

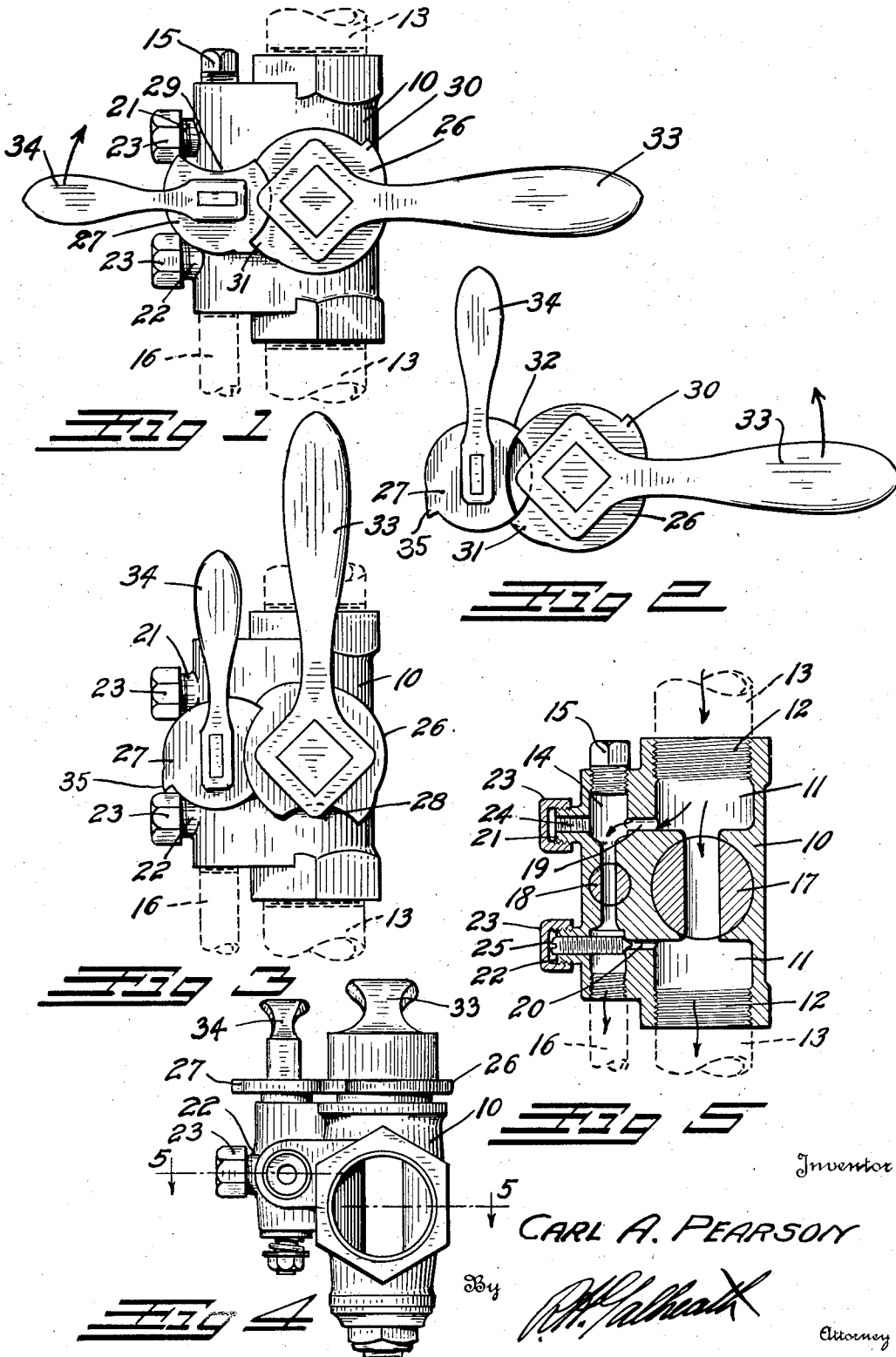
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VALVE CONSTRUCTION

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VALVE CONSTRUCTION

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3 Claims. (Cl. 277—53)

This invention relates to a valve construction for gas burning devices relates more particularly to the interlocking valve illustrated in the applicant's application, Serial No. 563,995, filed Sept. 21, 1931 of which application this application is a division.

The principal object of the invention is to provide means which will reduce the possibility of explosions in gas burning devices to a minimum by preventing the gas from being turned into a burner when the pilot light is shut off.

Another object of the invention is to so construct an interlocking valve that it will be impossible to turn off the pilot light until the main gas supply has been first turned off.

A further object of the invention is to provide an interlocking valve which can be quickly adapted to either "right" or "left" hand installations.

A still further object is to so construct the valve that any liability of gas leakage from the valve mechanism will be eliminated.

Other objects and advantages reside in the detail construction of the invention, which is designed for simplicity, economy, and efficiency. These will become more apparent from the following description.

In the following detailed description of the invention reference is had to the accompanying drawing which forms a part hereof. Like numerals refer to like parts in all views of the drawing and throughout the description.

In the drawing:

Fig. 1 is a side elevation of the improved composite, interlocking, valve illustrating both of its valve members in the closed position.

Fig. 2 is a diagrammatic view of the interlocking mechanism illustrating the pilot valve in the open position and the main valve in the closed position.

Fig. 3 is a side elevation illustrating both valve members in the open position.

Fig. 4 is an end elevation of the valve in the position of Fig. 3.

Fig. 5 is a horizontal section taken on the line 5—5, Fig. 4.

The invention comprises a valve housing 10 preferably cast, or otherwise formed, as a single integral unit. The housing 10 contains a main passage 11 extending entirely therethrough and terminating in threaded extremities 12 for the reception of the main gas supply line to the burners, which is indicated in broken line on the drawing at 13. The housing 10 also contains a pilot passage 14 extending entirely therethrough

and terminating in threaded extremities, one of which receives a screw plug 15 and the other of which receives the pipe to the pilot burner such as indicated in broken line at 16. A main valve member 17 controls the flow through the main passage 11 and a pilot valve member 18 controls the flow through the pilot passage 14.

Two by-pass passages 19 and 20 are formed in the housing 10 communicating between the passages 11 and 14 at each side of the valves 17 and 18. Threaded nipples 21 and 22 are formed on the housing 10 opposite the passages 19 and 20, respectively. These nipples are threaded on the exterior to receive caps 23 and are threaded on the interior, as indicated at 24, to receive a needle valve 25.

The needle valve is preferably provided with a suitable screw driver slot, as illustrated, to facilitate its adjustment.

By interchanging the needle valve 25 between the nipples 21 and 22 the valve can quickly be converted for either "right" or "left" hand operation. For instance, as shown in Fig. 5, the gas or other fluid enters the passage 11 in the direction indicated by the arrows in Fig. 5. A portion of it by-passes through the passage 19 to the pilot passage 14 thence through the pilot valve member 18, exiting through the passage 16. Should it be desired to install the valve opposite hand, so that the gas may enter from the opposite extremity, the plug 15 and the pipe 16 are interchanged and the needle valve 25 is threaded through the nipple 21 so as to close the passage 19. The gas will now flow through the passage 20 thence through the valve 18 to the pipe 16.

Thus, it can be readily seen that the valve can be quickly converted for the desired direction of flow by simply interchanging the plug 15 and the needle valve 25. The caps 23 effectively prevent leakage from the nipples regardless of the position of the needle valve.

Interlocking discs 26 and 27 are formed on the valve members 17 and 18, respectively, on the exterior of the housing 10. The disc 26 is provided with an arcuate notch 28 having a radius substantially similar to the radius of the disc 27, so that the latter may rotate therein. The disc 27 is formed with an arcuate notch 29 of a radius substantially similar to the radius of the disc 26, so that the latter may rotate therein. The disc 26 is provided with stop lugs or projections 30 and 31 and the disc 27 is provided with stop lugs or projections 32 and 35.

The valve member 17 with its associated disc 26 is arranged to be manually operated from a

main handle 33. The valve member 18 is similarly arranged to be operated from a pilot handle 34.

Let us assume that both valves are closed.

- 5 The discs and their handles will be in the position illustrated in Fig. 1. It can be readily seen that it will be impossible to move the main handle 33 in either direction, since it is completely locked by means of the arcuate edge of the disc 27 which is in place in the notch 28. Therefore, when used upon a gas burner installation it will be impossible for anyone to turn the main gas supply into the burner without previously opening the pilot valve member 18, to the position of Fig. 2. It can be seen that when in the latter position the disc 27 has released the notch 28 so that the main handle 33 may be rotated in the direction of the arrow of Fig. 2. It can not be rotated in the opposite direction since the stop lug 31 is in contact with the disc 27.

- When rotated in the direction of the arrow of Fig. 2 to the position of Fig. 3 the disc 26 enters the notch 29 of the disc 27 and securely locks the pilot valve member 18 from any movement whatsoever. The pilot valve can not now be closed until the main valve member 17 is first closed to the position of Fig. 2. The lugs 30, 31, 32, and 35 act as stops to stop the rotation of the valve members 17 and 18 at the fully opened and closed positions.

- The valve members themselves may have any desired construction. As illustrated they are similar to the usual type of tapered plug valves employed in gas service.

- To remove the necessity for interchanging the needle valve, two needle valves may be employed, one for each of the by-pass passages 19 and 20. In this case the "hand" of the valve can be changed by simply closing one needle valve and opening the other. The open needle valve can, if desired, be employed for setting the amount of flow through the pilot passage to any desired amount.

- 45 The invention has been particularly described as applied to the control of gas supply lines to burners. It is, of course, to be understood that it is not necessarily limited to this use but will be found valuable wherever it is desired to interlock two valves so that they must be opened or closed in a predetermined sequence.

- While a specific form of the improvement has been described and illustrated herein, it is desired to be understood that the same may be varied, within the scope of the appended claims, without departing from the spirit of the invention.

- Having thus described the invention, what is claimed and desired secured by Letters Patent is:—

- 60 1. A reversible, composite, main and pilot valve comprising: an integral valve housing; a main passage formed in said housing; pipe receiving

threads at each extremity of said main passage for receiving the pipes of the main supply line; a pilot passage formed in said housing adjacent said main passage; pipe receiving threads at each extremity of said pilot passage so that a pilot supply pipe may be threaded into either desired extremity and so that a threaded plug may be threaded into the remaining extremity of said pilot passage to close the latter; a main valve member controlling the flow through said main passage; a pilot valve member controlling the flow through said pilot passage; two by-pass passages formed in said housing communicating between said main and pilot passages at each side of said main and pilot valve members; nipples projecting from said housing opposite each of said by-pass passages, said nipples being externally and internally threaded; a needle valve designed to be threaded into the internal threads of either of said nipples to close the opposing by-pass passage; and threaded caps engaging the external threads on said nipples and sealing the external opening of the same.

2. In an interchangeable right and left hand composite valve comprising: a housing; a main passage extending entirely through said housing and terminating in threaded extremities; a pilot passage extending entirely through said housing and terminating in threaded extremities; a main valve member controlling the flow through the main passage; a pilot valve member controlling the flow through the pilot passage; a by-pass passage at each side of both said valves communicating between said two passages; internally threaded openings through said housing opposite each of said by-pass passages; a needle valve adapted to be threaded through either of said openings to close either of said by-pass passages; and a plug adapted to be inserted in either extremity of said pilot passage.

3. In an interchangeable right and left hand composite valve comprising: a housing; a main passage extending entirely through said housing and terminating in threaded extremities; a pilot passage extending entirely through said housing and terminating in threaded extremities; a main valve member controlling the flow through the main passage; a pilot valve member controlling the flow through the pilot passage; a by-pass passage at each side of both said valves communicating between said two passages; internally threaded openings through said housing opposite each of said by-pass passages; a needle valve adapted to be threaded through either of said openings to close either of said by-pass passages; and a plug threaded into one extremity of said pilot passage on the opposite side of said valve from the needle valve which is closing one of said by-pass passages.

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