

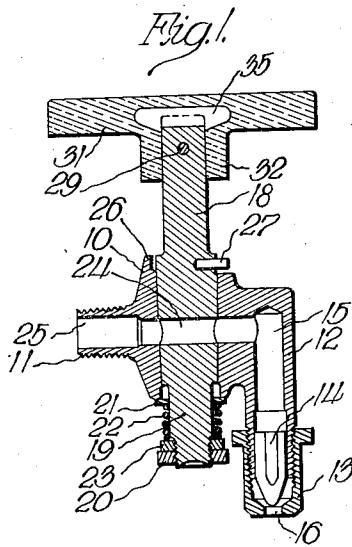
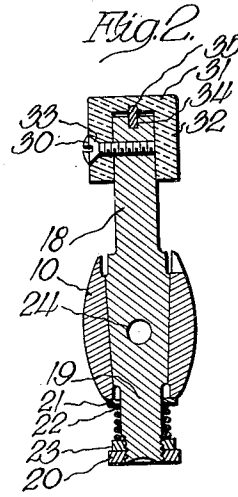
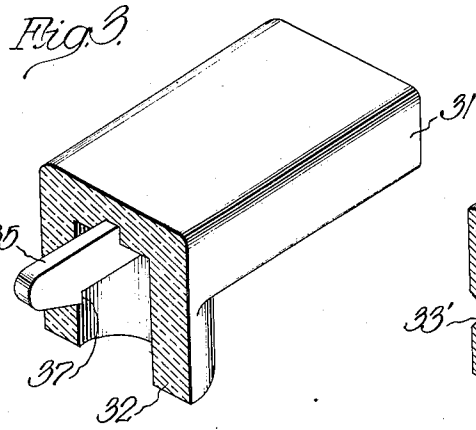
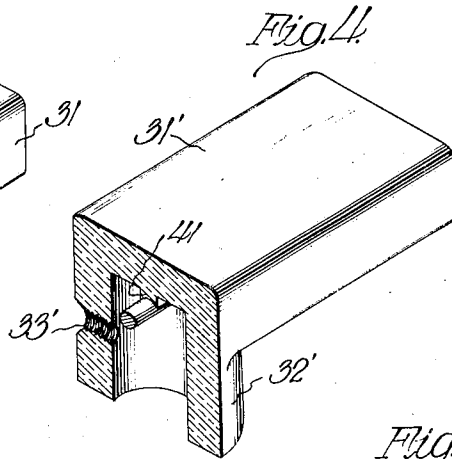
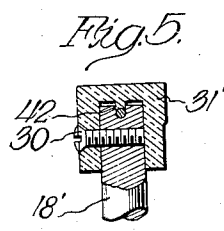
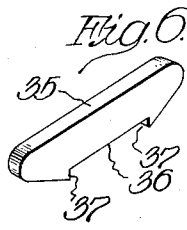
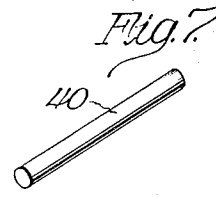
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O. J. LEINS

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GAS COCK

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UNITED STATES PATENT OFFICE

1,974,464

GAS COCK

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3 Claims. (Cl. 287—53)

This invention relates to gas cocks, and more particularly to gas cocks having handle portions formed of bakelite or similar molded condensation products.

In the supplanting of the open type of domestic gas range by the concealed manifold type, it has become necessary to provide more decorative gas cock handles, and these have been made, as a rule, from molded porcelain or bakelite. In the case of bakelite handles, considerable difficulty has been experienced because of the weakness of the material in resisting the shearing stress caused by turning the handle to rotate the valve stem.

It is therefore an object of the present invention to provide a gas cock having a handle formed of bakelite or a similar compound which is so mounted, with respect to the valve stem of the gas cock which it controls, as to provide a handle of great strength, which is light in weight and may be economically manufactured. This is accomplished by means of a suitable inlay key or pin which secures the stem for rotation with the handle.

A further feature of the invention is the provision of a bakelite handle of pleasing exterior appearance, which conceals the operating stem of the gas cock, and is of greater strength than the ordinary type of handle, due to the distribution of the stress which is present upon rotation of the handle to operate the gas cock.

In the preferred embodiment of the invention, I provide a gas cock handle of generally rectangular form, having a centrally extending boss section fitting over the projecting end of the operating stem of the gas cock, and which is provided with a recess receiving a key member for engagement in a suitable groove in the upper end of the operating stem to rotate the stem upon rotation of the handle. The handle is held in position upon the stem in any suitable manner.

In order that those skilled in the art may understand the construction and operation of my invention more readily, I shall now describe in detail, in connection with the accompanying drawing, a preferred embodiment thereof.

In the drawing:

Figure 1 is a sectional elevational view of a gas cock provided with a molded handle;

Figure 2 is a section taken substantially on the line 2—2 of Figure 1;

Figure 3 is an enlarged perspective view, showing one form of key member inserted into the handle;

Figure 4 is a modified broken away perspective

view, showing a second type of key member positioned within the handle;

Figure 5 is a partial sectional view, showing the handle of Figure 4 in position upon the upper end of an operating stem for a gas cock;

Figure 6 is a perspective view of the key member shown in Figure 3; and

Figure 7 is a perspective view of the key member shown in Figure 4.

Referring now in more detail to the drawing, in Figure 1, I have indicated a valve housing 10, provided with the threaded nipple portion 11 which threads into a suitable manifold for supplying fuel to the valve, and which is provided with the offset portion 12 which has, threaded upon its end, a suitable jet cap 13, which encloses the jet 14, this jet being provided with slatted off portions for permitting gas to pass from the outlet channel 15 of the valve to the outlet opening 16 formed in the cap 13, which cap preferably projects into a suitable mixing chamber leading to one of the gas burners. It is obvious, however, that this construction need not be applied to a gas range, but may be used for any type of fuel supply, wherein it is desired to control the flow of the desired fluid by means of a valve or similar member.

The valve housing 10 has a central opening formed therein which is adapted to receive the operating stem 18, this stem being provided at its lower end with a reduced portion 19 which has threaded thereon a tail nut 20. The valve stem 18 is preferably tapered throughout the portion which extends through the valve housing, and a suitable washer 21 encircles the lower end of the stem 18 and bears against the valve housing. A spring 22 encircles the reduced portion 19 of the stem, and bears at one end against the washer 21, and at its other end against a tail washer 23 encircling the stem and supported by the tail nut 20. The spring 22 is adapted to urge the valve stem 18 downwardly to provide a secure seating of the stem within the valve housing. The stem 18 is provided with the channel 24 extending therethrough, this channel being adapted to provide communication between the inlet channel 25 and the outlet channel 15 of the valve housing when in aligned position.

The valve housing 10 is provided with a projecting portion 26 adjacent the central opening thereof, and the valve stem 18 carries a suitable stop pin 27 projecting therefrom, this pin being adapted to abut against the projection 26 of the valve housing for limiting rotation of the stem 18 within the housing.

Adjacent its upper end, the stem 18 is provided with a threaded opening, indicated at 29, which receives the securing screw 30 for securing a suitable handle 31 thereto. The handle 31 is formed of bakelite, or a similar molded condensation product, and has the extending boss portion 32. This projecting boss 32 fits over the upper end of the valve stem 18, and is provided with an opening 33 for receiving the screw 30 to secure the gas cock handle to the stem 18.

At its upper end, the valve stem 18 is grooved, as indicated at 34, to receive the key member 35 carried by the handle 31. This key member 35, as shown in detail in Figure 6, is preferably formed of metal and may be stamped to the desired form. The key member 35 is provided with a cut-out portion 36 which engages in the groove 34 formed in the valve stem. The ear portions 37 of the key 35 are spaced apart a distance equal to the diameter of the stem 18, and engage the lateral surface of the stem. The key 35 is embedded in the handle 31 at the upper end of the boss portion 32, as shown in detail in Figure 3, and is securely held therein as by molding it in place in the handle. This key serves to lock the handle 31 to the valve stem 18 for cooperating rotative movement, and distributes the stress occasioned in the handle 31 when it is desired to rotate the valve stem, which would be present if the key were not provided, since the key distributes this stress along the portion of the key which is embedded in the handle. In this manner, rotation of the handle to operate the valve stem 18 will not produce great unit stress in the handle, and therefore the handle can be made of less dimension, while still retaining its strength.

In Figures 4, 5 and 7, I have disclosed a modified form of locking engagement between the valve stem and the handle. The handle 31' of Figure 4 is adapted to receive a pin member 40, shown in detail in Figure 7, which is carried by a projecting portion 41 of the handle 31', which portion 41 is disposed centrally of the opening formed in the boss 32' which receives the stem 18' of the valve. The ends of the pin 40 are firmly embedded in the handle adjacent the recess.

As shown in Figure 5, the screw 30 serves to position the handle 31' upon the stem 18', and the stem is grooved, as at 42, for receiving the pin 40 carried by the projecting portion 41 of the handle, and which serves to distribute the stress ordinarily present upon rotation of the handle to turn the stem 18'.

It is thus apparent that I have provided a novel manner of securing a molded handle to the operating stem of a gas cock or similar device, which handle is adapted to rotate the stem. Because of the distribution and consequent reduction of the unit stress ordinarily present, the handle 31 may be made relatively light in weight, which will reduce the cost of manufacture, while retaining all of the strength necessary for operation of the gas cock. It is to be understood that

the handle may be made in various forms, and need not be of the rectangular configuration shown in the preferred embodiment of the invention. Further, certain decorative effects may be produced by varying the configuration of the handle, without departing from the scope of the invention.

I do not intend to be limited to the exact details shown and described in connection with the illustrated embodiment of the invention, but only insofar as defined by the scope and spirit of the appended claims.

I claim:

1. In combination, a rotatable valve stem having a groove extending across and opening from one end of the stem, a handle formed of a molded condensation product having an integral hub fitting over the end of said stem, handle portions projecting radially from said hub, said handle having a groove disposed in the body of the handle and extending into said projecting handle portions and across the end of the stem when the handle is in position on the stem, a metal key member engaging in the groove in the body of the handle and having a cut-out portion engaging in the groove in the end of the stem and forming abutments for engagement with the opposite peripheral sides of the stem below the opposite ends of the groove therein, the opposite ends of said key member projecting laterally from the stem and being embedded in the projecting handle portion, and means disposed beneath said key member and engaging in said stem for maintaining said key member in engagement within said groove.

2. In combination, a molded handle comprising a cylindrical socket portion and a pair of integral handle portions projecting radially therefrom, a metal key member disposed within the base of said socket portion and extending diametrically thereacross, the ends of said member being embedded in said handle portions, said member being entirely disposed within said handle and non-removable therefrom, and a rotatable stem adapted to be engaged by said socket portion and having a diametrical groove across the engaged end thereof, said key member having a cut-away portion engaging in said groove and having normally extending abutment portions engaging the surface of said stem at each side of and below the axial extent of said groove.

3. A metal key member adapted for use with a rotatable stem having a diametrical groove of constant depth therein and a handle member having a socket receiving said stem, comprising a planar member having extending end portions adapted to be embedded in said handle, a cut-away central portion of constant section adapted to engage in the groove in said stem, and outwardly projecting abutment portions at each end of said cut-away portion extending normal thereto and adapted to engage the peripheral surface of said stem below the axial extent of said groove.

OSCAR J. LEINS.