Jan. 24, 1956 G. R. STOLTZ 2,731,683

JALOUSIE WINDOW CONSTRUCTION

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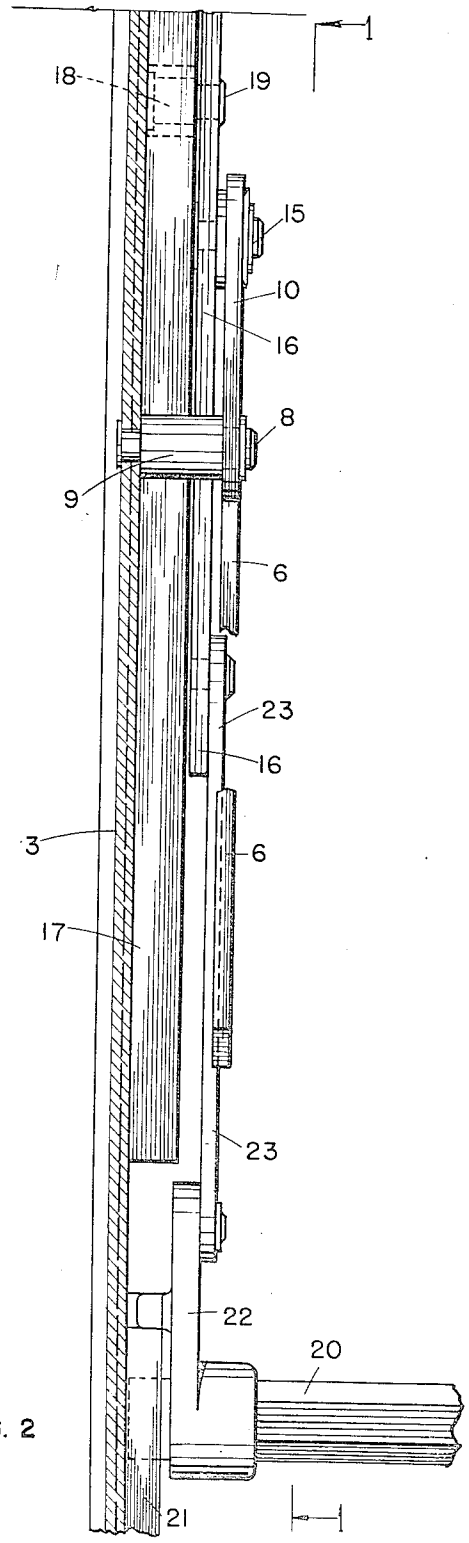
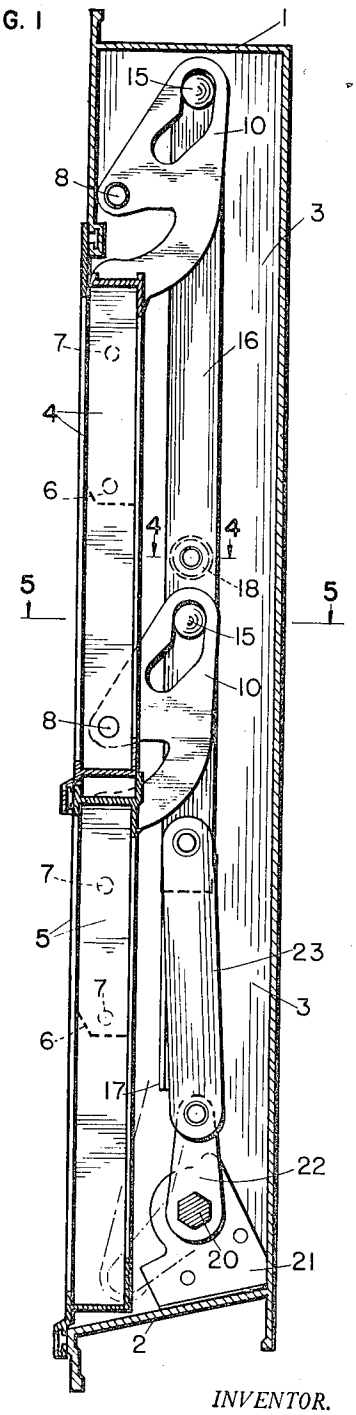


FIG. 2

FIG. 1



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FIG. 3

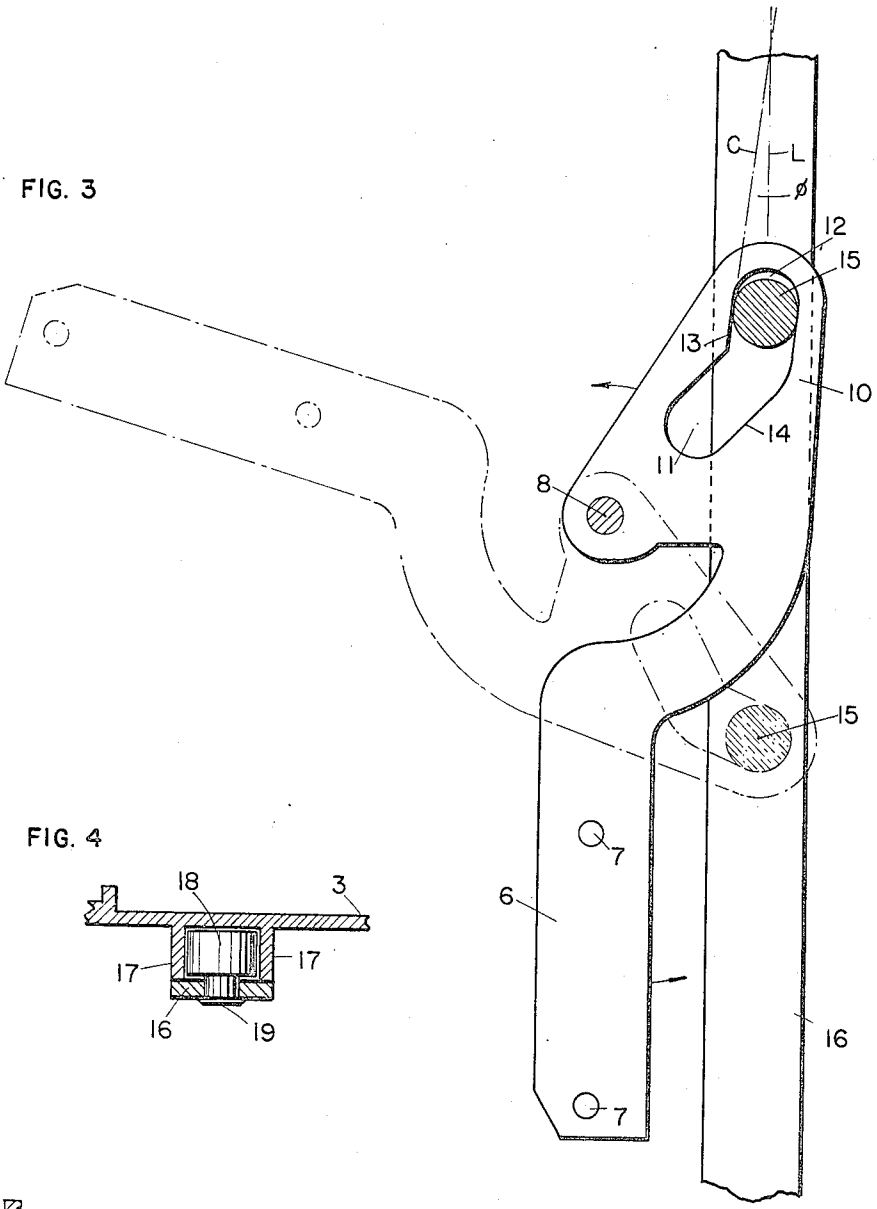


FIG. 4

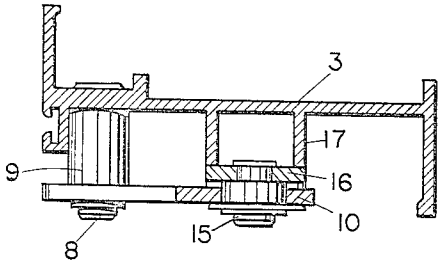


FIG. 5

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JALOUSIE WINDOW CONSTRUCTION

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Application January 15, 1954, Serial No. 404,216

5 Claims. (Cl. 20—42)

This invention relates to jalousie window structure and is applicable as well to pivotable paneled windows known in the trade as of the awning type, but is not limited within the purview thereof to jalousie structures of a specific type or utility.

An object of the invention is to provide a jalousie window which will be simple in assembly, compact in construction, and efficient in operation.

Another object is to provide a window of the character described which will be capable of ready and convenient maintenance.

A further object is to provide a window in which the panel actuating elements are arranged for frame extrusions of minimal depth.

Yet another object is to provide a pivotable paneled window in which the panels may be pivoted to positive closure and secured therein.

Still a further object is to provide window construction of the character and for the purposes described which may be readily and economically manufactured.

Other advantages of the invention will be discernible from the detailed description thereof hereinafter set forth.

According to the invention, the window has a frame including a pair of opposed jambs and head and sill members therefor, panel elements arranged for oscillatory movement between the jambs, panel supporting brackets at each end thereof pivotably related to the jambs and including apertured crank arms defining cam members engageable upon the actuation of the usual operating bar to oscillate the brackets and panels carried thereby between open and closed positions, insuring positive closure of the panels on securing the window.

The invention is embodied in one of the forms of jalousie window construction to which it may be applied, exemplified in the accompanying drawings in which the views are as follows, like reference numerals designating identical or analogous parts throughout the several views:

Fig. 1, a vertical section through the frame, including panel frames having the glass therein omitted for clarity, on line 1—1, Fig. 2;

Fig. 2, an enlarged fractional elevation in part section taken from the left of the view in Fig. 1, with panel frames omitted for clarity;

Fig. 3, a side elevation of one of the brackets in geometric relation to the operating bar associated therewith;

Fig. 4, a section on line 4—4, Fig. 1 and

Fig. 5, a section on line 5—5, Fig. 1.

The window has a frame comprising a head and sill members 1 and 2, and opposed jambs 3, of which one is shown in section in Fig. 5 and in interior elevation in Fig. 1, it being understood that the opposite jamb is of substantially identical construction but of opposite hand.

Arranged between the jambs for oscillatory movement therebetween on horizontal axes, is the usual assembly of louvers or panels, Fig. 1 illustrating a two panel window structure in which the rectangular panel frames 4 and 5 appear in section with glass lights removed, the better to exemplify the invention.

At each end thereof, the panel frames 4 and 5 are supported by brackets 6 to which they are attached by suitable fastenings, as at 7. These brackets (Figs. 1 and 3) are mounted in superposed relation from the inner faces of the jambs 3 to which they are pivotably connected by pivot pins 8 (Figs. 2 and 5) fitted with spacer members 9 sleeved thereover.

Each bracket 6 has an integrally formed extension functioning as a crank arm 10 operable about the pivot pin 8 to oscillate the bracket. Formed in each crank arm is a slot comprising a pair of angularly related apertured regions 11 and 12 (Figs. 3) which define along their marginal side edges an opposed pair of internal cam surfaces 13 and 14. Received in this aperture for slideable movement therein, is a crank pin 15 having operative engagement with cam surfaces 13 and 14 whereby to pivot the crank arm 10 and impart oscillatory movement, between its full line and broken line positions, to the bracket 6. These crank pins are carried by a substantially upright bar 16 arranged at each end of the panel assembly.

The bar 16 has reciprocable movement along its longitudinal axis for the simultaneous shifting of the crank pins 15 to effect a corresponding oscillatory movement of the brackets 6 and panel elements supported thereby between their open and closed positions. The inner faces of the jambs 3 have formed thereagainst a guideway defined by a spaced apart pair of upright flanges 17 (Figs. 1 and 4) and received in this guideway is a roller 18 mounted upon a shaft 19 secured on the operating bar 16, whereby to confine the bar to movement along its longitudinal axis.

Referring now to Fig. 3, it will be seen that when the bar 16 is moved either upwardly, or downwardly, to close or open the panel members, the crank pin 15 traverses the length of the slot from a position occupying region 12 (as shown by the full line position), to region 11 and returns to region 12. That is to say, when the bracket reaches either terminus of its arc of rotation, either in its open or its closed position as depicted in broken lines and in full lines in the figure, the pin 15 will have made the shift from region 12 to region 11 and return. Region 12 thus functions as a terminal region and region 11 an intermediate region in the sequence of occupancy of these apertured portions by pins 15 traveling therealong. When the bracket is in its closed or full line position, it will be observed that the cam surface 13 in the terminal region 12 inclines upwardly (along line C) and toward the axis L of the operating bar at the angle ϕ therewith. By this construction, when the pin 15 moves along the terminal region 12 in working engagement against cam surface 13, the force component thereby developed when the panels reach their closed positions urges the crank arm 10 outwardly and the bracket 6 inwardly, as indicated by the arrows in Fig. 3. Thus, by virtue of the above described inclination of the cam surfaces a relatively positive closure of the panels is effected on securing the window. Moreover, the terminal movement of pins 15 into and along region 12 tends to lock or secure the bracket structure when in closed position for the positive closure of the panel assembly.

Manual actuation of the bar 16 may be effected through any suitable means conventional in the art such, for example, as the usual hand crank and worm gear mechanisms (not shown) which are employed to rotate a horizontal drive shaft 20 extending across the lower region of the frame (Figs. 1 and 2). This shaft has its ends journaled in suitable bearing blocks 21 secured to adjacent frame structure. Mounted on the shaft 20 and rotatable therewith, is a crank member 22 pivotably connected to the lower end of a link 23, the upper end of which is pivoted to the bar 16. Oscillatory movement of the panel

elements between open and closed positions is thus transmitted thereto from the drive shaft **20** through intervening linkage and the bar **16**, as will be understood.

While the invention herein exemplified discloses a separable bracket to which a panel frame is attachable for support thereby, it will, of course, be understood that I do not limit myself to the precise panel supporting elements shown. The invention contemplates as well the employment of the conventional flanged end brackets adapted to receive the end portions of the panels therein, such end brackets being then fitted with a crank arm apertured as hereinabove described to receive the operating bar supported crank pins.

The invention thus provides panel actuating structure which permits the use of jamb extrusions of relatively narrow depth and results in a window assembly which is simple and efficient in operation, of compact construction, and readily accessible for maintenance. The window may be secured with panels in positive closure, locked therein by virtue of the elongated terminal regions in the crank arms and the engagement therewith of the crank pins **15**.

Of course, the invention is susceptible of a variety of changes and modifications without departing from the scope thereof, as hereinafter claimed. Having thus described the invention and the mode of its application, what I claim as new and desire to secure by Letters Patent, is:

I claim:

1. In a jalousie window construction having a frame defining a pair of opposed jambs and a plurality of panels arranged therebetween for oscillation between open and closed positions, the combination therewith of a pair of brackets supporting each panel laterally endwise thereof, each of said brackets including a crank arm pivotably connected to the jamb adjacent thereto, each of said crank arms having an angled slot comprising a terminal region and an intermediate region, said slots defining a pair of opposed internal cam surfaces, crank pins received in said slots and engageable with said cam surfaces to pivot said crank arms for the simultaneous oscillation of said panels, common carrying means for said crank pins operable for the actuation thereof in operative engagement with said cam surfaces.

2. The invention as defined in claim 1, and: the cam surfaces in the terminal region inclining upwardly and rearwardly of said frame when the panels are in closed position.

3. In a jalousie window construction having a frame including a pair of opposed jambs and a plurality of panels arranged therebetween for oscillation between open and closed positions, the combination therewith of a pair of brackets supporting each panel laterally endwise thereof, each of said brackets including a crank arm pivotably connected to the jamb adjacent thereto, each of said crank arms having a slot formed therein defining a terminal region and an intermediate region angularly related thereto, said slots defining a pair of opposed internal cam surfaces along the side marginal edges thereof, crank pins received in said slots and engageable with said cam surfaces, an upright bar interconnecting said crank pins and reciprocable along the longitudinal axis thereof to effect the engagement of said pins with said cam surfaces whereby to pivot said crank arms for the simultaneous oscillation of said panels, means confining said bar in movement along said axis, and means actuating said bar in reciprocal movement.

4. The invention is defined in claim 3, and: the cam surface portions in said terminal region inclining upwardly and toward said axis.

5. In a jalousie window construction having a frame including a pair of opposed jambs and a plurality of panels arranged therebetween for oscillation between open and closed positions, the combination therewith of a pair of brackets supporting each panel laterally endwise thereof, each of said brackets including a crank arm pivotably connected to the jamb adjacent thereto, each of said crank arms being apertured to form a slot defining a terminal region and an intermediate region in angular relation therewith, said slots defining along the side marginal edges thereof a pair of opposed internal cam surfaces, a crank pin receivable in each of said slots and engageable with said cam surfaces, an upright operating bar interconnecting said crank pins and reciprocable along the longitudinal axis thereof to carry said pins into operative engagement with said cam surfaces whereby to pivot said crank arms and oscillate said panels, a pair of upright flanges extending inwardly of the inner faces of said jambs and defining a guideway, a roller received in said guideway and carried by said bar for the confinement thereof in movement along said axis, the cam surface portions in said terminal region inclining upwardly and toward said axis when the panels are in closed position, and means to actuate said bar in reciprocal movement.

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