April 2, 1935. E. A. MADER 1,996,340

LOUVER CONSTRUCTION

Filed June 18, 1934

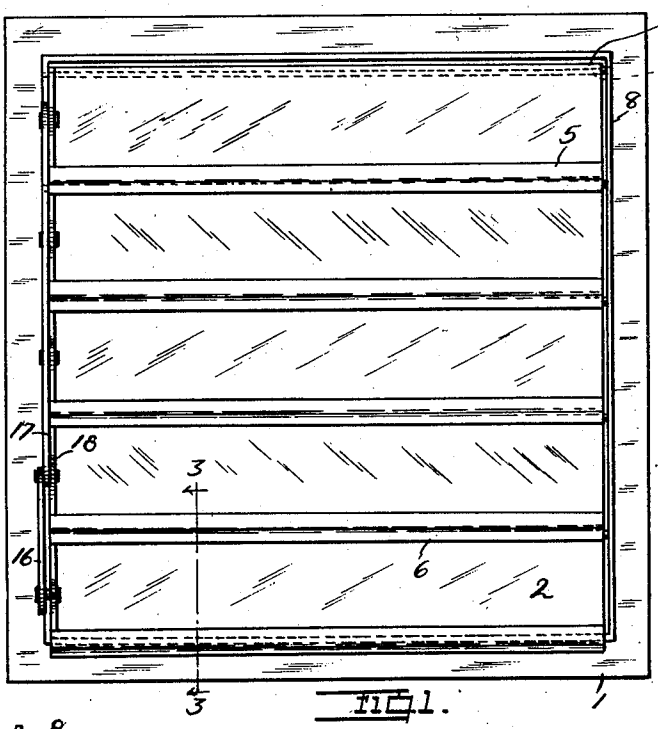


FIG. 1.

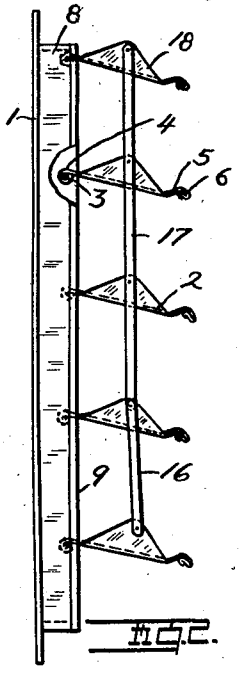


FIG. 2.

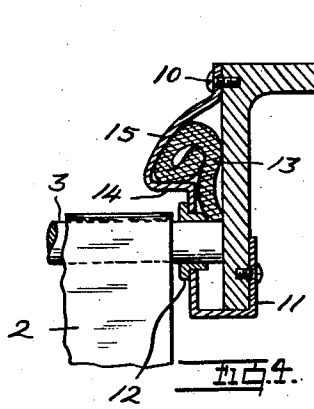


FIG. 4.

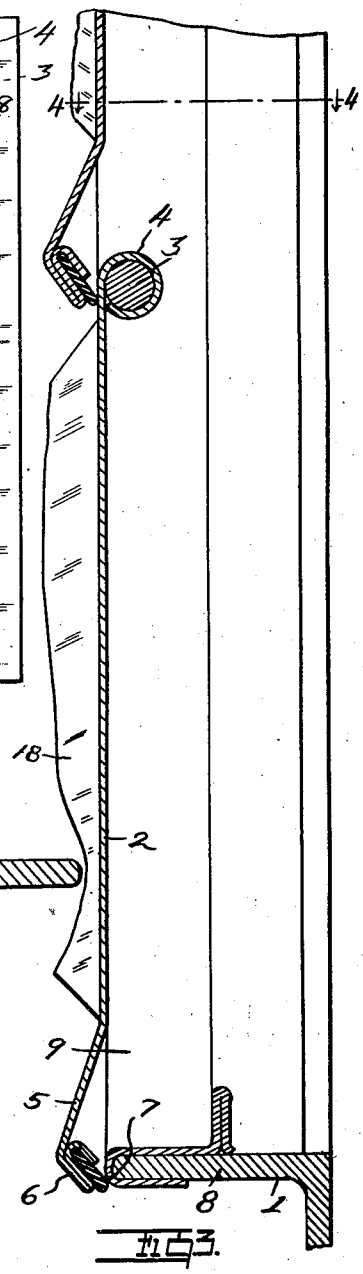


FIG. 3.

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LOUVER CONSTRUCTION

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6 Claims. (Cl. 98—121)

This invention relates to louvers and particularly louvers for ventilating use.

An object of the invention is to interconnect a set of ventilating louvers to swing in unison, and to utilize their interconnection in closed position, against flapping, rattling or opening, under wind pressure.

Another object is to mount a set of louvers on pivot rods and to provide improved means for journaling the rods in a frame and maintaining their lubrication over a long period of use.

These and various other objects the invention attains by the construction hereinafter described, and illustrated in the accompanying drawing, wherein:

Fig. 1 is a front view of the louver construction showing a closed position of the louvers.

Fig. 2 is a side elevational view, showing the louvers open.

Fig. 3 is an enlarged fragmentary vertical section, taken on the line 3—3 of Fig. 1, showing the louvers closed.

Fig. 4 is a fragmentary horizontal section, taken on the line 4—4 of Fig. 2 and particularly showing a provision for journaling and lubricating the pivot rods.

In these views, the reference character 1 designates a frame preferably of steel angle bar construction, forming a rectangular opening, within which a set of horizontally elongated sheet metal louvers 2 are pivoted one above another. Each louver is mounted on a cylindrical pivot rod 3, terminally journaled upon the uprights of said frame, and has its upper marginal portion rolled to form a sleeve 4 extending from end to end of the louver and snugly receiving said rod. The relation of each louver to the sleeve 4 thereof is substantially tangential, each sleeve being rearward of the plane of its louver.

A lower portion 5 of each louver is bent forwardly at an angle approximating sixty degrees to the plane of the louver and is then rearwardly bent, at substantially the same angle, as indicated at 6. The portion is return bent upwardly to form a mid ply and return bent downwardly rearward of said ply to form a clamping jaw coacting with said ply to grip a strip of felt 7 or other sound deadening material, extending the full length of the louver. Said strip projects sufficiently downward beyond the portion 6 to seat against the front upper portion of an underlying louver, when the louvers are closed. The felt pad 7 upon the lowermost louver, seats against the bottom member of the frame 1, when the louvers are closed.

Marginally of the opening of the frame 1, the latter, by virtue of its angle bar construction has a forwardly projecting flange 8, to which is secured a sheet metal weather strip 9. Said strip is secured at its forward and rear margins to the flange 8 by screws 10 or the like, and is spaced toward the louvers from said flange between said margins, as best appears in Fig. 4. Preferably the forward margin of said weather strip is hooked over and riveted to the corresponding edge portion of the flange 8, as indicated at 11.

The end portions of the rods 3 are journaled in eyelets 12 secured in suitable openings of said weather strip, and project beyond said eyelets into terminal proximity to the flanges 8, so that the latter serve to longitudinally position said rods.

Proper lubrication of the rod journals is maintained over a long period of time by elongated strips 13 of felt or the like, dipped in oil and inserted in the space between the weather strip and flange 8.

At the rear of the louvers, the weather strips are bent transversely to the flanges 8 to project some distance into the frame opening, as indicated at 14, and are then bent back at a more acute angle, as at 15, to engage said flanges at their rear margins. Thus the strips form a guard to intercept any rain, moisture or dust which may be carried inwardly past the closed louvers. The portions 14 and 15 form enlargements of the space between the weather strip and flange 8 and it is preferred to fold the lubricating strips 13 several times within said enlargements so as to substantially fill the same, the resiliency of the strips consequently exerting a forward pressure on their portions engaging the rods 3 to insure effective contact with the latter.

Preferably small oil openings 15a are formed in the upper end portions of the weather strips in the walls 15 thereof, whereby lubrication of the strips 13 may be renewed, if desired.

The two lowermost louvers are connected for actuation in unison by a sheet metal link 16, and a similar (but longer) link 17 connects all but the lowermost louver, for a like purpose. Said links pivotally engage sheet metal brackets 18 which are riveted or otherwise secured to the louvers at corresponding ends thereof. Said brackets have triangular portions projecting forwardly from the louvers, the links being pivoted to said portions at their apices, which

are substantially equidistant from the top and bottom edges of the louvers.

In the closed position of the louvers, the link 16 connecting the two lowermost thereof, has a very slight rearward inclination from bottom to top. Thus if a gust of wind exerts an upward force upon the lower edge portions of the closed louvers, tending to swing them open, the link 16, because of its slight relative angularity to the link 17, resists such tendency, and the louvers are held from rattling and prevented from admitting drafts through the frame opening.

In use of the described construction, the frame 1 may be suitably secured within a ventilating opening in a wall (now shown) in opposed relation to the outlet of a fan (not shown) serving to discharge air outwardly through said opening. Normally the louvers assume, of their own weight, the closed position shown in Figs. 1 and 3, and they are adapted to automatically open under pressure of the discharge from the fan, when the latter is operated.

The felt strips 7 minimize noise due to closing of the louvers, or due to any slight vibration thereof, occurring in their closed positions.

Lubrication effected by the felt strips 13, as initially installed, will ordinarily be adequate for the entire life of the installation, although relubrication of said strips, may as aforesaid, be readily effected, if desired.

The construction lends itself to rapid assembly and establishes an efficient weather seal between the closed louvers and frame.

The invention is submitted as including all such modifications and changes as come within the scope of the following claims.

What I claim is:

1. A louver construction comprising a frame formed with an opening, a plurality of rods extended within and across said opening, one above another, and journaled at opposite sides of said opening, louvers individually mounted upon said rods to swing about the rod axes, and coacting in corresponding positions to substantially close said opening, weather strips secured to said frame at opposite sides of said opening and having portions spaced from the frame within said opening, and flexible strips of absorbent material, retained between the frame and said portions, in contact with said rods and impregnated with a lubricant for the rods.

2. A louver construction as set forth in claim 1, one of said absorbent strips being disposed adjacent each side of said frame and each forming a common means for lubricating all of the rod journals at the corresponding side of said opening.

3. A louver construction as set forth in claim 1, each of said whether strips having a hollow guard member extending substantially the full height of said opening, and projecting into the opening in rearward proximity to the louvers, said absorbent strips having portions within said hollow guard members.

4. A louver construction as set forth in claim 1, said weather strips each having an opening in its upper portion for renewed lubrication of said absorbent strips.

5. A louver construction comprising a frame forming an opening and having a forwardly projecting flange marginal to said opening, a plurality of rods extending within and across said opening, one above another, and journaled at opposite sides of said opening, louvers individually mounted on said rods to swing about the rod axes, and coacting in corresponding positions to substantially close said opening, weather strips extending substantially the full height of said opening at the sides thereof, between the frame and louvers, said strips having their forward marginal portions hooked over said flanges, means securing the front and rear marginal portions of said weather strips to said flanges, said strips being spaced from said flanges between said marginal portions, and a strip of absorbent material extending between each weather strip and the adjacent flange and contacting with each of said rods, and impregnated with a lubricant for said rods.

6. A louver construction comprising a frame having an opening, a plurality of louvers extending within and across said opening, one above another, and pivotally carried by the frame, a link connecting the two lowermost louvers for actuation in unison, and having a slight rearward inclination from its lower to its upper end, and a link connecting all of said louvers excepting the lowermost for actuation in unison.

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