July 5, 1932. A. YURKOVITCH 1,866,146

DOOR REENFORCEMENT

Filed Feb. 24, 1931

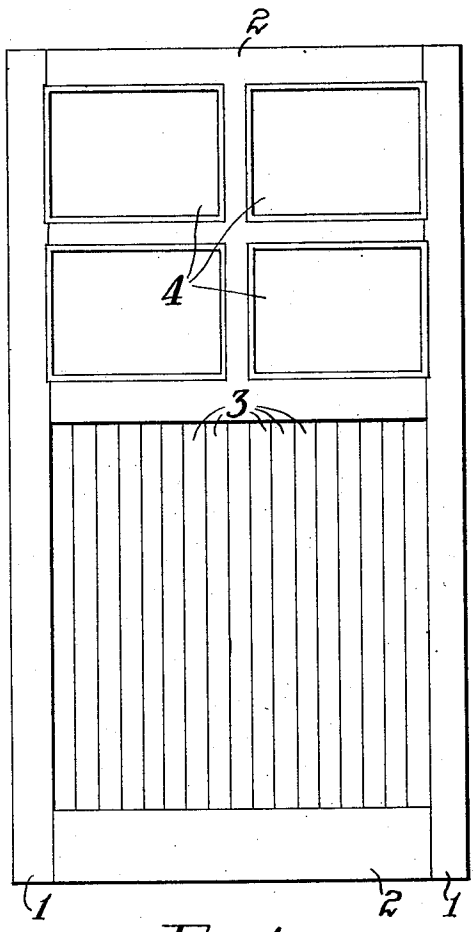


Fig. 1.

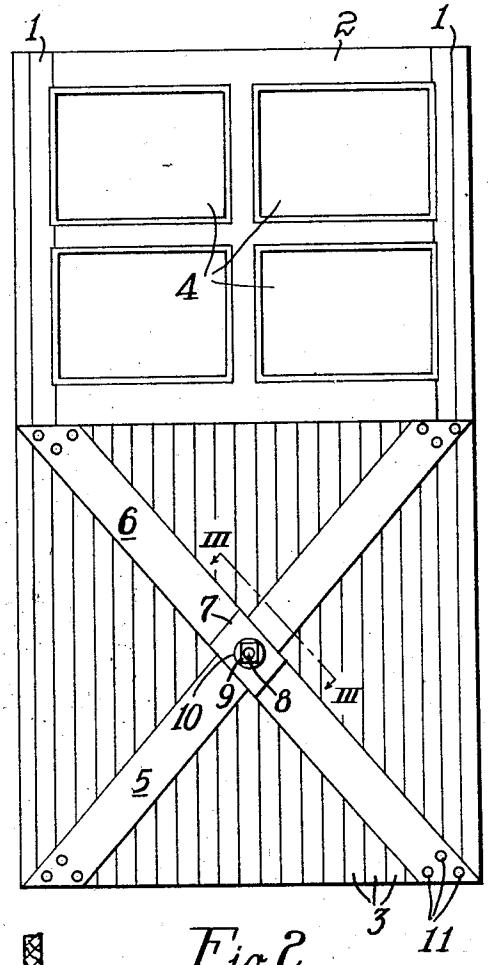


Fig. 2.

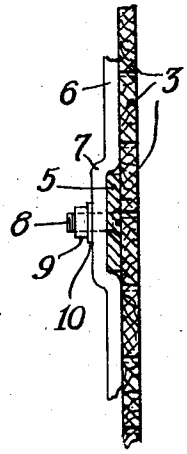


Fig. 3.

INVENTOR

Anton Yurkovitch

By Green & McCallister

His Attorneys

Patented July 5, 1932 1,866,146

UNITED STATES PATENT OFFICE

ANTON YURKOVITCH, OF PITTSBURGH, PENNSYLVANIA

DOOR REENFORCEMENT

Application filed February 24, 1931. Serial No. 517,741.

This invention relates to doors, and more particularly to a novel and improved reenforcement therefor and to a method of bracing and reinforcing such.

In this day of the automobile the majority of residences and dwellings have garage facilities in connection therewith. The usual garage is constructed with a wooden door or doors, and these because of their necessary size, are prone to sag and lose their original shape with use and passage of time. Cheap construction is probably the main factor in this deterioration, but since such construction is general throughout the country it becomes apparent that any means whereby the advantages of a heavier and more substantial structure may be realized without the additional cost of such, presents unquestionable utility. One frequent cause of deterioration results from the wooden members of the door becoming unglued or shrunken.

An object of this invention is to provide a means of reenforcing wooden doors which have been constructed in the ordinary manner and with the usual amount and quality of material, so that they will not sag or become distorted by use or passage of time.

A further object is to provide a new and practicable means of restoring doors that have sagged, to their former condition, and maintaining them thus properly aligned for an indefinite period.

Broadly speaking, the object of the invention is to provide a strong, economical and serviceable reenforcement for doors for garages and buildings of all types, which reenforced door may be constructed at a saving of cost and/or material yet still render a satisfaction and service superior to the unreenforced type of door. Although my invention is conceived particularly with garage doors in view, it may be used in connection with any other wooden door where reenforcement is needed or deemed desirable.

These and other objects made apparent throughout the further description of this invention are attained by means of a reenforcing device, the peculiar construction and application of which is an important feature of my invention. In order that my invention may be fully understood, I will proceed to describe it with reference to the accompanying drawing, wherein:

Figure 1 is a front elevation of an ordinary garage door or the like.

Fig. 2 is a rear elevation of the same door with my reenforcing device applied thereto.

Fig. 3 is a fragmentary view of the device taken along the line III—III of Fig. 2.

Like numbers indicate corresponding parts in all figures.

In the drawing, Figure 1 shows an ordinary wooden door adapted for use on garages or similar structures and constructed with side stiles 1, top and bottom rails 2, intermediate flooring strips 3 forming the lower panel, and a plurality of windows 4. This construction is usual in a door of this type and forms no part of the present invention. I do not, however, intend to limit myself to any special type of door structure herein, my invention residing rather in the reenforcing means for bracing and strengthening wooden doors of any suitable construction as will be hereinafter set forth more fully.

Fig. 2 shows my invention applied to such a wooden door. The reenforcing device consists of two strips of strap iron or other suitable material assembled in X-formation and shaped substantially as shown. The relative proportions of the strips may be varied to suit any given requirements as to weight, space, and the like. One piece, 5, is flat, while the other piece, 6, has an offset 7, for receiving piece 5, said piece 6 being otherwise similar to 5. This provides a flush arrangement occupying minimum space and not itself damaging the door. A bolt 8, nut 9, and washer 10, are used to join the strips together. Holes 11 are drilled or pierced at the ends of the pieces as indicated, for inserting bolts or screws or the like.

Fig. 3 is a sectional view of the device showing in detail the offset 7 and the manner in which screw or bolt 8 may be countersunk in member 5.

Although I have shown my device in what I deem to be its preferable form of two strips in X-formation, more than two strips may be used in its construction, such addition se-

curing additional rigidity to the completed structure.

When being applied to a new door, my device is opened to the proper extent and then rigidly secured to stiles 1, through strips or slats 3, at points 11. It is noted that the connection is to the stiles, as otherwise the desired firmness of frame is not secured and the door may sag as if without reenforcement. My invention has the effect of drawing together and clamping the parts of the door in proper position. When the device is in place, nut 9 may be tightened, which further adds to the stability of the reenforced door.

When applied to an old door that has already become warped or distorted and lost its shape, the method is substantially the same as previously indicated. In such a case, however, it is best first to wedge or block up the door at its bottom and on the side opposite the hinges so that the desired or original shape is secured, and then firmly to secure my device in place by means of bolts or screws at points 11. The wedges or blocks may then be removed and the door now swings freely, firmly reenforced and held in alignment by my superior device for accomplishing this purpose.

With the clamping bolt 8 slightly loosened it is a simple matter to pivotally swing the bars away from each other or toward each other properly adjust the X-frame to the panel while the same is being fastened thereto at the ends of the straps 5 and 6; and then when the X-frame is completely fastened to the panel the nut on the bolt is tightened up to give rigidity to the X-frame. It is important that the inner faces of both straps shall be flush or even with each other and that the head of the bolt shall have its head countersunk in the inner face of the underlying strap so that the straps shall lie their full length in contact with the panel. It is also important that the threaded end of the bolt shall extend outwardly through registering holes in the straps so that the two overlying straps may be solidly clamped together at their points of intersection after the frame is affixed to the door, thereby insuring the greatest possible degree of rigidity after the frame is affixed to the door and also rendering it unnecessary to bolt the X-frame to the door at the center.

It will be seen further that my construction lends itself nicely to marketing the device as a separate hardware article in that the pivot bolt permits the two straps to be swung into parallelism, one on the other, and clamped in that relationship for packing and shipping.

What I claim as new and desire to secure by Letters Patent is:

A door having a panel, side stiles and top and bottom rails, and means for maintaining the same in square, said means comprising a metal X-reenforcement having its four ends secured to said stiles and rails, said X-reenforcement being composed of two intersecting strips of strap iron, one of which is offset to receive the other at the point of intersection, the inner faces of the slats being flush or even with each other so as to lie flat against the panel, a pivot bolt extending through registering holes in the intersecting parts of the straps, the head of the bolt being countersunk in the inner face of the inner strip, and a clamping nut threaded onto the outer, projecting end of the bolt.

In testimony whereof, I have hereunto subscribed my name this 21st day of February, 1931.

ANTON YURKOVITCH.