March 30, 1937. M. H. BRADEN 2,075,334

OIL BURNER DRAFT CONTROL

Original Filed Feb. 11, 1932

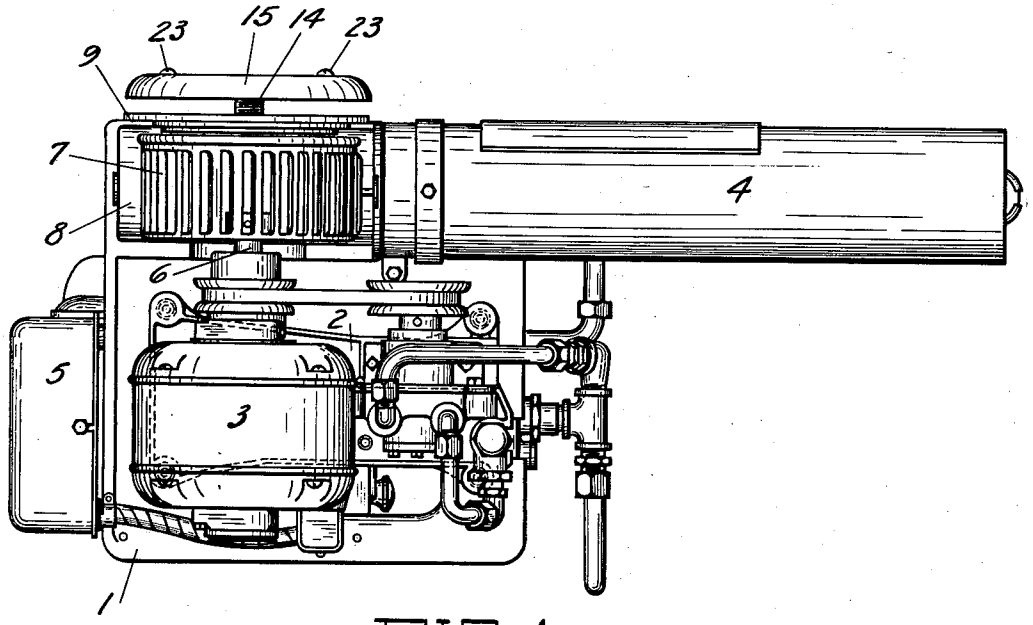


FIG-1

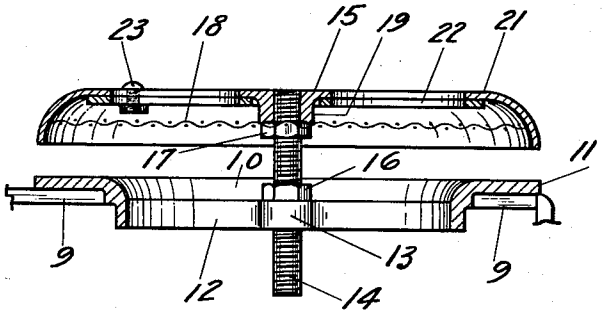


FIG-2

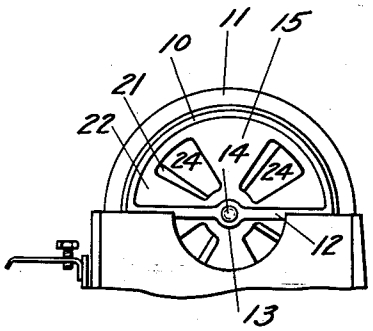


FIG-3

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OIL BURNER DRAFT CONTROL

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Original application February 11, 1932, Serial No. 592,282. Divided and this application January 20, 1936, Serial No. 59,847

3 Claims. (Cl. 230—114)

The present invention relates to oil burner units and more especially to heaters of the domestic type, though the invention is not limited thereto and may be applied to larger capacity heaters, as will more fully appear hereinafter. This is a division of my prior co-pending application, Serial No. 592,282, filed February 11, 1932, on Demountable oil burner mechanism.

The primary purpose of this invention is to provide readily adjustable control means for the air admission opening to the burner fan; to provide means for the purpose stated which is so constructed that the amount of air admitted may be regulated with nicety from a small minimum to a large maximum. This invention comprises such further objects, advantages, and capabilities as will hereafter appear and as are inherent in the construction disclosed herein. My invention further resides in the combination, construction and arrangement of parts illustrated in the accompanying drawing and, while I have shown therein what is now considered the preferred embodiment of this invention, I desire the same to be understood as illustrative only and not to be interpreted in a limiting sense.

In the drawing annexed hereto and forming a part hereof,

Fig. 1 is a plan view of a burner unit embodying my present invention, with the cover of the fan removed to show the relationship of the damper mechanism to the fan;

Fig. 2 is a substantially horizontal section through the damper mechanism;

Fig. 3 is a fragmentary elevation designed to illustrate the relationship of the parts of the damper.

Reference will now be made in greater detail to the annexed drawing for a more complete description of this invention. Mounted on a main base 1 is an auxiliary base 2 which carries a motor 3. The air conduit 4 which surrounds the fuel nozzle and electrodes and carries the air to the point of combustion is also carried by the main base 1, as is the switch box 5. As disclosed in my prior application referred to above, the main and auxiliary bases are connected only by resilient cushions at the four corners of the auxiliary base. These practically eliminate transmission of vibrations from the motor to the base, air tube 4, furnace, and house. On the shaft 6 of the motor 3 is mounted a fan 7 which is contained in the compartment 8 provided with a cover not shown herein but bearing the number 20 in the application identified above. In the wall 9 of the compartment 8 and opposite the open end of the fan is a sleeve 10 having a flange 11 which rests against the outside of the wall 9. Extending across this sleeve is a bar 12 having substantially midway of its length an enlargement 13 provided with a screw-threaded opening for the reception of the correspondingly threaded member 14 by which the damper member is carried. This damper member is indicated in general by the numeral 15.

A nut 16 on the screw-threaded member 14 screws against the cross bar 12 and secures these two in relatively adjusted position. The damper member 15 has screw-threaded connection with the outer end of member 14 and is held in relatively adjusted position by means of the nut 17. Between the nut 17 and the end of boss 19 on the inner face of damper 15 is a screen 18 whose function is to prevent children and others from pushing anything through the openings of the damper and into the fan compartment. As shown most clearly in Figs. 2 and 3, the damper member 15 comprises outer and inner relatively adjustable members 21 and 22 which may be secured in relatively adjusted positions by means of the bolts 23. The parts 21 and 22 are provided with openings 24 which may be caused to register more or less closely so as to regulate the amount of air admitted to the fan chamber.

If the damper 15 is entirely closed up against the flange 11 and the openings 24 in members 21 and 22 are entirely open and yet the burner does not receive air enough, the nut 16 is loosened so as to permit damper 15 to be moved away from flange 11 somewhat so as to permit a greater supply of air to reach the fan. If it is now found that too much air is delivered to the fan, a part of this supply can be cut off by loosening the bolts 23 and adjusting the parts 21 and 22 somewhat with relation to each other. When the spacing of the damper 15 from the flange 11 has been made such that the supply of air to the burner is approximately correct, the nut 16 can be tightened up to hold these parts in adjusted position and the remainder of the adjustment can be made by means of the relative adjustment of the parts 21 and 22. Thereafter, if minor adjustments in the size of the burner nozzle be made, it is not likely that the spacing of the damper 15 from the flange 11 will have to be changed, any necessary change in the air supply being accomplished by means of adjustment of the plates 21 and 22. However, if it should prove that this adjustment is insufficient, any needed major adjustment may be made, as indicated above, by changing the spacing of the

parts 11 and 15. This arrangement gives a nicety of adjustment of the air supply which is impossible with prior structures and which is important with the present day refined oil burner mechanisms.

It is of course understood that the specific description of structure set forth above may be departed from without departing from the spirit of my invention as set forth in this specification and the appended claims.

Having now described my invention, I claim:

1. In an oil burner mechanism, a fan housing having an opening opposite the end of the fan for the admission of air, damper mechanism covering said opening and being adjustable to regulate the effective carrying capacity thereof, said damper mechanism comprising a pair of relatively adjustable apertured plates, adjustment of which varies the effective size of the openings through the plates, supporting means in connection with said fan housing for supporting the damper mechanism, and an adjustable bolt which alone adjustably supports said plates with relation to said fan housing, said bolt extending into said supporting means.

2. In an oil burner mechanism, a fan housing having an opening opposite the end of the fan for the admission of air, a cross bar extending across said opening, substantially diametrically, said cross bar having an opening therein approximately midway thereof for the reception of a support for a damper member, a support in said opening and adjustable therein, damper mechanism carried by the outer end of said support, said damper mechanism being adjustable toward and away from the wall of the fan housing to regulate the air carrying capacity of the opening through the housing wall, said damper mechanism comprising a pair of superposed, apertured, relatively adjustable plates, adjustment of which with relation to each other regulates the effective air carrying openings through the damper.

3. A structure as defined by claim 2 having a reticulated guard secured on the inside of the damper member to prevent foreign objects from being inserted therethrough into the fan chamber.

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