

# United States Patent [19]

Zonneveld et al.

[11] 3,888,277

[45] June 10, 1975

[54] FUEL OIL FLOW CONTROLS

3,625,244 12/1971 Giwosky ..... 137/405

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## [57] ABSTRACT

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The oil flow control device, in the form of a chamber  
in which a constant oil level is maintained by a float  
controlled inlet valve, has an outlet metering device in  
the form of a perforated disc which is rotatable to  
bring any selected one of the metering apertures  
formed by the perforations into register with an outlet  
orifice. A cleaning device is mounted opposite the me-  
tering apertures to push dirt particles out of the aper-  
tures, the device being a manually movable pricker  
pin or a brush constantly in engagement with the disc.

[21] Appl. No.: 418,412

[52] U.S. Cl. .... 137/405; 137/244

[51] Int. Cl. .... F16k 11/02

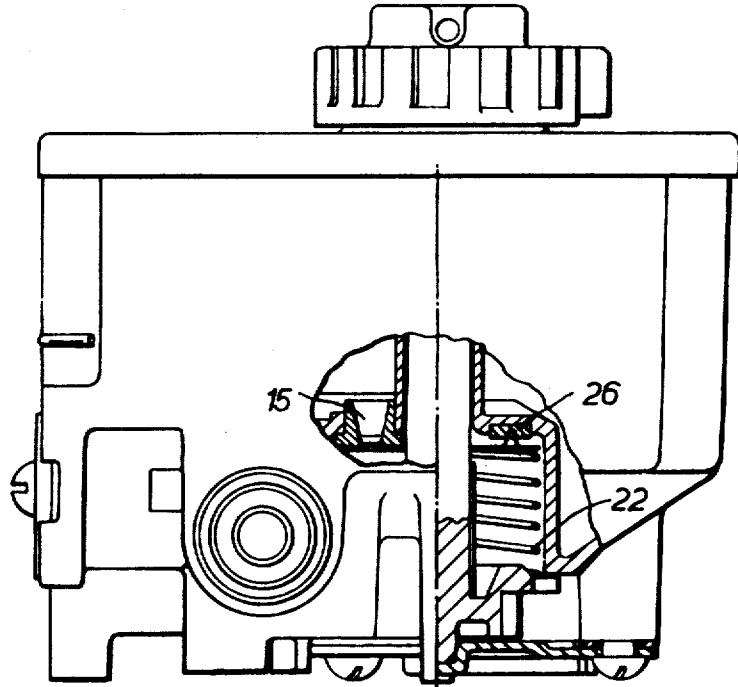
[58] Field of Search ..... 137/242, 244, 245, 245.5,  
137/400, 403, 405, 409, 410, 456

## [56] References Cited

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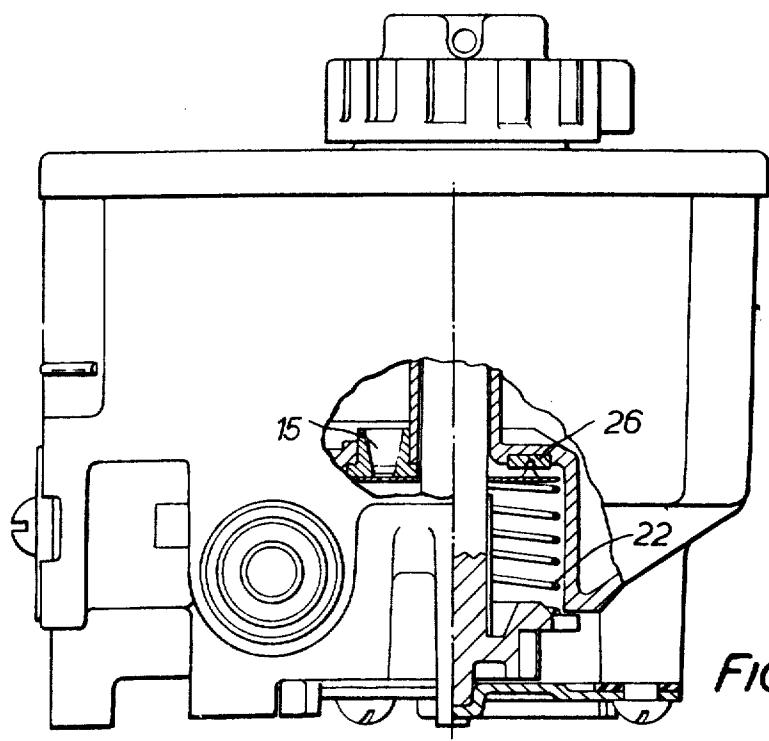
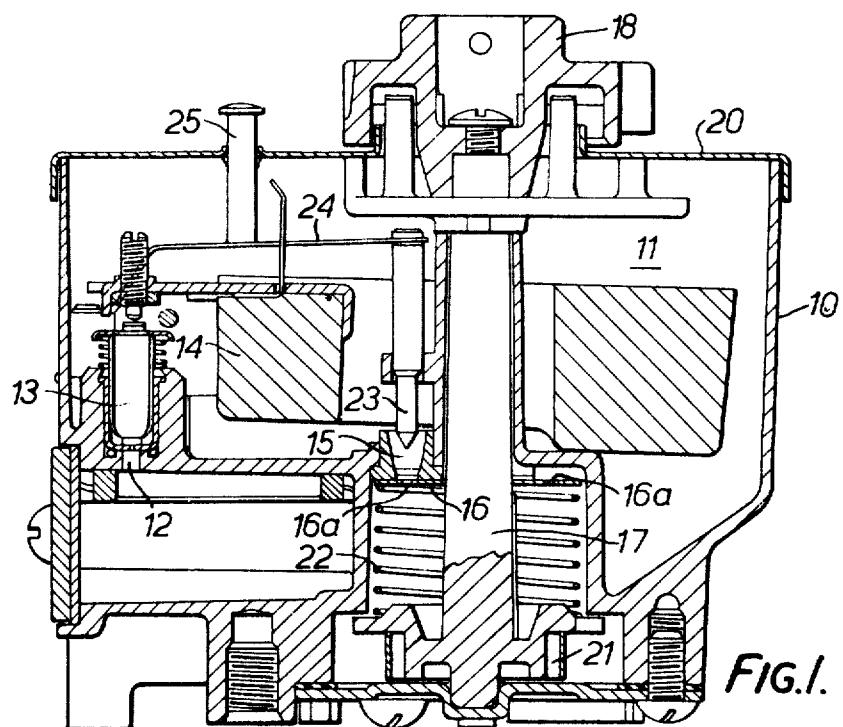
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1 Claim, 2 Drawing Figures



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# 1

## FUEL OIL FLOW CONTROLS

### BACKGROUND OF THE INVENTION

This invention relates to fuel oil flow controls, in particular for controlling the flow of fuel oil to the pot-type burner of a domestic space heater.

In U.S. Pat. No. 3,625,244 there is described an oil flow control device comprising a housing defining therein a chamber for containing oil and having an outlet, a metering disc having a plurality of metering apertures therein, the metering disc being movable to bring any selected one of its apertures into register with the outlet. The apertures are of different sizes in order to vary the flow rate, and the disc is located by a ratchet device.

On occasion a particle of dirt may become lodged in one of the apertures and so upset the flow rate, and removal of the dirt necessitates shutting down the control and removal of the disc for cleaning.

### SUMMARY OF THE INVENTION

The present invention consists of the provision of a cleaning device mounted within the housing of the oil control and movable into engagement with said openings to dislodge dirt particles therefrom.

### DESCRIPTION OF THE DRAWINGS

FIG. 1 is a section in a vertical plane through an oil flow control device according to the invention, and showing one form of cleaning device.

FIG. 2 is an end elevation, part sectioned, of the control device of FIG. 1, showing an alternative or additional form of cleaning device.

### DESCRIPTION OF THE PREFERRED EMBODIMENTS

As shown in the drawing, the control device comprises a housing 10 defining therein a chamber 11 for containing oil, the chamber having an oil inlet 12 and an inlet valve 13 controlled by a float 14 to maintain a constant level of oil within the chamber.

An outlet orifice 15 is formed in the base of the chamber, and flow through the outlet orifice is metered by a metering disc 16 keyed to a vertical shaft 17, the latter being rotatable by a knob 18 in the cover 20 of the housing. The disc 16 contains perforations 16a disposed around a circle about the axis of the shaft, and each of the metering apertures formed by the perforations can be brought into register with the outlet orifice by rotation of the shafts into any one of a corresponding number of positions which are located by a ratchet

device 21. The disc is biased into engagement with the outlet orifice by a spring 22.

In one embodiment of the invention illustrated in FIG. 1, the cleaner is in the form of a pricker pin 23 disposed parallel to the disc shaft and movable manually against the force of a return leaf spring 24, by a push button 25 or the like in the cover of the housing.

The pricker pin is located with its point directed towards the circular path of movement of the disc apertures so that when the disc is brought to rest by its ratchet device the pin will be directly opposite one of the metering apertures. Preferably the pin is located, as shown, on the axis of the outlet orifice to act on the aperture through which the oil is currently being metered.

15 In another embodiment of the invention, as seen in FIG. 2, the cleaning device takes the form of a brush 26 supported in a wall of the housing above the disc and held in permanent sliding engagement with the disc. Preferably the brush is located diametrically opposite the outlet orifice so that the disc will be biased by spring 22 into engagement with the brush 26 with a force approximately balancing that between the disc and the outlet orifice. If, therefore, an aperture of the disc becomes clogged with dirt, it is necessary merely 20 to rotate the vertical shaft on which the disc is mounted to bring each of the apertures, in turn, into engagement with the brush. The brush is located in a recess in the base of the housing, and preferably this recess is inclined in such a way that the bristles are inclined to the surface of the disc. As a result, rotation of the disc in one direction will cause the bristles to sweep over the apertures, but rotation in the opposite direction will tend to force the bristles into the apertures and push dirt through the apertures.

25 It will be apparent that the cleaning brush can be additional to, or alternative to, the pricker pin.

We claim:

1. An oil flow control device comprising a housing defining therein a chamber for containing oil and having an outlet, a metering disc having a plurality of apertures therein, the metering disc being movable to bring any selected one of its apertures into register with the outlet, and a brush mounted within the housing separate from the orifice in engagement with said metering disc and said apertures in the disc as the disc is moved whereby dirt particles are dislodged from the apertures by the brush.

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