Nov. 8, 1938. M. HARDING 2,135,750

AIR FILTER FOR WALL REGISTERS

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Fig.3.

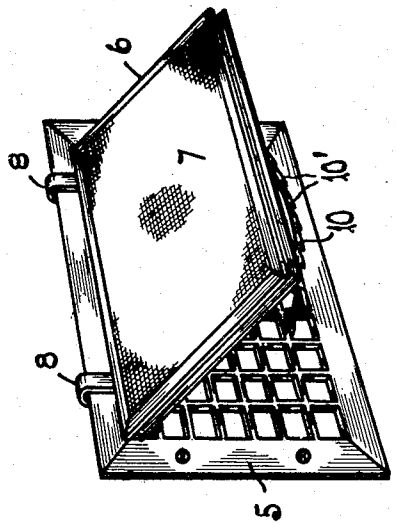
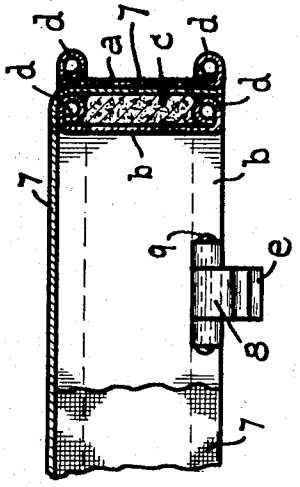


Fig.4.



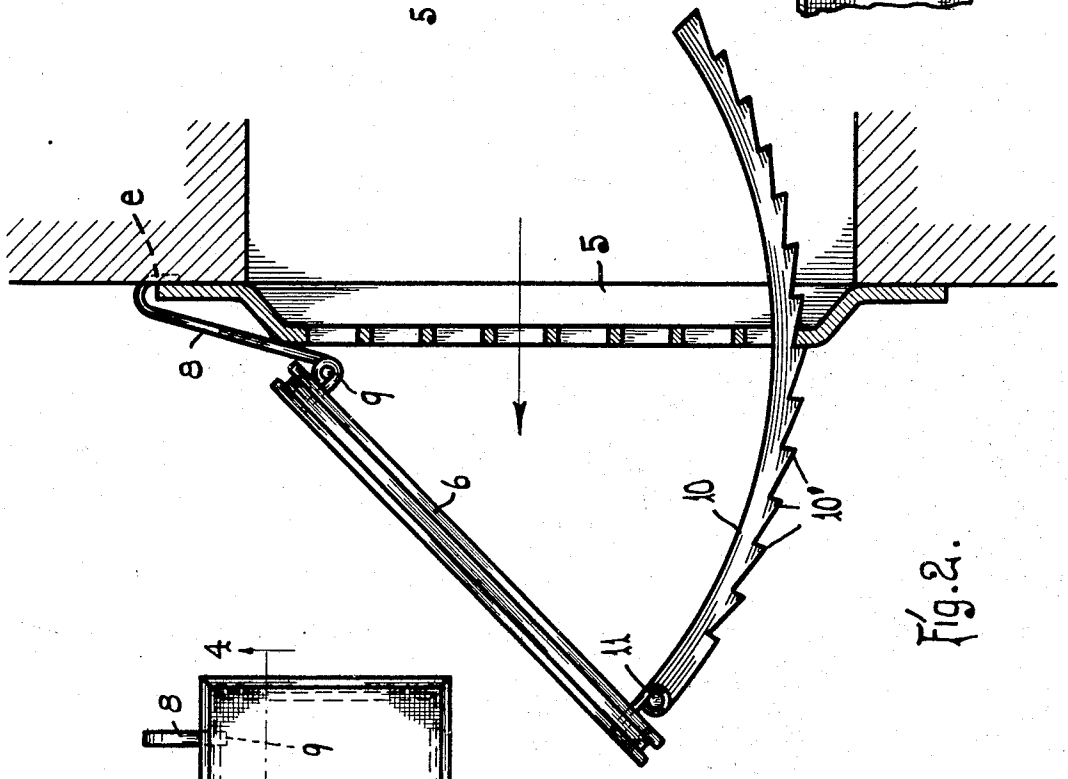


Fig.2.

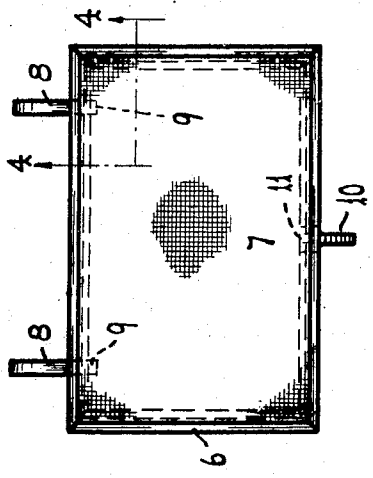


Fig.1.

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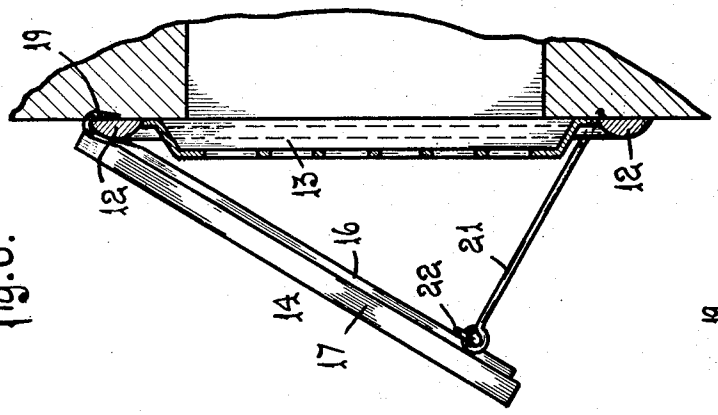


Fig. 6.

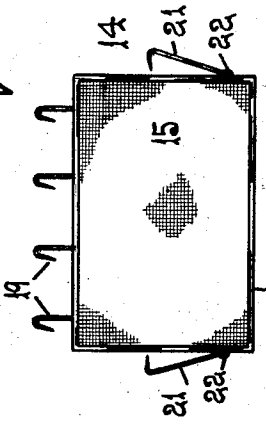


Fig. 7

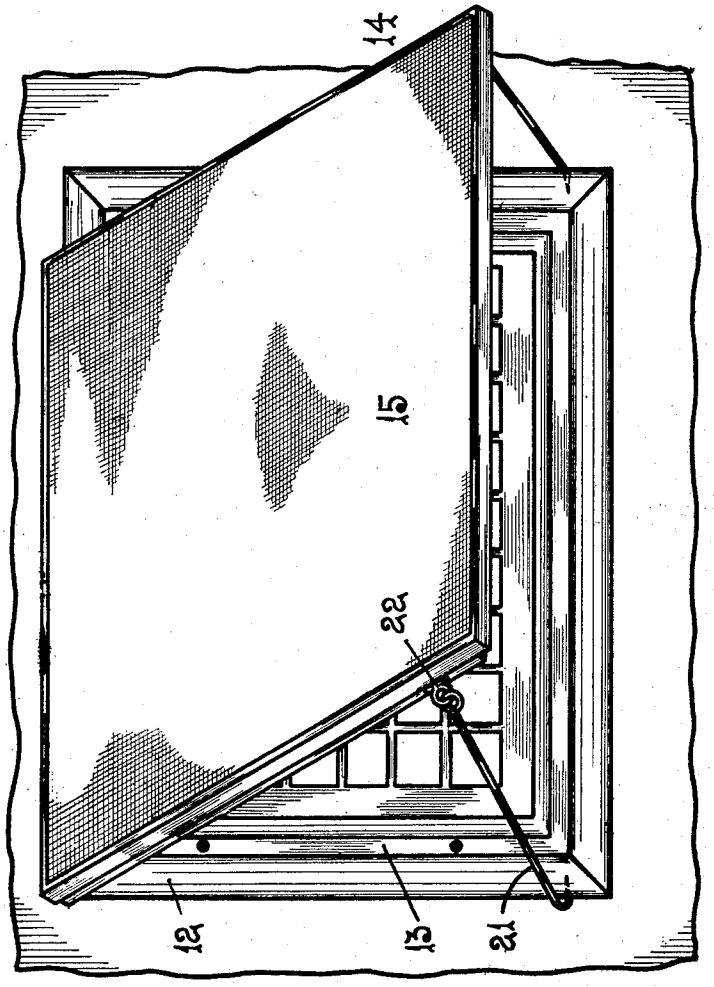


Fig. 5.

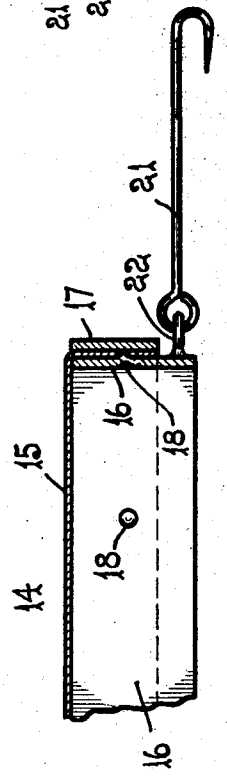


Fig. 8.

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AIR FILTER FOR WALL REGISTERS

Margaret Harding, Omaha, Nebr.

Application March 11, 1938, Serial No. 195,328

2 Claims. (Cl. 98—108)

This invention relates to a trap or filter for catching or removing dust from heated air while moving through wall registers.

Air which is heated by means of furnaces and which moves into the rooms of buildings through wall registers is generally charged with dust, this objectionable feature often causing discoloration of the walls and injury to curtains and furniture. The object of the invention, broadly, is to provide a portable device for catching the dust while the heated air moves through the register.

One of the specific objects is to provide a foraminous web of fabric material (cotton preferred) disposed in the line of travel of heated air moving through a wall register for deflecting the air current and collecting the particles of dust.

It is an object of the invention to provide a device which may be readily detached from the register so that the fabric web may be cleaned.

Another object is to provide a frame of such construction that the web may be maintained in a taut condition, and that a new web may be substituted when a former web has become unduly worn or injured.

Also it is an object to provide a device which may be adjusted to permit the fabric web to be disposed at suitable inclinations relative to the register, depending upon the degree of air-draft.

The invention consists of the new and useful construction, combination and arrangement of parts as described herein and claimed, and as illustrated in the accompanying drawings, it being understood that changes may be made in size, form, proportions and minor details as found to be of advantage, said changes being within the scope of the invention as claimed.

In the drawings, Fig. 1 is a plan view of the device, and Fig. 2 is a sectional view showing the device mounted on a wall register, the frame for the web being shown in a selected, inclined position.

Fig. 3 is a perspective view showing the device mounted on a wall register, and Fig. 4 is a sectional detail on line 4—4 of Fig. 1 to clearly show the construction of the web-holding frame.

Figs. 5, 6, 7 and 8 illustrate a modified form of the invention. Fig. 5 is a perspective view of the dust-filter. Fig. 6 is a view of the same in vertical section. Fig. 7 is a plan view of the dust-filter, and Fig. 8 is a sectional detail showing a fabric filter secured at its edges between the bands of a frame.

Referring now to the drawings for a more particular description, the invention is shown and described in connection with a wall register 5 through which air enters the room of a building after said air has been heated.

In order that dust and other foreign substances in the moving air may become caught or filtered at the register, I provide a frame 6 of rectangular form provided with a fabric web 7.

The frame 6 consists of a pair of rectangular bands *a* and *b* pressed one upon the other for holding the fabric web in a taut condition therebetween, the inner band *b* being provided with a lining *c* of resilient material, such as a strip of rubber or cork.

The metallic bands *a* and *b* are preferably reinforced to provide such a degree of rigidity that the fabric web 7 will be effectively gripped, and for this purpose both of the bands are formed with rolled edges *d*, and the resilient strip *c* is disposed between the rolls *d* of the band *b*, and when the bands are disposed in their normal position the fabric web will be pressed into engagement with said resilient strip.

Numerals 8 indicate a pair of hook-members, each being pivotally mounted at their inner ends, as indicated at 9, upon the band *b* of the frame, the outer ends of said arms 8 being provided with sharp hooks *e* adapted to engage the upper edge of the register 5 for supporting the device.

As thus described the device is detachably mounted on the register, and whenever desired it may be removed so that the fabric web 7 may be cleaned. Since the hooks *e* are of sharp attenuated form they may readily be disposed in "hooked" position over the top of the register frame and may be detached without appreciably injuring the wall to which the register is secured.

Since the device is pivotally mounted at 9 upon the hook-arms 8 it may be moved to selected inclined position relative to the register, and may be maintained in stationary position by use of the toothed bar or ratchet 10 which is pivotally mounted at 11 upon the band *b* of the frame 6, the teeth 10' being adapted to engage the grating of the register as shown in Fig. 2 of the drawings.

It will be noted that the bands *a* and *b* may be readily separated to permit removal of the fabric web whenever desired. In operation, the dust carried by the heated air through the register will be deposited, for the most part, on the fabric web for the purposes described.

Figures 5, 6, 7 and 8 illustrate a dust-filter corresponding substantially to that which has been described, the object in view being to provide such

a construction that it may be produced at a very limited cost.

In this instance, a moulding 12 is provided which extends around the vertical wall register 13.

The rectangular frame 14 which provides a mounting for the fabric, foraminous web 15 consists of an outer, rectangular band 16 and an inner rectangular band 17, said bands being of such proportions that when disposed one within the other, the web 15 when disposed between them, will be securely held, and may be stretched to a taut condition.

The inner band is provided on one of its sides with projections 18 which engage the web to prevent any sliding movement thereof while mounted upon said frame 17.

Numerals 19 indicate a plurality of hooks each being mounted upon the lower edge of the band 17 on one of its sides, said hooks 19 being adapted to extend over the upper edge and engage the top of the moulding 12.

Numerals 21 indicate a pair of hooks, these being pivotally mounted as indicated at 22 upon the inner band 17 on the opposed sides thereof, said hooks 21 being adapted to extend over the sides and to engage the molding for maintaining the dust-filter at a selected degree of inclination relative to the register.

As thus described, the dust-filter is adapted to be adjusted inclinedly since it is pivotally mounted on the hooks 19, and it will be noted that the hooks 21 may engage selected parts of the molding at the sides thereof for determining the degree of its inclination.

The metallic parts used in the construction of this modified form of the invention are of attenuated form and comparatively inexpensive. It will be noted that the parts may be readily separated simply by removing the outer band 16 from the web, and the device may be removed from the molding when cleaning of the web is desired. In operation, the dust carried by heated air will accumulate on the lower side of the inclined web and will be prevented, for the most part, from entering the room of a building.

I claim as my invention,—

1. In a dust-filter for a wall-register, a frame adapted to be disposed at the front of the register, comprising a rectangular band and a second rectangular band on the first named band, a foraminous web compressed between and carried by said bands, and means pivotally mounted on the first named band arranged to maintain the frame at a selected degree of inclination relative to the wall-register.

2. In a dust-filter for a wall-register, a rectangular frame adapted to be disposed at the front of the wall-register comprising a band provided with a rugose element, a second band on the first named band, a foraminous web disposed between said bands engaging the rugose element and carried by said bands, and means pivotally mounted on the first named band arranged to maintain the frame at a selected inclination relative to said wall-register.

MARGARET HARDING.