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AIR DISTRIBUTING APPARATUS

Filed Oct. 16, 1961

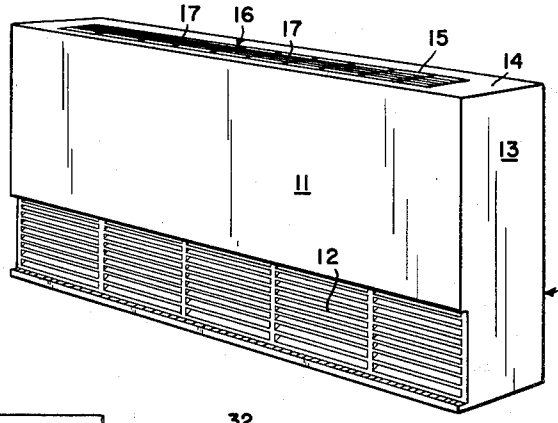


FIG. 1

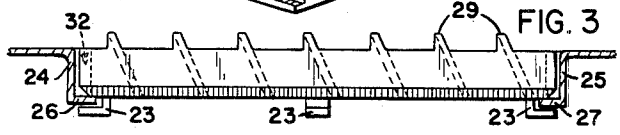


FIG. 3

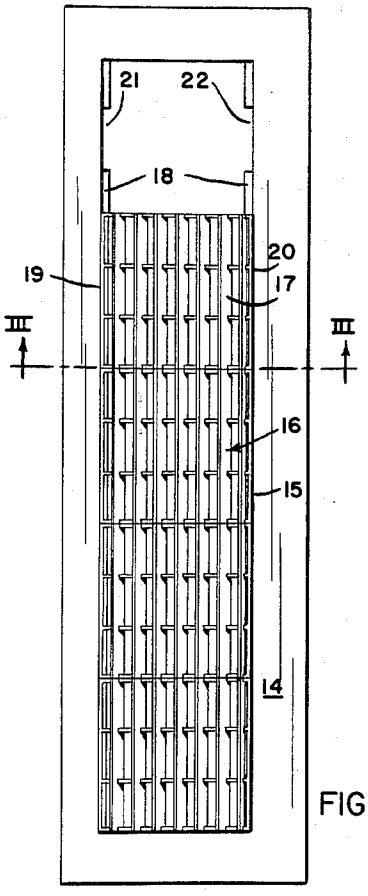


FIG. 2

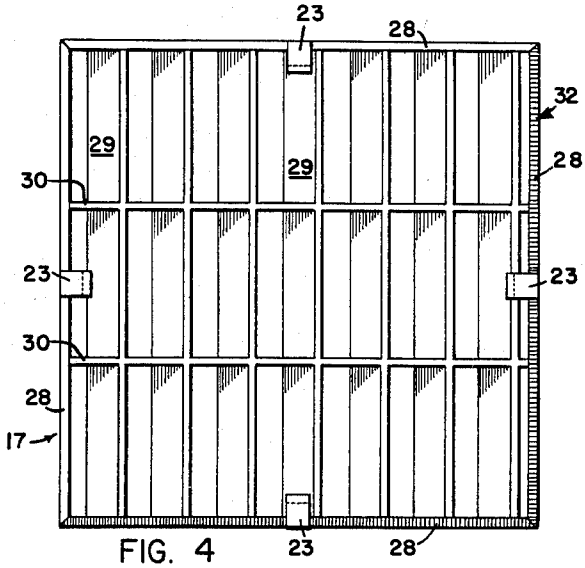


FIG. 4

INVENTORS.
WALTER W. HOYLE
JAMES BLACK
BY Seymour Rothstein
ATTORNEY.

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AIR DISTRIBUTING APPARATUS

Walter W. Hoyle, Fayetteville, and James Black, Syracuse, N.Y., assignors to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware

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This invention relates to air distributing apparatus and, more particularly, to air distributing apparatus having novel grille means which are both adjustably and removably mounted on the casing of such apparatus.

In many commercial air conditioning systems, for example, those used in motels or hotels, treated air is discharged into an area to be conditioned through an air distributing apparatus. Such apparatus generally comprises a casing having an opening therein in which are positioned suitable louvered grille means. Often, these grille means are formed integrally with the casing. This is undesirable as it is often necessary to vary the air deflection pattern to accommodate the wishes of the occupants of the area to be treated. Too, maintenance of components within the casing would be facilitated if the grille means were removable. The provision of pivoted louvers in the grille means to vary the air pattern was found to be unwarranted in view of the expense. Recently, grille means, which were formed from a plurality of small grilles that merely rested on a support in the casing, were used. However, these small grilles were not secured to the casing. Consequently, they were often removed by the occupants of the area to be treated and either lost or damaged. Replacement of these small grilles necessitated an unnecessary expense.

An object of this invention is to provide air distributing apparatus in which the deficiencies and disadvantages of prior constructions are obviated.

Another object of the present invention is to provide air distributing apparatus with grille means which are secured in such apparatus, yet which are easily removable therefrom for maintenance purposes.

Yet another object of this invention is to provide air distributing apparatus with grille means which are detachably secured to the casing in such apparatus in a manner to discourage unauthorized removal therefrom.

A further object of the present invention is to provide air distributing apparatus having grille means comprising stationary louvers therein, the grille means being adjustably mounted to vary the deflection of the air discharging from such apparatus.

These and other objects of this invention will become hereafter more apparent.

This invention relates to an air distributing apparatus comprising a casing having an elongated opening therein, the opening having at least two parallel sides, track means adjacent the parallel sides of the opening, and air deflecting means removably positioned in the opening, the air deflecting means comprising at least one frame member having oppositely disposed lug means thereon engaging the track means, the track means having aligned recesses therein to receive the lug means whereby the frame member is engageable with the track means at the recesses and is slidable along the track means to prevent removal of the frame member from the track means in a direction normal to the track means at a location other than at the recesses.

The specific structural details of the present invention and their mode of functioning will be made most manifest and particularly pointed out in clear, concise and exact terms in conjunction with the accompanying drawing, wherein:

FIGURE 1 is a front perspective view of an air distributing apparatus embodying the present invention;

FIGURE 2 is a top view of the air distributing apparatus of FIGURE 1 with one of the grilles removed;

FIGURE 3 is an enlarged cross-sectional view taken along line III—III of FIGURE 2; and

FIGURE 4 is a bottom view of one of the grilles of the present invention.

Referring now to the drawing, like numerals in the various figures will be employed to designate like parts.

In FIGURE 1, there is shown an air distributing apparatus comprising casing **10** through which air may be discharged into an area to be treated. The air may be ventilation air or treated air. The manner in which the air is treated forms no part of this invention and it is believed adequate to state merely that air may be supplied to the interior of the casing from a suitable source. The casing includes front **11** having louvered opening **12** therein, sides **13** and top **14**. In top **14** of casing **10** there is provided rectangular opening **15** within which is disposed grille means **16**. The grille means are preferably formed of a plurality of individual grilles or deflecting members **17**.

Referring to FIGURE 2, it can be seen that the grille means **16** are supported on track means **18** which are provided adjacent elongated parallel sides **19** and **20** of opening **15**. Provided in the track means are recesses or cutout portions **21** and **22**.

In FIGURE 3, there is shown a fragmentary cross-sectional view taken generally along the line III—III in FIGURE 2. Track means **18** may be formed integrally with top **14** of casing **10**, and may comprise a depending member **24**, **25**, respectively, and a supporting member **26**, **27**, respectively. The track formed by members **24** and **26** is adjacent side **19** of opening **15**. The track formed by members **25** and **27** is adjacent side **20** of opening **15**. If desired, the depending member and supporting member may be formed from an angle member suitably secured to top **14** as, for example, by welding.

As can best be seen in FIGURE 4, each grille **17** comprises frame **32** having four sides **28** preferably of equal length. Louvers for deflecting the air are fixed to frame **32**. In the embodiment of the invention illustrated, parallel louvers **29** are disposed at predetermined angles across two of the sides **28**. Support ribs are secured to the other two sides and to the louvers **29**. Lug means **23** are secured to each side **28** of grille **17**. These lug means may be formed from generally outwardly opening L-shaped projections which are adapted to engage track means **18** or these lug means may be angle members which cooperate with the bottom of the sides to function in the same fashion as the L-shaped projections. The manner in which the lug means **23** engage the track means **18** can best be seen in FIGURE 3. It is contemplated that louvers **29** may be secured across adjacent sides **28**. Too, some louvers in a frame may be angled in one direction and others in a second direction.

It will be apparent that in use, grilles **17** can be engaged onto the track means **18** only through the recesses **21** and **22** in the track means. A grille **17** is positioned over opening **15** such that opposed lugs **23** thereon extend into recesses **21** and **22**. The lugs are moved into engagement with the track means and then the grille is slid along the track means into position in opening **15**. Only the grille last positioned can be removed by lifting the same in a direction normal to the plane of the track means. The other grilles can be removed only by successively sliding them to a position where opposed lug means **23** are in recesses **21** and **22**. Lugs **23** are disengaged from the track means **18** and the grille may be removed.

Inasmuch as sides **28** are equal in length in a preferred embodiment of the invention and louvers **29** are fixed

in each of the grilles **17**, adjustment of the deflection pattern of the air is accomplished by selective positioning of the grilles in the opening **15**. For example, considering the illustrated embodiment of the invention, to deflect air forwardly of the casing, each of the grilles may be positioned in the opening such that the louvers are angled forwardly. By positioning each of the grilles **17** in opening **15** such that the louvers are angled to the left, the air may be deflected to the left. Similarly, by rotating each of the louvers 180° such that the louvers are angled to the right, the air may be deflected to the right. It will be obvious that if desired, certain of the louvers may be positioned to deflect air in one direction and others may be positioned so as to deflect air in another direction.

By the present invention there has been provided an air distributing apparatus having grille means which are detachably and adjustably connected to track means adjacent an opening in such apparatus. The grille means may be removed when necessary for maintenance, yet the removal is of such a nature that unwarranted removal of the grilles is discouraged. In a presently preferred embodiment of the invention each grille comprising sides **28**, louvers **29**, support ribs **30** and lug means **23** are molded integrally of plastic. The resultant grille is thus easy to manufacture and is relatively inexpensive.

The above disclosure has been given by way of illustration and not by way of limitation and it is desired to protect all embodiments of the herein disclosed inventive concept within the scope of the appended claims.

We claim:

1. In an air distributing apparatus, the combination of a casing having an elongated opening therein, said opening having at least two parallel sides, track means adjacent the parallel sides of said opening, and air deflecting means removably positioned in said opening, said air deflecting means comprising at least one frame member having oppositely disposed lug means thereon engaging said track means, said track means having aligned recesses therein to receive said lug means whereby said frame member is engageable with said track means at said recesses and is slidable along said track means to prevent removal of the frame member from the track means in a direction normal to the track means at a location other than at the recesses.

2. In an air distributing apparatus, the combination of housing means having a generally rectangular opening therein; opposed track means adjacent the longer sides of said opening, each of said track means having a recessed portion; and grille means detachably and adjustably connected to said track means for deflecting the air discharged through said opening, said grille means having lug means secured thereto, said lug means being constructed and arranged to slidably engage opposite sides of said track means whereby the grille means may be positioned by placing the lug means in said recessed positions and by moving said grille means in a plane parallel to the plane of the track means to engage the lug means on the track means.

3. An air distributing apparatus as in claim 2 wherein said grille means comprises a plurality of frames, each frame having a plurality of louvers disposed in a predetermined position therein, and said lug means are secured to opposed edges of each frame, thus permitting inversion of the frames to vary the air distribution through the opening.

4. An air distributing apparatus as in claim 2 wherein said grille means comprises a plurality of frames, each frame having four sides of equal length, and lug means secured to each side of said frame for selectively positioning the frame to vary the air distribution through said opening in any one of four directions.

5. An air distributing apparatus as in claim 3 wherein said frame louvers, and lug means are integrally formed.

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