Feb. 4, 1964 G. L. SHERWOOD 3,120,024

HINGE AND CLOSURE ASSEMBLY FOR WINDOWS AND THE LIKE

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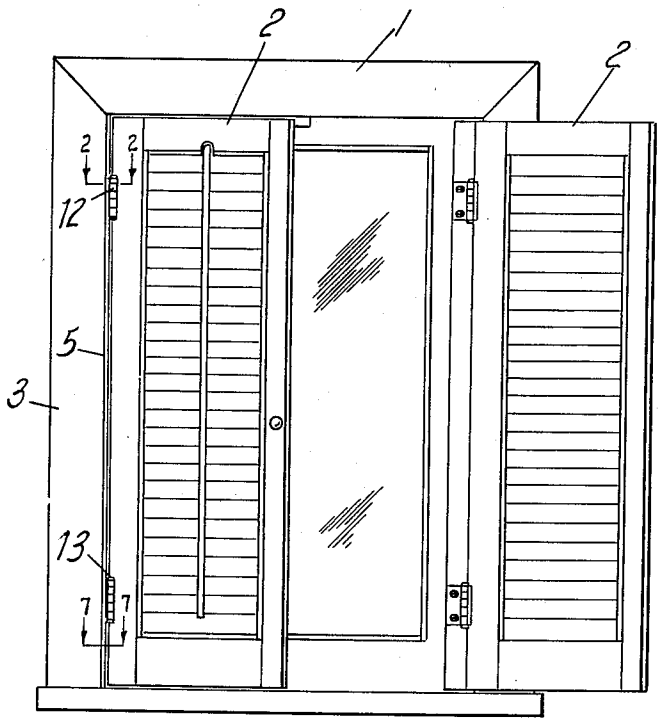


Fig. 1

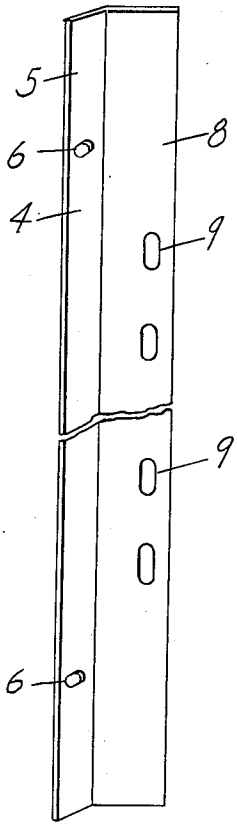


Fig. 5

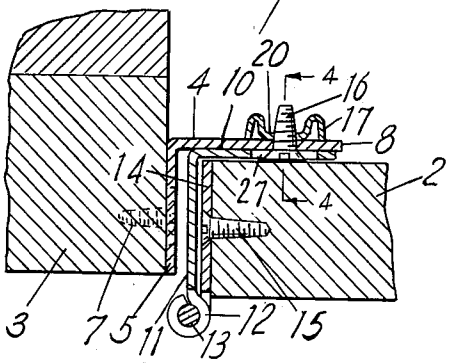


Fig. 2

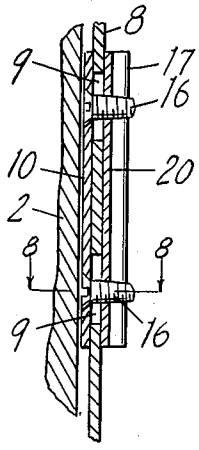


Fig. 4

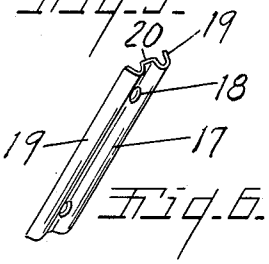


Fig. 6

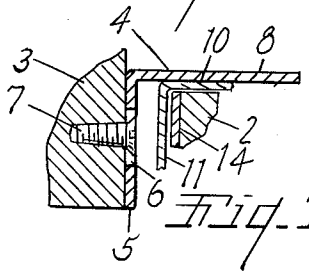


Fig. 7

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HINGE AND CLOSURE ASSEMBLY FOR WINDOWS AND THE LIKE

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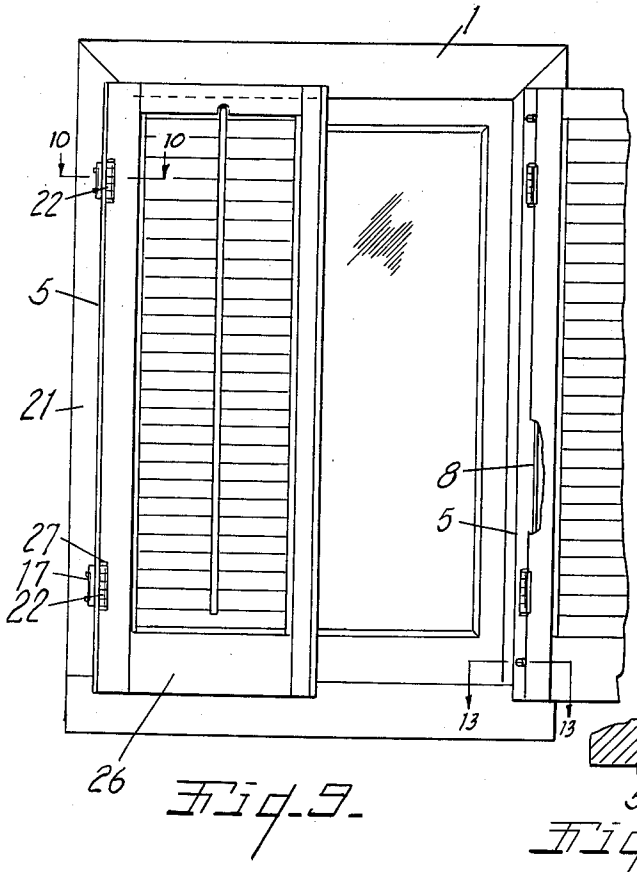


Fig. 9.

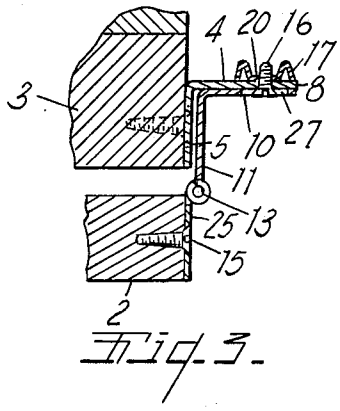


Fig. 3.

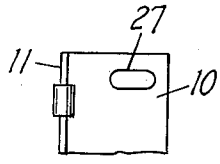


Fig. 12

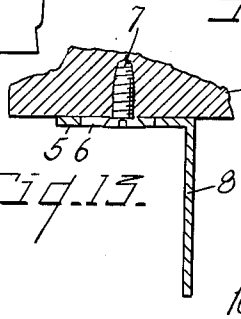


Fig. 13.

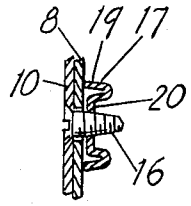


Fig. 8.

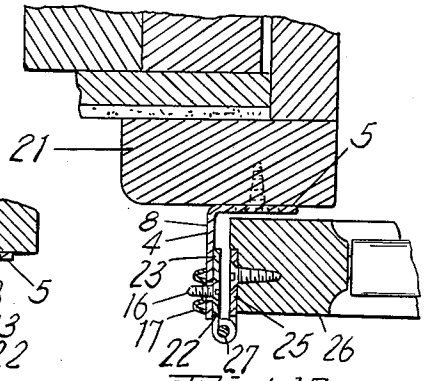


Fig. 10

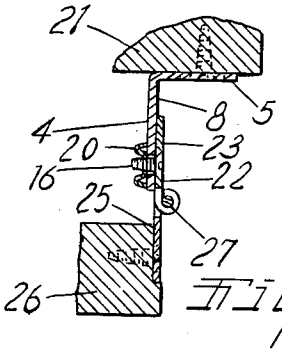


Fig. 11.

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United States Patent Office 3,120,024 Patented Feb. 4, 1964

3,120,024

HINGE AND CLOSURE ASSEMBLY FOR WINDOWS AND THE LIKE

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Filed Apr. 9, 1958, Ser. No. 727,294
6 Claims. (Cl. 16—135)

This invention relates to blinds or like closure assemblies for windows and the like and mounting fixtures therefor.

The main objects of this invention are:

First, to provide a closure mounting structure or assembly which is adapted for installation and adjustment to meet varying conditions of window structure and the positioning of closure members to close into the window frame or to mount the closures on the inner sides of the frame.

Second, to provide a hinge assembly having these advantages which may be readily installed by others than skilled workmen.

Objects relating to details and economies of the invention will appear from the description to follow. The invention is defined in the claims.

A structure which embodies the features of the invention is clearly illustrated in the accompanying drawing in which:

FIG. 1 is an elevational view of a window frame and window with a closure assembly embodying my invention, one closure member being shown in closed position and the other in open position.

FIG. 2 is an enlarged fragmentary horizontal view on a line corresponding to line 2—2 of FIG. 1.

FIG. 3 is a fragmentary view similar to that of FIG. 2 with the closure member in open position.

FIG. 4 is a fragmentary view in vertical section on a line corresponding to line 4—4 of FIG. 2.

FIG. 5 is a fragmentary perspective view of one of the supporting rails.

FIG. 6 is a perspective view of one of the springable nut elements of my invention.

FIG. 7 is a fragmentary view in horizontal section on a line corresponding to line 7—7 of FIG. 1, showing details of the mounting for the supporting rails to the frame.

FIG. 8 is a fragmentary sectional view on a line corresponding to line 8—8 of FIG. 4 showing certain details of the mounting for the hinge members upon the supporting rail.

FIG. 9 is an elevational view corresponding to that of FIG. 1 showing another adaptation of the invention in which the supporting rail is mounted on the front side of the frame member instead of on the inner side thereof.

FIG. 10 is an enlarged fragmentary view on a line corresponding to line 10—10 of FIG. 9.

FIG. 11 is a fragmentary sectional view corresponding to that of FIG. 10 with the closure member in open position.

FIG. 12 is a front elevational view of one of the hinge members adapted for use in connection with the embodiment of my invention as shown in FIGS. 1 to 8 inclusive.

FIG. 13 is an enlarged fragmentary view taken on line 13—13 of FIG. 9.

In the accompanying drawing the invention is illustrated as embodied in a window frame designated generally by the numeral 1 with closure members 2 of the blind type. The frame 1 includes the side frame members 3. It will be understood that in FIG. 1 and in the details thereof the closure members are mounted to close

into the frame. That is not always practical, and in FIG. 9 and the details thereof the invention is illustrated as embodied in an assembly in which the closures are mounted on the front side of the window frame and close against the front side thereof as distinguished from closing into the frame.

The supporting rails 4 are adapted for both conditions as will appear later. The rails 4 are of angled cross section, the arms 5 thereof being provided with longitudinally spaced laterally elongated holes 6 adapted to receive the attaching screws 7. These laterally elongated or horizontally elongated holes 6 permit the positioning of the rails to accommodate substantial variations in frame structure such as are commonly found; that is, the upright frame member 3 may vary in width and may not be plumb, and it is desirable that the rails should be plumb. In the embodiment shown in FIGS. 1, 2, 3 and 7 the rails are disposed on the inner sides of the frame members 3 and in outwardly facing relation with the arms 8 thereof projecting laterally from the frame member 3.

The arms 8 are provided with vertically spaced pairs of elongated fastener receiving openings 9. The hinge members 10 of angle section are disposed on the outer sides of the arms 8 of the rails with their knuckle arms 11 adjacent to the arm 5 of the rail and projecting beyond the same and terminating in the knuckles 12 provided with the pintles 13. The coacting hinge members 14 are secured to the closure member 2 commonly at the edge thereof by means of screws 15. These hinge members 14 are provided with knuckles coacting with the knuckles and pintles of the hinge members 10. The hinge members 10 are in the preferred embodiment thereof provided with elongated fastener openings 27.

The hinge members 10 are secured for vertical adjustment to the projecting arms of the rails by means of the screws 16 disposed through the vertically elongated holes 9 in the rail and having threaded engagement with the springable nut elements 17 which have holes 18 therein spaced to correspond to the pairs of holes 9 in the rail. The inturned edge flanges 19 normally project somewhat beyond the web portion 20 so that when the screws are tightened springable stress is applied to the members 17 which clampingly engages the rail so that the screws are held in their adjusted position in the elongated holes or slots 9. It is important that the supported closure member remain in properly adjusted position and this is accomplished while permitting proper adjustment thereof by this means.

In some conditions it is desirable that the blinds or other closure members be mounted on the front sides of the window frame and in overlapping relation thereto as illustrated in FIGS. 9, 10 and 11. In such an installation the supporting rails 4 are mounted on the front side or face of the upright frame member 21.

In this embodiment or adaptation the hinge designated by the numeral 22 is provided with a leaf 23 secured to the outwardly projecting arm 8 of the rail by the same means as that described. The leaf 25 is secured to the closure member 2, the two hinge members being provided with coacting knuckles engaged by the pintle 27. This modified form enables the positioning of the closure members so that they close against the outer side of the frame as is illustrated in FIG. 9, instead of closing within the frame as illustrated in FIG. 1.

By providing the supporting rail with the transversely elongated slot-like openings 6 adapted to receive the attaching screw 7 and with the projecting arm thereof with the vertical slot-like fastener receiving openings 9 and the hinge member 10 with the slot-like openings 27 for the fastener 16, the closure supports may be readily adjusted

to a very wide range of structural conditions. This permits the manufacture of the closure members to generally predetermined dimensions and the installing thereof in connection with window openings or the like which commonly do vary greatly in details and dimensions, even where they are supposed to be of particular dimensions. The supporting rails may be adjusted to particular conditions either on the inside of the frame or on the face or outer side of the frame, as is illustrated in the drawings, and the hinges are capable of a wide range of adjustment relative to the rails.

In both embodiments of the invention the parts may be readily adjusted to accommodate variations commonly met with in buildings and in some installations the sash is so positioned that it is not practical to position the rails inside the window casing or to close the blinds or other closure members into the casing. In such conditions the parts may be arranged as illustrated in FIGS. 9, 10 and 11.

I have illustrated and described my invention in a highly practical embodiment thereof. I have not attempted to illustrate other modifications or adaptations as it is believed this disclosure will enable the adaptation of the invention as may be desired.

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

1. In combination with a side member of a window or like frame and a closure member, of a closure member supporting rail of angle section disposed on the inner side of said frame member in outwardly facing relation with one arm on the frame member and the other projecting laterally therefrom, the arm of said rail disposed on the frame member being provided with vertically spaced transversely disposed elongated fastener receiving openings facilitating the positioning of the rail upon the frame member, the projecting arm of said rail being provided with vertically spaced vertically extending elongated fastener receiving openings, a hinge member of angular section disposed in outwardly facing relation with one arm thereof in lapping relation upon the projecting arm of said rail with the other arm thereof projecting outwardly therefrom and provided with knuckles disposed in outwardly spaced relation to the plane of said side member and provided with a pintle, the arm of said hinge member disposed on said rail having transversely elongated fastener element receiving openings therein and being adjustably secured to said rail by fastener elements disposed through said transversely elongated opening therein and said vertically elongated openings in said rail, and a hinge member mounted on said closure member and provided with knuckles supportedly coacting with said knuckles and pintle of said first named hinge member.

2. In combination with a side member of a window or like frame and a closure member, of a closure member supporting rail of angle section disposed on the inner side of said frame member with one arm on the frame member and the other projecting laterally therefrom, the arm of said rail disposed on the frame member being provided with vertically spaced transversely disposed elongated fastener receiving openings facilitating the positioning of the rail upon the frame member, the projecting arm of said rail being provided with vertically spaced vertically elongated fastener receiving openings, a hinge member of angular section disposed in outwardly facing relation with one arm thereof in overlapping relation to the inwardly projecting arm of said rail with the other arm thereof projecting outwardly and provided with knuckles disposed in outwardly spaced relation to the plane of said side member and provided with a pintle, the arm of said hinge member disposed on said rail having transversely elongated fastener receiving openings therein and being adjustably secured to said rail by fastener elements disposed through said transversely elongated opening therein and said vertically elongated opening of said rail, and a hinge member mounted on said closure member and provided with knuckles supportedly coacting with said knuckles and pintle of said first named hinge member.

3. In combination with a side member of a window or like frame and a closure member, of a closure member supporting rail of angle section disposed on the inner side of said frame member with one arm thereof in supported engagement with the frame member and the other arm projecting from the frame member, the projecting arm of said rail being provided with fastener receiving openings, a hinge member of angular section disposed in outwardly facing relation with one arm thereof in lapping relation upon the inwardly projecting arm of said rail with the other arm thereof projecting outwardly and provided with knuckles disposed in outwardly spaced relation to the plane of said side member and provided with a pintle, the arm of said hinge member disposed on said rail being adjustably secured thereto by fastener elements disposed through said openings thereof, and a hinge member mounted on the edge of said closure member and provided with knuckles supportedly coacting with said knuckles and pintle of said first named hinge member.

4. A support for window closures and the like comprising a closure member supporting rail of angled section, one arm of which is adapted to be supportedly disposed upon a supporting frame member with the other arm projecting laterally from the frame member being provided with vertically spaced transversely elongated fastener receiving openings facilitating the upright positioning of the rail upon the frame member, the projecting arm of the rail being provided with vertically spaced elongated fastener receiving openings, a hinge comprising a pair of articulated hinge members, one hinge member being of angular section and disposed in the angle of said rail with one arm thereof in lapping relation to the projecting arm of said rail and with the other arm thereof adjacent the arm of the rail attached to the support member, the hinge member disposed on said rail being adjustably secured to said rail by threaded fastening elements disposed through said openings, and coacting springable nut elements disposed on the other side of said rail arm to receive said threaded fastener elements.

5. A support for window closures and the like comprising a closure member supporting rail of angled section, one arm of which is adapted to be supportedly disposed upon a supporting frame member with the other arm projecting laterally from the frame member being provided with vertically spaced transversely elongated fastener receiving openings facilitating the upright positioning of the rail upon the frame member, the projecting arm of the rail being provided with vertically spaced elongated fastener receiving openings, a hinge comprising a pair of articulated hinge members, one hinge member being of angular section and disposed in the angle of said rail with one arm thereof in lapping relation to the projecting arm of said rail and with the other arm thereof adjacent the arm of the rail attached to the support member, the hinge member disposed on said rail being adjustably secured to said rail by fastening elements disposed through said openings.

6. A support for window closures and the like comprising a closure supporting rail of angled section, one arm of which is adapted to be supportedly disposed upon and secured to a supporting frame member with the other arm projecting laterally from the frame member, the projecting arm of the rail being provided with fastener receiving openings, a hinge comprising a pair of articulated hinge members, one hinge member being of angle section disposed in the angle of said rail with one arm thereof in lapping relation to the projecting arm of said rail and with the other arm thereof adjacent the arm of the rail attached to the support member, the hinge member disposed on said rail being secured thereto by fastening elements disposed through said openings thereof.

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