April 29, 1941. M. J. SADVARY 2,239,831

SAFETY LATCH FOR GAS VALVES

Filed April 18, 1939

Fig. 1

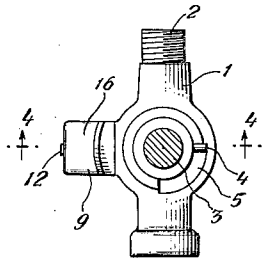


Fig. 3

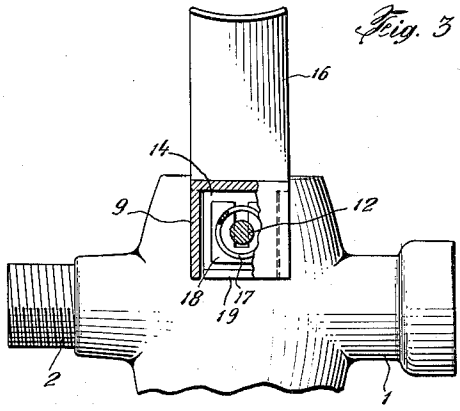


Fig. 2

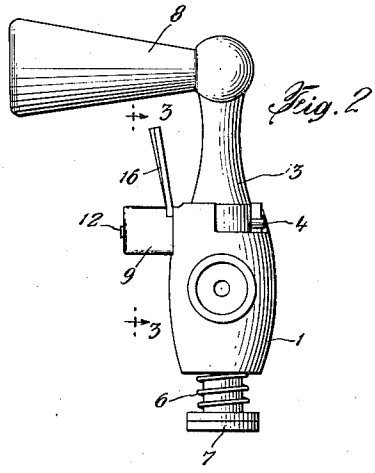


Fig. 4

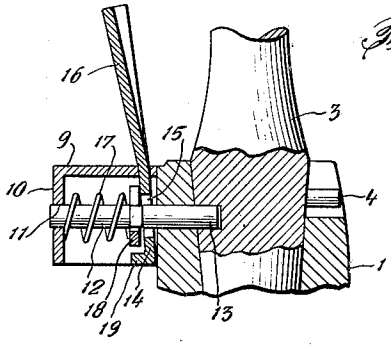


Fig. 5

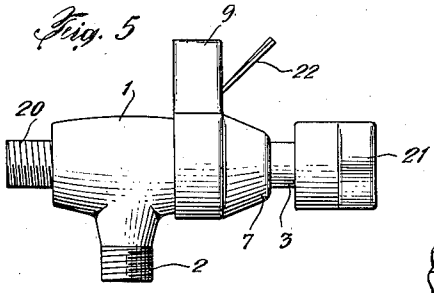


Fig. 6

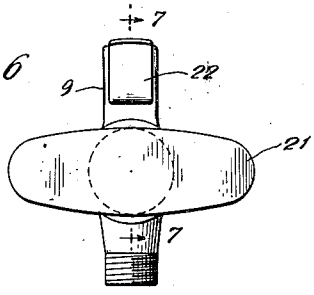
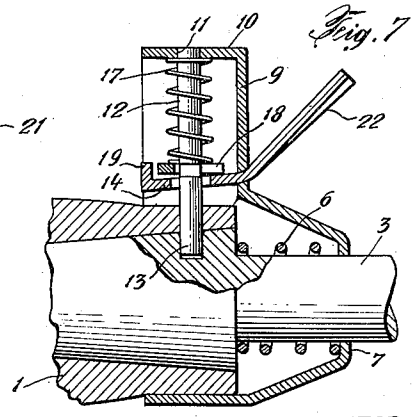


Fig. 7



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SAFETY LATCH FOR GAS VALVES

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4 Claims. (Cl. 251—164)

The present invention is directed to safety devices, more particularly to a means for preventing accidental opening of a gas valve usually of the character to be found in the ordinary domestic gas stoves.

It occurs at intervals that the valves on gas stoves are accidentally opened by someone working around the stove and the escaping gas constitutes a source of danger. It has also occurred that young children, not knowing of the dangerous character of the gas, will in play open up gas valves and thus cause the escape of gas, often with serious results.

In order to avoid such accidents, it has previously been proposed to provide such gas valves with safety devices in the nature of latches or locks which hold the valves closed except at the time when the operator requires the use thereof. Among such devices of this character which had been proposed were some which had a member passing from the valve casing into the valve member itself and held in place to lock the valve. When it was desired to operate the valve, it was necessary to grasp the same with the hand and then to reach over with the thumb over the top of the valve to the side opposite the operator and press a member which released the latch. This was quite awkward and difficult to operate. Furthermore, the device itself was complicated, requiring machined and screw parts and a relatively high cost of assembly. Therefore, devices of such character have never gone into extensive use.

In a modified form of such device known to the prior art, a pivoted member was provided to be operated at a point considerably below the valve stem, and at or near the side opposite the operator. This also had the same disadvantages and in addition required very careful machine work in order to cause the parts to properly fit.

In still another type of safety latch proposed by the prior art, and usually applied to the type of valve which is to be grasped by the thumb and forefinger of the hand, similar latch means were provided. However, in this case, in addition to the disadvantages enumerated above, it became necessary in practically all cases to use both hands, one to operate the latch member and the other to operate the valve simultaneously therewith. This also was highly disadvantageous, as it was almost impossible in many cases to have sufficient space wherein both hands might be used for a simple operation.

The present invention is intended and adapted to overcome the difficulties and disadvantages of the prior art and to provide a valve structure which is cheap, easy to produce, may be made with relatively unskilled labor, which can be readily assembled and disassembled, and which is applicable to various types of valves.

It is also among the objects of the present invention to provide a structure which may be readily and easily operated with one hand, without placing either the hand or fingers in an unnatural position, or subjecting the same to any undue strain.

The invention is more fully disclosed herein in conjunction with the accompanying drawing, constituting a part hereof, and in which like reference characters indicate like parts, and wherein

Fig. 1 is a top plan view of one form of the invention with the handle of the valve broken away for clearness;

Fig. 2 is a side elevational view thereof;

Fig. 3 is an enlarged cross-sectional view taken along the line 3—3 of Fig. 2 with the valve stem omitted;

Fig. 4 is an enlarged cross-sectional view taken along the line 4—4 of Fig. 1;

Fig. 5 is a side elevational view of a slightly modified form of the invention shown applied to a different type of valve;

Fig. 6 is a front elevational view thereof; and

Fig. 7 is a fragmentary, enlarged cross-sectional view taken along the line 7—7 of Fig. 6, with the omission of certain unimportant parts.

There is provided the ordinary valve casing 1, having an opening 2 for the entrance of gas, and provided with a valve element 3 centrally of the casing 1. A stop member 4 on the valve 3 cooperates with the stop 5 on casing 1. A spring 6 on the lower end of valve 3 abuts against the shoulder 7 and casing 1 and holds the valve in operative relation to the casing. A handle 8 projects from one side at the upper end of valve 3. All such construction is standard in the art.

In accordance with the present invention, I provide a support 9, secured to casing 1, the end 10 of which constitutes a bearing and has a bearing opening 11 therein, as most clearly shown in Fig. 4. A pin or latch 12 has one end seated in opening 11 and the other end 13 passing through the casing 1 and into valve 3, as shown. A lever 14 has an opening 15 through which the pin 12 passes and the upper end of said lever is provided with an extension 16 whereby the operator may actuate the pin or latch 12. Such extension is made curved on a radius which has the center of valve 3 as its approximate center. The pur-

pose thereof is that when the operator's finger is placed on extension 16 and the handle 8 is turned, there will be no flat surfaces or sharp edges to irritate the finger. A spring 17 surrounds pin 12 and abuts against the inner portion of surface 10. A lock washer or latch 18 fits into a groove in pin 12 and is interposed between spring 17 and lever 14. Usually, in order to prevent accidental displacement of the lock washer 18, a horizontal extension 19 is provided on the lever 14.

The assembling of this device is quite simple. In order to adapt an ordinary valve for the present invention, it is merely necessary to drill a hole through the outer casing and into the valve. The member 9 is secured to the casing in any suitable manner, as by welding or soldering, the pin 12 is introduced through opening 11 and spring 17, washer 18 and lever 15 introduced thereover as shown in Fig. 4, whereby the entire assembly is completed in a simple manner. If it is desired to remove a part for replacement or repair, ready access is obtained through the lower part of support 9. It will be seen that the assembly is so simple that even unskilled labor may be used for the operations. Furthermore, all of the parts are standard and may be readily obtained in large quantities on the market at very low prices.

In the operation of the device, with special reference to Fig. 2, the operator grasps the handle 8 with his hand, usually with the thumb on the top of the handle and the forefinger underneath the same. By merely pressing the hand against extension 16, the lever 14 is caused to move to the left with the casing 1 as a fulcrum, thus compressing the spring 17 and moving pin 12 to the left so that end 13 is removed from the valve 3. The handle 18 is then turned slightly, still maintaining contact of the forefinger with extension 16, and upon moving for a very short distance the valve is now in operative position. Further opening of the valve does not require that the forefinger be held in place.

In Figs. 5, 6 and 7 I have shown a modification wherein the gas outlet 20 from the valve is at right angles to the gas inlet. Also, in this valve the handle 21 is elongated but is secured at its center to the valve stem 3. The extension 22 on lever 14 is at an angle to the horizontal and is placed above the valve stem 3, differing from the modification shown in Figs. 1 to 4 wherein the extension 16 is directly under the valve handle 8. In the modification of Figs. 5, 6 and 7, in order to operate the same the operator grasps the handle 21, but in place of holding his thumb on said handle the thumb rests upon extension 22 and in the turning of handle 21 the valve 3 is released.

Although I have described my invention, setting forth two specific embodiments thereof, it will be apparent to those skilled in the art that the said description illustrates the character of the invention, which is not to be limited to the specific embodiment shown, as numerous variations in the details may be made within the scope of the invention. For instance, the extension 22 need not be at as great an angle as shown, but may be at a different angle. Also, the assembling of the parts may be made differently, as for example the support 9 may be cast or otherwise formed integral with the casing 1. The relative size of the parts and the materials from which they are made may be changed at will. These and other variations may be made in my invention, the scope of which is not to be limited except by the character of the claims appended hereto.

What I claim is:

1. A valve for gas stoves and the like comprising a valve member, a handle at one end thereof, a casing surrounding said member and connected to a gas supply, a latch projecting through said casing and into said member to lock the same in closed position, a spring for holding said latch in said position, an operating lever having a portion bearing against said casing, said bearing constituting the fulcrum of said lever, said lever having an opening in an intermediate portion thereof, said latch passing through said opening, an extension on said lever projecting in proximity to and below said handle and adapted to make contact with the finger of the operator, said extension being on the same side of said casing as said valve handle and being movable in a direction directly towards said valve member, a support secured to said casing, the free end of said latch being held therein, one end of said spring contacting with the inside of said support and surrounding said latch, the other end of said spring bearing against said lever.

2. A valve for gas stoves and the like comprising a valve member, a handle at one end thereof, a casing surrounding said member and connected to a gas supply, a latch projecting through said casing and into said member to lock the same in closed position, a spring for holding said latch in said position, an operating lever having a portion bearing against said casing, said bearing constituting the fulcrum of said lever, said lever having an opening in an intermediate portion thereof, said latch passing through said opening, an extension on said lever projecting in proximity to and below said handle and adapted to make contact with the finger of the operator, said extension being on the same side of said casing as said valve handle and being movable in a direction directly towards said valve member, a support secured to said casing, the free end of said latch being held therein, one end of said spring contacting with the inside of said support and surrounding said latch, said lever surrounding said latch and contacting with said casing, and a washer interposed between said lever and spring.

3. A valve for gas stoves and the like comprising a valve member, a handle at one end thereof, a casing surrounding said member and connected to a gas supply, a latch projecting through said casing and into said member to lock the same in closed position, a spring for holding said latch in said position, an operating lever on said latch adapted to compress said spring, an extension on said lever projecting in proximity to and below said handle and adapted to make contact with the finger of the operator, said extension being on the same side of said casing as said valve handle and being movable in a direction directly towards said valve member, a support secured to said casing, said support having an angular extension parallel with the axis of said valve member, the free end of said latch being held therein, said spring contacting with the inside of said support and surrounding said latch, said lever surrounding said latch and contacting with said casing, an opening in said support through which said extension passes, the wall of said opening constituting a bearing for said lever, and a washer interposed between said lever and spring.

4. A valve for gas stoves and the like comprising a valve member, a handle at one end thereof, a casing surrounding said member and connected to a gas supply, a latch projecting through said

casing and into said member to lock the same in closed position, a spring for holding said latch in said position, an operating lever on said latch adapted to compress said spring, an extension on said lever projecting in proximity to said handle and adapted to make contact with the finger of the operator, said extension being on the same side of said casing as said valve handle and being movable in a direction directly towards said valve member, a support secured to said casing, said support having an angular extension parallel with the axis of said valve member, the free end of said latch being held therein, said spring contacting with the inside of said support and surrounding said latch, said lever surrounding said latch and contacting with said casing, an opening in said support through which said extension passes, the wall of said opening constituting a bearing for said lever, and a washer interposed between said lever and spring.

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