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F. S. CARR

SHIFTABLE NUT FASTENING

Filed July 22, 1925

Fig. 1.

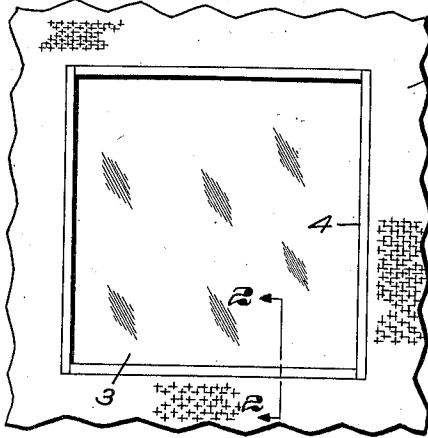


Fig. 2.

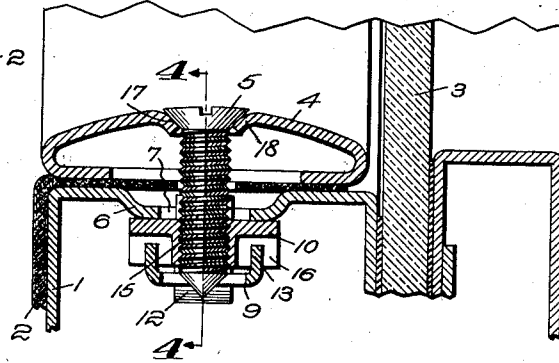


Fig. 3.

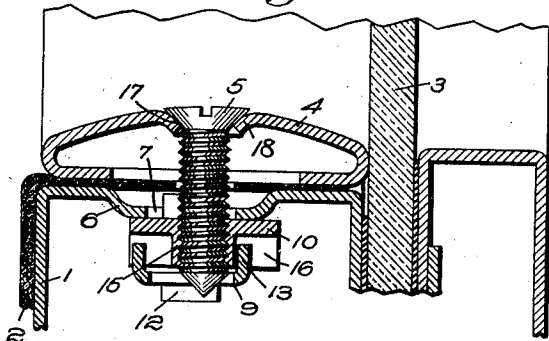


Fig. 4.

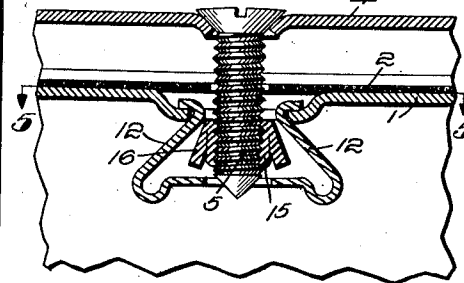


Fig. 5.

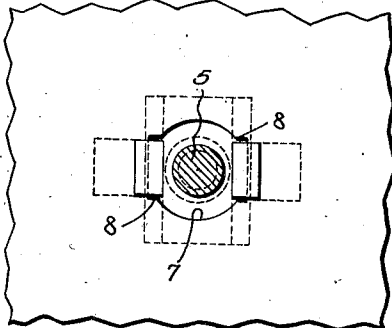


Fig. 6.

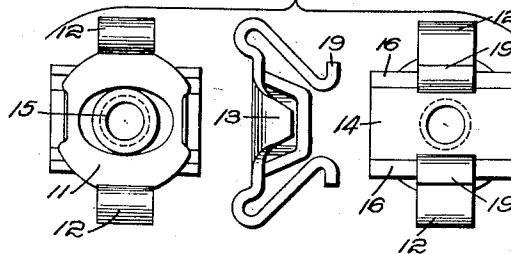
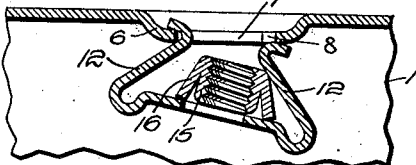


Fig. 7.



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SHIFTABLE NUT FASTENING.

Application filed July 22, 1925. Serial No. 45,279.

REISSUED

This invention aims to provide an improved shiftable nut device.

Reference is hereby made to a divisional of this application, Serial No. 166,147, filed February 5, 1927.

In the drawings which illustrate a preferred embodiment of my invention:

Fig. 1 is an elevation view of a window, part of the surrounding frame being broken away;

Fig. 2 is an enlarged section on the line 2—2 of Fig. 1 being partly in elevation and showing the trim or sill strip spaced away from the glass;

Fig. 3 is a section similar to Fig. 2 but showing the trim strip pressed against the glass;

Fig. 4 is a section on the line 4—4 of Fig. 2 being partly in elevation;

Fig. 5 is a plan section on the line 5—5 of Fig. 4;

Fig. 6 includes bottom, side, and top views respectively of the shiftable nut device, and

Fig. 7 illustrates the manner in which the nut device is secured to the frame part.

Referring to the drawings, I have illustrated a nut device in connection with securing trimming strips to windows and the like. The device illustrated is particularly, though not exclusively, useful in automobile body construction for easily and quickly securing trimming strips of wood or metal to the body.

The installation shown in the drawings includes a metal window frame part or sill support 1 having its exposed surfaces covered with upholstery 2, a glass 3 which may or may not be raised and lowered, a plurality of metal trim or sill strips 4 forming a casing for the glass, shiftable nut devices secured to the frame part and screws 5 for engagement with the nut devices to secure the strips in place.

The frame part 1 is initially prepared for the nut device by forming a depressed portion 6 therein about midway between the glass 3 and the inner edge of the frame. At the bottom of the depressed portion 6 is formed an aperture 7 having opposed notches 8 to receive the nut device as hereinafter described.

The nut device includes a nut holder 9 pressed from a single piece of metal and a nut 10 also pressed from a single piece of metal. The nut holder is provided with a base portion 11 having an aperture extending there-through, opposed relatively long resilient fin-

gers 12 extending first below the base portion 11 and then sloping toward each other at the opposite side of the base portion. Opposed shorter projections 13 are also formed from the base of the holder and extend in the same general direction as the fingers 12, as best illustrated in Fig. 6. The nut 10 has a base 14 from which is pressed a boss 15 screw threaded on the inside for reception of a screw 5. Parallel diverging flanges 16 extend from the base 15 and are presented at two sides of the nut. These flanges 16 terminate in substantially the same plane as the end of the boss 15 as illustrated in Fig. 4, and provide guides for the nut.

The nut unit is assembled at the point of manufacture and while the nut is shiftable relative to the holder it is held in assembled relation therewith by the fingers 12 which overlie the nut sufficiently to prevent its becoming disengaged therefrom. The aperture in the base 11 of the nut holder is larger than the boss, but the boss is prevented from entering the aperture and interfering with the operation of the nut by the flanges 16 which span the aperture and guide the nut along the base portion 11 of the holder as illustrated in Fig. 6.

The trim strip 4 is formed from a single piece of metal and is provided with a plurality of screw receiving apertures 17 surrounded by tapered walls 18 to provide for countersinking the heads of the screws 5.

Assembly of the installation may be effected by first securing the nut unit to the frame part 1. This may be accomplished by entering one of the fingers 12, which may or may not be contractible and expansible, into one of the notches 8 at one side of the aperture 7 so that a hook-shaped portion 19 formed at the end of the finger may hook over the outer face of the frame part 1 in the depressed portion 6 as illustrated in Fig. 7. Then the other finger may be snapped through the aperture so that its hook-shaped portion 19 may also overlie a portion of the frame part thereby to securely hold the device in place relative to the frame part 1. When thus secured to the frame the holder is held against rotation by cooperation between the slots 8 and the fingers 12 while the nut which is generally rectangular in outline, is held against rotation by the fingers 12 and the projections 13. The nut is free to shift transversely in all directions relative to the nut

holder and the frame 1 and is limited in its movement by cooperation between the flanges 16 of the nut and the fingers 12 and also by cooperation between the boss 15 and the projections 13. After the upholstery 2 has been stretched over the frame 1 the trim strip 4 may be placed over the upholstery and a screw 5 entered in the aperture 17. This screw 5 passes through the upholstery, through the aperture 7 in the depression 6 and enters the threaded boss 15 of the nut. By turning the screw 5 it may be threaded into the boss 15 as best illustrated in Fig. 2. During the screwing together operation, the nut may shift in any transverse direction, as above described, so as to align itself with the screw.

Where the trim strip is used at the edge of a frame, as in the window frame illustrated in the drawings, it is sometimes necessary to shift the strip sidewise so that it may be aligned with the edge of the frame or pressed against the glass as illustrated in Fig. 3. This movement may be greater than the usual shifting movement of the nut for correcting misaligned holes as shown and described in cooperating applications and therefore provision has been made for permitting greater sidewise shifting movement of the nut to provide for movement of the strip. The drawings illustrate the fact that the nut may shift to a greater extent toward the projections 13 than toward the fingers 12. Thus the notches 7 at the sides of the apertures are formed lengthwise of the strip so that when the nut unit is secured to the frame 1 the projections 13 are located crosswise of the strip to permit greater shift of the strip in the proper direction as fully illustrated by Figs. 2 and 3. During the assembling operation of the installation the screws are turned to tighten the nuts but before finally clamping the strip in place it is shifted to its proper relation with the frame and then the screws are given a final twist to clamp the strip tightly against the frame 1 with the upholstery gripped tightly between them.

While I have shown and described a preferred embodiment of my invention, it will be understood that changes involving omission, alteration, substitution and reversal of parts and even changes in the mode of operation may be made without departing from the scope of my invention which is best defined in the appended claims.

Claims:

1. A shiftable nut fastening device including a nut holder having resilient means for

engagement with a suitable support and a shiftable nut assembled with said nut holder, said nut having a boss cooperating with lugs presented by said holder for limiting crosswise movement of said nut relative to said resilient means.

2. A shiftable nut device comprising, in combination, a nut part having a base portion and a boss portion, a nut holder presenting means for holding said nut in assembled relation therewith and for securing said device to a support and opposed projections for cooperating with the boss portion to limit transverse movement of said nut in a direction crosswise relative to said means presented by said holder.

3. A shiftable nut device comprising, in combination, a pressed metal nut holder and a pressed metal nut, said holder having a base portion presenting an aperture there-through to permit a screw to pass there-through, opposed fingers extending therefrom and overlying portions of the nut to hold the nut in assembly with the holder, a boss presented by said nut and extending toward the base of the holder, opposed flanges presented by said nut having their edges terminating in substantially the same plane as the end of said boss to prevent entrance of said boss in the aperture provided in the base of the holder and opposed projections extending from the base of said holder to limit the movement of said nut in any direction generally crosswise relative to said fingers.

4. A shiftable nut device comprising, in combination, a pressed metal nut holder and a pressed metal nut, said holder having a base portion presenting an aperture there-through to permit a screw to pass there-through, opposed fingers extending therefrom and overlying portions of the nut to hold the nut in assembly with the holder, at least one of said fingers being contractible and expansible, a boss presented by said nut and extending toward the base of the holder, opposed flanges presented by said nut having their edges terminating in substantially the same plane as the end of said boss to prevent entrance of said boss in the aperture provided in the base of the holder and opposed projections extending from the base of said holder to limit the movement of said nut in any direction generally crosswise relative to said fingers.

In testimony whereof, I have signed my name to this specification.

FRED S. CARR.