(No Model.)

J. C. KIMBALL.

ANTIFRICTION DRAWER SUPPORT.

No. 562,768. Patented June 23, 1896.

Fig. 1.

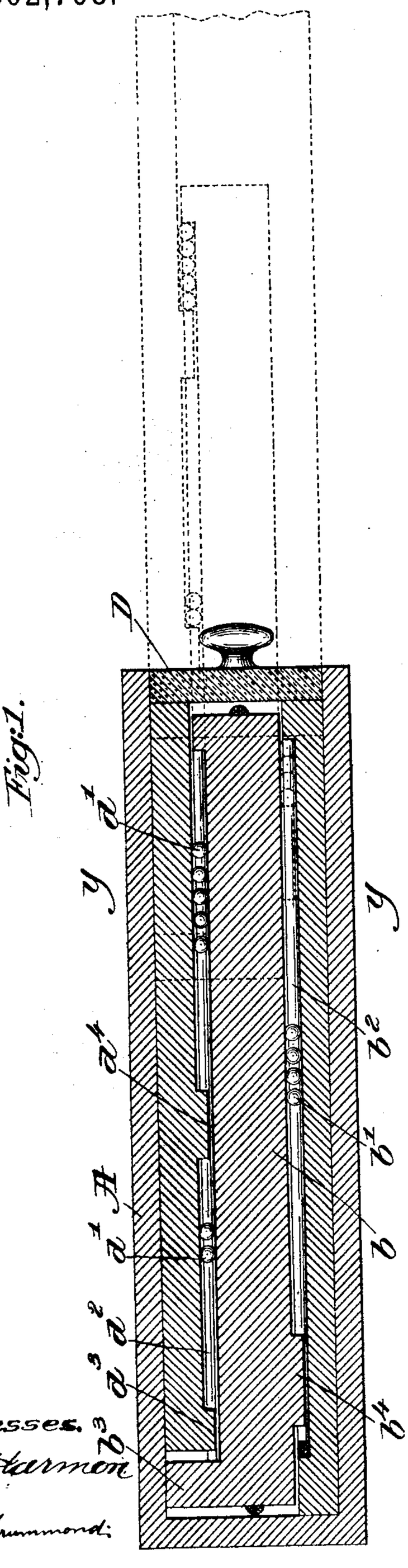
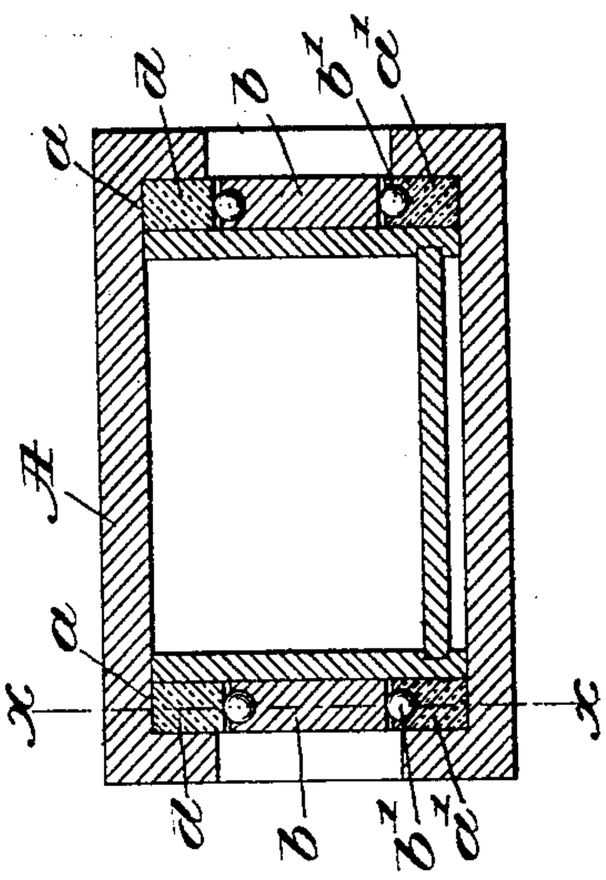


Fig. 2.



Witnesses.
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UNITED STATES PATENT OFFICE.

JEREMIAH CURTIS KIMBALL, OF BOSTON, MASSACHUSETTS.

ANTIFRICTION DRAWER-SUPPORT.

SPECIFICATION forming part of Letters Patent No. 562,768, dated June 23, 1896.

Application filed May 20, 1895. Serial No. 549,903. (No model.)

To all whom it may concern:

Be it known that I, JEREMIAH CURTIS KIMBALL, of Boston, county of Suffolk, State of Massachusetts, have invented an Improvement in Antifriction Drawer-Supports, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention relates to drawer-supports of the "Taylor-slide" type, the object of the invention being to provide, in connection with such a type of slide, suitable antifriction devices to enable the drawer to be operated more easily than heretofore, and yet give to the drawer the same freedom of action which is obtained in the Taylor-slide construction.

In the drawings, Figure 1, in vertical section, shows a suitable casing containing the drawer mounted in accordance with this invention, the section being taken on the dotted line $x\,x$, Fig. 2; and Fig. 2 is a vertical cross-section taken on the dotted line $y\,y$, Fig. 1.

In the particular embodiment of my invention shown for illustration in the drawings, A is a suitable casing constituting a support for the drawer, the inner surface of its top at $a\,a$ constituting runs, and at its bottom the said casing is herein shown as provided with the two strips $a'\,a'$, which also constitute runs, the said runs a and a' at opposite sides the drawer being parallel and, so far as concerns my present invention, may be otherwise formed or constructed as desired. Arranged between these parallel runs a and a' are the extension-slides $b\,b$, the same at their under sides resting upon series of antifriction devices b', (shown as balls,) running in suitable grooves b^2 in the lower runs a', and at their upper sides, preferably at or near their rear ends, being provided with upwardly-extending projections b^3, which travel in contact with the upper runs a. Depending lugs or projections b^4, on or near the inner back ends of the extension-slides, act in connection with the antifriction devices b' to limit the outward movement of the said slides.

The drawer D is provided with usual laterally-extended tracks d, which rest upon and are supported by the extension-slides b, as shown in Fig. 2, and between these laterally-extended tracks d and the upper edges of said extension-slides I have interposed other antifriction devices d', which are entirely independent of the antifriction devices b', the said antifriction devices d' preferably running, as shown, in suitable grooves d^2 in the upper edges of the said extension-slides. At their inner or back ends the tracks d are shown as provided with the depending stop projections d^3, which limit the outward movement of the drawer upon the extension-slides, and in the preferred embodiment of my invention I divide the antifriction devices d' between the drawer-tracks and extension-slides into two independent series, separated by depending projections or separators d^4, there being preferably more antifriction devices in the series in front of the said projections d^4 than at the back thereof. I provide these independent series at the upper edges of each extension-slide in order that the weight of the drawer may be more evenly distributed upon the extension-slides.

In practice the grooves or channels b^2 and d^2 will be of such a depth, and parts of true circles, that the balls therein are retained against displacement, enabling the parts holding the same to be turned into any desired position without fear of loss of the balls.

In practice I have found that by forming slight depressions in the under sides of the projecting tracks and the extension-slides the weight of the drawer and its contents will automatically, as it were, center the drawer and its slides upon their respective bearings, so that without requiring any special side guides or stops the drawer runs freely in and out without apparent frictional contact with the parts at either side. In other words, the drawer automatically centers and adjusts itself under its load and thereby runs with less friction than any drawer now known to me.

The great advantage derived from the use of independent antifriction devices at the upper and under sides, respectively, of the extension-slides is that the slides and drawer are not restricted to any precise and always uniform or regular movements, they being free to move relatively or together, according to the location of the load in the drawer and manner of operation, precisely as with the well-known Taylor slide, although oper-

ating with much less friction than with the Taylor slide.

My invention is not limited to the particular constructional details herein shown and described, for it is evident the same may be varied within the spirit and scope of my invention, as herein set forth.

Having described one embodiment of my invention, and without limiting myself as to details, what I claim, and desire to secure by Letters Patent, is—

1. In a drawer-support, the combination of suitable runs, drawer-supporting extension-slides, the drawer provided with tracks fixed to the drawer and extending laterally over the slides, antifriction-balls interposed between the slides and tracks, and other and independent antifriction-balls interposed between said slides and runs, the said balls being confined between the ends of the runs, slides and tracks respectively in partly-circular grooves sunk to a greater depth than half the diameter of the balls to prevent the escape of the balls, the said balls having the capacity of distributing themselves in the direction of the length of said parts, substantially as described.

2. In a drawer-support, the combination with parallel runs, of the extension-slides arranged between the same, the drawer provided with laterally-extended tracks resting upon and supported by said slides, antifriction devices at the under sides of said slides and between the same and the adjacent runs, and a plurality of series of antifriction devices at the upper sides of each extension-slide and between the latter and the said drawer-tracks and independent of the antifriction devices at the under sides of the said slides, to operate substantially as described.

3. The combination with the runs, of the extension-slides, provided at their rear ends with the upwardly-extended projections b^3, and at their lower sides resting upon the antifriction-balls arranged in grooves in the runs beneath said slides, the drawer provided with laterally-extended tracks 2, independent series of antifriction-balls arranged in a groove at the upper edge of each extension-slide, and the depending projections d^3, d^4, on each of the said drawer-tracks, the latter projections separating the series of antifriction-balls at the upper side of each slide, substantially as described.

4. In a drawer-support, an inclosing case, runs therein, the drawer, and side tracks applied to such drawer, the extension-slides arranged above the lower runs and having slight grooves or depressions in their under sides, the lower runs being supplied with partly-circular grooves in their upper faces sunk to a greater depth than half the diameter of the balls to prevent the escape of the balls, antifriction-balls arranged in such grooves and next the bottom edges of the slides and fitted to the said slight grooves or depressions in the said bottom edges of the slides, and other and independent antifriction-balls arranged in partly-circular grooves in the upper edges of the slides and in slight grooves or depressions in the under sides of the side tracks, the several series of antifriction-balls having the capacity of distributing themselves in their respective grooves in the direction of the length of the parts, substantially as described.

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

JEREMIAH CURTIS KIMBALL.

Witnesses:
FREDERICK L. EMERY,
THOMAS J. DRUMMOND.