March 3, 1964 E. F. WILEY 3,123,189

JALOUSIE

Filed Dec. 6, 1961 2 Sheets-Sheet 1

FIG_1

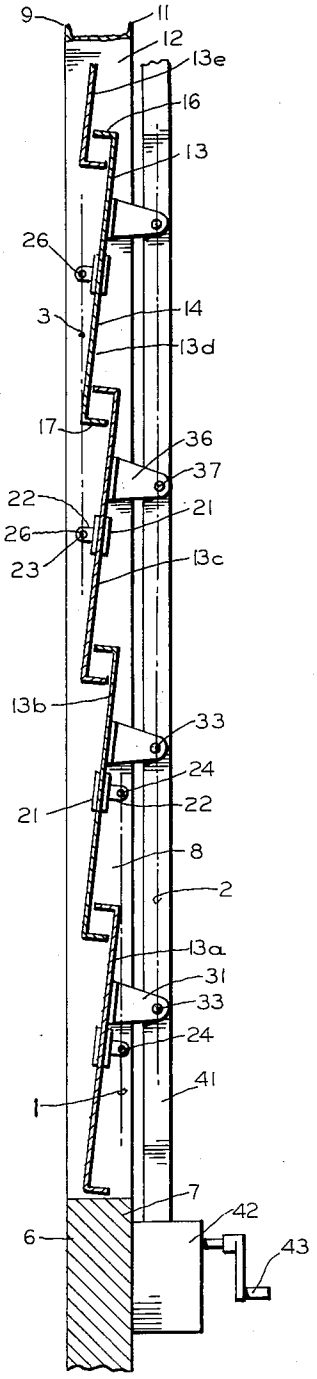
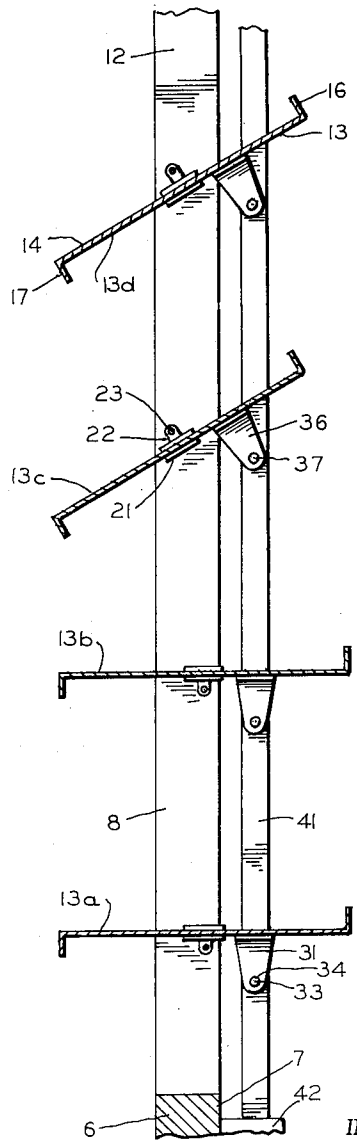


FIG_2



INVENTOR.
ESMOND F. WILEY
BY Lothrop & West
ATTORNEYS

March 3, 1964 E. F. WILEY 3,123,189

JALOUSIE

Filed Dec. 6, 1961 2 Sheets-Sheet 2

FIG_3

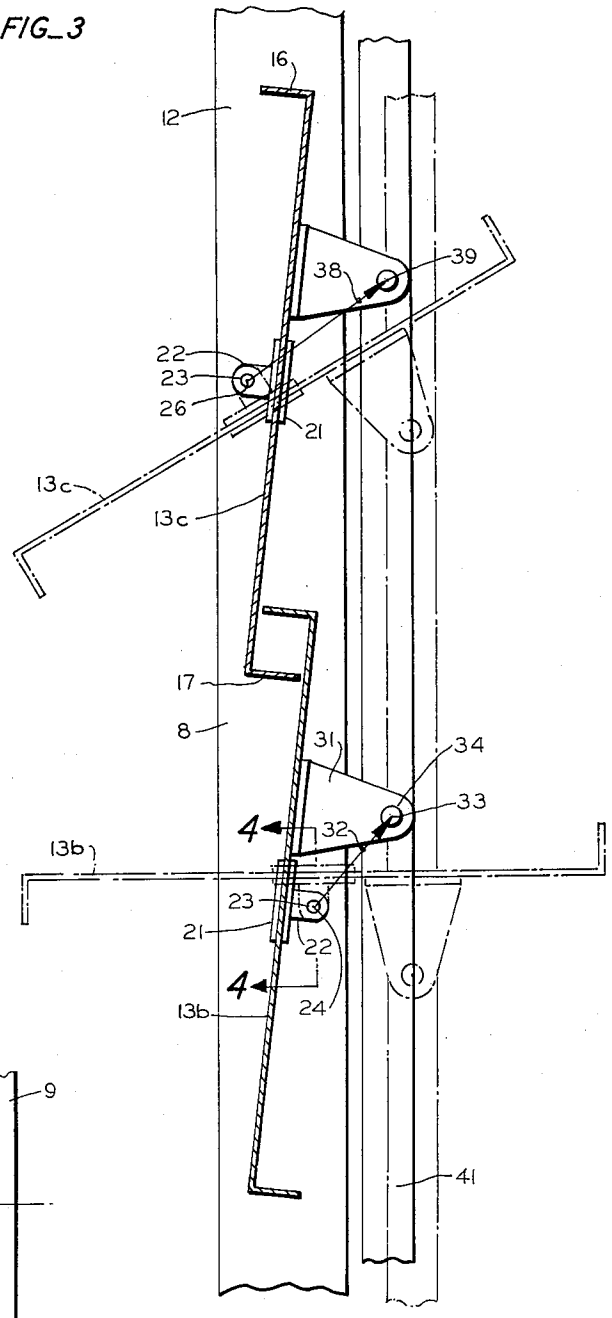
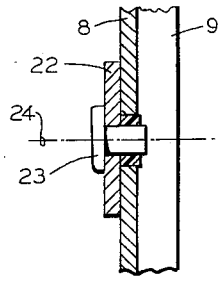


FIG_4



INVENTOR.
ESMOND F. WILEY
BY
Lothrop & West
ATTORNEYS

United States Patent Office 3,123,189 Patented Mar. 3, 1964

3,123,189

JALOUSIE

Esmond F. Wiley, 1132 Mandana Blvd., Oakland, Calif.

Filed Dec. 6, 1961, Ser. No. 157,369
3 Claims. (Cl. 189—62)

My invention relates to window constructions, particularly those useful in connection with buildings such as schools and the like in which the window openings are provided with movable shutters or louvers for controlling the view and light through the window.

It has long been the practice particularly in institutional windows to utilize a window frame provided with a number of similar, generally planar louvers mounted to pivot about horizontal axes and actuated by some sort of a control device so that the various louvers can all be turned to control the influx of external light to the room or to control the view from the room.

It has also been proposed to provide various arrangements and controls so that in a given window some of the louvers can be put in one desired position, whereas the others of the louvers can be positioned in a different desired position. This permits the opening of the louvers at the bottom portion of the window to substantially a horizontal position so that there is good influx of side light and also a clear view outward while at the same time permitting the setting of the louvers in the upper portion of the window at a steep angle to provide shade and particularly to block out intense light from the sky in an area wherein the outward view is unimportant. Devices for this particular purpose and known to me have been either complex in operation or have involved a large amount of mechanism or have been expensive or difficult to maintain or have had other drawbacks.

It is therefore an object of my invention to provide a jalousie of the sort indicated but having a relatively simple, straightforward operating arrangement and control so that different portions of the same window opening can readily and easily be differently screened or blocked.

Another object of the invention is to provide a jalousie conforming in many respects to standard jalousies now available but which is specially adapted to provide variant movement of various of the louvers.

Another object of the invention is to provide a jalousie which is substantially no more expensive nor cumbersome than a simple jalousie but which will have added functions and features.

A final object of the invention is to provide an improved jalousie.

Other objects together with the foregoing are attained in the embodiment of the invention described in the accompanying description and illustrated in the accompanying drawings in which:

FIGURE 1 is a cross section on a vertical transverse plane through a window provided with a jalousie constructed in accordance with the invention, the upper portion of the structure being broken away and all of the louvers being shown in a closed position;

FIGURE 2 is a view similar to FIGURE 1 showing the same structure but with the louvers in a different, open position;

FIGURE 3 is a view similar to FIGURE 1 but to an enlarged scale showing a portion of the jalousie with the closed louvers indicated by full lines and the open louvers indicated by dotted lines; and

FIGURE 4 is a cross section on the line 4—4 of FIGURE 3, showing a pivot mounting detail.

The window, whether in a building or house, is bounded by a frame 6 which has a bottom beam 7 and an upright side frame member 8. Since the construction of the window frame is standard for the most part, repetitive or duplicate parts are omitted from the drawing. The upright side member 8 is conveniently a metallic channel having its flanges 9 and 11 turned outwardly to leave an upright, transversely extending planar surface 12 bounding the window opening.

Situated between parallel upright frame members is a plurality of louvers 13. Each of these is preferably like the others in the installation and preferably includes a planar sheet 14, usually metallic, having one marginal flange 16 turned outwardly and another marginal flange 17 turned inwardly. When in closed position, as shown in FIGURE 1, the louvers overlap each other both horizontally and vertically.

Pursuant to the invention, the various louvers 13 are installed in a series divided into two groups. One of the groups includes the lower louvers such as the two louvers 13*a* and 13*b*, whereas the other or second group includes the upper louvers such as the louvers 13*c*, 13*d* and 13*e*.

The louvers 13*a* and 13*b* of the first group are mounted in an identical fashion. At the center of the side edges of each louver there is provided a clip 21 engaging the central sheet 14 and having an arm 22 connected to a pivot pin 23. The pin is mounted in the side member 8 so that the louver is rotatable about a generally horizontal rotational axis 24. The axes of the louvers of the first group are substantially parallel to each other and are disposed in a straight line 1 extending vertically and parallel to the side member 8.

In a similar fashion, the various louvers 13*c*, 13*d* and 13*e* of the second group are provided with identical clips 21 arranged centrally at their edges. These clips have identical arms 22 secured to pivot pins 23 rotatable about axes 26. While the clips 21 and the pivot pins 23 are the same in both groups, the relative locations differ. The clips 21 of the second group are disposed on the opposite side of the central panel 14 of the louver from the clips 21 on the louvers of the first group; that is, the pivots of the second group are toward the outside while those of the first group are toward the inside. Consequently, while the various axes of rotation 26 of the pivots for the second group of jalousies are all in a straight line 3 extending substantially vertically, this line is displaced from and parallel to the straight line 1 through the axes 24. Hence, the louvers of the first group all turn about axes in one vertical plane, whereas the louvers in the second group all turn about axes in a different vertical plane.

Affixed to each of the louvers in the first group are lever extensions 31 located in such a position as to afford a pedetermined first radius 32 (FIGURE 3) between the axis 24 of the particular louver and the rotational axis 33 of a pivot connection 34 forming part of the lever extension 31. Since the louver 13*b* is similarly equipped, the resulting rotational axes 33 are in the same vertical line 2. This vertical line 2 is distinct from the vertical lines 1 and 3 of the pivot axes 24 and 26.

In a comparable fashion, the louvers 13*c*, 13*d* and 13*e* of the second series are also provided with substantially identical second lever extensions 36 having pivot connections 37. The position of the extensions 36 is such with respect to the reversed clips 21 that a different radial distance 38 (see FIGURE 3) is provided between the adjacent axis 26 and the rotational axis 39 of the pivot connection 37. In fact, not only are the radii 32 and 38 different in length, but with respect to a vertical plane each occupies its own angle when the louvers are shut.

In accordance with the invention and for simplicity of construction, there is provided a single, straight, usually metallic, control bar 41 disposed in an upright fashion. At substantially uniform intervals throughout its length the vertical bar 41 is pivotally connected to the pivot

connections 34 of the first group and 37 of the second group. The bar 41 is moved in an up and down motion by any sort of convenient actuator 42 mounted on the beam 7 and worked by rotation of a hand crank 43.

By strict geometry, if all of the various structures and pivot mountings as described were completely rigid and without clearance, the mechanism would form an immovable multiple linkage. Consequently, special measures are taken to have the control bar 41 move generally parallel to itself in all positions and to take care of the different radii 32 and 38 and their usual differences in angle. In a typical installation having the customary proportions, the amount of discrepancy in the linkage is relatively small, but must be recognized and compensated for.

One means for affording smooth and effective operation is to provide sufficient clearance at one or more or all of the pivot pins 23 and pivot connections 34. This is considerably larger than the usual running clearance for pivot connections. The extra clearance is not necessary in a vertical direction. Normal running clearances are sufficient vertically. The geometrical discrepancy is primarily transverse or horizontal rather than vertical. Thus extra horizontal or transverse clearance is provided in some or all of the pivot connections. Practically, the provision of transversely enlarged openings or transversely flattened pins is awkward so it is more satisfactory to leave an annular clearance around the pivot pins but to make that clearance more than is customary.

But while the enlarged clearance results in freeing the otherwise bound linkage, it provides a loose structure prone to rattle and flutter. Preferably, I leave all of the pin clearances at their standard values, barely sufficient for turning and consequently tight enough to avoid rattle and flutter. But to make the structure operable, the parts, particularly the louvers and lever extensions, are made of flexible or somewhat springy materials. The control bar 41, being of metal, is also somewhat flexible, but ordinarily this is not relied upon as much as is the flexibility of the louvers and extensions. By making the parts flexible, they yield to the position discrepancies and act somewhat as springs. The parts are thus kept snugly in position when set even after considerable wear, but ready and smooth operation is not interfered with.

With a structure arranged as indicated in FIGURE 1, when the crank 43 is rotated the control bar 41 is lowered, moving parallel to itself until it ultimately gets into the extreme position shown in FIGURE 2. Then the central portions 14 of the louvers 13*a* and 13*b* of the first group are substantially horizontal, whereas the central portions 14 of the upper or second group of louvers are at an inclination of approximately thirty degrees. With this relative orientation there is a free access of horizontal lighting between the louvers of the first group with a clear horizontal view outwardly, whereas light from the sky and the view upwardly are blocked by the louvers in the second group.

What is claimed is:

1. A jalousie having variably movable louvers comprising a frame having a side member, a plurality of similar louvers arranged in first and second groups, first pivots for pivoting said louvers in said first group on said side member, the rotational axes of said first pivots being in a first straight line, first lever extensions on said louvers in said first group, first pivot connections on said first lever extensions, each of said first pivot connections being at a radius of one predetermined length from the rotational axis of the respective first pivot and the axes of said first pivot connections being in a second straight line substantially parallel to and displaced from said first straight line, second pivots for pivoting said louvers in said second group on said side member, the rotational axes of said second pivots being in a third straight line parallel to and displaced from said first straight line, second lever extensions on said louvers in said second group, second pivot connections on said second lever extensions, each of said second pivot connections being at a radius of a different predetermined length from the rotational axis of the respective second pivot and the axes of said second pivot connections being substantially in said second straight line, and a single control bar engaging said first and said second pivot connections, said louvers and said lever extensions being flexible to accommodate the different paths of said first pivot connections and said second pivot connections.

2. A jalousie having variably movable louvers comprising a frame, a plurality of similar louvers arranged in first and second rectilinear groups, means for pivotally mounting said louvers of said first group and said second group on said frame for rotation about individual parallel axes, first pivot connections on said louvers of said first group, each of said first pivot connections being at a radius of one predetermined length from the respective one of said axes, second pivot connections on said louvers of said second group, each of said second pivot connections being at a radius of a different predetermined length from the respective one of said axes, and a single control bar engaging said first and said second pivot connections, said louvers being flexible between said pivotally mounting means and said pivot connections to accommodate the different paths of said first pivot connections and said second pivot connections.

3. A jalousie having variably movable louvers comprising an elongated frame, a plurality of similar louvers arranged parallel to each other in a first group, a plurality of similar louvers arranged parallel to each other in a second group, a single control bar substantially parallel to said frame, a plurality of means all arranged in a first straight line for pivotally connecting each of said louvers in both of said groups to said single control bar, a plurality of means all arranged in a second straight line for pivotally connecting each of the louvers of said first group to said frame, and a plurality of means all arranged in a third straight line for pivotally connecting each of said louvers in said second group to said frame, all of said straight lines being parallel to and displaced from each other in substantially the same plane, the mechanism between said connecting means to said bars and said connecting means to said frame being flexible.

References Cited in the file of this patent

UNITED STATES PATENTS

1,480,095	Moller	Jan. 8, 1924
2,565,447	Andresen et al.	Aug. 21, 1951
2,751,154	Valtersson et al.	June 19, 1956
2,901,961	Cotts	Sept. 1, 1959