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# UNITED STATES PATENT OFFICE.

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## DOOR-BRACE.

985,184.

Specification of Letters Patent.

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*To all whom it may concern:*

Be it known that I, FREDERICK J. LEE, a citizen of the United States, residing at Wichita, in the county of Sedgwick and State of Kansas, have invented certain new and useful Improvements in Door-Braces, of which the following is a specification.

This invention relates to braces, having particular reference to a novel form of a brace adaptable to door and other like frames.

The invention has for an object to form a brace which is applicable to sagging doors, when the interfitting parts thereof are loose or worn, so as to hold the door frame in its correct shape to properly fit within the door casing.

Another object of this invention is to form a simple and economical device of this character which can be readily applied to a door, and which may be tightened from time to time to return the door frame, after settling, to its correct shape.

For a full understanding of the invention, reference is to be had to the following description and accompanying drawing, in which:

Figure 1 is a detail perspective view of the upper end of a door having the improved brace applied thereto. Fig. 2 is a horizontal section through the key and key plate employed. Fig. 3 is an end view of the support, disclosing the cable in section and passing over the support. Fig. 4 is a detail perspective view of the key employed. Fig. 5 is a perspective view of the upper end of a door having a modified form of brace applied thereto. Fig. 6 is a detail perspective view of a modified form of key and supporting plate therefor.

Corresponding and like parts are referred to in the following description and indicated in all the views of the accompanying drawing by the same reference characters.

Referring to the drawing in which the improved brace is disclosed as applied to a panel door, the numeral 10 designates the top rail of the door and the numerals 11 and 12 designate the hanging and the lock stiles respectively.

The improved brace essentially comprises a holder 13, the same being preferably in the form of an ordinary wood screw. The holder 13 carries the outer end of a cable 14 which is suitably twisted or otherwise secured about the holder 13. The holder 13

is positioned on one side of the lock stile 12 at a point slightly below the lower edge of the top rail 10. The cable 14 extends upwardly and inwardly from the holder 13 and passes over a support 15.

Referring particularly to Fig. 3 of the drawings, the support is formed of a length of metal flat at its upper end and providing a bearing plate 16 suitably apertured for the reception of the screw 17. The screw 17 may be substituted by any detachable fastening device for engagement in the top rail 10 to hingedly retain the support against the door. The lower end of the length of metal is rounded and curved outwardly and upwardly to form a hook 18 for the reception of the cable 14. The cable 14 passes inwardly against the side of the top rail 10 and is secured at its inner end to the key 19. The key, referring particularly to Figs. 2 and 4 of the drawings, is preferably in the form of the common wood screw having a head 20 provided in the usual manner with the kerf 21 for the reception of a screw driver or the like for rotating the key. The head 20 carries a plurality of inwardly extending ratchet teeth 22. The stem of the key is provided with a transverse opening 23 through which is passed the inner end of the cable 14. The key 19 engages through the side of the hanging stile 11, adjacent its upper end and in substantially horizontal alinement with the support 15.

The key plate 24 rests loosely about a key 19 and is secured to the side of the hanging stile 11. The key plate 24 is provided with a tongue 25 stamped longitudinally therefrom and extending outwardly into the path of the ratchet teeth 22.

In the modified form disclosed in Fig. 5, the holder 13 carries the outer end of the cable 14 as above described. The top rail 10 is provided with a support 15<sup>a</sup> the same comprising a stout wood screw having its head spaced from the side of the top rail 10 to accommodate the cable 14 which is passed upwardly and inwardly therefrom. In its modified form the hanging stile 11 carries a key 19<sup>a</sup> to receive the inner end of the cable 14. The key 19<sup>a</sup> is in the form of an ordinary wood screw having a transverse opening, similar to the opening 23 of the key 19, for the reception of the inner extremity of the cable 14 in its form, disclosed in Fig. 5, the key 19<sup>a</sup> depends upon its binding action in the hanging stile 11 to prevent the back-



ward rotation thereof after drawing the cable 14 taut.

In the preferred form the support is hung at one side and adjacent the outer end of the top rail 10, and swings about the screw 17 to accommodate the support to the adjustment of the cable 14. In this manner the cable 14 is easily drawn taut without kinking or bending the cable at too sharp an angle. Friction between the hook 18 and the cable 14 is practically eliminated since the support swings inwardly about the screw 17 as the cable is tightened. The key 19 may be turned by a screw driver or other light tool to wind the inner end of the cable 14 about the key, the key being held in such position by the seating of the tongue 25 against one of the adjacent teeth 22.

In the modification disclosed in Fig. 6 the key 19<sup>a</sup> is provided with a head 20<sup>a</sup> having ratchet teeth 22<sup>a</sup> in the periphery thereof. The key plate 24<sup>a</sup> is provided with an outturned flange at its lower edge, as at 24<sup>b</sup>, the inner end of the flange being turned inwardly to engage with the teeth 22<sup>a</sup>. The plate 24<sup>a</sup> is recessed as at 24<sup>c</sup> to accommodate the inturned tongue 25<sup>a</sup> formed on the inner extremity of the flange 24<sup>b</sup>.

Having thus described the invention, what is claimed as new is:

1. The combination with a door having a top rail and hanging and lock stiles, of a holder attached to the lock-stile below the top rail, a support disposed against one side of the top rail adjacent its outer end, a cable

secured to the holder and passing upwardly and inwardly over the support to draw the lock-stile against the top rail, a key rotatably disposed in the side of the hinged stile, and having teeth formed at the outer end thereof, said key carrying the inner end of the cable which is wound thereabout, and a clamping plate carried by the hanging stile and surrounding the key, and having a yielding tongue to engage with the teeth of the key.

2. A door brace including a holder disposed upon the lock-stile of a door, a key adjustably disposed upon the hanging stile of the door, a cable carried by the holder and connected to the key to be wound thereabout, and a support carried upon the top rail of the door for supporting the central portion of the cable across the upper and outer corner of the door.

3. A door brace including a holder arranged adjacent to the outer edge and the upper end of the door, a support disposed midway of the edges of the door and in diagonal alinement with the holder, a cable carried by the holder and passing over the support to draw the same together, and an adjustable key carried by the door adjacent to its inner edge for tightening the cable.

In testimony whereof, I affix my signature in presence of two witnesses.

FREDERICK J. LEE. [L. s.]

Witnesses:

C. A. MATSAN,  
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