

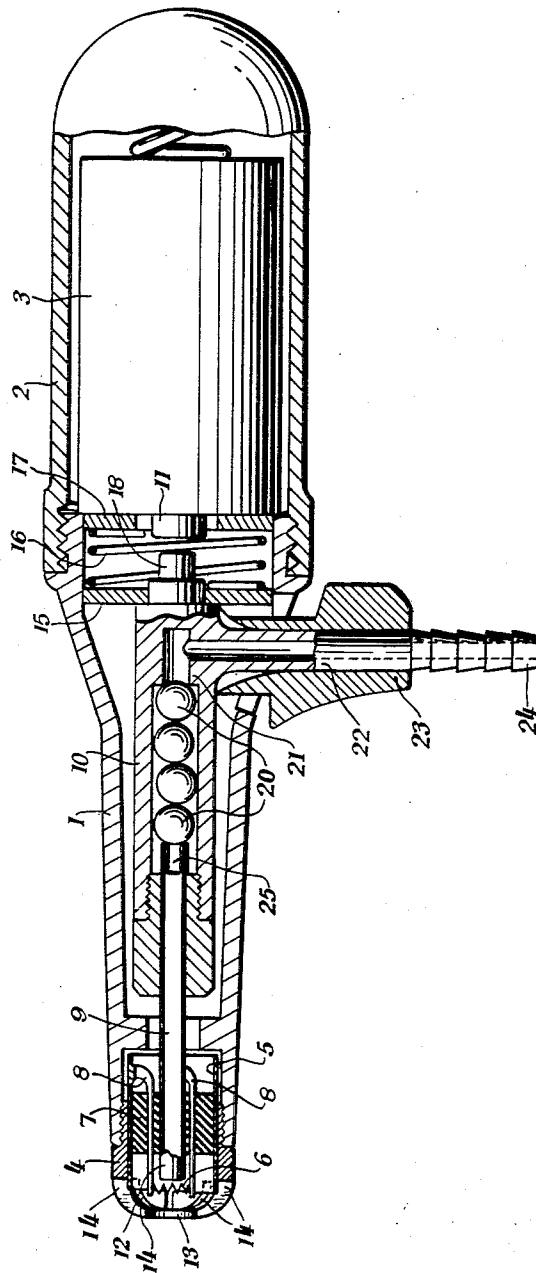
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HAND IGNITERS FOR GAS BURNERS

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HAND IGNITERS FOR GAS BURNERS

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This invention relates to igniting appliances for gas burners of the kind in which a pilot tube supplies gas to an igniting burner associated with an electric filament energised by a dry battery, the passage of gas to the igniting burner being controlled by a manually operated valve which simultaneously operates a switch or contact device in the filament circuit.

In prior British patent specification No. 477,498 there is described an improved appliance of this kind which is portable and capable of use as a hand torch and wherein the flow of gas through the pilot tube is controlled by two valves, one being a manually operated main control valve and one a gravity valve which closes when the appliance is pointed upwardly so that in this position no flame at all will be projected or only a feeble flame unlikely to harm any persons in the vicinity.

The primary object of the present invention is to provide an igniter appliance of the kind referred to embodying a gravity valve functioning as in the invention of the aforesaid prior specification and also serving as the main control valve.

According to the present invention an igniting appliance of the kind hereinbefore set forth, and constructed as a portable device for use as a hand torch, is provided with a gravity valve member housed in a valve body feeding the igniting burner and normally held immovable in a closed position, manually operated means being provided to free the valve member and permit it to move by gravity into an open position.

In one way of carrying out the said invention, there is provided a hand igniting appliance for gas burners which comprises a valve body axially movable within a casing on a central gas burner feed tube fixed relatively to the casing and terminating within the valve body, a gravity valve carried in the body and adapted to be pressed on to a valve seating inside the body by the end of said feed tube, a resilient device normally thrusting the valve body on to the gravity valve to close the valve, and operating means to move the body against the resistance of the resilient device to free the valve member (permitting the latter to open by gravity) and to close suitable contacts in the igniter filament circuit.

To enable the invention to be clearly understood an embodiment will now be described in greater detail, by way of example, with the aid of the accompanying drawing which shows a longitudinal section.

Referring to the drawing there is a main outer casing comprising the body 1 to which is screwed the housing 2 for a dry battery 3. The casing body 1 is fitted with a detachable nozzle 4 which carries a liner 5 fixed therein and an electric filament 6. An electrical insulating block 7 is mounted in the liner 5 and through this there extends a pair of conductive posts 8 which carry the said filament. In this embodiment the casing is of metal constituting an earth return for the filament circuit to the battery 3, but with a casing of insulating material an appropriate return lead would be provided. The other lead runs via a central gas burner feed tube 9, thence through a valve

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housing body 10 to the central electrode 11 of the battery. The end 12 of the tube 9 constitutes a burner which is ignited when the gas flows over the energised filament 6, the flame being projected out of the nozzle orifice 13. The nozzle 4 is formed with a number of axial slits 14.

The aforesaid valve housing 10 is axially movable within the casing 1 on the centrally disposed gas burner feed tube 9. To one end of the valve housing 10 a disc 15 is secured and this disc is axially slidable within the casing against the action of a compression spring 16 interposed between said disc and a fixed end plate 17. A contact stud 18 is carried by the disc and makes electrical contact with the central electrode 11 of the dry battery 3 when the valve housing 10 is moved against the force of the spring 16.

Within the valve housing 10 there is mounted a line of balls 20 the right-hand end one of which constitutes a loose valve member which together with the seating 21 comprises a valve for admitting gas from the branch 22 to the housing and thence, via the feed tube 9 to the burner 12. The spring 16 normally presses the housing 10 and consequently the valve element 20 towards the feed tube 9, and thus the valve ball 20 is pressed solidly against the end of the tube 9 (with the interposition of the remaining balls 20). The end of the burner feed tube 9 is slotted at 25. If, however, the housing 10 is moved to the right (with respect to the drawing) in relation to the casing 1, against the action of spring 16 then the valve ball is freed, and is permitted to roll away from the seating, opening the valve, if the igniter should be tilted downwardly.

A trigger 23 is secured to the gas inlet branch 22 for the purpose of moving the housing 10 in the manner described so that it slides on the relatively fixed tube 9. The inlet branch 22 is provided or formed with a grooved end 24 to receive a flexible gas feed tube (not shown) and leads to a passage in the trigger which communicates with the interior of the valve body through the valve seating 21.

I claim:

1. An igniting appliance for a gas burner constructed as a portable device for use as a hand torch comprising in combination and outer casing, a valve housing body within said casing having a valve seating and a gas inlet branch, a burner nozzle located at one end of said casing, a gas burner housed within said nozzle, a gas burner feed tube leading from the valve body to the burner and fixed relatively to the casing and terminating within the valve housing body, the said valve housing body being axially slidable within the outer casing on the gas burner feed tube, a loose valve member housed in the valve body and co-operating with said valve seating, said valve member being normally held immovable in the closed position on the valve seating, and manually operable means to free the valve member and permit it to move by gravity within the valve housing away from and off said seating into a valve open position when the end of the casing containing the burner nozzle is pointed downwardly.

2. An igniting appliance according to claim 1 in which a series of balls is located between the end of the gas burner feed tube and the valve seating, and the loose valve member is an end one of said series.

3. An igniting appliance according to claim 1 in which the valve housing body is axially slidable within the outer casing on the gas burner feed tube the latter being fixed relatively to the casing and terminating within the valve housing body, a valve seating inside the body, a gravity valve member within the body adapted to be pressed on to the valve seating by the end of said feed tube, a resilient device normally thrusting the valve body on to the gravity valve member to close the valve, and manually operated

means adapted to move the valve body against the resistance of the resilient device to free the valve member, an igniting filament in the burner nozzle co-operating with the burner, a housing formed as part of the outer casing for a dry battery to energise the filament, and a switch in the filament-battery circuit operable into the closed position by the said manually operated means simultaneously with the freeing of the valve.

4. An igniting appliance according to claim 3 in which a dry battery is housed in the outer casing and the axially slidable valve housing body is provided with a contact stud and adapted to move said stud into engagement with the central electrode of said dry battery as and when the manually operated means is actuated to move the valve housing body.

5. An igniting appliance according to claim 1 in which the loose valve member within the body is adapted to be pressed on to the valve seating by the end of the said feed tube, a resilient device normally thrusting the valve body on to the valve member to close the valve, and manually operated means adapted to move the valve body against the resistance of the resilient device to free the valve member.

6. An igniting appliance according to claim 5 in which

the nozzle is detachable and carries an electric filament.

7. An igniting appliance according to claim 5 in which a plate is fixed to and within the outer casing, and the resilient device is a compression spring disposed between the valve housing body and the said plate.

8. An igniting appliance according to claim 5 in which the slidable valve body is formed with a trigger extending through an opening in the outer casing whereby it may be moved against the resistance of the resilient device.

9. An igniting appliance according to claim 8 in which the trigger device is secured to a gas inlet branch extending from the valve housing body and provided with a union end to receive a flexible gas feed tube, said gas inlet branch leading to a passage in the trigger which communicates with the valve seating within the valve body.

References Cited in the file of this patent

UNITED STATES PATENTS

1,254,716	Madeksho	Jan. 29, 1918
1,380,950	Fornwalt	June 7, 1921
2,666,480	Peterson	Jan. 19, 1954