Feb. 12, 1929. 1,701,766

U. E. TUOMI

CASEMENT WINDOW AND DOOR STRAIGHTENER

Filed April 1, 1926

Fig. 1.

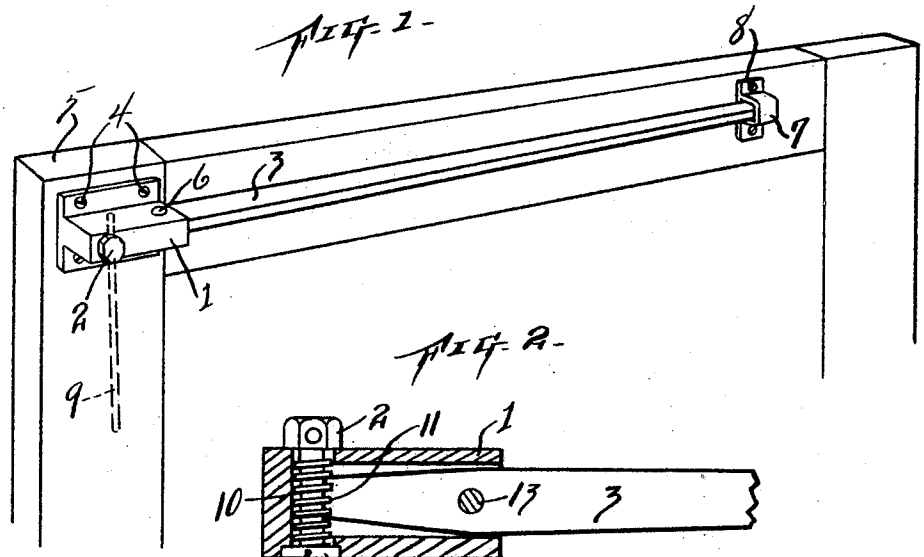


Fig. 2.

Fig. 3.

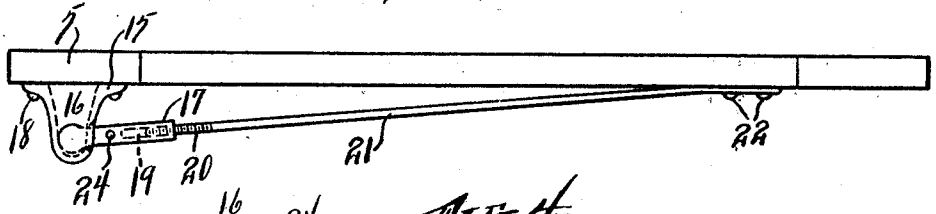
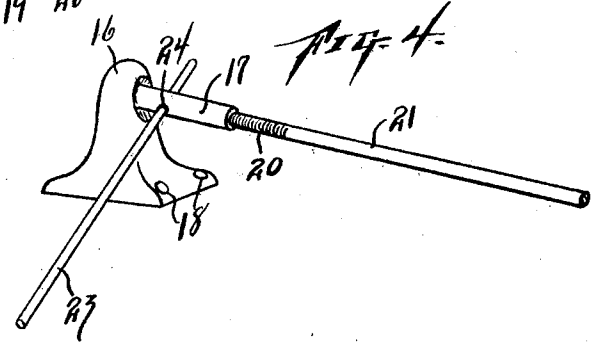


Fig. 4.



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UNITED STATES PATENT OFFICE.

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CASEMENT WINDOW AND DOOR STRAIGHTENER.

Application filed April 1, 1926. Serial No. 99,022.

My invention relates to improvements in devices for straightening all descriptions of windows and for straightening doors, and preventing windows and doors from becoming warped, and the objects of my improvement are, as follows:

First, to provide attachments and devices for straightening warped windows and doors that will be practical, inexpensive, easily operated and which can be quickly applied.

Second, to provide attachments and devices for casement windows and doors that will hold them in their original shape and will keep them from becoming warped;

Third, to allow the making of windows and doors less expensive, as it will allow a lighter and less expensive material to be used in their construction.

A particular feature of my invention is, the simplicity of the design as it can be operated or applied to most any door, window, screen, etc., by a person inexperienced in mechanical or carpenter line, thereby saving both money and labor.

I attain these objects by the arrangement of attachments and devices illustrated in the accompanying drawings, in which

Fig. 1 shows the attachment and devices of the casement window and door straightener as applied to a window or door whereby the adjustment end of the device is fastened to one of the stiles or sides, and the lever fastened to the top rail. Fig. 2, a sectional view showing the adjustment end of the casement window and door straightener shown in Fig. 1; Fig. 3, a top view showing the attachments and devices of a casement window and door straightener as applied to a window or door, and is of a little different design from the casement window and door straightener shown in Figs. 1 and 2, but answers the same purpose, and is inserted mainly to show one of the various changes in size and shape as well as modifications that may be made without departing from the spirit of the invention and within the scope of the appended claims. Fig. 4, different view showing part of the casement window and door straightener shown in Fig. 3, and illustrating the adjustments.

Similar numerals refer to similar parts throughout the several views. (See Figs. 1 and 2.) Number 1 is a casting housing, accommodating revolving screw 2 and lever 3. Screws 4 hold housing 1 in proper place as shown in drawing attached to stile 5 of window or door. Hole 6 accommodates hinge on which lever 3 operates and the casting 7 holds lever 3 tight against rail of window or door and is attached to rail by screws 8. The revolving screw 2 fits against the rear housing using it as a brace, and screw can easily be operated by a tool 9 by placing it in the hole in the head of the screw and revolving same. Threads 10 of revolving screw 2 mesh with threads 11 in lever 3. Pin 12 passes through revolving screw 2 holding it in place in casting 1 and allows screw to turn when operated. A washer for screw 2 fits in slot 14 of housing 1 between pin 12 and housing 1, and when screw 2 is revolved it either raises or lowers lever 3 as desired. Consequently, when screw 2 is operated it will straighten a window or door as desired, by screw threads 10 pushing or pulling threaded end of lever 3 which operates on hinge 13 which fits in hole 6 and is fastened to housing 1, thereby moving lever 3 which is held tight at one end of the window or door rail by casting 7.

(See Figs. 3 and 4.) 15 is a casting housing with socket 16 to accommodate ball end of lever 17 whereby it will turn in socket. The housing is shown held in place on door or window stile 5 by screws 18. One end of ball lever 17 is threaded 19 to accommodate the threads 20 on the end of extension lever 21. The other end of the extension lever is fastened to window or door rail by screws 22, and when ball lever 17 is turned it either screws on or off extension lever 21, therefore pulling or pushing same, consequently straightening door or window as desired, socket 16 is so designed that ball lever 17 can be slipped in or out of large end of socket opening. 23 is a convenient tool for turning ball lever when tool is pushed through hole 24 in ball lever 17.

From the foregoing description and the accompanying drawings, it is believed that a clear enough understanding of the invention is to be had to render further description unnecessary.

Various changes in size and shape as well as modification may be made without departing from the spirit of the invention and within the scope of the appended claims.

The invention having been described, what I claim as new and useful is:—

1. A device for straightening doors, windows, window frames and the like, compris-

ing a bar, a housing, one end of the bar being pivotally seated in the housing, the housing being attached to the window frame or object to be straightened, the opposite end of the bar attached at a point on the window or object to be straightened, so as to provide an angular relation of the bar to produce a straightening effect on the window frame, and means for moving one end of the bar to produce a straightening effect on the window frame.

2. A device as set out in claim 1, said housing including a spiral screw, said bar having one end provided with teeth in mesh with said screw; said bar pivoted to one end of the housing.

3. A device as set out in claim 1, said means for moving the bar including a spiral screw with a capstan head, the inner end of the bar provided with teeth in mesh with the screw, and pivoted to one end of the housing; said bar when moved by the screw producing a fulcrum-like movement on the object to be straightened.

4. A device for straightening warped doors, windows, window frames and the like, comprising a bar attached at one end near to a corner of the door or the like and extending practically across the door or the like, a housing attached near another corner of the door or the like and extending sufficiently far from the door so that when the bar is attached to the housing it will be out of the plane of the surface of the door, means for tensioning the bar to straighten the door comprising a screw having a hole therein and a detachable rod insertible in said hole for operating the screw.

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