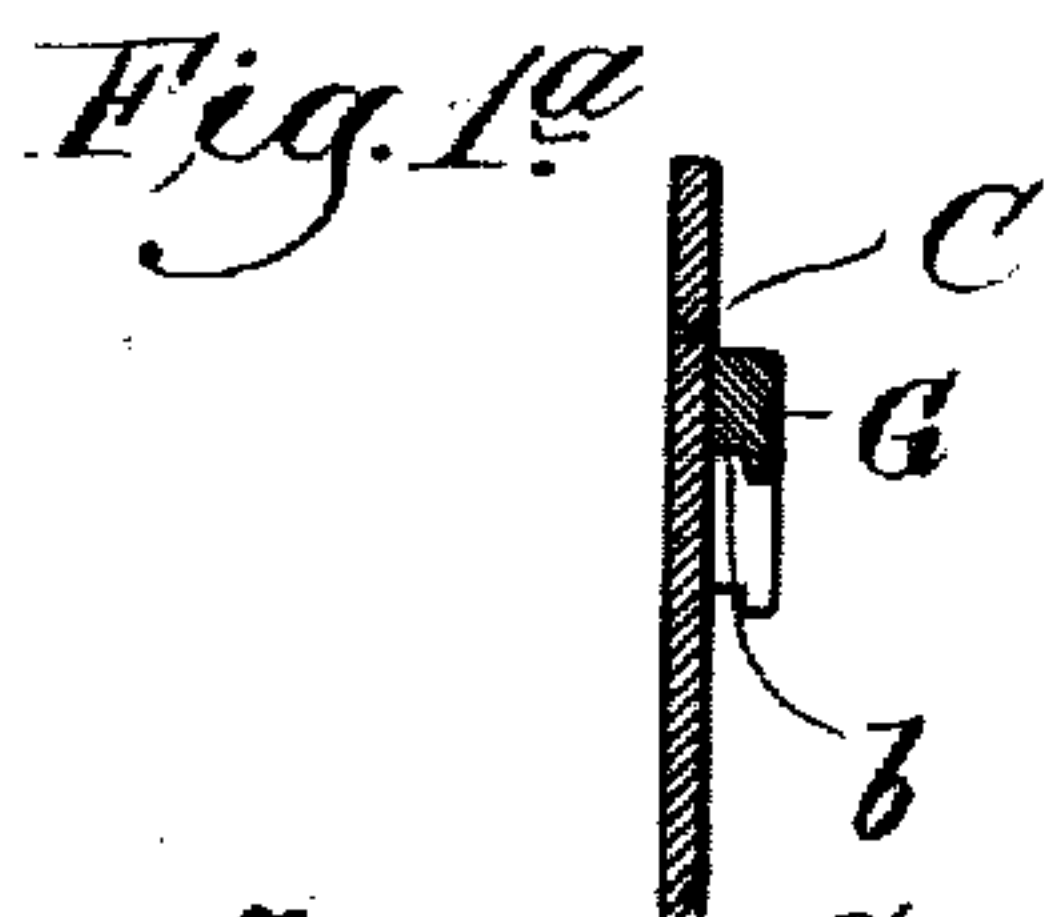
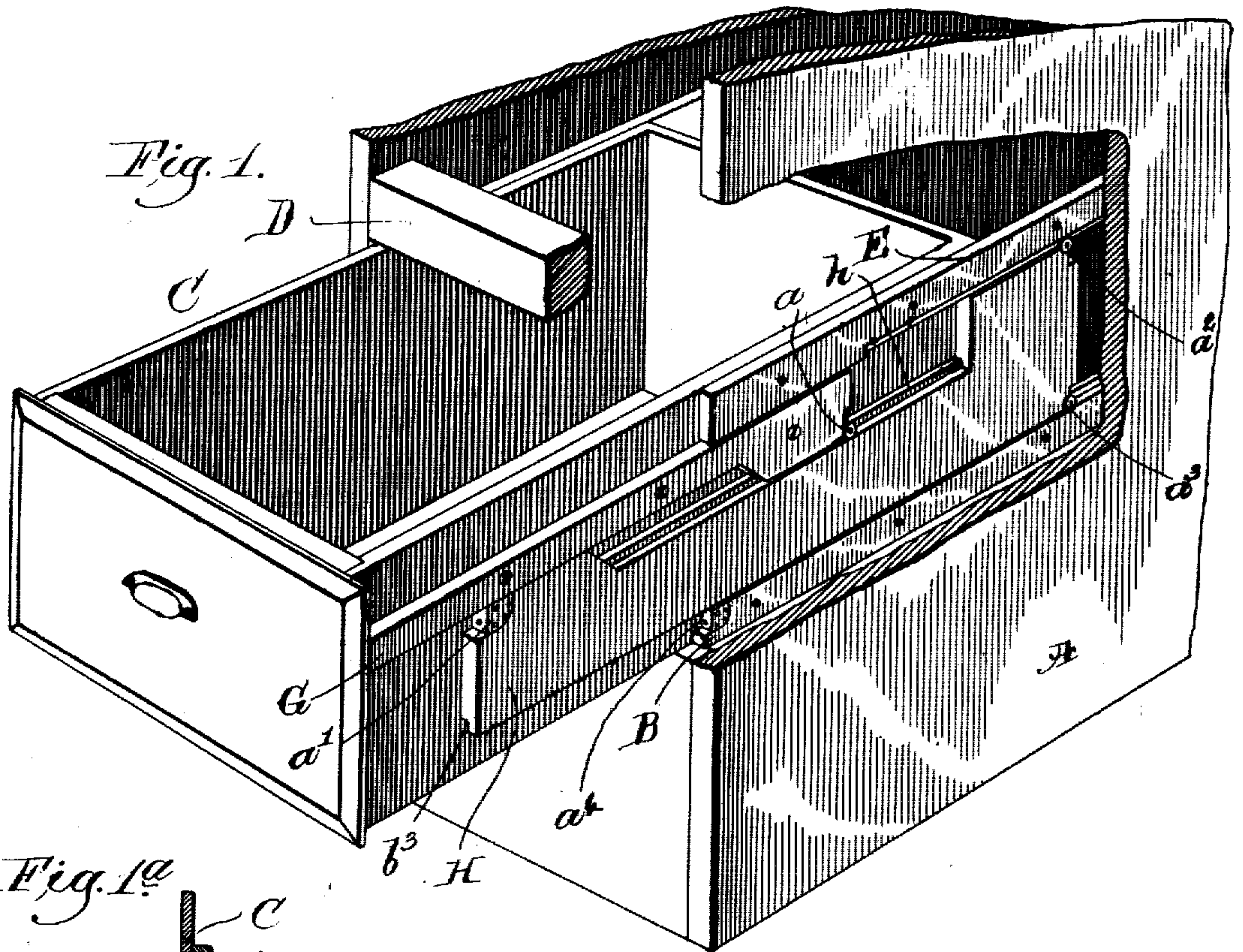
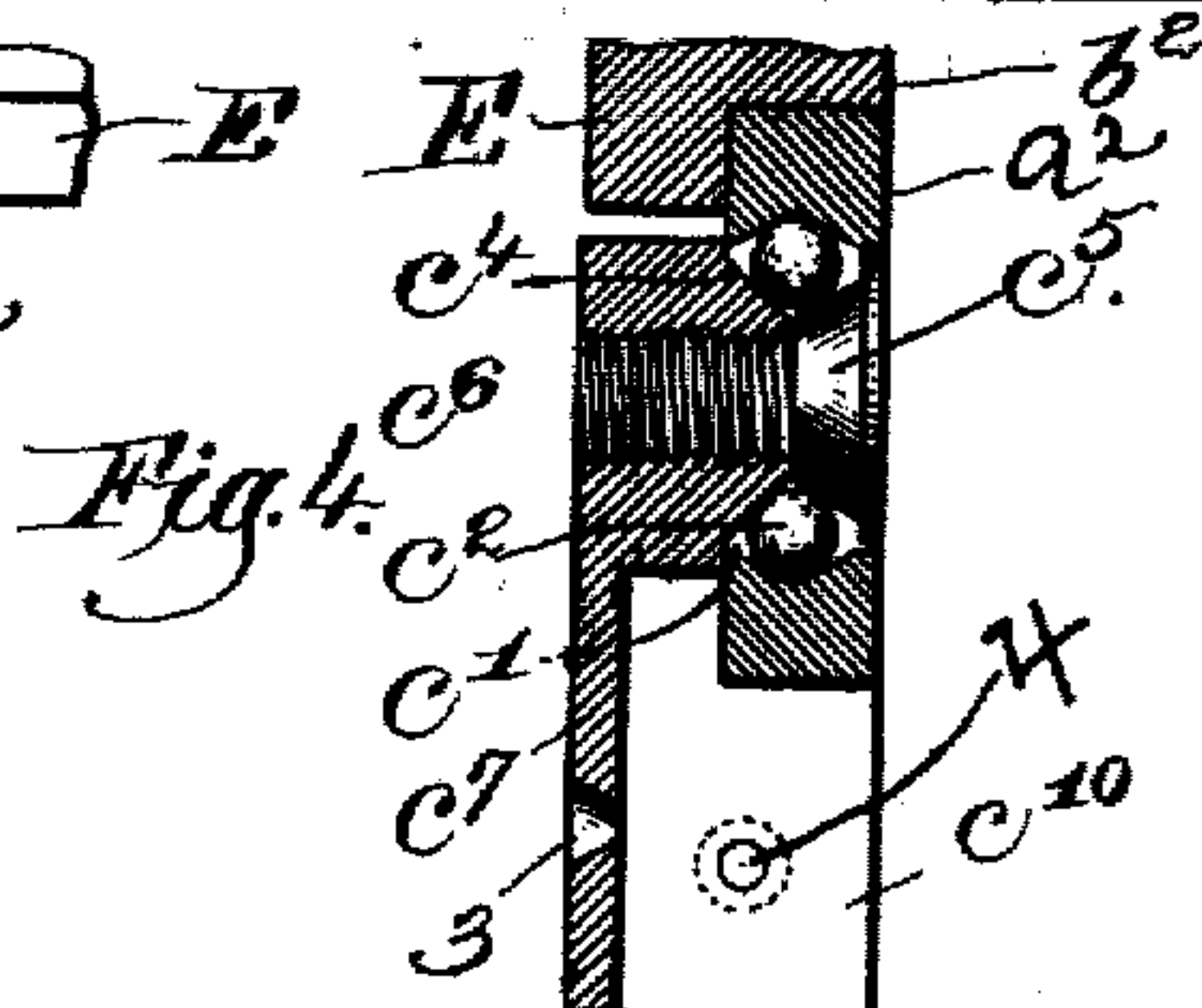
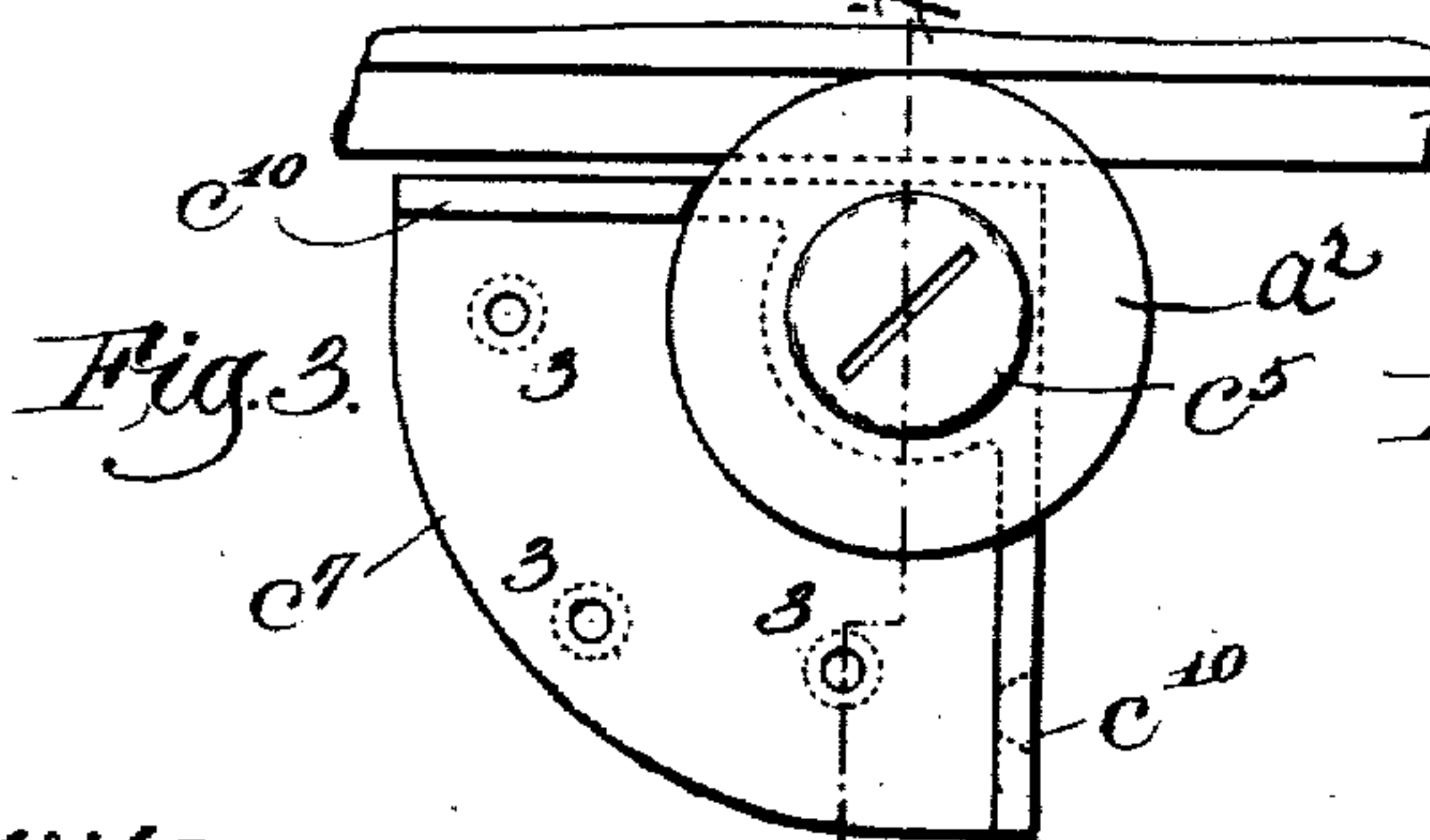
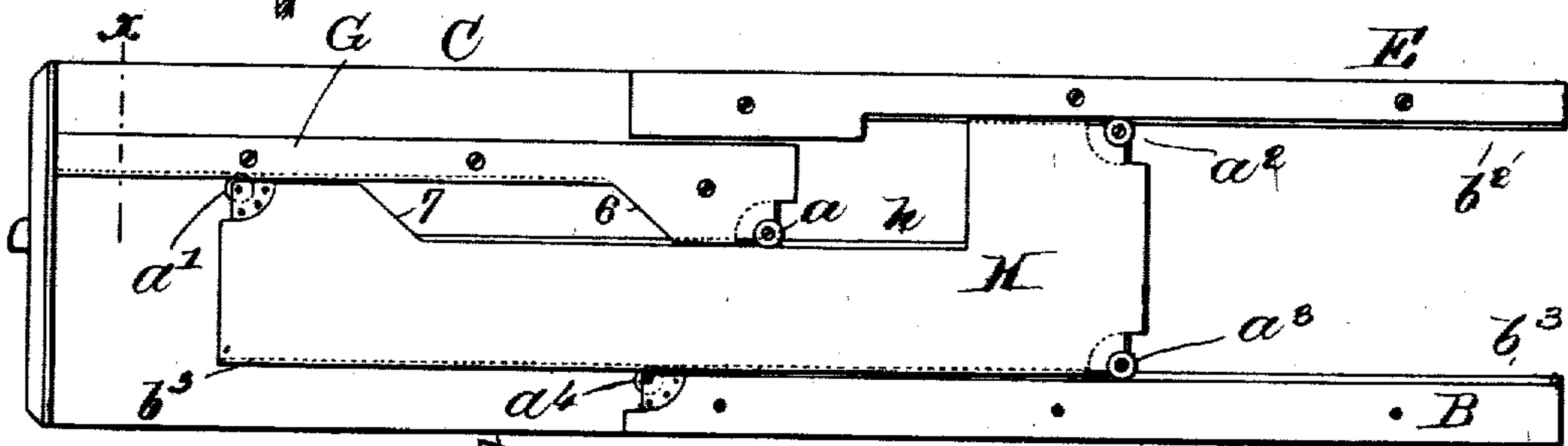


J. R. FREEMAN.  
DRAWER SUPPORT.  
APPLICATION FILED MAY 17, 1904.



*Fig. 2.*



Witnesses:  
Thomas Drummond,  
J. Wm. Sutton.

Inventor:  
John R. Freeman,  
by Wesley Gregory, atty.



# UNITED STATES PATENT OFFICE.

JOHN R. FREEMAN, OF PROVIDENCE, RHODE ISLAND.

## DRAWER-SUPPORT.

No. 814,197.

Specification of Letters Patent.

Patented March 6, 1906.

Application filed May 17, 1904. Serial No. 208,381.

*To all whom it may concern:*

Be it known that I, JOHN R. FREEMAN, a citizen of the United States, residing at Providence, in the county of Providence and State of Rhode Island, have invented an Improvement in Drawer-Supports, of which the following description, in connection with the accompanying drawings, is a specification, like characters on the drawings representing like parts.

This invention has for its object to improve that class of drawer-support for holding books, papers, and the like wherein the drawer is sustained on slides capable of following the drawer during portions of its outward and inward movements.

In my improvement I have interposed a novel and peculiar roller-bearing between the slide and its sustaining-track on the drawer-casing and between said slide and the overhanging cleats attached to the sides of the drawer, whereby although heavily loaded the drawer may be moved very easily.

Figure 1, in perspective, shows a drawer partly withdrawn from a casing and the casing partially broken out to illustrate the slide and the roller-bearing. Fig. 1<sup>a</sup> is a section in the line  $x$ , Fig. 2, of the cleat. Fig. 2 is a side elevation of one of the drawers with the casing omitted, the track connected with the casing, however, being contained in said figure. Fig. 3 is a detail showing the roller-bearing detached. Fig. 4 is a section thereof in the line  $x'$ .

The casing A, the tracks B, one at each side of each drawer and sustained at the inner side of the casing, the drawer C, and the separators D, separating one drawer from another, are and may be all as common.

To each side of the drawer by screws I have attached a cleat G and have interposed between a like cleat and track at each side of the drawer a slide H. Each cleat is provided at its inner lower corner with a roller  $a$ . The slides at their corners are provided with rollers  $a'$   $a^2$   $a^3$ , and the outer end of each track is provided with a roller  $a^4$ , as best shown in Fig. 2. Each cleat G is grooved at its under side, as shown by dotted lines, Fig. 2, and in the section Fig. 1<sup>a</sup>, to leave a surface  $b$ , over which may travel the roller  $a'$ , each of said rollers forming parts of like roller-bearings to be described, connected with the cleat, the slide, and the track B at corners thereof. Each track, one on each side of the drawer and secured to the casing E,

has a rabbet  $b^2$  (see Figs. 2 and 4) to form a surface over which may travel the roller  $a^2$  of the roller-bearing located at the rear upper corner of the slide. The rear lower corner of said slide is also provided with a roller  $a^3$ . The under side of each slide H is also rabbeted, as shown at  $b^3$ , (full lines, Fig. 1, and by dotted lines, Fig. 2,) to constitute the surfaces over which may travel the rollers  $a^4$  of the roller-bearings located at the outer upper corners of the tracks B. Each roller  $a'$   $a^2$   $a^3$   $a^4$  forms part of a roller-bearing, and, viewing Figs. 3 and 4, where the roller  $a^2$  is illustrated, all the rollers being alike, it will be seen that the roller is grooved internally to receive a series of balls  $c^2$ , that, besides contacting with said rollers, also contact with the beveled end of a hub  $c^4$ , projecting from a web  $c^7$  of a casting, and also with the tapering or cone-shaped inner side  $c^5$  of the head of a bolt  $c^6$ , the threaded shank of which is screw-threaded into said hub  $c^4$ . The web  $c^7$  has, as shown, ribs  $c^{10}$ , so that the castings comprising the web and ribs are shaped to fit the corners of either the slide or cleat. The web and ribs have holes 3 4 countersunk for the reception of the heads or screws employed to attach the web or casting to the slide, cleat, or track. The rabbets in the cleats and tracks receive projections at the upper and lower edges of the slides, and the slides H are thus held securely in place while the drawer is moved out or in.

While I greatly prefer for durability to employ a frame having a conical hub and a stud having a conical part and to groove the roller as shown in Fig. 4, yet I do not intend to limit the scope of my invention to the particular roller-bearing shown.

It will be noticed that the web  $c^7$  is so shaped that it may be applied to any of the different parts described of the drawer-sustaining means—that is, it may be applied behind the face of the lower inner end of the cleat or behind the corners at the inner end of the slide H, or by reversing the same it may be applied to the front upper end of the track B or the front upper end of the slide.

The screws inserted in the holes 3 enter the sides of the piece of wood to which the frame is applied, while the screws inserted in the holes 4 enter the ends of the piece of wood.

Were it not for the peculiar shape of the web, two different kinds of roller-bearings would be required, one to take the position of the roller-bearings  $a'$   $a^4$  and the other to take



the position  $a^2 a^3$ , occupied by other roller-bearings. These roller-bearings are so located with relation to the track, the drawer, and the slides as to sustain the weight of the drawer in all its positions. For instance, assuming that the drawer is closed, the handle may be engaged preparatory to pulling the drawer out from the casing. As the drawer is started the one pulling it out will naturally lift upwardly a little on the handle, and as the drawer is drawn out the roller-bearings at  $a$  will travel over the track part  $h$  of the slides  $H$ , and as the drawer comes out the roller-bearing at  $a'$  will begin to receive more and more of the weight of the drawer. As soon, however, as the incline 6 of the cleat  $G$  meets the incline 7 of the slide the slide will be started and the roller-bearings  $a^2 a^3 a^4$  will be started to obviate friction between the slides and the tracks  $E$  and  $B$ . As the drawer is drawn outwardly with the slide the weight of the drawer is thrown rather heavily on the roller-bearing at  $a^2$  and at  $a^4$ . The rabbeting of the cleats and tracks prevents any tendency of the slides tipping over or out of a vertical plane.

It will be observed that in my form of construction when the drawer is fully open the weight of the drawer is fully supported by the slide-arms. Moreover, a drawer can be lifted out from its support simply without necessity for unscrewing or manipulating any catch, and the slide-arms meanwhile are retained and supported with stability. Furthermore, the location of the trucks or rollers at the extreme corners of the slide provides a stable wheel-base of the maximum length, the form of roller attachment being especially adapted thereto.

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

1. In a drawer-support, a drawer having a cleat provided with a roller at the lower corner of its inner end, and a casing having parallel tracks, and a slide interposed between the cleats and the tracks and provided at its corners with studs on which are mounted rollers that move with the slide and roll over the track.

2. In a drawer-support, a drawer having a cleat provided with a roller, a casing having parallel tracks, and a slide interposed between the cleat and the tracks and provided with rollers, one of said tracks having a roller at its outer end to contact with the under side of the slide.

3. In a drawer-support, a casing having tracks, a drawer having a cleat, and a slide

interposed between said cleat and the tracks and having at its opposite ends rollers, the rollers of said slide contacting with said cleat and tracks.

4. In a drawer-support, a casing having parallel tracks, a drawer having a cleat, a slide interposed between said cleat and tracks and having between its ends at its upper edge a track-surface, combined with a roller connected with said cleat at the inner lower corner thereof and rolling over the slide.

5. In a drawer-support, a casing having parallel tracks, a drawer having a cleat, a slide interposed between said cleat and tracks and having between its ends at its upper edge a track-surface, combined with a roller connected with said cleat at the lower corner thereof, and rollers at both ends of said slide, said rollers coacting respectively with said tracks and with said cleat.

6. In a drawer-support, a casing having parallel tracks, a drawer having a cleat, a slide interposed between said cleat and tracks and having between its ends at its upper edge a track-surface, combined with a roller connected with said cleat at the inner lower corner thereof, rollers mounted at both ends of said slide, said rollers coacting respectively with said tracks and with said cleat, and a roller located at the outer end of the lower track and sustaining the under edge of the slide.

7. In a drawer-support, a drawer having cleats, a drawer-casing having tracks, and intermediate slides, the cleats, tracks and slides being rabbeted, and rollers carried by said slides and rolling over said tracks, said rabbets aiding in guiding and maintaining the slides securely in position while the drawer is being moved out or in.

8. In a drawer-support, a casing having parallel tracks, a drawer having cleats, and intermediate slides provided at their two upper corners and at their rear lower corners with rollers.

9. In a drawer-support, a casing having parallel tracks, a drawer having cleats, and intermediate slides provided at their two upper corners and at their rear lower corners with rollers, each of said tracks also having a roller at its outer corner over which the under side of the corresponding slide travels.

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

JOHN R. FREEMAN.

Witnesses:

GEO. W. GREGORY,  
ABBIE L. PORTER.