

No. 627,165.

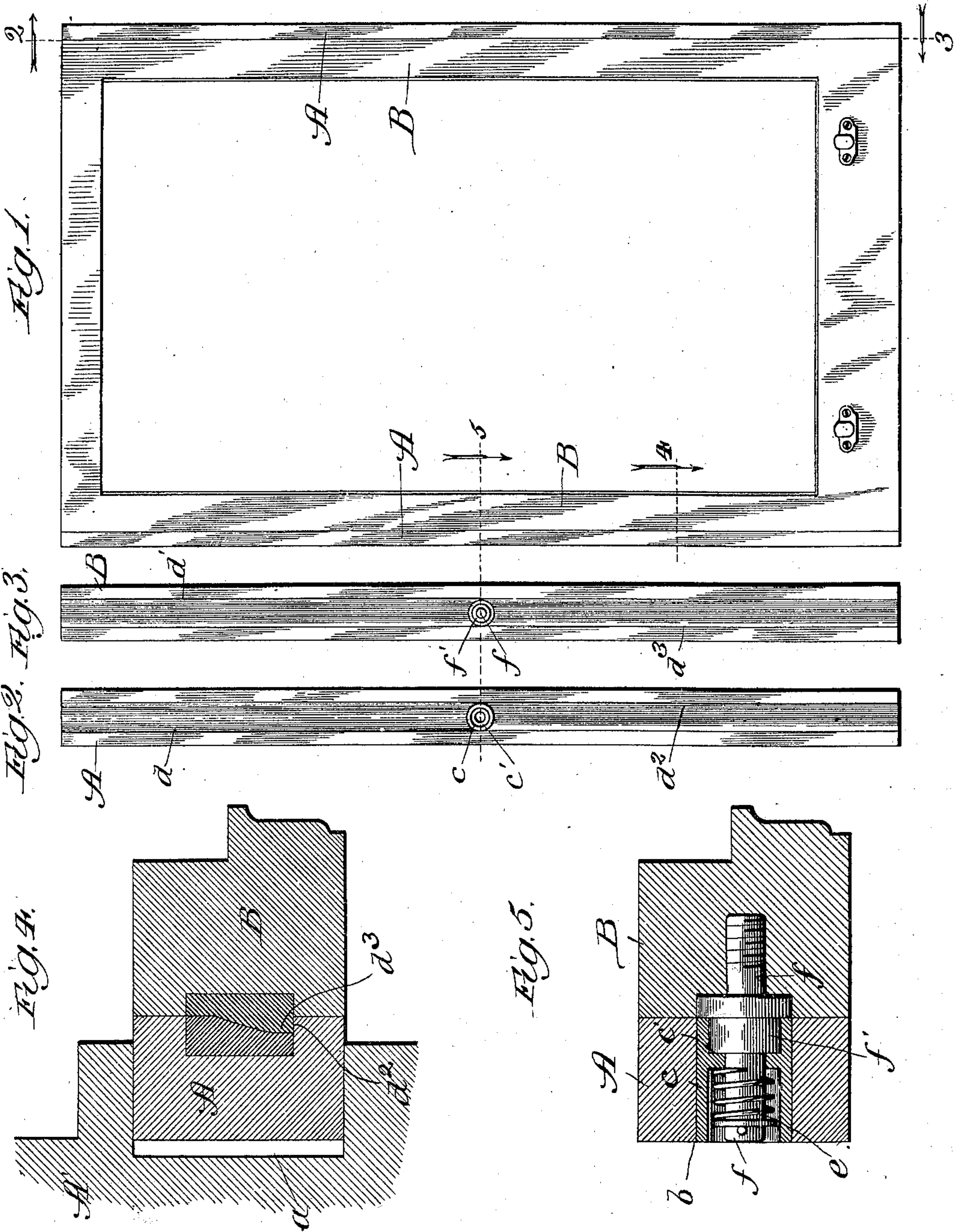
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W. T. WATERSTRAAT.

REVERSIBLE WINDOW.

(Application filed Feb. 25, 1899.)

(No Model.)



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# UNITED STATES PATENT OFFICE.

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## REVERSIBLE WINDOW.

SPECIFICATION forming part of Letters Patent No. 627,165, dated June 20, 1899.

Application filed February 25, 1899. Serial No. 706,823. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM T. WATERSTRAAT, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Reversible Windows, of which the following is a specification.

My invention relates to an improvement in the class of reversible windows in which the sash is supported on pivots to permit it to be swung about to bring the outer side, for cleaning it, within the room.

More definitely stated, my invention relates to an improvement in the class of reversible windows thus generally described in which the pivots consist of pins projecting from the sash-rails into bearings yieldingly confined in the window-frame against springs, said bearings and sash-rails having meeting faces provided longitudinally with means for rendering them weatherproof and adapted to cooperate cam-like by turning the sash to spread the bearings apart for permitting the sash to be turned.

My object is to provide a cam-like construction of shouldered face on the meeting surfaces of the sash-rails and yielding bearings which shall afford a thoroughly weatherproof joint between them.

In the accompanying drawings, which illustrate my improvement applied to a window-sash pivotally supported in sliding stiles at its sides to swing through a vertical plane, Figure 1 is a view of the window in front elevation; Fig. 2, a face view of one of the sliding stiles, taken at the line 2 on Fig. 1 and viewed in the direction of the arrow; Fig. 3, a similar view of a side rail of the window-sash stile, taken at the line 3 on Fig. 1 and viewed in the direction of the arrow; Fig. 4, a section taken at the line 4 on Fig. 1, viewed in the direction of the arrow and enlarged; and Fig. 5, a section taken at the line 5 on Fig. 1, viewed in the direction of the arrow and enlarged.

A A are sliding stiles confined in longitudinal recesses *a*, provided in the sides of the window-frame A', a section of which is shown in Fig. 4. Each recess *a* is, as shown of the one presented in Fig. 4, deeper than the thickness of the sliding stile fitting between its sides to permit it to yield outwardly for

the purpose hereinafter described. Centrally between the ends of each sliding stile it is provided with a transverse opening *b*, containing a thimble *c*, having an internal annular flange *c'*, all for a purpose hereinafter described. Along the exposed face of each sliding stile there extends, behind (toward the outer side of the window) its longitudinal center, from its upper end to the opening *b*, a straight shoulder *d*, and from the shoulder *d* toward the inner side of the window the surface of the stile in cross-section is straight part way across and thence bulging. From the opening *b* to the lower end of the stile A there extends, forward (toward the inner side of the window) of its longitudinal center, a straight shoulder *d*<sup>2</sup>, and from the shoulder *d*<sup>2</sup> toward the outer side of the window the surface of the stile is the same shape in cross-section as that extending from the shoulder *d*.

B B are the sash-stiles, from points midway between the ends of which project outward the pivot-pins *f* into the thimbles *c* in the sliding stiles, in which the pivots find bearing at bosses *f'* upon them abutting against the internal annular flanges *c'*, and about the pivot-pins beyond the flanges *c* are confined coiled springs *e*. Each stile B has formed upon its outer face a straight shoulder *d'*, extending from its upper end to the pivot-pin *f* at a distance from the side of the stile facing from the room provided with the window corresponding with the transverse width of the shoulder *d* on a sliding stile, and from the shoulder *d'* toward the inner side of the window the surface of the stile in cross-section is bulging part way across and thence straight. From the pivot-pin *f* to the lower end of each stile B there extends a straight shoulder *d*<sup>3</sup> at a distance outward (from the room) from the inner side of the stile corresponding with the transverse width of the shoulder *d*<sup>2</sup> on a sliding stile A, and from the shoulder *d*<sup>3</sup> toward the outer side of the stile its surface is shaped in cross-section the same as that extending from the shoulder *d'*. When, therefore, the window-sash is in its closed position, the shoulders *d* and *d'* on the meeting faces of the sliding stiles A and sash-stiles B, respectively abut, as do the shoulders *d*<sup>2</sup> and *d*<sup>3</sup>, respectively, on the meeting surfaces of of the sliding and sash stiles. The springs *e*



press the sliding stiles against the sash-stiles, and thus tend to hold the abutting shoulders together, thereby producing thorough weatherproof closure of the joints between the meeting faces of the sliding and sash stiles.

By turning the window on its pivot-supports the bulging sections of the surfaces of the sash-stiles, respectively above and below the planes of the pivots and forward and backward of the shoulders on the sash-stiles, are turned against the adjacent bulging sections of the surfaces of the sliding stiles, respectively forward of and behind the shoulders  $d$   $d^2$  thereon. The bulging sections of the meeting surfaces of the sliding and sash stiles thus act as cams against each other to force the sliding stiles against the resistance of the springs  $e$  farther into their recesses  $a$  to permit the stiles  $B$  in turning the window-sash to pass them, and in returning the sash to its normal position the springs by their recoil action replace the sliding stiles to abut the shoulders upon them against those on the sash-stiles.

My improvement is equally applicable to a sash pivotally supported at its upper and lower rails to swing on a vertical axis through a horizontal plane when the upper and lower sash-rails are formed like the sash-stiles  $B$ , and stiles  $A$ , like the sliding stiles, are yieldingly supported though not to slide lengthwise in the upper and lower ends of the window-frame.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a reversible window, the combination of a sash, bearings yieldingly confined in recesses in the window-frame and in which said sash is pivotally supported, and mutually-abutting shoulders and cooperating cam-surfaces on the meeting faces of said sash and bearings, substantially as and for the purpose set forth.

2. In a reversible window, the combination of a sash, bearings confined in recesses in the

window-frame and having inward and outward play therein, pivot-pins projecting from the sash into said bearings and provided with springs holding together the meeting faces of the sash-rails and said bearings, and mutually-abutting shoulders and cooperating cam-surfaces on said meeting faces, substantially as and for the purpose set forth.

3. In a reversible window, the combination of a sash, sliding stiles yieldingly confined in recesses in the sides of the window-frame and in which said sash is pivotally supported at its stiles, and mutually-abutting shoulders and cooperating cam-surfaces on the meeting faces of said sash-stiles and sliding stiles, substantially as and for the purpose set forth.

4. In a reversible window, the combination of a sash, sliding stiles confined in recesses in the sides of the window-frame and having inward and outward play therein, pivot-pins projecting from the sash-stiles into said sliding stiles and provided with springs holding together their meeting faces, and mutually-abutting shoulders and cooperating cam-surfaces on said meeting faces, substantially as and for the purpose set forth.

5. In a reversible window, the combination of a sash having its stiles  $B$  provided with pivot-pins and with shoulders  $d'$   $d^3$  and cam-surfaces on their faces, and sliding stiles  $A$ , in which said pivot-pins have bearing, confined in recesses in the sides of the window-frame and having inward and outward play therein, shoulders  $d$   $d^2$  and cam-surfaces on the faces of said sliding stiles, and springs confined against said sliding stiles to hold their shouldered cam-faces in meeting contact with the shouldered cam-faces of said sash-stiles, substantially as and for the purpose set forth.

WILLIAM T. WATERSTRAAT.

In presence of—

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