United States Patent [19]

Day

[11] **3,906,846**

[45] **Sept. 23, 1975**

[54] **DIRT CONTROL SHIELD FOR AN AIR OUTLET**

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[22] Filed: **June 20, 1973**

[21] Appl. No.: **371,749**

[52] **U.S. Cl.** ..... **98/40 D;** 98/108

[51] **Int. Cl.²** **F24F 7/06**

[58] **Field of Search** ..... 98/40 B, 40 D, 114, 40 C, 98/108, 40 DL

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[57] **ABSTRACT**

A shield which is mounted about an airflow outlet in a room wall for reducing the accumulation of air carried dirt upon the room wall adjacent the outlet. The shield includes a reticulated side wall and deflector plate. The deflector plate serves to direct a portion of the air flowing from the outlet laterally through the openings in the shield side wall and parallel along the room wall.

3 Claims, 4 Drawing Figures

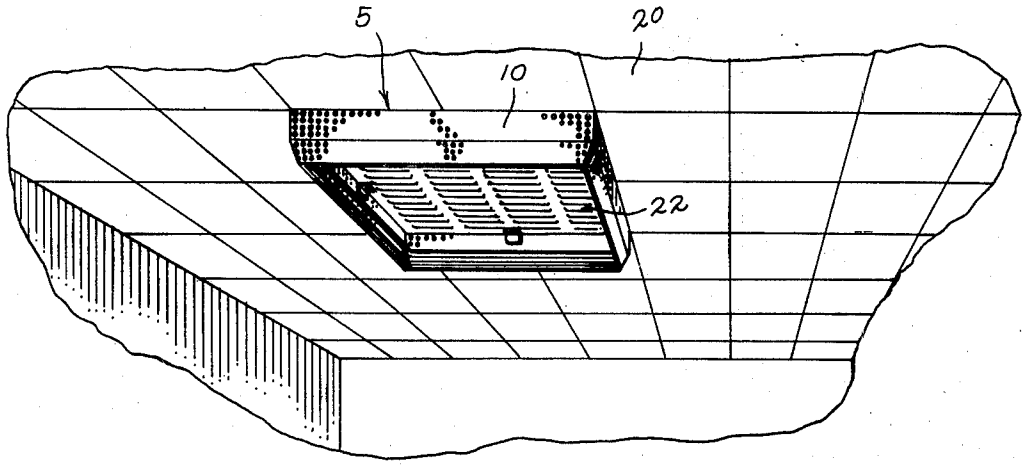


Fig. 1

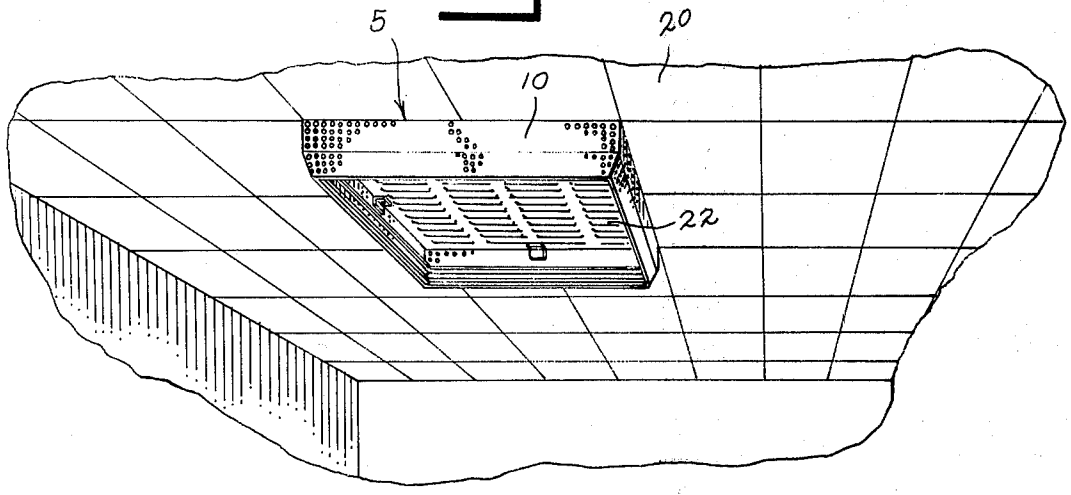


Fig. 2

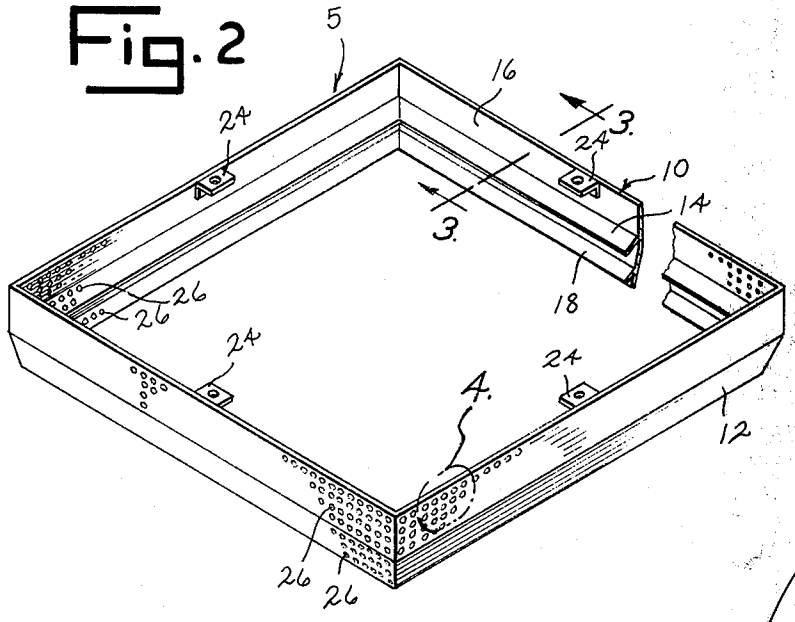
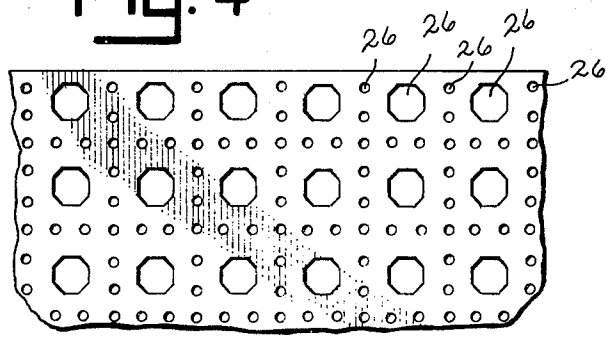


Fig. 4



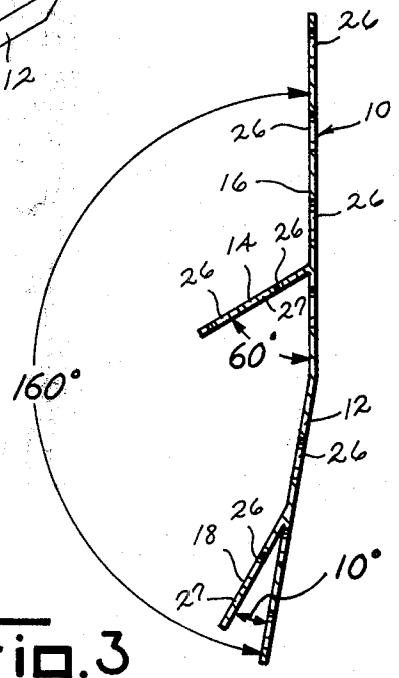


Fig. 3

DIRT CONTROL SHIELD FOR AN AIR OUTLET

SUMMARY OF THE INVENTION

This invention relates to a shield which is mounted about an airflow outlet in a room wall for the purpose of reducing the accumulation of air carried dirt upon the room wall adjacently about the outlet.

The shield of this invention includes a side wall which surrounds the outlet and which extends substantially perpendicularly outwardly from the room wall. The shield includes deflector plate means carried at the inside of the shield side wall and spaced from the room wall. The shield side wall has a plurality of openings formed therein so that a portion of the air passing from the airflow outlet will strike the deflector plate means and be diverted laterally through the openings in the shield side wall and parallel adjacently along the room wall to form an air barrier which prevents the circulating room air which has dirt and similar type particles entrained therein from coming into contact with the room wall around the periphery of the airflow outlet. Through the use of the shield of this invention, room walls, whether of the ceiling or side wall type, are generally prevented from becoming smudged and otherwise covered with an accumulation of dirt so often present about air conditioning and heating outlets in restaurants and similar locations.

Accordingly, it is an object of this invention to provide means for reducing the accumulation of air carried dirt and similar matter upon a room wall about a heating or air conditioning outlet within the wall.

It is another object of this invention to provide an economical and simplified means of reducing the accumulation of dirt about air conditioning or heating outlets without materially affecting the air conditioning or heating of the room.

It is another object of this invention to provide a method of reducing the accumulation of air carried dirt upon a room wall adjacent an airflow outlet.

Other objects of this invention will become apparent upon a reading of the invention's description.

BRIEF DESCRIPTION OF THE DRAWINGS

A preferred embodiment of this invention has been chosen for purposes of illustration and description wherein:

FIG. **1** is a perspective view of the shield embodiment mounted to a ceiling about an airflow outlet.

FIG. **2** is a perspective view of the shield of FIG. **1** shown detached from the ceiling and in fragmentary form for purposes of illustration.

FIG. **3** is a sectional view taken along line **3—3** of FIG. **2** showing the embodiment of the shield in actual proportional size.

FIG. **4** is a fragmentary detailed view of the side wall of the shield enclosed within broken line circle **4** of FIG. **2.**

DESCRIPTION OF THE PREFERRED EMBODIMENT

The preferred embodiment illustrated in not intended to be exhaustive or to limit the invention to the precise form disclosed. It is chosen and described in order to best explain the principles of the invention and its application and practical use to thereby enable others skilled in the art to best utilize the invention.

The illustrated shield **5** includes a quadangular side wall **10** having a tapered lower marginal portion **12.** A deflector plate **14** is carried by side wall **10** above its marginal portion **12.** Deflector plate **14** extends around all four sides of side wall **10** and projects outwardly from the inner face **16** of the side wall. A second deflector plate **18** is carried by side wall **10.** Deflector plate **18** also extends around all four sides of the side wall and projects outwardly from inner face **16** thereof. Both deflector plates **14** and **18** are angled downwardly toward the lower end of side wall **10** and are arranged so as to angle away from ceiling **20** against which the shield is mounted as shown in FIG. **1.**

Shield **5** is mounted against ceiling **20** and surrounds a diffusion airflow outlet **22.** Airflow outlet **22** may be either an air conditioning outlet or hot air outlet and can take the form of any of a variety of shapes of registers or diffusers. The means for mounting shield **5** against ceiling **20** can vary. In the illustrated embodiment, side wall **10** carries tabs **24** at its upper edge through which screws or nails can be inserted or driven into the register which forms outlet **22.** In other embodiments of this invention, shield **5** can be connected directly to the ceiling or side wall.

Sidewall **10** and deflector plates **14** and **18** of shield **5** have a plurality of openings **26** formed therein. Openings **26** permit a portion of the air from outlet **22** to pass through the side wall and deflector plates. A portion of the air passing from outlet **22** will contact the solid portions **27** of the deflector plates and be deflected upwardly from the plates and laterally outwardly, in conjunction with other air from outlet **22,** through the openings **26** in the side wall above the deflector plates. This air which passes laterally through side wall openings **26** will generally parallel ceiling **20** to form a barrier which prevents the circulating room air having entrained dirt particles therein from contacting the ceiling about outlet **22.**

In FIG. **4,** the size and arrangement of openings **26** in side wall **10** and deflector plates **14** and **18** of the shield are shown. There are preferably four ¼ inch octagon shaped openings per square inch and fourteen 1/16 inch circular openings per square inch of side wall and deflector plate material. In FIG. **3,** shield **5** is shown in actual proportional size with the angular relationship of deflector plates **14** and **20** relative to side wall **10** indicated. It has been found that a suitable air barrier can be formed along ceiling **20** adjacent outlet **22** when 50 to 65% of the air passing through the outlet is deflected laterally through openings **26** in side wall **10** of the shield.

It is to be understood that the invention is not to be limited to the details above given, but may be modified within the scope of the appended claims.

What I claim is:

1. A shield mounted about an airflow outlet in a room wall for reducing the accumulation of air carried dirt upon said room wall adjacent said outlet, said shield comprising a side wall surrounding said outlet and extending substantially perpendicularly outwardly from said room wall, said shield including a deflector plate means carried at the inside of said side wall spaced from said room wall, said side wall having a plurality of openings formed therein, said deflector plate means extending around said outlet and projecting outwardly from the inside of said side wall and away from said room wall wherein a portion of the air from said outlet

contacts said deflector plate means and is diverted laterally through said openings in the side wall and parallel adjacently along said room wall.

2. The shield of claim **1** wherein said deflector plate means has a plurality of openings therein.

3. The shield of claim **2** and another of said deflector plate means carried at the inside of said side wall spaced from said room wall, said two deflector plate means being in a spaced relationship and serving to divert a portion of said air flowing from said outlet laterally through said openings in said side wall and parallel adjacently along said room wall.

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