

[54] HOT AIR REGISTER

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[51] Int. Cl. F24f 13/00

[58] Field of Search.....98/108, 103, 101, 110, 114, 98/121

[56] References Cited

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[57] ABSTRACT

A hot air register of the type that includes a vertically baffled front piece that is secured to a wall in communication with the outlet of a hot air duct therein. The front piece has a resilient sealing strap disposed between the rearward peripheral surface thereof and the wall. A plurality of horizontally disposed louvers that are pivotally adjustable in unison are supported in a rigid sheet frame that extends rearwardly from the front piece into said duct. The rearward portions of said frame are formed to flare outwardly towards the interior surface of said duct but do not contact the same. A slotted resilient member engages the rearward extremities of said frame and is also in sealing contact with the interior surface of said duct. The resilient strip, frame, resilient member and a portion of the interior surface of said duct cooperate to define a dead space into which soot and dust are discharged by the hot air, and which soot or dust would otherwise be discharged laterally relative to said front piece to discolor the wall adjacent to said register.

3 Claims, 4 Drawing Figures

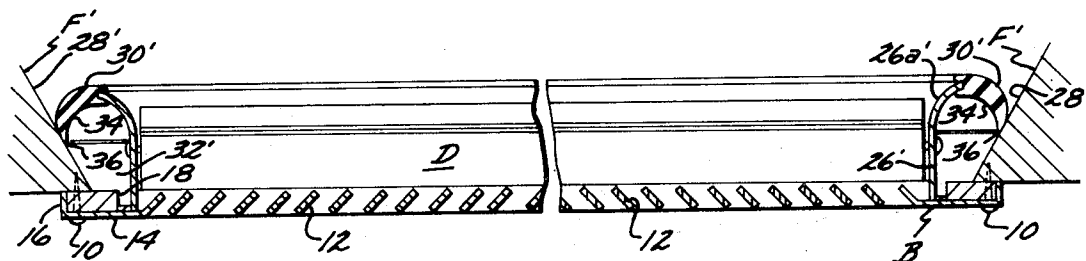


FIG. 1

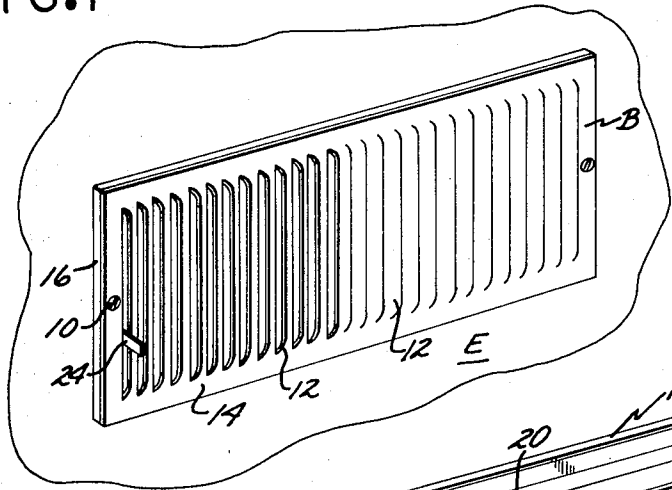


FIG. 2

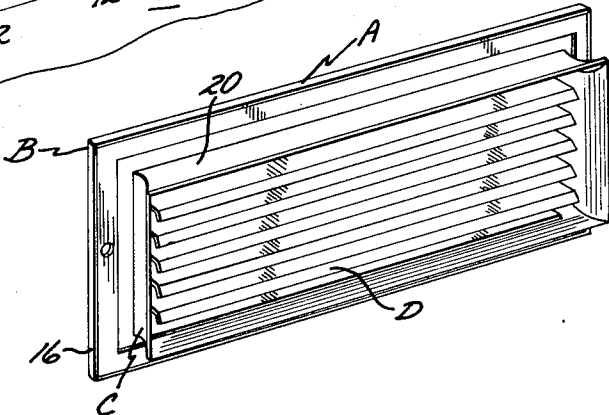


FIG. 3

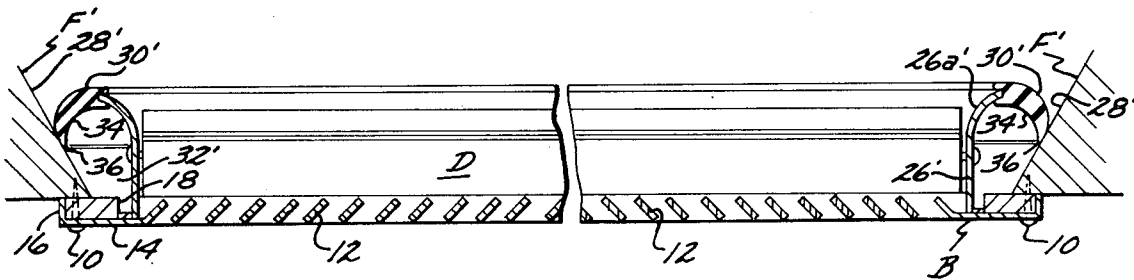
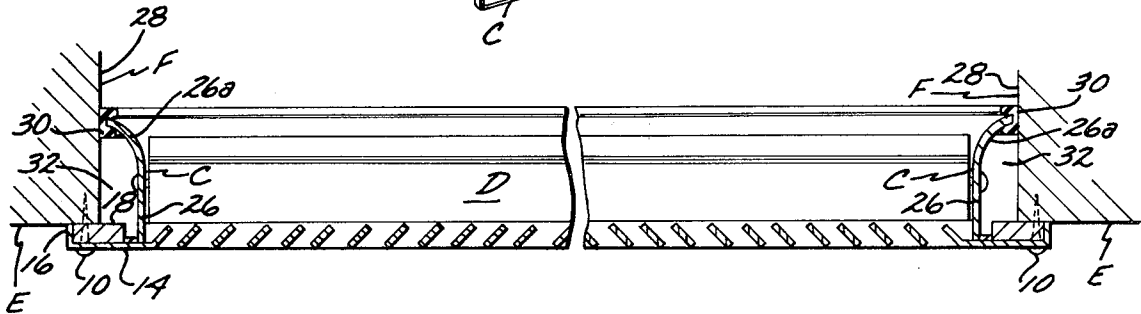


FIG. 4

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HOT AIR REGISTER

BACKGROUND OF THE INVENTION

1. Field of the Invention

A hot air register for minimizing the deposit or soot and other discoloring materials on the portion of the wall adjacent thereto.

2. Description of the Prior Art

Numerous forms of wall mounted hot air registers have been devised and used in the past. An operational disadvantage of all prior art hot air registers is that after they have been used for a prolonged period of time they allow soot and other discoloring materials carried by the stream of hot air discharging therethrough to be deposited on the wall surface adjacent to the register. The purpose of the present invention is to provide a hot air register in which such disposition of foreign material does not take place.

SUMMARY OF THE INVENTION

A hot air register in which a baffled front piece, rearwardly extending louvre supporting frame, and resilient sealing means are so arranged that a dead air space is provided when said register is mounted on a wall in communication with a hot air duct. Soot and foreign material carried by the air stream that would normally be deposited on the wall adjacent to the register, are instead discharged into said air space from which they may periodically be removed.

A major object of the present invention is to provide a hot air register that does not permit soot and other discoloring materials carried by the air stream flowing therethrough to be deposited on the wall surface adjacent to the register.

Another object of the invention is to supply a hot air register that is of simple mechanical structure, is easy to install and maintain, can be fabricated from standard commercially available materials, and can be retailed at a sufficiently low price as to encourage the widespread use thereof.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a front elevational view of the device installed in a wall;

FIG. 2 is a rear perspective view of the device;

FIG. 3 is a longitudinal cross-sectional view of the device installed in communication with a hot air duct of uniform transverse cross section; and

FIG. 4 is a longitudinal cross-sectional view of the device installed in communication with a hot air duct that tapers outwardly and rearwardly.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

The hot air register A as may be seen in the drawing includes a rectangular front piece B that supports a rearwardly extending frame C in which a number of vertically spaced, longitudinally extending louvers D are pivotally supported. The front piece B as is customary with the installation of hot air registers is secured to a wall E by screws 10 or other suitable fastening means in alignment with the discharge opening of a duct F.

The front piece B as may be seen in the drawings is of rectangular shape and formed from sheet metal. Front

piece B has a number of vertically extending, longitudinally spaced baffles 12 formed in a rectangular sheet 14 that forms a part thereof which sheet has a continuous flange 16 extending rearwardly from the edges thereof. A resilient strip 18 extends around the rearward peripheral surface of sheet 14. The resilient strip 18 is in abutting contact with flanges 16. Resilient sealing strip 18 is gripped between wall E and sheet 14 when air register A is mounted on the wall E by screws 10 as shown in FIG. 3.

Front piece B has a rectangular sheet metal frame 20 projecting rearwardly therefrom, which frame serves to pivotally support a number of spaced louvers D. The louvers D may be pivoted in unison by a lever 24 that projects forwardly from the air register A as is conventional with such devices. Frame 20 as may be seen in FIGS. 3 and 4 is of lesser transverse cross section than that of the duct F in which it is disposed.

The frame 20 as may best be seen in FIG. 3 is defined by sections 26, each of which has a rearward portion 26a that curves outwardly and rearwardly towards the interior surfaces 28 of duct F, but are not in contact therewith. The portion 26a due to the curvature thereof tends to direct outwardly disposed portions of a current of forwardly moving air inwardly to exit between the spaced baffles 12, rather than between the walls 26 and the interior surface 28 of the duct F. A continuous slotted resilient member 30 in the form of a hollow structure engages the rearward extremities of wall portions 26a, with the member 30 being of sufficient thickness to sealing contact the interior surface 28 of duct F.

Resilient member 30, wall 26, rearward curved portion 26a, resilient strip 18, and portions of interior duct surface 28 cooperate to define a rectangularly extending confined space 32. Particles of soot and other discoloring material carried along the interior surface 28 by the air stream discharging through the register A are either stopped by the resilient member 30, or enter the dead air space 32 by slipping between the resilient member 30 and interior surface 28. Irrespective of which path the soot and discoloring material follows, the material is prevented from seeping between the resilient strip 18 and wall E to discolor the wall adjacent to the air register A. Soot and discoloring particles of material entering the confined space 32 have no tendency to be discharged forwardly therefrom, as this is a dead air space. After prolonged usage of an air register A, it is desirable to remove the register from the wall and clean material therefrom that may have accumulated in the confined space 32.

When the air register A is mounted on a wall E in communication with duct F' that has an interior surface 28' that tapers rearwardly and outwardly as shown in FIG. 4 a resilient member 30' is mounted on the rearward extremities of curved walls 26a. Resilient member 30 is of substantial length as can best be seen in FIG. 4, and includes a deformed curved forward portion 34. The portion 32 tends to straighten out due to the resiliency of the material defining the same, and as a result the forward extremity 36 thereof is at all times in pressure sealing contact with surface 28'. When member 30' is used, a confined space 32' is formed, that serves the same purpose and function as the space 30 previously described.

I claim:

1. In hot air register of the type that includes a baffled front piece, a resilient strip on the rearward peripheral surface thereof, a louver supporting frame extending rearwardly from said front piece, and screws for holding said front piece on a wall in communication with a hot air duct of greater transverse cross section than said frame, the improvement for preventing soot and other discoloring material carried by the air stream discharging through said register from being deposited on the wall adjacent to said register, said improvement comprising:

- a. an endless elongate resilient member that defines a hollow structure of such dimensions that the exterior surface thereof abuts against the interior surface of said duct when said frame is disposed transversely in said duct; and
- b. a continuous rearward extension of said frame that curves rearwardly and outwardly toward the interior surface of said duct but does not contact the same, with the rearward extremity of said extension supporting said hollow structure defined by said resilient member in abutting contact with the interior surface of said duct, said extension not only serving as a guide to direct a current of forwardly moving air inwardly to exit through said baffled front piece, but also in cooperation with

said frame, front piece, resilient strip, and interior surface of said duct cooperating to define a continuous dead air confined space, which confined space serves to receive soot and discoloring material that are moved forwardly between said interior surface of said duct and the surface of said resilient member in abutting contact therewith, and said confined space serving as a reservoir for said soot and discoloring material from which said soot and discoloring material do not tend to escape to discolor said portion of said wall adjacent said register due to said soot and discoloring material in said confined space being subjected to no air current to cause the movement thereof.

2. A hot air register as defined in claim 1 in which said resilient member is provided with a slot that removably engages said rearward extremity and supports said resilient member therefrom.

3. A hot air register as defined in claim 1 in which the interior surfaces of said duct taper rearwardly and outwardly, with said resilient member having a curved elongate transverse cross section, and said resilient member having a slot therein that removably engages said rearward extremity to support said resilient member from said extension.

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