Dec. 20, 1938. J. G. HOFF 2,140,628

NUT OR BOLT HOLDER

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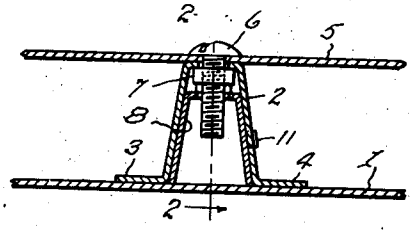


Fig. 1

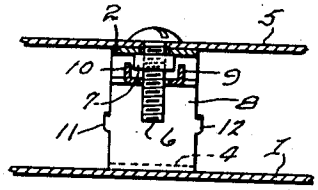


Fig. 2

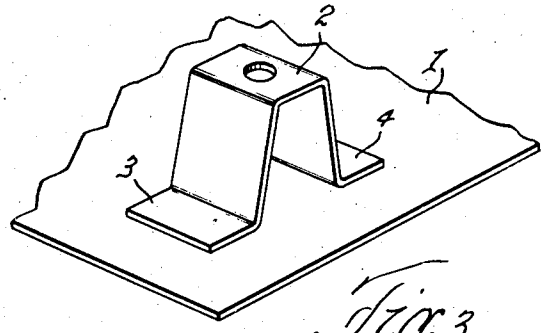


Fig. 3

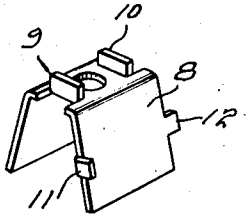


Fig. 4

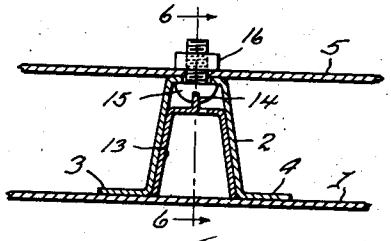


Fig. 5

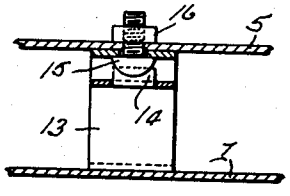


Fig. 6

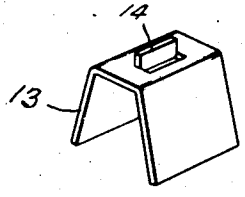


Fig. 7

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NUT OR BOLT HOLDER

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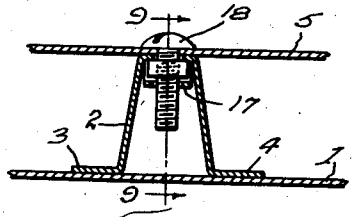


Fig. 8

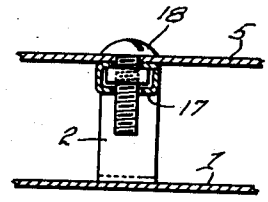


Fig. 9

Fig. 10

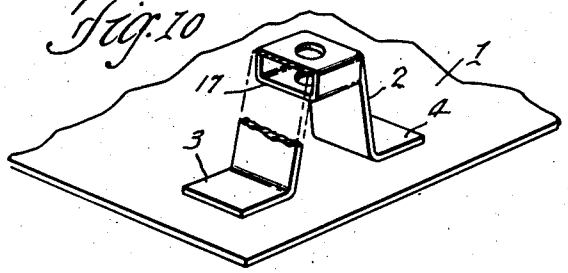
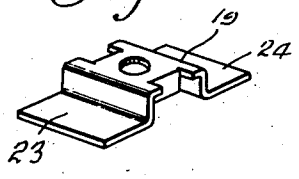


Fig. 11



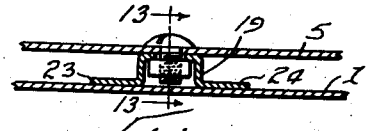


Fig. 12

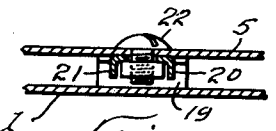


Fig. 13

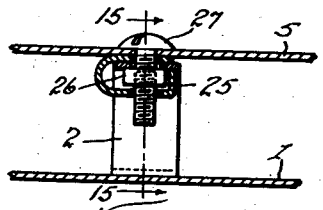


Fig. 14

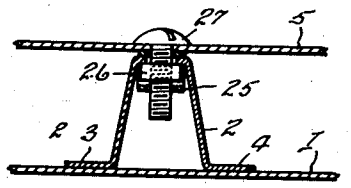


Fig. 15

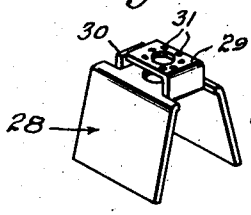


Fig. 16

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Patented Dec. 20, 1938 2,140,628

UNITED STATES PATENT OFFICE

2,140,628

NUT OR BOLT HOLDER

John G. Hoff, Mansfield, Ohio, assignor to The Tappan Stove Company, Mansfield, Ohio, a corporation of Ohio

Application May 15, 1937, Serial No. 142,860

2 Claims. (Cl. 189—36)

This invention relates to a securing or fastening device for securing a plate or part, one face of which is finished or enameled and the opposite face of which is unfinished, to a supporting structure in such a manner that the securing means does not extend through the finished part and is hidden from view.

Many articles in common use today are finished with a decorative coating of paint, vitreous enamel, chromium plating or other finish, and it is desirable that the finished side of the article present a smooth unbroken appearance. Nuts and bolts and similar securing means detract from the beauty of the article and also frequently rust and discolor the finish. It is also impractical to enamel any parts which are threaded or tapped and it is therefore obvious that nuts, bolts or threaded parts must be assembled after the enameling or finishing operation.

I have provided a securing or fastening device which comprises a clip and a nut or bolt retainer for securing enameled or finished parts in place and which is hidden from view and which can be secured to the part to be enameled before the enameling operation.

One of the objects of the invention is to provide a securing means for securing a finished part to an unfinished part where it is desirable to have the securing means hidden from view.

Another object of my invention is to provide a mechanical structure consisting of a part or plate having one side finished and the other side unfinished and which is secured to another part in such a manner that the nut or bolt for securing the parts in place will be hidden from view.

Another object of the invention is to provide means for holding a nut or bolt in inaccessible places where there is insufficient room for the operator to hold the parts in place.

Another object of the invention is to provide a fastening device of the character described which includes means for holding a nut or bolt in such a position that bolts of varying lengths may be used thus enabling the operator to draw the two parts together tightly.

A further object of the invention is to provide a nut or bolt retainer which consists essentially of a clip adapted to be welded to the unfinished face of a plate or part the opposite face of which is enameled or finished, the clip having means carried thereby for loosely and non-rotatably supporting the nut or bolt so as to enable it to be brought into proper alignment.

Further and more limited objects of the invention will appear as the description proceeds and by reference to the accompanying drawings in which several modifications are illustrated.

In the accompanying drawings, Fig. 1 is a transverse sectional view showing a plate having one side finished and secured to an unfinished part by means of my improved device; Fig. 2 is a vertical sectional view on tht line 2—2 of Fig. 1; Fig. 3 is a fragmentary perspective view showing the clip secured to the unfinished face of a plate and with the nut retainer removed therefrom; Fig. 4 is a perspective view of the nut retainer; Fig. 5 is a transverse sectional view of a modified form of my device which includes a bolt retainer and means for holding the bolt against rotation; Fig. 6 is a transverse sectional view on the line 6—6 of Fig. 5; Fig. 7 is a perspective view of the bolt retainer removed from the clip; Fig. 8 is a transverse sectional view of a second modification and showing a modified form of nut retainer; Fig. 9 is a transverse sectional view on the line 9—9 of Fig. 8; Fig. 10 is a fragmentary perspective view with parts broken away to more clearly illustrate the nut retainer; Fig. 11 is a perspective view of another modification of my invention disclosing a clip having means formed integral therewith for loosely but non-rotatably supporting the nut in place; Fig. 12 is a transverse sectional view illustrating the clip shown in Fig. 11 as it will appear when in use; Fig. 13 is a transverse sectional view on the line 13—13 of Fig. 12; Fig. 14 is a transverse sectional view of another modification of my invention disclosing a modified form of nut retainer; Fig. 15 is a transverse sectional view on the line 15—15 of Fig. 14; and Fig. 16 in a perspective view illustrating still another modification of my invention in which a clip is provided with integral means for holding the nut in place.

Referring now to the drawings, the reference character 1 designates a plate or part of the outer face of which is enameled or provided with a suitable finish and to which is secured a clip 2 which is shaped in section as shown most clearly in Figs. 1 and 2 and which has a pair of arms 3 and 4 which are spot welded to the unfinished face of the plate 1. The reference character 5 designates a part to which the finished plate is secured by means of a bolt 6 which extends through an opening provided in the clip and is held in place by a nut 7. Slidably fitting within the clip 2 and detachable therefrom is a nut retainer 8 shown in perspective in Fig. 4 and which has a pair of arms 9 and 10 bent upwardly therefrom which cooperate with the walls of the clip to provide a nut retainer which loosely but non-

rotatably supports the nut. The nut retainer is provided with bendable arm 11 and 12 which may be bent to secure the nut retainer to the clip.

In Figs. 5, 6 and 7 there is disclosed a modified form of retainer which is indicated by the reference character 13, shown in perspective in Fig. 7. The bolt retainer is substantially identical with the nut retainer except that it has a bent-up tongue 14 adapted to receive thereover a bolt 15 as shown in Fig. 5. In this case, the bolt is in the reversed position from that shown in Figs. 1 to 4 inclusive and the nut 16 is disposed on the opposite side of the plate 5. The tongue 15 engages in the slot provided in the bolt head and holds it against rotation. The side walls of the bolt retainer are somewhat resilient and frictionally engage the inner walls of the clip to hold the retainer in place so that it may be readily removed therefrom when and if desired.

In Figs. 3 and 9 there is disclosed another modified form of nut retainer which consists of a metal strip 17 bent to the shape shown in Figs. 8 and 9 so as to provide means for loosely but non-rotatably securing the nut in place. The bolt 18 is threadedly secured into the nut, as shown.

In Figs. 11, 12 and 13 there is disclosed another modification of the invention which consists essentially of a metal strip 19 shaped as shown most clearly in Fig. 11 and which has a pair of oppositely disposed arms 20 and 21 which are bent downwardly, as shown in Fig. 13, to provide means for loosely and non-rotatably supporting the nut. The bolt 22 threadedly engages the nut and serves to secure the parts 1 and 5 together in spaced relation. In this form of the invention the nut retainer and clip are formed in one piece and the arms 23 and 24 are spot welded to the unfinished face of the plate 1.

In Figs. 14 and 15 there is disclosed a still further modification of my invention in which the nut retainer consists of a strip of metal 25 bent to the shape shown in Figs. 14 and 15 and providing means for loosely but non-rotatably supporting the nut 26 which threadedly engages the bolt 27.

In Fig. 16 there is disclosed a still further modification of my invention which consists of a nut retainer 28 shaped as shown and provided with an arm 29 and a cooperating arm 30 so disposed as to provide means for loosely non-rotatably supporting the nut. The upper face of the arm 29 is provided with spaced depressions 31 which form projections on the underside thereof which engage the nut when the bolt is tightened and serves the purpose of a lock washer. The nut retainer 28 is adapted to be detachably secured within the clip 2.

It will now be clear that I have provided a nut or bolt retainer which will accomplish the objects of the invention as hereinbefore stated. It is of course to be understood that the various modifications herein disclosed are to be considered merely as illustrative and not in a limiting sense as the invention is limited only in accordance with the scope of the appended claims; and that further modifications may be made without departing from the spirit of my invention.

Having thus described my invention, what I claim is:

1. A mechanical structure consisting of a part having a finished face and an unfinished face, a second part secured in spaced relation to said first part, means detachably securing said parts together comprising a substantially U-shaped clip welded to the unfinished face of said first part and invisible from the front thereof, a substantially U-shaped carrier slidably and detachably secured in said U-shaped clip and having a portion shaped to loosely and non-rotatably support one half of said securing means, the other half of said securing means extending through said clip and said second part, the opposite walls of said carrier having face to face engagement with the adjacent walls of said clip and being resilient and readily bendable and providing means for frictionally securing said carrier within said clip.

2. A mechanical structure consisting of a part having a finished face and an unfinished face, a second part secured in spaced relation to said first part, means detachably securing said parts together comprising a substantially U-shaped clip welded to the unfinished face of said first part and invisible from the front thereof, a substantially U-shaped carrier slidably and detachably secured in said U-shaped clip and having a portion shaped to loosely and non-rotatably support one-half of said securing means, the other half of said securing means extending through said clip and said second part, the opposite walls of said carrier having face to face engagement with the adjacent walls of said clip and being resilient and readily bendable and providing means for frictionally securing said carrier within said clip, said carrier having a plurality of projections thereon disposed so as to serve the purpose of a lock washer.

JOHN G. HOFF.