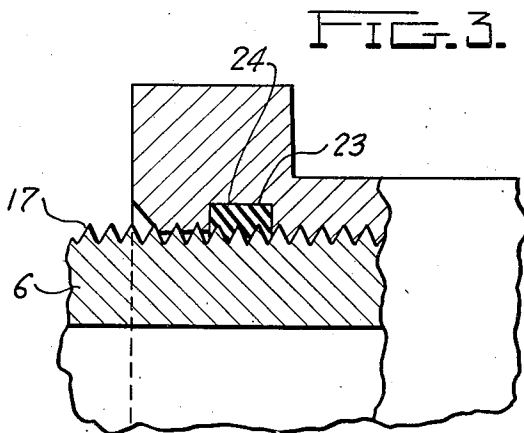
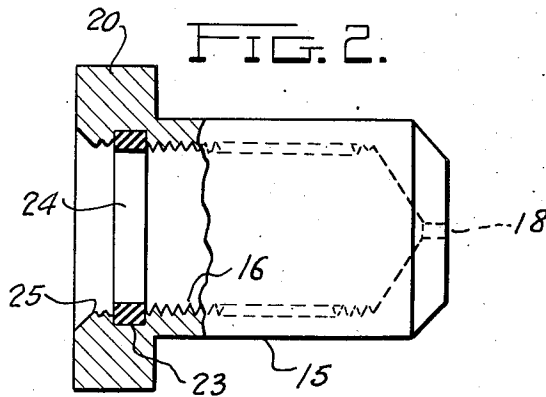
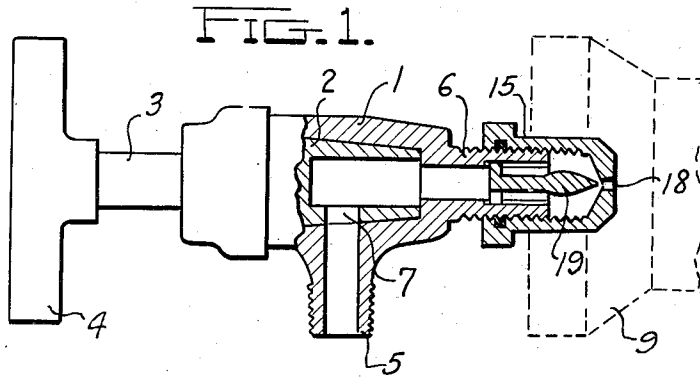


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HOOD FOR GAS VALVE
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HOOD FOR GAS VALVES

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This invention relates to the gas appliance industry and it has to do particularly with appliances used in connection with gas burners such, for example, as a valve.

In considering the invention, a gas valve may be visualized. Such a valve is conventionally employed for the discharge of gas into a mixing tube or the like of a burner. Such valves usually employ what is termed a hood which is screw threaded onto an extension of the valve body. The hood has a discharge orifice and a needle or pointed element is frequently employed and which is carried by the valve body so that by adjusting the hood on its screw threads, the needle or pointed element and the discharge aperture are relatively shifted so that a proper discharge of gas through the orifice is obtained. The needle or pointed element thus functions as a device for metering the orifice.

The size of the outlet orifice in the hood is variable, and this depends largely upon numerous factors including the type of gas which is used. For example, in some sections of the country, manufactured gas is used exclusively; in other sections of the country, natural gas is employed, and in some sections of the country, a mixture of these gases is employed. Also, the gas pressure is a factor to be considered. A manufacturer, such as a manufacturer of gas ranges, may, for example, have quite a supply of valves on hand, but for one reason or another it develops that while the valves themselves are satisfactory for a particular lot of ranges, hoods are needed with a different size outlet aperture. Accordingly, the manufacturer may order a quantity of hoods which are to be put onto the valves already on hand. These hoods may be ordered from a manufacturer entirely different from the one who furnished the valve. As a result, much difficulty is encountered in combining the hoods and the valves because of varying manufacturing tolerances. Even where the same manufacturer supplies the hoods as supplied the valve, tolerances may have varied in the meantime. As a result, the hoods may fit too tightly or too loosely. Since pressure is maintained within the hood, a hood which is too loose may leak at the threads, and the live gas leaking therefrom may become ignited. This is a dangerous situation. If the fit is too tight, it may become too difficult or even impossible to properly adjust the hood on the valve.

The general object of the present invention is to provide an improved construction which embodies an improved hood which will fit upon any valve construction. Thus, a number of hoods may be placed upon valves which were manufactured either before or after or quite separately and when the hoods are employed in initial production, it is unnecessary to maintain close tolerances as between the valve body and the threads

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on the hood. With a construction made in accordance with the invention, adjustment of the hood is very easily made because the hood does not become tight upon its threads but nevertheless there is a sealing agency which sets up a rather uniform friction so that the hood will maintain itself in any adjusted position. Moreover, this element makes a tight non-leaking fit to prevent leaking irrespective of how loose the threads on the hood may fit those on the body. The invention is disclosed in the accompanying drawings wherein one structure for carrying out the invention is shown.

Fig. 1 is a cross sectional view taken through an exemplary valve showing the hood applied thereto.

Fig. 2 is an enlarged view of the hood with a portion thereof cut away showing the sealing element in section.

Fig. 3 is a further enlarged view illustrating the screw thread sealing joint.

In Fig. 1 a conventional valve is illustrated as having a body 1, a rotatable valve member 2 therein, which is turnable in its seat by means of a stem 3, equipped with a handle 4. The valve body has a threaded inlet extension 5 and a threaded outlet extension 6 while the valve member 2 is ported as at 7 so that it may be turned to open the valve for the flow of gas therethrough and to close the valve. The gas which flows through the valve may be and usually is discharged into the throat of a mixer tube or the like of a burner as illustrated in dotted lines at 9.

The hood is generally illustrated at 15 and it is of hollow construction having internal threads 16 which are arranged to be threaded upon the external threads 17 of the outlet extension of the valve. The hood is provided with an outlet aperture or jet aperture 18 and the valve body may be equipped with a needle or pointed member 19. The hood is provided with an enlarged base 20 which is usually in the form of a hexagon thus providing a nut formation for the reception of a wrench so that it may be turned. Frequently, the valves are relatively concealed and it is necessary to use a wrench of some length for application to the nut 20 in order to turn the hood on its threads to adjust the jet aperture 18 relative to the element 19 to thus obtain the desired action for the discharge of the gas through the jet port 18.

It will be appreciated, as above pointed out, that due to the small outlet port or jet port 18 that some pressure is maintained within the hood and unless there is a good fit between the screw threads 16 and 17 some gas may escape. This is a dangerous situation for various obvious reasons. Therefore, fairly close tolerances have heretofore been necessary to be maintained. As mentioned also above, a range manufacturer, for example, may have a large number of valves on hand and

in order to condition these valves for use in some particular section of the country, or for use where there is a gas condition which is different from that for which the valves were originally contemplated, new hoods are required and oftentimes the new supply of hoods do not fit the valves properly.

The new hood construction of the present invention, as indicated in Fig. 2, resides in providing an internal groove in the hood as illustrated at 23 and into this groove is placed a ring or washer of elastic or resilient characteristic. This ring or washer is shown at 24. The material of which the ring is made is subject to variation. Under some conditions where heat may be encountered, it should be of some material capable of resisting the heat to which it would be subjected although it need not be of heat resisting material for installations where no particular heat will be encountered. A fibrous substance, such as a fibrous material, or a cork composition, may be employed. The resilience required is not excessive and, therefore, a fairly hard fiber may be used. The position of the groove 23 and, therefore, the washer 24, is preferably inwardly from the open end of the hood so as to leave intact what may be termed lead threads 25. For the purpose of facilitating assembly of the ring into the hood, the lead threads may and preferably are, partially removed as indicated. This increases the inside diameter at the location of the lead threads so that the washer may, with more ease, be assembled into its groove.

The interior diameter of the washer is preferably just about the same as the diameter measured across the inside of the hood from the apices of the threads 16 as illustrated in Fig. 2. In its original form the washer 24 fits fairly snugly in its groove so that it normally stands as a barrier between the lead threads 25 and the remaining threads 16. The number of lead threads 25 is variable but for normal purposes it is thought that about two full threads will suffice. It might be said further that the exterior threads 17 on the valve body and the interior threads 16 in the hood are straight threads and so that the hood may be adjusted along the extension 6 throughout the length of the threads. In applying the hood to the threaded stem, the lead threads 25 are first engaged with the threads 17 and the hood turned to advance the same on the threads 17. As the threads 17 reach the washer 24 the threads 17 impress themselves into the washer as illustrated in Fig. 3. The threads 17 preferably do not cut a thread in the washer because of the tough elastic character of the washer. The material of the washer is compressed as the shape of the threads are impressed into the same. This also tightens the washer in its groove. As the hood is continued to be threaded onto the stem, the washer turns with the hood and the threads 17 merely follow the impressed formation in the washer.

This construction provides an effective seal against leakage of gas. As a matter of fact, tests have been made under excessive pressures and no leakage was found. The hood turns on the stem 6 with a nice, smooth friction action and the friction is sufficient to maintain the hood in any adjusted position. Thus, fairly large tolerances as between the internal threads 16 of the hood and the external threads 17 of the valve is permissible and, in fact, it is preferable that the hood should normally fit loosely upon the extension 6 in order to obtain the full benefits of the sealing character and friction provisions of the washer. It also

has been found that a hood of this kind can be completely removed from the valve body numerous times and replaced thereon without any deleterious effect upon the sealing and friction characteristics. This is due to several factors including these: The hood is always accurately piloted on the valve extension by the lead threads 25 before the threads 17 reach the washer; therefore, the formation of the threads 17 is impressed into the washer at the same location upon each application. Also, the lead threads serve to advance the hood on the threads 17 with the result that the washer is not called upon to perform any function of advancing or retracting the hood axially as it is turned. In other words, the lead threads 25 take the initial axial thrust until such time as the remaining threads 16 or some of them are engaged by the threads 17 when the axial thrust is distributed through the various metal threads. A further factor is the fact that the threads 17 do not cut their shape into the washer but merely impress the same as by compressing and compacting the material of the washer.

I claim:

1. In a gas appliance having a hollow part for the flow of gas and which part is provided with external threads, a hood of hollow formation provided with an outlet orifice and having internal threads for engaging said external threads, said hood having an internal circumferential recess therein, said recess being positioned within the hood so that the internal threads have some of its convolutions in advance thereof which constitute a lead thread, and an unthreaded washer of elastic or resilient characteristic situated in said groove and having an internal diameter such as to engage the external threads on the said hollow part whereby to establish frictional engagement of the hood with said hollow part and a sealed joint to prevent escape of gas, said lead threads being partially cut away to increase the internal diameter to facilitate assembly of the washer in its groove.

2. A hood for application to a hollow threaded member for the flow of gas comprising, a hollow body having an outlet orifice and having internal threads for engaging the threads of the hollow member, said hood having an internal circumferential recess formed therein at a location inwardly of one or more convolutions of the internal thread and an unthreaded washer of elastic or resilient characteristic positioned in the groove, said washer having an internal diameter less than the maximum outside diameter of the threads on the hollow member whereby to be engaged by said external threads as the hood is threaded onto the member to provide a gas seal and a frictional engagement between the hood and said hollow member, the lead threads in the hood which are outwardly of the washer having their tip portions removed to facilitate assembly of the washer in its groove.

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