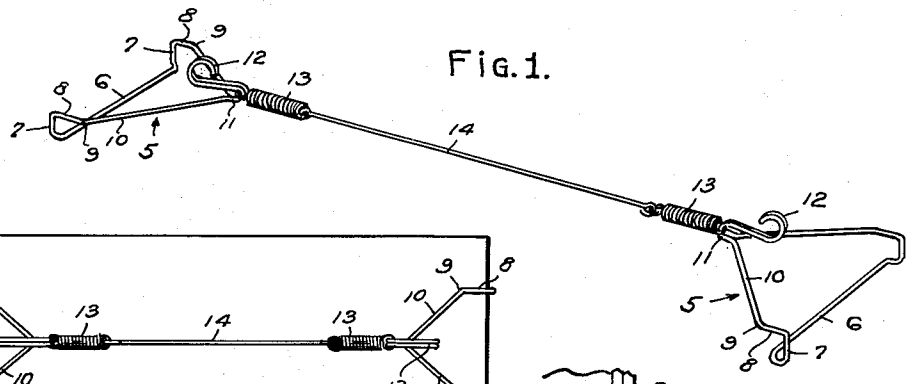
April 24, 1956 J. A. YOUNG 2,742,679

SPRING LOADED PRESSURE CLIP FOR STORM SHUTTERS

Filed Sept. 3, 1953

Fig. 1.



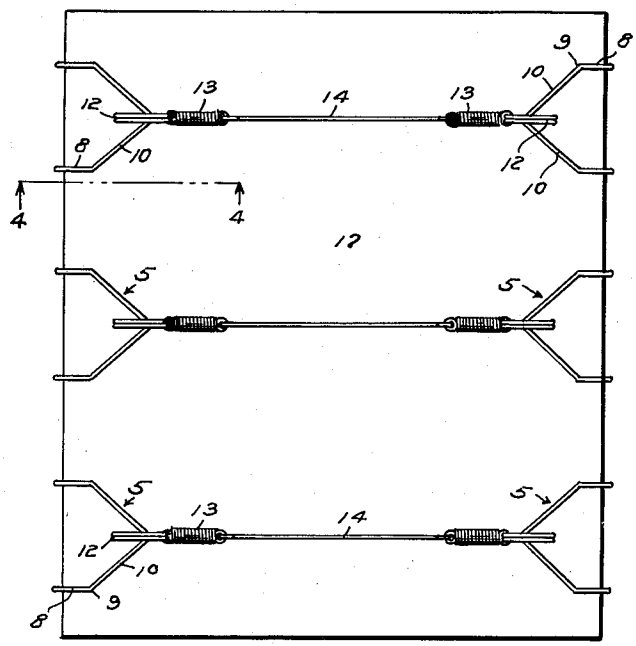


Fig. 2.

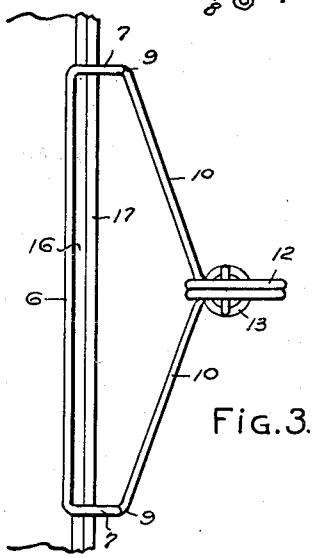


Fig. 3.

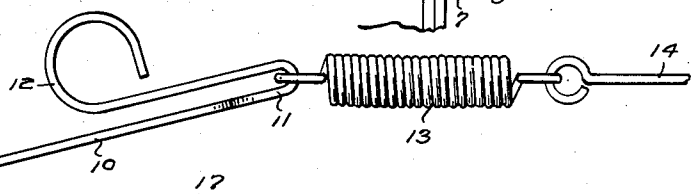


Fig. 4.

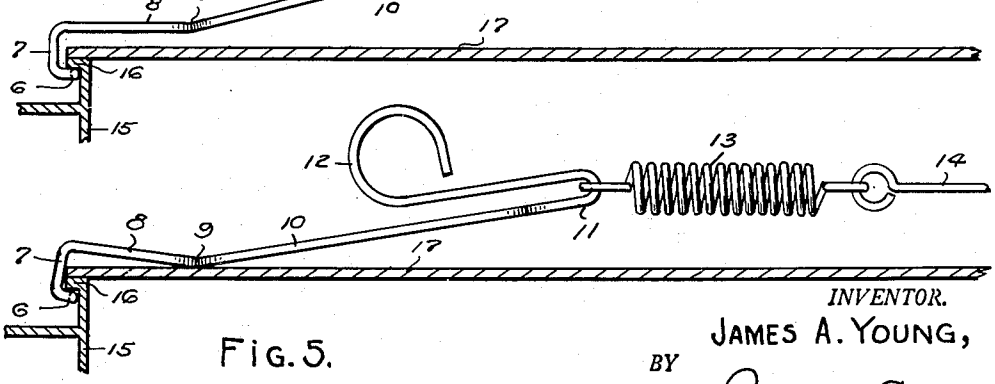


Fig. 5.

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SPRING LOADED PRESSURE CLIP FOR STORM SHUTTERS

James A. Young, Hollywood, Fla.

Application September 3, 1953, Serial No. 378,251

4 Claims. (Cl. 20—58)

This invention relates generally to storm shutters and particularly to spring loaded pressure clips for connecting and supporting the storm shutter in overlying relation to a window opening.

The invention has for its object a simple and highly effective clip device that overlies a storm shutter that has been placed in overlying relation to a window frame and with the clip being engaged beneath a structural flange of the window frame to prevent displacement of the shutter.

Another object of the invention resides in forming the clips in pairs connected by linkage and retractible springs whereby the clips upon being installed in hooked relation to the window frame will be retracted toward each other to firmly engage the hooks and with such retraction causing the clips to swing toward the shutter to impart a binding action thereon.

Another object of the invention resides in forming the clips of a single section of wire and to provide each clip with a finger loop to assist in installing them in position.

A further object of the invention resides in forming the clips with relatively long flange engaging hooks to impart a binding contact against the shutter at relatively widely spaced points and with the hooks so proportioned as to readily accommodate themselves to shutters of varying thicknesses.

Details of construction, operation and assembly will be more clearly understood by reference to the following specification and the accompanying drawings, wherein has been illustrated a preferred form of the device and wherein like characters of reference are employed to denote like parts throughout the several figures.

In the drawings:

Figure 1 is a perspective view of a pair of connected clips constructed in accordance with the invention,

Figure 2 is an outer face view of an installed storm shutter showing the connecting clips in use,

Figure 3 is a fragmentary edge view of the installed storm shutter showing one of the clips in hooked engagement with a structural flange of the window.

Figure 4 is an enlarged transverse section, taken on line 4—4 of Figure 2 and,

Figure 5 is a similar view with the clip in retracted and binding engagement with the storm shutter.

Referring specifically to the drawings, the numeral 5 designates a pair of identical clip devices, generally employed in co-operating pairs. Each clip is bent from a single section of suitable wire and comprises a relatively long hook embodying a bar 6, right angle upwardly directed legs 7 and right angle portions 8. The portions 8 are parallel to each other and are spaced a predetermined distance above the bar 6 by the legs 7. The space between the bar 6 and the portions 8 is calculated to be adequate to engage over relatively thick storm shutters when the bar 6 is engaged in hooked relation to the window.

From the portions 8, the wire is bent inwardly and upwardly at 9 to form a pair of inwardly angled legs 10 that terminate in parallel contacting engagement where they are jointly bent in a reverse parallel and spaced apart sections, forming a loop 11. The reversely bent sections terminate in a relatively large circular finger engaging loop 12. A retractile coil spring 13 has one eye connected to the loop 11 and an opposite eye connected to a link 14, through the medium of which the clips are spring loaded to be forcibly engaged with the window structure.

The window structure here illustrated at 15, is of the conventional extruded type equipped with an outer peripheral flange 16. The storm shutter 17, may be formed of any desirable material, such as metal, composition board or plywood and is dimensioned to be flush with the outer marginal edge of the flange 16.

In the illustration of Figure 2, three pairs of the clips have been shown for use with a relatively large size storm shutter and it will be apparent, that in smaller sizes, two pairs will be adequate to retain the shutter in position. On very small windows, it may be desirable to employ two pairs of the clips with but a single retractile spring 13 for each pair.

The operation is as follows:

With the shutter placed in position to completely overlie the window opening and with its edges flush with the edges of the flanges 16, the operator first engages one clip device 5 by directing the hook bar 6 beneath the flange 16 and swings the clip over the face of the shutter where it will assume a position substantially as illustrated in Figure 4. The operator then inserts his finger through the loop 12 of the opposite clip and pulls it outwardly against the tension of the springs 13 until he is able to engage the opposite hook bar 6 beneath the opposite flange 16. When this occurs, the tension of the springs will cause the clips to swing downwardly until the bends 9 firmly bind against the face of the shutter, which action binds the shutter against the face of the flanges 16, while the hook legs 7 prevent lateral shifting of the shutter. The clips will preferably be formed of relatively heavy spring wire which will permit the device to flex to such an extent as to always impart the binding contact against the face of the shutter, regardless of the thickness of the shutter material. The finger loops greatly facilitate the installation and removal of the clips and avoids damage or injury to the individual as so commonly occurs in other types of spring loaded retaining devices.

It will be apparent from the foregoing, that a very simply yet highly effective form of clip has been provided. The device is strong, durable and cheap to manufacture and will securely retain a storm shutter in overlying protective engagement with various forms of extruded metallic window frames. The spring loaded clips will effectively retain the shutter in position against substantially all pressures, such as are encountered in the well known tropical storms. The clips, while having been designed primarily for hooking engagement with the flanges of extruded frames, is just as readily adapted to other forms of window frames, such as wood, by the addition of any desirable and relatively inconspicuous brackets or lugs fixed upon the frames and the device is in no sense restricted to its use on the extruded frames as will be clearly apparent to those skilled in the art.

While a preferred form of the device has been illustrated and described, changes are contemplated, such as forming the clips in stamped sheet metal or by casting, such changes being limited as shall fall within the scope of the subjoined claims.

Having described my invention, what I claim as new and desire to secure by Letters Patent is:

1. A clip device of the character described for use in clamping a storm shutter over a window opening, that

is formed from a single section of spring wire that is bent intermediate its ends to form an elongated hook that is adapted to engage a portion of the window, the hook including a straight hook bar, a pair of upstanding parallel and right angle legs bent upwardly from the bar and offset outwardly with respect thereto, the legs being bent inwardly to form a pair of parallel and spaced apart extensions that are at a right angle to the legs, the wire from the parallel extensions being bent inwardly and upwardly toward each other to form upwardly angled converging legs, the converging legs meeting and bent to a straight parallel engagement and then bent upon themselves to form a spring attaching socket, the terminal ends of the wire being reversely bent to form a finger engaging loop, the clip at the points of bending from the parallel extensions to the converging legs forming a pair of spaced apart contact points that have a clamping engagement with the shutter when the clips are spring loaded with their hooks in hooked engagement with the window.

2. A device for securing a storm shutter to a window frame having outwardly directed side flanges comprising a pair of hooklike elements to engage over the side flanges and marginal edges of the storm shutter, each hooklike member having a side adapted to be spaced from the outer face of the storm shutter and to be arranged substantially parallel thereto, an extension secured to said side of each hooklike member and being horizontally inclined with respect to said side and storm shutter and diverging from the storm shutter when said side is substantially parallel to the storm shutter and spaced therefrom, and resilient retractile means extending between and connecting said extensions and drawing the hooklike members into clamping engagement with said side flanges and pivoting the hooklike members in a direction for causing said sides and extensions to swing inwardly and engage the outer side of the storm shutter at points substantial distances inwardly from the marginal sides of the storm shutter, whereby the device frictionally clamps the storm shutter to the outer face of the window frame.

3. A device for securing a storm shutter to the outer side of the window frame having outwardly projecting side flanges abutting the inner side of the shutter comprising hook elements engageable over the side flanges and marginal edges of the shutter in opposed relation,

each hook element including a relatively long outer side adapted to be spaced from the outer face of the shutter in substantially parallel relation thereto, an extension secured to said side of each hook element and extending inwardly thereof transversely of the shutter for a considerable distance and being horizontally inclined with respect to said side of the hook element and diverging from the shutter toward the transverse center of the shutter when said side is substantially parallel with the shutter and spaced therefrom, resilient retractile means extending between and connecting said extensions and drawing the hook elements toward each other, whereby the hook elements clampingly engage the side flanges and pivot about the side flanges for causing said sides and extensions to shift toward and contact the outer face of the shutter at points substantial distances inwardly of the side flanges and marginal edges of the shutter, and an element carried by each of said extensions to be engaged by the user of the device for separating the hook elements and stretching said resilient retractile means.

4. Means for securing a storm shutter to the outer side of a window frame having outwardly projecting side flanges which abut the inner face of the shutter comprising a pair of opposed members adapted to grip said side flanges and including body portions disposed forwardly of the shutter and adapted to be spaced somewhat from the shutter while said members are gripping said flanges, each of said body portions including a part diverging from the shutter toward the transverse center of the shutter and extending inwardly for a substantial distance from the adjacent side flange and marginal edge of the shutter, and resilient retractile means extending between and connecting said body portions and drawing said members together and serving to pivot the members about the side flanges, whereby the body portions swing inwardly toward and contact the outer face of the shutter substantial distances inwardly of the side flanges to frictionally clamp the shutter against the window frame.

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