April 28, 1953 R. BAUDERS, JR 2,636,558

COMBINATION LOUVER AND SCREEN STRUCTURE

Filed Oct. 6, 1947 2 SHEETS—SHEET 1

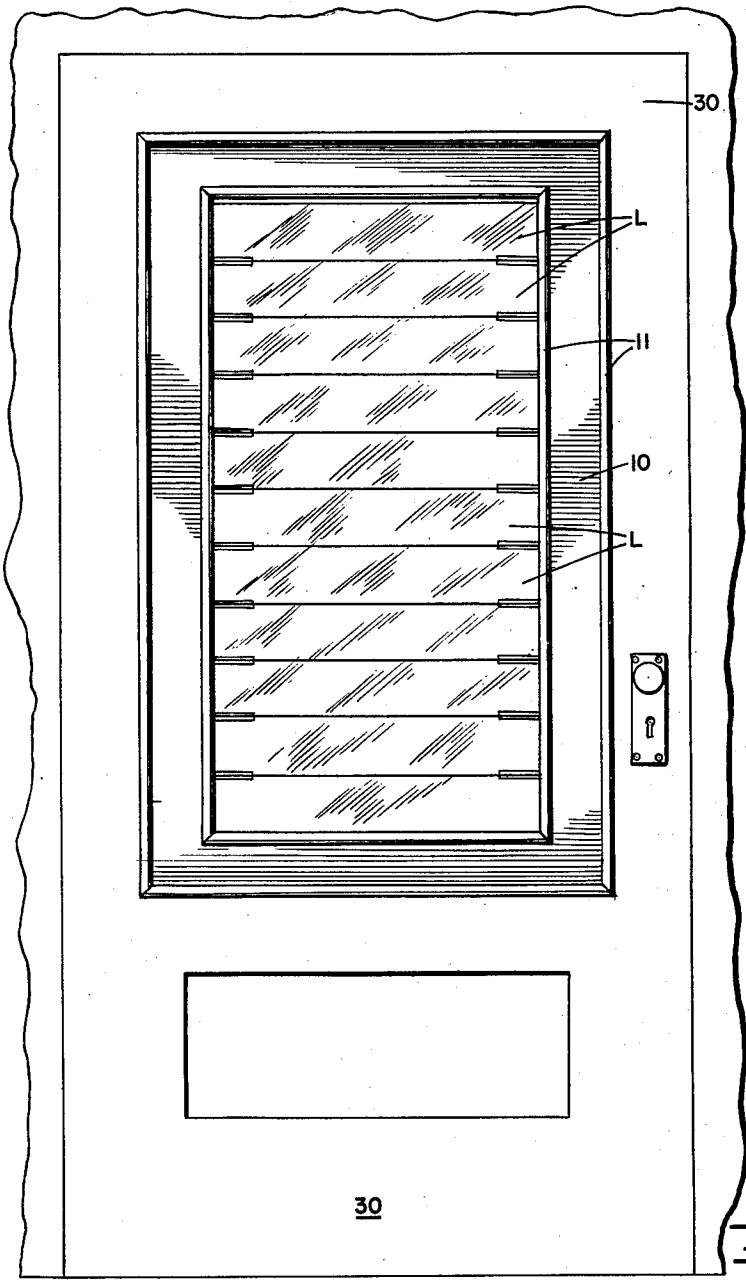


Fig 1.

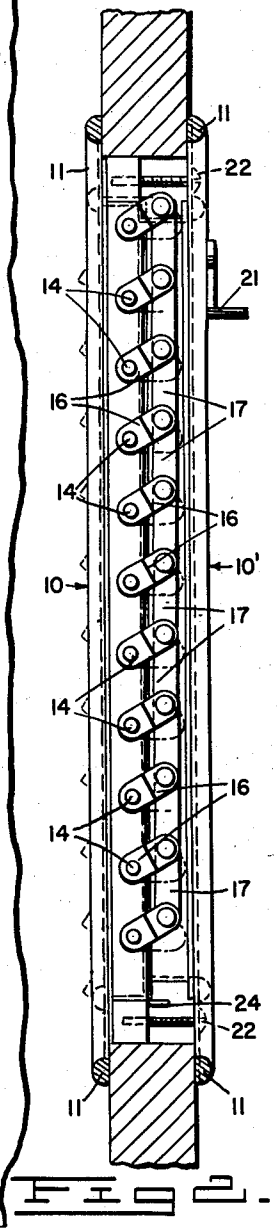


Fig 2.

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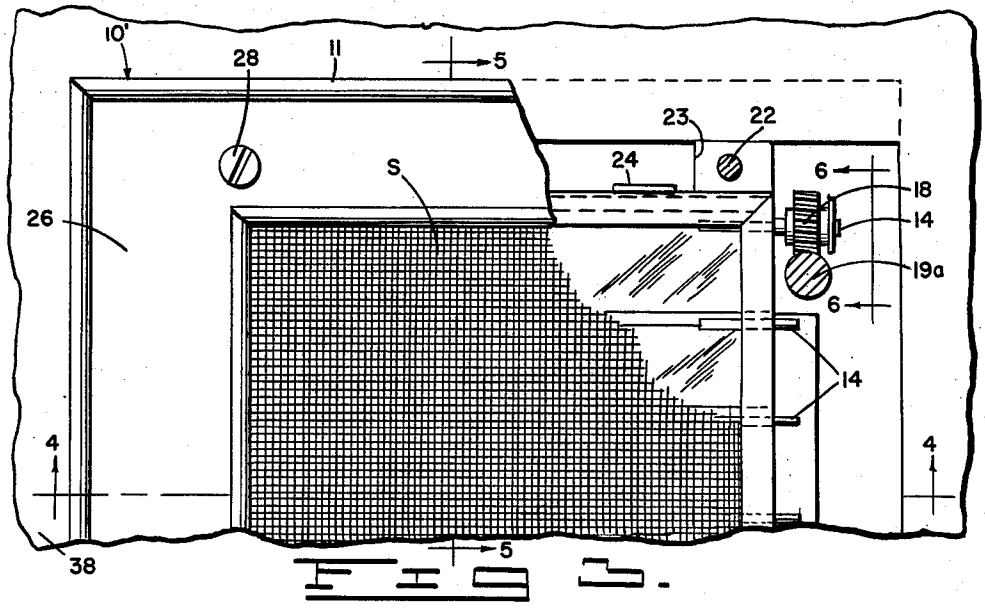


FIG. 3.

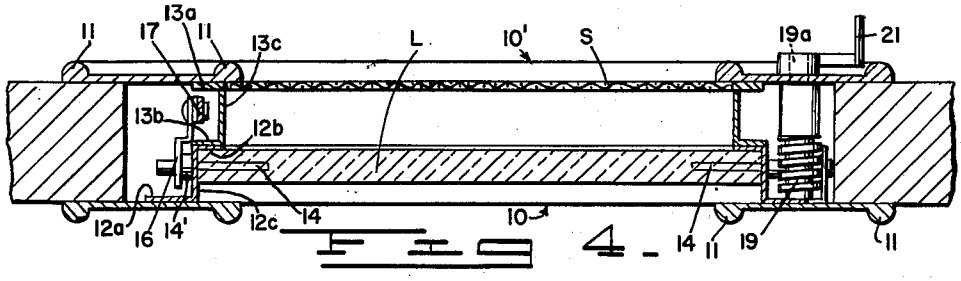
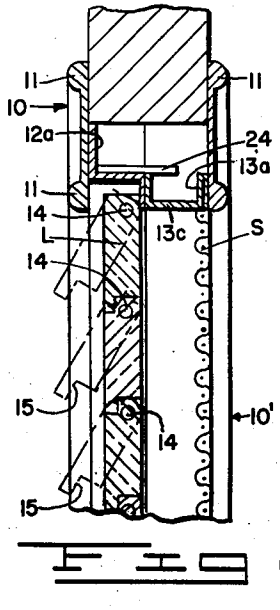


FIG. 4.



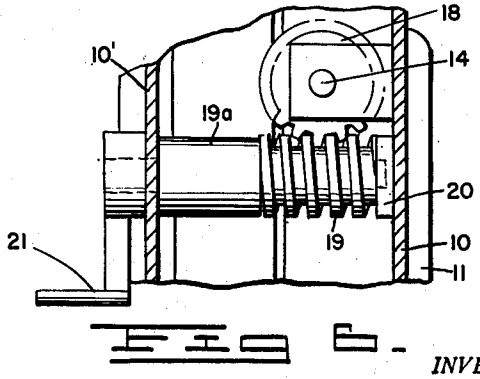


FIG. 5.

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COMBINATION LOUVER AND SCREEN STRUCTURE

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Application October 6, 1947, Serial No. 778,057

1 Claim. (Cl. 160—104)

1

My invention relates to a combination louver and screen structure for installation in openings in doors and windows.

The object of my invention is to provide a structure of the above character adapted to be mounted in a door, window or the like, so that the screen is located inwardly of the pivoted louver slats, so as to be protected against the deteriorating influence of rain, snow or the like, when the louver slats are closed.

Another object of my invention is to provide a structure of the character mentioned above, wherein the louver slats are manipulated by means of a crank and gear mechanism from the inside of the door or the like, so that the position of the slats may not be changed from the outside.

A further object of my invention is to provide a structure of the character as stated above, wherein the louver slats are preferably made from a transparent material such as glass, Lucite, Plexiglas or the like and are provided at their longitudinal edges with an inner and an outer offset shoulder overlapping the shoulders of the adjacent louver slats, so that the inner and outer surfaces of the several slats are disposed in a common plane, when the slats are in closed positions.

Other objects of my invention not specifically mentioned may appear in the following specification describing my invention with reference to the accompanying drawing illustrating a preferred embodiment of my invention.

It is however to be understood that my invention is not to be limited or restricted to the exact construction and combination of parts described in the specification and shown in the drawing, but that such changes and modifications can be made, which fall within the scope of the claim appended hereto.

In the several figures of the drawing similar parts are designated by similar reference characters and

Figure 1 is a view in elevation of a door showing the improved louver and screen structure installed within an opening thereof.

Figure 2 is a fragmentary vertical section taken through the door of Figure 1, and showing the operating linkage of the louver slats.

Figure 3 is a fragmentary side elevation, partly broken away, of the upper portion of the door, and showing the gear mechanism for operating the slats.

Figure 4 is a horizontal section taken substantially on the line 4—4 of Figure 3, looking in the direction of the arrows.

Figure 5 is a vertical section taken substantially

2

on the line 5—5 of Figure 3, looking in the direction of the arrows; and

Figure 6 is a section taken substantially on the line 6—6 of Figure 3 looking in the direction of the arrows.

Referring to the drawings, and in accordance with the invention, the louver and screen combination is comprised in an outer rectangular frame in which louvers L are mounted and an inner rectangular frame on which a sheet of wire screening S is secured; the two frames, preferably, being formed of lengths of angled metal and abutted together for positioning within a rectangular opening in a door between an outer border frame 10 and an inner border frame 10' which are secured to the opposite sides of the door about the opening therein, substantially as illustrated. The height of the louver frame is such that the free edges of the outer flanges 12a at its upper and lower ends have substantial contact with the top and bottom walls of the door opening, substantially as shown in Figure 5; the frame being made up of lengths of angle metal having outer and inner parallel, oppositely directed, flanges 12a and 12b, respectively, connected by a central web 12c, while the other or screen frame is made up of lengths of U-channel metal having outer and inner parallel, outwardly directed, flanges 13a and 13b, respectively, connected by a central web 13c. In assembly within the door opening, the inner flange 12b, of the louver frame, is abutted against the inner flange 13b, of the screen frame, and the outer flanges 12a and 13a, of the two frames, are abutted by the inner sides of the border frames 10 and 10', respectively.

The louvers L are mounted horizontally within the louver frame on pivot pins 14 which are passed inwardly of openings in the opposite side webs 12c and into the ends of the louvers, as best shown in Figure 2; the pins having annular flanges or collars 14' spaced inwardly from their outer ends and bearing against the outer sides of the side webs. The louvers L have the outer and inner sides of the top and bottom edges thereof rabbeted, as at 15, to provide portions of a reduced thickness which overlap in a manner that the outer and inner faces of the louvers will lie in a common plane, when the louvers are disposed in closed positions. Secured on the outer ends of the pivot pins 14, at one side of the louver frame, are one of the ends of angled rocker arms or levers 16 which have their other ends pivotally interconnected by links 17, so that reversed vertical movements of the arms or levers will turn

the pivot pins to affect the opening and closing of the louvers.

To affect the operation of the louvers L from the inner side of the door, a worm gear 18 is mounted on the outer end of the pivot pin 14 of the uppermost of the louvers, at the opposite side of the louver frame, and is disposed in mesh with a worm 19 formed in the surface of a shaft 19a which has its outer end journalled in a bearing block 20, mounted on the inner side of the outer border frame 10, and its other end through the inner border frame 10' for the mounting of a hand crank 21 on the portion projecting outwardly of the latter frame.

The border frames 10 and 10' are clamped against the sides of the door about the opening therein, by means of screws or the like 22, and in a manner that the inner edge portions of the same overlap the edges of the opening and the outer side flanges 12a and 13a, of the louver and screen frames, respectively, the screws passing through the inner border frame 10' and engaging with tapped openings formed in the inner side of the outer border frame 10, which openings are exposed through cutouts 23 removed from the outer side flanges 12a at the top and bottom ends of the louver frame. Projecting rearwardly in spaced relation from the outer sides of the connecting webs 12c, at the top and bottom ends of the louver frame, are pairs of stop or guide elements 24, the free end portions of which extend across the free edges of the inner side flanges 13b, of the screen frame, to maintain the latter frame vertically centered with respect to the louver frame.

Having thus fully described my invention, it is to be understood that the words which I have used are words of description rather than of limitation and that changes within the perview

of the appended claim may be made, without departing from the true spirit and scope of the invention in its broader aspects.

Having described my invention I claim as new and desire to secure by Letters Patent:

In a louver and screen structure for a door having a rectangular opening therethrough, a frame having a plurality of louvers pivotally mounted in the same, a second frame covered with a wire screening, the first frame being fitted within the front side of the door opening and the second frame within the rear side of the door opening in abutted relation with respect to the first frame, border frames at the opposite sides of the door and overlapping the edges of the opening and the adjacent sides and ends of the first and second frames, means for clamping said border frames against the sides of the door and the outer sides of the first and second frames, and other means for affecting the opening and closing of the louvers from the inner side of the door, the first frame having a height to have its top and bottom ends fit tightly against the like walls of the door opening, and means carried at the inner side of the first frame adjacent to the top and bottom ends thereof to engage over the like ends of the second frame to maintain the latter frame vertically centered with respect to the first frame.

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