A. R. GORDON.

ATTACHMENT FOR SCREEN DOORS.

APPLICATION FILED SEPT. 15, 1908.

931,411.

Patented Aug. 17, 1909.

Fig 1.

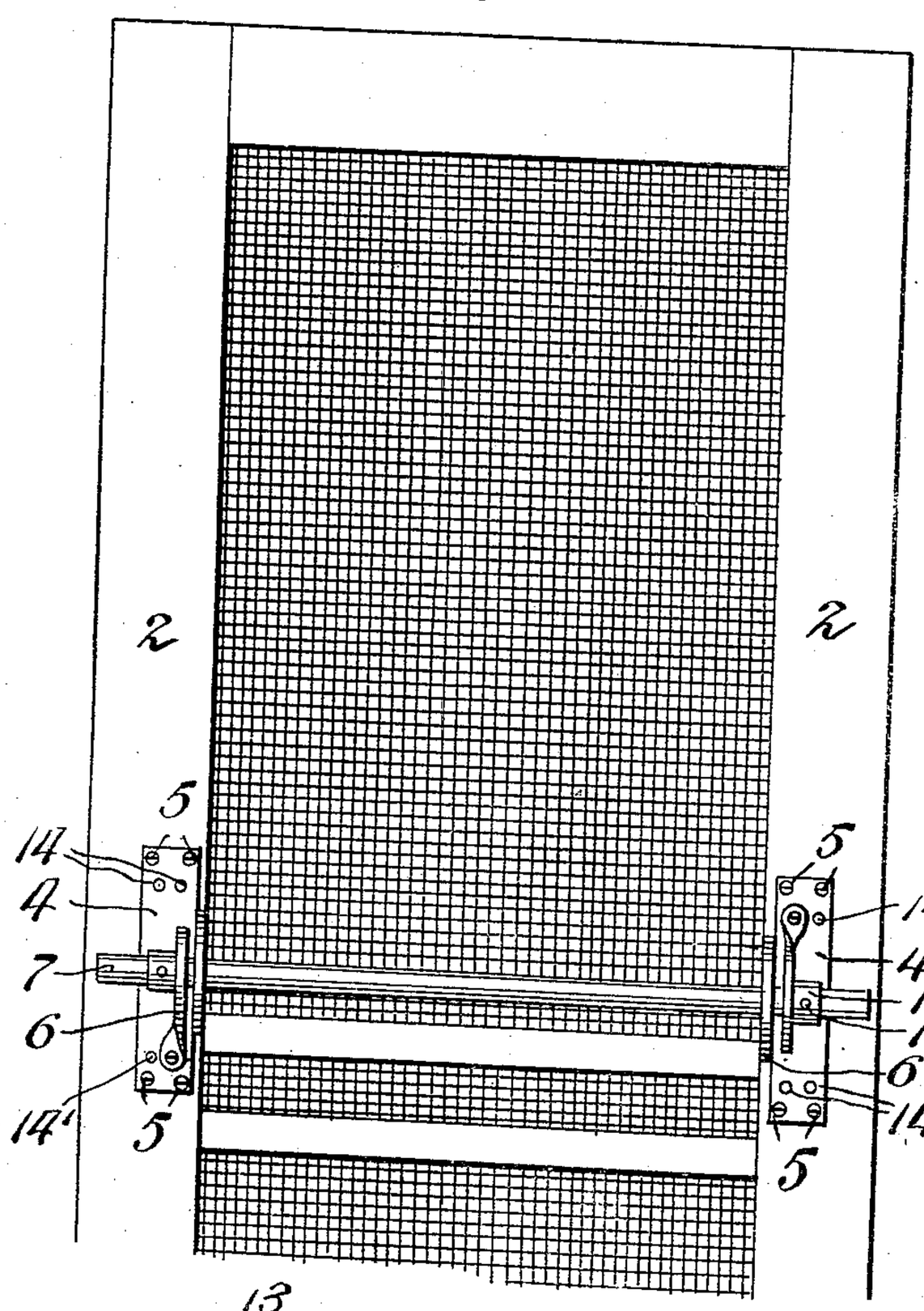


Fig 2.

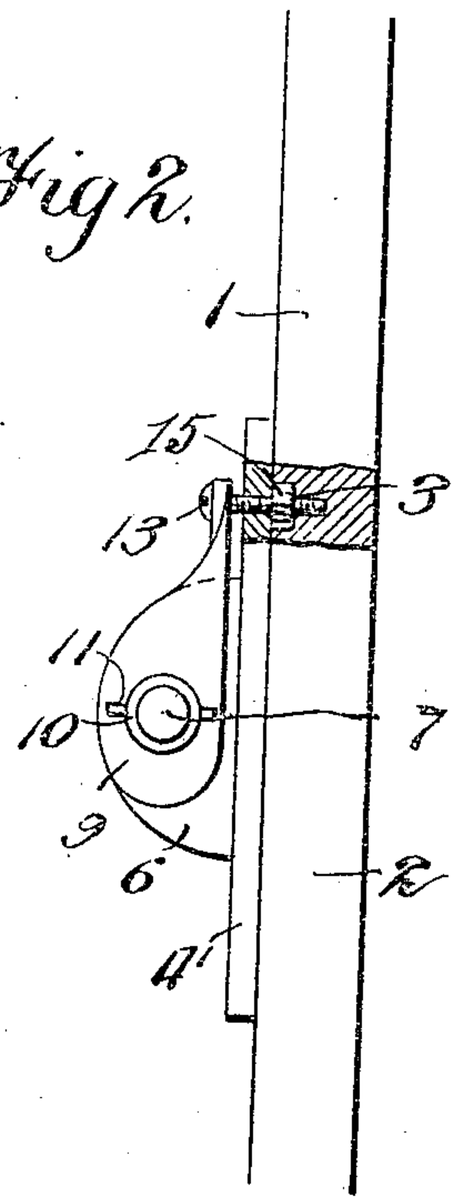


Fig 4.

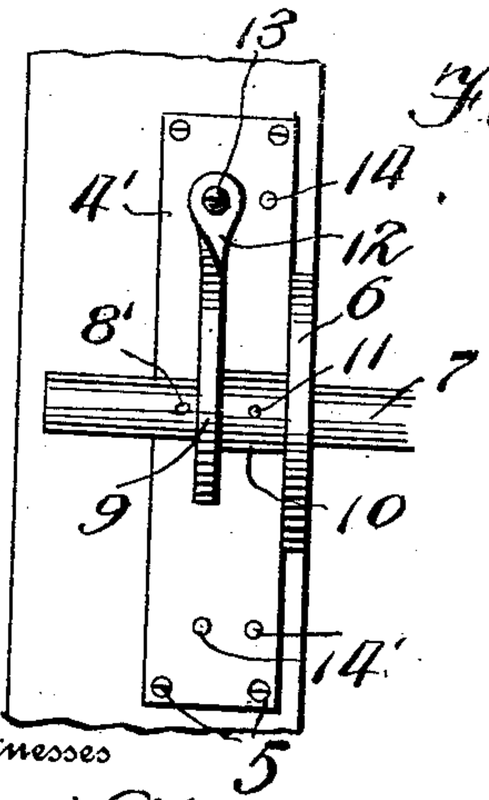


Fig 3.

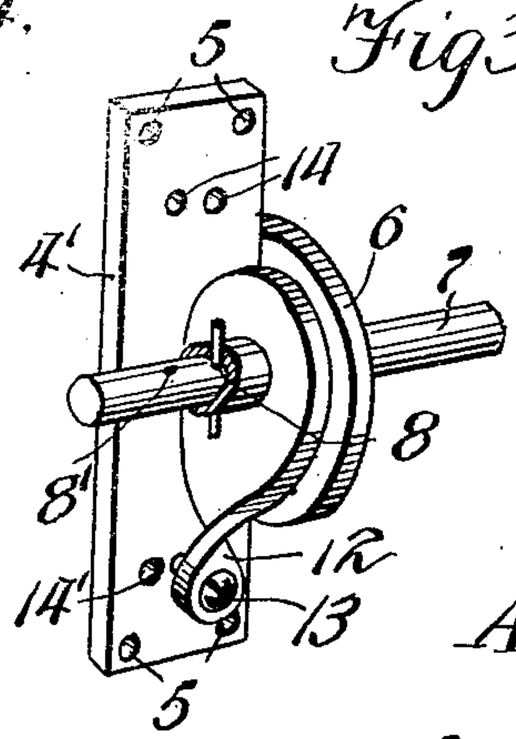
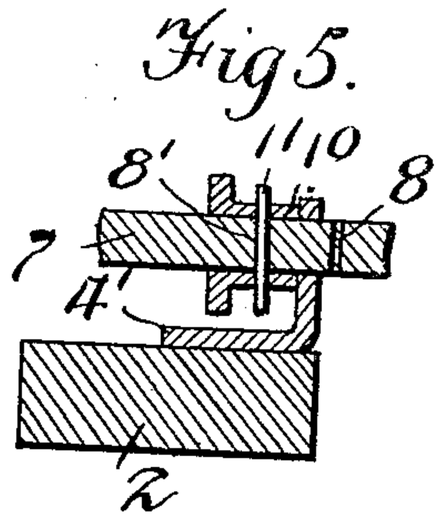


Fig 5.



Witnesses

Hugh H. Ott

C. C. Hines.

Inventor

Arthur R. Gordon

By Victor J. Evans

Attorney

UNITED STATES PATENT OFFICE.

ARTHUR R. GORDON, OF GORIN, MISSOURI.

ATTACHMENT FOR SCREEN-DOORS.

No. 931,411. Specification of Letters Patent. Patented Aug. 17, 1909.

Application filed September 15, 1908. Serial No. 453,195.

To all whom it may concern:

Be it known that I, ARTHUR R. GORDON, a citizen of the United States, residing at Gorin, in the county of Scotland and State of Missouri, have invented new and useful Improvements in Attachments for Screen-Doors, of which the following is a specification.

This invention relates to an attachment for screen doors, and has for its object to provide a simple and effective device by which a door which is warped or twisted out of shape may be straightened to accurately fit the door frame or parts against which it is intended to seat.

The invention consists of the features of construction, combination and arrangement of parts hereinafter fully described and claimed, reference being had to the accompanying drawing, in which:—

Figure 1 is a front elevation of a door showing the application of my invention thereto. Fig. 2 is a fragmentary side view, partly in section, on an enlarged scale, showing the fastening and adjusting means of one of the operating levers. Fig. 3 is a detail view of one of the brackets, rod or shaft and associated parts. Fig. 4 is a view showing the manner of reversing the bracket plates side-for-side, so as to adapt the device for use on wider doors. Fig. 5 is a horizontal cross section through the parts shown in Fig. 4.

Referring to the drawing, the numeral 1 designates a screen door of conventional construction, the side pieces 2 of which are formed at or near the center thereof with angular mortises or recesses 3 for the purpose of preparing the same for the application of my attachment, whereby the door, if warped or otherwise twisted out of shape, may be straightened to a normal condition.

The device embodying my invention comprises a pair of metallic bracket plates 4—4′ adapted to be secured to the outer faces of the side pieces 2 by screws or other suitable fastenings 5. Each of these bracket plates is provided at its inner edge with a bearing ear or lug 6 bent outward at right angles therefrom and suitably apertured for the passage of a transverse rod or shaft 7. The rod or shaft 7, which may be either solid or tubular and of a nature adapted to sustain without breakage a predetermined twisting strain, is extended at its ends, after the application of the bracket plate to the door, through the openings in the ears 6, and each end of the shaft is formed with a plurality of transverse openings 8—8′. Upon each end of the shaft beyond the ear of the adjacent bracket is applied a lever 9 provided with an outwardly extending hub or sleeve 10 perforated for the passage of a fastening pin 11, which is also adapted to pass through either one of the openings 8—8′ to fixedly secure the lever to the rod or shaft. The free end of the lever is bent or quarter-twisted to provide an arm or extension 12 which is perforated for the passage of an adjusting and securing bolt or screw 13, said screw being adapted to pass through either one of a pair of openings 14—14′ in the bracket plate and to extend within the recess 3 of the adjacent side piece 2 of the door and to receive a retaining nut 15 seated in said recess and bearing against the inner face of the bracket plate.

The openings 14—14′ in the two bracket plates are respectively disposed above and below the rod supporting portions of the ears 6 thereof. In the operation of straightening or restoring a door to normal condition, the nuts 15 are primarily fixed in the recesses 3 and held against rotation in any preferred manner, as by making both the recesses and nuts of non-circular form, and the levers are applied to the ends of the rod or shaft after the latter has been extended through the ears, with the arm of one lever projecting upwardly and the other downwardly. The levers are then successively moved toward the bracket plates 4—4′ and the screws 13 passed through the openings in the lever arm and openings in the bracket plates and engaged with the nuts, after which the screws are threaded through the nuts by means of a screw driver or other suitable tool so as to gradually draw the lever arms toward the bracket plates. As shown in Fig. 1, the levers coacting with the respective bracket plates 4—4′ have their arms respectively projecting upward and downward and the screws 13 pass through the opening 14′ of the plate 4 and opening 14 of the plate 4′, so that as the screws are threaded through the nuts the opposite ends of the shaft will be subjected to reverse torsional or twisting strain and will thereby operate through a leverage action on the side pieces of the door to bring such side pieces into exact alinement and thus restore the warped or twisted door to a normal condition, in which it will be maintained by the attachment. As a result, a door badly

warped or twisted out of shape may be, by a greater or less extent of adjustment of the screws, straightened out, so that it will closely fit within a door frame or seat against the parts against which it is intended to bear to closed position.

It will be understood that by interchanging and reversing the levers side-for-side, as shown in Fig. 4, so that their collars 10 will extend inwardly instead of outwardly and bear against the ears 6, and connecting said collars with the rod or shaft by passing the pins 11 through the openings 8′, as shown clearly in Fig. 5, the levers may be disposed a greater distance apart, allowing the bracket plates to be also set a greater distance apart for application to the side pieces of wide doors, thus rendering the device applicable to both narrow and wide doors within determined limits. Of course, the number of openings 8—8′ in the shaft may vary to space the brackets variable distances apart for the purpose described. It will be further understood that by reversing the levers from the position shown in Fig. 1 so that the lever associated with bracket plate 4 will extend upwardly, while the lever associated with bracket plate 4′ will extend downwardly, in which event the adjusting screws of said levers will respectively pass through the openings 14′ and 14 in the said bracket plates 4 and 4′, the torsional strain will be correspondingly reversed, so that by the application of the parts in the aforesaid ways doors warped or twisted in opposite directions may be quickly and conveniently straightened out.

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

1. A device for straightening screen doors comprising a pair of brackets adapted to be attached to the sides of the door, a rod or shaft journaled in said brackets, levers adapted to be applied to the ends of the shaft for exerting a twisting strain to restore the door to normal condition, and means for fixing the levers to maintain the parts in such condition.

2. A device for straightening screen doors comprising a pair of attaching brackets adapted to be secured to the sides of the door, a rod or shaft carried by said brackets, means for placing said rod or shaft under strain to straighten out the portions of the door, and means for retaining the parts in such condition.

3. A device for straightening screen doors comprising a pair of attaching brackets adapted to be applied to the sides of the door, a rod or shaft journaled in said brackets, levers adapted to be applied to the ends of the shaft for imparting reverse torsional strain thereto, and adjusting means for each lever including a bolt or screw for operating said levers and fixing them in position to retain the torsional strain.

4. A device for straightening screen doors comprising a pair of attaching brackets adapted to be applied to the sides of the door, a rod or shaft adapted to be mounted in said brackets to have turning movement, levers adapted to be applied to the ends of the shaft and moved in reverse directions to place the ends of the shaft under reverse torsional strain, and adjusting means connecting the levers with the said brackets, whereby the levers may be operated and retained in strain inducing position.

5. A device for straightening screen doors comprising attaching brackets adapted to be secured to the sides of the door and provided with perforated ears, a rod or shaft extending through said ears and having openings in its opposite ends, levers provided with laterally projecting hubs having openings therein, pins adapted to pass through said hub and openings in the shaft to secure the levers thereto, whereby the levers may be operated in reverse directions to place the opposite ends of the shaft under reverse torsional strain, adjusting and retaining screws passing through the free ends of the levers and the bracket plates, and nuts engaging said screws and bearing against the rear sides of the bracket plates, said nuts being adapted to be held against rotation in the application of the device to a door.

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

ARTHUR R. GORDON.

Witnesses:
H. I. THURMAN,
HENRY WEBER.