June 20, 1933. R. C. BENDER 1,914,397

DUST SHIELD FOR WARM AIR REGISTERS

Filed Nov. 14, 1929

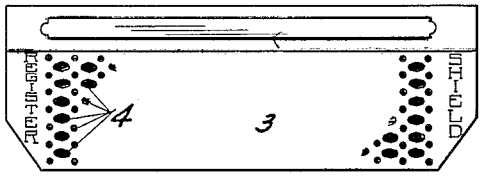


FIG-1

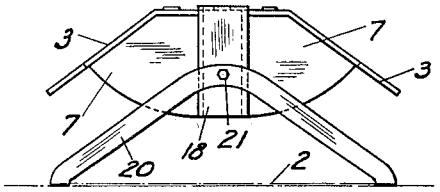


FIG-4

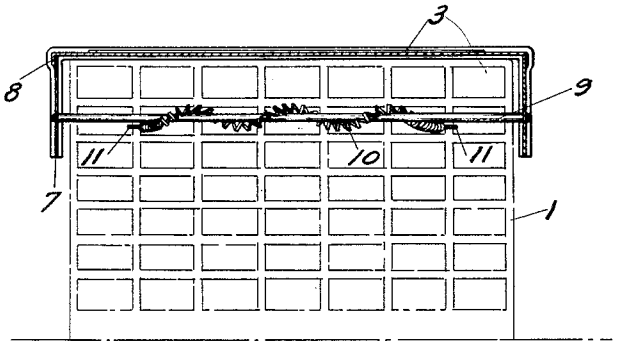


FIG-2

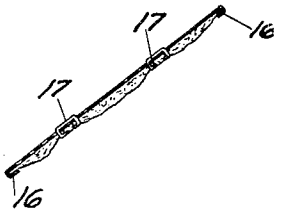


FIG-5

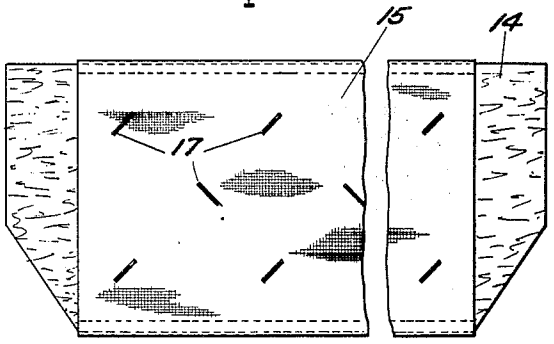


FIG-6

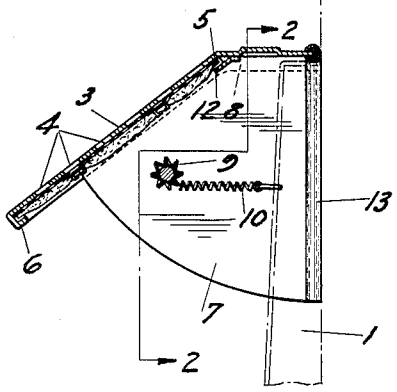


FIG-3



FIG-7

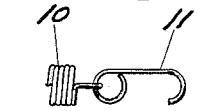


FIG-8

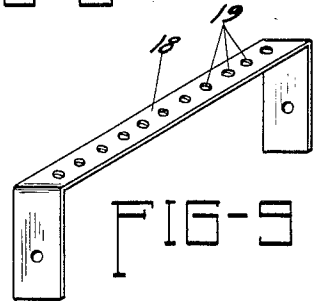


FIG-9

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UNITED STATES PATENT OFFICE

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DUST SHIELD FOR WARM AIR REGISTERS

Application filed November 14, 1929. Serial No. 407,142.

The present invention pertains to improvements in dust shields for warm air registers and more especially to improvements in the type of devices shown in my various patents and pending applications and has to do more especially with structures such as shown on sheet 4 of the drawing of my application Serial No. 355,330 filed April 15, 1929.

Among the objects of this invention are to provide an improved mode of securing such a dust shield in place in proximity to an air register; to provide an improved dust collecting means in such a structure; to provide improved means for forming a dust proof joint between the shield and wall; to provide an improved mode of constructing such a shield for use with floor registers; and such further objects, advantages and capabilities as will hereafter appear and as are inherent in the construction disclosed herein. My invention further resides in the combination, construction and arrangement of parts illustrated in the accompanying drawing and, while I have shown therein what is now considered to be the preferred embodiment of this invention, I desire the same to be understood as illustrative only and not to be construed in a limiting sense.

In the drawing annexed hereto and forming a part hereof, Fig. 1 shows a plan view of the metallic supporting member for the dust filter; Fig. 2 is a section substantially along the plane indicated by the broken line 2—2, Fig. 3; Fig. 3 is a vertical transverse section taken between the ends of the construction shown in Figs. 1 and 2; Fig. 4 is an end elevation of my invention as used in the making of a dust shield for a floor register; Fig. 5 is a transverse section through the dust mat or filter shown in Fig. 6; Fig. 6 is a broken plan view of the dust mat shown in Fig. 5; Fig. 7 is a transverse section of a split rubber tube used as a binding along part of the edges of the dust shield; Fig. 8 is an enlarged view of an end of the holding means by which the device is held to a register; Fig. 9 is a perspective view of a member used in the making of the construction illustrated in Fig. 4.

Reference will now be made in greater detail to the annexed drawing in which a wall register is denoted by the numeral 1 and a floor register by the numeral 2. This construction will first be described as applied to a wall register and then in its application to a floor register. A sheet metal member 3, provided with numerous perforations 4 is bent as indicated at 5 and has an outer longitudinal edge turned back as at 6 to form a smooth finish along the edge and to form a holding means for the dust pad or filter. A pair of generally triangular shaped ends or wings 7 are secured to the downwardly extending flanges 8 at the ends of the plate 3. These ends 7 are preferably spot welded to the flanges 8 and are therefore practically integral with the plate 3. A rod 9 passes through perforations in the end plates 7 and is secured therein in any suitable way. A coiled spring 10 is provided with hooks 11 at its two ends and one of these is hooked to the register 1 so that the spring may serve as resilient means to draw the dust shield against the wall. This spring is then wrapped several times around the rod 9 and its other hook 11 is also fastened to the register. It will therefore be seen that the device may be pulled away from the wall far enough to permit it to be turned over so that its interior is directed outwardly. It will then be possible to remove the dust pad from the securing means 6 and 12. The dust pads can then be taken to any convenient place to have the dust shaken out. A flexible rubber tube 13 is slitted along one side as indicated at 14 and is then mounted on the edge of the plate 3 and the back edges of the end plates 7. Therefore, the rubber will form a resilient pad between the dust shield and the wall and will also serve the purpose of sealing this joint against the passage of dust between the shield and wall.

The construction of the dust filter or pad will now be described with particular reference to Figs. 5 and 6 in which metal wool, preferably steel wool, is shown as being cut into the form of a pad 14. Attached to one side of this pad is a strip of wire netting,

preferably copper or bronze which may have its opposite edges folded over as indicated at 16 and engaging the edges of the pad. The primary purpose of folding over these edges of the netting is to form a smooth edge along each of the two opposite sides of this member so that there will be less danger of having one's hands injured when handling the dust pad. It may or may not be considered desirable to have the edges of the netting binding the edges of the metal wool and I therefore wish to cover both forms of construction as coming within the scope of this invention. In order to prevent the separation of the netting and the wool, I pass a number of securing means 17 through both of these as indicated in Fig. 5. These securing means may be in the nature of wire staples as illustrated or other means may be used. However, I consider the wire staples as preferable because of their simplicity and the ease of applying them for their intended purpose. When inserting the pad on the under side of the member 3, one of its edges may be put within one or the other of the holding means 6 and 12 and then the pad may be bent sufficiently to permit the other edge to be slid into the other holding means.

In the making of the structure shown in Fig. 4, a plurality of units such as shown in Figs. 1, 2 and 3, without the rubber 13 applied thereto, are joined to a member 18 such as shown in Fig. 9. This member may be provided with any desired number of perforations 19 for the passage of heated air therethrough. A pair of legs 20 are connected to opposite ends of the member 18 by suitable bolts 21 as shown in Fig. 4. The U-shaped member 18 is preferably secured to the plates 3 by spot welding or in some other suitable manner. The size of this dust filter can be varied by varying the with of the strip 18. Thus, if the register is unusually large, a wide strip 18 will serve the purpose of extending the dust filter in width so as to cover a register having a greater width. The dust pads for use in this construction are made of a width to extend from one extreme edge to the other instead of from the holding means 6 to the holding means 12 as shown in Fig. 3.

An obvious modification of the construction described is to have the wings 7 formed integrally with the body 3 instead of separately and secured thereto.

It will be seen from the foregoing description, taken in conjunction with the attached drawing that I have provided a construction which will accomplish the objects set forth above.

It is of course understood that the specific description of structure set forth above may be departed from without departing from the spirit of my invention as set forth in this specification and the appended claims.

Having now described my invention, I claim:

1. In a register shield, a perforated sheet metal member for supporting a dust pad, a dust pad attached thereto, a pair of roughly triangular plates secured to the ends of said perforated member and adapted to support the same above and in front of a register, a rod extending between said end plates and secured thereto, and resilient means attached to said rod and adapted to be attached to the register to hold the dust shield in place adjacent the register.

2. In a register shield, a pad supporting member, a pair of wings at the ends thereof, a pad attached to said member, the back edges of the pad supporting member and the wings lying in substantially the same plane, and a resilient tubular member slitted along one side and attached over the rear edge of the supporting plate and wings.

3. A dust shield for the purpose indicated comprising a perforated metal plate carrying means on its under side for supporting a dust catching pad, a pad attached to said plate, wing plates secured to the ends of said first mentioned plate and having their back edges in substantially the same plane as the back edge of the first mentioned plate, and a resilient tubular member having a slot along one side, the same being applied to the rear edges of said plates to form a resilient cushion between the plates and the wall adjacent a register.

4. A dust shield for use in connection with a warm air register, said shield including a dust pad and having wing plates at its ends and a bar connecting said wing plates, and resilient means connecting the bar to the register to hold the dust shield in position adjacent the register.

5. A structure as defined by claim 2 having in combination therewith resilient means for attaching the shield to a register.

6. A structure as defined by claim 4 in which the resilient means comprises a coil spring wrapped around the bar and having its ends secured to the register.

7. A dust shield for use in connection with a warm air register, said shield comprising a dust pad, wing plates at the ends thereof, a bar connecting said wing plates, and a coil spring connecting the bar and register.

In witness whereof, I hereunto subscribe my name to this specification.

ROBERT C. BENDER.