(No Model.)

C. R. CASE.

SLIDING DOOR FIXTURE.

No. 602,729. Patented Apr. 19, 1898.

Fig. 1.

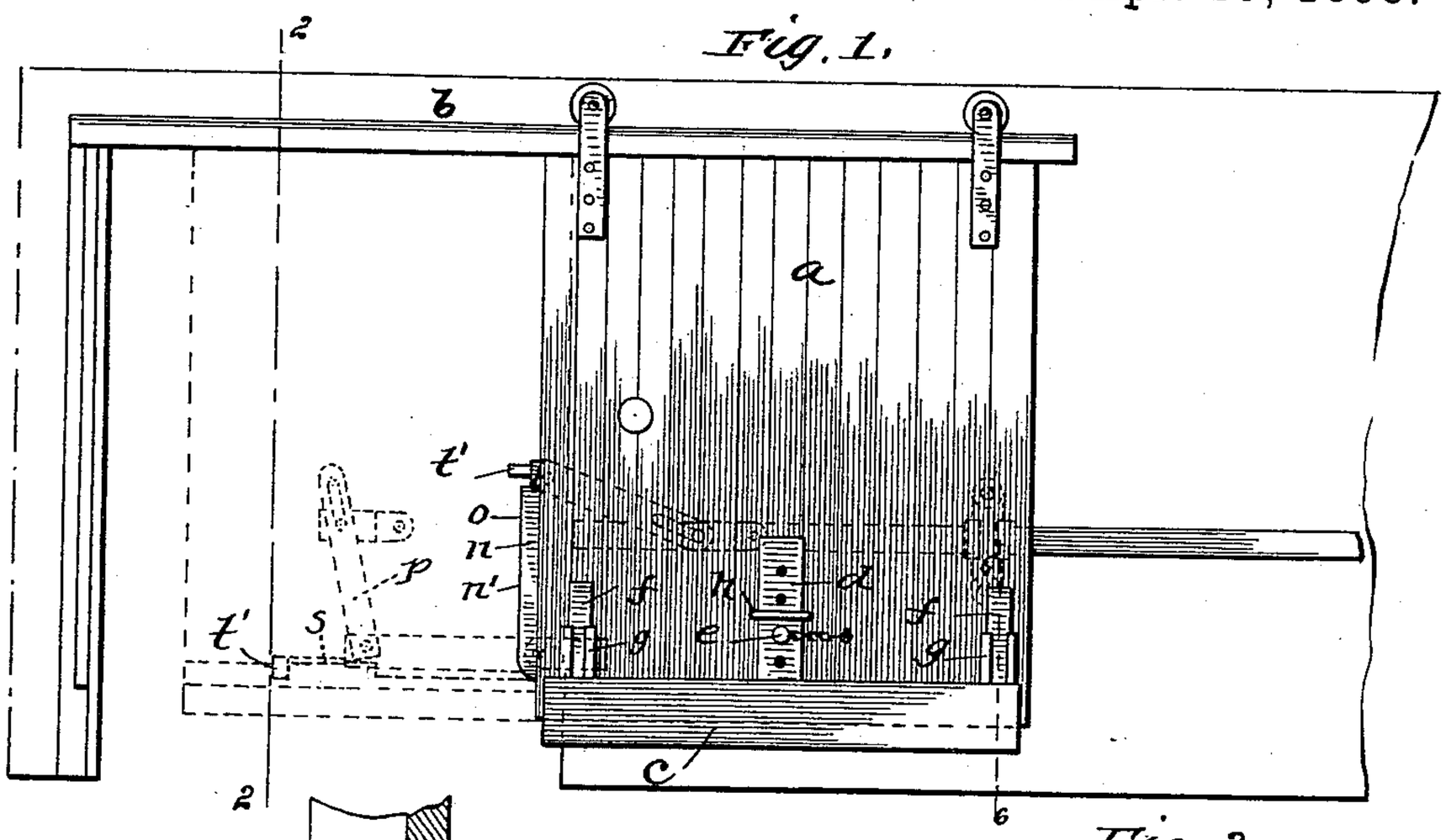


Fig. 3.

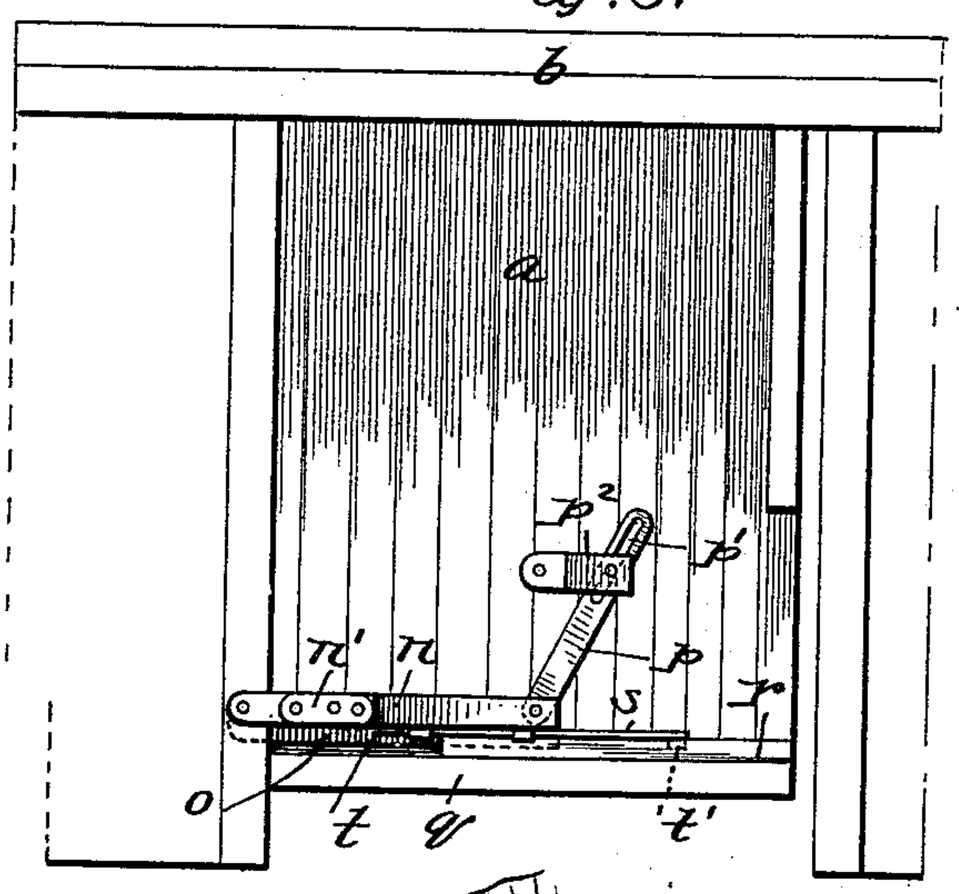


Fig. 2.

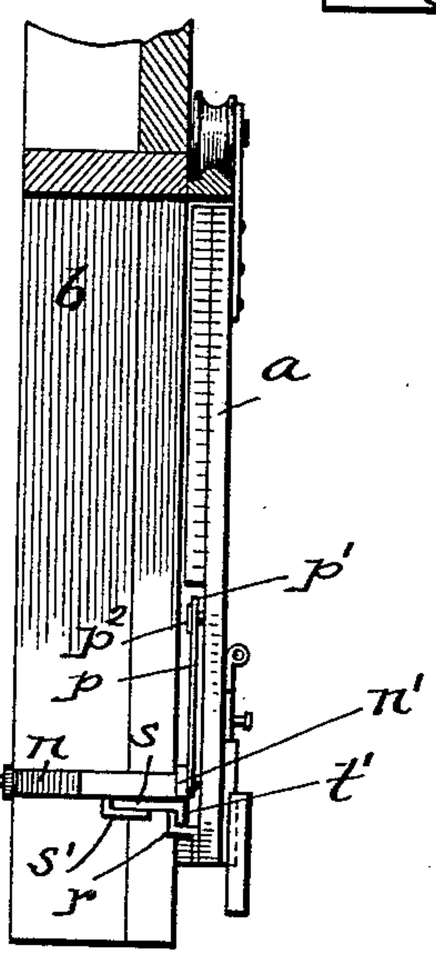


Fig. 7.

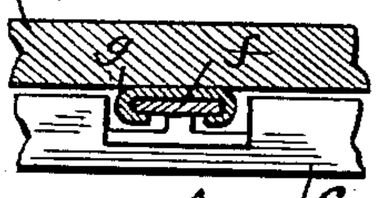


Fig. 6.

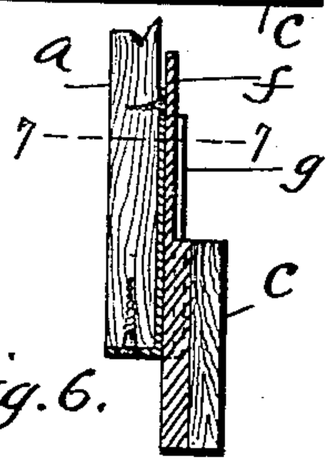
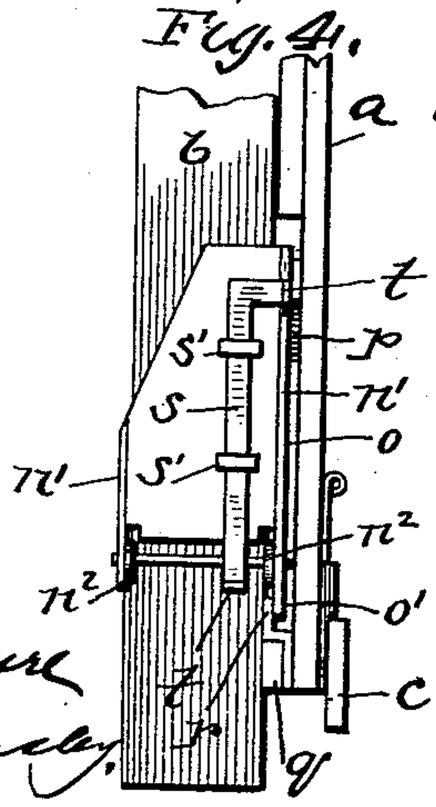


Fig. 4.



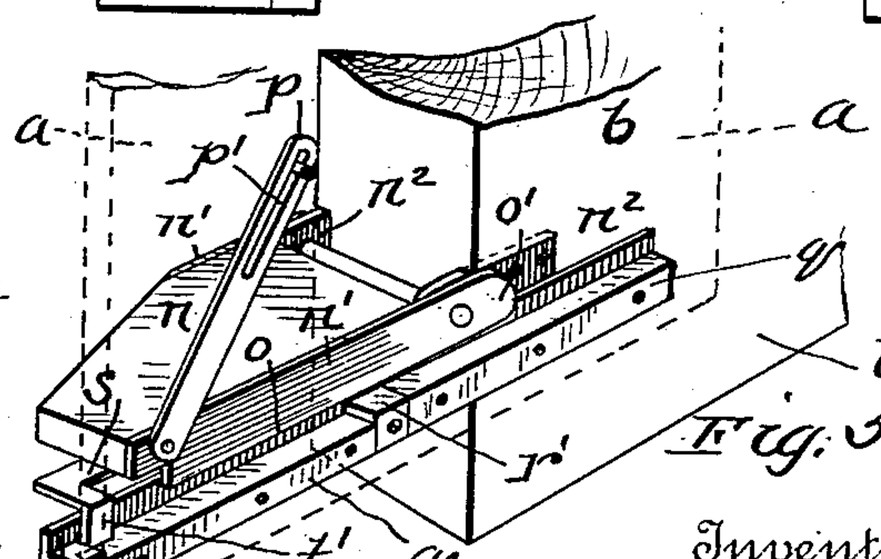


Fig. 5.

Witnesses

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SLIDING-DOOR FIXTURE.

SPECIFICATION forming part of Letters Patent No. 602,729, dated April 19, 1898.

Application filed September 4, 1897. Serial No. 650,640. (No model.)

To all whom it may concern:

Be it known that I, CHARLES R. CASE, a citizen of the United States, residing at Allen's Hill, in the county of Ontario and State of New York, have invented certain new and useful Improvements in Sliding-Door Fixtures, of which the following is a specification, reference being had therein to the accompanying drawings, in which—

Figure 1 is a front elevation of a sliding door provided with my improvements, the door being fully open; Fig. 2, a transverse section on the line 2 2 of Fig. 1, the folding stay being let down to a horizontal position; Fig. 3, a view of the inside of the door and adjacent structure, the folding stay being in position shown in Fig. 2; Fig. 4, a detail view of the inner edge of the door and the adjacent post, showing the stay folded up against the post, the position it assumes when the door is slid entirely back; Fig. 5, a detail perspective view showing the stay folded down, a part of the door being broken, as shown in dotted lines. Fig. 6, a detail section on the line 6 6 of Fig. 1, showing one of the slides for adjustably supporting the extension-board. Fig. 7 is a detail transverse section on line 7 7 of Fig. 6.

The object of this invention is to provide simple devices for preventing the door both when closed and open from being swung outward away from the structure supporting it, the construction of the devices being such that the settling or warping of the structure carrying the door or the door itself will not interfere with the ready opening and closing of the door, as more fully hereinafter set forth.

The preferred form of my devices will be best understood by reference to the drawings, in which—

The letter *a* designates the door swung by suitable hangers from an overhead track, the track being supported by the structure *b*, which may of course be a freight-car, warehouse, barn, or other structure.

The devices covered by this application are especially adapted for use in connection with doorways not provided with a sill-beam or any secure foundation for such a beam. I employ a folding stay or brace *n* to hold the lower front corner of the door to the structure both when the door is open and when closed, said brace being adapted to automatically fold down across or partly across the door-opening when the door is shut and to fold up against the door-post when the door is slid back away from the door-opening. The stay consists of a board or plate about equal in width to the door post or jamb and in length about sufficient to reach half-way across the door-opening, its longitudinal edges being provided with straps or plates n', which project beyond the inner or lower end and are pivoted to metallic plates or ears n^2, which latter project out horizontally from the adjacent door-posts, the outer one of said plates n' having its lower edge extended below the lower edge of the stay n to form a flange o and its inner end extended beyond the pivotal point to form an extension o'.

To fold and unfold the stay as the door is closed and opened, a link p is employed, which is pivoted at its lower end to the free end of the stay at its outer edge and is pivotally connected at its upper end by a pin-and-slot connection to the inner face of the door. The slot is formed at p' in the link, and the pin p'' is supported by a small bracket on the door and the door itself, said pin passing through the bracket and slot and into the door. Fastened upon a strip q, attached to the lower inner edge of the door, is a plate r, which extends upward from the inner corner of the strip q and forms a sort of flange, a narrow space being left between the flange and the inner face of the door. This flange r extends a little farther than half-way across the door and is attached to the strip by bracket-arms r'. As will be observed, the depending flange o of the stay engages the flange r when the stay is folded down, and the extension o' engages it when the stay is folded up against the post.

It will be observed that as the door is closed the link will push or let down the stay and will draw it up against the post when the door is slid back, the flanges o and o', carried by the stay, (the flange o' being in reality but an extension of the flange o,) remaining constantly interlocked with the flange r on the

door, thereby locking the door against outward swinging in all its positions. The stay being comparatively wide at its pivotal end affords the necessary firmness.

I employ an extension-bar *s*, carried by the stay, wherever the doorway is so wide as to make it impracticable to have the stay proper extend half-way or nearly half-way across the door-opening. This extension-rod is fastened slidingly to the bottom of the stay by means of keepers *s'*, its inner end being provided with a stop *t* to prevent it being withdrawn endwise from the keepers and its outer or free end being provided with a depending lip *t'*, which is set off to one side far enough to engage the upward-extending flange *r*. This lip *t'* engages the flange *r* only when the stay is folded down, and it is adapted to abut against the brackets *r'* of said flange to restrict its endwise movement during engagement with said flange. It will be observed that the inner one of the stops *r'* engages the lip *t'* as the door is shut and draws out the extension-stay, as shown in Figs. 3 and 5, and the outer one of the stops *r'* engages said lip when the door is slid back and pushes it back under the stay, and then as the door is pushed farther back the lip will be raised out of engagement with the flange *r* and bracket *r'* by the rising of the stay *n*. It will be observed that these simple devices guide the door in its to-and-fro movements and that the sagging of the door or structure to a reasonable extent will not destroy the utility of the devices. It will be observed also that the door is supported entirely from the hangers, the stay and its connected devices simply serving to prevent the door being swung outward and guiding it to and fro. It will be therefore observed that the door is not liable to be blown off by high winds or to be swung outward by animals pushing on it from the inside, it being particularly efficacious when the door is shut, as is obvious.

Adjustably attached to the lower end of the door is an extension-piece *c*, which extends practically the full width of the door and is adjustable below the lower edge of the same. Attached to this board, about midway its length, is a bar or plate *d*, which lies against the outer side of the door and is provided with a vertical series of holes, through any one of which a supporting pin or bolt *e* may be passed, this pin or bolt extending into an opening in the door. At each end of the board *c* is secured an upright plate or bar *f*, which works through stationary flanged guides *g*, carried by the door. These plates or bars *f* are extended across the inner face of the strip *c*, being recessed therein to come flush with said inner face, thus bringing the strip close to the outer face of the door. It will be observed that this strip will be guided truly in its vertical adjustments on the door and that it may be fastened at any desired height. This adjustable strip enables the door to be shortened or lengthend, thereby enabling the door-opening to be closed quite closely at the bottom. Should ice or snow or other matter accumulate under the door or in the door-opening the strip may be raised so as to avoid said accumulations. The upright bar *d* is guided in its movements by a staple or loop *h*, carried by the door and embracing said bar.

I desire it understood that this invention is not confined to the particular construction shown and described, as the same may be varied without departing from the spirit of the invention.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The combination of a structure and a sliding door supported thereon and having a transverse flange on its free end, means for attaching the free end of the door to the structure, said means consisting of a stay or brace adapted to be projected into the door-opening when the door is closed, said stay being carried by the structure and having a sliding connection with the flange on the door, as and for the purposes set forth.

2. The combination with a structure and a sliding door thereon provided with a transverse flange, of a stay connecting the lower end of the door to the structure and means for folding or swinging said stay across the door-opening when the door is closed, the stay being carried by the structure and having a sliding connection with the flange at all times, for the purposes set forth.

3. The combination with a structure and a sliding door thereon, of a stay pivoted to the structure at one side of the door-opening, and means for letting down said stay across the door-opening when the door is closed, means connecting the free end of the stay to the door when the stay is let down, as and for the purposes set forth.

4. The combination of a support and a sliding door suspended thereon, with a folding stay pivoted to the door-post at one side of the door-opening, a pivoted link connecting the stay to the door and adapted to raise the stay against the post and lower it across the door-opening as the door is moved back and forth, and means carried by the stay for slidingly engaging the lower end of the door for holding it to the support, for the purpose set forth.

5. The combination with a support provided with a door-opening, and a sliding door therefor, and means for holding the door to the support at its lower end, said means consisting essentially of a movable stay adapted to be projected across said door-opening when the door is shut, said stay being provided with a flange slidingly engaging a flange carried by the door, for the purposes set forth.

6. The combination with a support provided with a door-opening and a sliding door, of a movable stay carried by the support and adapted to be projected across the door-opening when the door is shut, said stay being provided with an extension rod or stay adapted to be projected beyond the end of the said stay, and means carried by the lower end of the door for slidingly engaging said extension-stay, substantially as set forth.

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

CHARLES R. CASE.

Witnesses:

AMOS L. SYMONDS,

CHARLES W. SIMMONS.