May 4, 1943. V. E. HUFF 2,317,994

LOUVER CONSTRUCTION

Filed July 20, 1942 2 Sheets-Sheet 1

FIG. 1.

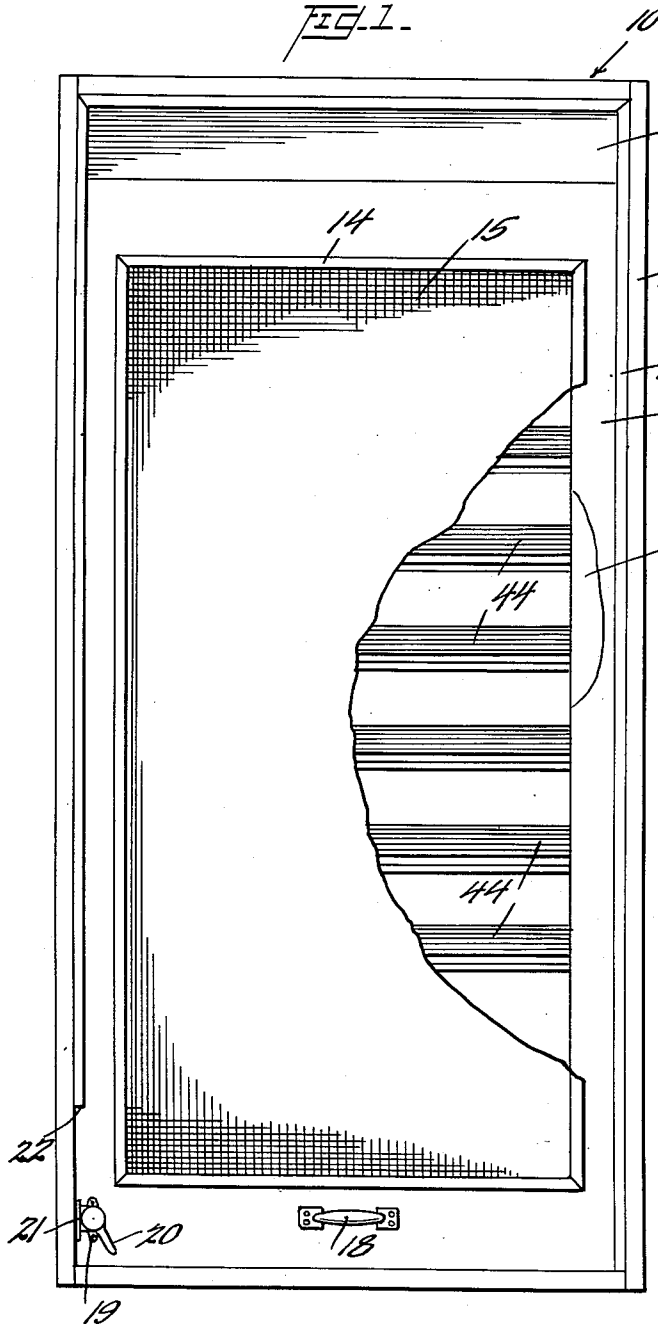
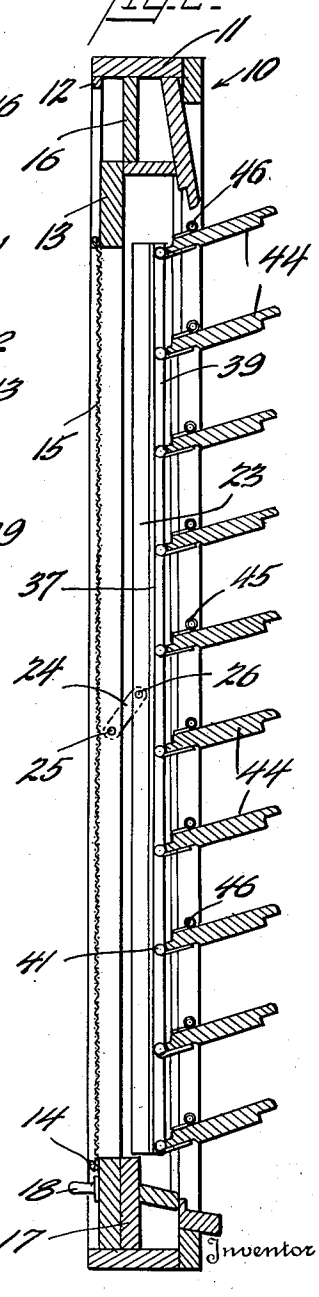


FIG. 2.



Inventor

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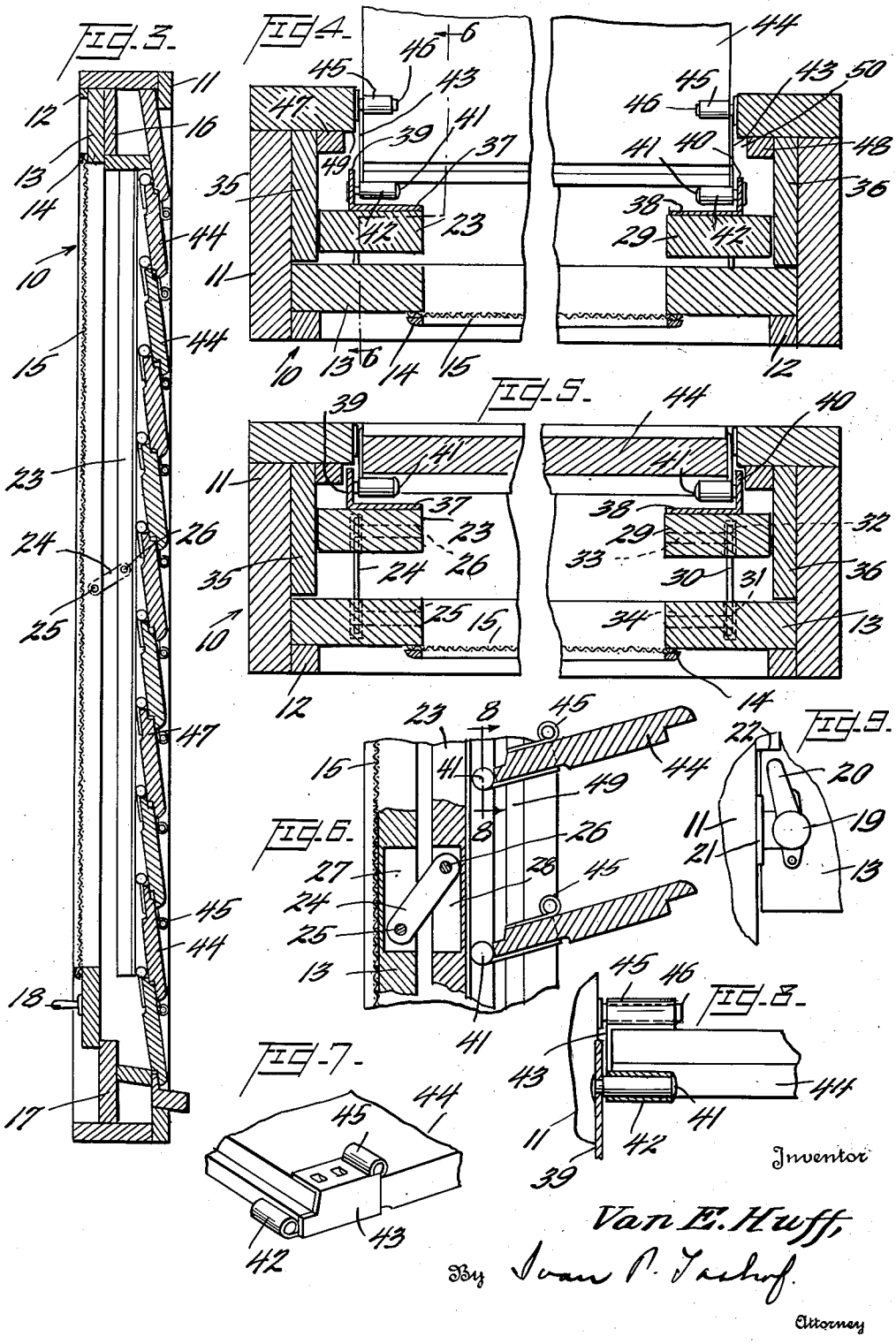
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LOUVER CONSTRUCTION

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UNITED STATES PATENT OFFICE

2,317,994

LOUVER CONSTRUCTION

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Application July 20, 1942, Serial No. 451,616

10 Claims. (Cl. 160—103)

The present invention relates to a louver construction. More particularly, the present invention relates to a louver and screen assembly which is adapted to be fitted within an ordinary window opening which includes a plurality of pivoted slats moved by upward and downward reciprocating motion of the screen.

The present screen and louver assembly is especially adapted as a substitute for an ordinary glazed sash and screen assembly and is particularly suitable for use in tropical and semi-tropical climates and for resistance to high winds or the like.

Although in the present embodiment, a louver and screen assembly adapted to fit within an ordinary opening is disclosed, the present invention is by no means limited to such a device, but is also suitable for use as an integral portion of the walls of sun porches or as an integral portion of a door assembly.

One of the objects of the present invention in particular is the provision of a louver construction including pivoted slats which are combined in a novel manner with an operator including a screen frame which may be reciprocated in a vertical manner to open or close the pivoted slats.

A second object of the present invention is a louver operator including a screen frame which utilizes a relatively minor amount of metal without the sacrifice of any strength or flexibility of operation.

A third object of the present invention is to provide a frame adapted to fit within an ordinary window opening or the like, said frame having mounted therewithin a reciprocating screen structure which is linked to operate upon reciprocation a plurality of slats pivoted to the frame.

A fourth object of the present invention is to provide a screen member capable of being reciprocated in a vertical manner within a frame provided with baffles at the upper and lower ends of the screen member so that such reciprocation does not militate against the effectiveness of the screen.

A fifth object of the present invention is to provide a novel slat operator including a vertically reciprocating frame and a traveler bar provided with pivots for a link member or members extending through slots within the traveler bar and frame so that the link member or members will be free from any side play during motion.

A sixth object of the present invention is to provide a louver assembly including a frame and pivoted slats and a traveler bar connected to the slats and cooperating with the frame to weatherproof the louver assembly.

Other objects and advantages of the present invention will become apparent from the subsequent description and figures of the drawings, wherein:

Figure 1 is a front elevation of the louver assembly with a portion of the screen and frame cut away to show the slats and traveler bar.

Figure 2 is a vertical section of the louver with the slats open.

Figure 3 is a vertical section similar to Fig. 2 with the slats closed.

Figure 4 is an enlarged transverse horizontal section of the louver with the slats open.

Figure 5 is a transverse section similar to Fig. 4 with the slats closed.

Figure 6 is a section taken along the line 6—6 of Fig. 4.

Figure 7 is a perspective detail of a portion of the slat showing the pivot clip mounted thereon.

Figure 8 is a section taken along the line 8—8 of Fig. 6.

Figure 9 is a detail of a portion of the screen frame showing the stop member in operation.

Referring to the figures of the drawings, and particularly to Fig. 1 thereof, a louver including a screen and slat assembly is indicated in general at 10. The assembly includes a frame 11 which is adapted to be mounted within a window opening or the like and provided on its inner sides with molding 12 forming a channel for receiving a screen frame 13 which may be reciprocated upwardly and downwardly within the frame 11. The screen frame 13 has fastened thereto in any suitable manner, as by molding 14, a screen indicated at 15. Mounted within the frame 11 at the upper and lower ends thereof are members 16 and 17 which are adapted to seal the upper and lower ends of the screen frame 13 when the screen frame is reciprocated so that vertical reciprocating movement of the screen does not open the same. A handle 18 is also provided on the screen so that the same may be grasped for reciprocation. Mounted to one side of the screen is a clamping member or stop 19 which includes a handle 20 and a shoe 21 which is moved against the edge of the frame 11 when the handle is moved from a six o'clock to a twelve o'clock position. In other words, referring to Fig. 9, it will be noted that the handle 20 is in a twelve o'clock position pointing upwardly and the shoe 21 has been moved against the frame 11 to force the screen frame 13 away from

the screen 11 to a slight extent. This prevents movement of the screen frame 13 upwardly or downwardly, and, as will be hereinafter pointed out, similarly fixes the louver slats in any desired position.

Again referring to Fig. 1, it will be noted that the molding 12 is cut away as indicated at 22 to allow for the operation of the stop member 19. The stop member 19 per se is conventional and any other suitable stop member or means for preventing upward and downward movement of the screen frame 13 in any desired position may be substituted therefor.

Referring to Fig. 2, it will be noted that the screen frame 13 is linked to a traveler bar 23 by a link 24 which is pivoted on the screen frame by a pivot 25 and on the traveler bar by a pivot 26. As best shown in Figs. 5 and 6, the link 24 extends into the screen frame 13 and is housed in a slot in the screen frame 13 indicated at 27. Link 24 at its other end is also housed in a slot 28 within the traveler bar 23. As best shown in Figs. 4 and 5, a second traveler bar 29 is also provided at the other edge of the frame and is similarly linked to the screen frame by a link 30 extending into slots 31 and 32 in the screen frame and traveler bar respectively. The link 30 is pivoted similarly to the link 24 on the pivots 33 and 34. The housing of the links 24 and 30 in slots in this manner prevents the links from exhibiting any side play during movement. It will be noted further that the traveler bars 23 and 29 are of a substantial width and are positioned closely adjacent the portions 35 and 36 of the frame 11. This also tends to produce a smoothly operating assembly. A pair of angle members 37 and 38 have a relatively wide leg, each attached to the traveler bars 23 and 29 respectively. The free legs of the angles 37 and 38, indicated at 39 and 40 respectively, are provided with openings adapted to receive a shoulder rivet 41 best shown in Fig. 8. The shoulder rivet 41 in turn passes through an eye 42 on a pivot clip 43 fastened at one edge of a louver slat 44. The pivot clip 43 is also provided with an eye 45 through which extends a pivot member 46 extending from the frame 11. It will be understood that each of the slats is thus pivoted at each end on similar pivot members and is similarly attached to the traveler bars 39 and 40 by shoulder rivets similar to the shoulder rivets 41 just described in connection with the single slat 44 so that each of the slats is pivoted at each end both on a stationary pivot and a moving pivot carried by the traveler bar. A pair of vertically extending strips 47 and 48 are positioned on the inner inside corners of the frame 11 and are spaced from the outer frame opening as indicated at 49 and 50 to provide a space between the edges of the slats and the frame 11 into which the free legs 39 and 40 of the traveler bar angles extend when the slats are closed, as best shown in Fig. 5. The traveler bar and strips 47 and 48 thus function as a weatherproofing arrangement for the edges of the closed slats.

The louver construction just described operates as follows:

As shown in Fig. 1, the screen frame 13 is in its lowermost position and the slats are in open position, as shown also in Figs. 2, 4 and 6. At this time the traveler bars 23 and 29 are closely positioned relative to the screen frame 13 and the links 24 and 30 are in the angular position best illustrated in Fig. 6. At this time the member 16 functions as a baffle for the upper end of the screen frame 13 so that the screen is insect proof. If it is desired to completely close the slats, the handle 18 is grasped and the entire screen frame moved upwardly to the position of Figs. 3 and 5. Since the screen cannot move horizontally, the links 24 and 30 will be moved to the angular position shown in Fig. 3 and the traveler bars 23 and 29 will be first moved upwardly and then away from the screen frame 13 into the position shown in Figs. 3 and 5. This movement will rotate the slats about the fixed pivots 46 to close the same. It will be noted that when the slats are closed, the free legs 39 and 40 of the traveler bars will fit between the strips 47 and 48 and the slats, and will serve to weatherproof the edges of the slats.

The specific pivot clip herein disclosed is claimed in applicant's co-pending application Serial No. 338,799, filed June 4, 1940, Louver pivot clip.

Having thus described the invention, what is claimed as new and desired to be secured by Letters Patent is:

1. In a louver construction including a frame provided with pivoted slats, a screen member mounted on said frame for reciprocating movement relative thereto, and means to connect said screen member and said slats so that reciprocation of said screen member in one direction will open said slats and movement in the other direction will close said slats.

2. In a louver construction including a frame provided with pivoted slats, a screen member mounted on said frame for vertical reciprocating movement relative thereto, means to restrict horizontal movement of said screen member, and means to connect said screen member and said slats so that movement of said screen in an upward direction will close said slats and movement of said screen in a downward direction will open said slats.

3. In a louver construction including a frame provided with pivoted slats, a screen member mounted within said frame for reciprocating movement therein, means to connect said screen member and said slats so that reciprocation of said screen member in one direction will open said slats and movement in the other direction will close said slats, and means on said frame baffling at least one end of said screen so that said screen can be reciprocated in said frame without uncovering the frame opening.

4. In a louver construction including a frame provided with pivoted slats, a screen member mounted within said frame for vertical reciprocating movement therein, means to restrict horizontal movement of said screen member, means to connect said screen member and said slats so that movement of said screen in an upward direction will close said slats and movement of said screen in a downward direction will open said slats, and baffling means carried by said frame above and below said screen so that said screen can be vertically reciprocated without uncovering said frame opening.

5. In a louver construction including a frame provided with pivoted slats, a screen member mounted within said frame for reciprocating movement therein, a traveler bar pivotally connecting said slats with one another, and means to connect said traveler bar and screen member so that reciprocation of said screen in one direction will move said traveler bar to open said slats and movement in the other direction will move said traveler bar to close said slats.

6. In a louver construction including a frame provided with pivoted slats, a screen member mounted within said frame for reciprocating movement therein, a traveler bar pivotally connecting said slats with one another, and means to connect said traveler bar and screen member so that reciprocation of said screen in one direction will move said traveler bar to open said slats and movement in the other direction will move said traveler bar to close said slats, said means to connect said traveler bar including a link member pivoted at one end to said traveler bar and at its other end to said screen member.

7. In a louver construction including a frame provided with pivoted slats, a screen member mounted within said frame for reciprocating movement therein, a traveler bar pivotally connecting said slats with one another, and means to connect said traveler bar and screen member so that reciprocation of said screen in one direction will move said traveler bar to open said slats and movement in the other direction will move said traveler bar to close said slats, said means to connect said screen member and traveler bar including a link pivoted within a slot in said traveler bar at one of its ends and pivoted within a slot in said screen member at its other end so as to inhibit side play of said link.

8. In a louver construction including a frame provided with pivoted slats, a screen member mounted within said frame for reciprocating movement therein, a traveler bar pivotally connecting said slats with one another, and means to connect said traveler bar and screen member so that reciprocation of said screen in one direction will move said traveler bar to open said slats and movement in the other direction will move said traveler bar to close said slats, said traveler bar including a portion projecting therefrom and cooperating with said frame to weatherproof the edges of said slats when said slats are closed.

9. In a louver construction including a frame provided with pivoted slats, a screen member mounted on said frame for reciprocating movement relative thereto, means to connect said screen member and said slats so that reciprocation of said screen member in one direction will open said slats and movement in the other direction will close said slats, and means to fix the position of said screen at any selected point in its movement to retain said slats in a desired position.

10. In a louver construction including a frame provided with pivoted slats, a screen member mounted on said frame for vertical reciprocating movement relative thereto, means to restrict horizontal movement of said screen member, means to connect said screen member and said slats so that movement of said screen in an upward direction will close said slats and movement of said screen in a downward direction will open said slats, and means on said screen member cooperating with said frame to fix the position of said screen member at any selected point in its movement to retain said slats in a desired position.

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