(No Model.)

W. H. & W. J. CLARK.

DEVICE FOR PREVENTING SAGGING OF SCREEN DOORS, &c.

No. 532,764. Patented Jan. 22, 1895.

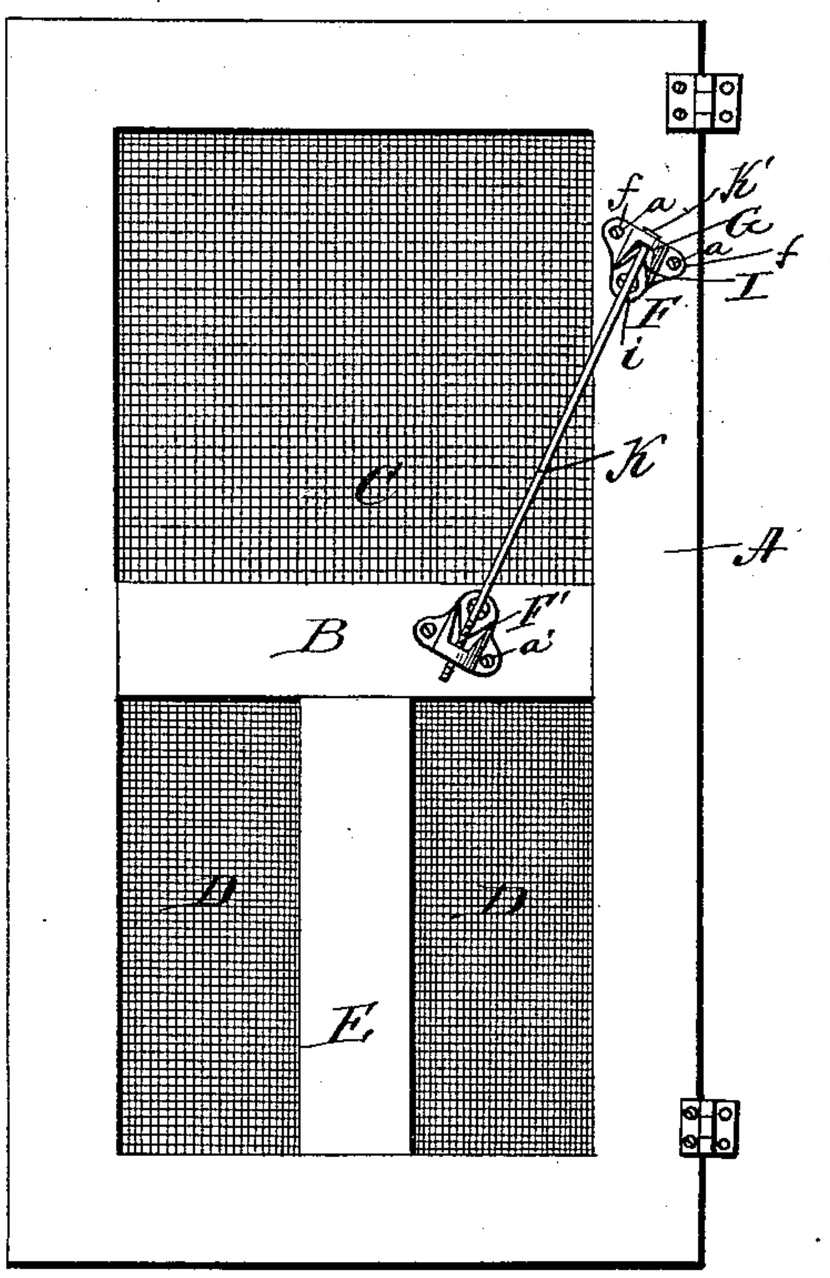


Fig. 1.

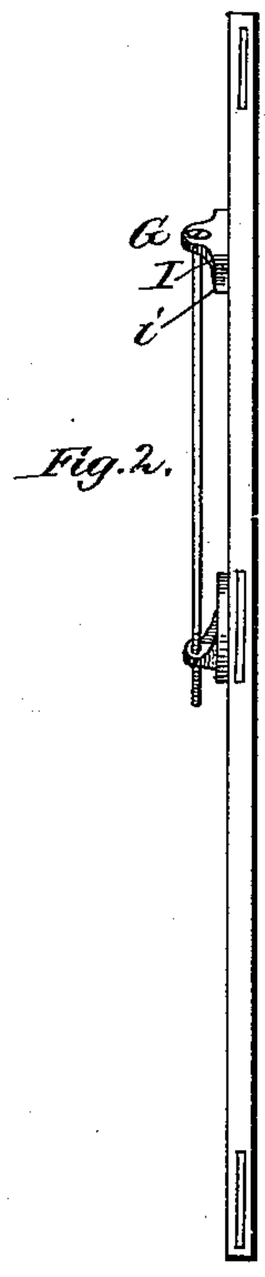


Fig. 2.

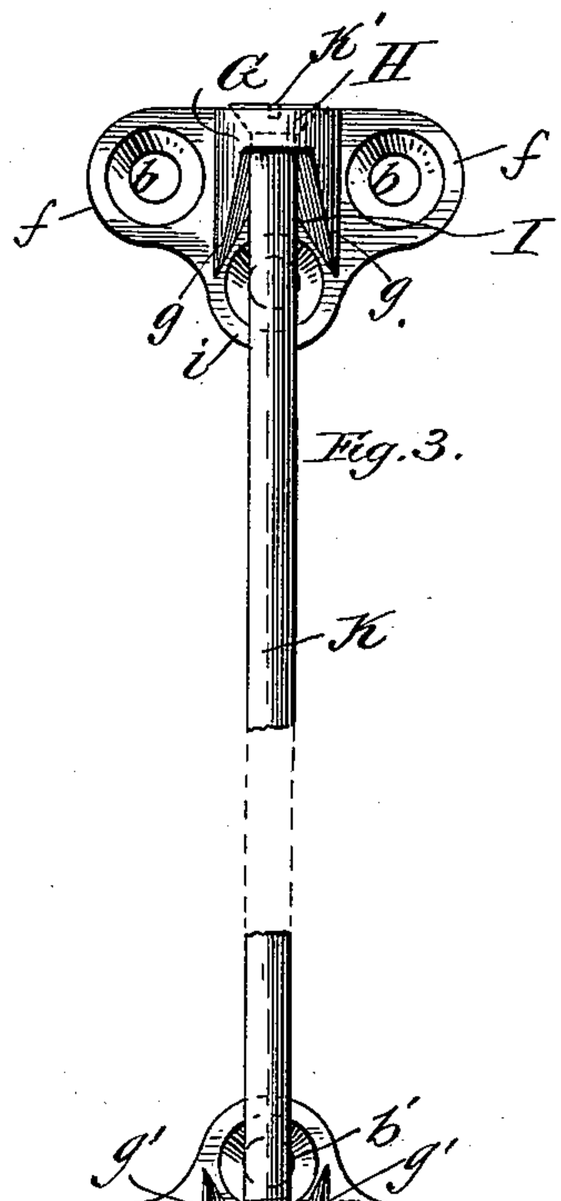
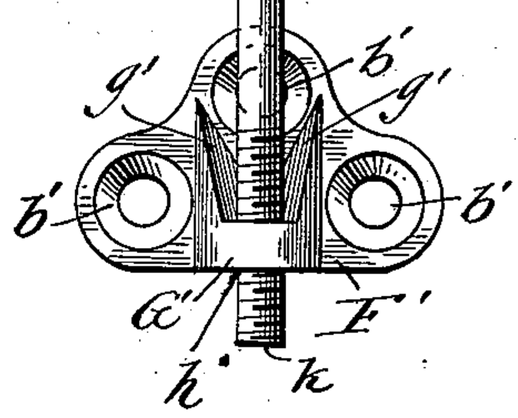


Fig. 3.



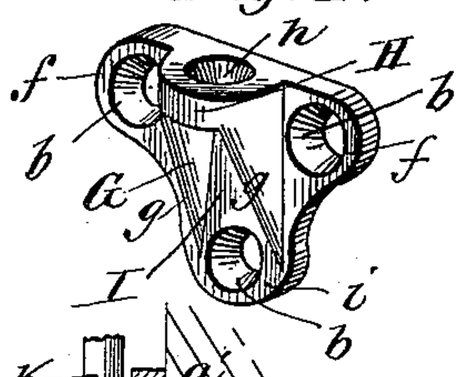


Fig. 4.

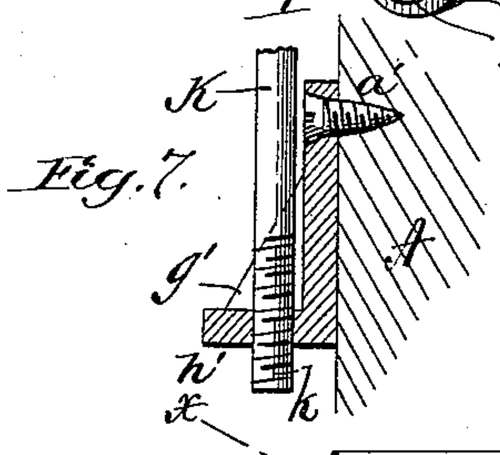


Fig. 7.

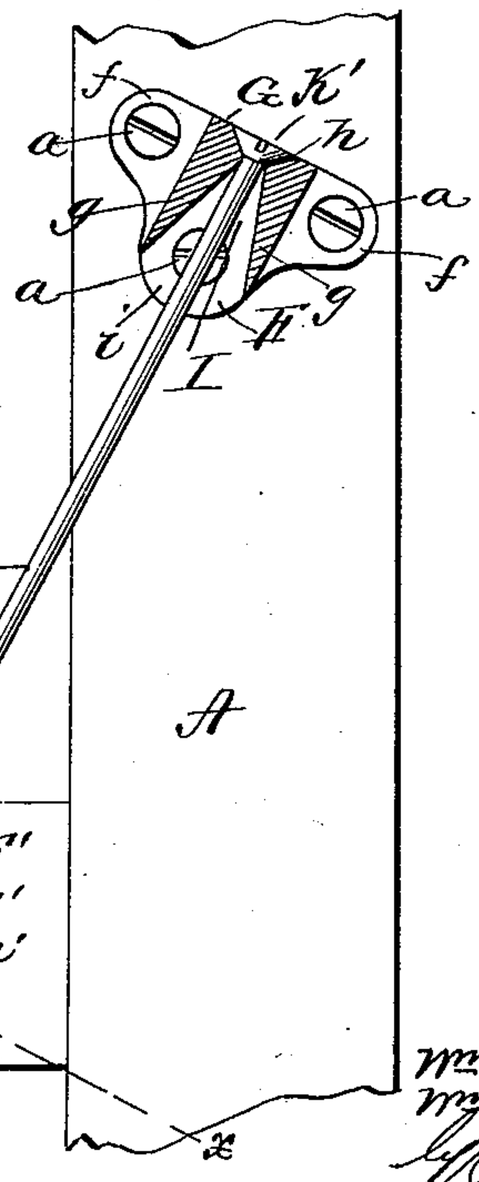


Fig. 5.

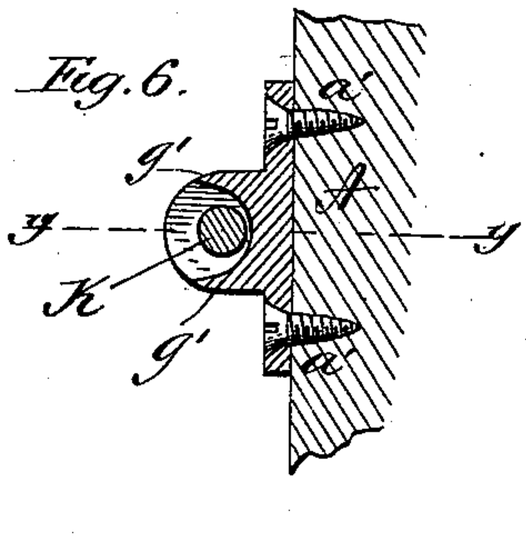


Fig. 6.

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UNITED STATES PATENT OFFICE.

WILLIAM H. CLARK AND WILLIAM J. CLARK, OF SALEM, OHIO.

DEVICE FOR PREVENTING SAGGING OF SCREEN-DOORS, &c.

SPECIFICATION forming part of Letters Patent No. 532,764, dated January 22, 1895.

Application filed February 27, 1894. Serial No. 501,706. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM H. CLARK and WILLIAM J. CLARK, residents of Salem, in the county of Columbiana and State of Ohio, have invented certain new and useful Improvements in Devices for Preventing the Sagging of Screen-Doors; and we do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a front elevation of a screen door equipped with our device or means for preventing "sagging." Fig. 2 is a side or edge elevation of the door. Fig. 3 is a detail view of the device, detached from the door. Fig. 4 is a detail view of the upper fastening or bracket plate, with the inclined rod or brace removed. Fig. 5 is a longitudinal sectional view of the device, showing the rod or brace in position. Fig. 6 is a cross section on line *x*—*x* in Fig. 5; and Fig. 7 is a cross section on line *y*—*y*.

Like letters of reference designate corresponding parts in all the figures.

The invention has for its object to provide means for effectually preventing the "sagging" of the panels of screen doors. Owing to their construction, such doors are always liable to sag, which not only detracts from their general appearance, but often makes it difficult to open and close the door properly. To obviate this, various devices have heretofore been used, in the nature of reinforcing-rods or braces connecting the transverse bar or bars of the bottom panel with one or both sides of the frame; and while our invention relates to that class of devices, it differs from such braces as heretofore constructed and applied to a screen door in being much neater in appearance, easier of application and manipulation, not in the way either in opening or closing the door to which it is attached, very simple, durable and inexpensive in construction, and adapted to be applied to old doors, so as to "take up" sagging panels and restore both the appearance and the working of the door.

Our invention, therefore, consists in the combination with the frame of a screen door of an adjustable brace and its fastening-devices of novel and improved construction, as will be hereinafter more fully described and particularly pointed out in the claim.

On the accompanying drawings, the letter A denotes the frame of a screen door; B, one of the transverse bars of the same; C, the upper panel (made of wire netting), and D D the lower panels, separated by the vertical partition and reinforcing bar E, as usual in that class of doors.

Upon the hinged sides of the frame A is fastened, by screws *a a*, a small plate F, cast with a projecting bracket G, of the peculiar shape shown on the drawings, and having a countersunk aperture *h* in the head H at its upper end. Below this apertured head, the projecting bracket or bearing G is cut off slantingly, as shown at *g;* the slanting sides *g g* diverging from each other, so as to form a chamber or recess I, of an inverted V-shape, within the body of the bracket, the apex of which is formed by the top or head H of the bracket, having the countersunk aperture *h*. The flat lateral wings or flaps *f f* of plate F, as well as the extension *i* below the recess I, are provided with countersunk apertures, *b b b*, for the insertion of the screws, *a a a*, by which the device is fastened upon the side of the door-frame. Upon the horizontal transverse bar B is also fastened, by screws *a'* inserted through three countersunk apertures *b'*, a plate F', of the same size, shape and construction as the upper plate F already described, and, like this, cast with a projecting recessed bracket G' having slanting or diverging sides *g' g'* converging in the head H', which, however, instead of being countersunk, is tapped to form an interior screw-thread, or threaded nut, *h'*. Plate F' is reversed; that is to say: the V-shaped chamber or recess I' in the body of its bracket G' is not inverted, but presents its large or open end on top and the reduced, screw-threaded head H' of the bracket downwardly. With the exception of the reversed, or upside-down, position of the bracket-plate F' G', and the tapped or screw-threaded aperture *h'* in the head H', instead of a plain countersunk aperture *h* therein, the two bracket-plates F G and F' G' are precisely alike in size, shape and construction,

and may be cast in the same mold, or struck-up or forged from the same dies; the countersunk aperture *h* in the one case, and the screw-threaded bore *h'* in the other, being made afterward.

A steel rod K, of suitable length and thickness, and provided with a nicked or slotted head K' at its upper end, and screw-threaded, as shown at *k*, at its lower end, is first inserted through the countersunk aperture *h* in the head H of the upper bracket G, and then brought in an oblique or slanting direction down to the lower bracket G', where its screw-threaded end *k* is screwed into the threaded bracket-head H'; so that rod K will pass straight through the center of the brackets, at right angles to their respective heads.

The two bracket-plates having been fastened upon the door-frame in the position clearly shown on the drawings, and the rod K inserted in alignment with and through the uppermost bracket, with its head or enlargement K' resting loosely in the countersunk recessed aperture *h*, its screw-threaded free end *k* is next inserted into the tapped head H' of the lowermost bracket upon the crossbar B and screwed home, as far as it will go without straining. The device is then in its operative position; the rod or brace K connecting the crossbar B to the adjacent side of the door-frame, so that the bar cannot bend or "sag," but will maintain the panels D D in their proper shape and position. If there should be any disposition to sag, this may be remedied by a few turns of rod K, so as to screw its threaded end *k* farther into the tapped head H' of the lower bracket, thus always maintaining the cross-bars in a straight and horizontal position in the frame.

It will be obvious that, if desired, the position of the bracket plates F G and F' G' may be reversed, *i. e.*, placing the former on the cross-bar B, and vice-versa, which necessitates, of course, the reversing, or turning upside-down, of the connecting-rod K, so that its nicked head K' will be at the bottom and the threaded end *k* on top, or uppermost; but as it is more convenient to turn the rod with a screw-driver when its nicked head K' is uppermost, in the position shown on the drawings, we prefer to adjust it in that way, which affords easy access to the nicked or slotted head of the rod with an ordinary screw-driver, when it is desired to adjust the rod to tighten-up the device.

Having thus described our invention, we claim and desire to secure by Letters Patent of the United States—

The combination with the door-frame A provided with the transverse bar B, of the bracket-plates F G and F' G', provided with heads H, H', cut off slantingly and the slanting sides diverging from each other so as to form a **V** shaped recess, and the adjustable headed and screw-threaded connecting-rod K, inserted loosely through a countersunk aperture in the head H of one of said brackets, and screwed with its threaded end into the tapped head H' of the other bracket; substantially as and for the purpose herein shown and set forth.

In testimony that we claim the foregoing as our own we have hereunto affixed our signatures in presence of two witnesses.

WILLIAM H. CLARK.
WILLIAM J. CLARK.

Witnesses:
W. W. HOLE,
ROBERT HOLE.