

A. C. SOULE.  
REVERSIBLE WINDOW.  
APPLICATION FILED APR. 13, 1910.

981,807.

Patented Jan. 17, 1911.

2 SHEETS-SHEET 1.

Fig. 1.

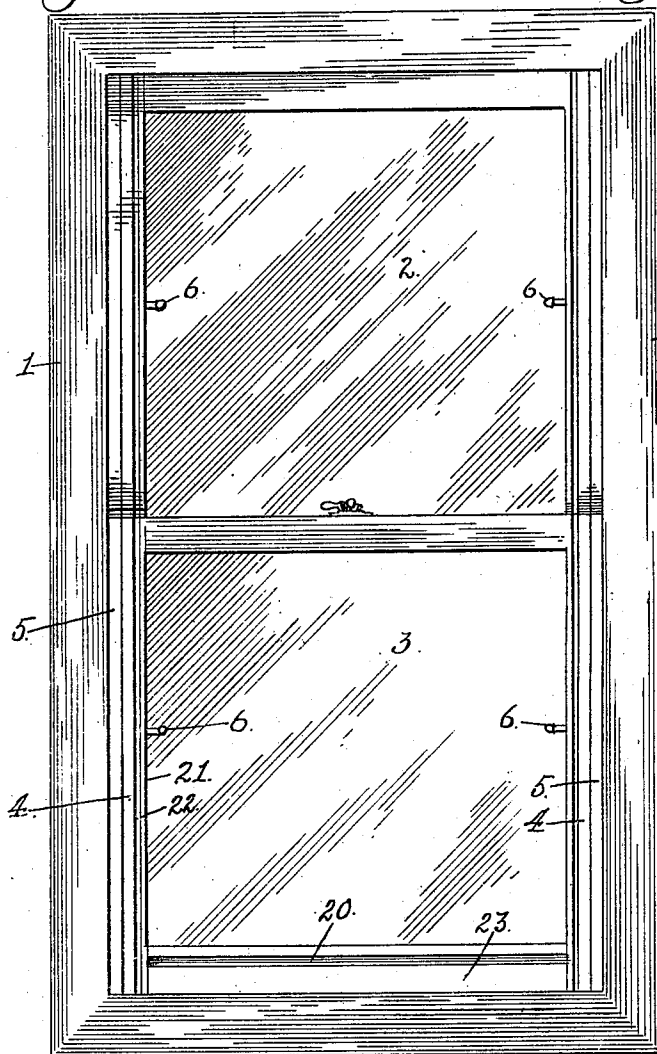


Fig. 2.

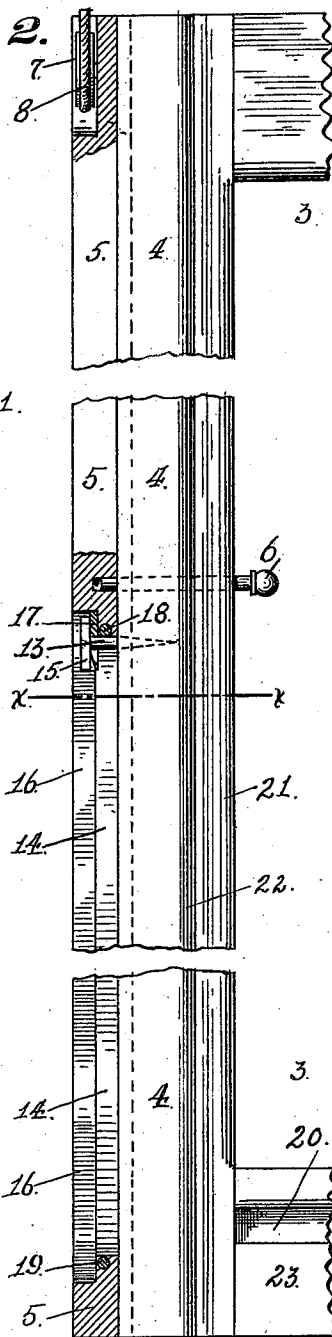
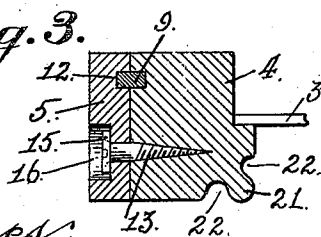


Fig. 3.



Witnesses:

Arthur L. Lee.

S. Constance.

Inventor

Arthur C. Soule

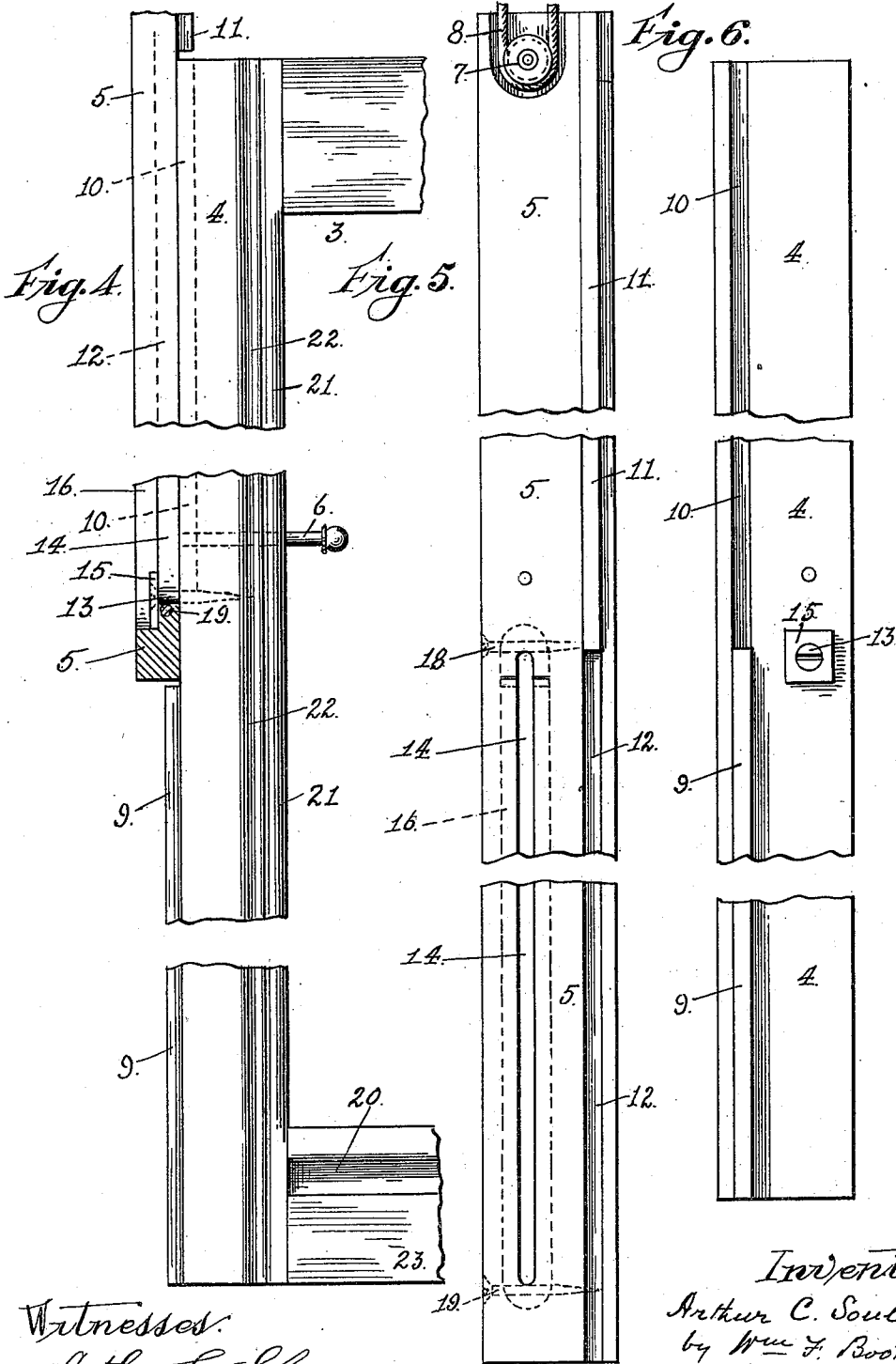
by H. F. Booth

his Attorney.

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2 SHEETS—SHEET 2.



Witnesses:  
 Arthur L. Slee.  
 S. Conner.

Inventor:  
 Arthur C. Soule  
 by Wm. F. Booth  
 his Attorney.

# UNITED STATES PATENT OFFICE.

ARTHUR C. SOULE, OF SAN FRANCISCO, CALIFORNIA, ASSIGNOR TO SOULE REVERSIBLE WINDOW CO., OF SAN FRANCISCO, CALIFORNIA, A CORPORATION OF CALIFORNIA.

## REVERSIBLE WINDOW.

981,807.

Specification of Letters Patent.

Patented Jan. 17, 1911.

Application filed April 13, 1910. Serial No. 555,153.

*To all whom it may concern:*

Be it known that I, ARTHUR C. SOULE, a citizen of the United States, residing in the city and county of San Francisco and State of California, have invented certain new and useful Improvements in Reversible Windows, of which the following is a specification.

My invention relates to the class of reversible windows, and it consists in the novel construction and arrangement of parts which I shall hereinafter fully describe and claim, the object of my invention being to provide a simple, inexpensive and efficient window the sashes of which can be easily manipulated and can be readily reversed for cleaning, etc.

Referring to the accompanying drawings—Figure 1 is a front elevation of a window casing showing two sashes and indicating the general arrangement of parts. Fig. 2 is an elevation, enlarged, of one side of one sash, the carrier-bar being partly in vertical section. Fig. 3 is a cross section on line  $x-x$  of Fig. 2, looking upwardly. Fig. 4 is a side view showing the position of the sash and carrying bar, when the former is about to be reversed. Fig. 5 is a face view of one of the carrier-bars. Fig. 6 is a side view of one of the stiles of the sash frame.

In Fig. 1, the window casing is 1, the upper sash is 2, and the lower sash is 3. As the construction of the two sashes is alike, either may be taken for illustration and description, and I will, therefore, describe my improvements in terms of the lower sash.

In Fig. 2, I show one side of the lower sash, it being understood that the other side is similarly constructed. In this figure, the numeral 4 indicates the stile of the sash, and 5 is its carrier-bar. This bar is fitted to the side of the stile, and is independent thereof, but is adapted to be connected with it or to be disconnected from it, by suitable means, as, for example, by the lock pin 6. The bar 5 extends the full length of the stile 4, and it is this bar which, as seen in Fig. 1, fits and slides within the usual guide groove in the window casing, formed by the customary stop and parting strip, the sash stile itself being free of said casing because its width is less than the width of the casing aperture. The bar 5 is hung and counter

balanced in any suitable way, as I have indicated by the pulley 7 and the rope 8 at its top. Still referring to Fig. 2, it will now be seen that if the locking pin 6 be in the position shown, the sash and its carrier-bar will be locked against relative parallel movement and the two will slide up and down together as a unit, but if the pin be withdrawn from the bar, the sash and bar may move independently of each other, as far as vertical or parallel movement is concerned. In order, however, to hold the sash stile and its carrier-bar together, to lock the former against swinging movement through a vertical arc, and to release it, so that it may have such movement, the meeting faces of the two parts are constructed and made to engage and disengage as follows: The meeting face of the stile 4 as shown best in Figs. 4 and 6, is formed or provided with a tongue 9 which extends from its lower end and terminates at or near the median line, and from there to its upper end said face is formed with a groove 10, aligned with the tongue, as seen in Fig. 6. The meeting face of the carrier-bar 5, as seen best in Fig. 5, is formed or provided with a tongue 11 which extends downwardly from its top, and stops short at or near the middle, from which point and in line with said tongue, a groove 12 extends down to the bottom of the bar. Now, when these two faces are fitted together as in Fig. 2, the opposing tongues and grooves interengage, and while the bar and the stile may slide relatively in the direction of their length, the stile can not swing relatively to the bar. But, if the locking pin 6 be withdrawn as shown in Fig. 4, and the carrier-bar 5 be permitted, by the effect of its counter-balancing or suspending weight to slide upwardly, this movement of said bar, will, as shown in said figure remove its tongue 11 wholly above and out of the groove 10 of the stile 4, and will also carry its own groove 12, above and clear of the tongue 9 of said stile, so that the two parts will then lie together with plane surfaces only, and, as a consequence the sash may be swung relatively to the bar. To permit this swinging movement through a vertical arc, the sash stile and the carrier-bar are pivoted together by the horizontally disposed pin 13 which is seated in the stile. In the carrier-bar 5 is made a long slot 14, as in Fig. 6, through which the pivot pin 13 extends as seen in Fig. 2, and

said pin carries on its outer end a head plate 15 which lies housed within a long channel or recess 16 in the back of the bar.

By referring to Fig. 2, it will be seen that if the locking pin 6 be withdrawn, the carrier-bar 5 may slide up, its slot 14 and channel 16 playing past the pivot pin 13 and its head plate, until, as seen in Fig. 4, the bar reaches its upper limit, at which time the bottom of said groove and channel has reached the pivot pin and its head plate, whereupon, the sash being free as above explained, of the interengaging tongues and grooves, may be turned through a vertical arc with the pivot pin as a center.

In order that the carrier-bar 5 and the sash-stile 4 may make a tight and presentable fit, when they are locked together to act as a unit, when the window is being used in the ordinary manner, I secure within the upper portion of the channel 16 of the carrier-bar 5, as seen in Fig. 2, a plate 17, which as shown has a slightly wedge shape surface. When the head plate 15 of the pivot pin 13 reaches the wedge plate 17, as seen in Fig. 2, it will ride thereon, and by wedging action press and hold the bar and stile closely together to make a neat, close joint.

To prevent undue wear at the upper and lower limits of relative movement of the bar and sash I put an upper screw 18 and a lower screw 19, crosswise through the bar, and these screws in addition to strengthening the bar at the ends of its slotted and channeled portion, receive the direct contact of the pivot pin 13 as seen in Figs. 2 and 4. In order to make the sashes easy of operation in lifting or lowering, I have the following constructions. The lower rail 23 of the lower sash, instead of having short hand holds either attached to or formed in it, is provided with a finger-hold groove 20 extending its full length, so that it may be gripped at any convenient point. Also the stiles of the sashes are formed or provided with a bead 21 which leaves, on each side, grooves 22 of sufficient depth to enable one to readily grip the bead, so that the sashes may be easily lifted or pulled down by catching hold of their stiles.

The following is a résumé of the operation of the sash: When connected as in Fig. 2, the sash can be raised and lowered in the ordinary manner. When it is desired to reverse it, for any purpose, the locking pin 6 is withdrawn from the carrier-bar 5, whereupon said bar moves up under the effect of its counter-balance weight until it reaches the position shown in Fig. 4. In this position the interengaging tongues and grooves of the bar and sash are free from each other, and then the sash may be reversed on its pivot pins 13, turning on a horizontal axis at about its median line. When the sash is

returned, it may be relocked to its carrier-bar, by pulling said bar down to its initial position.

The interengaging tongues and grooves between the meeting faces of the sash stiles and the carrier-bars have the further beneficial effect of making the joint between the parts water tight.

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 of a casing; a sash frame of less width than the width of the casing aperture whereby it may clear said casing in swinging; counterweighted carrier bars fitted and adapted to slide in the sides of the casing; interengaging devices between the meeting faces of the sash frame stiles and the carrier bars to lock the sash frame against a swinging movement said devices being releasable by the relative parallel movement of the stiles and bars in order to free the sash frame to permit its swinging movement; and a horizontally disposed pivotal connection between the sash-frame-stiles and the carrier bars arranged to permit their relative parallel movement and allow the sash frame to swing in a vertical arc.

2. In a reversible window, the combination of a casing; a sash frame of less width than the width of the casing aperture whereby it may clear said casing in swinging; counterweighted carrier bars fitted and adapted to slide in the sides of the casing; interengaging devices between the meeting faces of the sash frame stiles and the carrier bars to lock the sash frame against a swinging movement said devices being releasable by the relative parallel movement of the stiles and bars in order to free the sash frame to permit its swinging movement; a releasable locking connection between the sash-frame stiles and the carrier bars to prevent or permit said relative parallel movement; and a horizontally disposed pivotal connection between the sash-frame-stiles and the carrier bars arranged to permit their relative parallel movement and allow the sash frame to swing in a vertical arc.

3. In a reversible window, the combination of a casing; a sash frame of less width than the width of the casing aperture, whereby it may clear said casing in swinging; counterweighted carrier bars fitted and adapted to slide in the sides of the casing, the meeting faces of the sash frame stiles and carrier bars being provided with complementary tongues and grooves arranged oppositely at opposite ends and terminating at or near the median line of the sash-frame-stiles and bars, whereby when said tongues and grooves are engaged the sash frame is locked against swinging movement, and when disengaged by the relative parallel

movement of the sash frame and bars, said frame is free to swing; and a horizontally disposed sliding pivotal connection between the sash-frame-stiles and the carrier bars arranged to permit the frame to swing in a vertical arc.

4. In a reversible window, the combination of a casing; a sash frame of less width than the width of the casing aperture, whereby it may clear said casing in swinging; counterweighted carrier bars fitted and adapted to slide in the sides of the casing, the meeting faces of the sash frame stiles and carrier bars being provided with complementary tongues and grooves arranged oppositely at opposite ends and terminating at or near the median line of the sash-frame-stiles and bars, whereby when said tongues and grooves are engaged the sash frame is locked against swinging movement, and when disengaged by the relative parallel movement of the sash frame and bars, said frame is free to swing; a releasable locking connection between the sash-frame stiles and the carrier bars to prevent or permit said relative parallel movement; and a horizontally disposed sliding pivotal connection between the sash-frame-stiles and the carrier bars arranged to permit the frame to swing in a vertical arc.

5. In a reversible window, the combination of a casing; a sash frame of less width than the width of the casing aperture, whereby it may clear said casing in swinging, the side faces of the stiles of said sash frame having a tongue extending from one end and terminating at or near the median line, and a groove thence extending in line with the tongue to the other end; counterweighted carrier bars fitted and adapted to slide in the sides of the casing, said bars having on their faces adjacent to the back faces of the sash-frame stiles, a tongue adapted to fit and slide in the groove of said stiles, said tongue extending from one end of the bars and terminating at or near the median line, and having also a groove thence extending in line with the tongue to the other end, said groove slidably receiving the tongue of the sash frame stiles, and said bars having also a slot; and pivot pins seated in the sash frame stiles and extending into and playing in said slot of the carrier bars, and forming pivotal connections on which the said frame may swing in a vertical arc.

6. In a reversible window, the combination of a casing; a sash frame of less width than the width of the casing aperture, whereby it may clear said casing in swinging, the side faces of the stiles of said sash

frame having a tongue extending from one end and terminating at or near the median line, and a groove thence extending in line with the tongue to the other end; counterweighted carrier bars fitted and adapted to slide in the sides of the casing, said bars having on their faces adjacent to the side faces of the sash-frame stiles a tongue adapted to fit and slide in the groove of said stiles, said tongue extending from one end of the bars and terminating at or near the median line, and having also a groove thence extending in line with the tongue to the other end, said groove slidably receiving the tongue of the sash frame stiles, and said bars having also a slot; pivot pins seated in the sash frame stiles and extending into and playing in said slot of the carrier bars, and forming pivotal connections on which the said frame may swing in a vertical arc; and detachable locking pins seated in the sash-frame stiles and engaging the carrier-bars to hold them against relative parallel movement or to release them.

7. In a reversible window, the combination of a casing; a sash frame of less width than the width of the casing aperture, whereby it may clear said casing in swinging, the side faces of the stiles of said sash frame having a tongue extending from one end and terminating at or near the median line, and a groove thence extending in line with the tongue to the other end; counterweighted carrier bars fitted and adapted to slide in the sides of the casing, said bars having on their faces adjacent to the side faces of the sash-frame stiles a tongue adapted to fit and slide in the groove of said stiles, said tongue extending from one end of the bars and terminating at or near the median line, and having also a groove thence extending in line with the tongue to the other end, said groove slidably receiving the tongue of the sash frame stiles, and said bars having also a slot; pivot pins seated in the sash frame stiles and extending into and playing in said slot of the carrier bars, and forming pivotal connections on which the said frame may swing in a vertical arc; a head plate on said pivot pins, and a wedging plate on the carrier-bars, the two co-acting by contact to draw the stiles and bars together.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ARTHUR C. SOULE.

Witnesses:

WM. F. BOOTH,  
D. B. RICHARDS.