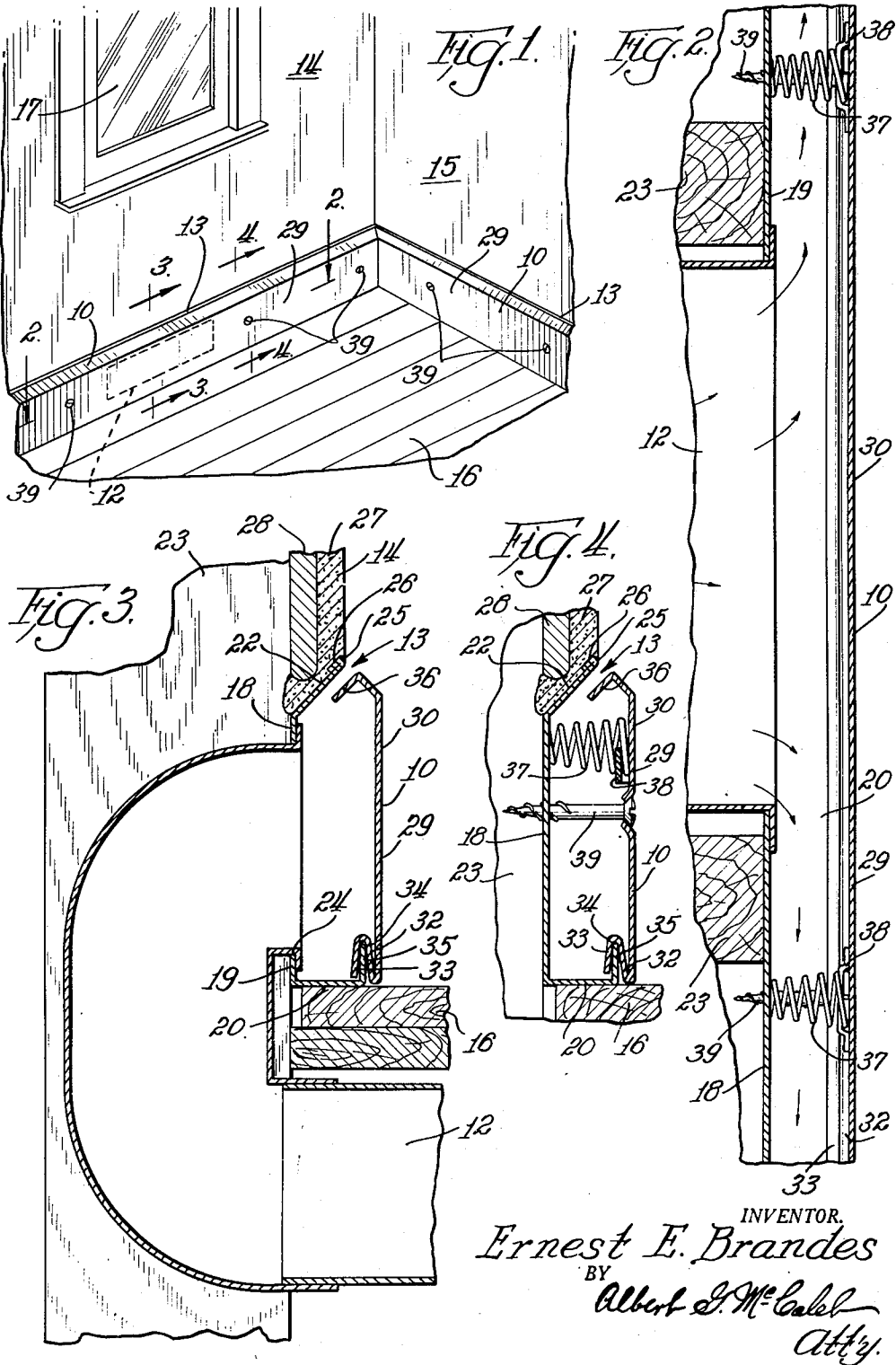


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HEAT DISPERSING APPARATUS

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HEAT DISPERSING APPARATUS

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This invention relates to heat dispersing and distributing apparatus for use in warm air heating systems and adapted to the effective and efficient dispersion and distribution, in a room or the like, of warm air from a heat source.

As a general object, my invention has within its purview the provision of heat dispersing apparatus for use in a warm air heating system and which is not only suited to inconspicuous mounting in a room, but which also gives effective and desirable distribution of the warm air over a relatively large space and at a position or positions for efficiently heating the space without appreciable or concentrated drafts.

Another object of this invention is to provide heat dispersing apparatus for use in a warm air heating system and which serves to spread the warm air over a selected space and is adjustable to effect evenness of heat distribution along a given space and under the conditions encountered in a particular installation.

My invention has for another object the provision of heat dispersing apparatus for a warm air heating system, which apparatus is adapted to mounting at the base of a wall and embodies a hollow conduit structure which serves to conduct and disperse warm air, in addition to providing a furring strip or base and guide for the plastered surface of the wall.

It is a further object of the invention to provide heat dispersing apparatus for a warm air heating system which distributes heat along the base of a wall and directs the emitted warm air upwardly and outwardly relative to the wall surface, so as to minimize spots and streaks on the wall due to dirt carried by the warm air.

In this invention, I have also provided apparatus for dispersing warm air along a space of considerable length, which apparatus includes an assembly of hingedly connected inner and outer conduit forming parts constructed and arranged to present normally spaced surfaces between which warm air is emitted from within the conduit, and which surfaces are spaced from the hinge connection of the parts and disposed for adjustment toward and from one another by movements of readily accessible and easily manipulated adjusting elements.

Another feature of my invention which is correlated to the provision of the aforementioned conduit forming parts is the construction and arrangement of such parts so that one is stationary and the other is exposed and removable for ease and convenience of installation, servicing and cleaning.

Other objects and advantages of the invention

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will be apparent from the following description and the accompanying drawings in which similar characters of reference indicate similar parts throughout the several views.

Referring to the one sheet of drawings,

Fig. 1 is a perspective view depicting the installation of a preferred form of my heat dispersing apparatus in a room;

Fig. 2 is a top sectional view drawn to a considerable larger scale than Fig. 1, and wherein the section is taken substantially on a line 2—2 of Fig. 1 and in the direction indicated by accompanying arrows; and

Figs. 3 and 4 are end sectional views drawn to a larger scale than Fig. 1 and wherein the sections are taken substantially at the positions indicated by lines 3—3 and 4—4 respectively in Fig. 1.

Considered generally, the exemplary embodiment of my invention which is depicted in the accompanying drawings for illustrative purposes, comprises heat dispersing apparatus generally designated by the reference numeral 10, and which is adapted to mounting along the base or bases of one or more walls of a room; the heat dispersing apparatus providing an elongated conduit or duct which, in a warm air heating system, is supplied with warm air by one or more supply ducts 12 extending from a heat source, such as a furnace. As illustrated in Fig. 1, my heat dispersing apparatus replaces the usual base board on the walls where it is used. At its top, the heat dispersing apparatus 10 has a relatively narrow slot 13 extending longitudinally thereof through which warm air is disseminated and dispersed from the interior of the duct to provide a blanket of warm air along the adjacent wall and give wide distribution to the heat in the room. For maximum efficiency, my heat dispersing apparatus extends along the base of each outside wall, so as to counteract drafts normally caused by the fall of cool air along those outside walls. With this arrangement, the warm air rises adjacent the outside walls and descends to a cold air return duct near a warmer inside wall.

Considered in greater detail, the exemplary room depicted in Fig. 1 has outside walls 14 and 15 and a floor 16; the outside wall 14 being provided with a window 17. Instead of the usual baseboard, the room is provided with my heat dispersing apparatus 10 which, in a preferred installation, occupies substantially the same room space as the usual base board and provides a very similar trim effect along the base of the walls adjacent the floor.

Structurally, my heat dispersing apparatus,

in its disclosed form, includes a back channel portion 18 having a back wall 19, a base portion 20 and a top flange portion 22. As illustrated in Figs. 2, 3 and 4, the back channel portion is adapted to permanent mounting in a wall structure with the back wall thereof secured to the studding 23 in the wall and the base portion 20 thereof adjacent and resting on the floor 16. In any particular installation, the warm air supply duct 12 extends between the wall studding and through an opening 24 in the back wall 19 which is provided at an appropriate position. For shorter lengths of the heat dispersing apparatus, a single warm air supply duct 12 may communicate with the midportion of the heat dispersing apparatus, while longer lengths may be supplied through two or more warm air supply ducts at spaced positions. As will be more fully explained, my apparatus provides adjustment for the distribution of heat along its length, so that the placement of the warm air supply ducts is not particularly critical.

As shown in Figs. 3 and 4, the top flange portion 22, on the channel portion 18 of my heat dispersing apparatus, projects upwardly and outwardly in obtuse angular relationship to the back wall 19. This flange portion 22 defines one side of the heat dispersing slot 13, so that its obtuse angular relationship to the back wall 19 has one purpose in directing warm air upwardly and outwardly with reference to the wall surface, thereby minimizing the collection of dirt from the warm air along the adjacent surface of the wall, as well as in producing the blanket of warm air along the wall, as aforementioned, to counteract drafts. Since the top flange portion 22 has a straight edge 25 which is preferably strengthened by a return bent flange 26, I provide that flange 22 with a lateral extent such that it serves as a furring strip or guide for plastering the wall surface. Thus, plaster 27 is applied to a plaster base 28, so that the surface of the plaster is flush with the edge 25 of the flange 22. The upward and outward sloping of the flange 22 has an additional advantage in that it makes shrinkage of the plaster less apparent.

For convenience in manufacture and assembly, as well as for convenience and ease of disassembly for cleaning purposes, my heat dispersing apparatus embodies two main parts. The back channel portion comprising one of those parts while a front panel portion 29 provides the other of the parts. The front panel portion 29, like the channel portion 18, in the disclosed structure, is made of formed sheet metal and preferably has a generally plane front wall portion 30 which may be finished on its outer surface to serve as a base board for the wall. Along its lower edge, the front wall portion 30 has integrally formed thereon return bent flanges 32 and 33 which together form an inverted and substantially V-shaped channel 34 and straddle a flange 35 which projects upwardly from the base 20, so as to form a hinge connection, as well as a relatively tight joint between the front panel and channel portions of the apparatus. The hinge connection between the parts thus has an axis near the bottom of the parts and extending longitudinally thereof, and adapts the upper portion of the front panel for movement toward and from the flange portion 22 of the channel portion. Along its upper margin, the front panel portion has a flange 36 in opposed and substantially parallel relationship to the flange portion 22, so that the two flanges define the opposite sides of the slot 13,

between which warm air is dispersed into a room.

At separated positions along the heat dispersing apparatus, I have provided compression springs 37, each of which has one end anchored to the inner surface of the front panel portion by a substantially U-shaped clip 38 secured thereto. The other ends of the springs bear against the opposed inner surface of the back wall 19 to bias the upper portion of the front panel portion away from the flange 22 and about the axis of the hinge connection, thereby tending to open the slot 13. At positions adjacent each of the springs 37 adjusting elements, such as screws 39, extend through the front wall portion and are threaded into the back wall 19, so that such screws counteract the action of the springs. By virtue of the flexibility of the sheet metal structure of the front panel portion, adjustment of the screws 39 at their various positions along the length of the heat dispersing apparatus provides a selective adjustment for the width of the heat dispersing slot, whereby that slot may be selectively adjusted along the length of the apparatus to afford relatively even dispersion and distribution of the warm air passing through the slot. It is to be noted that the angular dispositions of the flanges 22 and 36 is such that in addition to accomplishing the aforementioned advantageous results, the adjustment of the slot width is accomplished by horizontal swinging movement of the upper portion of the front panel portion about an axis near the floor. This not only contributes to simplicity of the structure required for producing effective results, but also makes less perceptible the required variation of the slot width required for relatively even distribution of the heat along the length of the dispersing apparatus.

From the foregoing description and reference to the accompanying drawings, it may be readily appreciated that I have provided an effective and efficient heat dispersing apparatus for use in warm air heating systems, particularly when such systems embody a blower for forced circulation of the warm air. It may also be understood that the disclosed structure may be readily and economically manufactured and installed, and that after installation, it is not only inconspicuous but does not occupy any appreciable amount or particularly useful portion of the wall or room space.

While I have illustrated a preferred embodiment of my invention, many modifications may be made without departing from the spirit of the invention, and I do not wish to be limited to the precise details of construction set forth, but desire to avail myself of all changes within the scope of the appended claims.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent of the United States is:

1. Heat dispersing apparatus suited to mounting along a wall base and adapted to use in a warm air heating system in which warm air from a heat source is distributed through warm air ducts and comprising, in combination, two formed sheet metal parts of corresponding lengths and hingedly connected together along a longitudinal axis to define a warm air conducting and dispersion conduit having an open slot extending longitudinally thereof between the parts and at a position spaced from the said axis of the hinge connection of the parts, one of said parts being generally L-shaped in section with connected back and base portions and having an upright flange along the base portion in spaced relationship to the back portion, and the other of

said parts having a substantially Z-shaped fold along the margin thereof, said fold having a portion straddling the flange on said one of the parts to provide the hinge connection between the parts, an opening in one of the parts for connection to a warm air duct, and a series of adjusting elements at spaced positions longitudinally of the parts and spaced from the axis of the hinge connection, said adjusting elements providing an adjustable connection between the parts for varying the width of the slot, said other of the parts including an upright front wall in spaced and opposed relation to said back portion of said one of the parts, said axis of the hinge connection between the parts being near the bottom of the parts, said slot being defined by opposed flanges at the top of the parts, said opposed flanges having faces disposed to direct air from within the parts in an angular direction upwardly and away from the front wall.

2. Heat dispersing apparatus suited to mounting along a wall base and adapted to use in a warm air heating system in which warm air from a heat source is distributed through warm air ducts and comprising, in combination, two formed sheet metal parts of corresponding lengths and hingedly connected together along a longitudinal axis to define a warm air conducting and dispersion conduit having an open slot extending longitudinally thereof between the parts and at a position spaced from the said axis of the hinge connection of the parts, one of said parts being generally L-shaped in section with connected back and base portions and having an upright flange along the base portion in spaced relationship to the back portion, and the other of said parts having a substantially Z-shaped fold along the margin thereof, said fold having a portion straddling the flange on said one of the parts to provide the hinge connection between the parts, an opening in one of the parts for connection to a warm air duct, and a series of adjusting elements at spaced positions longitudinally of the parts and spaced from the axis of the hinge connection, said adjusting elements providing an adjustable connection between the parts for varying the width of the slot, said parts being biased apart at positions spaced longitudinally thereof by resilient elements which are spaced from the axis of the hinge connection between the parts, and said adjusting elements comprising screws extending through one of the parts and threaded into the other part in directions corresponding to the action lines of the resilient elements.

3. Heat dispersing apparatus suited to mounting along a wall base and adapted to use in a warm air heating system in which warm air from a heat source is distributed through warm air ducts and comprising, in combination, two formed sheet metal parts of corresponding

lengths and hingedly connected together along a longitudinal axis to define a warm air conducting and dispersion conduit having an open slot extending longitudinally thereof between the parts and at a position spaced from the said axis of the hinge connection of the parts, one of said parts being generally L-shaped in section with connected back and base portions and having an upright flange along the base portion in spaced relationship to the back portion, and the other of said parts having a substantially Z-shaped fold along the margin thereof, said fold having a portion straddling the flange on said one of the parts to provide the hinge connection between the parts, an opening in one of the parts for connection to a warm air duct, and a series of adjusting elements at spaced positions longitudinally of the parts and spaced from the axis of the hinge connection, said adjusting elements providing an adjustable connection between the parts for varying the width of the slot, said one of the parts having an upper flange portion spaced from the base portion to form a shallow channel for permanent mounting at the base of a wall with the channel opening outwardly so that said upper flange portion serves as a furring strip, and the said other part being separable from said one of the parts at said hinge connection.

4. Heat dispersing apparatus suited to mounting along a wall base and adapted to use in a warm air heating system in which warm air from a heat source is distributed through warm air ducts and comprising two sheet metal parts of corresponding lengths hingedly connected together along a longitudinal axis to define a warm air duct and dispersion conduit having an open slot extending longitudinally thereof between the parts and at a position spaced from the said axis of the hinge connection of the parts, one of the parts having an opening for connection to a warm air duct, resilient elements spaced longitudinally of the parts and biasing them apart, and a series of adjusting screws spaced longitudinally of the parts and from the axis of the hinge connection and extending through one of the parts and threaded into the other part in directions corresponding to the action lines of the resilient elements.

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