C. H. MILLER.

VALVE FOR GAS RANGES.

APPLICATION FILED FEB. 6, 1912.

1,040,376. Patented Oct. 8, 1912.

Fig. 1

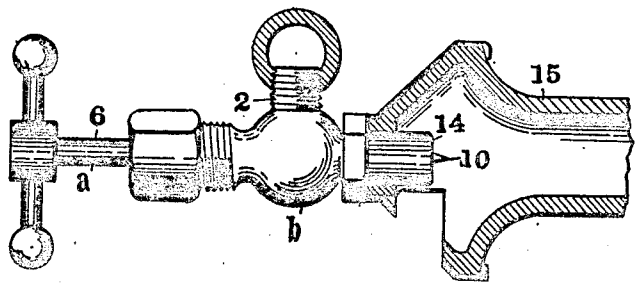
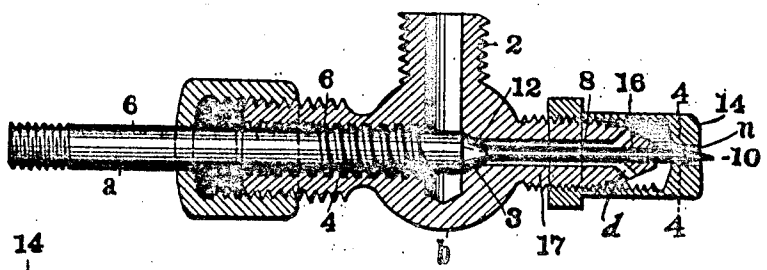


Fig. 2



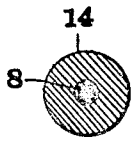
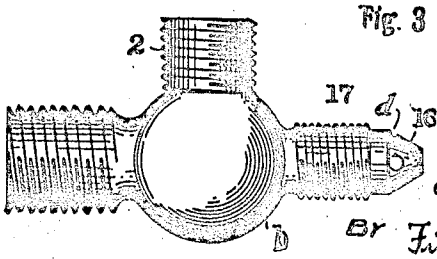


Fig. 4

Fig. 3



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VALVE FOR GAS-RANGES.

1,040,376. Specification of Letters Patent. Patented Oct. 8, 1912.

Application filed February 6, 1912. Serial No. 675,861.

To all whom it may concern:

Be it known that I, CARL H. MILLER, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Valves for Gas-Ranges, of which the following is a specification.

My invention relates to an improvement in valves for gas burners, and the invention consists in a valve mechanism constructed and adapted to operate substantially as shown and described and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a side elevation of the valve mechanism and a section of the mixing tube, and Fig. 2 is a longitudinal sectional elevation of the valve mechanism alone and enlarged as compared with Fig. 1. Fig. 3 is a side elevation of the body of said mechanism. Fig. 4 is a cross section on line 4—4, Fig. 2, showing the exact centering of needle.

This invention is an improvement upon the construction shown and claimed in Letters Patent, No. 1,010,665, issued to me on the 5th day of December, 1911, and is designed to remedy certain defects in said device as will presently appear. To make this difference clear, a reference to the drawings shows a body *b*, and a main stem 6 having a valve 12 thereon adapted to occupy tapered seat 3 in said body. The stem 6 runs on threads 4 in the body as usual in such constructions for adjustment, and said stem has a reduced outer end portion 8 of needle shape with a tapered point 10 at its extremity. The body *b* has a side boss or projection 2 through which gas is admitted, and the bore of the body from valve seat 3 outward is larger than the needle 8 in cross section so as to provide a free passage for the flow of the gas about the needle.

Now, in the above mentioned patent it is set forth that the invention is designed more especially to supply gas to a kitchen range, and that it remedies the common defect in burners for such ranges of sputtering or blowing of the gas, which is recognized as a serious objection for several reasons and especially because it contributes to a loss of gas without combustion. The mechanism of said patent effectually remedies this objection, but I have found that unless the gas be delivered uniformly from about the needle point 10 to the mixer 15 it will flow unevenly to the burner and there will be an uneven flame. In fact the slightest unevenness in the issuing of the gas from about point 10 travels directly through the mixer in that way and manifests itself in the flame of the burner. Hence sometimes more gas appears on one side or portion of the burner than on another and the results are altogether bad. In seeking for the cause I found that it lay in the very slight deflection or off-center position of the needle point through the gas outlet. This cause was difficult to locate because the parts are small and the passage about the point of the needle very slight and film-like at best, but nevertheless the slightest difference here is transmitted directly to the burner. This trouble has been remedied by providing a centering portion or guide 16 for the needle next to point 10 and where it will hold said point to its center through all adjustments. The said guide 16 is in fact a cone-shaped head on a projection 17 on body *b* through which the said needle extends beyond the valve 12, and one or more lateral ducts *d* conduct the gas out from the base of said head into the open space about said head within cap 14. The said cap is threaded internally and screws over or upon the externally threaded projection 17, on which it is adapted to be adjusted and set according to the effect desired at or by the needle point 10. The setting of said cap is done when the valve is installed, and the jet orifice *n* is large enough to afford a free and uniform passage for the gas, and of course is exactly centered with respect to the point 10 so that the point will occupy the exact center of the orifice.

It will be observed that there is a chamber or space in cap 14 into which the gas flows through the ducts *d* and is uniformly distributed therein under more or less detained or checked pressure, so that its issuance from said chamber becomes uniform and has more or less head according as the valve 12 is open more or less.

Obviously the orifice *n* is never entirely closed and the cap 14 can be run back or forward on projection 17 to permit more or less freedom of flow of the gas about the tapered point 10.

The body *b* is shown in this case as in the patent as having a bore of two diameters, the valve seat 3 being at the end of the larger

diameter and head 14 at the end of the smaller diameter.

The needle 8 necessarily fits closely in the bore of head 16 so that it will be held definitely to its center at all times and no gas flows through said sead about the needle but passes out through the laterally inclined orifices or ducts *d*.

What I claim is:

1. In gas supply mechanism for cooking ranges and the like, a body provided with a bore of two diameters lengthwise and having a valve seat at the end of the larger bore, an inlet for gas next to said seat and a head at the outer end of the smaller bore having a lateral gas outlet at its base, in combination with a hand controlled valve stem having a valve adapted to close the said valve seat and provided with a needle projecting through said smaller bore and fitting closely in said head, and a cap adjustably mounted on the inner portion of said body about said head and provided with a central orifice penetrated by the said needle and larger than the needle.

2. In a valve mechanism for ranges, a body having a valve seat and an inlet for gas next to said seat and provided with a tubular extension externally threaded and having a head with lateral outlets for gas, in combination with a cap adjustably mounted on said extension over said head and having a central orifice, and a valve stem through said body having a valve to occupy said valve seat and a needle extension fitting closely in said head and extending centrally through said orifice out of contact with the wall thereof.

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

CARL H. MILLER.

Witnesses:
JOHN A. HERBST,
ALBERT G. STEIN.