

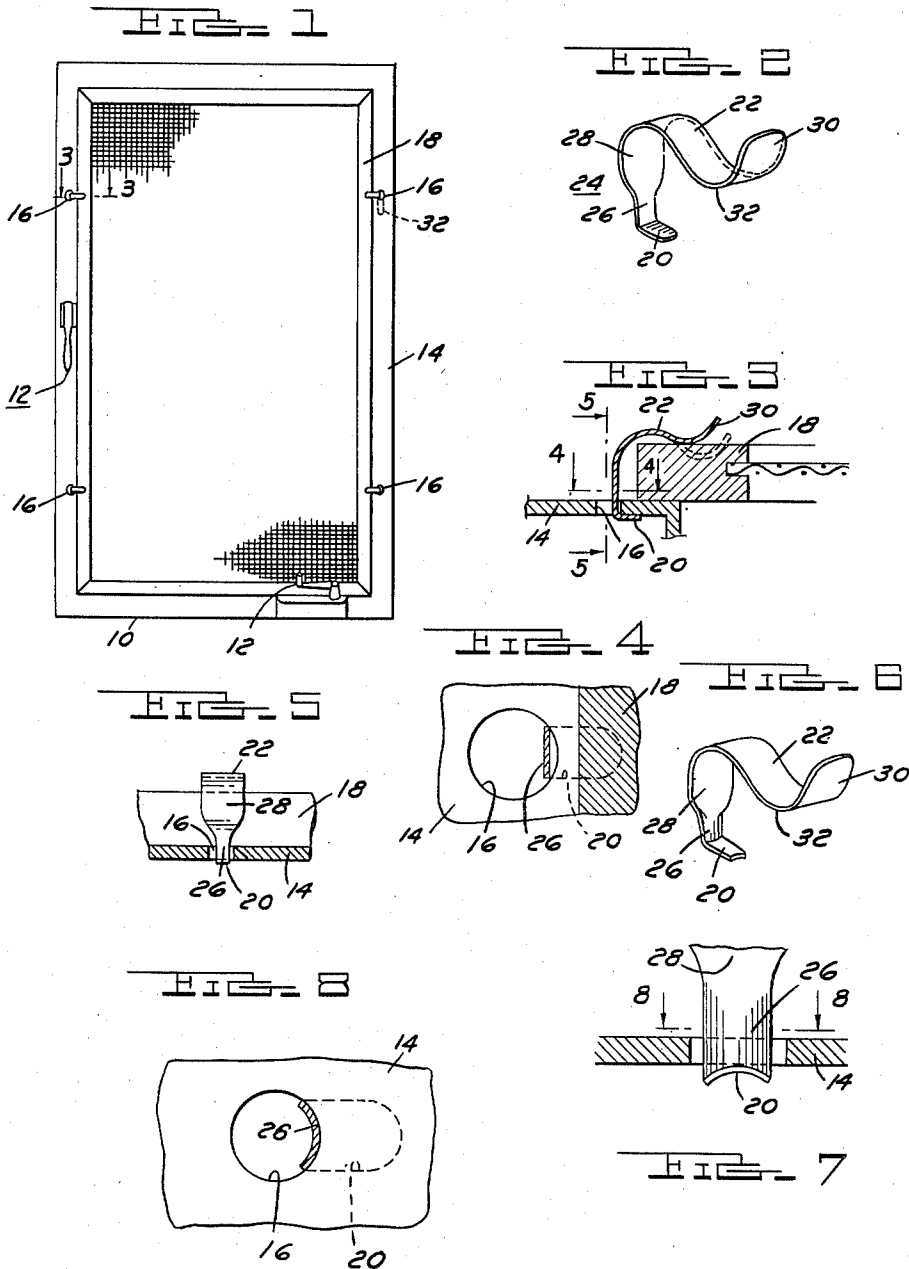
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SPRING CLIP

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SPRING CLIP

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1

This invention relates to an improved spring clip particularly designed to secure a screen or the like to a window frame assembly and to such assembly.

The invention particularly relates to metal window frame assemblies and to assemblies of this character wherein the window sash are pivotally supported to be swung outwardly by an operating mechanism which mechanism extends through the window frame for manipulation on the inside of the window. The screen in such structure is mounted on the inside of the window frame. In order to provide for replacement of screens with storm windows or for removal of screens or storm windows, it is desirable to provide means whereby a screen or the like may be quickly removably attached to or detached from the window frame.

This invention relates to a spring clip structure of an improved design which is capable of being employed to attach a screen or the like to a window frame and the frame is so constructed as to be adaptable to receive such clips.

An object is to provide a spring clip which is simple, inexpensive and capable of being readily attached to a window frame to be employed to removably secure the screen thereto. The clip is so mounted upon the frame that it may be quickly attached thereto or detached therefrom without the use of any tools. The clip is also so mounted upon the frame that when mounted thereon it is readily manipulable to engage a screen to hold the screen thereto.

This improved clip is a one-piece device so constructed that when mounted upon the window frame and engaged with a screen it exerts a yielding spring pressure upon the screen to hold it snugly against the frame. The clip is further so constructed that it may be readily manipulated to release the screen from its securement to the frame.

The construction is such that the clip is adapted to be secured to the frame without any auxiliary attaching means and without the aid of any tools. When the screen is not located upon the frame the clips as well as the screen are removed from the frame so that the window assembly does not exhibit any unsightly attachments.

Other objects, advantages and meritorious features will more fully appear from the following description, claims and accompanying drawing wherein:

Fig. 1 is an elevation of a metal window frame provided with a screen and equipped with the clips of this invention;

2

Fig. 2 is a perspective of an improved clip embodying the invention;

Fig. 3 is a cross sectional view taken on the line 3—3 of Fig. 1;

Fig. 4 is an enlarged cross sectional view taken on the line 4—4 of Fig. 3;

Fig. 5 is a cross sectional view taken on the line 5—5 of Fig. 3;

Fig. 6 is a perspective of a slightly modified form of clip as compared with that of Fig. 2;

Fig. 7 is an enlarged cross sectional view showing the clip illustrated in Fig. 6;

Fig. 8 is a cross sectional view taken on the line 8—8 of Fig. 7.

In the drawing a metal window frame is indicated by the numeral 10. This frame is provided with sash which are not shown in the drawing but which are so mounted as to be pivotally swung by means of a crank operator 12. The frame exhibits a pair of complementary face portions 14. These face portions are provided with apertures 16. The apertures in the two face portions are located, as shown, in corresponding aligned positions. The window frame is provided with a screen which is here illustrated as a metal frame screen 18. The screen is shown as of a size to superpose the frame seated upon the face portions between the apertures 16, all as shown in Fig. 1.

In order to secure such a screen in superposed position upon the frame there is provided spring clips in suitable number to hold the screen in place. Four such clips are here shown, one for each aperture 16. A clip of the character described is illustrated in Fig. 2. This clip might be described as of an angular shape having one leg portion which constitutes the base of the clip and which is bent at its end to exhibit a short projection or hook 20 and another leg portion 22 which is S-shaped in contour and, on the other hand, it might be described as a generally U-shaped clip having a short leg 20 and a relatively long leg 22 with the base of the clip being indicated as 24. The short leg 20 is of relatively narrow width as compared with the long leg 22. The clip shown is formed of sheet metal but it might be formed of any suitable material, such as spring wire or plastic. That portion of the base of the clip adjacent to the short leg 20 is also of reduced width and is indicated in Fig. 2 by the numeral 26. That portion of the base of the clip adjacent to the long leg 22 and indicated by the numeral 28 is of substantially the same width as the long leg.

The long leg of the clip is somewhat S-shaped in contour. It has an outer end portion 30

adapted to be engaged by the thumb and finger of an operator to spread the long leg outwardly away from the short leg. It has an intermediate portion 32 which is disposed in closer proximity to the short leg than any other portion of the long leg. The clip is formed of springy or resilient material.

When desired for use, the short leg 20 of the clip is inserted through an aperture 16 in the frame 12 until the leg 20 lies underneath one side of the frame and the reduced portion 26 of the clip is disposed rotatably within an aperture 16. One margin of a screen may be inserted under the two clips mounted on one face member of the frame. A clip would normally occupy the position shown in dotted line in Fig. 3, but when the frame of the screen is inserted underneath the clip the S-shaped leg 22 is swung resistingly outwardly so as to permit reception of the screen frame thereunder and the clip then exerts a spring tension on the screen frame to hold it against the window frame.

In Figs. 6, 7 and 8 the narrowed portion 36 of the U-shaped clip is rolled upon itself, as shown in Figs. 6, 7 and 8, into an arcuate shape with the convex side inwardly of the clip. This convex face, as shown particularly in Fig. 8, seats against the circular aperture 16 through the window frame and facilitates rotation of the clip within such aperture. Due to the fact that this portion of the clip is narrowed and the adjacent bottom portion 23 is of greater width, the shoulders formed between the portions 26 and 28 serve to retain a clip within the aperture. When it is desired to remove a screen the end portion 30 of the long leg can be grasped and the long leg spread away from the short leg and then the clip can be readily swung rotatably within the aperture to a released position, as indicated in dotted line in Fig. 1 at 32, thereby permitting ready removal of the screen.

What I claim is:

1. In a window and screen assembly comprising, in combination, a window frame defining a window opening and having opposite face portions exhibiting aligned apertures, a screen removably overlying the face portions of the frame extending thereacross between said apertures, spring clips removably rotatably supported within said apertures provided with yieldable spring portions adapted to engage over the margins of the screen seated upon the frame and urging the screen against said face portions.

2. In a window and screen assembly comprising, in combination, a window frame defining a window opening and having opposite face portions exhibiting aligned structures, a screen superimposing the frame and seated upon the face portions thereof between said apertures, a spring clip angular in shape and having one leg disposed rotatably within an aperture and terminating at one end in a hook engaging a face of the face

portion of the frame, the opposite leg of the clip overlying in spaced relationship the opposite face of said face portion of the frame and extending inwardly therefrom beyond the inner edge of the frame and engaged over said screen seated upon a face portion of the frame yieldingly urging said screen against said face portion.

3. A screen retainer clip angular in shape and having one leg the end portion of which is bent to form a hook projecting substantially perpendicularly away from the plane of the leg, the other leg of the clip projecting substantially perpendicularly away from the plane of the first leg and substantially parallel to said hook, said last mentioned leg being somewhat S-shaped and having its intermediate portion disposed in closer proximity to said hook than its outer end portion.

4. A screen retainer clip substantially U-shaped and having one leg substantially shorter than the other, said short leg having a width substantially less than that of the long leg, that portion of the bottom of the U-shaped clip adjacent to the short leg having a width substantially less than that portion of the bottom of the clip adjacent to the long leg and the long leg of the clip being generally S-shaped in contour and tensioned resiliently toward the short leg but resistingly yieldable to be bent away from the short leg.

5. A screen retainer clip generally U-shaped in contour, one leg of the clip being substantially shorter than the other leg, that portion of the base of the clip adjacent to the short leg having a width substantially less than that portion of the base of the clip adjacent to the long leg, the long leg of the clip being generally S-shaped in contour and having an intermediate portion disposed substantially closer to the short leg than the outer end portion of the S-shaped leg.

6. A spring clip generally U-shaped in contour having one leg substantially shorter than the other, the short leg of the clip having a length not greater than one half of the length of the long leg and having a width substantially less than the width of the long leg, that portion of the bottom of the clip adjacent to the short leg being crescent shaped in section and exhibiting a convex face inwardly of the clip, the long leg of the clip being generally S-shaped with the intermediate portion of the leg projecting most closely to the short leg and the outer end of the S-shaped leg being bent away from the short leg, said S-shaped leg being resilient.

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