Dec. 14, 1948. G. R. GOLDTHWAITE 2,456,058

OUTLET GRILLE

Filed Nov. 26, 1946

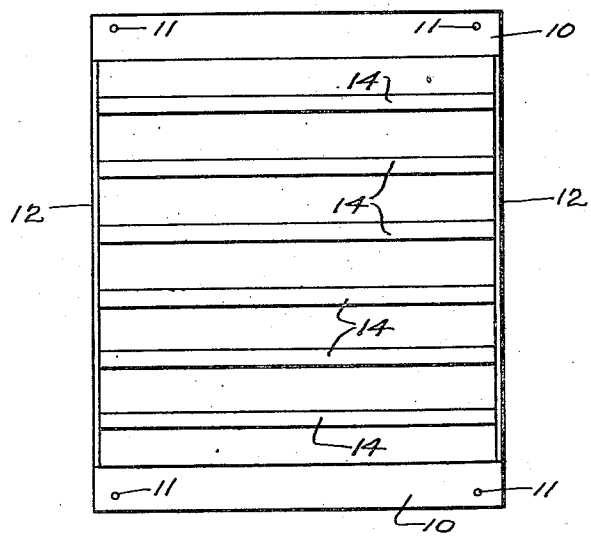


FIG. 1

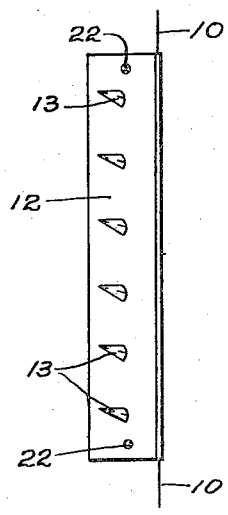


FIG. 2

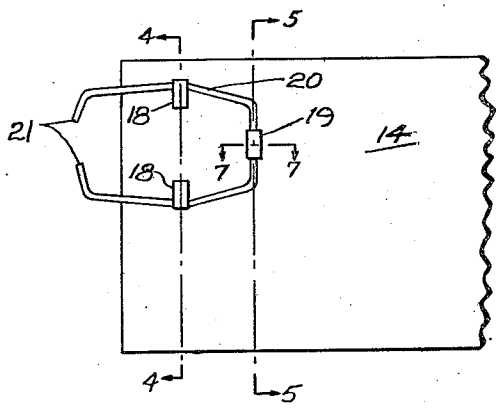


FIG. 3

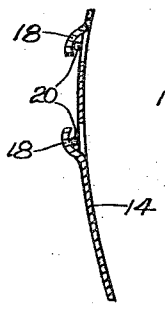


FIG. 4

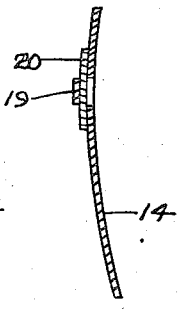


FIG. 5

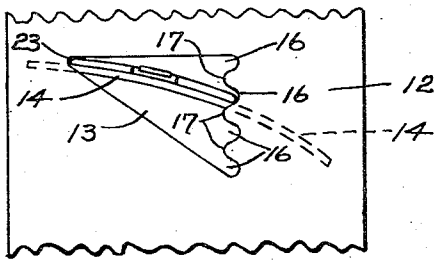


FIG. 6

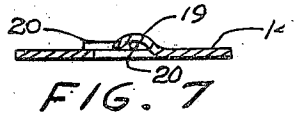


FIG. 7

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OUTLET GRILLE

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2 Claims. (Cl. 98—110)

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This invention relates to air outlet grilles such as are used in ventilating, air heating and air cooling systems and apparatus.

This invention provides an air outlet grille having individually adjustable vanes for deflecting the air discharged from the grille, in desired directions, the vanes being easily adjustable manually without the use of tools.

A feature of the invention is the provision of notched openings in the sides of the grilles, the ends of the vanes having U-shaped springs attached thereto which engage notches in the openings, the vanes being easily movable by hand so that the springs engage different notches.

An object of the invention is to reduce the manufacturing cost of air outlet grilles having individually adjustable vanes.

Another object of the invention is to provide in an air outlet grille, vanes which are easily adjustable by hand.

The invention will now be described with reference to the drawing, of which:

Fig. 1 is an end elevation of an air outlet grille embodying this invention;

Fig. 2 is a side elevation of the grille of Fig. 1;

Fig. 3 is an enlarged view of one end of one of vanes of the grille;

Fig. 4 is a sectional view along the lines 4—4 of Fig. 3;

Fig. 5 is a sectional view along the lines 5—5 of Fig. 3;

Fig. 6 is an enlarged view of a portion of one of the sides of the grille including one of the notched openings, and

Fig. 7 is a sectional view along the lines 7—7 of Fig. 3.

The grille illustrated has the upper and lower plates 10 of sheet metal with the circular openings 11 therein which are adapted to receive machine screws for attaching the grille in an air outlet.

The sheet metal sides 12 are attached to the plates 10, and define therewith an air outlet opening in which the vanes 14 are positioned. The sides 12 have the openings 13 shaped substantially as right angle triangles therein in which the ends of the vanes 14 are supported as will be described. The bases of the openings 13 extend parallel the plates 10 and have the notches 16 formed therein, the notches having curved sides and having the rounded portions 17 therebetween.

Each end of each of the vanes 12 has the aligned tongues 18 punched therefrom, and has the tongue 19 punched therefrom and off-set inwardly from the tongues 18. The U-shaped

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springs 20 with their ends 21 facing outwardly are placed between the tongues 18 and 19 and the vanes 14, and the tongues are bent over against the springs for retaining them in position as illustrated by Figs. 3, 4, 5 and 7.

In assembling the grille, one of the sides 12 is removed as by removing the screws 22 (Fig. 2) which hold it in position, and the vanes are placed in the grille through the open side so that the springs 20 at their corresponding ends fit into the notched openings 13 in the other side 12 of the grille, the ends of the springs 20 being sprung inwardly as they enter the openings 13 so that one of the ends 21 of each spring 20 fits into the apex 23 of its associated triangular opening 13, and the other end 21 of the spring 20 fits into one of the notches 16 of the opening. The removed side 12 is then reassembled by springing the ends 21 of the springs 20 in the adjacent ends of the vanes in the openings 13 in the side so that the ends of the springs fit into the apices and notches of the openings 13 in the side following which the screws 22 are replaced and tightened.

After the grille has been assembled as described, and attached to the air outlet of an air heater, for example, each vane 14 can be adjusted to any of five different directional positions, in the embodiment illustrated, by grasping the outer edge of the vane and pressing it upwardly or downwardly. When this is done the ends 21 of the springs 20 spring inwardly under the applied pressure causing the spring end in one notch 16 to move into the next adjacent notch in the direction of the pressure.

The embodiment of the grille illustrated was designed for use with an air heater to be placed overhead the space to be supplied with heated air, the heater including a fan for blowing the heated air into the space to be heated. The vanes 14 accordingly are curved downwardly, and the openings 13 and the notches 16 therein are arranged so that in the uppermost position of the vanes, the heated air is discharged substantially horizontally from the grille; in the lowermost position of the vanes, the air is discharged downwardly at a substantial angle from a horizontal line, and in the intermediate positions the angles of discharge from horizontal lines are reduced.

For other duties the curvature of the vanes, and the openings 13 and the notches 16 therein, could be arranged to provide other directions of discharge including upwardly directed air streams.

While one embodiment of the invention has been described for the purpose of illustration, it

should be understood that the invention is not limited to the exact apparatus and arrangement of apparatus illustrated, as modifications thereof may be suggested by those skilled in the art, without departure from the essence of the invention.

What is claimed is:

1. A grille comprising a frame having an outlet opening therein and having side members on opposite sides of the opening, said side members having substantially triangular openings therein, the openings having apices and bases opposite the apices, said bases having a plurality of notches therein, and vanes extending across said outlet opening, said vanes having springs attached to the ends thereof and which have portions fitted into said apices and notches.

2. A grille as claimed in claim 1 in which each spring is substantially U-shaped and has one end fitted into one of said apices and has the other end fitted into one of said notches.

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