March 26, 1957 J. S. STEPHENS 2,786,242

STRAIGHTENING DEVICE

Filed July 20, 1955

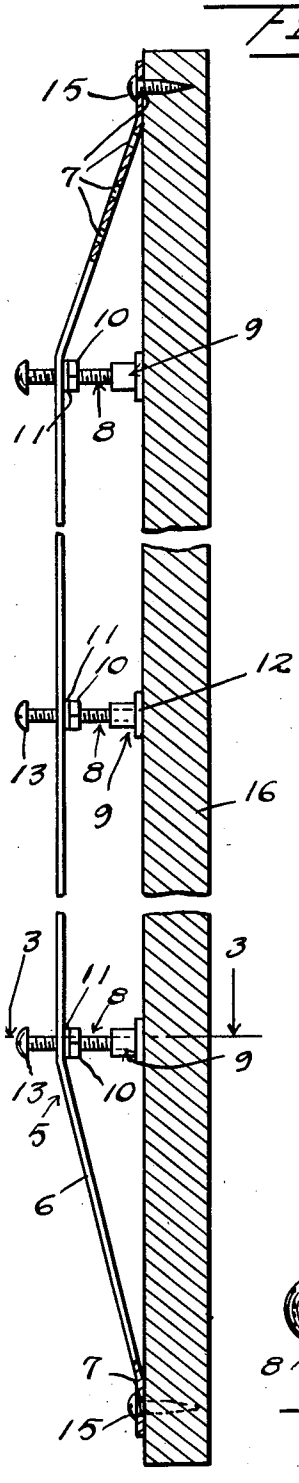


Fig. 2.

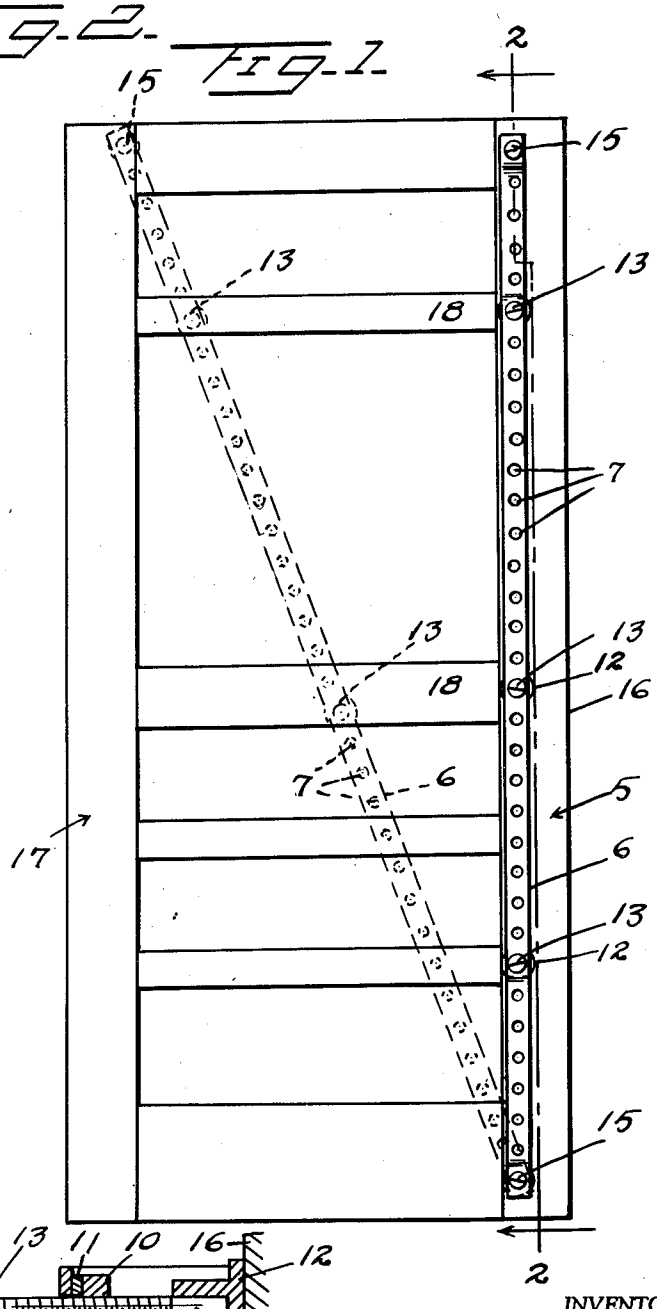


Fig. 1.

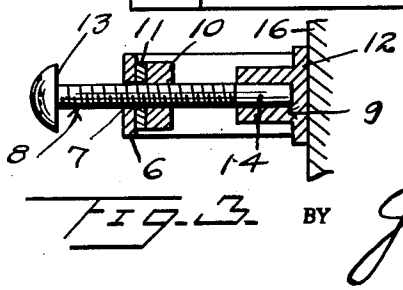


Fig. 3.

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United States Patent Office 2,786,242 Patented Mar. 26, 1957

2,786,242

STRAIGHTENING DEVICE

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Application July 20, 1955, Serial No. 523,199

1 Claim. (Cl. 20—38)

This invention relates to a novel device of simple construction for straightening crooked or warped doors and windows or stiles thereof.

More particularly, it is an aim of the present invention to provide a straightening device which may be used particularly for straightening doors without interfering with the use of the door while applied thereto.

A further object of the invention is to provide a straightening device wherein pressure may be exerted at a plurality of points and where most needed to effect the straightening of a crooked or warped area of a door, window or the like.

A further object of the invention is to provide a straightening device of extremely simple construction which may be very economically manufactured and which may be easily applied to or removed from a member to be straightened.

Still another object of the invention is to provide a straightening device requiring only two fastenings for securing the device to a member to be straightened so that the member will not be materially marred by application of the device thereto.

Various other objects and advantages of the invention will hereinafter become more fully apparent from the following description of the drawing, illustrating a presently preferred embodiment thereof, and wherein:

Figure 1 is a front elevational view showing the straightening device in an applied position on a door;

Figure 2 is an enlarged fragmentary longitudinal sectional view thereof, partly in side elevation, taken substantially along a plane as indicated by the line 2—2 of Figure 1, and

Figure 3 is a cross sectional view thereof, taken substantially along a plane as indicated by the line 3—3 of Figure 2.

Referring more specifically to the drawing, the straightening device in its entirety and comprising the invention is designated generally 5 and includes an elongated strip of a relatively flexible metal, such as a steel band 6, which is provided with longitudinally spaced openings 7 throughout substantially the length thereof arranged equal distances apart and relatively close together, as illustrated in Figures 1 and 2.

The straightening device 5 also includes a plurality of screws 8, socket members, designated generally 9, nuts 10 and washers 11. The socket members 9 are each provided with an enlarged base 12 defining the closed end thereof. Each screw 8 has a kerfed head 13 at one end thereof and an unthreaded shank end 14, as seen in Figure 3, disposed remote from the head 13 and which swivelly engages in a socket 9. The straightening device 5 also includes a pair of wood screws 15.

As illustrated in full lines in Figure 1, the straightening device 5 is shown utilized for straightening a stile 16 of a door 17. The metal strip or band 6 may be of various lengths. When utilized as illustrated in full lines in Figure 1, the strip 6 is of a length so that the

anchoring screws 15 may be applied through the end openings 7 thereof and may be anchored in the stile 16 adjacent the top and bottom edges of the door 17, as illustrated in Figure 1, and so that sufficient slack will exist in the strip 6 to enable it to be bowed outwardly relatively to the stile 16. The strip 6 is thus secured to the side of the stile 16 a portion of which, spaced from its ends, is warped in a direction toward the strip 6, or to the side of the stile the end portions of which are warped in a direction away from the strip. The screws 8 are inserted inwardly through selected openings 7 after which the washers 11 and nuts 10 are applied to the inner ends of the screws 8. The socket members 9 are positioned to engage the unthreaded ends 14 of the screws 8 with the base portions 12 of the sockets bearing against the stile 16. Any desired number of the units 8, 9, 10 and 11 may be utilized with the strip 6 depending upon the number of points that it is desired to apply pressure to the stile 16. The nuts 10 may then be turned while the screws are held stationary for advancing the nuts and washers toward the screw heads 13 and the portions of the strip 6 beneath which said nuts are disposed, or the nuts can be held while the screws 8 are turned with a screw driver in the sockets 9 in a proper direction for displacing the nuts 10 away from the sockets 9. It will thus be readily apparent that pressure will be exerted by the washers 11 and nuts 10 against spaced portions of the strip 6. As the strip 6 is anchored at its ends, this pressure will be transmitted through the screws 8 and sockets 9 to the areas of the stile 16 immediately adjacent the sockets 9 for straightening the stile. In the same manner, the end portions of the stile will be drawn toward a position in alignment with the intermediate portion or portions thereof. It will also be apparent that different amounts of pressure may be applied by the different screws 8 for straightening the stile where needed and to the extent required.

As no part of the straightening device 5 extends beyond the top and bottom edges of the stile 16, it will be readily apparent that the straightening device 5 may be left applied to the door 17 for any desired period of time to accomplish the desired result and during which time the door 17 may be used.

The straightening device 5 is illustrated in dotted lines in Figure 1 for straightening a warpage or crooked condition of the entire door 17. When so utilized, the strip 6 employed is somewhat longer than as shown in full lines in Figure 1 and is disposed diagonally of the door 17 and is anchored by the screw fastenings 15 adjacent diagonally opposite corners of the door 17 and so that the strip 6 will be spaced slightly from the top and bottom edges of the door. The pressure applying units 8, 9, 10, 11 may be positioned to engage selected openings 7 and so that the bases 12 of the sockets 9 can bear against cross members 18 of the door 17 where pressure can be applied without damage to the door. It will be apparent that used in either manner as illustrated in Figure 1, the straightening device 5 will only mar the door 17 by the two anchoring screws 15 being driven into the door, as the socket bases 12 merely bear flush against a surface of the door. The openings 7 are of sufficient size so that the screws 8 may turn and slide freely therein, as seen in Figure 3.

It will be apparent that the straightening device 5 may be used for straightening various types of doors, such as storm doors and screen doors, in addition to conventional doors, and various types of windows and other members such as wall panels or the like.

Various modifications and changes are contemplated and may obviously be resorted to, without departing from the spirit or scope of the invention as hereinafter defined by the appended claim.

I claim as my invention:

A straightening device of the character described comprising an elongated relatively flexible metal strip provided with a plurality of longitudinally spaced openings including an opening located adjacent each end of the strip, anchoring screws extending through said end openings of the strip and adapted to be anchored in spaced portions of a member to be straightened for anchoring said end portions of the strip to said member, said strip having an inner side facing said member and an outer side, a screw extending loosely through a selected one of said strip openings and supported by the strip, a socket member disposed between said strip and the member to be straightened and bearing against said member and in which one end of the screw seats for supporting the socket member, and a nut threadedly engaging said screw between the socket member and said strip said screw swivelly engaging in said socket member and having a kerfed head at the outer end thereof spaced outwardly from the outer side of the strip and by means of which the screw is rotatable in the socket member and strip opening and relative to the nut for causing the nut to exert a pressure against the inner side of the strip for moving the strip relative to the screw in a direction away from the socket member.

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