

962,502.

Patented June 28, 1910.

2 SHEETS—SHEET 1.

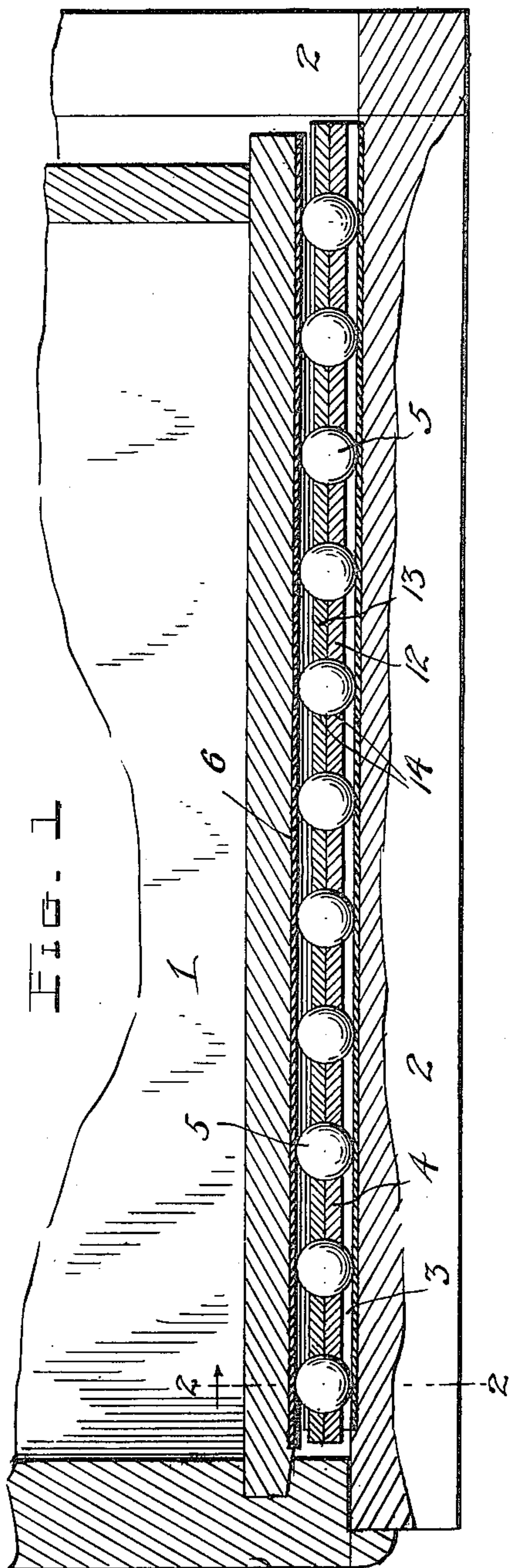


FIG. 1

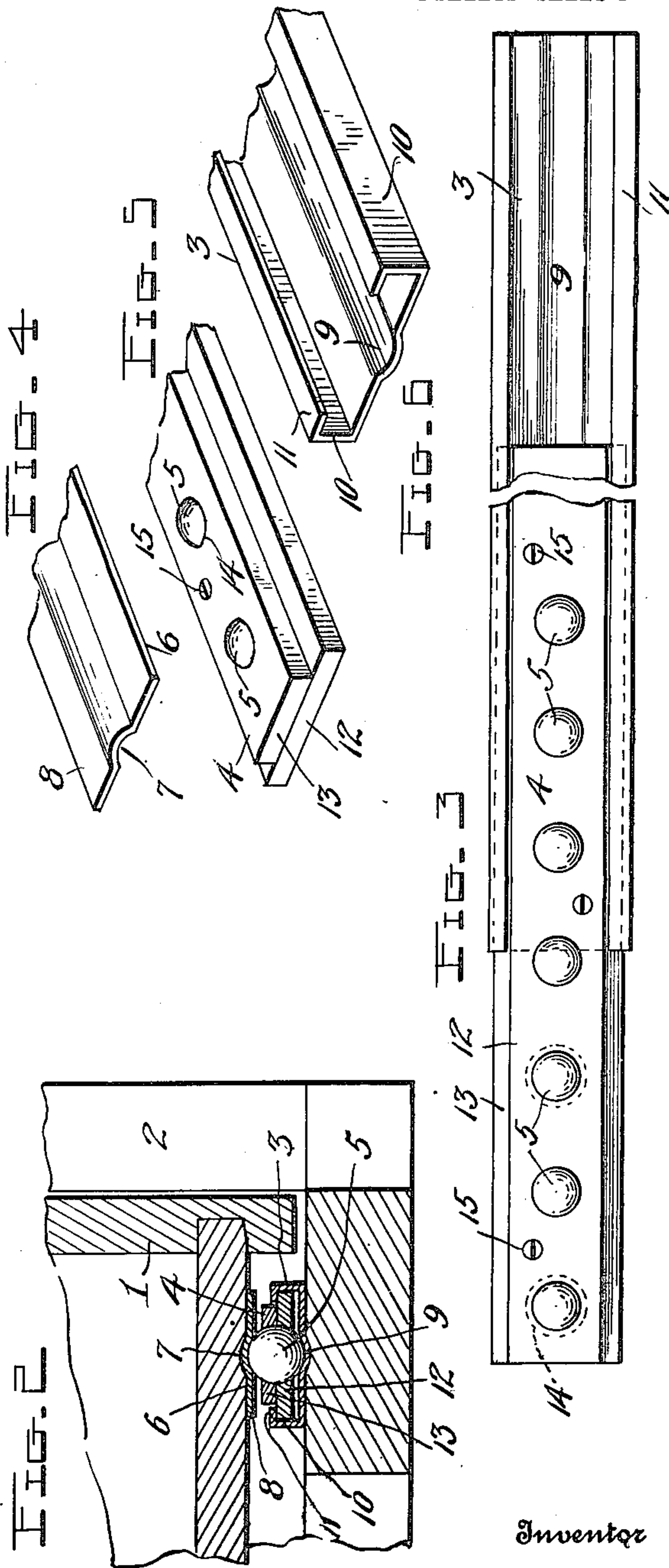


FIG. 4

FIG. 5

FIG. 6

FIG. 2

FIG. 3

Witnesses

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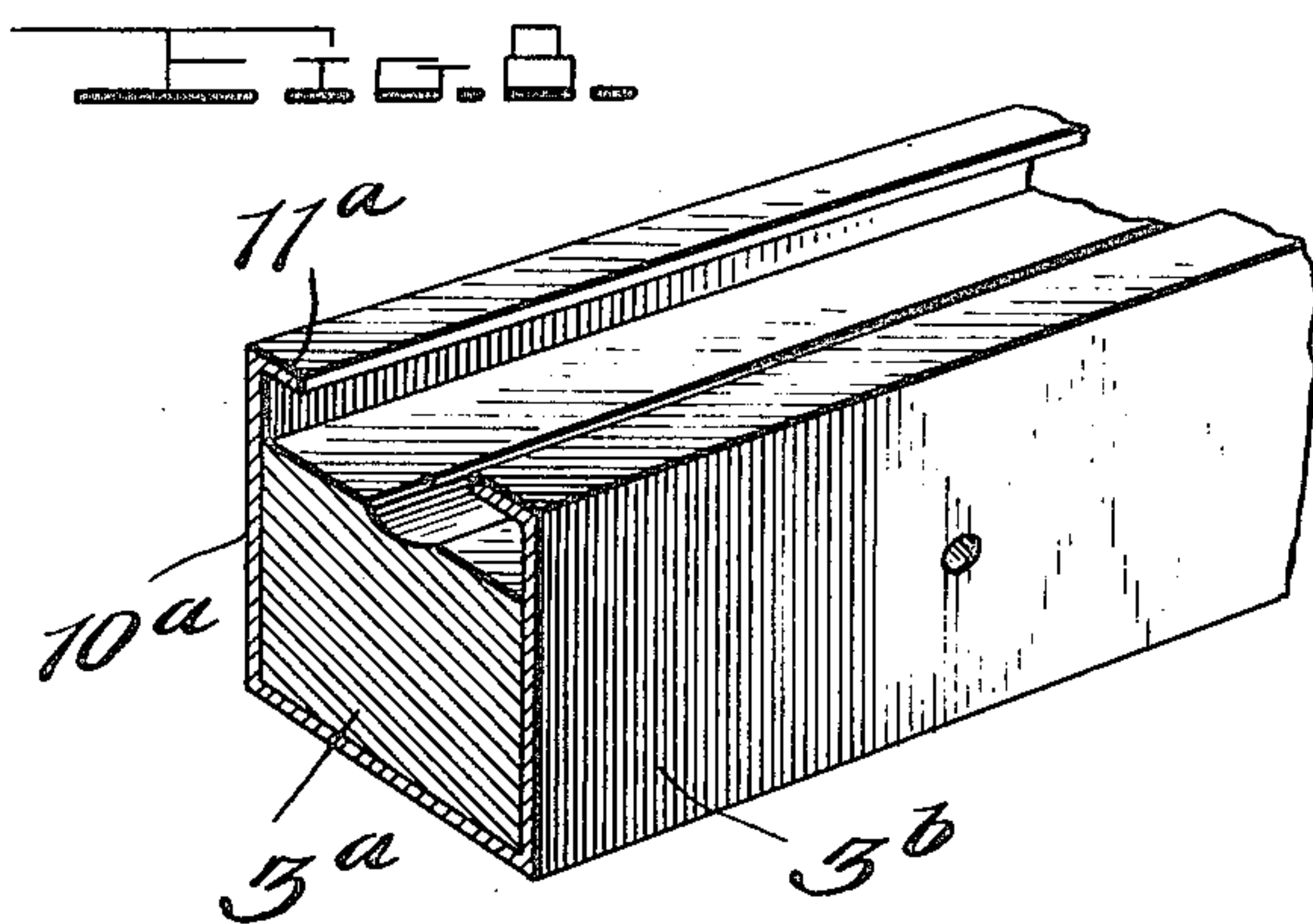
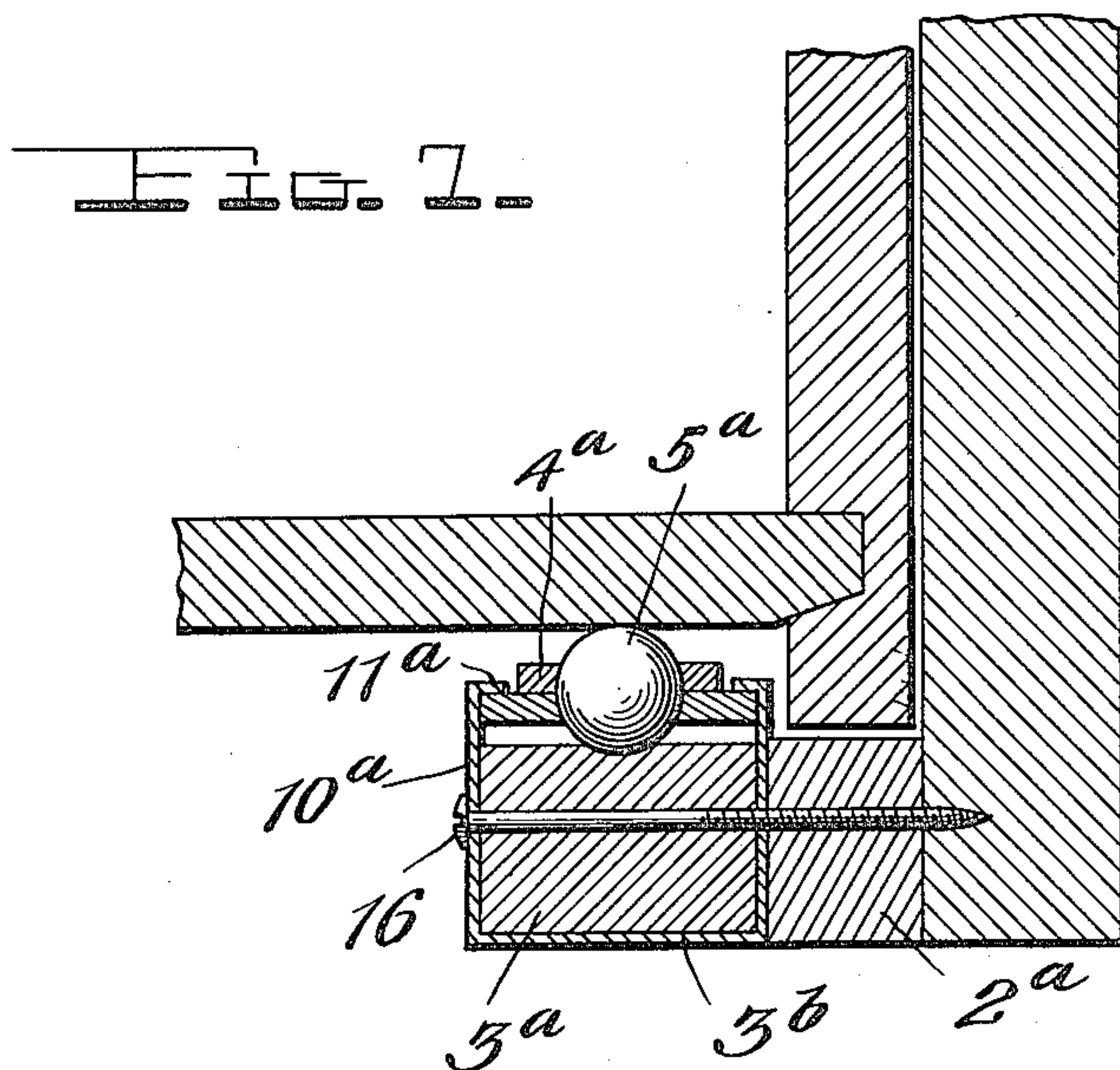
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DRAWER GUIDE,  
APPLICATION FILED FEB. 17, 1910.

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2 SHEETS—SHEET 2.



Witnesses

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# UNITED STATES PATENT OFFICE.

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## DRAWER-GUIDE.

962,502.

Specification of Letters Patent. Patented June 28, 1910.

Application filed February 17, 1910. Serial No. 544,499.

*To all whom it may concern:*

Be it known that I, AXEL ELMBORG, a citizen of the United States, residing at Ottumwa, in the county of Wapello and State of Iowa, have invented certain new and useful Improvements in Drawer-Guides, of which the following is a specification, reference being had to the accompanying drawings.

My invention relates to improvements in drawer guides and more particularly to anti-friction bearings for sliding drawers, doors or the like.

The object of the invention is to provide a practical ball bearing device for supporting and guiding the sliding object so that it will not bind and may be readily moved in either direction; a further object being to provide a device which when used in connection with a sliding drawer will support the same and prevent it from tilting when drawn entirely out of the casing or object containing the drawer.

With the above and other objects in view the invention consists of the novel construction, combination and arrangement of parts, hereinafter fully described and claimed, and illustrated in the accompanying drawings, in which:—

Figure 1 is a vertical longitudinal section through a portion of the casing and the sliding drawer showing the application of my invention thereto; Fig. 2 is a transverse section taken on the line 2—2 in Fig. 1; Fig. 3 is a plan view of the device; Figs. 4, 5 and 6, are detail views of parts of the device; Fig. 7 is a sectional view similar to Fig. 2 showing a modified form of my invention; and Fig. 8 is a sectional perspective of the stationary track member shown in Fig. 7.

Referring more particularly to the drawing 1 denotes a sliding drawer or other sliding object, and 2 denotes a casing or frame within or on which the object 1 is arranged. When the object 1 is a sliding drawer two of my improved anti-friction or ball bearing supporting devices are provided beneath the bottom of the drawer and adjacent its opposite sides, each of said devices consisting of a stationary track member 3 arranged in the frame or casing 2, a traveling supporting slide 4 containing anti-friction bearing balls 5, and an upper track section 6 carried by the drawer. When the drawer is made of wood the upper track member 6 is preferably made from a strip of metal by stamp-

ing in its central portion a concaved channel 7 to receive the balls 5, the side edges 8 of the strip forming attaching flanges. The lower track member or section 3 is constructed of sheet metal and is preferably of channel formation to receive and guide the slide 4. The said track member 3 has stamped in its bottom a longitudinal channel 9 in which the balls 5 travel, and on its side edges are upstanding longitudinal flanges 10 having their upper edges turned inwardly to provide retaining stops 11. The slide 4 contains a plurality of suitably shaped sockets or openings to receive the bearing balls 5, and it may be suitably guided and retained in the channeled stationary track or guide member 3. However, said slide 4 is preferably constructed of two superposed bars 12, 13, of unequal width whereby the side portions of the lower bar which is the broader one, will project to form flanges adapted to travel beneath the stops or flanges 11 on the sides of the stationary track member 3. The superposed bars 12, 13 are formed at intervals with opposing openings having flared walls which form co-acting sockets 14 for the reception of the balls 5, said sockets being of such shape as to retain the balls within them and at the same time allow them to have free rotary movement. This construction it will be noted, causes the balls to be retained in the slide 4 when said balls pass off of the track section 3 in the outward sliding movement of the drawer. The bars or strips 13, 12 may be detachably united by screws 15 or other suitable fastenings.

In operation, it will be seen on reference to Fig. 1 that the balls 5 run in the grooved track or raceway 9 of the stationary track member 3, and that the weight of the drawer rests upon the tops of the balls through the movable upper track member 6. Consequently when the drawer 1 is pulled out of the desk, table, casing or other object 2, it will slide freely on the balls and at the same time the latter will run upon the lower track member 3 and the slide 4 will travel outwardly. The outward movement of the slide will be less rapid than that of the drawer, consequently when the drawer is pulled entirely out of the object 2 it will still rest upon the projected end portions of the slides and the latter will be prevented from tilting by reason of the engagement of their inner ends with the channeled track mem-



ber 3, consequently the drawer will be supported and prevented from tipping. The peculiar construction of the several parts of the device enables the latter to be produced  
5 at an exceedingly small cost and at the same time renders the device exceedingly strong, durable and efficient for use in connection with doors, windows and other slidable objects, as well as sliding drawers.  
10 While the preferred embodiment of the invention has been shown and described in detail, it will be understood that I do not wish to be limited to the precise construction set forth, since various changes in the form,  
15 proportion and arrangement of parts, and in the details of construction, may be resorted to within the spirit and scope of the invention. For example, the stationary track member 3 instead of being constructed  
20 entirely of metal as shown in Fig. 7, may have a main body portion 3<sup>a</sup> of wood on the top of which the anti-friction balls 5<sup>a</sup> roll and the ball carrying slide 4<sup>a</sup> may be guided by flanges 11<sup>a</sup> formed on metal plates 10<sup>a</sup>  
25 disposed on opposite sides of the body 3<sup>a</sup>. If desired, the plates 10<sup>a</sup> may be formed integral with the connecting bottom portion so as to form a channeled casing 3<sup>b</sup> within which the body 3<sup>a</sup> is arranged. This embodiment  
30 of the invention is especially adapted for use on small articles of furniture such as cupboards, dressers, etc., and by employing a wooden track for the balls and allowing the wooden bottom of the drawer to rest upon  
35 the balls, the device will not be as noisy in operation as it is when all parts are constructed of metal as shown in the embodiment of the invention first described. The

track member shown in Figs. 7 and 8 may be readily applied to the ordinary drawer 40 supporting strips or cleats 2<sup>a</sup> by means of wood screws 16 so that the invention may be applied to ordinary pieces of furniture without altering the construction of the same and at a very small cost. 45

Having thus described the invention what is claimed is:

1. The combination with a support and a slidable object, of a channeled track member secured to the support, a two-part slide having the projecting edges of one of its parts slidably engaged with said channeled track member, the parts of said slide being formed with opposing sockets, bearing balls rotatably arranged in said sockets and adapted to travel on the bottom of said channeled track member, and an upper grooved track member secured to said slidable object and adapted to rest on the tops of said balls. 50 55

2. In a device of the character described, the combination with a channeled track member, a slide arranged therein and consisting of superposed parts of unequal width, the side edges of the broader part projecting and being slidably engaged with said channeled track member, the parts of said slide being formed with opposing sockets, and anti-friction bearing balls rotatably retained in said sockets. 60 65

In testimony whereof I hereunto affix my signature in the presence of two witnesses. 70

AXEL ELMBORG.

Witnesses:

M. L. SWENSON,  
LAWRENCE L. SWENSON.