Sept. 29, 1931. P. KOHL 1,825,595

STORM SASH OR SCREEN HANGER

Filed April 24, 1930 2 Sheets-Sheet 1

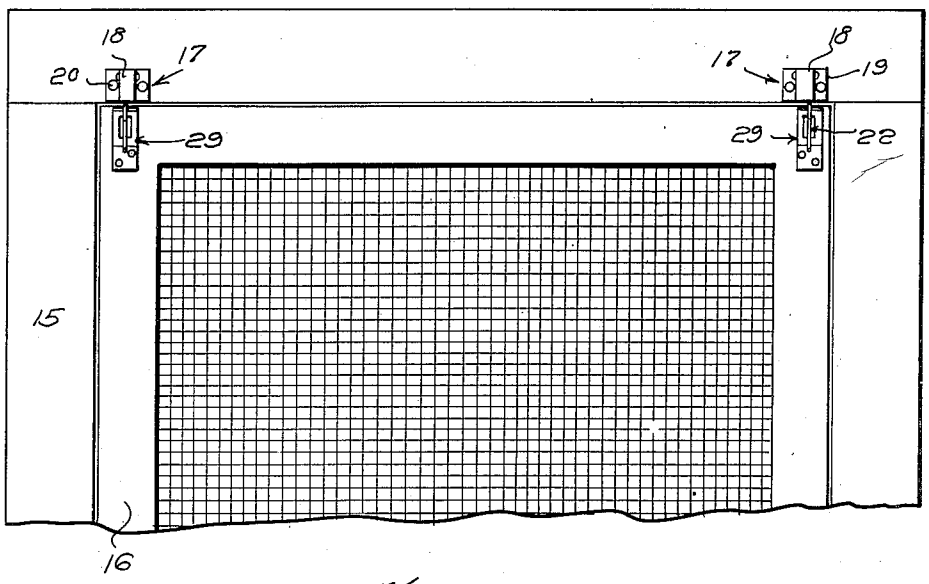


Fig. 1.

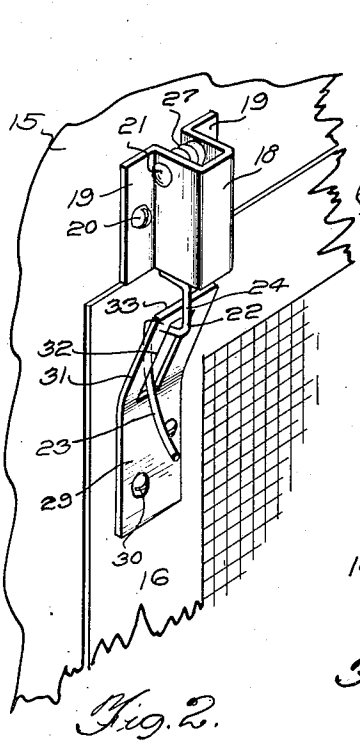


Fig. 2.

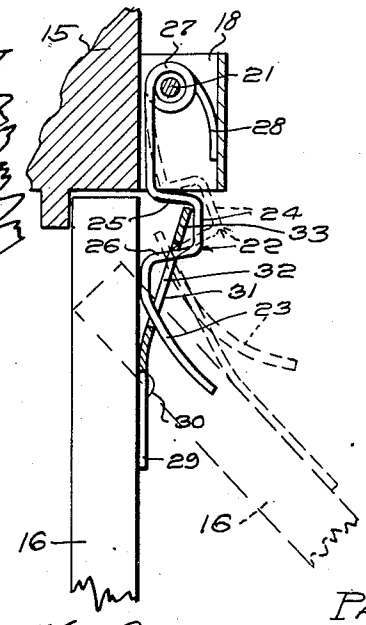


Fig. 3.

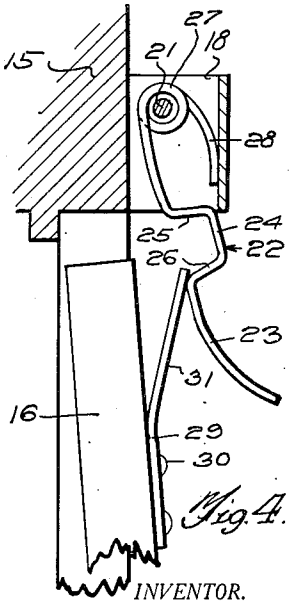


Fig. 4.

INVENTOR.

PAUL KOHL,

BY B P J Watson

ATTORNEY.

Sept. 29, 1931. P. KOHL 1,825,595

STORM SASH OR SCREEN HANGER

Filed April 24, 1930 2 Sheets-Sheet 2

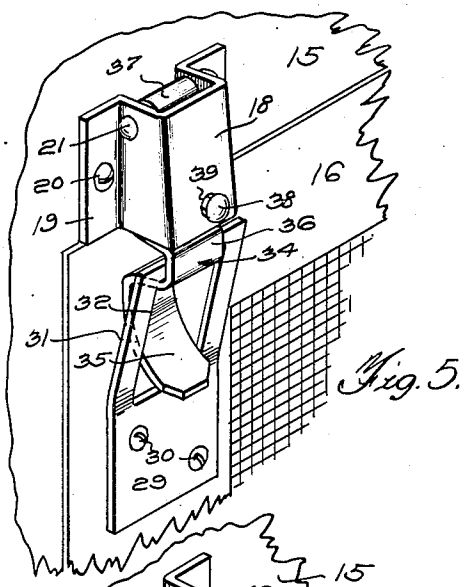


Fig. 5.

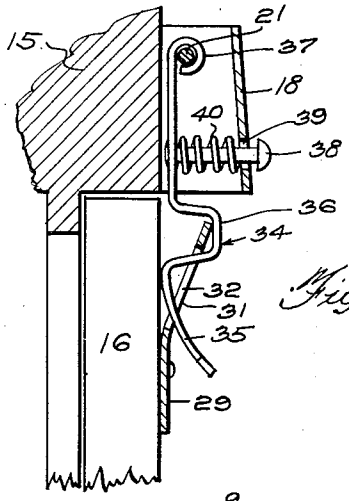


Fig. 6.

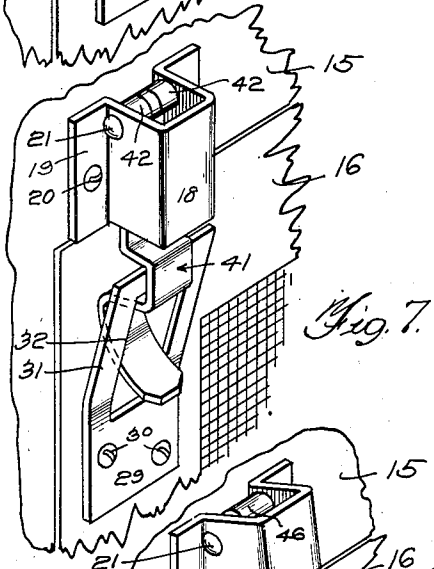


Fig. 7.

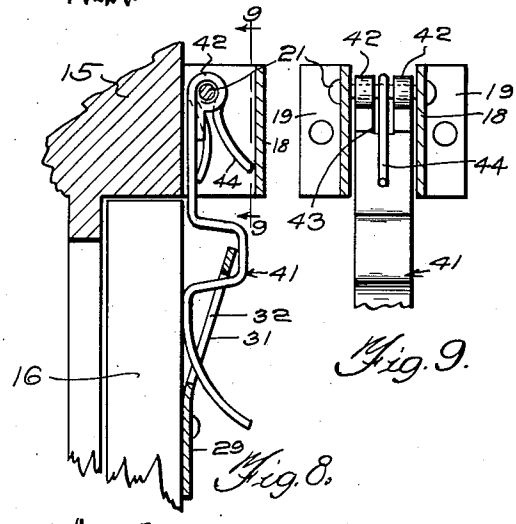


Fig. 9.

Fig. 8.

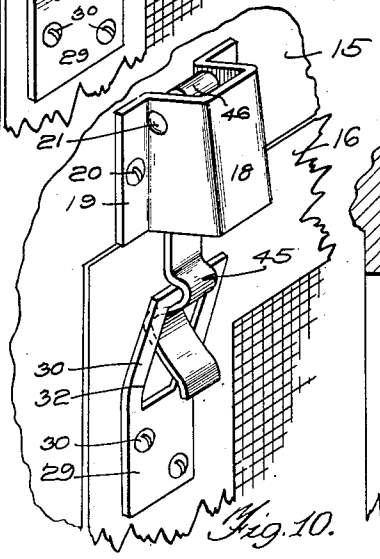


Fig. 10.

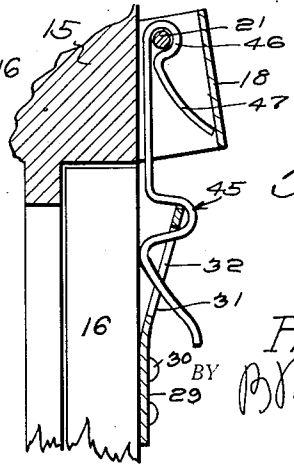


Fig. 11.

INVENTOR.
PAUL KOHL,
BY
ATTORNEY.

Patented Sept. 29, 1931 1,825,595

UNITED STATES PATENT OFFICE

PAUL KOHL, OF WAUSAU, WISCONSIN

STORM SASH OR SCREEN HANGER

Application filed April 24, 1930. Serial No. 447,031.

My invention relates to a hanger for storm sashes, screens, or the like.

An important object of the invention is to provide a hanger of the above mentioned character, which will permit of the quick and convenient insertion and removal of a storm sash, screen or the like, to or from its position in use.

A further object of the invention is to provide a hanger of the above mentioned character, which will permit of the storm sash or screen having its lower end swung outwardly for a substantial distance without releasing the upper end of the same, so that the windowsill or the like may be cleaned or swept.

A further object of the invention is to provide a device of the above mentioned character, which is simple in construction, inexpensive to manufacture, strong and durable.

Other objects and advantages of the invention will be apparent during the course of the following description.

In the accompanying drawings, forming a part of this specification, and in which like numerals are employed to designate like parts throughout the same,

Figure 1 is a side elevation of hangers embodying my invention, showing the same applied to a screen.

Figure 2 is a perspective view of the hanger,

Figure 3 is a central vertical longitudinal section through the same, showing the screen in the inner locked position,

Figure 4 is a similar view, showing the upper end of the screen being inserted into the inner position, prior to the interlocking of the elements of the hanger,

Figure 5 is a perspective view of a hanger embodying a second form of the invention,

Figure 6 is a central vertical longitudinal section through the same,

Figure 7 is a perspective view of a hanger embodying a third form of the invention,

Figure 8 is a central vertical longitudinal section through the same,

Figure 9 is a transverse section taken on line 9—9 of Figure 8,

Figure 10 is a perspective view of a hanger embodying a fourth form of the invention, and,

Figure 11 is a central vertical longitudinal section through the same.

In the drawings, wherein for the purpose of illustration, are shown preferred embodiments of my invention, attention being called first to Figures 1 to 11, inclusive, the numeral 15 designates a window frame adapted to receive the frame 16 of a screen, storm sash, or the like.

Attention now being called to Figures 1 to 4, inclusive, it will be seen that the numeral 17 designates hangers, arranged at the upper corners of the screen frame 16. Each of these hangers embodies a vertically arranged housing 18, formed of metal or the like, and this housing is provided with outwardly projecting flanges 19, secured to the window frame 15 by means of screws 20, or the like. The numeral 21 designates a transverse horizontal pivot element or pin extending through the upper end of the housing 20 and attached to the sides thereof. The numeral 22 designates a resilient swinging bolt, formed of a section of suitably stiff and resilient wire bent to provide an inclined or longitudinally curved end 23 and a U-shaped hook or socket 24 at the rear of the end, said hook having sides 25 and 26. The section of wire continues upwardly beyond the hook and is bent into a coil 27 and is continued beyond the coil in a pressure extension 28, engaging the inner side of the housing 18. The coil 27 is carried by the pivot element 21.

The numeral 29 designates a keeper, formed of metal or the like, and secured to the frame 16 near its upper corner, by screws 30, or the like. This keeper has an upper inclined or angularly disposed portion 31, provided with a slot 32, providing a closed end 33, adapted to enter the hook 24.

In operation of this form of hangers, to insert the frame 16 in place within the frame 15, the upper end of the frame 16 is moved upwardly within the frame 15, and the inclined end 31 of the keeper 29 engages beneath the inclined end 23 of the swinging bolt, forcing it upwardly. When the upper

end of the frame 16 approaches the end of its upward travel, the inclined end 31 enters the slot 32, and the closed end 33 enters the hook 24. The hook is slightly wider than the closed end 33 to permit of slight play. The lower end of the screen is held against outward lateral movement by any suitable means. The lower end of the screen may be swung outwardly for a substantial distance, without disengaging the keeper 29 and bolt 22, whereby the windowsill may be cleaned or swept. To separate the bolt and keeper, the lower end of the frame 16 is swung outwardly for a suitable distance, the inclined or curved end 31 then engaging and rolling upon the adjacent surface 16, raising the bolt until the side or shoulder 26 clears the transverse end 33. Particular attention is called to the fact that the upper end of the keeper 29 is inclined forwardly from the frame 16 toward its upper end. When the frame 16 is swung outwardly the upper end of the inclined portion 31 of the keeper 29 is swung inwardly, while the bolt is swung outwardly, these parts moving in opposite directions. This is the mode of operation of the device which produces certain advantages. It simplifies construction of the keeper and bolt. The bolt may be shortened and does not project downwardly below the keeper, and since these parts move in opposite directions, the distance that the screen must be moved to separate the keeper and bolt is accordingly reduced.

In Figures 5 and 6, I have shown a modified from of hanger. In this form of the invention, the swinging bolt 34 is formed of relatively stiff sheet metal and is of the same shape as the bolt 24 having a curved or inclined end 35 and hook 36. At its upper end, the bolt has a knuckle 37, which is pivoted upon the pin 21. The bolt 34 carries a pin 38 rigidly attached thereto, operating through an opening 39 in the housing 18, and a compressible coil spring 40 surrounds this pin and is confined between the bolt and the top of the housing. The opening or slot 32 in the inclined portion 31 of the keeper is made larger to receive the end of the bolt. All other parts of the hanger remain identical with those described in connection with the first form of the invention.

In Figures 7, 8 and 9, I have shown the hanger as embodying a swinging bolt 41 formed of relatively stiff sheet metal and having the identical shape of the bolt 34, Figures 5 and 6. This bolt has a pair of knuckles 42, pivotally receiving the pin 21, with a slot 43, arranged between the same. A generally U-shaped spring 44 is arranged within the slot 43 and is pivotally mounted upon the pin 21, and has one arm engaging the bolt 41 and its opposite arm engaging the top of the housing 18. All other parts remain substantially identical with those shown and described in connection with the first and second forms of the invention.

In Figures 10 and 11, I have shown a hanger embodying a swinging bolt 45 having substantially the shape of the bolt 41. This bolt has its upper end bent into a knuckle 46, pivoted upon the pin 21, and extended beyond the knuckle in the form of an arm 47, engaging the top of the housing 18. The bolt 45 is formed of resilient sheet metal. All other parts of this hanger remain substantially identical with those shown in connection with the first three forms of the invention.

As the operation of the second, third and fourth forms of the invention is substantially identical with that stated in connection with the first form of the invention, no further explanation is thought to be necessary.

It is to be understood that the forms of my invention, herewith shown and described, are to be taken as preferred examples of the same, and that various changes in the shape, size and arrangement of parts may be resorted to, without departing from the spirit of my invention, or the scope of the subjoined claims.

Having thus described my invention, I claim:—

1. A hanger for the frame of a storm sash or screen, or the like, comprising a swinging bolt having spring action and provided at its lower end with an inclined portion extending forwardly from the frame toward its lower end, said bolt being provided at the inner end of the inclined portion with a hook, means for attaching the bolt to a window frame, or the like, and a keeper to be secured to the first-named frame and having an upper inclined end portion extending forwardly from said frame toward its upper end, the inclined end portion of the keeper having an opening formed therein which is spaced from its upper end for providing a closed end element, the arrangement being such that the inclined end portion of the swinging bolt is adapted to enter said opening and the closed end element of the keeper is adapted to enter said hook, the swinging bolt and the upper end of the keeper swinging in opposite directions, when the screen is swung outwardly.

2. A hanger comprising a resilient bolt attached to a window frame or the like, said bolt having its lower end inclined and extending forwardly from the frame toward its lower end and provided at the upper end of such inclined portion with a hook, and a keeper secured to a frame to be inserted within the window frame, said keeper having an upper inclined portion extending forwardly from its frame toward its upper end and provided with an opening spaced from its upper end for affording a closed element,

the arrangement being such that the inclined portion of the bolt is adapted to enter said opening and the closed element of the keeper to enter said hook, the upper end of the keeper and the bolt moving in opposite directions when the frame of the keeper is swung outwardly.

3. A hanger comprising a rigid bolt having pivotal connection with a window frame or the like, said bolt having its lower end inclined and extending forwardly from the frame toward its lower end and provided at the upper end of such inclined portion with a hook, resilient means to swing the bolt inwardly, and a keeper secured to a frame to be inserted within the window frame, said keeper having an upper inclined portion extending forwardly from its frame toward its upper end and provided with an opening spaced from its upper end for affording a closed element, the arrangement being such that the inclined portion of the bolt is adapted to enter said opening and the closed element of the keeper to enter said hook, the upper end of the keeper and the bolt moving in opposite directions when the frame of the keeper is swung outwardly.

In testimony whereof I affix my signature.

PAUL KOHL.