Jan. 2, 1940. G. N. ROWLEY 2,185,712

LOUVER CONSTRUCTION

Filed March 2, 1938

Fig. 1.

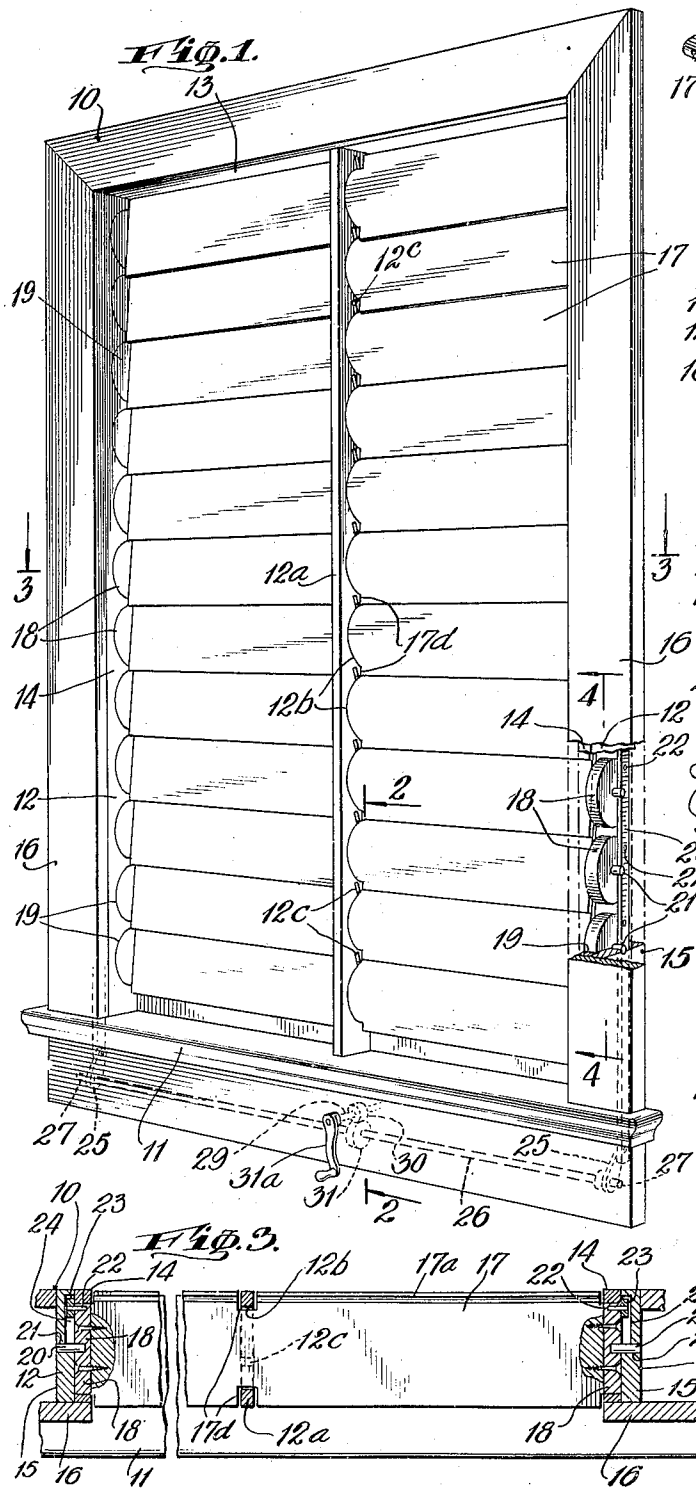
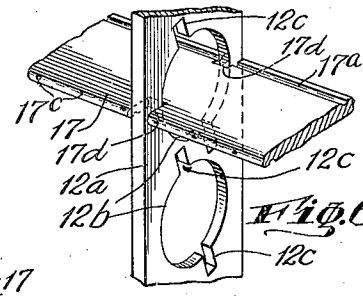


Fig. 6.



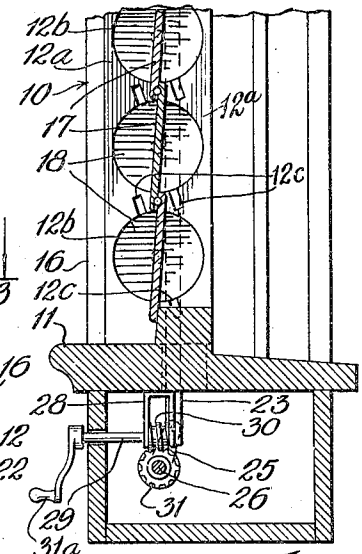
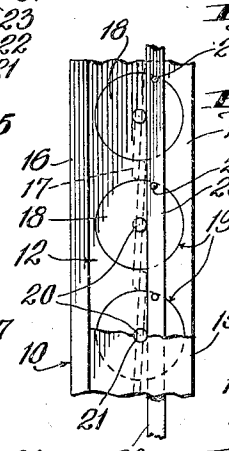


Fig. 2.

Fig. 4.



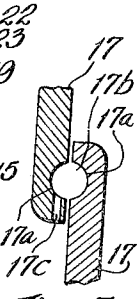


Fig. 5.

Fig. 3.

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LOUVER CONSTRUCTION

Garold N. Rowley, Miami, Fla.

Application March 2, 1938, Serial No. 193,457

9 Claims. (Cl. 20—62)

My invention relates to improvements in closures for windows, doors and other openings for the passage of light or air in buildings and other structures, and the same has for its object the provision of a louver or shutter construction which is simple in form, efficient in operation and use, and inexpensive to manufacture.

Further, said invention has for its object to provide a louver construction which may be readily and positively secured to open or closed position, or to any position intermediate fully open or closed.

Further, said inventtion has for its object to provide a louver construction in which the essential operating parts are wholly concealed and protected against injury by weather.

Further, said invention has for its object to provide a louver construction in which the shutters or vanes are positively connected at both ends to the operating mechanism in order to actuate the shutters or vanes simultaneously at both ends.

Other objects will in part be obvious and in part be pointed out hereinafter.

To the attainment of the aforesaid objects and ends my invention consists in the novel features of construction, and in the combination, connection and arrangement of parts hereinafter more fully described and then pointed out in the claims.

In the accompanying drawing—

Figure 1 is a perspective view illustrating one form of louver construction constructed according to and embodying my said invention;

Fig. 2 is an enlarged detail vertical section on the line 2—2 of Fig. 1;

Fig. 3 is a transverse section on the line 3—3 of Fig. 1 with the louver shown in its intermediate or horizontal position;

Fig. 4 is an enlarged detail elevation with parts broken away and in section on the line 4—4 of Fig. 1;

Fig. 5 is an enlarged detail sectional view showing the overlapping edges of the louvers and the chambers therein, and

Fig. 6 is an enlarged detail perspective view showing a portion of a louver and the central support therefor.

In said drawing 10 designates a frame or casing of rectangular form and including the stool or sill 11, side members 12, and lintel 13. The side members 12 are preferably formed of several vertical portions as 14 and 15, and a suitable molding strip 16 may form the exposed inner sides of said side members 12 and lintel 13. 17 denotes louvers or slats disposed one above the other in the frame or casing 10.

The louvers 17 are provided at their opposite ends with relatively thin circular heads or disks 18 which may be made of wood or metal and secured to the ends of said louvers 17 by screws or other suitable fastening means. The said disks 18 are fitted into corresponding circular sockets 19 provided in the side members 14, and have their outer or exposed surfaces flush with the outer exposed surfaces of said side members 14. Each head or disk 18 is provided with a concentric pin 20 which extends into an aperture 21 in the outer side member 15. The said apertures 21 serve as bearings for the pins or trunnions 20 whereby the louver is pivotally supported within the frame portion 15. The disks 18 are severally further provided with eccentrically disposed studs 22 which are pivotally connected to vertical actuating bars 23 located in vertical recesses 24 in the frame portions 15. The lower ends of said actuating bars 23 extend downwardly below the sill 11, and are pivotally connected at their said ends to arms 25 fixed upon opposite ends of a transverse shaft 26 supported in suitable bearings 27 arranged in the lower ends of the side members 14, 15 below the sill 11.

In order to prevent the louvers 17 sagging intermediate their ends, particularly where the same are of considerable length, a center support or jamb 12^a is secured centrally in the frame 10. The said center jamb or support 12^a is provided with a series of circular apertures 12^b corresponding in number with the number of louvers 17. The diameters of the circular apertures 12^b and the circular heads 18 are not shown to scale, relative to each other, in Fig. 3. Each aperture 12^b is provided with diagonally disposed recesses 12^c to permit of the louvers 17 being passed lengthwise through the support or jamb 12^a, and to be rotated in said aperture. When adjusted to horizontal position, or a position approaching horizontal, the notches 17^a provided in the opposite longitudinal edges of the louver will engage with the sides of the apertures 12^b, and serve to prevent the louver sagging or being moved lengthwise relative to said center support or jamb 12^a. If desired, when the structure has been fully assembled, the recesses 12^c may be filled in.

The underside of the sill 11 is provided intermediate its ends with a depending bearing 28 in which is mounted a shaft 29 disposed at right angles to the transverse shaft 26 upon which is fixed a worm 30 meshing with a worm gear wheel

31 fixed on the transverse shaft 26. The shaft 29 is provided at its projecting end with a detachable operating handle or crank 31.

The louvers 17 are provided at their overlapping edges with substantially semi-circular registering recesses 17a which are coextensive in length with the length of the louvers 17, and jointly form a substantially cylindrical expansion chamber 17b. The lower edges of said slats or louvers 17 are provided at intervals with weep holes 17c which communicate at their upper ends with the lower portions of the chambers 17b. The said chambers 17b serve to reduce the velocity of the air passing and cause the same to drop the entrained water or moisture and permit the same to pass out by gravity through the weep holes 17b.

To open or close the louvers 17, or to adjust the same to any intermediate position, it merely becomes necessary to rotate the operating crank 31, one direction or the other, until the desired position of the louvers 17 is obtained, whereupon the louvers will be positively held to adjusted position by the actuating mechanism.

It is to be noted particularly that by means of my invention I am enabled to provide a construction in which the louvers or shutters are positively actuated simultaneously from both ends thereby avoiding all torque strain upon them, that the entire operating mechanism is concealed; that the parts are arranged to form a weather proof structure, and that by avoiding projecting or overlapping parts in the structure the painting and cleaning thereof is facilitated.

Having thus described my said invention what I claim and desire to secure by Letters Patent is:

1. A louver construction comprising a frame having circular sockets in its opposite side members, a series of louvers between said side members, circular heads at the opposite ends of said louvers corresponding in outline with and extending into said circular sockets, pivots extending centrally from said circular heads and into said side members, studs on said heads disposed eccentrically relative thereto, bars working in said side members and pivotally connected to said studs, and operating means associated with said bars at the lower ends thereof for actuating the same to adjust said louvers.

2. A louver construction comprising a frame having circular sockets in its opposite side members, a series of louvers between said side members, circular heads at the opposite ends of said louvers corresponding in outline with and extending into said circular sockets, pivots extending centrally from said circular heads and into said side members, studs on said heads disposed eccentrically relative thereto, bars working in said side members and pivotally connected to said studs, a transverse shaft supported below said frame, arms fixed on said shaft and pivotally secured to the lower ends of said bars, a worm gear fixed on said transverse shaft, a shaft supported adjacent said transverse shaft, a worm on said shaft meshing with the worm gear on said transverse shaft, and an operating crank on said worm shaft for actuating said worm shaft and associated mechanism to adjust said louvers.

3. A louver construction comprising a frame having series of circular sockets in its opposite side members, a series of louvers between said side members, circular heads secured to the opposite ends of said louvers corresponding in outline with and extending into said circular sockets, pivots extending centrally from said heads and into said side members, studs on said heads disposed eccentrically thereon, each of said side members having recesses extending vertically therethrough, a bar working in each recess and pivotally connected to the studs on said circular heads, bearings depending from the sill of said frame, a transverse shaft supported in said bearings, arms fixed at the opposite ends of said shaft and pivotally connected to the ends of said bars, a second bearing on said sill, a shaft mounted therein at right angles to said transverse shaft, a worm on said second-named shaft meshing with the worm gear on said transverse shaft, and an operating crank engaging said second-named shaft actuating said second-named shaft and associated mechanism to adjust said louvers.

4. A louver construction comprising a frame including side members, a series of louvers, means for pivotally supporting said louvers in said side members, means intermediate said side members having apertures therein and recesses communicating therewith for receiving said louvers and said apertures serving to revolubly support said louvers, and means for actuating said louvers.

5. A louver construction comprising a frame including side members, sockets in said side members, a series of louvers, means for pivotally supporting said louvers at their ends in said sockets, means intermediate said side members having circular apertures of less diameter than the width of said louvers and means associated with said circular apertures for receiving said louvers and said apertures serving to revolubly support said louvers intermediate their ends, and means for actuating said louvers.

6. A louver construction comprising a frame including side members, sockets in said side members, a series of louvers pivotally supported at their opposite ends in said sockets, a support intermediate said side members having circular apertures therein of less diameter than the width of said louvers, and oppositely disposed recesses opening into said circular apertures for receiving said louvers, said intermediate support serving to revolubly support said louvers intermediate their ends, and means for actuating said louvers.

7. A louver construction comprising a frame including side members, sockets in said side members, a series of louvers pivotally supported at their opposite ends in said sockets and having registering notches in their opposite edges, a vertical member secured in said frame intermediate the side members thereof having a series of circular apertures therein of less diameter than the width of said louvers engaging the notched edges of said louvers, and oppositely disposed recesses opening into said circular apertures, said recesses jointly forming openings corresponding in length with the width of said louvers, said vertical member loosely enclosing said louvers and serving to revolubly support the same, and means for actuating said louvers.

8. A louver construction comprising a frame including side members, circular sockets in said side members, a series of louvers, circular members on the ends of said louvers extending into said circular sockets for revolubly supporting said louvers, said louvers having registering notches in the opposite edges thereof, a vertical member supported in said frame intermediate the side members thereof and having apertures therein corresponding in diameter with that of said circular members on said louvers, and oppositely disposed recesses opening into said circular apertures and jointly forming diagonal openings cor-

responding in length with the width of said louvers, an operating member pivotally connected to the circular members on said louvers, and means for actuating said operating member to actuate said louvers.

9. A louver construction comprising a frame having circular sockets in the side members thereof, a series of louvers disposed in said frame and provided with notches in opposite edges thereof, circular heads on the opposite ends of said louvers working in said circular sockets, pivots on said circular heads supported in said side members, a vertical member disposed intermediate said side members and having circular apertures of less diameter than the width of said louvers engaging with the notches in said louvers, and oppositely disposed recesses opening into said apertures to permit of the passage of said louvers through said apertures, a stud on each circular head, an operating member disposed in said frame and pivotally connected to the stud of each louver head, and means for actuating said operating member for simultaneously actuating said louvers at both of their opposite ends.

GAROLD N. ROWLEY.