J. M. OLIVER.
BEARING FOR WINDOW SASHES.


Witnesses
Edwin G. Co. Aco.
Louis G. Anderson.

Inventor
James M. Oliver
By John Wedderburn
his Attorney.
To all whom it may concern:

Be it known that I, JAMES MILTON OLIVER, a citizen of the United States, residing at Orangeburg, in the county of Orangeburg and State of South Carolina, have invented certain new and useful Improvements in Bearings for Window-Sashes; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in window-sashes and sliding doors, the same residing particularly in the peculiar construction of ball-bearings between the moving parts.

The object of the invention is to produce an antifrictional bearing between the window-sash or door and its frame, so that said sash or door may be easily raised or lowered or moved from side to side for the purpose of opening and closing the same.

The invention consists of a suitable framework having a groove extending longitudinally thereof and a door or window-sash recessed at points along its outer edge, in which recesses balls are inserted and held in place by plates secured to the edges of said sash or door, said plates being formed with slots therein narrower than the diameter of the balls, thereby permitting the balls to project slightly beyond the edge of the sash, permitting a sliding and rolling movement of said balls and preventing the same from falling out of the sockets or recesses in which they are placed. A suitable spring-stop is provided upon the side of the window-sash, which engages notches along the edge of the window-frame for securing the sash in any one of its adjusted positions. I further provide means for tightening the bearing parts in case they become worn, the same consisting of a movable slat or bar provided with laterally-extending elongated slots, by means of which said slat or bar may be moved inwardly or outwardly for this purpose.

The invention also consists in other details of construction and combinations of parts, which will be hereinafter more fully described and claimed.

In the drawings forming a part of this specification, Figure 1 represents a perspective view of a window-frame with one sash therein. Fig. 2 is an edge view of the sash. Fig. 3 is a cross-section on the line 3 3 of Fig. 1; and Fig. 4 is a perspective view of a sliding door, showing the application of my invention thereto.

Like reference-numerals indicate like parts in the various views.

In Fig. 1 the preferred form of my invention is shown, in which 1 represents the window-frame, and 2 the window-sash moving therein. The frame 1 is formed with inclined inner edges, which are covered by suitable wear-plates 3, formed with a longitudinal groove or corrugation 4 therein. These inclined surfaces are made upon removable strips 5, which are formed with elongated slots 6, through which they are secured to the frame proper 1 through suitable screws, the slots 6 enabling a vertical adjustment of said strips. The sash 2 is formed with angularly-cut outer edges, having recesses or sockets 7 therein, in which fit a series of balls 8, as clearly shown. These balls are held in place by means of plates 9, having slots 10 cut therein, which are narrower than the diameter of the balls 8, but of such a width as to permit the outer edges of said balls to project therethrough, but prevent the same from falling out of the recesses or sockets 7. When the sash 2 is in place in the window-frame 1, the balls 8 fit the longitudinal groove or corrugation 4 in the wear-plates 3, and a tight joint is thereby formed between the sash and the frame, preventing the entrance of air from the outside. A spring-stop 11, of any suitable form of construction, is secured to the side of the sash 2 and engages notches 12 90 upon one of the strips 5 of the frame 1.

By the construction just described it will be seen that I provide a perfect antifrictional bearing between the window sash and frame, and at the same time form the joints between said sash and frame so as to prevent the entrance of cold air from without. The sash may also be raised or lowered and adjusted at any point, and in case of wear of the bearing parts the strips 5 may be conveniently adjusted to take up said wear.

In the form of my invention shown in Fig. 4 its application to a sliding door is illustrated. In this view, 13 represents the door...
having a square lower edge instead of the angular edges described with reference to the window sash 2. In all other respects it is exactly like the preferred form of my invention.

5

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

1. The combination with a stationary frame having a longitudinal groove therein, of a sash or door adapted to slide therein, said sash or door having recesses or sockets formed in its edges adjacent to said stationary frame, a series of balls loosely mounted in said recesses, and a plate secured to the edge of said sash or door having an elongated slot therein registering with the socket or recess in said sash or door and narrower than the diameter of said balls, substantially as and for the purpose described.

2. The combination with a window frame whose inner edges are formed with inclined surfaces, and wear plates secured to said inclined edges having longitudinal grooves or corrugations therein, of a window sash having angularly cut outer edges fitting within said frame and provided with recesses or sockets therein, balls loosely mounted in said recesses or sockets, and plates secured to the inclined edges of said sash, having elongated slots registering with said recesses or sockets and of narrower width than the diameter of the balls contained therein, substantially as and for the purpose described.

3. The combination with a window frame, strips fitting the inner edges thereof, having slots therein through which securing screws are passed, by means of which said strips may be adjusted, said strips being formed with inclined inner edges, and wear plates thereon formed with longitudinal grooves or corrugations, of a window sash having angularly cut outer edges fitting within said frame and provided with recesses or sockets therein, balls loosely mounted in said recesses or sockets, and plates secured to the inclined edges of said sash having elongated slots registering with said recesses or sockets and of narrower width than the diameter of the balls contained therein, substantially as and for the purpose described.

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

JAMES MILTON OLIVER.

Witnesses:

A. A. BRANTLEY,

Wm. M. STOCKBRIDGE.