Aug. 25, 1959 P. S. CURTIS 2,900,678

TURNBUTTON FASTENER FOR FRAME SUPPORTED INSERT SECTION

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FIG. 1

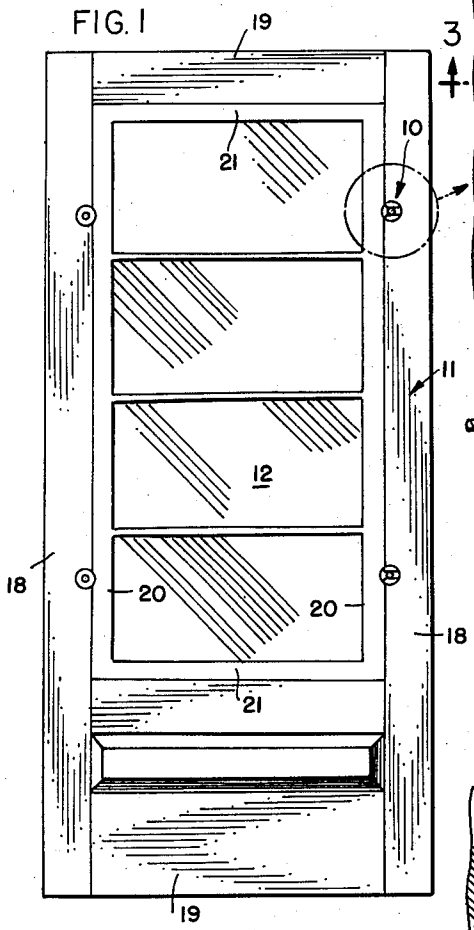


FIG. 2

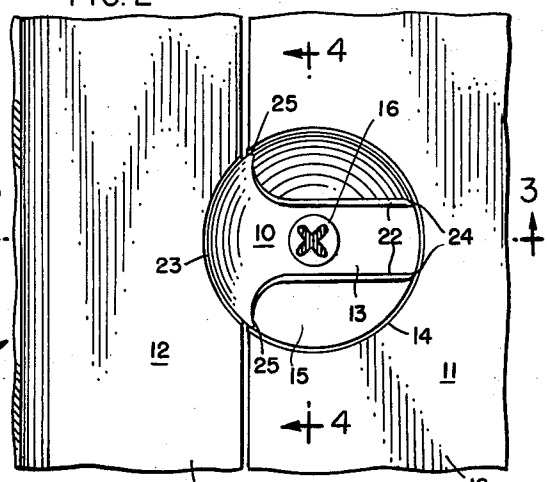


FIG. 3

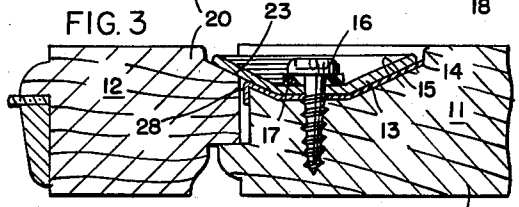


FIG. 4

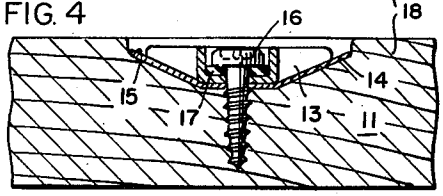
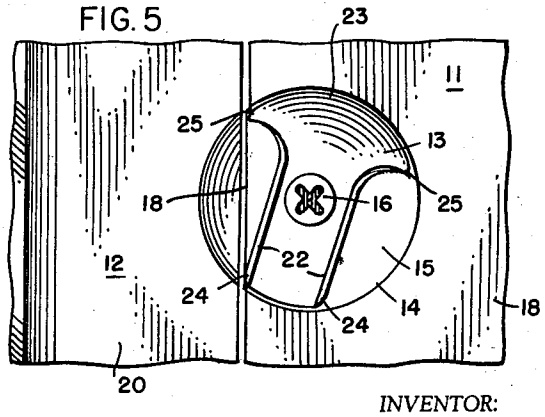


FIG. 5



INVENTOR:
PAUL S. CURTIS

BY

Rummler and Arrow
ATT'YS

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FIG. 6

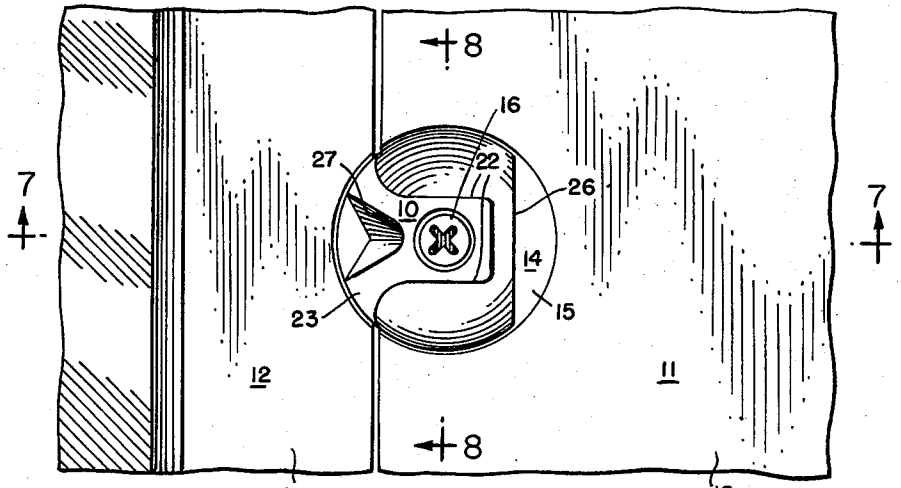


FIG. 7

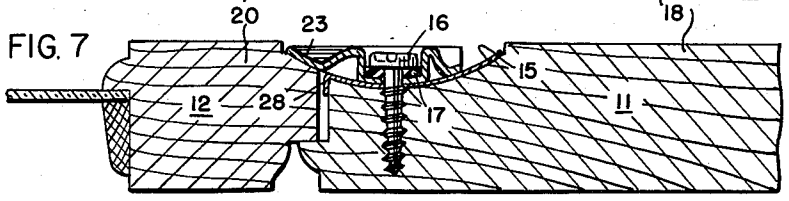


FIG. 8

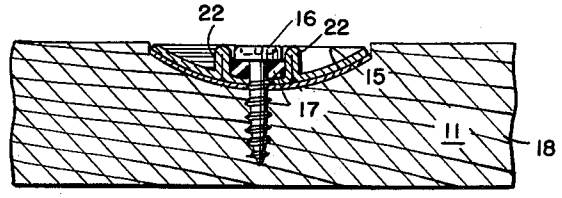
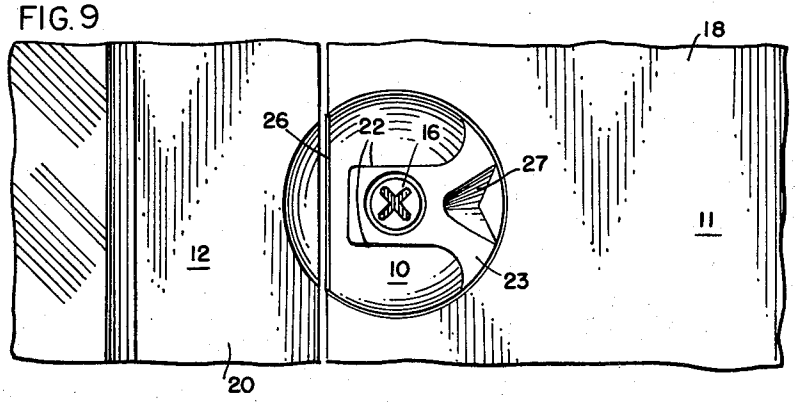


FIG. 9



INVENTOR:
PAUL S. CURTIS
BY
Rummler and Snow
ATT'YS

United States Patent Office 2,900,678
Patented Aug. 25, 1959

2,900,678

TURNBUTTON FASTENER FOR FRAME SUPPORTED INSERT SECTION

Paul S. Curtis, Jacksonville, Ill.

Application June 4, 1957, Serial No. 663,435

2 Claims. (Cl. 20—36)

This invention relates to fasteners of the turnbutton type for securing in place on auxiliary doors (or windows) the removable insert glazed or screen sections.

Heretofore the fasteners for the insert glazed or screened sections for auxiliary doors and/or windows have involved a turnbutton fastener on the frame section positionable to extend one end overlapping the insert section. These turnbutton fasteners have been rotatably mounted either on the face of the frame section or recessed therein and secured to a stud-pin journaled in the frame section with the kerfed end of the stud-pin exposed on the face of the frame section for the application of a screw driver. In the former arrangement the turnbuttons always are exposed as obstructions on the face of the door or window. In this latter arrangement the side edges of the vertical stiles of the insert sections have to be slotted to receive the ends of the turnbuttons.

The main objects of this invention are to provide an improved type of turnbutton fastener for securing the glazed or screened insert sections in place on the auxiliary door or windows supporting section; to provide an improved fastener of this kind which is exposedly recessed in the face of one of the sections for turning merely by the application of one's fingers; to provide a fastener of this kind with improved means for yieldably retaining it in any adjusted position; to provide a turnbutton fastener of this kind with improved means for protecting the section material from excessive wear, especially when the sections are made of wood; and to provide an improved fastener of this kind which is inexpensive to manufacture, easy to attach, and of ornamental character.

Illustrative embodiments of this invention are shown in the accompanying drawings, in which:

Figure 1 is a front elevation of an auxiliary storm door with the insert section held in place by fasteners made in accordance with this invention.

Fig. 2 is an enlarged view of that portion of Fig. 1 embraced within the circle and showing one adaptation of this improved type of fastener as mounted on the frame section and positioned to hold the insert section in place;

Fig. 3 is a sectional view taken on the plane of the line 3—3 of Fig. 2;

Fig. 4 is a sectional view taken on the plane of the line 4—4 of Fig. 2;

Fig. 5 is a view similar to Fig. 2 but showing the fastener positioned to permit the insertion or removal of the insert section;

Fig. 6 is a view similar to Fig. 2 but showing another adaptation of this improved type of fastener positioned to hold the insert section in place;

Fig. 7 is a transverse section of the adaptation shown in Fig. 6 as taken on the plane of the line 7—7 of that figure;

Fig. 8 is a similar view taken on the plane of the line 8—8 of Fig. 6; and

Fig. 9 is a view similar to Fig. 6 but showing the turnbutton positioned to permit the insertion or removal of the insert section.

The essential concept of this invention involves a less-than-circular element of arcuate cross-section formed with an upset radially-disposed finger-grip portion and so journaled in a metal-lined circular depression in adjacent parts of the separable sections of a combination auxiliary door or window that in one position of the fastener a peripheral wing-portion overlaps the adjacent face of the other section and in another position of the fastener the entire periphery is located inwardly of the adjacent perimeter of the section on which the fastener is mounted.

A turnbutton fastener 10 embodying the foregoing concept, for use with a supporting frame section 11 and an insert section 12 of an auxiliary storm door (or window), comprises an element 13 rotatively mounted in a circular depression 14 formed in and spanning abutting parts of the sections 11 and 12 and protected by a lining 15, the element 13 being held in place by a screw 16 with an interposed compression-friction washer 17.

The sections 11 and 12, of the hereinshown auxiliary storm door, are of conventional character. The supporting frame section 11, formed of the usual stiles 18 and top and bottom cross pieces 19, and the insert section 12, formed of the usual stiles 20 and top and bottom cross pieces 21, are conventionally dimensioned, contoured, and shouldered so that the insert section 17 fits into the frame section 11 in the plane thereof and is held in place by pairs of the fastener elements 13, generally secured to the stiles of the frame section 11. The insert section 12 may be either glazed or screened, in the conventional manner, and interchangeably positionable in the frame section 11 so that it serves both winter and summer needs.

Two slightly differently contoured forms of fastener elements 13 are shown—Figs. 2–5 and Figs. 6–9 respectively. However, the two adaptations are mounted and function in precisely the same manner. Preferably the elements 13 are metal stampings, each of less-than circular form, arcuate in cross-section, and having a central portion radially upset from the concave face to form a finger-grip 22 extending across the element from a wing-portion 23.

In the simpler and less-expensive-to-manufacture element 13 (Figs. 2–5) the upset finger-grip 22 is formed of single parallel flanges terminating at a point diametrically opposite the wing-portion 23, which overlaps the insert section 12. The extremities 24 of the flanges forming the finger-grip 22 and the extremities 25 of the wing-portion 23 are so disposed that when the element 13 is turned to retract the wing-portion 23 from overlapping the insert section 12, the respective extremities 24 and 25 on one side of the element 13 are positioned within the inner face of the frame section stile 18. This permits the placing and/or removing of the insert section 12.

The slightly more ornate element 13 (Figs. 6–9) is more nearly a complete disk having only a small portion cut away along a line 26. This line 26 is spaced from the axis of the element 13 a distance equal to that from the axis of the element 13 to the inner face of the stile 18 on which the element 13 is mounted. In this adaptation the upset finger-grip 22 is formed by doubled-over parallel flanges (Fig. 8) rather than the single flanges of the other adaptation (Fig. 4), and terminates short of the edge 26. To further enhance the ornamental effect of this element 13, a chevron-like embossment 27 is formed in the peripheral wing-section 23.

In order to locate these elements 13 below the faces of the stiles 18 and 20 of the frame and insert sections 11 and 12, the circular, concave depressions 14 are formed in the stiles 18 and 20 at longitudinally-spaced points, as indicated in Fig. 1. Such depressions 14 would be cut

with a specially-formed tool, where the sections **11** and **12** are made of wood or solid metal. If these sections were made of hollow metal, the depressions **14** could be obtained by deforming the metal. As is most clear from the figures, the depressions **14** are positioned so that the major part of each is in the frame section stiles **18**. The part of the depression **14** in the insert section stiles needs to be merely enough to insure a reasonable overlap of the wing-portion **23** of the fastener elements **13**.

When the frame section **11** is formed of wood, the thin metal lining **15**, concaved to fit in the depression **14**, is fixed in that part of the depression **14** located in the frame section stiles **18**. Preferably an integral turnover tab **28** is formed along a chord of the liner **15** to abut against the inner face of the stiles **18** (Figs. 3 and 7). These liners **14** may be secured in place in any suitable manner; by several small brads through the face of each liner and/or through the tabs **28**, and/or by the use of a suitable adhesive.

The pivoting screw **16** here is shown as a conventional wood screw. The washer **17** may be rubber or any comparable substitute which will tend to yieldingly retain the elements **13** in any adjusted position.

Among the more apparent advantages of this improved type of turnbutton fastener are; exposed ornate appearance; operable by mere pressure of the fingers; flushed position permits stacking units for storage or transport; constant tension of washer prevents rattle of loose parts, compensates for variations in the thickness of the frame and insert materials, and precludes backing up of screw.

The manner of operating of such an improved fastener is believed to be so obvious from the foregoing description as to require no further explanation.

Although but two adaptations of this invention are herein shown and described it will be understood that details of the structure may be altered or omitted without departing from the spirit of the invention as defined by the following claims.

I claim:

1. A turnbutton fastener for releasably retaining an insert section on a supporting section of the type wherein the faces of the two sections are disposed in a common plane and have a circular concave fastener recess formed in the common-plane faces of the two sections and spanning the abutting edges of the two sections, the fastener comprising a stamped-metal element of arcuate cross-section conforming with and in depth not to exceed that of the two-section recess, the element having a quadrant wing section the periphery of which substantially conforms with the periphery of the two-section recess, the

perimetrical portions of the element at one side of the quadrant wing and on opposite sides of a diameter through the center of the element and the middle point in the periphery of the quadrant wing being upset from the concave face of the element to provide upwardly-extending finger-grip flanges the top edges of which are in a plane common with that of the periphery of the quadrant wing and below the common plane faces of the two sections, the transverse spacing of the flanges being such that the tip of the periphery of the quadrant wing and the tip of the flange on the same side of the aforesaid diameter are alineable with the perimeter of the supporting section when the element is turned to permit the sections to be assembled or separated.

2. In combination, a supporting frame section and a removable insert section contoured and shouldered to permit the insert section to fit and be retained in the frame section with the faces disposed in a common plane and having a circular concave recess formed in the common-plane faces of the two sections with the major portion of the recess located in one of the sections, a stamped metal fastener element of an arcuate cross-section conforming with the recess and in depth not to exceed that of the recess pivoted at its center to the center of the recess, the element having a quadrant wing portion the periphery of which substantially conforms with the circumference of the recess, the perimetrical portions of the element on one side of the quadrant wing and on opposite sides of a diameter through the center of the element and the middle point of the periphery of the quadrant wing being upset from the concave face of the element to provide upwardly-extending parallel finger-grip flanges the top edges of which flanges are in a plane common with that of the periphery of the quadrant wing and below the common plane faces of the assembled sections, the transverse spacing of the flanges being such that the tip of the periphery of the quadrant wing portion and the tip of the flange on the same side of the aforesaid diameter are alineable with the perimeter of the one section when the element is turned to permit the sections to be assembled or separated.

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