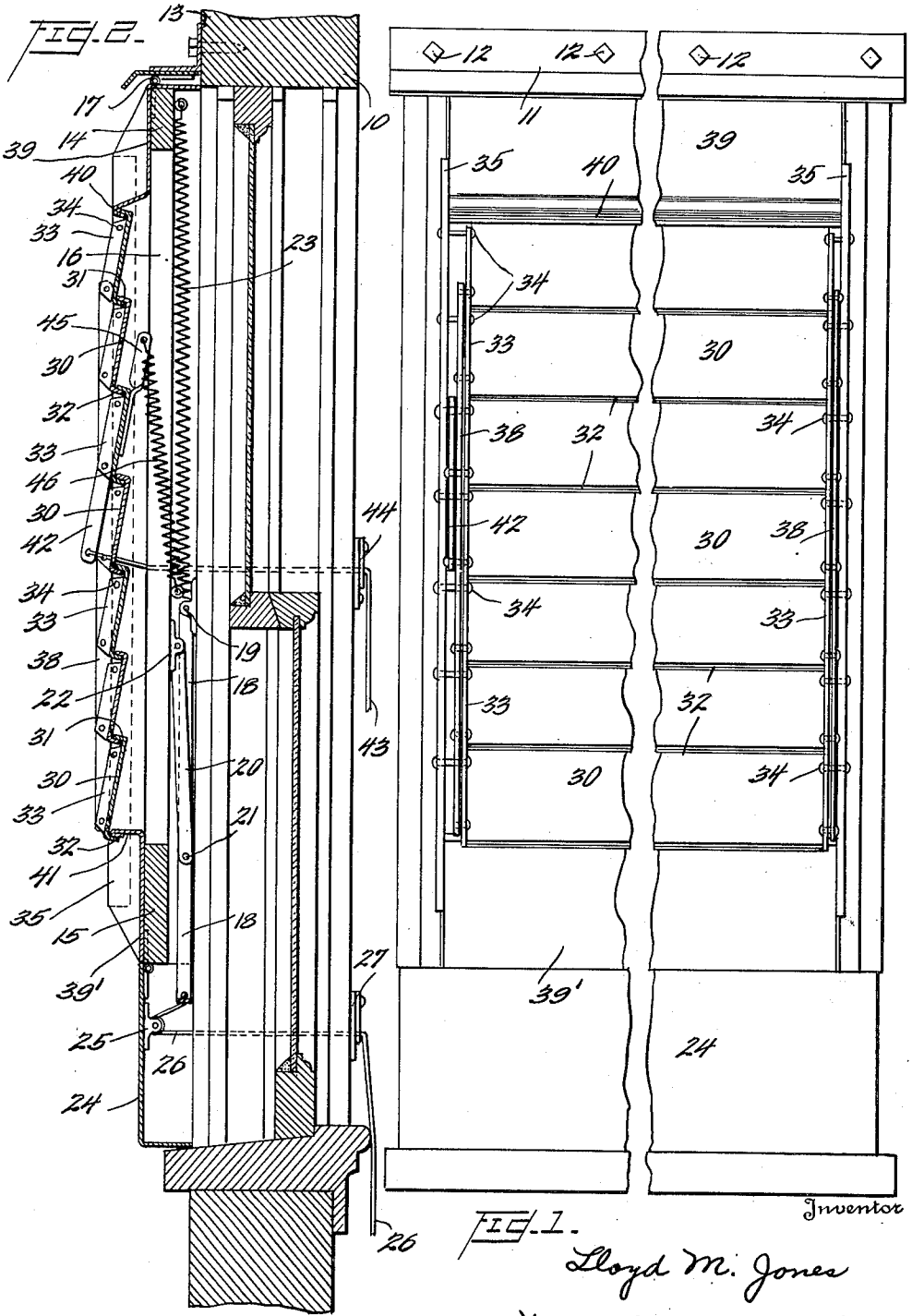
Jan. 31, 1939. L. M. JONES 2,145,569

AWNING SHUTTER

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AWNING SHUTTER

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FIG. 5.

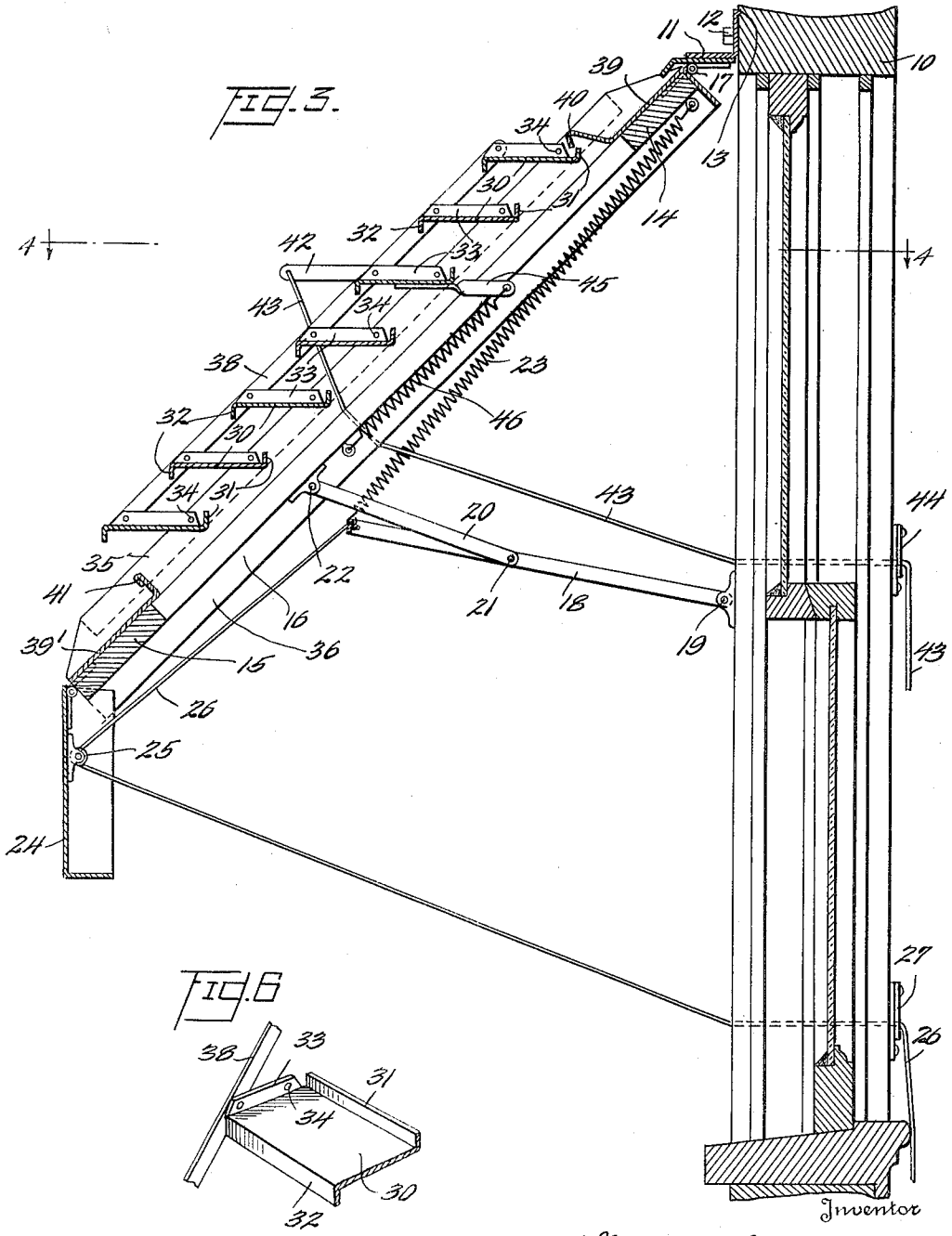


FIG. 6

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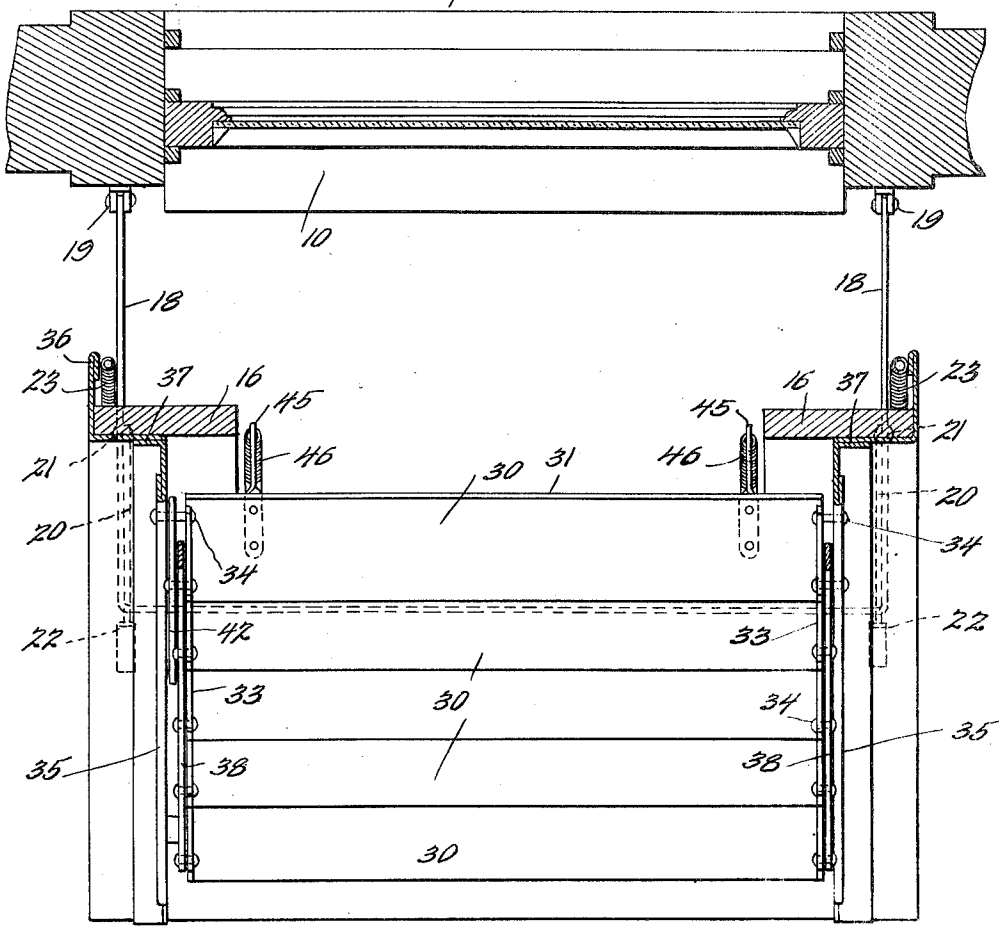
Attorney

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AWNING SHUTTER

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FIG. 4.



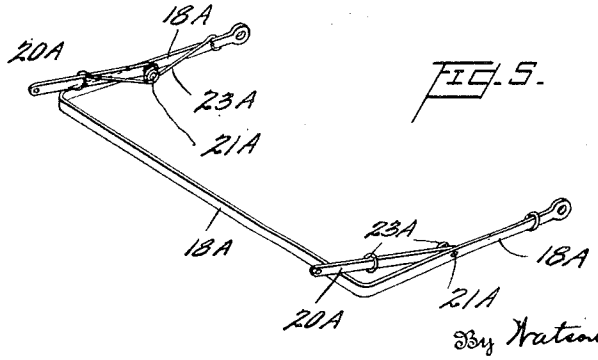


FIG. 5.

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AWNING SHUTTER

Lloyd M. Jones, Fort Lauderdale, Fla.

Application July 13, 1937, Serial No. 153,446

5 Claims. (Cl. 189—55)

This invention relates to what is commonly termed awning shutters, and its object is to provide certain improvements in devices of that kind which render the same more serviceable, more easily manipulated, and more effective than prior devices. In general my invention includes an awning shutter pivoted at its upper end adjacent the upper end of a window or other opening, and which can be easily and quickly swung inwardly to close or cover the window, or permitted to automatically swing outwardly to any extent desired to afford light and ventilation. It also includes certain detailed improvements for manipulating the slats or louvers in the shutter so as to regulate the amount of sunlight through the window. The foregoing and other minor improvements in my construction will be readily understood from the accompanying drawings taken in connection with the following specification, and in which drawings,

Figure 1 is a front or outside elevation of an awning shutter involving my invention;

Figure 2 is a vertical section through such a shutter, the same being closed and shown in combination with a window of usual construction;

Figure 3 is a view similar to Figure 2, but showing the shutter swung outwardly;

Figure 4 is a horizontal section substantially on line 4—4 of Figure 3;

Figure 5 is a slightly modified arrangement used for swinging the shutter outwardly; and

Figure 6 is a fragmentary perspective view showing part of one end of one of the slats or louvers used in the shutter.

Referring to the drawings in detail, my improved awning shutter is shown in combination with a window of a building, such as a house or other structure, indicated at 10. An angular supporting member 11 is secured to the building above the window as by means of lag screws 12 extending into the window frame or other suitable part of the building. The supporting member 11 is preferably provided with a sharpened flange 13 which is adapted to dig or be forced into the wall or frame so as to make a water-tight joint at that point. Preferably the member 11 is made up of two angular parts, as shown, which are riveted or welded or otherwise firmly secured together, the outer edge of the lower part being bent downwardly to shield the upper end of the shutter.

The awning shutter is hinged to the underside of the supporting member 11. The shutter includes an upper transverse frame member 14, a lower transverse frame member 15 and two side members 16. These transverse and side members form the main frame of the shutter. The shutter may be made plane or solid, or as shown in the drawings, it may be made up of a series of pivoted slats or louvers. As will be apparent, certain features of my invention are applicable to either a solid shutter or slatted shutter, while other features relate specifically to a shutter provided with slats or louvers.

One of the principal features of my invention relates to the means for swinging the shutter toward and from the window or supporting structure on which it is mounted. At its upper end the shutter is hinged to the window frame or other part of the supporting structure by means of hinges 17 secured to the under side of the supporting member 11 and to the upper frame member 14. A brace member 18, which is preferably made U-shaped in form, is pivotally secured at points 19 to the window frame or other suitable part of the building, the pivots 19 being below the hinged upper end of the shutter. Pivotally connected to each arm of the brace member 18 is a thrust member 20, each of these thrust members being pivoted to the member 18 at a point between its inner and outer end, as indicated at 21; and the outer end of each thrust member 20 is pivotally connected to the inner side of the shutter, as indicated at 22. The thrust members 20 are of such length as to extend outwardly beyond the free end of the brace member 18 when the shutter is in open position, as shown particularly in Figure 3. A single thrust member 20 may suffice, but it is preferable to use two such members, one on each side of the shutter. It is apparent that when the outer end of the brace member 18 is raised or drawn upwardly, the shutter will be swung outwardly through the medium of the thrust member or members 20. On the other hand, when the brace member is drawn downwardly, the shutter will be swung inwardly toward the window.

Means are provided to automatically raise the brace member 18 and swing the shutter outwardly. In the preferred arrangement, coiled springs 23 are connected at their lower ends to the outer end of the brace member 18, and at their upper ends such springs are preferably secured to the upper frame member 14 of the shutter. A single spring 23 may suffice, but preferably two are employed, one on each side of the shutter. The springs 23 are of such length and are so tensioned that, when free to act, they serve to swing the shutter outwardly to any desired extent. When the brace member 18 is drawn

downwardly, it will be apparent that the tension on the springs 23 will be considerably increased due to the relative position of the pivots 19 and the point of attachment of the upper ends of the springs 23.

Any suitable arrangement may be employed for drawing the brace member downwardly and swinging the shutter to closed position. As shown, the shutter is provided at its lower end with a hinged extension 24 having on its inner side a suitable guide 25, such as a pulley guide. A flexible member 26, such as a cable, chain, or cord, is secured to the outer end of the brace member 18 and passes through the guide 25 and through a suitable opening in the window frame or wall of the building and into position to be conveniently manipulated from the inside of the building. A suitable swinging latch or lock 27 on the inside of the window serves to hold the member 26 in any position desired.

As already noted, one of the important features of the invention lies in the fact that when the brace member 18 is drawn downwardly, the springs 23 are substantially extended and put under considerable tension. The result is that when the cable 26 is loosened, the shutter will easily and quickly swing outwardly to the extent desired, and when the cable is again fastened, the shutter will be firmly held in its desired open position against shaking or rattling or tendency to close.

In the modified arrangement of Figure 5, the brace member 18A and thrust members 20A are substantially the same as the parts 18 and 20 above described. In this modification, however, the coiled springs are replaced by spring rods or bars 23A, each of which has its ends shaped to engage respectively the members 18A and 20A, and the intermediate portions thereof wrapped around or otherwise engaging a pivot pin 21A connecting said members. With this arrangement, it is obvious that the spring rods 23A will be flexed and put under increased tension when the member 18A is drawn downwardly as above set forth.

While the foregoing features of my invention, as already noted, may be used with an awning shutter having a plane or solid outer surface, they possess particular utility in combination with a shutter having pivoted slats or louvers. Such a shutter is illustrated in the drawings. It includes a plurality of slats or louvers 30 preferably formed of sheet metal, each having a rear flange 31 turned upwardly or outwardly, and a front flange 32 turned downwardly or inwardly, and also having end flanges 33 turned upwardly. Each of the slats or louvers is pivoted at each end adjacent its rear edge, as indicated at 34, to a metal flange member 35, which members are secured to and project outwardly from the side member 16. Other flange members 36 extend over the front faces of the side member 16 and rearwardly thereof, as clearly shown in Figure 4, and which are adapted to fit tightly against the window frame or other part of the building when the shutter is closed. The flange members 35 and 36 preferably overlap, as indicated at 37, and are firmly secured together and to the frame member 16. The slats, or louvers 30 are all connected to move in unison by means of connecting bars 38, so that they are caused to open and close together. In closing, the front flange 32 on each louver overlaps the rear flange 31 on the next louver, thus producing a closely fitting and water-tight structure. To provide a water-tight construction at the upper end of the shutter a protecting plate 39 is secured to the outer face of the upper frame member 14, and the lower edge thereof is bent outwardly and then inwardly at 40 to form a shield to overlie the flange 31 on the uppermost slat or louver 30 when the louvers are closed. Similarly, a protecting plate 39' is secured to the outer face of the lower frame member 15, and the upper edge thereof is bent outwardly at 41 to form a flange over which the outer flange 32 on the lowermost louver 30 is adapted to engage.

An important feature of the invention concerns the means for operating the slats or louvers of the shutter. Secured to the end flange of one of the louvers 30 is a lever or arm 42 which projects outwardly from the shutter. To the outer end of the lever 42 is connected a cord, chain, or cable 43 which extends inwardly through a suitable opening in one of the side members 16 and also through a suitable opening in the window frame or wall of the building to a point where it can be grasped and manipulated by the operator. A lock or latch 44 serves to hold the cable 43 in any desired position. It is apparent that by drawing inwardly on the cable 43 the slats or louvers may be simultaneously closed. To automatically open the same, one or more arms or levers 45 is attached to one of the louvers 30 and such levers project inwardly from the shutter. A coiled spring 46 is connected at its upper end to each of said levers, the other ends of each of said springs being connected to one of the side rails 16 at a point below the lever. The springs 46 are under tension and normally tend to open the slats or louvers. By manipulating the cable 43, the louvers may be permitted to open to any desired position to afford light and ventilation when the shutter is open or closed, and by drawing inwardly on the cable 43, the louvers may be tightly closed in any position of the shutter.

Various modifications may be made in the foregoing structure within the scope of my invention as set forth in the appended claims.

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

1. In combination with a supporting structure, a shutter pivotally supported at its upper end to swing outwardly from said structure, a brace member pivotally connected at one end to said structure below the pivot of said shutter and extending outwardly therefrom, a thrust member pivotally connected at one end to said brace member intermediate the ends of the latter and at the other end to said shutter, said brace member and thrust member being arranged to swing said shutter toward the supporting structure when said brace member is swung downwardly, a spring arranged to exert tension on said brace member to swing the same upwardly about its pivot and cause said thrust member to swing the shutter outwardly, and flexible means for swinging said brace member downwardly.

2. In combination with a supporting structure, a shutter pivotally supported at its upper end to swing outwardly from said structure, a brace member pivotally connected at one end to the supporting structure below the pivot of said shutter, a thrust member pivotally connected at one end to said brace member intermediate the ends of the latter and at the other end to said shutter, and a coiled spring having one end thereof secured at a point above the pivot point

of said brace member and the other end operatively connected to said brace member, whereby the tension of said spring serves to swing said brace member upwardly about its pivot and causes said thrust member to swing the shutter outwardly, and manually operable flexible means for swinging said brace member downwardly and thereby swinging the shutter inwardly.

3. In combination with an awning shutter pivotally connected at its upper end to a supporting structure, of means for automatically swinging said shutter outwardly at its lower end relative to said structure, said means comprising a brace member pivotally connected to said structure below the pivot point of the shutter, a thrust member pivotally connected at one end to said brace member intermediate the ends of the latter and at the other end to said shutter, a coiled spring connected at one end to said brace member and at its other end to said shutter below the pivot point thereof, whereby the tension of the spring serves to swing said brace member upwardly and cause said thrust member to swing the shutter outwardly, and flexible means for manually swinging said brace member downwardly and said shutter inwardly and holding the latter in position adjacent the structure.

4. In combination with a supporting structure, a shutter pivotally supported at its upper end to swing outwardly from said structure, a brace member pivotally connected to said structure below the pivot of said shutter, a thrust member pivotally connected at one end to said brace member intermediate the ends of the latter and at its other end to said shutter, said brace member and thrust member being arranged to swing said shutter toward the supporting structure when said brace member is swung downwardly, a spring arranged to exert tension on said brace member to swing the same upwardly about its pivot until said brace member and thrust member are substantially in alignment with each other to form a toggle joint, and flexible means connected to said brace member and operable from within said structure to swing said brace member downwardly and break said toggle joint and thereby swing the shutter inwardly toward said structure.

5. In combination with a shutter pivotally supported at its upper end to swing outwardly from a building, means for automatically swinging the same outwardly and a flexible device for drawing the same inwardly, said shutter having a plurality of pivoted slats carried thereby, a bar connecting said slats to cause the same to move in unison, an arm secured to and extending inwardly from one of said slats, a coiled spring carried by said shutter at the rear of said slats and connected to said arm to automatically move said slats toward open position, an arm secured to one of said slats and projecting outwardly therefrom, a cable connected to said arm and extending through said shutter and into said building for simultaneously moving said slats toward closed position against the tension of said spring.

LLOYD M. JONES.