June 24, 1941. H. C. T. SCHULTZ ET AL 2,246,602

CABINET HEATER DAMPER CONTROL

Filed June 7, 1940

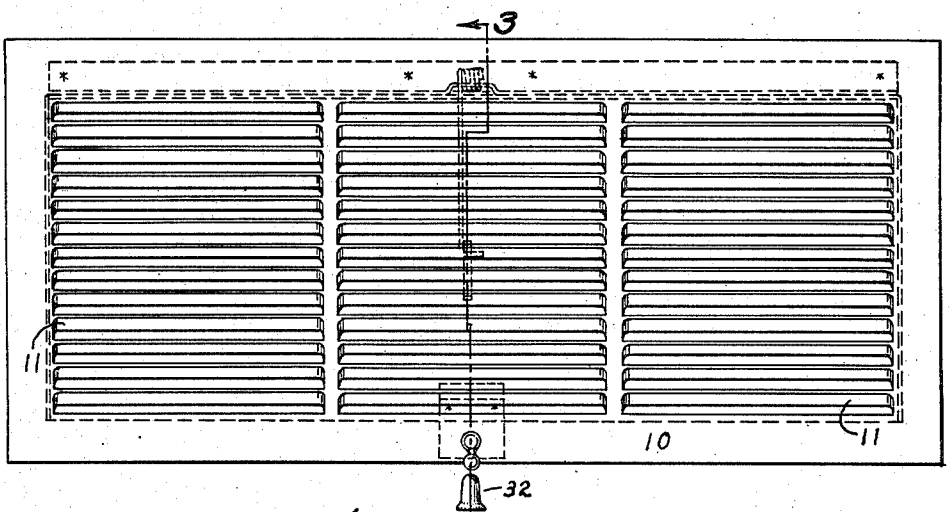


FIG. 1

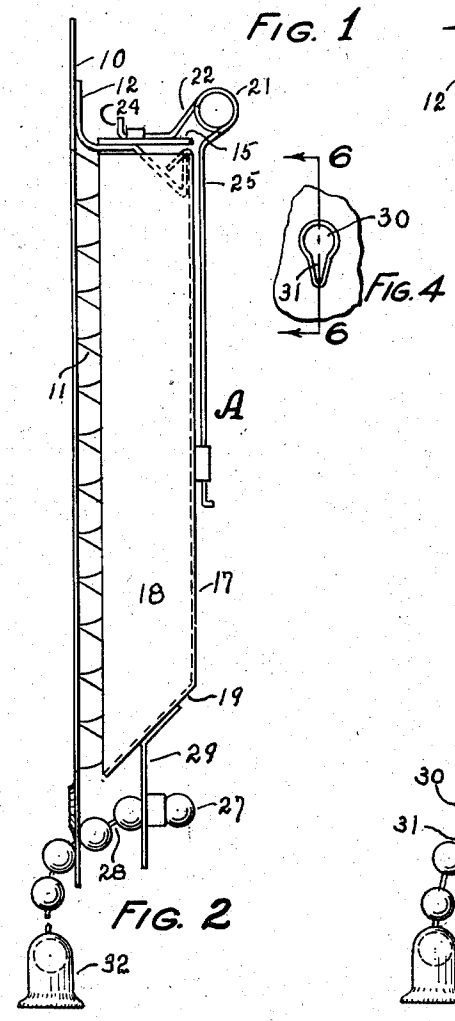


FIG. 2

FIG. 4

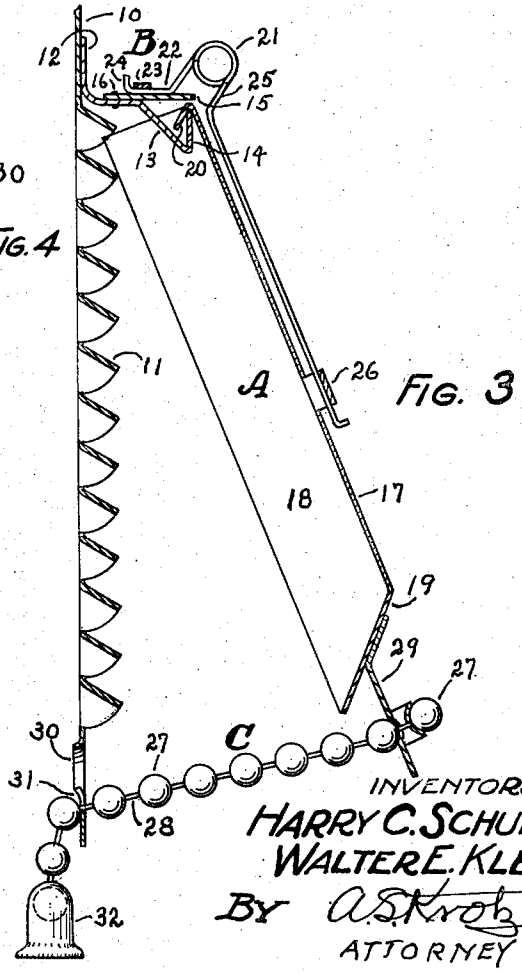


FIG. 3

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Patented June 24, 1941 2,246,602

UNITED STATES PATENT OFFICE

2,246,602

CABINET HEATER DAMPER CONTROL

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Application June 7, 1940, Serial No. 339,267

4 Claims. (Cl. 98—106)

The present invention relates to dampers for use on cabinet heaters and particularly where a grilled outlet is controlled thereby.

The principal object of the present invention is to provide a damper which can be made at low cost, is reliable, efficient and not likely to get out of order.

Another object of the present invention is to provide a damper wherein controlling means are provided which indicate to the operator the position of the damper and which will definitely hold the damper in its regulated position.

To these and other useful ends, our invention consists of parts, combinations of parts, or their equivalents, and mode of operation, as hereinafter set forth and claimed and shown in the accompanying drawing in which:

Fig. 1 is a front elevational view of a grille being equipped with our invention.

Fig. 2 is an end view of our improved damper.

Fig. 3 is a transverse sectional view of the grille and damper taken on line 3—3 of figure 1.

Fig. 4 is a plan view of the aperture through which the controlling chain extends and illustrating the locking means therefor.

In devices of the class, it is customary to provide large rectangular grilled openings in the front of the cabinet and near or in the top of the cabinet, which will not restrict the outflow of air; but which will largely shield the damper and internal parts of the cabinet from view.

It is customary to either form the grilles in the front panel of the cabinet or cut an opening in the front panel of the cabinet and insert, in the opening, a suitable frame and grille assembly.

In the drawing, we illustrate a grille which is formed from a single piece of sheet metal and adapted to fit over an opening in the front panel of the unit, forming a frame 10 and grille blades or louvers 11. The louvers are cut-free at one side and formed as illustrated in Figures 1 and 3. The frame, with its grille, may be secured to the panel in any suitable manner.

In cabinet heaters of the class, steam is usually used as the heating medium. It is customary to control the heat by controlling the volume of air permitted to pass through the heating core.

In the present invention, we provide a flanged damper which, in its entirety, is designated by reference character A, having a stationary member which is secured to the frame of the grille and designated, in its entirety, by reference character B. Member B is adapted to form the closure for the upper side of member A, when member A is closed.

Member B comprises an L-shaped bracket 12 having downwardly and upwardly extending portions 13 and 14 and a plate 15 which may be suitably secured to the horizontal part of member 12 as at 16 so there is a narrow space left between the rear end of member 15 and the top of member 14.

Member A comprises a base panel 17, and flanges 18—18 and a bottom flange 19. The end flanges 18 are preferably at right angles to panel 17 and the bottom flange 19 is preferably formed at a considerable angle as indicated in Figure 3. Flanges 18 and 19 are preferably formed integral with panel 17.

We provide a hooked portion 20 on member 17 which is placed over member 14 before member 15 is secured to member 12. Thus, after the assembly is completed, a suitable hinge is provided for the damper that cannot be disconnected without first removing member 15. The upper ends of members 17 and 18 cooperate with the stationary part of the hinge so as to form a closure for the upper edge of the damper when it is closed.

When member A is in its closed position, the edges of members 18 and 19 may be made to lie against frame 10 and tightly close the grille against the passage of air therethrough. We have, however, illustrated members 18 and 19 in Figure 2 as being positioned a short distance away from frame 10; either position being optional.

We provide a coil spring 21 having a downwardly and rearwardly extending end 22, which is held into position on member 15 by means of a bracket 23, and held from being disengaged from this bracket by means of up-turned end 24. The other end of the spring extends downwardly and forwardly as at 25 and is bent so it lies on or close to member 17 and extending under bracket 26 but having means whereby member 25 may move longitudinally without friction, the spring being adapted to move damper A to its wide open position.

We provide means for closing the damper or holding it in any desired position between its closed and open position consisting of a chain which, in its entirety, is designated by reference character C; and comprising balls 27 which are secured to cable 28 in spaced relation, the rear end being anchored to a bracket 29, in any desired manner.

We provide an aperture 30 in the frame, having a key-slot 31. Opening 30 is large enough for the free passage of the balls on member C

and opening 31 is large enough to loosely embrace cable 28. Thus, when it is desired to move the damper, all that is necessary is to lift the cable out of key 31 and pull the damper to the position desired or permit spring 21 to open the damper to whatever position is desired, after which the cable is dropped into the keyway and the damper locked into position.

It will be seen that we have provided a damper which is light, easily manufactured at low cost, and easily adjusted to any desired position and that the damper will not change its position when once adjusted.

Clearly the free end of chain C may be provided with a decorative portion 32 and that any person with ordinary intelligence will be able to find whatever opening is desired by manipulating the chain as outlined.

Having thus shown and described our invention, we claim:

1. A damper of the class described, comprising a panel having a rectangular opening therein, an L-shaped bar secured to said panel adjacent the edge of said opening, its horizontal flange being bent rearwardly and downwardly and then upwardly terminating a short distance below the plane of the top of said horizontal portion, a plate secured to the top of said horizontal portion and extending rearwardly terminating past the edge of the vertical plane of said upwardly extending portion, a damper having a forwardly and downwardly extending hook arranged to lie over the top edge of said upwardly extending portion, forming a hinge, a coil spring positioned adjacent said hinge, one end of which extends rearwardly and being anchored to said plate, the other end extending downwardly in rear of said damper and being anchored thereto, said spring adapted to urge said damper to its rearward or open position, an aperture in said panel below said rectangular opening having a downwardly extending key-way, a chain secured to the lower end of said damper and extending through said aperture, means whereby said chain may be locked in said key-way and the damper moved forwardly or permitted to move rearwardly and then locked into position.

2. A device as recited in claim 1 including; a grille positioned in said opening and extending rearwardly past the opening, flanges on the ends and bottom of said damper adapted to at least partially inclose the protruding part of said grille, said L-shaped bar adapted to form a closure for the top of said damper when in its closed position.

3. A device of the class described, comprising a rectangular frame having a grille therein, an angle bar secured to said frame adjacent one side of said grille, one flange of said bar extending inwardly and its edge being bent upwardly forming a hinge surface, a plate secured to said inwardly extending flange terminating past the vertical plane of and a distance above said hinge surface, a damper having forwardly extending flanges on its ends and bottom edge, the upper edge of said damper having a hook shaped portion adapted to lie over said upturned edge to thereby form a hinge which cannot be removed or dislodged without removing said plate, a coil spring positioned a distance above and in rear of said hinge, one end being anchored to said angle bar, the other end extending a distance below the top of said damper and on the rear side thereof and being anchored thereto, said spring adapted to urge said damper to its open position, means forming a connection between the lower end of said damper and said frame; whereby the damper may be moved and held in any desired position.

4. A device of the class described, comprising a frame having therein a grille, a damper adapted to regulate the opening to said grille and comprising an elongated L-shaped bracket secured to the top panel of the frame, an upturned edge on the rear edge of said bracket, a plate secured to said bracket and extending rearwardly, terminating a short distance above said upturned edge, said damper comprising a panel having forwardly extending flanges on its ends and bottom and having, at its upper end, an inwardly and downwardly turned hook adapted to fit over said upturned edge to thereby form a hinge, a coil spring, one end being anchored to said bracket, the other end extending downwardly a distance and being slidably anchored to said panel and being adapted to urge the damper rearwardly to its open position, a chain secured to the lower edge of said damper, an opening in said frame through which said chain extends, said opening having a key-way adapted to engage said chain; whereby said damper may be moved and locked to any desired position.

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