

**March 11, 1941.**

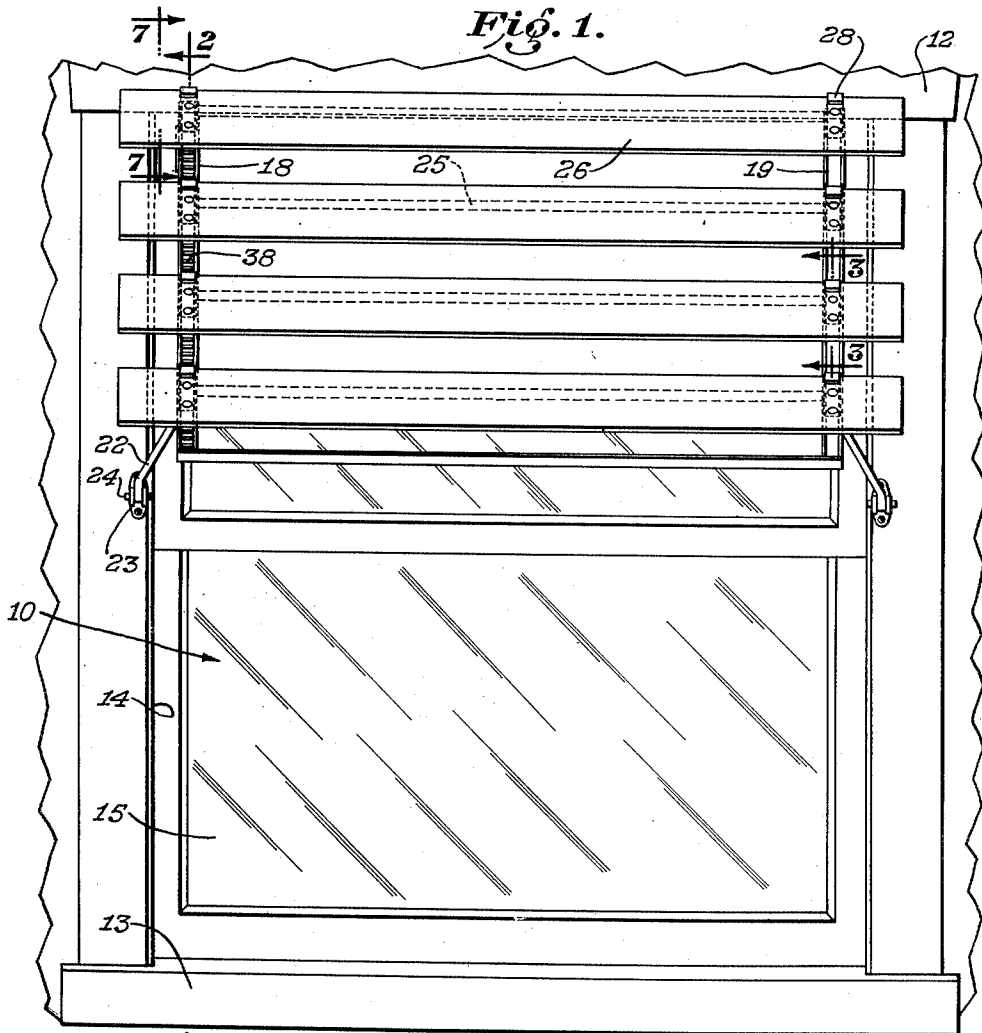
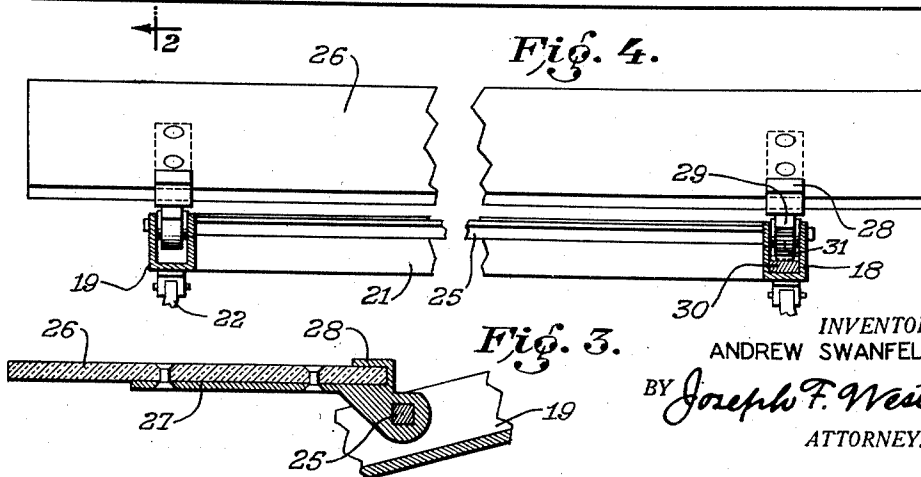
A. SWANFELDT

**2,234,712**

AWNING SHUTTER

Filed May 21, 1938

2 Sheets-Sheet 1



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*Fig. 8.*

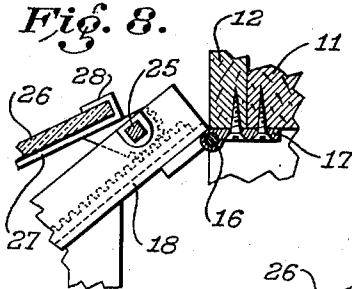


*Fig. 2.*

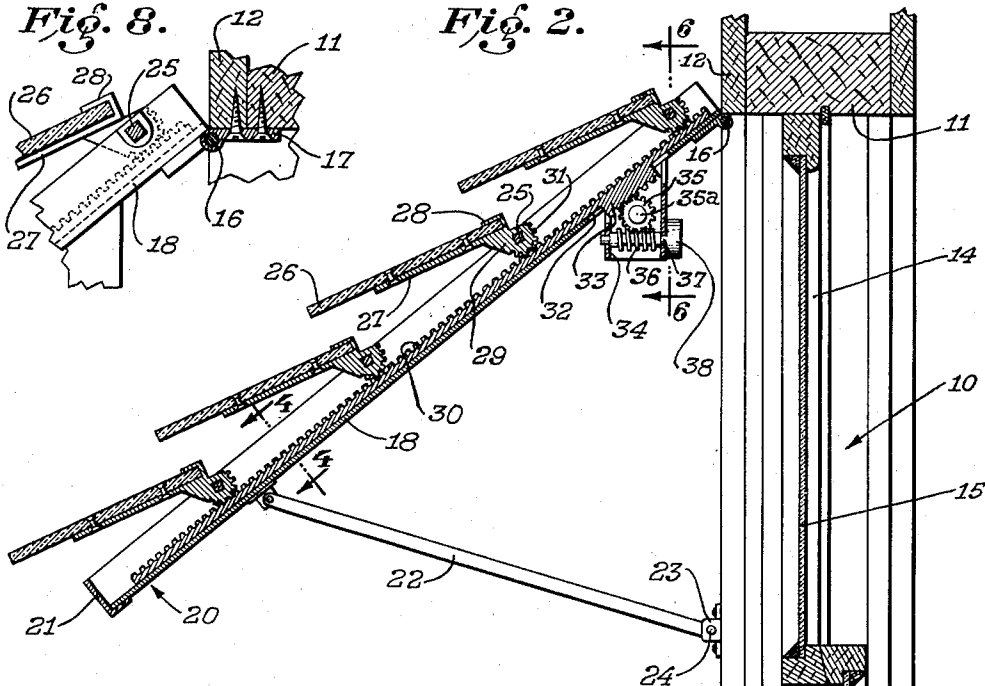


*Fig. 6.*

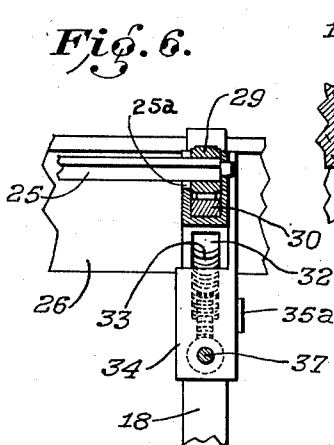


*Fig. 7.*

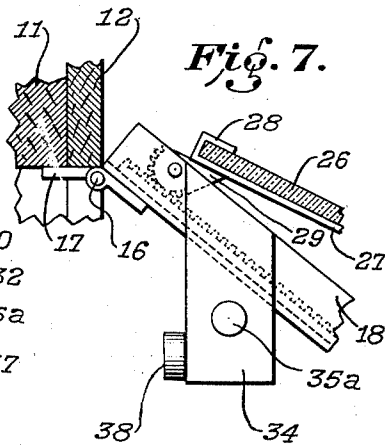
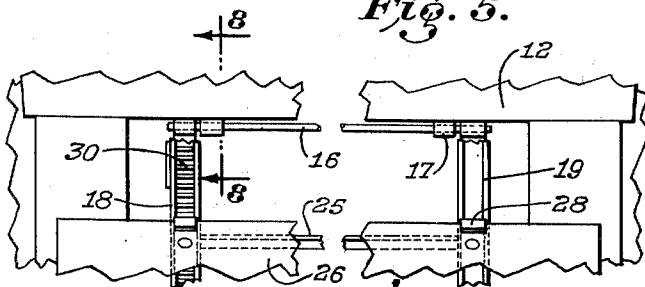
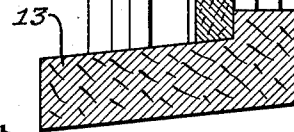


*Fig. 5.*



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## UNITED STATES PATENT OFFICE

2,234,712

## AWNING SHUTTER

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Application May 21, 1938, Serial No. 209,267

6 Claims. (Cl. 20-59)

This invention relates to awning shutters, and more specifically to devices which may be used selectively as either awnings or shutters for outside doors and windows or other openings in the outer walls of buildings. The utility of the conventional fabric awning is ordinarily limited to the provision of shade for the opening over which it is disposed and the deflection of rain during mild storms. In the art prior to my invention such awnings have been found to be objectionable in many instances because of their susceptibility to damage by wind and storms, and further, in that they tend to shut out light as well as the elements from which they are intended to afford protection. In many communities which are frequented by severe wind storms, it is necessary to remove the awnings and install shutters for the additional protection furnished thereby.

It is an object of this invention to provide a device having adjustments permitting its utility as either an awning or shutter, and thereby obviate the aforementioned disadvantages.

More particularly, a primary object is the provision of a device of the character described having a plurality of parallel louvers carried by a frame pivoted to the upper edge of the jamb of a window or like opening, the louvers being pivoted in parallelism to close the area between the sides of the frame or, selectively, to vary the angular adjustment of the louvers to reflect particular rays of light passing between the sides of the frame without diverting the passage of air or of light received from a different angle.

Another and highly important object hereof is the provision of mechanism for the joint pivotal control of the disposition of the louvers, which is conducive to facile manipulation and positive operation.

Another object is to provide a translucent awning affording a partial shade for a window or like opening adapted to carry different designs or colors on opposite sides so as to harmonize with both architecture or color schemes of the exterior of the building and of the particular room in which the window is located, respectively.

Other objects and corresponding advantages, such for example, as durability, comparative economy in manufacture and assembly, ease of installation, and an attractive appearance, will be apparent to those of skill in the art upon an examination of the following description read in the light of the accompanying drawings, in which:

Fig. 1 is a front elevation of a window structure

and my invention, operatively associated therewith;

Fig. 2 is a sectional view taken on lines 2-2 of Fig. 1, illustrating particularly the means for controlling pivotal disposition of the louvers;

Fig. 3 is a sectional view taken on lines 3-3 of Fig. 1;

Fig. 4 is a section on lines 4-4 of Fig. 2;

Fig. 5 is a detailed broken elevation of the pivotal attachment of the louver-carrying frame to the outside top rail lining of the window casement;

Figs. 6 and 7 are sectional views taken with correspondingly numbered lines of Figs. 2 and 1, respectively; and

Fig. 8 is a section on lines 8-8 of Fig. 5.

Referring to the drawings in detail, the numerals of which indicate similar parts throughout the several views, 10 designates generally a window casement comprising a top rail 11 and outside lining 12, a sill 13 and runways 14 for the sliding sash in which panes 15 are carried. A horizontal pivot post 16 is journaled in hinge brackets 17 attached to the lower edge of the outside lining 12 of the window top rail. On the opposite ends of the post 16, one end of each of a pair of channel irons 18 and 19 is pivotally secured, so as to extend at right angles thereto and form, respectively, the opposite sides of an awning frame 20. The outer ends of the channel irons are connected by means of an angle iron 21 to reinforce the parallel position of the channel irons and the rigidity of the frame.

It will be apparent that frame 20 will normally gravitate to a vertical position, being pivotally suspended at one end from the top of the window casement, but may be swung on the pivot post 16 to form any desired angle with the plane of the window.

When the device is in use as an awning the lower end of the frame is normally held from the window a distance predetermined as most favorable for that purpose by a pair of props 22, which are pivoted at their outer ends to respective channel irons at a point intermediate the ends thereof. The opposite end of each prop 22 is releasably attached to one of a pair of brackets 23, connected to the sash at each side of the window by means of a pin 24 which extends through the brackets and a hole in the end of the prop. While only a single pair of brackets 23 are illustrated, it will be apparent that a plurality may be disposed in vertical alignment at each side of the window with which the props may be selectively associated, in the

manner described, to maintain the frame at any angle with respect to the window and the sun's rays.

A plurality of horizontal rods 25 are pivotally supported equi-spaced apart and parallel to the angle iron 21 in frame 20, the opposite ends of each rod being journalled in aligned holes formed in the outer sides of the respective channel irons, the inner side of each iron being cut away as at 25a (Fig. 6). The length of each rod 25 intermediate the channel irons is squared for the purpose about to be described. A louver 26 (later described in detail) of a width greater than the distance between the respective rods 25 is rigidly secured to each rod by a pair of attaching members 27 riveted or otherwise secured to the underside of louver 26 at points thereon overhanging respective channel irons and extending transverse to the rods, each member 27 having one of its ends turned over the edge of the louver as at 28 to resist relative displacement of the louvers and rods. Integrally formed with and on the underside of each member 27 is a lug 29 having a square hole therein through which a rod 25 extends, to prevent relative rotation therebetween.

The louvers are composed of a translucent plastic. The underside of the louvers are adapted to be colored to harmonize with the colors used for the interior of the particular room over the window of which the awning is employed, while the upper surface of the awning may be of a different color, as, for example, corresponding to the color of the other awnings on the building.

The mechanism for maintaining the parallel disposition of the louvers and for controlling their position relative to the frame comprises a gear rack 30 slidably disposed in one channel 18. The lugs 29 secured to each member which overhangs channel iron 18 are semi-circular and are provided with a series of teeth 31 which are held in mesh with the teeth of rack 30, whereby longitudinal movement of the rack will cause arcuate movement of the lugs carrying teeth 31 and the louvers attached thereto as is herein-after more in detail described. An elongated opening 32 is formed in the bottom of the channel iron 18 in which the rack is disposed adjacent the end thereof pivoted to the top of the rail lining 12. Through opening 32, a short gear rack 33 extends, which is integrally formed with the underside of the gear rack 30. A gear housing 34 encloses rack 33, being secured by rivets or the like to the underside of channel iron 18. A pinion 35 journalled on a pin 35a, secured to one wall of the housing, is held in mesh with rack 33 to reciprocate the same. Pinion 35 is rotated by a worm gear 36 carried rigidly on a shaft 37. Shaft 37 is in turn journalled in walls of housing 34 which are parallel to the window and extends through the housing to a point adjacent the window. A handle 38 on the end of shaft 37 facilitates manual rotation of the shaft and the adjustment of the louvers.

It will thus be seen that I have provided an awning comprising a plurality of louvers 26 normally held in a position overhanging a window or like opening in a building, but adapted for movement to a position substantially closing the opening as a protection against the sun, wind, rain, or other weather conditions, and which incorporates therewith mechanism for tilting the louvers to cause their separation and thereby

vary the width of the shadow cast, and, correspondingly, the passage of air and light to the window.

It will be understood that the embodiment herein disclosed is only illustrative; that modifications varying as to size, number, proportion and shape of the parts may be made, particularly as to the length of the frame with respect to the length of the window and as to the number or width of the louvers; that the frame may be attached rigidly or adjustably to any portion of the window sash; all without departing from the spirit of my invention as defined by the appended claims.

What I claim and desire to secure by Letters Patent is:

1. In a device of the character described, a frame comprising a pair of parallel side supports pivoted to the upper edge of a window casement, a series of parallel rods journalled at their opposite ends in said supports, a plurality of louvers, each louver having a lug secured to its underside and intermediate its ends, said lugs being mounted on said respective rods, at points thereon overhanging one of said supports, a plurality of gear teeth formed on the edge of each of said lugs, a gear rack carried slidably by said last-named support with which the teeth of said lugs are in mesh, and means to reciprocate said rack.

2. In a device of the character described, a supporting frame comprising a pair of parallel channel irons, a gear rack slidably carried in one of said irons, a series of parallel rods journalled in said irons, a lug mounted on each of said rods at points thereon overhanging said gear rack, said lugs each comprising a gear segment having teeth in mesh with said rack, a plurality of louvers, a retaining member integral with each of said lugs secured to each of said louvers, each member having a portion thereof engaging one of the side edges of the louvers to which it is attached, and means to slide said rack relative to said frame.

3. In a device of the character described, a frame comprising a channel iron having two parallel sides and a bottom, a plurality of rods having one of their ends pivoted in one of the sides of said channel iron and extending over said bottom, a plurality of louvers, means to secure one of said louvers on each of said rods against lateral displacement relative to said channel iron, said means comprising a series of members secured to respective louvers, each of said members having a member integral therewith mounted on said rods respectively, between and engaging the sides of said channel iron.

4. In an awning shutter adapted for attachment to a window frame to cover the opening thereof, a frame comprising a channel iron having two parallel sides and a bottom, means to connect one end of said last-named frame to the window frame, a plurality of rods having one of their ends pivoted in one of the sides of said channel iron and overhanging said bottom, a plurality of louvers, means to secure one of said louvers on each of said rods against lateral displacement relative to said channel iron, said means comprising a series of members secured to respective louvers intermediate the ends of the louvers, each of said members having a lug integral therewith mounted on said rods respectively, between the sides of said channel iron, said lugs each carrying a series of arcuately arranged teeth, a gear rack slidably disposed in

said channel iron having teeth in mesh with the teeth of each of said lugs, a second gear rack integral with the underside of the first-named gear rack extending through a slot formed in the bottom of said channel iron adjacent the end of said frame which is attached to said window frame, a gear housing attached to said channel iron and inclosing a portion of said slot, a pinion journaled in said housing in mesh with said second gear rack, a shaft journaled in said housing carrying a worm gear in mesh with said pinion, and a handle on the end of said shaft whereby rotation of said shaft by said handle will tilt said louvers on said rods relative to said frame.

5. In an awning shutter for covering a window opening, a frame comprising a pair of spaced parallel members, a plurality of slats, means to engage each of said slats intermediate its ends having gear segments carried thereby, gear

mechanism carried by one of said members to engage said gear segments, and means to actuate said gear mechanism to vary the angular relation of said slats with respect to said members, said slats being of a length greater than the distance between said members to cover said gear mechanism.

6. In an awning shutter adapted for attachment to a window frame having an opening therein, a pair of slats, means engaging each of said slats intermediate their ends, each of said means having a gear segment carried thereby, a rack engaging each of said gear segments to tilt said slats upon longitudinal movement of said rack, and manual control mechanism engaging said rack at a point thereon intermediate the points on said rack at which said gear segments are engaged to shift said rack longitudinally.

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