

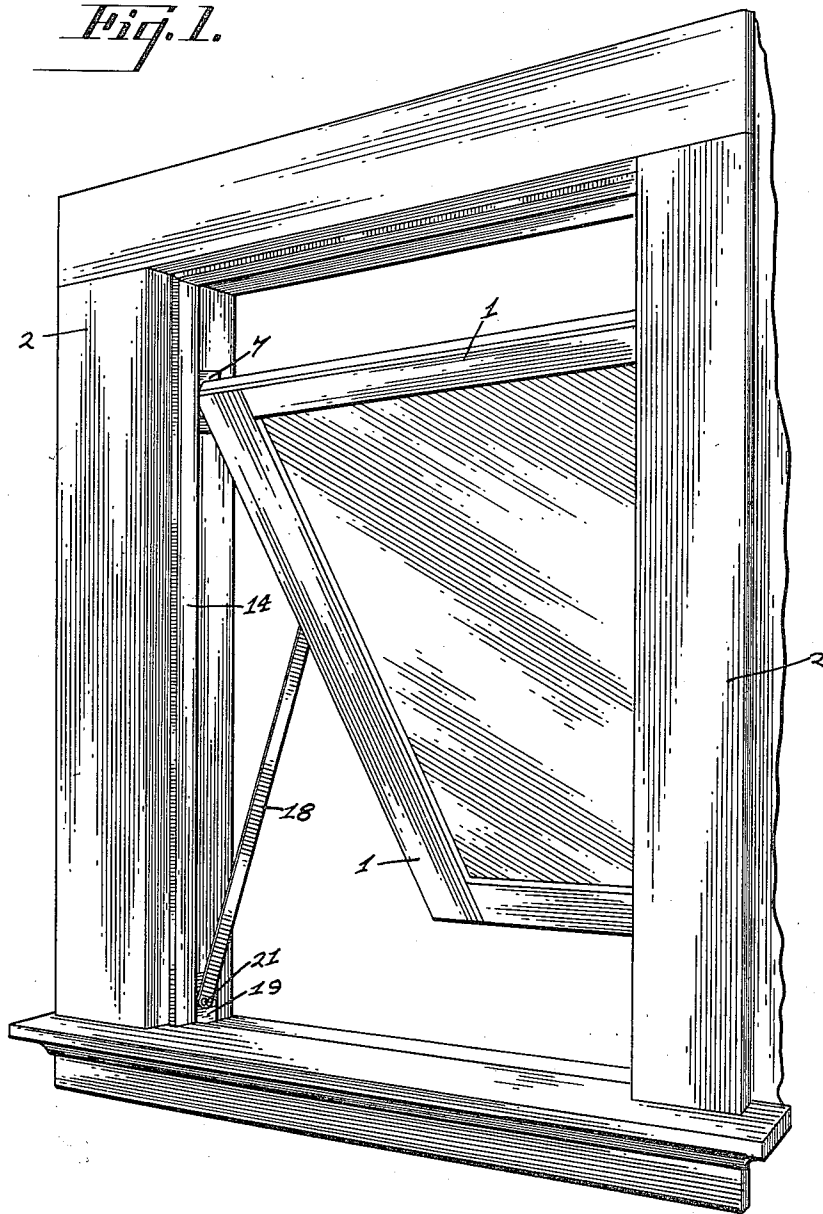
Jan. 30, 1923.

W. E. STEELE.
REVERSIBLE WINDOW.
FILED MAR. 19, 1921.

1,443,933.

3 SHEETS—SHEET 1.

Fig. 1.



Inventor

Warren E. Steele

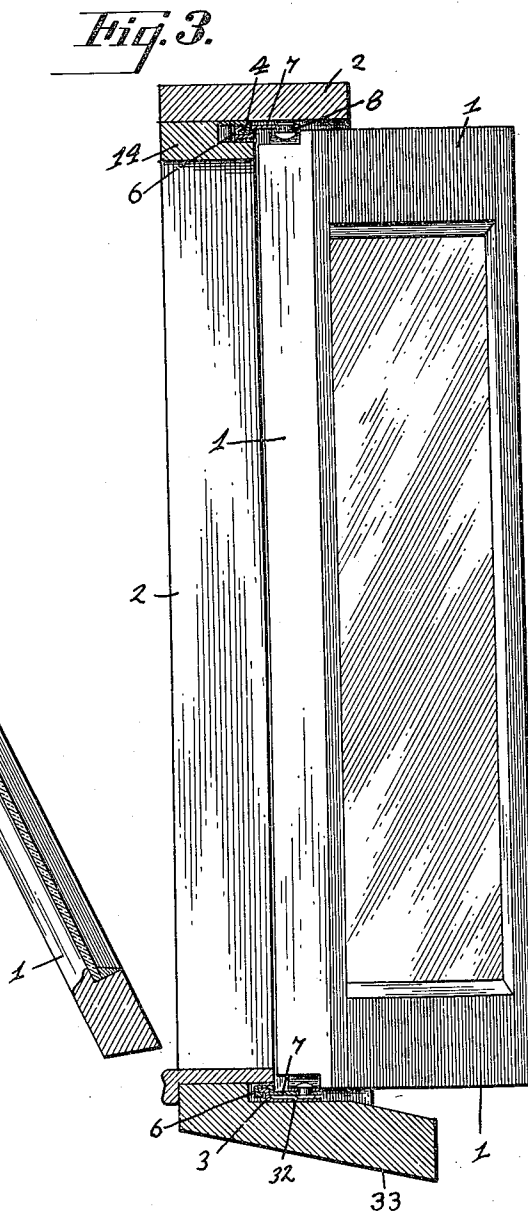
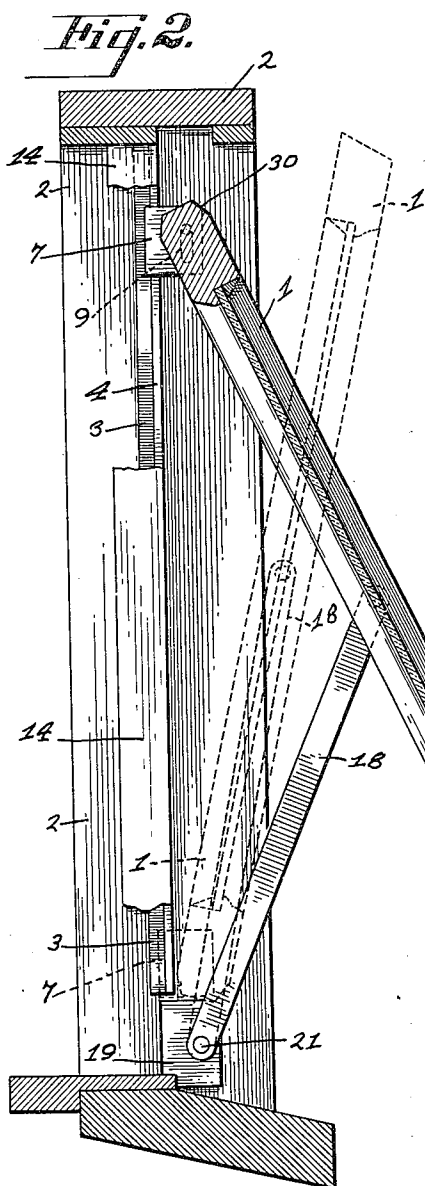
By Arthur L. Slee.
Att'y.

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3 SHEETS—SHEET 2.



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3 SHEETS—SHEET 3.

Fig. 4.

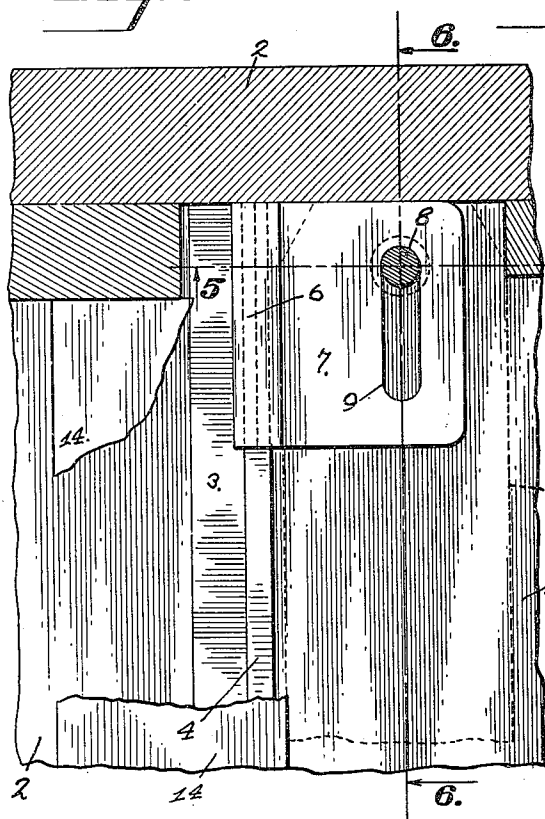


Fig. 6.

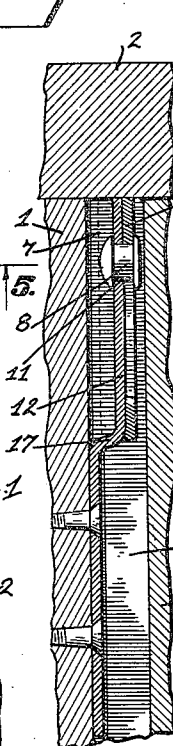


Fig. 7.

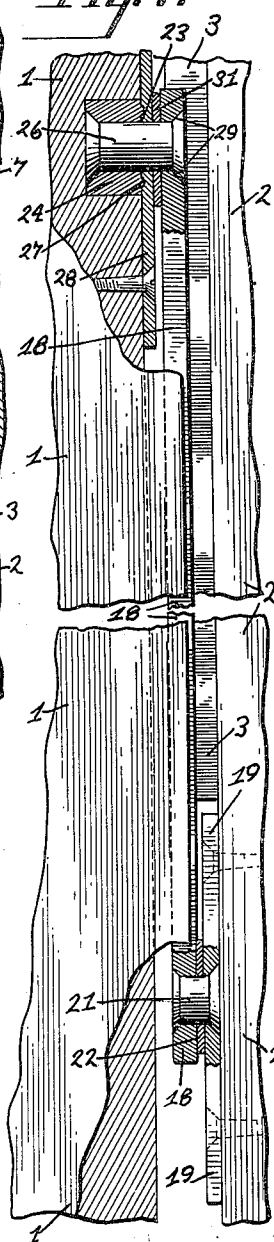
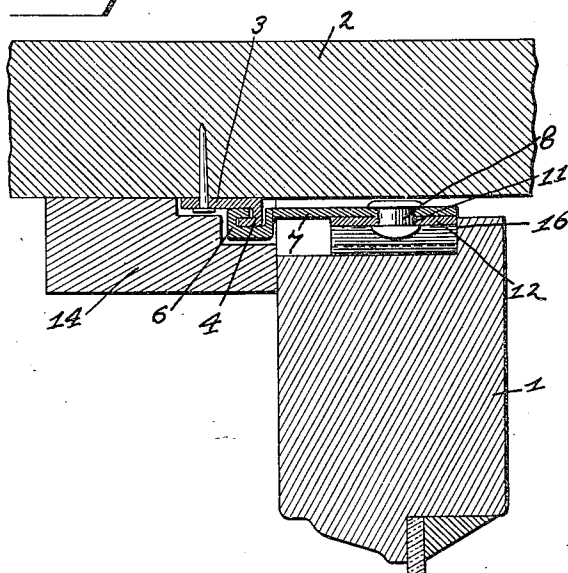


Fig. 5.



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UNITED STATES PATENT OFFICE.

WARREN E. STEELE, OF SAN FRANCISCO, CALIFORNIA.

REVERSIBLE WINDOW.

Application filed March 19, 1921. Serial No. 453,678.

To all whom it may concern:

Be it known that I, WARREN E. STEELE, a citizen of the United States, residing in the city and county of San Francisco, and State of California, have invented a new and useful Improvement in a Reversible Window, of which the following is a specification.

My invention relates to improvements in reversible windows wherein sliding guides and carrier arms normally enclosed within the sash and casement of a window operate to guide and frictionally hold said window in any position when one side of the window is moved outwardly along an arcuate path to the opposite side of the casement.

The primary object of my invention is to provide an improved reversible window.

Another object of my invention is to provide improved means for enclosing the guiding and carrying elements of a reversible window within the sash and casement of a window.

A further object of my invention is to provide improved frictional connections adapted to hold a window in a partially opened position.

A still further object of my invention is to provide an improved window adapted to be mounted within a casement without altering the framing of said casement.

I accomplish these and other objects by means of the improved device disclosed in the drawings forming a part of the present specification wherein like characters of reference are used to designate similar parts throughout said specification and drawing, and in which—

Fig. 1 is a perspective view of my improved window.

Fig. 2 is a vertical section through the window disclosed in Fig. 1, disclosing the manner in which the window may be moved to a reversed position about a horizontal axis.

Fig. 3 is a vertical section similar to Fig. 2 disclosing a window adapted for movement about a vertical axis.

Fig. 4 is an enlarged broken detail disclosing the track and guide shoe at one side of the window.

Fig. 5 is a broken horizontal section taken along the line 5—5 of Fig. 4.

Fig. 6 is a broken vertical section taken along the line 6—6 of Fig. 4.

Fig. 7 is an enlarged broken detail partly in section disclosing my improved carrier arm and friction bearing.

Referring to the drawings the numeral 1 is used in general to designate a window sash mounted within a casement 2. A track 3 is nailed or otherwise secured to the casement 2 upon opposite sides or upon top and bottom as disclosed in Figs. 2 and 3 of the drawings. The tracks are stamped from sheet metal or formed from any other suitable material and are provided each with an L shaped flange 4 adapted to engage an oppositely faced L shaped flange 6 formed upon a shoe 7 arranged to slidably engage a track 3. A shoe 7 is pivotally secured at one end of each side of the sash 1 adjacent the tracks 3 by means of a rivet 8 engaging one end of a slot 9 in the shoe 7 and an aperture 11 provided in a sash strip 12 screwed or otherwise fastened onto the edge of the sash 1. The track 3 is secured to the casement within a recess formed by a shouldered facing member 14 as best disclosed in Fig. 5 of the drawing. The sash 1 is shouldered as at 16 to provide a recess to receive the shoe 7 and sash strip 12, the strip 12 being offset as at 17 to space the shoe 7 away from the sash and permit the shoulder 16 to clear the shoe when the window is moved as hereinafter described. In this manner the track and shoe are enclosed by the casement and sash thereby reducing exposure to the weather and improving the appearance of the finished window.

Carrier arms 18 are pivotally secured at one end thereof to jamb plates 19 secured to the casement 2 at the extreme ends of the tracks 3 remote from the shoes 7 when the window is in the closed position, by means of suitable rivets 21. A washer 22 of brass or other non-corroding material is provided between each arm 18 and its plate 19 to prevent the members from rusting together in a manner preventing relative movement of the same about the rivet 21 as an axis. The other end of each carrier arm 18 is pivotally secured to the sash 1 by means of a friction bearing 23 comprising a bearing block 24 drilled and countersunk to receive one end of a rivet 26 of brass or other non-

corroding material. The blocks 24 are provided with a plurality of lugs 27 adapted to engage recesses formed to match therewith in sash plates 28 screwed or otherwise secured to the sash 1 at points slightly in advance of the center on the shouldered sides of the sash. The carrier arm 18 is drilled to receive the rivet 26 and is provided with a countersunk portion 29. A non-corroding washer 31 is provided between the sash plate 28 and the arm 18 for the purpose previously explained. The carrier arm 18 normally lies within the recess at the edge of the sash edge when the window is closed and is enclosed between the sash and the frame by the shoulder 16.

The edge of the sash 1 between the shoes 7 is beveled as at 30 to permit rotative movement of the sash about the rivets 8 securing the shoes to the sash. The slots 9 are provided in the shoes 7 to permit reversal of said shoe for use either upon the right or left side of the sash. The shoes 7 are riveted to the sash strips 12 before securing the same to the sash 1. When it is desired to change a shoe from a right hand to a left hand shoe, the shoe is turned through 180° about the rivet 8 and moved longitudinally until the rivet 8 engages the slot 9 at the opposite end thereof. In this manner, shoes 7 may be made identical and adapted for use on either side of the sash after assembly.

In operation my window fits neatly against the facing members 14 providing a window of the usual appearance and effectually shutting out air currents, rain and other elements. When it is desired to open the window, the end or side of the sash remote from the shoes 7 is forced outwardly from the casement against the frictional resistance of the bearings, the sash being carried by the arms 18 and moving pivotally about the bearings 23 as best disclosed in Fig. 2 of the drawings. The shoes 7 slide along the tracks 3 and hold the end of the sash to which they are secured in alignment within the casement. The sliding movement of the shoes 7 compensates for the lowering of the pivot bearings 23 as the arm 18 is swung outwardly about the pivot 21. As the bearings 23 are located slightly beyond the center of the sash, the free end of the sash may be moved outwardly along an arcuate path until the opposite end of the casement is reached, the shoes being moved at the same time to the end of the tracks 3 as shown in dotted lines in Fig. 2. In this manner, the window may be reversed to bring the outer side of the window toward the interior to facilitate cleaning and the like.

The operation of a window mounted for movement about a vertical axis is identical with that of a window mounted to move about a horizontal axis. In Fig. 3 I have

illustrated such a window, the lower track 3 being provided with an outwardly extending portion 32 to prevent wear on the sill 33 of the window as the window sash is moved therealong.

The rivets 8, 21 and 26 about which pivotal movement occurs are made sufficiently rigid to cause friction for holding the window in any desired position without the use of props or other locking members.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. In a reversible window, the combination with a casement having recesses and a sash movable in said casement, of a pair of tracks secured to the casement within said recesses; a pair of interchangeable guide shoes pivotally mounted upon one end of the sash and slidably engaging said tracks within said recesses to guide said end within the casement, said shoes having longitudinally disposed slots to permit increased movement of the sash and to permit said shoes to be reversed for application upon either side of the sash; and carrier arms pivotally connected to the casement and the sash to guide the free end of said sash along an arcuate path when moved outwardly from the casement.

2. In a reversible window, the combination with a casement having recesses and a sash movable in said casement, of a pair of tracks having L-shaped flanges formed thereon secured to the casement within the recesses; a pair of interchangeable guide shoes pivotally mounted upon one end of the sash and having L-shaped flanges faced oppositely to and slidably engaging the L-shaped flanges of the tracks within the recesses to guide said end within the casement, said shoes having longitudinally disposed slots to permit increased vertical movement of the sash and to permit said shoes to be reversed for application upon either side of the sash; and carrier arms pivotally connected to the casement and the sash to guide the free end of the sash along an arcuate path when moved outwardly from the casement.

3. In a mounting for reversible windows of the character described, a guide shoe provided with a longitudinal slot; a sash plate adapted for attachment to a window sash; and a rivet slidably and pivotally connecting said sash plate with said shoe through said slot, to permit said shoe to be reversed about said rivet for use upon either side of the sash.

4. In a mounting for reversible windows of the character described, a pair of offset sash plates adapted for attachment to a window sash; a slotted guide shoe pivotally and slidably connected to each sash plate; and a pair of tracks adapted for attachment to a

window casement to be slidably engaged by said guide shoes.

5 In a reversible window of the character described, a carrier arm adapted for pivotal connection with a window casement; and a friction bearing arranged to connect said carrier arm with a window sash, said bearing comprising a sash plate and a bearing block arranged to be mounted in im-

movable relation upon said sash, a rivet rotatably secured within the bearing block and rigidly secured to the carrier arm, and a non-corrodible washer mounted between the carrier arm and the sash plate.

In witness whereof I hereunto set my 20 signature.

WARREN E. STEELE.