No. 768,927. PATENTED AUG. 30, 1904.

F. C. BILLINGS.

DRAWER GUIDE.

APPLICATION FILED JAN. 15, 1904.

NO MODEL.

Fig. 1.

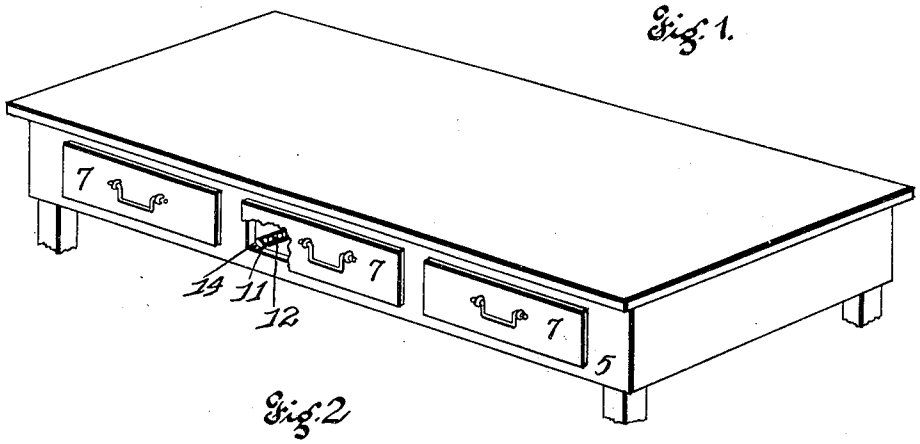


Fig. 2

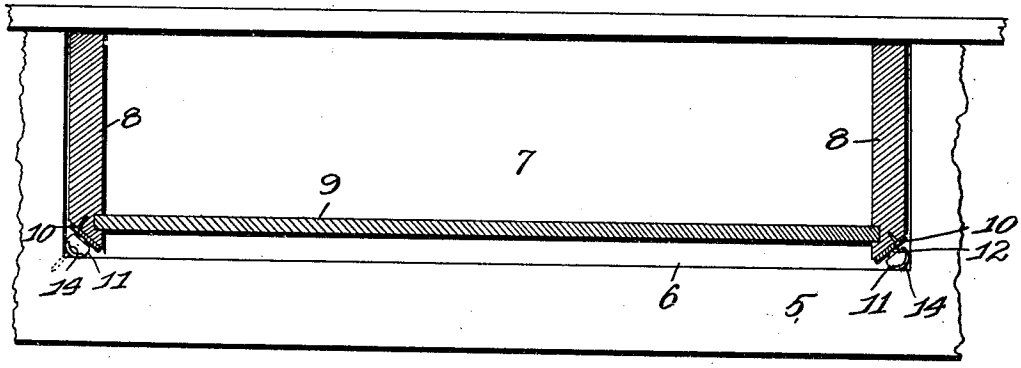


Fig. 3

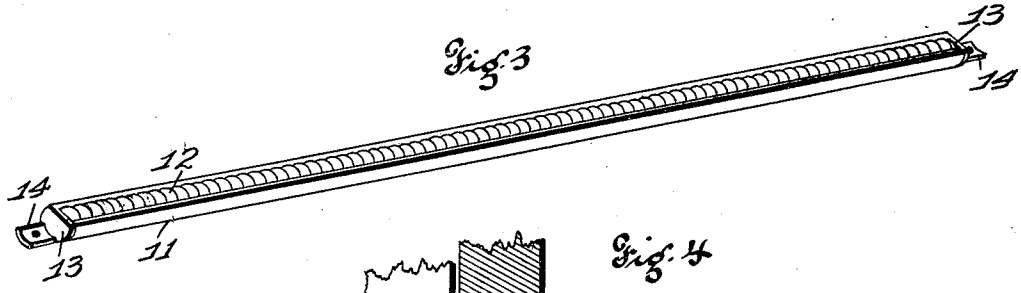
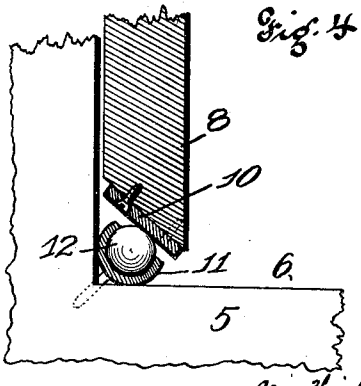


Fig. 4



Witnesses

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by Higdon & Longan & Hopkins Attys

No. 768,927. Patented August 30, 1904.

UNITED STATES PATENT OFFICE.

FREDERICK C. BILLINGS, OF MACON, MISSOURI.

DRAWER-GUIDE.

SPECIFICATION forming part of Letters Patent No. 768,927, dated August 30, 1904.

Application filed January 15, 1904. Serial No. 189,128. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK C. BILLINGS, a citizen of the United States, residing at Macon, Macon county, State of Missouri, have invented certain new and useful Improvements in Drawer-Guides, of which the following is a specification containing a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention relates to drawer-guides, my object being to construct an antifriction drawer-guide consisting of but two members so arranged that the drawer is supported and centralized, thereby avoiding friction at the sides as well as at the bottom of the drawer; and my improved drawer-guide comprises the combination, with a frame having a drawer-opening, of a drawer adapted to slide in said opening, the supporting-surfaces of said drawer being oppositely inclined at an angle of approximately forty-five degrees relative to a horizontal or vertical line, ball-races mounted in said opening, and balls in said ball-races to sustain and guide said supporting-surfaces, so that the drawer is supported by said balls, and so that the drawer is held in a central position with its sides out of contact with the frame.

In the drawings, Figure 1 is a perspective of a table-top, showing one member of my improved drawer-guide in position for use. Fig. 2 is an enlarged detail showing the frame-opening, the drawer in section, and the drawer-guides in position for use, the frame being broken away to economize space. Fig. 3 is an enlarged detail of one member of the drawer-guide. Fig. 4 is an enlarged sectional detail through the drawer and the drawer-guide, the frame being broken away.

Referring to the drawings in detail, the frame 5 has a drawer-opening 6, and the drawer 7 is adapted to fit in this opening. The sides 8 of the drawer extend below the bottom 9, and the lower edges of the sides 8 are beveled oppositely to an angle of forty-five degrees relative to a vertical or horizontal line, and the bearing-plates 10 are placed in position and secured to these beveled faces to form hard supporting-surfaces for the drawer. The ball-races 11 are placed in the lower corners of the drawer-opening 6 with the balls in contact with the supporting-surfaces 10, so that the balls support the drawer and cause the drawer to assume a central position, so that the sides 8 are out of contact with the frame. In constructing the ball-races I take a tube and cut away substantially one-third of the tube, fill the tube with balls 12, bend portions of the tube laterally to form the end walls 13, and leaving the ears 14 extending beyond the end walls 13, through which screws or nails are inserted into the frame 5 to hold the ball-races in position in the corners of the drawer-opening 6. After the ball-races have been placed in position the open sides are oppositely inclined to match the inclinations of the supporting-surfaces 10. In cross-section the ball-race 11 is somewhat greater than a half-circle, so that the balls must be inserted from the end, and when so inserted and the ends closed the balls will remain in the races. Thus I have produced a drawer-guide comprising two independent members which form an antifriction-support for the drawer and which serve to centralize the drawer, thus holding not only the bottom, but both of the sides of the drawer out of contact with the frame.

I claim—

In a drawer-guide, the combination with a frame having a drawer-opening; of a drawer adapted to slide in said opening, the supporting-surfaces of said drawer being oppositely inclined, ball-races mounted in said opening and balls in said ball-races in position to engage said supporting-surfaces, each of said ball-races comprising a piece of tube one-third cut away in cross-section, end pieces closing said tube and holding said balls in position, and ears extending beyond said end pieces to secure the ball-races to the frame, substantially as described.

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

FREDERICK C. BILLINGS.

Witnesses:

ALFRED A. EICKS,

M. G. IRION.