March 26, 1957 E. J. WIBORG 2,786,243

WEATHER STRIPPING FOR LOUVER CONSTRUCTION

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Fig. 1.

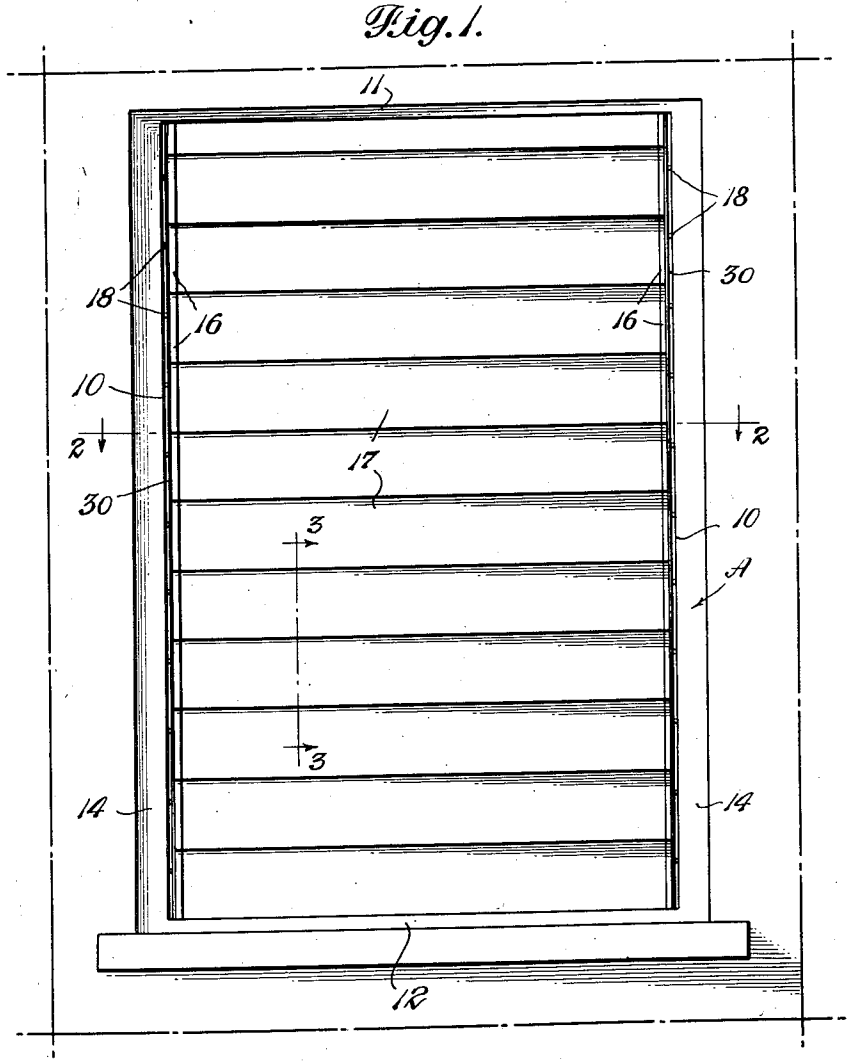
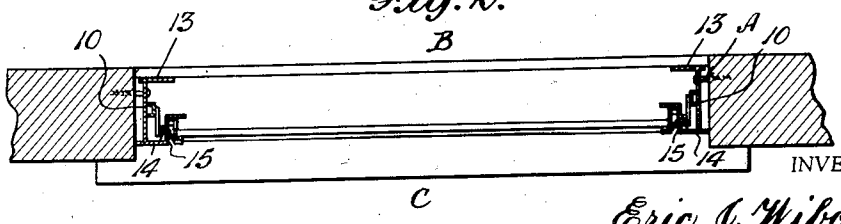


Fig. 2.



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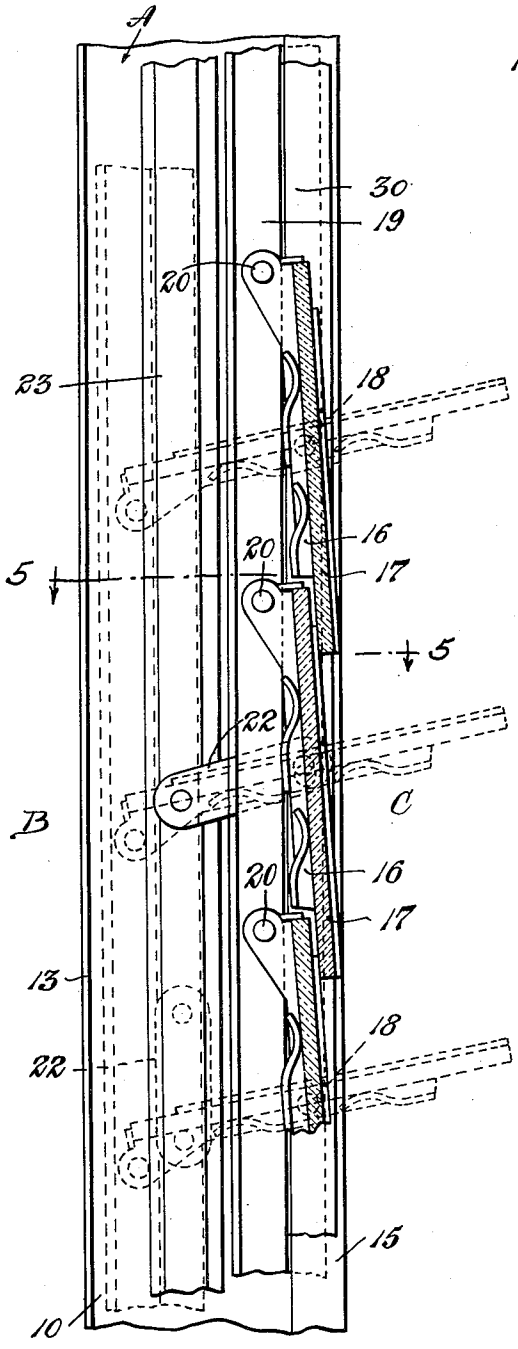


Fig. 3.

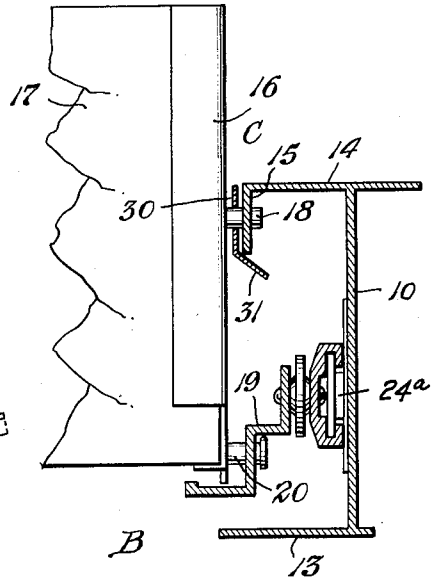


Fig. 4.

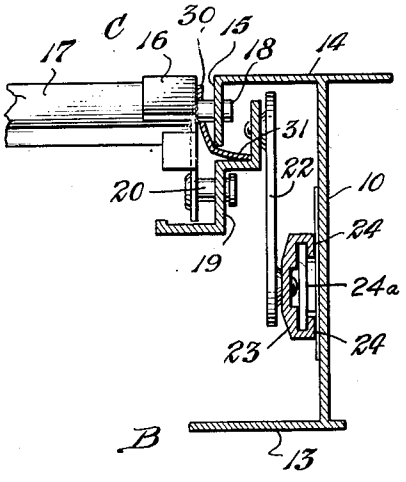


Fig. 5.

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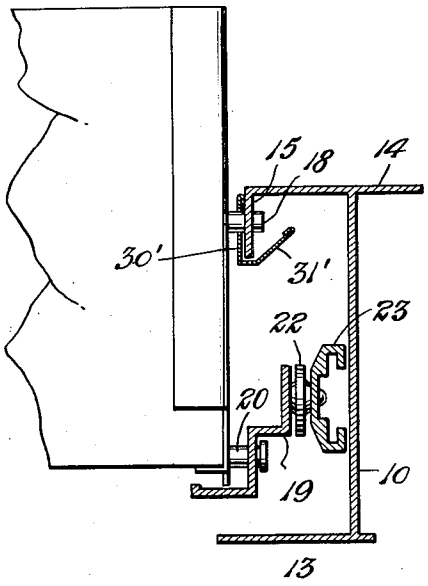


Fig. 6.

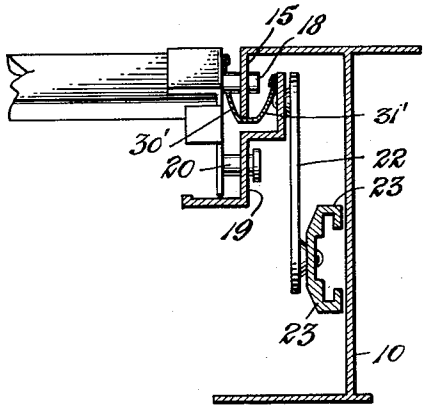


Fig. 7.

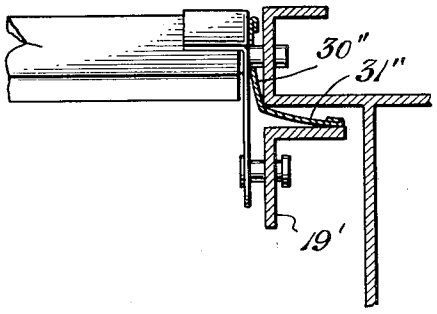


Fig. 8.

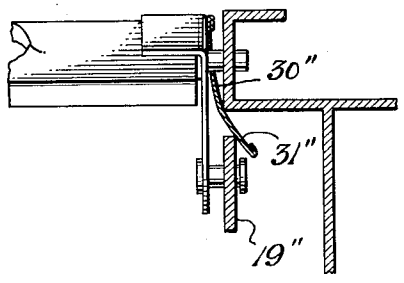


Fig. 9.

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United States Patent Office 2,786,243 Patented Mar. 26, 1957

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WEATHER STRIPPING FOR LOUVER CONSTRUCTION

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Application April 2, 1954, Serial No. 420,700

5 Claims. (Cl. 20—62)

The invention relates to louver or jalousie constructions designed for window openings, porch openings, door openings, and the like and more particularly to improved weatherstripping means for preventing infiltration of air, water, dust or dirt at the ends of the louvers.

In devices of this kind it has been generally recognized that the greater portion of infiltration takes place at the ends of the louvers. To combat this problem effort has been made to minimize the width of the cracks at these points. For example, it has been proposed to insert a short spring strip between the pivot clip and the glass slats. Such spring forces the aluminum clip against the aluminum jamb, thus effecting a seal, but at the same time imposing an undesirable load on the operating mechanism and inviting a galling condition between the two aluminum members.

Another proposed solution of the problem involves the use of an elongated stainless steel strip of about 5/8" in width between the pivot clip and the jamb. In the center of this strip are punched holes through which pivot pins extend. This strip is crowned in much the same manner as steel measuring tape. This arrangement provides a good seal, but the spring load against the strip is present at all times.

In order that a jalousie may operate freely enough to be satisfactory generous clearance must be allowed at the ends of the slats. However, in order to achieve a tolerable condition from the standpoint of infiltration this clearance has been reduced to such a minimum value that even under the most ideal conditions the mechanism cannot operate freely.

In accordance with the present invention a weatherstrip is provided which is loosely supported between the pivot clips and the jamb member, such strip having a projecting sealing portion which comes into play only during the last portion of the closing movement, thus allowing the louver slats to pivot freely during most of the cycle. In the present weatherstrip design generous clearances are provided.

The invention will be more readily understood by reference to the accompanying drawings and the following detailed description, in which specific embodiments of the invention are set forth by way of illustration rather than by way of limitation.

Referring to the drawings:

Fig. 1 is a front elevation showing a window opening equipped with the weatherstripping in accordance with my invention;

Fig. 2 is a section on line 2—2 of Fig. 1;

Fig. 3 is a fragmentary section on line 3—3 of Fig. 1 looking in the direction of the arrow, showing the movement of the jalousie mechanism in relation to the weatherstrip, parts being shown in elevation, and the scale being larger than that in Figs. 1 and 2;

Fig. 4 is a detail view showing the relation of parts when the slats are open;

Fig. 5 is a similar view on line 5—5 of Fig. 3 with the slats closed and the weatherstripping brought into functioning relationship;

Figs. 6 and 7 are views similar to Figs. 4 and 5 but showing a slightly modified form of weatherstripping;

Fig. 8 is a view similar to Fig. 6 but showing a further modification of the weatherstripping and also of the traveller bar; and

Fig. 9 is a view similar to Fig. 8 but showing a further modification of the traveller bar.

The principal moving parts of the jalousie and the operating mechanism therefor may be in the same general relation as set forth in Huff Patents Nos. 2,168,347 and 2,257,056 with louver pivot clips of the general type disclosed in Huff Patents Nos. 2,324,454 and 2,375,176, though some of the parts, as for example the pivot clips and traveller bars, are or may be of improved construction. The present invention resides in the provision of a weatherstrip having an outwardly extending flexible portion in the path of the traveller bar, which flexible portion is adapted to be engaged by the traveller bar when the slats are moved to closed position, a sealing fit being provided at this stage.

As shown, reference letter A denotes generally a metal jalousie frame which may be of aluminum or other suitable material and inserted in a window or other opening of a room or the like, the reference numeral B indicating the inside of the room and C the outside.

The frame A comprises vertical side members 10, head member 11 and sill member 12, all of which may be provided with suitable flanges extending therefrom and providing face plates. The side members 10 are shown as provided with front and rear flanges 13 and 14 forming inner and outer face plates, and the outer face plates 14 are provided with rearwardly projecting flanges 15 extending vertically substantially the full length of the window frame, said flanges 15 constituting pivot strips, hangers or side plates for a series of clips 16 carrying vanes, slats or blinds 17 of any suitable construction. The pivot clips 16 are generally similar in operation to those described in Huff Patents Nos. 2,324,454 and 2,375,176, but are of improved construction, and the vanes or slats 17 may be detachably mounted therein. The vanes may be of any suitable material and may be either opaque or transparent. Each clip 16 is pivoted intermediate its ends to a side strip, plate or hanger flange 15 of the window frame by means of a pin 18. It will be understood that the side strips or hangers 15 are provided with suitable apertures to receive the pins 18 which are attached to the clips 16 and may be readily inserted within the openings of the side strip 15. At their extremities the clips 16 are pivoted to a suitable traveller bar 19 through pivot pins 20.

By reason of its pivoted connection the traveller bar is adapted for simultaneous movement both upwardly or downwardly and inwardly or outwardly, that is, away from or toward the fixed side plate, hanger or pivot strip 15. As shown the traveller bar 19 is connected through a series of links 22 to a vertically reciprocable operator bar 23 having inwardly extending flanges 24 slidably engaging suitable fixed guide means 24A carried by said plate 10 of frame A. The operation of parts herein described is similar to that set forth in the Huff patents hereinbefore referred to. The construction on each side of the window frame may be substantially the same except for the fact that only one operating bar is necessary. Any suitable means for reciprocating the operating bar may be employed within the scope of the present invention.

The present invention is primarily concerned with the provision of a weatherstrip 30 which may be formed of stainless steel, brass, or other suitable material, which is loosely hung intermediate the rigid side plate or strip 15 and the ends of the slats 17. To insure a loose fit be-

tween the pivot pins and the weatherstrip elongated or enlarged holes to receive the pivot pins 18 are punched in the strip 30. The strip 30, which is of flexible material, may be readily assembled prior to the mounting of the slats 17 in their clips 16. As shown, the weatherstrip 30 is provided with a free flexible flange portion 31 extending angularly from the main portion of the strip into the space between the fixed pivot plate or side strip 15 and the outer side members 10, and such extension is thus in the path of movement of a portion of the traveller bar 19 which, as it moves outwardly toward the pivot pins 18 and the face plate 14 to effect the final closing movement of the vanes or slats 17, engages the flexible projecting portion or lip 31 of the weatherstrip forcing it against the inner edges of the fixed side plate, hanger or pivot strip 13 as indicated in Fig. 5, thereby insuring a weathertight fit.

It will be apparent that a pivot pin, or a screw or dowel could be placed in the end of a slat, thus eliminating the need of a pivot clip. Also, the weather strip could be supported at either extremity, especially the top end and allowed to hang without other support between the end of the slat or pivot pin and the supporting member.

A form of the traveller bar 19 as shown in Figs. 4 and 5 in which the bar may be described as substantially W-shape in cross section with right angle bend portions, is preferred but may be varied without departing from the spirit of the invention in its broadest aspects so long as a portion of the bar is adapted to engage a flexible angularly projecting portion of the weatherstrip to thereby force said strip against a fixed portion of the jalousie frame and thereby insure a weathertight fit. Modified forms of the traveller bar are shown at 19' and 19'' respectively in Figs. 8 and 9. Similarly, the exact construction of the weatherstrip 30 may be varied. One such variation is shown at 30' in Figs. 6 and 7, wherein an upwardly directed angular flange 31' is provided adapted to be engaged by an outer edge portion of the traveller bar 19. A further modification of the weatherstrip is shown at 30'' in Figs. 8 and 9, such strip having a flexible extension 31' adapted to be engaged by a portion of the traveller bar 19' in Fig. 8 or of the traveller bar 19'' in Fig. 9.

The invention has been described in detail for the purpose of illustration, but it will be obvious that numerous modifications and variations may be resorted to within the scope of the appended claims without departing from the spirit of the invention. It will be understood that suitable means may be provided for locking the parts in open, closed or intermediate positions.

I claim:

1. In combination with a jalousie construction including a plurality of slats pivotally mounted at their ends in fixed vertical side hanger members, operating means for said slats including a traveller bar having a component of movement toward and from said hanger members in effecting closing and opening movement of the slats, and a weatherstrip supported by the end pivots of said slats having a flexible free flange portion projecting into the path of movement of a portion of the traveller bar so as to be engaged thereby during the final closing of the slats.

2. The combination as set forth in claim 1, wherein a portion of the free flange portion is forced against the edge of the adjacent hanger member in the final closing of the slats.

3. In combination with a jalousie including a plurality of slats movable to open or closed position, a frame therefor, pivot pins at the ends of the slats mounted in the sides of the frame, operating mechanism including a traveller bar having connections with the ends of the slats to move said slats to open or closed position, said traveller bar having a component of movement toward the said pivot pin supports in effecting closing movement of the slats and away from the pivot pin supports in effecting opening movement thereof, weatherstripping supported by said pivot pins and having an angularly disposed flexible portion in the path of said traveller bar adapted to be flexed by said bar during the last portion of the closing movement of the slats.

4. In combination with a jalousie including a plurality of movable slats, a frame therefor and pivot pins at the ends of the slats mounted on the sides of the frame, operating mechanism for said jalousie including a traveller bar, means pivotally connecting the traveller bar to the ends of the slats at points removed from said pivot pins, means actuating the said traveller bar upwardly or downwardly and inwardly or outwardly with reference to the frame to effect opening or closing movement of the slats, and means for preventing air infiltration at the ends of the slats comprising a strip of spring material loosely mounted on the pivot pins of said slats, said strip having an angularly disposed vertical flexible flange portion in the path of movement of the traveller bar adapted to be engaged and flexed by said traveller bar in the final closing movement of the slats.

5. In combination with a jalousie construction including a plurality of slats pivotally mounted at their ends in fixed vertical side hanger members, operating means for said slats including a traveller bar having a component of movement toward and from said hanger members in effecting closing and opening movement of the slats, and a weatherstrip supported by the end pivots of said slats and having a portion projecting into the path of movement of a portion of the traveller bar so as to be engaged thereby during the final closing of the slats.

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