May 24, 1955 R. H. GROSSENBACHER ET AL 2,708,869

BASEBOARD REGISTER

Filed June 12, 1952

Fig. 1.

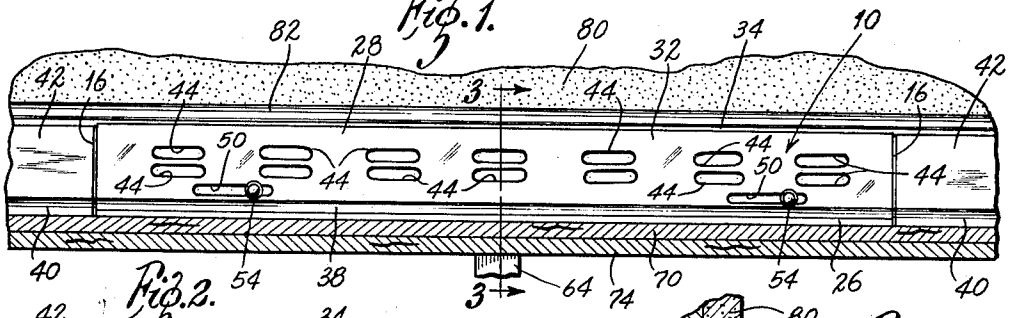


Fig. 2.

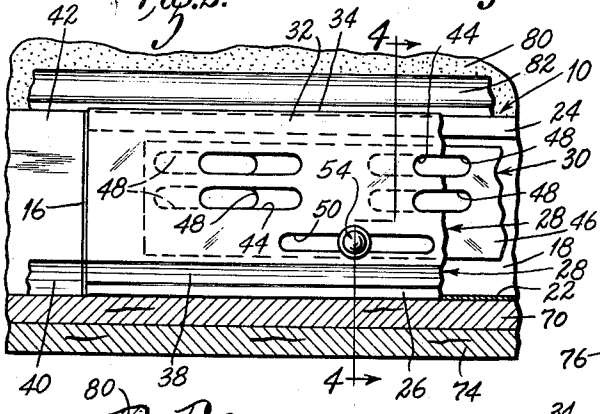


Fig. 3.

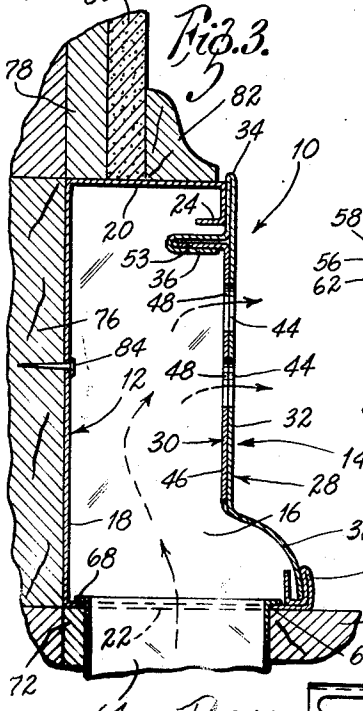


Fig. 4.

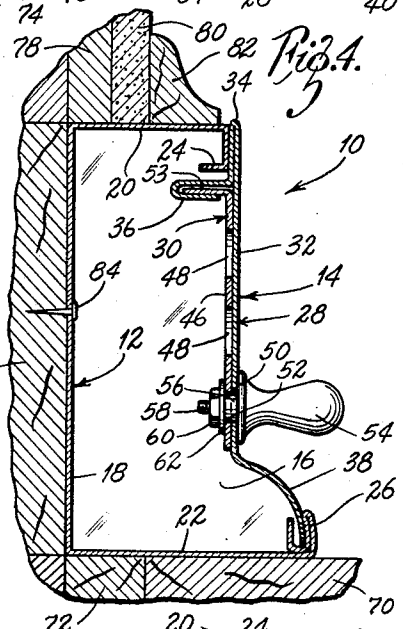


Fig. 5.

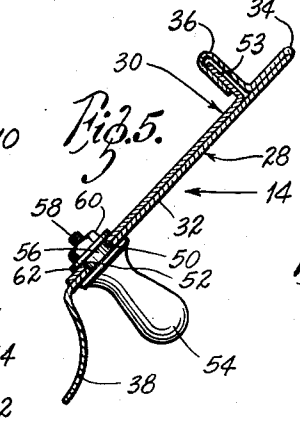


Fig. 6.

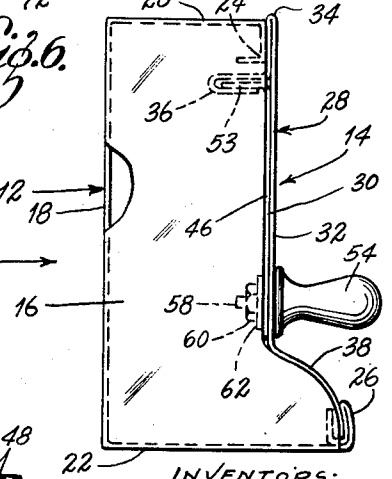
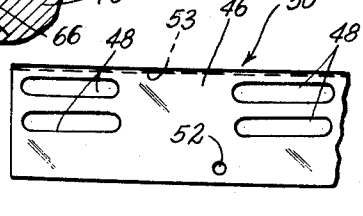


Fig. 7.



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BASEBOARD REGISTER

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3 Claims. (Cl. 98—40)

The present invention relates generally to novel improvements in the construction of registers for incorporation in conventional forced warm air heating systems.

More particularly, the invention relates to an improved register construction for dwellings, office buildings and so on, wherein the heating medium is of the forced warm air type.

Specifically, the invention pertains to a novel and improved register designed for insertion in the baseboard of a room or other space to be heated, in cooperative relation with the outlet end of a conventional duct leading from the heat source.

Briefly, the invention contemplates the provision of a baseboard register which may be prefabricated in any desired length for incorporation in new construction, and which may be substituted for a conventional register in old constructions, as will appear.

To this end, the invention provides a substantially rectangular casing, closed at either end, and adapted to rest upon the flooring in communication with the outlet end of a heat-supplying duct. That portion of said casing, which is visible after installation, is contoured to match the contour of the baseboard and its molding strip, so that the register may so to speak, be interpolated in the baseboard without protruding into the room. In the event the baseboard is provided with a top molding strip, the latter may rest upon the upper surface of the casing, since the height of said casing is designed to coincide with that of said baseboard.

Novel means are provided for regulating the heat output of the register, and for facilitating the cleansing thereof.

The principal objects of the invention therefore, include the provision of means for delivering warm air along the baseboard of a room or the like; means for selectively regulating the supply of warm air being delivered; and means for effectively shutting off the warm air supply, if desired.

Other objects, features and advantages of the invention will be apparent or noted in the detailed description thereof to follow, reference being had also to the accompanying drawing, wherein the preferable embodiment is illustrated.

In said drawing:

Figure 1 is an inside-the-room front elevational view of a register embodying the principles of the present invention, the register being portrayed interpolated in the baseboard and resting on the flooring, the latter being shown in vertical section;

Figure 2 is a fragmentary view, on an enlarged scale, of the left end portion of Figure 1, with certain elements in a moved position;

Figure 3 is a vertical sectional view on a further enlarged scale, taken centrally of the register on the line 3—3 of Figure 1;

Figure 4 is a similar view taken on the line 4—4 of Figure 2;

Figure 5 is a vertical sectional view of the removable cover assembly of the invention;

Figure 6 is a left end view of an assembled prefabricated register particularly illustrating the end cover member thereof; and

Figure 7 is a fragmentary view of one end portion of a reciprocable valve plate included in the register, the scale of Figure 7 corresponding to that of Figure 2.

The register comprising the present invention, and designated generally by the numeral 10, is portrayed in fully open position in Figures 1 and 3. In Figures 2 and 4, the register 10 is portrayed in semi-open, and therefore also semi-closed position, as is understood.

Broadly, a register constructed in accordance with the concepts of this invention comprises: an elongated substantially U-shaped outer section or casing generally designated 12; a removable inner cover assembly for the casing generally designated 14 and shown per se in Figure 5; and a pair of end closure plates for the casing, each designated 16.

The section 12 includes a vertical segment 18, an upper horizontal segment 20, and a lower horizontal segment 22. The inner end of the segment 20 terminates in an integral depending angular flange portion 24, and the inner end of the segment 22 terminates in an upwardly extending reversely bent and rebent integral U-shaped portion 26. Both the flange portion 24 and the U-shaped portion 26 extend from end to end of the casing, whereby to define with the end plates 16, a rectangular opening through which air may flow from the casing.

The removable cover assembly 14 for said opening includes a panel member 28, and a rectangular valve plate 30 supported thereby for limited horizontal movements in either direction relative thereto.

The panel member 28 includes a vertical segment 32, reversely bent upon itself at the top to form a rounded edge 34, and terminating in a reversely bent horizontally disposed slideway 36, the purpose of the latter to appear hereinafter. Said panel member 28 further includes an arcuately formed lower extremity 38 the contour of which corresponds to that of the molding strip 40 which trims the baseboard 42 in which the register 10 is interpolated, as understood and particularly demonstrated in Figures 1 and 2.

As appears to best advantage in Figures 1, 2, and 3, the vertical segment 32 of the panel member 28 has formed therein one or more rows of horizontally spaced elongated slots 44, and the vertical segment 46 of the valve plate 30 has formed therein one or more rows of similarly spaced elongated slots 48. Each row of slots 44 in the panel member 28 is disposed in a plane corresponding to that of a row of slots 48 in the valve plate 30.

Adjacent each end thereof, the vertical segment 32 of the panel member has also formed therein a single elongated slot 50, the latter slots having a length greater than that of the slots 44 and 48; and adjacent each end thereof, the vertical segment 46 of the valve plate has formed therein a circular opening 52.

The upper end of the vertical segment 46 terminates in a laterally projecting flange 53, reciprocally mounted in the slideway 36 of the panel 28.

Numerals 54 designate a pair of suitable knob members each including a reduced shank portion 56, and a further reduced threaded extremity 58. As shown in Figures 4 and 5, each shank 56 extends through one of the elongated slots 50 and through one of the openings 52, to have a nut 60 applied to its reduced threaded extremity 58. Preferably, a washer 62 is interposed about said extremity between the nut 60 and the adjacent portion of the valve plate. With this arrangement, it is manifest that the valve plate 30 may be manually moved

in either direction relative to the panel 23, by means of the knobs 54.

With particular reference now to Figures 1 and 3, a conventional air duct leading from the heat source is designated by the numeral 64. Preferably but not necessarily, the delivery or outlet end of said duct is introduced into the casing 12 centrally thereof as shown. The connection may be made in any suitable manner, and forms no part of the present invention. For example, as portrayed in Figure 3, an opening 66 may be formed in the segment 22, and the upper edge of the duct may be turned down to provide a flange 68 overlapping the opening 66. Other means for placing the register 10 in fluid communication with the duct may obviously be employed.

The fragmentarily illustrated exemplary building construction includes flooring 70; a floor stop 72; sub-floor 74; wall studding 76; lathing 78; and a plaster finish 80. An ornamental molding strip 82 for the top of the baseboard, is shown extending across and resting upon the top segment 20 of the casing 12. Stability may be insured by driving a few nails 84 through the vertical segment 18 of said casing, and into the studding 76, as portrayed in Figures 3 and 4.

Operation

Although it is believed that a complete understanding of the invention and its mode of operation may be had from the foregoing description augmented by an inspection of the drawings, a brief explanation will be given.

Thus, assuming that it is desired to distribute into the room the entire output of warm air delivered to the register 10 via the duct 64, the valve plate 30 is manipulated to the right by means of the knobs 54, until the rows of slots 44 are in full registry with the rows of slots 48. Figures 1 and 3 demonstrate the fully open disposition of these slots.

Assuming now that it is desired to reduce the volume of warm air entering the room, the valve plate 30 may be moved to the left by means of the knobs 54, to effect the exemplary half-open, half-closed disposition of the slots 44 and 48 relative to one another. Figure 2 demonstrates this disposition of said slots.

Assuming that it is desired to entirely shut off the entry of warm air into the room, the valve plate 30 may be moved farther to the left until the left end of said plate strikes against the adjacent end closure plate.

An outstanding feature of the invention resides in the unattached cover assembly 14, and the ease with which it may be removed for cleansing purposes and thereafter replaced. Thus, in order to remove the cover assembly 14, it is merely necessary to grasp the knobs 54, one with each hand, and swing the assembly inwardly, or to the right as viewed in Figure 4, until the slideway 36 clears the angular flange 24. During this movement, the reversely bent and rebent U-shaped section 26 serves in what may be termed a pivotal capacity, inasmuch as the cover assembly is swung arcuately inwardly, as is understood. After the slideway 36 clears the flange 24, the cover assembly may be lifted from the casing also by means of the knobs 54.

To replace the assembly, the reverse procedure is followed. In other words, suspending the assembly by means of the knobs 54, the lower extremity of arcuate section 38 is first deposited in section 26, whereupon the assembly is swung outwardly, or to the left as viewed in the drawings, until upper end portion of panel segment 32 abuts the depending angular flange portion 24 of the casing.

In consequence of this arrangement, the cover assembly is automatically maintained in position because of gravity. That is to say, inasmuch as almost all of the cover assembly weight is to the left of the lower extremity of the arcuate segment 38, and inasmuch as said lower extremity is restricted against inward movement, the upper

portion of the assembly will gravitate outwardly or to the left, thus automatically maintaining it in its normal position.

It is to be understood that the illustrated and described baseboard register construction has been given in an exemplary rather than in a limited sense.

Therefore, we do not desire to be restricted to the precise details disclosed, our invention contemplating any and all modifications thereof, and such equivalents as may fall within the scope of the appended claims.

We claim:

1. In a baseboard register construction of the character described, an elongated casing in fluid communication with a warm air duct, and a removable cover assembly for the casing; said assembly comprising: a panel member including a vertical segment reversely bent upon itself at the top to form a rounded edge and terminating in a reversely bent horizontally disposed segment to form a slideway; an arcuate segment integral with said vertical segment along the bottom thereof; at least one row of spaced elongated slots in said vertical segment; a valve plate including a vertical segment terminating at the top in a horizontal flange segment reciprocably mounted in said slideway; at least one row of spaced elongated slots in the vertical segment; and a pair of knob elements rigid with the valve plate for reciprocating the latter to selectively effect full or partial registration of said rows of slots.

2. In a heating system of the character described, a register interpolated in the base board and associated moulding strip of a room, said register including in combination: an elongated substantially U-shaped casing supported on the flooring of a room and in fluid communication with the delivery end of a warm air duct, said casing including integrally an upper horizontal segment terminating at its inner end in a depending angular flange portion, a lower horizontal segment terminating at its inner end in an upwardly extending reversely bent and rebent U-shaped portion, and a vertical segment joining the outer end portions of said upper and lower segments, the leg segments of said U-shaped portion being disposed in planes parallel to but spaced inwardly of the vertical plane of the inner surface of said depending flange portion of the casing; end closure plates for the casing, each said plate having a lower portion contoured correspondingly with the visible contour of the adjacent moulding strip; a rectangular opening through which air may flow defined in the casing by said depending angular flange portion thereof, said upwardly extending U-shaped portion thereof, and said end closure plates; an unattached cover assembly coextensive with the casing for normally covering said opening; means on said cover assembly to control the flow of air through said opening into the room, said means comprising a vertical panel member provided with at least one row of horizontally spaced elongated slots, and a valve plate slidably supported from said panel and provided with at least one row of horizontally spaced elongated slots adapted to register with the slots in the panel member; a pair of horizontally spaced knob elements rigid with the valve plate for reciprocating said plate to effect the full or partial registration of the slots thereof with the slots in the panel member; and an inwardly and downwardly sloped arcuate segment integral with the panel member at the bottom and removably seated in the aforesaid reversely bent and rebent U-shaped portion of the casing, the upper end portion of said panel member being in engagement with the inner surface of the depending flange portion aforesaid when the cover assembly is in covering relationship with said opening, whereby the center of gravity of said assembly is in a plane outwardly of that of said arcuate segment.

3. In a heating system of the character described, the register construction set forth in claim 2, wherein the recited panel member is reversely bent upon itself to

form a rounded edge at the top and terminates in a reversely bent horizontal segment coextensive therewith; wherein said valve plate terminates at the top in a horizontal flange extending into and slidable in said reversely bent segment of the panel member; and wherein the recited pair of knob elements also serves to facilitate the removal from and the replacement of the cover assembly on said casing.

References Cited in the file of this patent

UNITED STATES PATENTS

1,809,223	Tashjian	June 9, 1931

FOREIGN PATENTS

525,222	Great Britain	Aug. 23, 1940