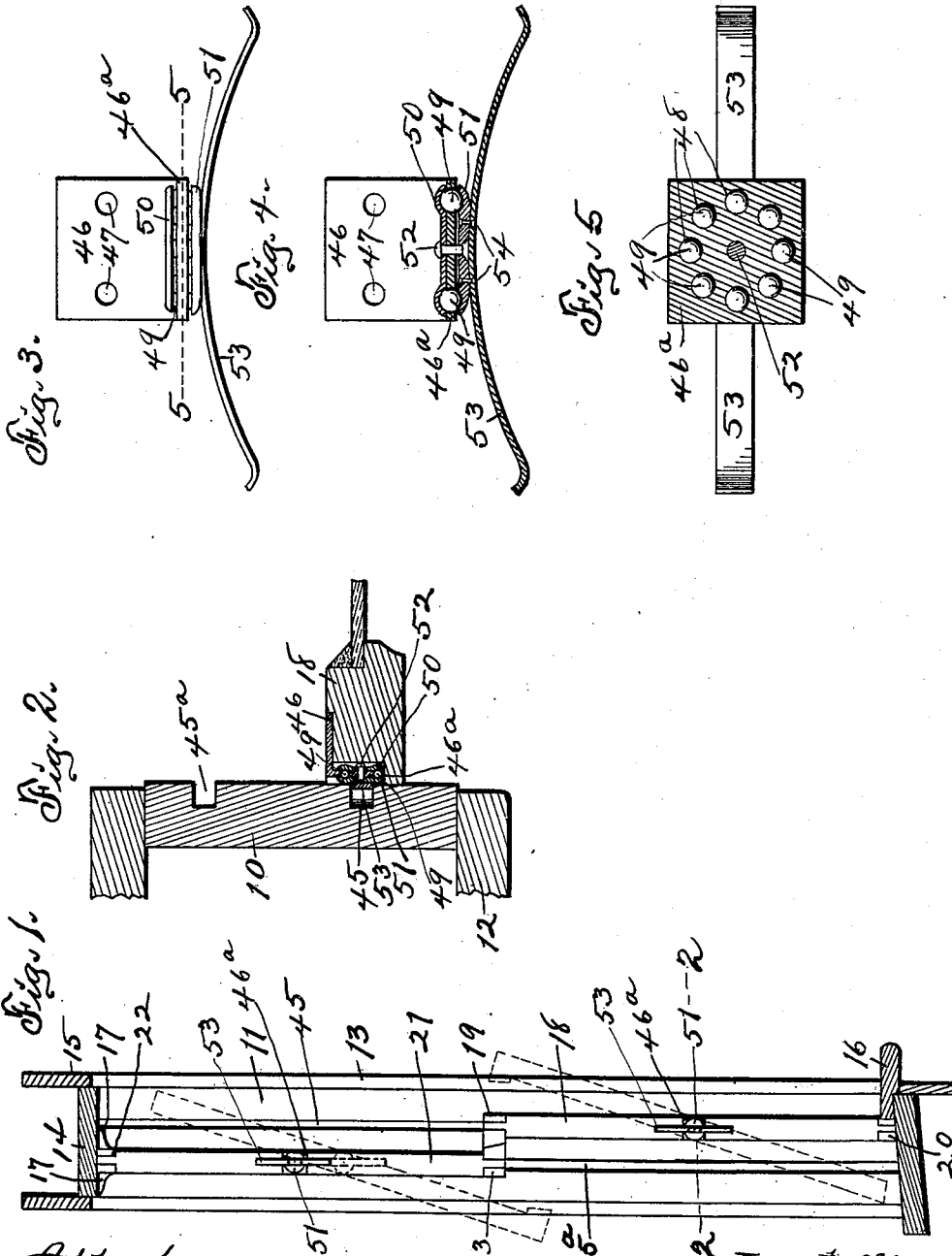


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REVERSIBLE WINDOW.
APPLICATION FILED SEPT. 6, 1910.

988,277.

Patented Mar. 28, 1911.



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UNITED STATES PATENT OFFICE.

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REVERSIBLE WINDOW.

988,277.

Specification of Letters Patent.

Patented Mar. 28, 1911.

Original application filed May 9, 1910, Serial No. 560,283. Divided and this application filed September 6, 1910. Serial No. 580,750.

To all whom it may concern:

Be it known that we, WILLIAM H. MEIXEL and JESSE L. MEIXEL, citizens of the United States of America, and residents of York, York county, Nebraska, have invented a new and useful Reversible Window, of which the following is a specification.

The object of this invention is to provide improved means for pivoting window sashes in a frame.

Our invention consists in the construction, arrangement and combination of elements hereinafter set forth, pointed out in our claims and illustrated by the accompanying drawing, in which—

Figure 1 is an elevation, partly in section, of a pair of sashes showing our improved pivoting device applied thereto, dotted lines indicating abnormal positions of the sashes. Fig. 2 is a horizontal section on the indicated line 2—2 of Fig. 1. Fig. 3 is an elevation of the pivoting device detached from a sash and shown at right angles to the illustration in Fig. 1. Fig. 4 is an elevation similar to Fig. 3 and partly in section. Fig. 5 is a vertical section on the indicated line 5—5 of Fig. 3.

The subject matter of this application is divided out of our application filed May 9, 1910, Number 560,283.

In the construction and mounting of the devices as shown the numerals 10, 11 designate jambs, 12, 13 vertical face casings, 14 a header, 15 a head casing and 16 a sill of a window frame, which frame may vary in construction as desired so long as it retains the characteristics noted. Stops 17 are mounted parallel with each other and project downward from the header 14 and extend from the jamb 10 to the jamb 11. These stops 17 are spaced apart a distance equal to the thickness of the upper end of the upper sash of the window. The window frame preferably is provided with two sashes of ordinary construction. The lower sash comprises stiles 18, an upper rail 19, a lower rail 20 and suitable glazing. The upper sash comprises stiles 21, an upper rail 22, a lower rail 23 and suitable glazing. The stiles of these sashes are not provided with the usual socket and groove for sash cords inasmuch as they are not designed to be employed with sash-cords and weights. The upper rail 19 and lower rail 23 are provided with the usual beveled projections

or lips for fitting such rails together when the window is closed. The upper and lower sashes are mounted, when the window is closed, in parallel vertical planes, the upper margin of the top rail 22 entering between the stops 17 and the lower margin of the bottom rail 20 overlapping downward on the outer marginal face of the sill 16. The side margins of the sashes are in sliding engagement with or slightly spaced from opposing faces of the jambs 10, 11. The jambs 10, 11 are provided with grooves 45, 45^a parallel with each other. Angle plates 46 are mounted in mortises in and embrace outer edges of the stiles 18 and 21 midway between the rails 19, 20 and 22, 23. The angle plates 46 are secured to the stiles by screws mounted through holes 47 (Fig. 3) in their base members and seated in the rear faces of the stiles. Flange members 46^a of the angle plates extend partly across side margins of the stiles 18, 21 and are formed with a plurality of holes 48 arranged in annular rows concentric with the centers of said flange members (Fig. 5). Balls 49 are mounted in the holes 48 and project from both faces of said flange members.

Bearing plates 50, 51, each formed with annular raceways, are mounted on opposite sides of the flange members 46^a and are secured thereto pivotally by rivets 52 extending through the centers of said plates and flange members. The bearing plates 50, 51 overlie and engage with their ball races diametrically opposite points of the balls 49. Semi-elliptic springs 53 are fixed to the outer faces of the bearing plates 51 by means of rivets 54. The springs 53 extend within and longitudinally of the grooves 45, 45^a in the jambs 10, 11 and are compressed normally so as to exert pressure in opposite directions against the bottoms of the grooves and the bearing plates 51 respectively, which pressure is of sufficient degree to overcome the normal gravity of a sash and hold said sash in any position in which it may be placed manually. The stiles 18, 21 and angle plates 46 articulate on the rivets 52 when manually oscillated in either direction.

In practical use the sash can be raised or lowered at will, the springs 53 sliding in the grooves 45, 45^a, and when so moved as to be released from the sill 16 or stops 17 either sash may be oscillated in either direction on horizontal axes articulating on the rivets 52.

At the same time the sash is being oscillated it is maintained at any desired elevation by frictional engagement of its springs 53 in the respective grooves of the jambs.

- 5 Any desired means may be employed to maintain the sash in vertical positions in the frames or to bridge the joints between said sash and the jambs, such, for instance, as the weather-strip described in our pend-
10 ing application from which this application is divided.

We claim as our invention—

1. In a reversible window, the combination of a sash, angle plates on stiles of said
15 sash, one flange of each angle plate formed with an annular row of holes, balls mounted in said holes, bearing plates overlying and inclosing said balls, pivots connecting said bearing plates and flanges, and springs carried by the outermost bearing plates.

2. In a reversible window, the combination of a frame having jambs, said jambs provided with longitudinal grooves, a sash having stiles, angle plates on said stiles, one
25 flange of each angle plate formed with an annular row of holes having their axes at right angles to the jambs, balls mounted in said holes, bearing plates overlying and inclosing said balls, pivots connecting said
30 bearing plates and flanges axially of the row of balls, and springs carried by the outermost bearing plates, the springs extending within and slidingly engaging the bottoms of the grooves of the jambs, said springs
35 being compressed within the grooves and

exerting resilience on the jambs and outermost bearing plates.

3. Means for pivoting a window sash, comprising plates adapted to be mounted on a sash, each plate formed with an annular
40 row of holes, balls mounted in said holes, bearing plates overlying opposite sides of said balls, pivots connecting said bearing plates and first plate, and springs carried by the outermost bearing plates.

4. Means for pivoting a window sash, comprising plates adapted to be mounted on a sash, each plate formed with an annular
45 row of holes, balls mounted in said holes, bearing plates overlying opposite sides of said balls, pivots connecting said bearing plates and first plates, and means carried by the outermost bearing plates for engagement with a window frame.

5. Means for pivoting a window sash, comprising plates adapted to be mounted on a sash, each plate formed with an annular
55 row of holes, balls mounted in said holes, bearing plates overlying opposite sides of said balls, pivots connecting said bearing plates and first plates, and semi-elliptic
60 springs carried by the outermost bearing plates.

Signed by us at York, Nebraska, this 29th day of June, 1910.

WILLIAM H. MEIXEL.
JESSE L. MEIXEL.

Witnesses:

W. E. McCloud,
I. A. Baker.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."