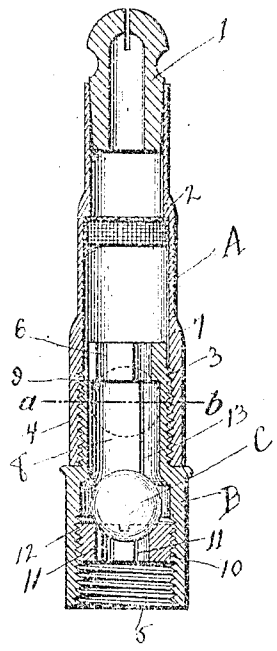


Fig. 2.

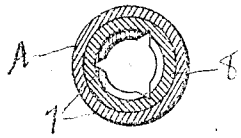
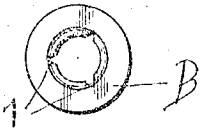


Fig. 3.



Witnesses
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UNITED STATES PATENT OFFICE.

DANIEL P. SKELLENGER, OF MORRISTOWN, NEW JERSEY.

GAS-REGULATOR.

No. 851,999. Specification of Letters Patent. Patented April 30, 1907.

Application filed January 29, 1906. Serial No. 298,430.

To all whom it may concern:

Be it known that I, DANIEL P. SKELLENGER, a citizen of the United States, residing at Morristown, in the county of Morris and State of New Jersey, have invented certain new and useful Improvements in Gas-Regulators, of which the following is a specification.

My invention relates to an improved economizer, especially adapted for use in connection with all open flame and incandescent burners for gas, and is attached directly to the pillar cock below the pillar which conveys the gas to the tip, or when an incandescent burner is used beneath the aforesaid burner so that the gas passes through the economizer before reaching the burner.

This invention consists of a brass nipple or ferrule, so constructed as to contain a ball of suitable material, preferably of aluminium.

The object of this invention is to insure that the pressure of gas at the point of ignition will be uniform, and independent of any variations in the initial pressure which as a rule, is always greater than is requisite to insure combustion; the aim in the use of it, being to keep down the pressure to the lowest limit consistent with the proper combustion of the gas, a saving not only of gas, but globes where open flame burners are used; also mantles and chimneys necessarily used in connection with incandescent burners, which are often destroyed by excessive pressure carried by gas companies, which forces the gas through the burners half consumed, causing it to flicker, smoke, and blow, and if fed too fast with imperfect light.

The removable valve seat or socket on which the ball rests, is so constructed as not to retard the progress of the gas unless a very heavy pressure is put on, when it will raise the ball automatically, closing the outlet above, but never fully checking the flow of gas, which is taken care of by three by-passes formed triangularly on the various sides so as to be a constant source of feed to the burner in order to keep it supplied; said by-passes being extended to the top of the governor in case the ball is forced there by the pressure, at all times keeping the burner supplied when the gas is turned on. The by-passes of this removable valve seat can be made different sizes, allowing the quantity of gas to be burned subject to the consumer's order, and can be accurately gaged, measuring exact amount consumed by each burner, and in being equally distributed on the various sides of the ball, a larger tip can be used producing a better light from the same amount of gas, without wasting the gas.

The object of this invention, is a saving of from 30% to 50% of gas to the consumer, with same results.

My economizer consists of a brass nipple or ferrule to be screwed to the pillar-cock, and having the incandescent burner or gas pillar screwed thereon, this ferrule being constricted at its upper end and provided with grooves for the escape of gas, and internally screw-threaded at its lower end to receive a removable valve seat, said valve seat confining a ball-valve between it and the valve seat at the upper end of the ferrule, the ball valve being adapted to move within the confines of the chamber which is thus formed for the expansion and regulation of the flow and pressure of the gas before it is burned, and being a proper distance from the orifice of the burner causing the gas to develop more light for the same consumption, as the gas issues from the economizer at less pressure causing a steadier flow, and yielding a more uniform light.

My invention still further consists in other minor details which will be more fully described hereinafter.

In the accompanying drawings:—Figure 1 is a view in vertical section through an ordinary pillar and tip showing my improved gas economizer in position. Fig. 2 is a horizontal section on the line *a*—*b* on Fig. 1, Fig. 3 is a bottom plan view.

A, represents a pillar with the usual tip 1, at the upper end with a gauze diaphragm 2, if desired, at an intermediate point therebelow, and having internal screw threads 3, at its lower end which are employed to fasten the pillar to the economizer; B, represents the ferrule, the same being externally screw-threaded at one end as at 4, and internally screw-threaded as at 5 at the lower end where it screws to the gas fixture. At its upper end this ferrule is constricted as at 6 and provided with several grooves 7, 7, preferably three in number, equidistantly arranged for the passage of gas therethrough. C, is a ball valve made of aluminium or heavier metal and perforated or not as desired accordingly as greater or less weight is required. This ball is confined within the chamber 8 which is enlarged above the removable valve seat, however, so that the gas

is never cut off by the valve notwithstanding its position therein. The chamber 8 is formed between the constricted end 6, where a valve seat 9 is formed for the ball when the latter is in the elevated position indicated by outlines in Fig. 1. At the lower end a threaded socket or bushing 10 screws into the threads 5 of the ferrule, and this threaded socket or bushing is likewise provided with grooves 11, 11, corresponding with and for the same function as the grooves 7, 7, at the opposite or upper end of the ferrule. This threaded socket or bushing is milled out at its upper end to form a removable valve seat 12 upon which the valve C normally rests. The chamber 8 is somewhat enlarged just above this valve seat 12, to afford the expansion and undisturbed outlet for the gas issuing up through the grooves 11, 11.

In operation under ordinary pressure the gas escapes beneath and around the ball valve C, but if the pressure becomes excessive, this ball is raised to the valve seat 9 as indicated by dotted lines where it approximately fits the bore of the ferrule and closes the constricted end thereof, save the grooves which still permit the gas to pass but in greatly reduced volume, thereby preventing sudden, irregular and excessive flow of gas to the tip.

Slight changes might be resorted to in the form and arrangement of the several parts described without departing from the spirit and scope of my invention, and hence I do not wish to limit myself to the exact construction herein set forth, but:—

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

1. The combination with a ferrule or nipple, the inner bore of which has two diameters, the smaller of which has a constricted outer end, of a ball valve of less diameter than the smaller diameter of the ferrule or nipple and a valve seat removably secured in the larger portion of the ferrule or nipple and provided with a grooved bore so that even when the valve rests upon its seat, it does not entirely cut off the supply of gas.

2. The combination with a ferrule or nipple, having an enlarged screw threaded lower end, of a ball valve of less diameter than the diameter of the smaller end of the ferrule or nipple, and a valve seat having a grooved bore and removably screwed in the threads of the ferrule or nipple, it being of less length than the length of the threads, whereby the nipple may be screwed to the pillar cock.

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

DANIEL P. SKELLENGER.

Witnesses:

ANNIE E. MURPHY,

IRVING E. SALMON.