Dec. 12, 1961 J. M. DRUMMOND 3,012,494

DRUM LOUVER

Filed July 14, 1959 2 Sheets-Sheet 1

FIG. 1

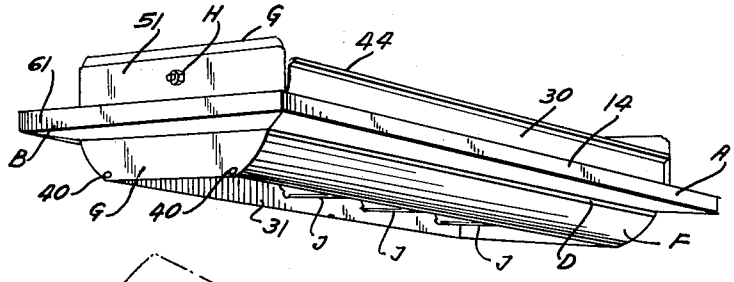


FIG. 2

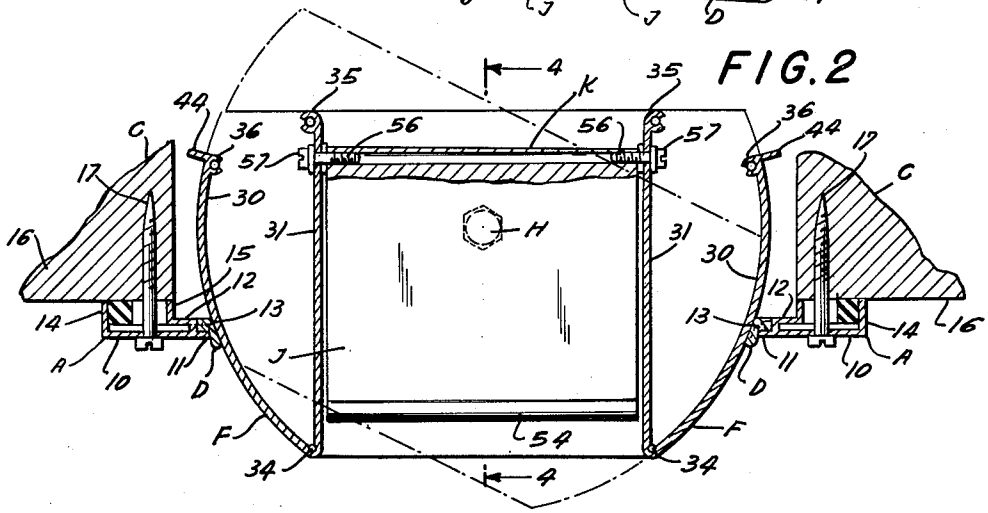
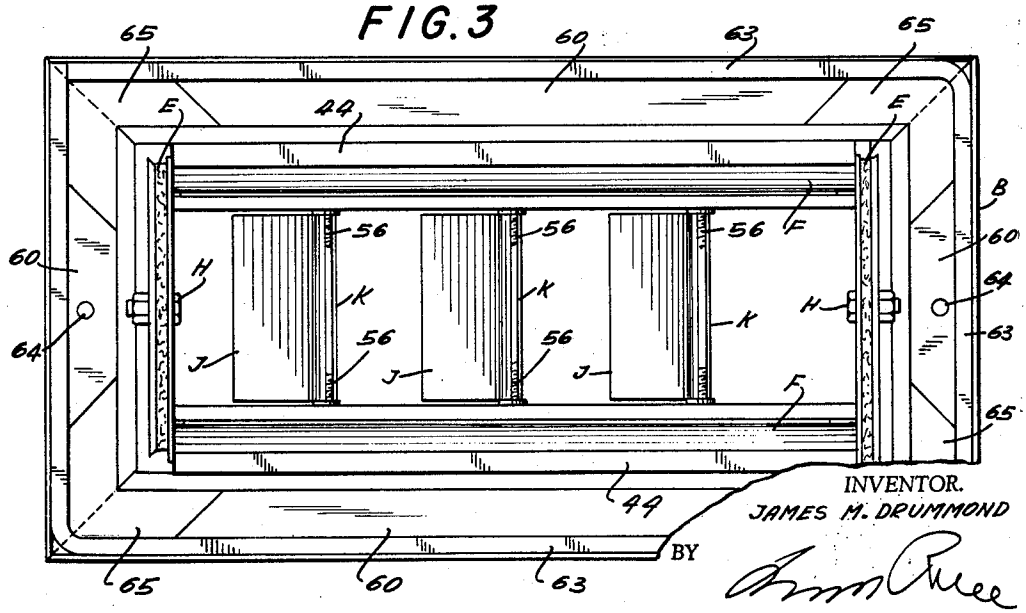


FIG. 3



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DRUM LOUVER

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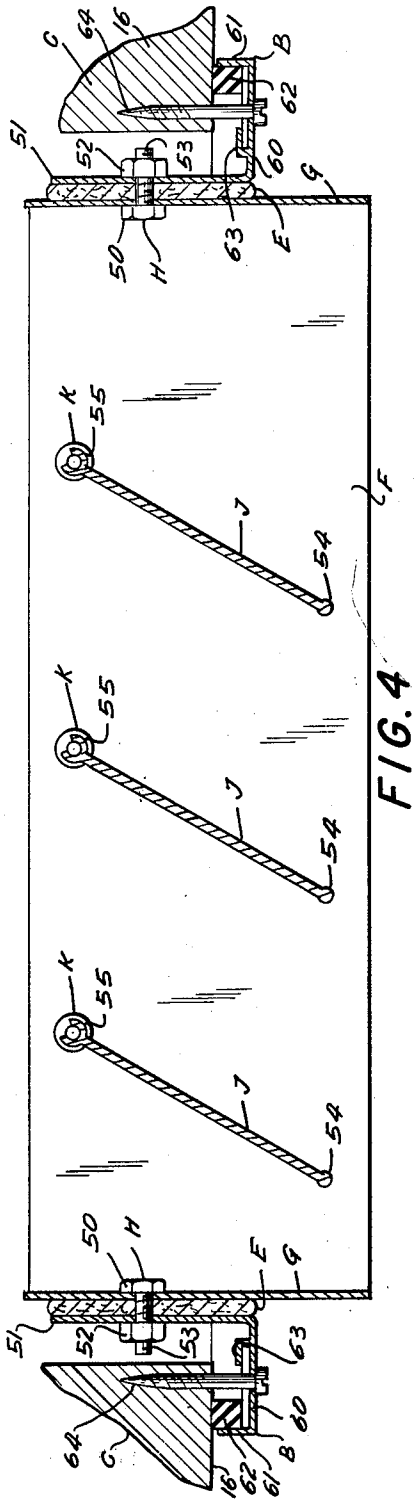

FIG. 4

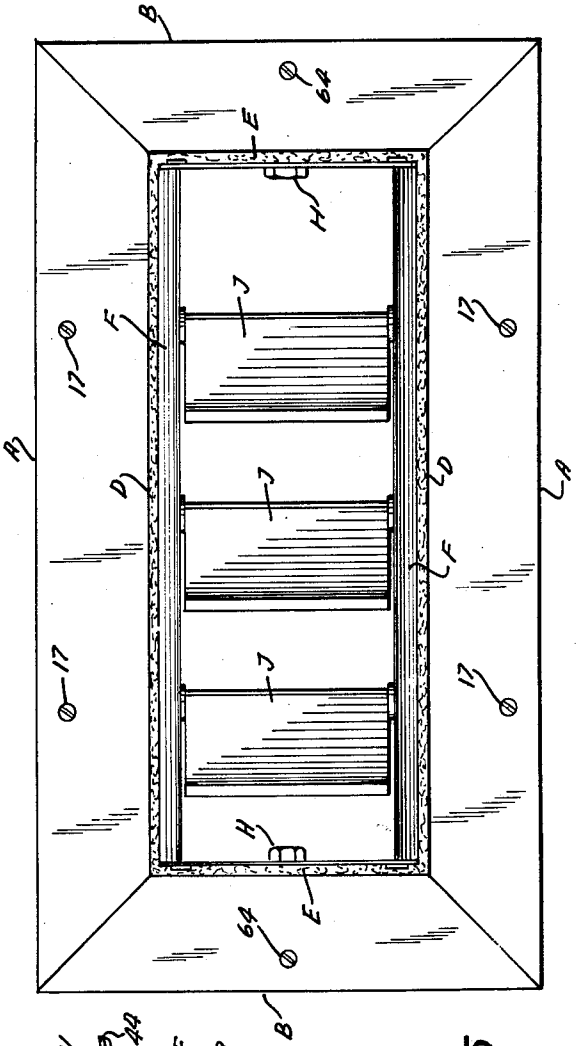

FIG. 5

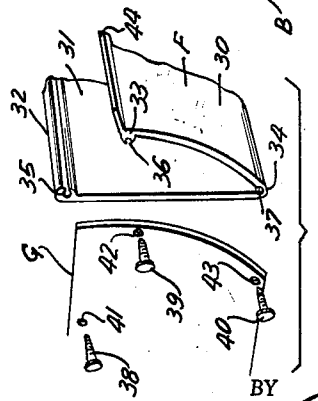

FIG. 6

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DRUM LOUVER

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4 Claims. (Cl. 98—40)

The present application relates to a drum louver and it particularly relates to an extruded aluminum drum louver.

It is among the objects of the present invention to provide a simple barrel louver construction which may be readily made from extruded elements, and particularly extruded aluminum elements, and which may be simply installed.

Another object is to provide a novel louver construction in which the various elements thereof may be readily assembled, mounted and maintained, and which will have an attractive appearance and will not disfigure a wall or ceiling.

Still further objects and advantages will appear in the more detailed description set forth below, it being understood, however, that this more detailed description is given by way of illustration and explanation only and not by way of limitation, since various changes therein may be made by those skilled in the art without departing from the scope and spirit of the present invention.

In accomplishing the above objects it has been found most satisfactory according to the present invention to provide a barrel structure which may be conveniently formed of extruded sections, which barrel section may have a plurality of adjustable swinging transverse louvers arranged along the length thereof.

The side or bearing elements may consist of extruded strips which can be readily mounted or positioned on a wall or ceiling.

With the foregoing and other objects in view, the invention consists of the novel construction, combination and arrangement of parts as hereinafter more specifically described, and illustrated in the accompanying drawings, wherein is shown an embodiment of the invention, but it is to be understood that changes, variations and modifications can be resorted to which fall within the scope of the claims hereunto appended.

In the drawings wherein like reference characters denote corresponding parts throughout the several views:

FIG. 1 is a side perspective view of the preferred form of barrel louver, according to the present invention.

FIG. 2 is a transverse sectional view on an enlarged scale as compared to FIG. 1.

FIG. 3 is a top plan view upon an enlarged scale as compared to FIG. 1.

FIG. 4 is a transverse longitudinal sectional view taken upon the line 4—4 of FIG. 2.

FIG. 5 is a bottom plan view.

FIG. 6 is a detailed end perspective separated view, showing the construction of one of the end corners of the drum louver.

Referring to FIGS. 1 to 6, the drum louver has the side and end mounting flanges A and B which enable it to be mounted upon a ceiling structure C.

The side flanges carry the elongated longitudinal bearing and sealing strips D and the end sealing strips E. The rotatable drum louver itself is formed of the side, partly cylindrical elements F, which are closed at their ends by the end walls G having the hinge mounts H.

Extending between the side members F are the swinging vane members J which are hingedly mounted at K. As indicated by the dot and dash lines at L in FIG. 2, the drum louver may be swung in either direction, as may also the transverse vanes J.

Referring particularly to FIG. 2, the side sealing contact flange members A consist of extruded sections with a base flange **10**, an inwardly extending lip **11** and a **Z** member **12** (see FIG. 2).

The **Z** member **12** will form a recess for carrying the inner end **13** of a longitudinal bearing and sealing strip D (see FIG. 2).

The base member **10** also has the outer upwardly extending flange **14** and the inside upwardly extending flange **15** to contact the lower face **16** of the ceiling C (see FIG. 2).

The flanges **10** are held on to the ceiling C by means of the screws or bolts **17**. The semi-cylindrical members F, which extend the full length of the drum louver, are shown in cross section in FIG. 2 and in their extruded form in perspective in FIG. 6.

Referring to FIG. 6, it will be noted that it consists of a semi-cylindrical portion **30** and a flat inside section **31**, which are extruded, together with the recessed beaded inside edge **32**, the flanged outside beaded edge **33** and the base grooved corner **34**.

The openings which are formed by the extrusions at **35** in the bead **32**, at **36** in the bead **33** and at **37** in the corner **34**, receive the attachment screws **38**, **39** and **40** respectively, which are inserted through the openings **41**, **42**, and **43** in the end plate G.

These beads **35** and **36** not only form convenient smooth edges for the walls **30** and **31**, but they also are a means for making the attachments, as indicated in FIG. 6.

It will be noted that the upper edge of the semi-cylindrical wall F has an outstanding flange **44** which will limit the movement of the drum louver when it stops against the **Z** member **12** at the extreme swinging position.

The end plates G (see FIG. 4) carry the bolts **50**, forming part of the hinging structure H. These bolts **50** extend through the sealing pads E, then through the flanges **51** and are held in position by the nuts **52** screwed on to the threaded shanks **53**.

The transverse swinging vanes J are also of extruded material and have the lower enlarged rounded edges **54** (see FIG. 4) and the upper grooved curved cylinder portions **55** forming part of the hinge structure K.

Projecting into the ends of the members **55**, as shown best in FIG. 2, are the short screws **56**, which have the filister heads **57** and which are screwed through the upper portions of the walls **31**.

The extruded end mounting frame members B (FIG. 4) include inner flanges **51** which project upwardly from the base plate **60**, outside flanges **61** which position the ceiling strip **62**, and a portion **63** forming an inwardly projecting lip which corresponds in part with the portion **12** of each side frame member.

The screws **64** extend through the base flanges **60** into the ceiling C to hold the flanges in position.

It will be particularly noted that each and every element is of struded stock and the flanges A and B, the side section F, the end plates G and the vanes J are all produced in continuous lengths and then cut to size.

The arrangement may be readily connected or assembled by the screws **38**, **39**, **40**, **50** and **57** after the various extruded lengths are cut to the desired size for the drum louver to be employed.

The sealing strips or plates D, E and **62** and **63** are readily applied and held in position by the flanges. The flanges A and B themselves are held together by the oblique corner strips **65** (see FIG. 3) which fit within the lips formed by the portions **63** of the end frame members and the portions **12** of side frame members.

As many changes could be made in the above drum louver, and many widely different embodiments of this

invention could be made without departure from the scope of the claims, it is intended that all matter contained in the above description shall be interpreted as illustrative and not in a limiting sense.

Having now particularly described and ascertained the nature of the invention, and in what manner the same is to be performed, what is claimed is:

1. A directionally adjustable air outlet including a four sided mounting frame consisting of pairs of side and end members adapted to be secured to a supporting surface around the border of an air discharge opening therein, said frame end members being of extruded section and each having a base portion disposed parallel to the supporting surface and inner and outer flanges extending normal to the base portion, the inner flange being adapted to project into said opening and the outer flange extending toward said surface; said frame side members being of extruded section and each having a corresponding base portion, inner and outer flanges extending toward said surface, and said base portion having an inner edge which projects within said opening; a sealing strip carried by the side and end frame members within the said outer flanges thereof for engagement with the supporting surface around the opening therein; a nozzle assembly consisting of pairs of side and end panels, said side panels each having an outer cylindrical segment wall portion and an inner plane surface wall portion, means connecting said side and end panels together with the inner side wall portions in spaced relation to form an air passage in combination with said end panels, the inner wall portions of each side panel merging with the outer cylindrical segment wall portion thereof at the discharge end of said passage; means securing said nozzle assembly to the frame between the said inner flanges of the frame end members for pivotal movement on an axis equidistant from said cylindrical segment wall portions of the nozzle assembly and also from the said inwardly projecting edge of the side frame members; sealing means carried along the said inner edge of each side frame member for engagement with the cylindrical segment wall portions of the nozzle assembly; sealing means interposed between the end frame inner flanges and the nozzle assembly end panels; and stop means formed integrally with the nozzle assembly side panels for engagement with one of the frame side members for limiting movement of the nozzle assembly about the pivotal axis thereof.

2. A directionally adjustable air outlet according to claim 1 further characterized by each of said frame side and end members including a lip spaced from the said base portions thereof and directed toward the said outer flange thereof, and clip means engageable with said lip portions for retaining said side and end frame members in assembled relation.

3. A directionally adjustable air outlet according to claim 1 wherein the said means for connecting the side and end panels of the nozzle assembly comprise connecting elements engageable in each end of one of the side panels at three points defined by extruded apertures formed in the side panels at the intersection between the inner and outer wall portions thereof, at the discharge end of the air passage in the nozzle unit and at the end of each of said wall portions which lies at the inlet side of said air passage.

4. A directionally adjustable air outlet having a rectangular frame consisting of pairs of side and end members adapted to be secured to a supporting surface around the border of an air discharge opening therein; a nozzle assembly consisting of pairs of side and end panels, said side panels each having an outer cylindrical segment wall portion and an inner wall portion, means connecting the side and end panels together with the inner side portions in spaced relation and forming an air passage in combination with said nozzle end panels, the inner and outer wall portions of each side panel being in spaced relation to each other at the inlet end of said passage and merging together at the discharge end thereof; means securing said nozzle unit to said frame for rocking adjusting movement on an axis parallel to the frame, intermediate the frame side members and intermediate the outer cylindrical segment wall portions of the nozzle side panels; sealing means between said frame side and end members and said nozzle assembly, and a sealing strip carried by said frame for engagement with the supporting surface.

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