

C. D. TABOR.

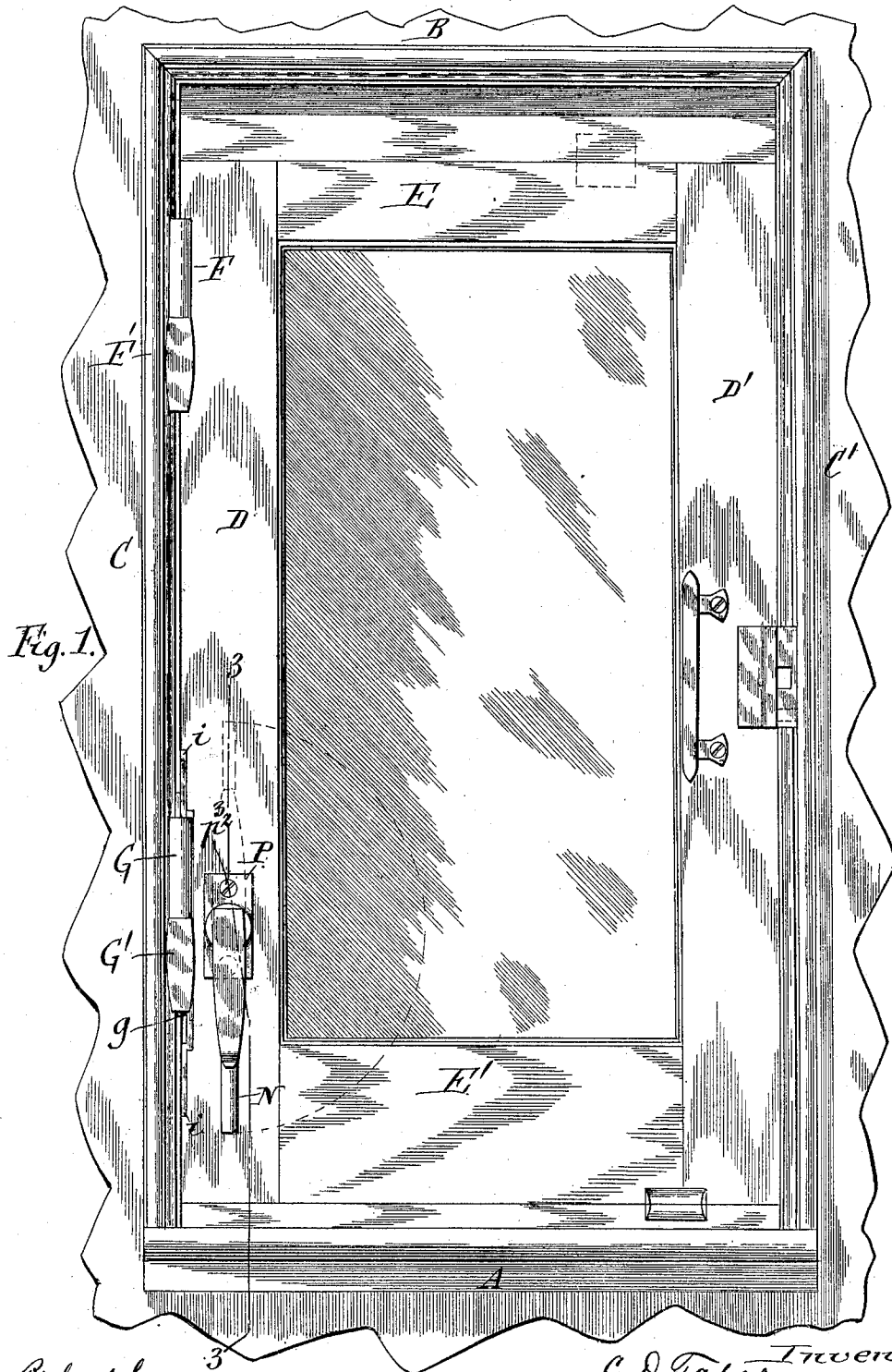
HINGE.

APPLICATION FILED JULY 25, 1907.

Patented Feb. 7, 1911.

3 SHEETS—SHEET 1.

983,323.



Richard Sommer.
Gustav W. Hora.

} Witnesses.

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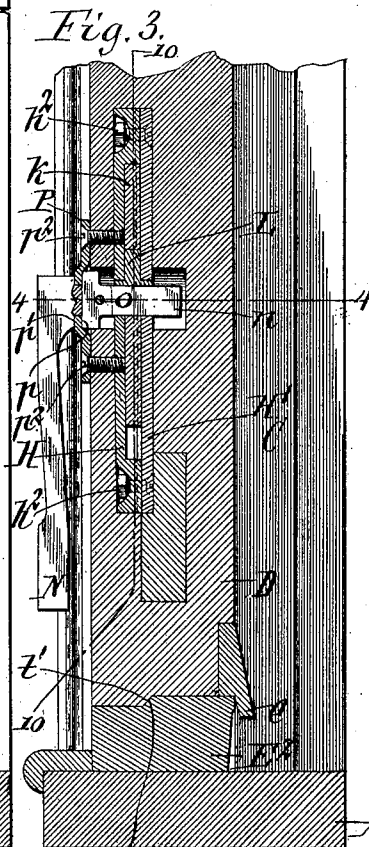
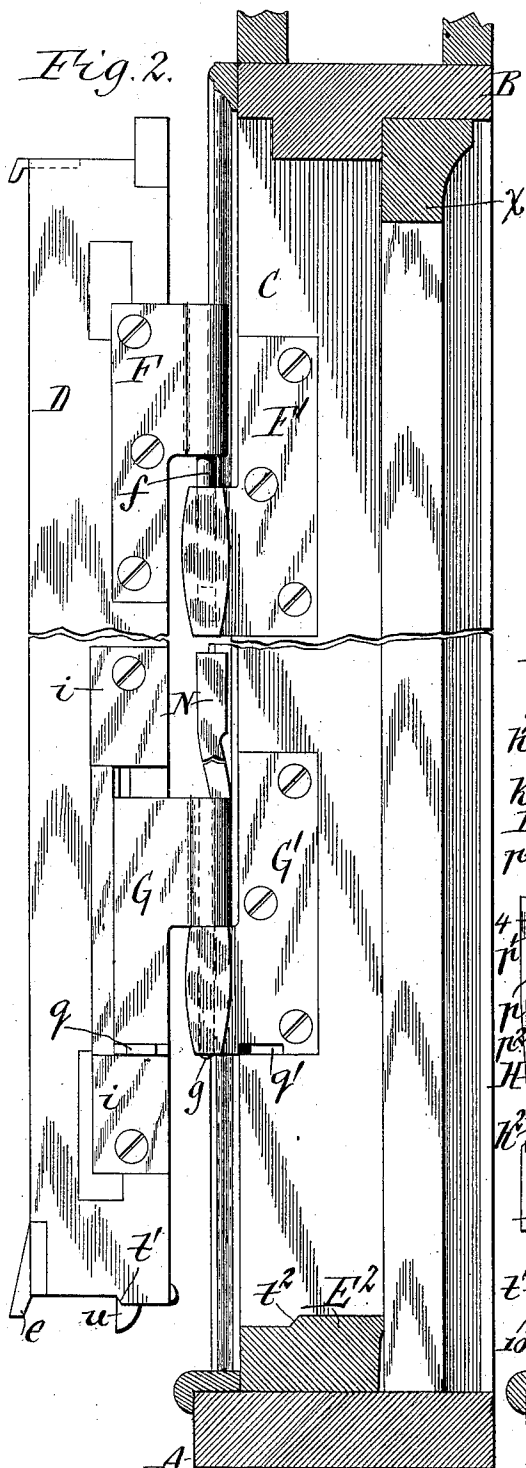
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3 SHEETS-SHEET 2.



Richard Samuel
Eustace W. Horne.

Witnesses.

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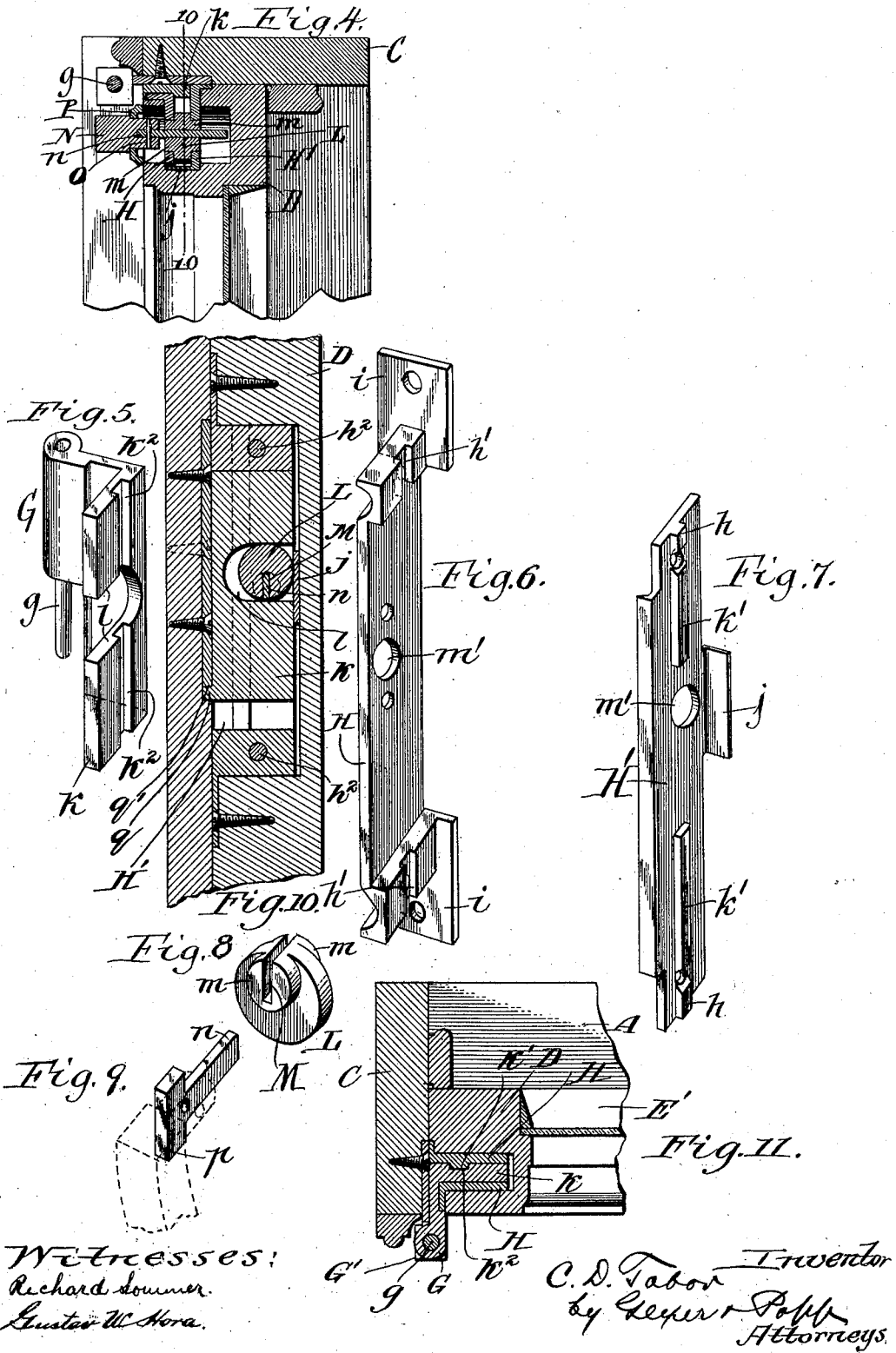
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3 SHEETS—SHEET 3.

983,323.



UNITED STATES PATENT OFFICE.

CLINTON D. TABOR, OF NEW DORP, NEW YORK, ASSIGNOR TO TABOR SASH COMPANY,
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HINGE.

983,323.

Specification of Letters Patent.

Patented Feb. 7, 1911.

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To all whom it may concern:

Be it known that I, CLINTON D. TABOR, a citizen of the United States, and residing at New Dorp, in the county of Richmond and State of New York, have invented a new and useful Improvement in Hinges, of which the following is a specification.

This invention relates to fixtures for that class of windows in which the sash swings horizontally on hinges in the frame for opening and closing the same and is also raised and lowered for unlocking and locking the same.

The objects of this invention are to improve and simplify the means whereby the sash is locked or unlocked and the means whereby a weather tight joint is produced between the sash and frame.

In the accompanying drawings consisting of 3 sheets: Figure 1 is an inside elevation of a window equipped with my improvements. Fig. 2 is a fragmentary vertical transverse section thereof, on an enlarged scale, showing the sash raised into its unlocked position and swung inwardly into its open position. Fig. 3 is a vertical transverse section, on an enlarged scale, taken in line 3—3, Fig. 1. Fig. 4 is a fragmentary horizontal section taken in line 4—4, Fig. 3. Figs. 5, 6, 7, 8 and 9 are detached perspective views of different parts of the sash raising and lowering mechanism. Fig. 10 is a fragmentary vertical section in line 10—10, Figs. 3 and 4. Fig. 11 is a fragmentary horizontal section in line 11—11, Fig. 10.

Similar letters of reference indicate corresponding parts throughout the several views.

The frame of the window comprises the usual lower horizontal sill A, an upper horizontal jamb or head B, and vertical side jambs C, C'. The window shown in Fig. 1 contains only one sash having two vertical side rails or stiles D, D' and top and bottom rails E, E'. This sash is so mounted in the opening of the frame that the same can be lowered or raised while in a closed position for locking or unlocking the same, and when in its elevated position the same is also capable of being swung horizontally into its opened or closed position.

In the closed and lowered position of the sash, the bottom rail of the same rests upon the sub-sill E² of the frame and the hori-

zontal drip flange *e* which depends from the outer lower part of this rail overhangs the outer side of the sub-sill, thereby covering the joint between the lower end of the sash and the bottom part of the frame and preventing the passage of weather through the same. The sash must be first raised sufficiently to bring its drip flange *e* above the top of the sub-sill and then the sash may be swung open inwardly, as shown in Fig. 2.

F, F' represent the two leaves of a plain hinge, which are secured to the opposing upper parts of the pivot stile D, and side C of the sash and frame, and which are connected by a pivot pin *f*, so that the sash and the leaf F attached thereto are capable of both rotating horizontally and sliding vertically relatively to the frame and the leaf F'. More than one of such hinges may be applied to the sash and frame according to its height, width or other conditions.

G, G' represent the two leaves of an abutment hinge which are secured to the opposing lower parts of the pivot stile and side of the sash and frame and pivotally connected by a pin *g*, and which form parts of the device whereby the sash is raised and lowered in the frame. The sash leaf G of the abutment hinge rests on the frame leaf G' and turns on the pintle of the latter but does not move vertically relatively thereto. The sash is connected with the leaf G so that it can slide vertically upon the same and also turn horizontally therewith, the preferred means for thus guiding and shifting the sash on this leaf being constructed as follows:—H, H' represent two sash guide plates which are arranged vertically side by side in a recess in the outer edge of the pivot stile of the sash and separated from each other by an intervening space forming a vertical guide way. These guide plates are held in the proper position with reference to each other by means of ribs or lugs *h* formed on the inner side of one of these plates at the upper and lower ends thereof and fitting into grooves *h'* on the inner side of the other plate at opposite ends thereof, and bolts *h''* connecting the corresponding ends of these plates, as shown in Figs. 3, 6 and 7. The outer sash guide plate H' terminates flush with the outer face or edge of the respective sash stile while the other sash guide plate H

stops at its outer edge short of the outer edge of the respective stile forming a longitudinal guideway or recess which receives the sash leaf G of the abutment hinge. The last mentioned guide plate H is provided at its upper and lower ends with perforated ears i which are secured to the outer side of the sash stile. The inner edge of the sash leaf G of the abutment hinge is provided at right angles thereto with a hinge guide plate k which projects inwardly between the two sash guide plates and forms a sliding connection between the sash and the abutment hinge. The sash guide plates are prevented from becoming detached from the hinge guide plate by means of vertical ribs k^1 formed on the inner side of one of the sash guide plates and engaging with vertical grooves k^2 formed in the inner side of the adjacent hinge guide plate, as shown in Fig. 11.

L represents a vertically rotatable eccentric or cam forming part of the means whereby the sash is raised and lowered. This eccentric engages on opposite lateral sides with the inner faces of the sash guide plates while its periphery engages with the upper and lower edges of a socket, notch or recess l formed in the central portion of the hinge guide plate, as shown in Figs. 3 and 10. On its opposite sides the eccentric is provided with trunnions m which are journaled in bearings or openings m^1 in the sash guide plates. Upon turning this eccentric or cam so that its high part or face is uppermost, the sash will be lowered as shown in Figs. 3 and 10, while upon turning the same half way around so that its high part is lowermost, the sash will be raised relatively to the abutment hinge and frame, as shown in Fig. 2. The rotation of the eccentric or cam may be limited upon reaching its upper and lowermost positions by any suitable means, preferably by a stop j formed on the inner edge of the sash guide plate H^1 and adapted to be engaged by the eccentric, as shown in Fig. 10.

Various means may be employed for turning the eccentric, that shown in the drawings consisting of a vertically turning operating handle N provided with a flat sided shank or stem n which projects laterally therefrom through a diametrical slot M formed in the eccentric and its trunnions. This slot for convenience of manufacture opens at one end through the periphery or side of the eccentric and its trunnions, as shown in Fig. 8.

The operating handle and its stem or shank are preferably made separate and connected by a transverse rivet o and the same are retained in operative connection with the eccentric by means of a retaining plate P arranged on the inner side of the sash and having a central opening which receives the

contracted part of the hub of the operating handle and engages on opposite sides with shoulders p, p^1 formed on the adjacent portions of the shank and operating handle, as shown in Fig. 3.

The retaining plate is preferably held in place by means of screws p^2 connecting the same with the adjacent sash guide plate and passing through the intermediate portion of the sash, as shown in Fig. 3. This means of connecting the operating handle permits of applying the same to the eccentric of the lifting device from one side of the sash or the other, and thus enables the same to be used on sash which swing either toward the left or toward the right and also inwardly or outwardly with reference to the frame.

Means are provided for preventing the two leaves of the abutment hinge from moving vertically one relatively to the other when the sash is swung into its closed position, the preferred means for this purpose consisting of a lug q projecting outwardly from the lower part of the sash leaf of the abutment hinge and adapted to engage with a recess q^1 formed in the lower edge of the frame leaf of this hinge, as shown in Fig. 10. When the two leaves of the abutment hinge are thus interlocked and the sash is lowered by means of the eccentric, as shown in Fig. 10, it is impossible to raise the sash from the outside of the window.

I claim as my invention:

1. A fixture for windows having a sash which is mounted in the frame to move vertically and also swing horizontally comprising a hinge having a fixed leaf adapted to be secured to the frame and a movable leaf adapted to be connected with the sash, and means for raising and lowering the sash on said movable leaf comprising a rotatable eccentric or cam interposed between said movable leaf and the sash, substantially as set forth.

2. A fixture for windows having a sash which is mounted in the frame to move vertically and also swing horizontally comprising a hinge having a fixed leaf adapted to be secured to the frame and a movable leaf adapted to be connected with the sash, and means for raising and lowering the sash on said movable leaf comprising a socket arranged on the movable leaf, and a rotatable eccentric or cam pivoted on the sash and engaging with said socket, substantially as set forth.

3. A fixture for windows having a sash which is mounted in the frame to move vertically and also swing horizontally comprising a hinge having a fixed leaf adapted to be secured to the frame and a movable leaf adapted to be connected with the sash, and means for raising and lowering the sash on said movable leaf comprising a socket arranged on the movable leaf, a rota-

table eccentric or cam pivoted on the sash and engaging with said socket, and a handle connected directly with said eccentric or cam, substantially as set forth.

5 4. A fixture for windows having a sash which is mounted in the frame to move vertically and also swing horizontally comprising a hinge having a fixed leaf adapted to be secured to the frame and a movable
10 leaf adapted to be connected with the sash, and means for raising and lowering the sash on said movable leaf comprising a guide plate arranged on the movable hinge leaf, a sash guide plate adapted to be secured to
15 the sash and cooperating with the hinge plate and a rotatable eccentric or cam pivoted on the sash guide plate and engaging with a seat on the hinge guide plate, substantially as set forth.

20 5. A fixture for windows having a sash which is mounted in the frame to move vertically and also swing horizontally comprising a hinge having a fixed leaf adapted to be secured to the frame and a movable leaf
25 adapted to be connected with the sash, and means for raising and lowering the sash on said movable leaf comprising a guide plate arranged on the movable hinge leaf at right angles thereto, a sash guide plate adapted
30 to be secured to the sash and cooperate with the hinge guide plate, and an eccentric or cam pivoted on the sash guide plate and engaging with a seat on the hinge guide plate, substantially as set forth.

35 6. A fixture for windows having a sash which is mounted in the frame to move vertically and also swing horizontally comprising a hinge having a fixed leaf adapted to be secured to the frame and a movable leaf
40 adapted to be connected with the sash, and means for raising and lowering the sash on said movable leaf comprising a guide plate arranged on the movable hinge leaf, a pair of guide plates adapted to be secured to the
45 sash and form a guideway between them which receives the hinge guide plate, and an eccentric or cam pivoted on said sash guide plates and engaging with a seat on the hinge guide plate, substantially as set
50 forth.

7. A fixture for windows having a sash which is mounted in the frame to move vertically and also swing horizontally comprising a hinge having a fixed leaf adapted to
55 be secured to the frame and a movable leaf adapted to be connected with the sash, and means for raising and lowering the sash on said movable leaf comprising a guide plate arranged on the movable hinge leaf, a pair
60 of guide plates adapted to be secured to the sash and form a guideway between them which receives the hinge guide plate, a guide rib arranged on one of the sash guide plates and engaging with a groove in the sash
65 guide plate, and an eccentric or cam piv-

oted on said sash guide plates and engaging with a seat on the hinge guide plate, substantially as set forth.

8. A fixture for windows having a sash which is mounted in the frame to move vertically and also swing horizontally comprising a hinge having a fixed leaf adapted to be
70 secured to the frame and a movable leaf adapted to be connected with the sash, and means for raising and lowering the sash on said movable leaf comprising a guide plate arranged on the movable hinge leaf, a pair
75 of guide plates adapted to be secured to the sash and form a guideway between them which receives the hinge guide plate, and an eccentric or cam engaging with a seat on said hinge guide plate and provided on opposite sides with trunnions which are jour-
80 naled in bearings on the sash guide plates, substantially as set forth.

9. A fixture for windows having a sash which is mounted in the frame to move vertically and also swing horizontally comprising a hinge having a fixed leaf adapted to be
85 secured to the frame and a movable leaf adapted to be connected with the sash, and means for raising and lowering the sash on said movable leaf comprising a guide plate arranged on the movable hinge leaf and hav-
90 ing a seat, a guide plate adapted to be secured to the sash and having a bearing, a rotatable eccentric or cam engaging with said seat and journaled in said bearing and having a flat sided socket, and a handle having a flat
95 sided shank engaging with said socket, substantially as set forth.

10. A fixture for windows having a sash which is mounted in the frame to move vertically and also swing horizontally comprising a hinge having a fixed leaf adapted to be
105 secured to the frame and a movable leaf adapted to be connected with the sash, and means for raising and lowering the sash on said movable leaf comprising a guide plate arranged on the movable hinge leaf and
110 having a seat, a guide plate adapted to be secured to the sash and having a bearing, a rotatable eccentric or cam engaging with said seat and journaled in said bearing and having a flat sided socket which opens
115 through one side of the same, and a handle having a flat sided shank which is arranged in said socket, substantially as set forth.

11. A fixture for windows having a sash which is mounted in the frame to move vertically and also swing horizontally comprising a hinge having a fixed leaf adapted to be
120 secured to the frame and a movable leaf adapted to be connected with the sash, and means for raising and lowering the sash on said movable leaf comprising a guide plate arranged on the movable hinge leaf and
125 having a seat, a guide plate adapted to be secured to the sash and having a bearing, a rotatable eccentric or cam engaging with
130

said seat and journaled in said bearing and having a flat sided socket, a handle having a flat sided shank engaging with said socket, and a retaining plate adapted to be secured to the sash and arranged between opposing shoulders on the handle and shank, substantially as set forth.

12. A fixture for windows having a sash which is mounted in the frame to move vertically and also swing horizontally comprising a hinge having a fixed leaf adapted to be secured to the frame and a movable leaf adapted to be connected with the sash, and means for raising and lowering the sash on said movable leaf comprising a guide plate arranged on the movable hinge leaf and having a seat, a guide plate adapted to be secured to the sash and having a bearing, a

rotatable eccentric or cam engaging with said seat and journaled in said bearing and having a flat sided socket, a flat sided shank engaging its inner end with said socket and having a shoulder at its outer end, a handle connected with said shank and having a shoulder opposite that of the shank, and a retaining plate adapted to be attached to the sash and provided with an opening which receives the hub of said handle between the shoulders of the latter and the shank, substantially as set forth.

Witness my hand this 19th day of July, 1907.

CLINTON D. TABOR.

Witnesses:

ALBERT G. SCHRAFFT,
GEORGE SWEZEY.