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BASEBOARD RADIATOR

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The present invention relates to a baseboard radiator and more particularly to an improved baseboard radiator containing a novel unit for use as a combination damper-air splitter.

Conventional baseboard radiators in use today operate by permitting a draft of cool air to enter the bottom of a housing enclosing a heating unit and to make contact with the heating unit to become warm. The heated air then rises and passes through an opening provided in the top of the housing.

The temperature of the room is controlled by regulating the quantity and direction of the heated air as it leaves the housing. This is accomplished by providing the opening in the top of the housing with a movable damper or blade which may be used to regulate the draft of heated air as it leaves the housing and to direct the air to the various parts of the room.

It has been found that the installation of the conventional damper is somewhat complicated and that the movable surfaces of the conventional damper are so situated that they cannot be easily assembled and removed. Hence the installation of such conventional units is necessarily inconvenient and expensive.

It is an object of the present invention to provide a baseboard radiator with an improved combination damper-air splitter.

Another object of this invention is to provide a baseboard radiator with a combination damper-air splitter which may be easily removed, cleaned, lubricated, and replaced within the housing by the average unskilled person.

Another object of this invention is to provide a baseboard radiator with a combination damper-air splitter which may be pivotally positioned within the housing.

Other and further objects of the invention will be obvious upon an understanding of the illustrative embodiment about to be described, or will be indicated in the appended claims, and various advantages not referred to herein will occur to one skilled in the art upon employment of the invention in practice.

A preferred embodiment of the invention has been chosen for purposes of illustration and description and is shown in the accompanying drawings, forming a part of the specification, wherein:

FIG. 1 is a cross-sectional view of the improved combination damper-air splitter showing it in position within the housing of a baseboard radiator;

FIG. 2 is an exploded perspective view showing the individual parts of the improved combination damper-air splitter prior to assembly;

FIG. 3 is a perspective view showing the individual parts of the combination unit in assembled relationship; and

FIG. 4 is a cross-sectional view along line 4-4 of FIG. 1.

The improved baseboard radiator A, as shown in FIG. 1, comprises a housing unit 1, a heating unit 2 and a novel combination damper-air splitter unit 3.

The housing unit 1 comprises a back panel 11 which may be mounted on the baseboard of a wall (not shown) by any conventional or desired means, for example by screws (not shown).

The upper portion 13 of the back panel 11 extends upwardly and outwardly in the shape of an arc to form a top wall and then extends backwardly forming a horizontal ledge 16 which terminates in a downwardly turned flange 17. The lower portion 14 of the back panel 11 is provided with a rigidifying outwardly bulged channel 18 whose lower side is extended to form an outwardly turned edge 19.

A plurality of spaced hanger brackets 21 (only one of which is shown in the drawing) are provided within the housing to support a front panel 12, the heating unit 2 and the damper-air splitter unit 3 along several points within the housing unit 1. Each hanger bracket 21 is mounted on the back panel 11 by means of male inserts or tongues 22 and 23 formed in the bracket 21 fitting into female receptors or pockets 24 and 25, respectively, formed in the back panel 11. Back panel 11 is also provided with a locking tab 26 insertable into an opening 27 in hanger bracket 21 to lock the bracket 21 in place. The hanger bracket 21 has a heating unit supporting section 4 extending substantially at right angles from its lower edge and adapted to support the heating unit 2.

The hanger bracket 21 has a hanger section 5 extending substantially at right angles from the upper part of one edge and comprising a lower arm 28 and an upper arm 29. The lower arm 28 is provided with a toe 33 on its extreme end which is adapted to support the front panel 12. The front panel 12 has an upper inwardly turned flange 38 adapted to hook over toe 33 and a lower inwardly turned groove 39 adapted to fit under a flange 30 depending from supporting member 4 to hold the front panel 12 in place. The front panel 12 is spaced from the top wall 13 to permit heated air to pass therethrough.

The upper arm 29 is spaced from the lower arm 28 and has its upper end provided with a semi-circular recess or slip-in socket 36 which may extend over an arc of greater than 180 degrees and adapted to hold the combined damper-air splitter. Its lower end is provided with a protrusion 57 to act as a stop for the combined damper-air splitter, as will be more fully discussed hereinafter.

The heating unit 2 of the improved baseboard radiator may be a conventional heating unit. In FIG. 1 the heating unit is shown as consisting of a heating tube 37 and a plurality of fins 38 attached to the tube 37. The heating unit 2 is supported on support member 4 of hanger bracket 21 by a support clip 41 which is provided with runners 42 and 43 which may be of a generally V-shaped configuration and which may be adapted to fit loosely into grooves 31 and 44 in support member 4.

The combination damper-air splitter 3 comprises a longitudinally extending concave resilient blade or slat 45 having longitudinally extending retaining hooks 51 and 52 which may extend along its edges to permit it to be secured to a plurality of retaining clips 48 each of which is mounted on upper arm 29 of hanger bracket 21, as will be more fully described hereinafter. The blade 45 may be a single piece and it may be provided with suitable extensions, as may be desired. The hooks 51 and 52 may be U-shaped.

Each retaining clip 48 may be made from resilient spring material and comprises a resilient swivel or bearing hub 47 and a pair of support arms 49 having edges 53 insertable into the hooks 51 and 52 of blade 45. Each hub 47 is adapted to be inserted in receiving socket 36 of upper arm 29 of bracket 21 to hold the blade 45 in position. Each of the hubs 47 are provided with peripheral lips 55 and 56 to prevent the clips 48 from slipping off the sockets 36 in upper arms 29 of hanger brackets 21. The hubs 47 have restricted opening 50 to give the clip added flexibility and to permit the arms

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49 to pivot on hub 47 when the clips 48 are to be mounted in sockets 36.

The combined damper-air splitter is assembled in the space between top wall 13 and front panel 12 of housing unit 1 by first squeezing the arms 49 of the spring clip 48 together to compress the hub 47 and inserting the hub 47 into the socket 36 of upper arm 29. When the arms 49 are released, the clip 48 will spring out so that the hub 47 substantially fills the socket 36 and is frictionally held in place. To assemble the blade 45 the arms 49 of clip 48 are again squeezed toward each other until the edges 53 thereof enter the hooks 51 and 52 of blade 45 and when pressure is released the arms 49 spring outwardly to hold the blade 45 in place.

The damper-air splitter 3 may be placed in any desired position merely by exerting pressure against the upper or lower longitudinal surface of the blade 45 so that the hub 47 pivots in socket 36 and the pressure and friction of the hub 47 bearing against socket 36 will hold the blade 45 in the desired position. The maximum movement of the blade 45 in either direction is determined by toe 38 on lower arm 28 of hanger bracket 21 and stop 57 on upper arm 29. When the blade 45 is in the fully closed position, as shown in broken lines in FIG. 1, it functions as a fully closed damper. If the blade 45 is moved in a counter-clockwise direction to the fully open position, it will function as an air-splitter since heated air will flow along both sides thereof to be distributed to different parts of a room to be heated. However there are any number of intermediate positions which the blade 45 may assume, as may be desired.

The blade 45 may be easily removed by pressing the arms 49 of clip 48 until the edges 53 thereof slip out of hooks 51 and 52 in the blade 45. With the arms 49 under compression, the hub 47 can be easily slipped out of socket 36. Hence, the damper-air splitter can be disassembled without the use of special tools and by a relatively unskilled person.

As is apparent from the foregoing, the present invention provides an improved baseboard radiator containing a novel combination damper-air splitter which is inexpensive to install and which may be easily removed without the use of special tools.

As various changes may be made in the form, construction and arrangement of the parts herein without

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departing from the spirit and scope of the invention and without sacrificing any of its advantages, it is to be understood that all matter herein is to be interpreted as illustrative and not in a limiting sense.

Having thus described our invention, we claim:

1. A baseboard radiator comprising a housing having a rear panel and a top wall, a hanger bracket mounted on said rear panel and having a recess opening formed therein, a front panel mounted on said hanger bracket and spaced from said top wall to provide an air discharge opening, a heating unit mounted in said housing, a longitudinally extending damper blade having a curved cross section wherein the concave surface of said damper blade faces said discharge opening, hook means formed on said blade along longitudinal portions thereof, a retaining clip having a pair of arms the ends of which are inserted into said hook means for supporting said curved damper blade on the retaining clip, a bracket secured to said housing having a substantially horizontally oriented member and a substantially vertically oriented member, an edge portion of said substantially horizontally and vertically oriented members facing the air discharge opening, a non-yieldable open socket bearing positioned in the top front edge portion of said vertically oriented member, and a semi loop formed in said retaining clip and seatable in said non-yieldable open socket bearing for pivotally supporting said retaining clip on said bracket to permit the damper to be opened and closed.

2. The combination of claim 1 wherein said semi loop formed in said retaining clip comprises flanges to prevent lateral displacement of said semi loop relative to said socket bearing.

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