Nov. 15, 1960 H. C. GOSS 2,960,304

VALVE FOR GAS TORCHES

Filed Oct. 3, 1958

Fig.1.

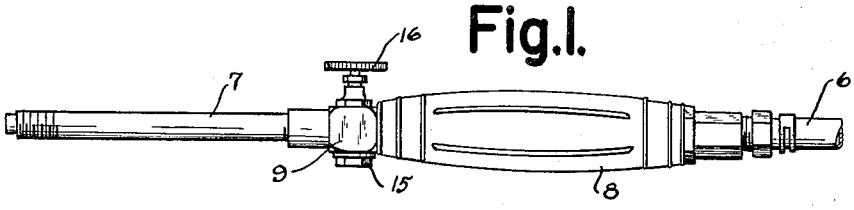


Fig.2.

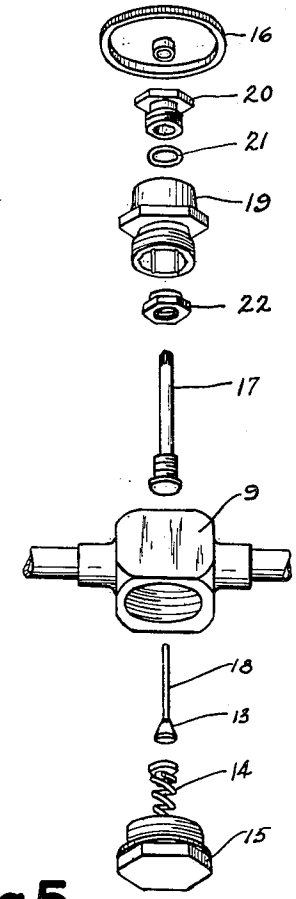


Fig.3.

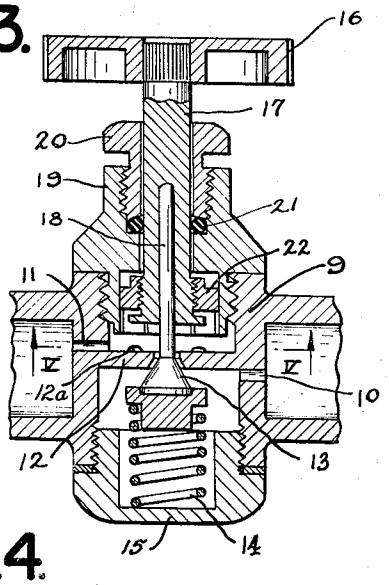


Fig.4.

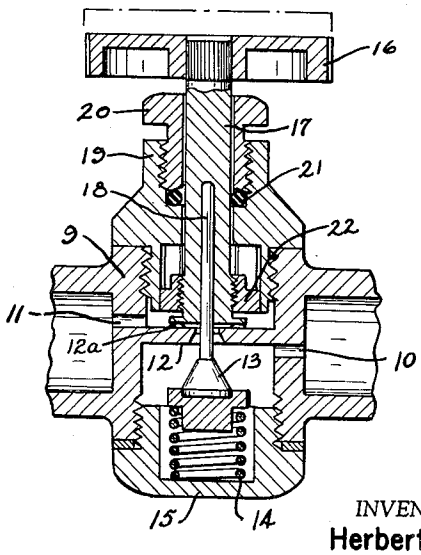
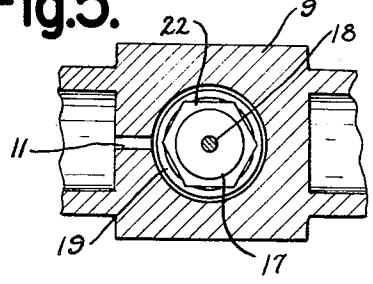


Fig.5.



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VALVE FOR GAS TORCHES

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2 Claims. (Cl. 251—276)

My invention relates to valves that are particularly suitable for use with blow torches and the like.

One object of the invention is to provide a structure wherein the flow of gas may be controlled more safely than in the case of various prior devices of this character.

More specifically stated, my object is to provide a valve wherein the valve may be operated in such manner as to permit passage of only sufficient gas to a burner tip to serve as a pilot flame and whereby the valve can be opened more fully to admit the flow of a working supply of gas to a burner tip.

As shown in the accompanying drawing:

Figure 1 is a side view of the valve.

Fig. 2 is an exploded view of the various valve parts.

Fig. 3 is a vertical sectional view of the valve on an enlarged scale, with the valve open for only a restricted flow of gas.

Fig. 4 is a view showing the valve fully open.

Fig. 5 is a view taken on the line V—V of Fig. 3.

The valve controls flow of gas from a supply pipe **6** to a discharge conduit **7** that is connected to a suitable burner. The line **6** extends through a handle **8** and discharges into a valve body **9** that has an inlet port **10** and an outlet port **11**.

A valve seat **12** is provided with a port that affords communication between the ports **10** and **11**. The flow of gas being controlled by a valve **13** that is urged toward closed position by a spring **14** which seats upon a bottom cap **15** for the valve body. The valve **13** is actuated by a knurled thumbpiece **16** which serves also as a push button. The member **16** tightly fitted to a shank **17** that is centrally bored to receive the stem **18** of the valve **13**. A valve bonnet **19** is threaded into the upper end of the valve body **9** and has a packing gland or nut **20** that compresses packing ring **21**.

A threaded collar **22** is non-rotatably supported in the valve bonnet **19** but is vertically slideable therein when the button **16** is depressed against the spring **14** to move the valve from the slightly open position of Fig. 3 to the fully operative position of Fig. 4.

When the operator wishes to initiate a flame cutting operation, he will turn the button **16** to effect movement of its shank **17** downwardly, by reason of its threaded connection with the collar **22**. Such rotative movement of the button permits a small amount of gas to flow, and thus provides for a pilot flame which will not be so dangerous to the operator as if he attempted to light a full flow of gas at the tip. When the pilot flame has

been lit, the operator will depress his thumb against the button **16**, moving it from the position shown in Fig. 3 to that shown in Fig. 4, the collar **22** being free to slide downwardly during this movement. Bosses **12***a* serve as stops to limit downward movement of the valve operating member **17** to thereby prevent cutting off of gas flow when said member is depressed.

The convenience and safety of my valve structure arises out of the fact that the operator, while grasping the handle **8**, can use his thumb in engagement with the knurled edge of the button **16**, rotating it slightly to gradually open the valve, through downward movement of the shank **17** in the collar **22**. He thereby avoids danger of too quick initial opening of the valve preliminary to lighting a pilot flame at the burner. Of course, thereafter, he will shift his thumb to the top of the button **16** and press it downwardly to the desired distance.

I claim as my invention:

1. Valve apparatus for controlling flow of fluids, that comprises a valve body, a handle rigidly connected at one end to the valve body and being in the form of a grip member for grasping by the hand of the operator, the valve body having an inlet port through which fluid will enter, and having an outlet port, a valve seat disposed between the inlet and outlet ports and having a valve port therethrough that provides communication between the inlet and outlet ports, a valve between the inlet port and the valve seat and movable to open and close the valve port, a spring yieldably holding the valve against the side of the seat which is adjacent to the inlet port, and in closed relation to the valve port, a valve stem carried by the valve and extending in a direction at right angles to the axis of said handle, a valve-operating member coaxial with the stem and extending inwardly from a point exteriorly of the valve body and rotatable on the valve stem and also movable axially inward to move the valve to open position against the spring, the said member being also axially shiftable in the valve body through threaded engagement thereof with a nut that is non-rotatably mounted in the valve body and is movable axially with the operating member, means carried by the valve body for limiting the extent of axial movement of said nut, the said spring urging the valve, its stem and the valve-operating member outwardly, and a thumb-operative disc on the outer end of the valve-operating member, in position to be rotated by the thumb of an operator who holds the handle, to effect slow opening of the valve through turning of said threaded connection, the disc when pressed inwardly by the operator's thumb, serving to depress the valve against the spring, for quick opening movement.

2. Valve apparatus as recited in claim 1, wherein the handle is tubular co-axial with the inlet and outlet ports and serves as a conduit for flow of gas into the inlet port.

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