Dec. 27, 1955 R. P. TURNER, JR 2,728,390

ATTACHMENT FITTINGS

Filed Aug. 17, 1951 2 Sheets-Sheet 1

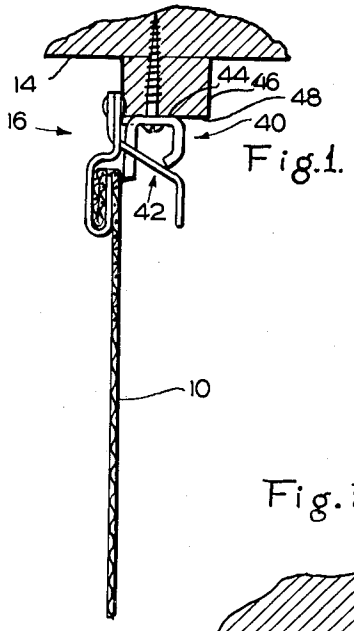


Fig. 1.

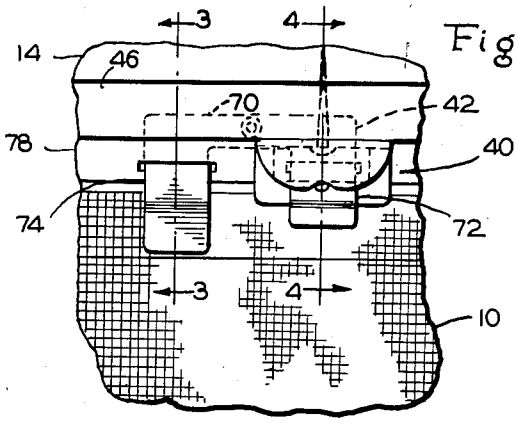


Fig 2.

Fig. 3.

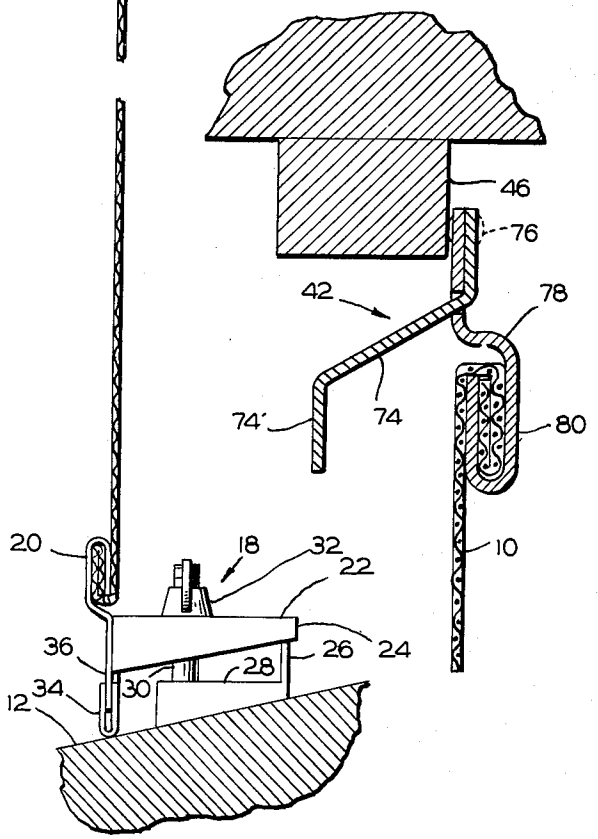
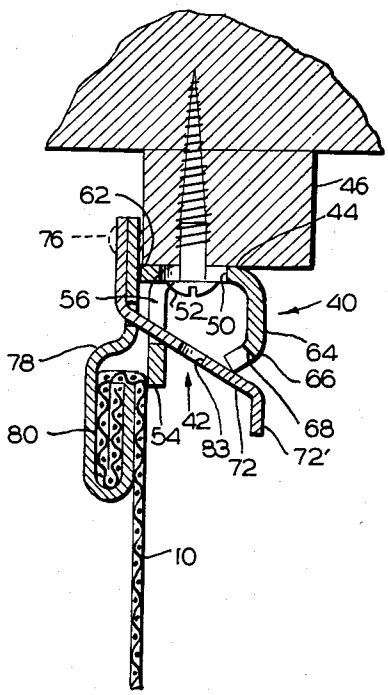


Fig. 4.



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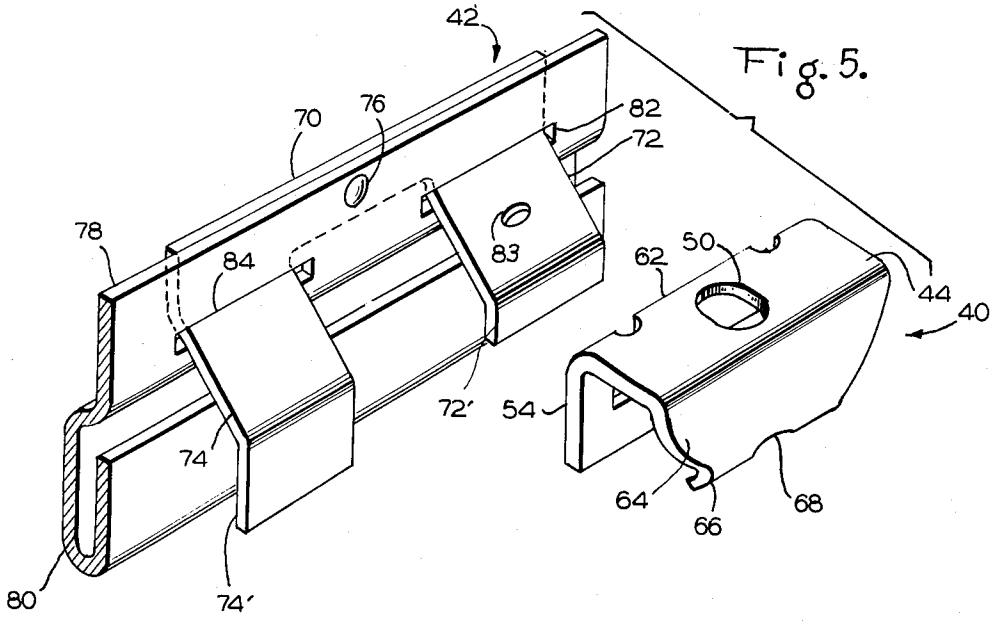


Fig. 5.

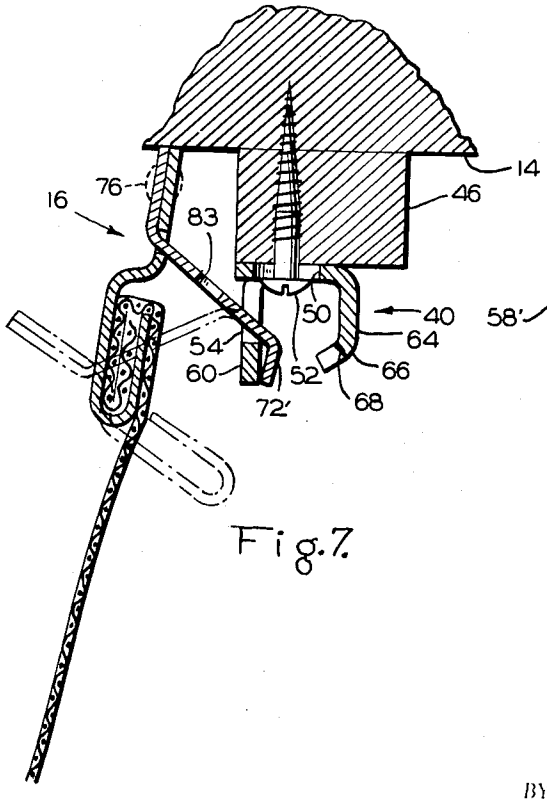


Fig. 7.

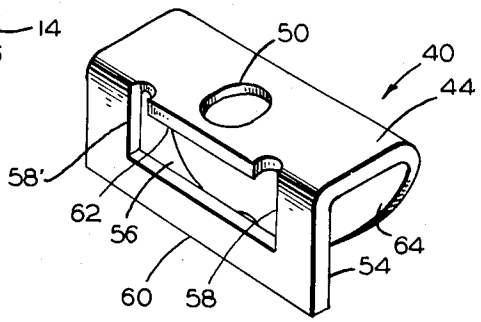


Fig. 6.

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ATTACHMENT FITTINGS

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Application August 17, 1951, Serial No. 242,389

3 Claims. (Cl. 160—327)

This invention relates to attachment fittings and in particular relates to bracket-hanger assemblies for releasably securing frameless screens and the like.

It will be understood throughout this specification that the bracket-hanger assemblies which are described below may be employed for many uses in supporting many different types of objects. However, since the invention particularly pertains to the hanging of frameless screens the description will proceed with reference to such screens.

In hanging frameless screens it is desirable that the upper end of the screen be firmly urged against the window frame to prevent any appreciable opening which would permit insects to pass through. Moreover, it is particularly desirable that considerable tension be placed on the screen so that the screen will be flat and moreover will lie firmly against the sides of the window frame blind-stops. In addition, it is extremely desirable that the brackets for hanging the screen be so constructed and arranged that they may be easily installed by persons not particularly skilled in the use of tools. By the use of the present invention a frameless screen, as well as many other objects, may be securely retained to meet the foregoing requirements and in addition, the hanger may be readily disengaged from the bracket when desired.

Therefore, it is a primary object of this invention to provide improved means for releasably securing frameless window screens or other objects.

It is a further object of the invention to provide improved means for releasably securing frameless screens or the like in such manner that forces tending to separate the members involved will not effect a release, and yet by a simple unhooking movement the members may be released.

It is a further object of this invention to provide improved means for releasably securing frameless window screens to the tops of window frames and the like.

It is a further object of this invention to provide an improved bracket having a portion for engaging a hanger to prevent bending of the hanger when forces are applied to the latter.

Further objects and the entire scope of the invention will become further apparent from the following detailed description and from the appended claims.

The invention may be best understood with reference to the accompanying drawings in which:

Figure 1 shows a side view of a complete screen assembly, partly in section, showing the upper bracket-hanger assembly as well as a lower clamping arrangement which may be conveniently employed.

Figure 2 shows a front view of the upper bracket-hanger assembly.

Figure 3 shows a sectional view taken along the line 3—3 of Figure 2.

Figure 4 shows a sectional view taken along the line 4—4 of Figure 2.

Figure 5 shows an exploded isometric view of the upper hanger and bracket.

Figure 6 shows yet another isometric view of the bracket.

Figure 7 is a view similar to that shown in Figure 4 but showing the screen and upper hanger bracket assembly in a partially released condition.

The general arrangement of a screen embodying the present invention may be understood with reference to Figure 1. The screen is designated **10** and is stretched between a window sill **12** and the upper window frame member **14**. The upper bracket-hanger assembly which constitutes the present invention is designated generally as **16** and this assembly will be described in considerable detail below. The lower clamping assembly designated generally as **18** does not form any part of the present invention and, therefore, will not be described in detail. The assembly **18** as here shown is similar to that shown in U. S. Patent 2,405,855, August 13, 1946, to D. J. Rust. It is believed sufficient here to explain that the screen **10** is crimped in a transverse channel bar **20** which has extending therefrom a clamping arm **22** which rests at its outer end **24** on an upright post **26** extending from a base **28** which is secured to the window sill **12**. A bolt **30** extends upwardly from base **28** and through a suitable aperture in arm **22** so that a wing nut **32** may be placed on the bolt **30** to exert a downward force on arm **22**. The arm **22** will thus tend to pivot about its point of engagement with the post **26** to exert a downward force on screen **10**. A U-shaped transverse channel **34** may be provided in floating relation to the downwardly extending skirt **36** of transverse bar **20** to compensate for any irregularities in the sill **12**.

Having described briefly the lower clamping arrangement **18**, attention will now be directed to the upper bracket-hanger assembly **16** which constitutes the present invention.

Referring now to Figures 2 through 6 as well as Figure 1, the assembly **16** comprises a bracket designated generally as **40** and a hanger designated generally as **42**. The bracket will be described first.

The bracket **40** is comprised of a base portion **44** which is intended to be placed in contact with the horizontal lower surface **48** of a strip **46**, commonly referred to as a blind-stop, which forms part of the upper member **14** of the window frame. This blind-stop also usually extends downwardly at the sides of the window frame. An elongated aperture **50** is provided in the base portion **44** to permit a screw **52** to extend upwardly into the blind-stop **46** to retain the bracket in position.

The bracket **40** is further characterized by provision of a first and normally front arm member **54** which extends from the base portion 44 at right angles to the latter. The arm **54** has provided therein a rectangular aperture **56** for receiving a hanger arm to be described below. By reason of the aperture **56** the arm **54** is characterized by two legs **58** and **58'** joined together at their ends remote from base portion **44** by transverse member **60**. As will be clear from the drawings, the legs **58**, **58'** and cross member **60** may be integral with base portion **44**. The bracket **40** is further characterized by having the edge of the base portion **44** between the legs **58** and **58'** slightly extended in the plane of base portion **44** to form an edge **62**. As may be best observed in Figure 4, the edge **62** increases the amount of flat bearing surface between the bracket and the blind-stop **46**. The fact that the edge **62** is located beyond the plane of the outer surface of arm **54** also permits the aperture **50** to extend further toward the plane of the arm **54** than would otherwise be possible. Yet another use of the edge **62** is to permit accurate alignment of the bracket with the blind-stop **46**, that is, edge **62** is easier to align

with the outer face of the blind-stop than a curved edge would be.

The bracket 40 is also characterized by provision of a second and normally rearward arm 64 which extends from the base portion 44 at the edge of the latter opposite the previously mentioned arm 54. The bracket arm 64 extends downwardly substantially parallel to arm 54 except at the lower extremity where it is directed inwardly as at 66 toward the arm 54. In the center of the extremity 66 there is provided a cut-away section 68 to permit ready access to the screw 52.

Referring now to the hanger 42 this is comprised of a transverse member 70 having a downwardly extending hanger arm 72 at one end and a downwardly extending handle 74 at the opposite end. The hanger is riveted or otherwise secured as at 76 to an upper transverse channel bar 78 which runs the width of the screen. As is the case with the lower transverse channel bar 20 the bar 78 is similarly provided with a clamping section 80 for receiving the screen 10.

It will be understood that two or more bracket-hanger assemblies will be employed as necessary across the width of the screen. The following description is directed to a single unit for convenience.

In the transverse channel bar 78 there is provided a first elongated rectangular aperture 82 for receiving the hanger arm 72 and another aperture 84 for receiving the handle 74. As may be understood from Figures 3, 4 and 5, the hanger arm 72 and the handle 74 are inclined to lie at an acute angle facing the direction in which the screen will be retained. Since the screen will be flexible this means that the acute angle is in relation to the direction of force to be applied to the transverse bar 78.

Since the space which the bracket-hanger assembly can occupy is invariably limited to the width of the blind-stop 46 the lower end 72' of the hanger arm 72 is formed to extend downwardly at an angle to the major portion of the hanger arm. Also, the extension 72' serves to prevent undesired release of the screen under certain circumstances to be described below. The lower end 74' of the handle 74 is also formed to extend downwardly and in a plane coinciding with that of end 72'.

The reason that the bracket-hanger assembly is preferably limited to the width of the blind-stop 46 is that any protrusions of the assembly beyond the stop may interfere with hanging storm sash and the like. This is a very significant aspect of the present invention, inasmuch as no satisfactory similar means has been previously known which does not so interfere with hanging storm sash and the like after the screen is removed.

As may be best understood with reference to Figure 4, when the screen is to be hung in the brackets (there will usually be at least two brackets in each installation) the hanger arm 72 will be inserted through the previously described aperture 56 and when downward tension is exerted on the screen 10, the angle of position of the hanger arm 72 will cause the transverse channel bar 78 to slide downwardly and inwardly until the bar 78 comes to rest as best shown in Figures 1, 3 and 4. In this position the bar 78 will rest firmly against the face of blind-stop 48 and the screen 10 at the crimping portion 80 may rest against the lower end of arm 54, if desired. It will be apparent that in this position, as the downward tension on screen 10 may be increased the slope of arm 72 will tend to more firmly engage the transverse bar 78 against the face of the blind-stop in the manner described.

To completely prevent any opening between the transverse bar 78 and blind-stop 46 the rivet 76 may be of the flat head type and counter-sunk into bar 78. Then, with edge 62 of bracket 40 aligned with the edge of stop 46, or further back, bar 78 will be perfectly flush against stop 46.

Normally, as may be understood with reference particularly to Figure 4, it would be expected that extreme

tension on the screen 10 would cause the hanger arm 72 to bend in a counterclockwise direction as viewed in Figure 4. It is to overcome such tendency to bend and yet permit the use of relatively light weight materials that the second arm 64 is provided. As will be observed in Figure 4, the lower extremity of arm 64 engages the arm 72 closely adjacent the point where the arm 72 is formed downwardly to provide the end 72'. Accordingly, the arm 72 is restrained from bending and a secure joint is provided. This arrangement of the second arm 64 in cooperation with the position of the arm 72 is a very significant feature of the present invention.

Aside from bending, tension on screen 10 will also cause the bar 70 to tend to rock counterclockwise as viewed in Figure 4. However, assuming crimp section 80 does not engage arm 54, such rocking will be prevented by engagement of arm 72 with bracket arm 64.

For use in initially installing the brackets 40, the arm 72 may be provided with apertures 83 through which a marking instrument may be extended to mark in the blind-stop 46 a suitable point for starting the screws 52.

When it is desired to clean the glass panes of a window with which screen 10 may be associated, it is customary for the person about to clean the window to release the bottom clamping assemblies 18 and then seat himself on the window sill in the conventional manner with the loosened screen lying over his back. Since there are no side members to the frameless screen, this position of the screen is not objectionable. However, there may be some tendency for the upper bracket-hanger assembly 16 to assume the solid-line position shown in Figure 7. That is, there will be a tendency for the assembly to move upwardly and outwardly. However, by virtue of the fact that the lower end 72' of arm 72 is formed downwardly this extension will engage the cross member 60 of bracket arm 54 to prevent the screen from becoming completely loosened. This arrangement has proved very effective in practice. If the screen has an inherent roll therein, as from having been tightly rolled up, the assembly 16 may be cocked in one direction or another relative to the position shown in Figure 7, but the screen will remain hooked.

To actually remove the screen when desired, as well as to insert the screen, it is only necessary to grasp the handles 74 and rotate the assembly 16 counterclockwise as viewed in Figure 7 until the assembly assumes the position shown in chain line in Figure 7. Then, as is clear from this figure, the ends 72' of the hanger arms will readily pass through the bracket apertures 56 and the screen completely released.

From the foregoing, it will be apparent that by this invention there is provided a simple and reliable bracket-hanger assembly which can withstand a considerable tension on a screen or like member without yielding and yet can be readily released, if desired. Moreover, particularly in the case of window screens, the assembly facilitates cleaning of the window without accidentally releasing the untensioned screen.

The foregoing detailed description is given only for the purpose of illustrating one embodiment of the invention and is not intended to limit the scope of the invention. On the contrary, the scope of the invention is to be determined from the appended claims.

What is claimed is:

1. A bracket-hanger assembly for releasably securing frameless window screening to a window frame including a blind stop and comprising in combination; a hanger attachable to one end of window screening to support the same and having an arm extending downwardly and toward the window frame when the screen is operatively positioned against the outer face thereof; and a bracket comprising an elongated base portion attachable directly to the horizontal surface of a blind stop of a window frame and parallel thereto, and a flange-like arm depending from each longitudinal edge of said base portion and spaced in a direction transverse to said edges a distance less than the

length of said hanger arm, the normally front arm having an aperture partially defined by a lower edge parallel to said base portion and engageable by said hanger arm for support thereby and the lower extremity of the normally rearward arm being below said lower edge of said aperture in said front arm and positioned to abut the upper surface of said hanger arm when operatively mounted upon said bracket, thereby preventing the hanger and arm from pivotally moving about said lower edge of said aperture in said bracket in a disconnecting direction.

2. The bracket-hanger assembly set forth in claim 1 further characterized by the lower extremity of said normally rearward arm being directed inwardly toward said normally front arm.

3. A bracket-hanger assembly for releasably securing frameless window screening to a window frame including a blind stop and comprising in combination; a hanger arm attachable to a slotted channel bar at one end of a tension screen to support the same and having a normally upper end arranged to be attached against the outer surface of said bar and extend through a slot in said bar and downwardly from the inner surface thereof, the lower extremity of said arm being bent downwardly so as to be substantially vertical in use, thereby serving to prevent accidental disconnection of said hanger from a bracket to support the same; and a bracket comprising an elongated base portion attachable directly to the blind stop of a window frame and parallel thereto, and a flange-like arm depending from each longitudinal edge of said base portion and spaced in a direction transverse to said edges, the normally front arm having an aperture partially defined by a lower edge parallel to said base portion and engageable by said hanger arm for support thereby and the lower extremity of the normally rearward arm being below said lower edge of said aperture in said front arm and positioned to abut the upper surface of said hanger arm when operatively mounted upon said bracket, thereby preventing the hanger and arm from pivotally moving about said lower edge of said aperture in said bracket in a disconnecting direction.

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