May 25, 1954 C. A. BISSMAN 2,679,447

STANDARDIZED INTERCHANGEABLE SLIDING DRAWER AND TRACK MEANS THEREFOR

Filed Sept. 24, 1951 2 Sheets-Sheet 1

Fig. 1

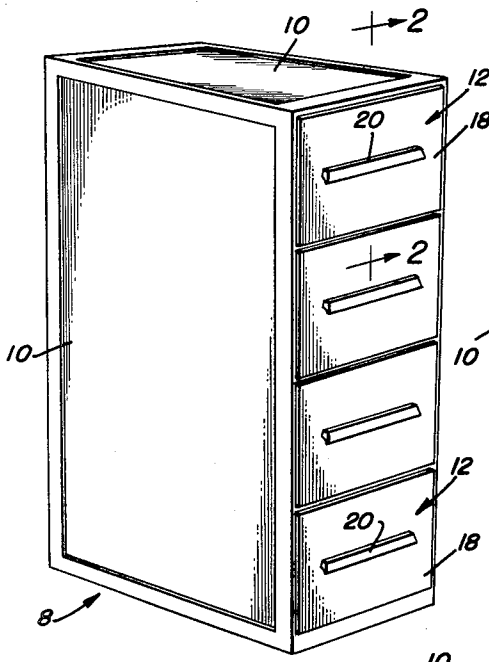


Fig. 5

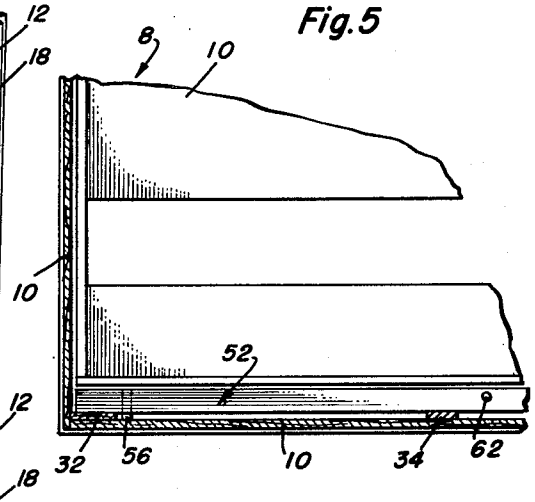


Fig. 6

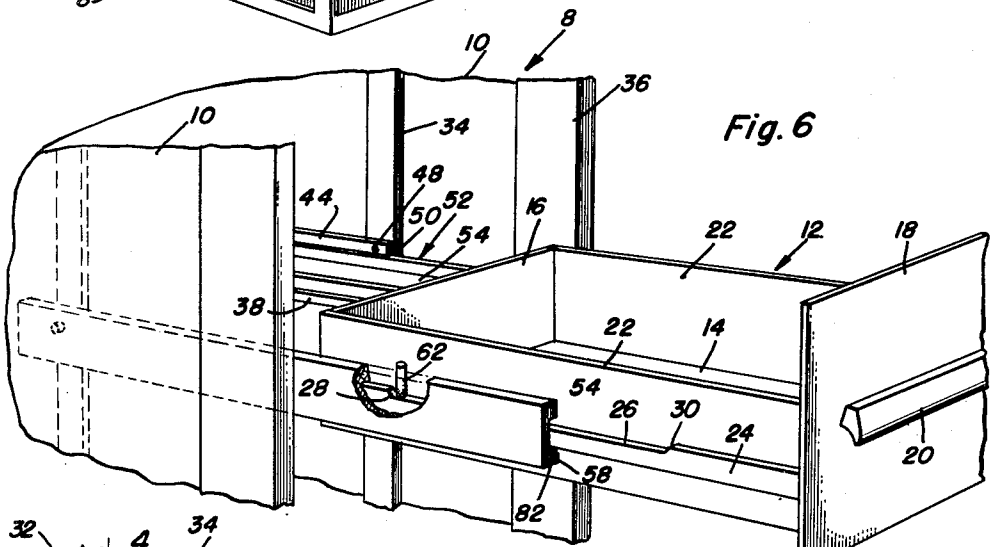
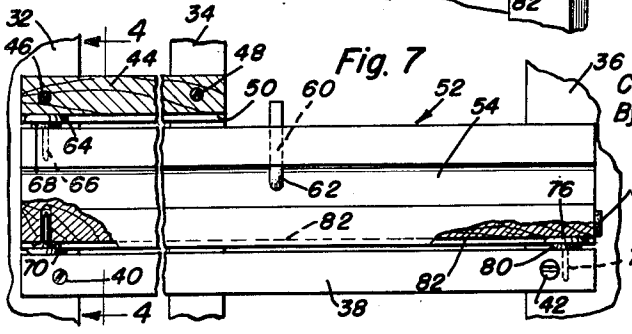


Fig. 7



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STANDARDIZED INTERCHANGEABLE SLIDING DRAWER AND TRACK MEANS THEREFOR

Filed Sept. 24, 1951 2 Sheets-Sheet 2

Fig. 2

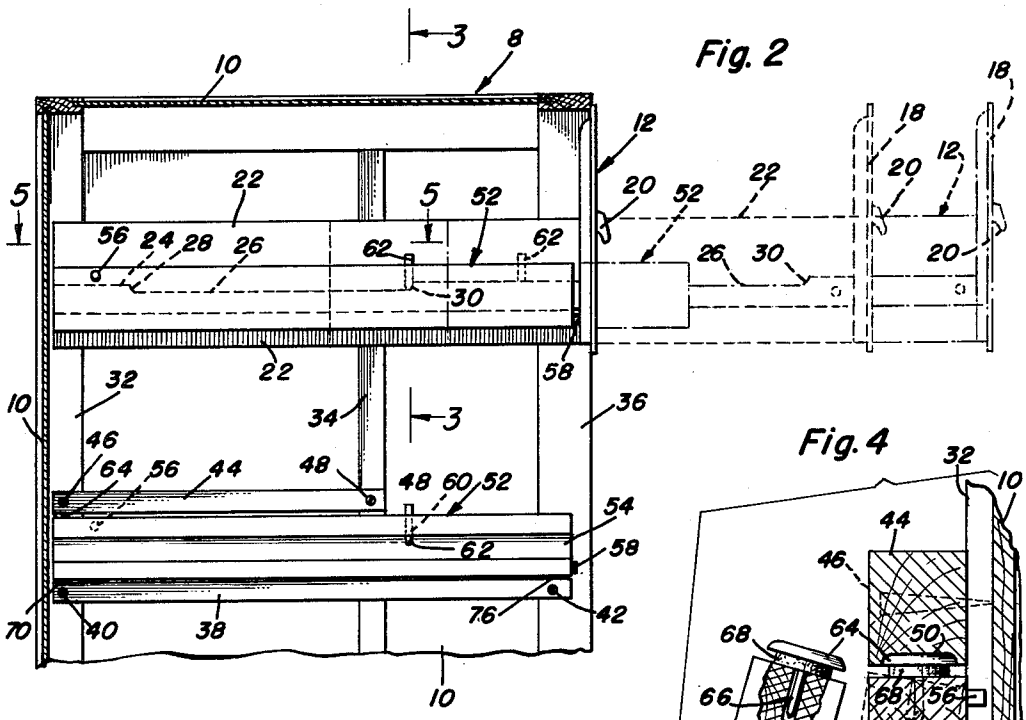


Fig. 4

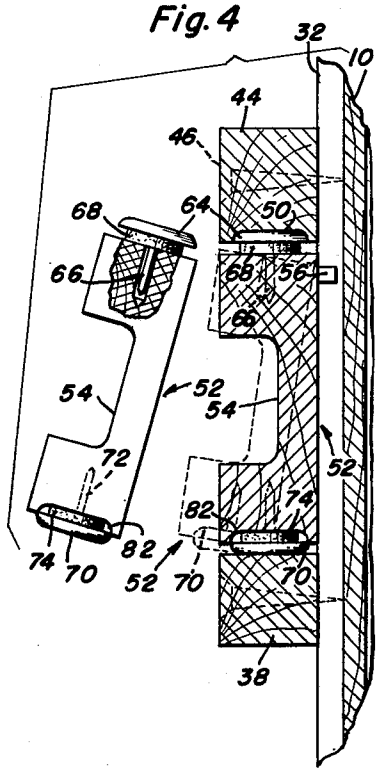
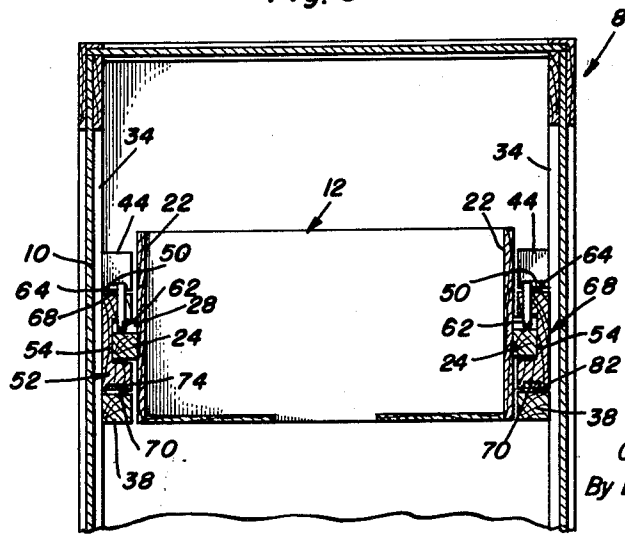


Fig. 3



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Patented May 25, 1954 2,679,447

UNITED STATES PATENT OFFICE

2,679,447

STANDARDIZED INTERCHANGEABLE SLIDING DRAWER AND TRACK MEANS THEREFOR

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Application September 24, 1951, Serial No. 247,936

6 Claims. (Cl. 312—338)

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The present invention relates to certain new and useful improvements in wooden case goods and has more particular reference, in the instant matter, to a structurally novel office file cabinet, one in which all of the essential components or parts are constructed from wood and in which special track means makes the use of wooden drawers highly feasible and unquestionably satisfactory.

Due to certain shortages of essential materials there exists an increasing demand for office file cabinets and similar office furniture which is almost wholly made from properly seasoned wood. It is, however, a matter of common knowledge that it is extremely difficult for manufacturers of wooden case goods to turn out a precision made cabinet in which the sliding drawers operate with requisite ease and efficiency, this because of the fact that warping and distortion of coacting wood parts gives rise to drawers which stick, jam and are, generally speaking, noisy and difficult to cope with. Therefore, it is a general object of the instant invention to provide a wooden file or equivalent cabinet in which manufacturers, retailers and users will find their respective requirements and needs fully met, contained and effectually available.

More specifically, the invention has to do with the particular way in which the tracks and sliding drawers are specifically constructed. To this end the invention, in one of its phases has to do with a cabinet characterized by a vertically elongated wooden case having interiorly fixed horizontal wooden track means, and a plurality of wooden drawers, operatively mounted in the cabinet by way of the respective track means, all of said track means being precision made and correspondingly uniform, and all of said drawers being duplicates of one another and precision made, whereby said drawers are bodily insertable and removable and interchangeable regardless of the choice of selection of the track means chosen for retention of each drawer.

Another object of the invention appertains to the appropriate adoption and use and location of anti-friction devices which are incorporated in the respective track means, said devices being preferably resiliently cushioned, and being in the form of smooth surfaced discoidal button-type glides.

A further object of the invention is to devise, for proper use in a wooden cabinet and sliding drawer, a pair of track assemblies, each assembly comprising a fixed relatively long wooden lower rail rectangular in cross-section having a perfectly smooth and flat top surface, a fixed relatively short upper rail in spaced parallelism above said lower rail, the forward end of said upper rail terminating in inwardly spaced relation from the corresponding end of said lower rail and the under side of said upper rail having a lengthwise channel providing a guideway as well as a keyway, a longitudinally grooved slide rail interposed between said upper and lower fixed rails, said slide rail being readily insertable and removable in and from the space between said fixed rails in a direction at right angles to the latter rails simply by manually angling same and either "pressing" it in place or "lifting" it out as the case may be, and rubber cushioned glide buttons removably mounted on the respective upper and lower edge portions of said slide rail, said glide buttons being circular in plan and situated at the inward trailing end portion of said slide rail and the resiliency factor of the respective buttons and their special coaction with said flat top surface of the lower rail and channel in the upper rail constituting the essential ways and means whereby said slide rail is keyed in place and held against accidental displacement.

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Then too, novelty is predicated on the track assembly just briefly comprehended wherein said slide rail has an outstanding check element at its inner trailing end, a drawer bumper at its outer leading end and an insertable and removable stop pin intermediate its ends, the stop pin projecting into said groove.

What is more, equal importance is attached to the unique track assembly wherein the under side of said slide rail is provided with a lengthwise channel, and a third anti-friction rubber cushioned glide is mounted on the flat top surface of the lower rail at the outward end of the latter, said channel being slidingly keyed on and in relation to said third anti-friction glide.

In addition, novelty has to do with sliding drawer and track means therefor wherein all of the drawers are precision made and standardized for interchangeable association with the correspondingly precision made standardized track assembly, the pairs of slide rails in each track assembly being such that they may be readily applied and removed and replaced, if necessary, and wherein the slide rails may be quickly and easily inserted in their respective operating positions, after which the coacting drawer may be slipped into place and the coacting stop pin on the slide rails momentarily removed to allow the drawer to be put in place and afterwards reinserted to bring about the desired delayed action

of the slide rails during which the drawer slides out first, then picks up the slide rails and simultaneously glides them to their outwardly projecting final positions.

Other objects and advantages will become more readily apparent from the following description and the accompanying sheet of illustrative drawings.

In the accompanying drawings wherein like numerals are employed to designate like parts throughout the views:

Figure 1 is a perspective view of a complete wooden office file cabinet constructed in accordance with the principles of the present invention;

Figure 2 is a fragmentary view, in section and elevation, on an enlarged scale, and taken approximately on the vertical line 2—2 of Figure 1, looking in the direction of the arrows with one drawer in place and one drawer removed and with the drawer progressively shown in full and dotted lines to illustrate the progressive action of drawer and sliding guide rails;

Figure 3 is a fragmentary vertical sectional view taken approximately on the line 3—3 of Figure 2, looking in the direction of the arrows;

Figure 4 is a still further enlarged view showing one of the track assemblies and showing, in dotted lines, the manner in which the insertable and removable slide rail (full lines) is either removed or applied, said view being taken on line 4—4 of Figure 7;

Figure 5 is a fragmentary horizontal section on the line 5—5 of Figure 2, looking in the direction of the arrows;

Figure 6 is a fragmentary perspective view with portions in section showing a single track assembly and drawer and the arrangement and construction of coacting parts; and,

Figure 7 is a fragmentary view in section and elevation, with the drawer removed and showing the components which go to make up a single track assembly.

By way of explanation and introduction to the detailed description it is to be pointed out that the expression 'office file cabinet' herein used is primarily for convenience due to the fact that the construction herein shown and described is a file cabinet. It will be evident, however, that the principal novelty has to do with a free floating single sliding drawer and the special track means whereby said drawer, because all of the parts are of wood, is susceptible of satisfactorily achieving the end result desired, namely, a drawer which operates without hindrance, with requisite smoothness and ease, and which is virtually noiseless in its operation.

With the foregoing in mind, attention is first invited to Figure 1 wherein the office file cabinet, as a unitary structure is denoted by the numeral 8. In external appearance this resembles a conventional file cabinet, as is obvious. It is to be pointed out, however, that the entire cabinet and its components are constructed from available wood which lends itself to satisfactory finishing and painting and promotes the desired over-all beautiful appearance. Except for the fact that the cabinet or case is of wood, its particular construction, so far as the invention is concerned, is not too important. That is to say, the cabinet comprises a rectangular enclosure with flat walls all of which are conveniently denoted by the numerals 10. The cabinet is, of course, open at the front to accommodate the wooden sliding drawers 12. Each drawer is simply made and embodies a bottom wall 14, an inner transverse end wall 16, a front panel 18 with handle means 20 and longitudinal side walls 22. The unusual part of the drawer has to do with the longitudinal fixedly mounted guide and assembling strips 24 which constitute keying members. It will be seen in Figure 6 that the upper intermediate edge portion of each strip has its central portion notched out as at 26 to provide longitudinally spaced abutments or stop shoulders 28 and 30, respectively.

The walled case of the cabinet is built around a suitable internal frame structure for rigidity and so far as the instant invention is concerned (see Figure 2) only the vertical battens or frame members 32, 34 and 36 are to be taken into account here.

To simplify the description and an understanding of the claimed subject matter, it is believed proper to confine the same more or less to a single sliding drawer and the track means or arrangement of tracks used in accommodating and properly supporting the drawer in the cabinet. With this in mind it will be clear from the drawings that the tracks are in pairs; that is, there is one track assembly on one vertical side of the cabinet and another, of duplicate construction, on the other side of the cabinet. Each track assembly is the same in construction and, therefore, a description of one will suffice for both. Attention is, therefore, directed to the uncovered track assembly shown at the bottom in Figure 2. This comprises a lower wooden track rail 38 which is horizontally disposed and superimposed against the frame members 32, 34 and 36. It is secured at its opposite ends as at 40 and 42 to the members 32 and 36. As best shown in Figure 4, this rail 38 is rectangular in cross-section and, therefore, the top surface is perfectly smooth and flat from end to end. It must be precision finished and level in order to serve its intended purposes. The complemental upper track rail is denoted by the numeral 44 and it will be noticed that this is coplanar and in spaced parallelism with the rail 38 and that it is shorter, its left or inward end (Figure 2) being flush with the same end of the rail 38 and its forward or outward end being spaced inwardly from the corresponding end of the rail 38. It is fastened in place as at 46 and 48. It is also rectangular in cross-section as shown in Figure 4 and the underside thereof is provided with a central longitudinal guiding and keying channel 50. The complemental slide rail, which is a readily applicable and removable insert, is denoted by the numeral 52, this as best shown in Figure 4 is generally rectangular in cross-section and is of a length commensurate with the over-all length of the track. The inwardly facing side thereof is centrally grooved as at 54 to provide a keying channel. This rail 52 is sometimes referred to as a "floating" rail and its glides nicely "in" and "out" between the upper and lower rails 44 and 38 respectively. At its inward trailing end it is provided with a lateral check member or pin (see Figure 5) 56. This travels back and forth between the frame members 32 and 34 and thus the outward sliding movement of the slide rail is obviously limited. There is a suitable drawer bumper or buffer 58 on the leading or forward end of the slide rail. There is a pin hole in the upper intermediate portion thereof which is denoted at 60 in Figure 2 and this serves to accommodate an insertable and removable dowel which constitutes a stop pin 62. It will be noted that the stop pin

depends and thus projects into the keyway 54.

Figure 4 is employed to illustrate the complete association of fixed upper and lower track rails 44 and 38 with the intervening free-floating slide rail 52 therebetween. The latter rail is bodily and readily insertable and removable as shown in full and dotted lines. It is placed in position at right angles to the trackway between the track rails and this may be accomplished with ease and speed.

In order to promote the free-floating drawer action each slide rail 52 is provided at the inward trailing end with anti-friction rubber cushioned or equivalent glide buttons. For example, there is a metal capped button 64 on the top edge of the sliding rail at the inner end thereof held in place by a pin 66 which fits into an oversize hole and which is capable of angling itself to render the button substantially self-leveling. A rubber washer or cushion 68 surrounds the pin and is interposed between the metal button and surface of the sliding rail and glued to the latter. This button operates in the channel 50 in the fixed upper rail as is obvious. A second glide button, also a metal button 70 is mounted on the corresponding inner end of the lower edge of the sliding rail and this has a freely movable stem 72 and a rubber cushioning washer 74. This self-leveling glide or button 70 rides on the flat top surface of the lower fixed rail 38.

As best shown in Figure 7, there is a third glide or button and this is denoted by the numeral 76 and it too has a freely wiggling stem or pin 78 and a cushioning washer 80. The latter button is mounted on the top side of the outer or leading end of the fixed rail 38. The sliding rail 52 in addition to having the side groove or keyway 54 has a shallow groove or channel 82 formed in its underside and this has sliding keying relationship with the relatively fixed glide or button 76 as is obvious.

Not only do these glides serve to provide the free floating and unhampered sliding action of the slide rails 52 for they are, in addition, freely adaptable devices, are substantially self-leveling and are far superior to rollers or anti-friction ball bearings which are often used in constructions of the character under consideration. All shocks are absorbed by the rubber cushions or washers and noise is reduced, obviously, to a minimum. There will be no sticking or jamming of the slide rails as is obvious. Then too, it is evident that when the slide rail is inserted between the fixed upper and lower rails in Figure 4 the respective buttons cause, by pressure, the rubber washers to compress slightly and this makes it possible to insert the rail 52 between the fixed rails 38 and 44 with a minimum of ease and practicality. After the rail 52 is in the full line position shown in Figure 4, the inherent resilient characteristic of the rubber washers on the respective glide button comes into play and presses the respective button against its coacting surfaces, thus assisting in properly lodging and retaining the slide rail in place and against accidental displacement.

After the slide rails are assembled in their respective positions the wooden dowel pins 60 are temporarily removed. This allows the guide strips or keying strips 24 on the drawer to be fitted into the keyways 54, after which the dowel pins 60 are replaced to function as protruding stop elements in an obvious manner. These stop elements coact with the aforementioned shoulders 28 and 30 on the guide strips and provide the delayed action result which is accomplished. That is to say, when the drawer is first pulled out it slides more or less independently of the in "stationary" slide rails 52. When the stop pins 62 engage the shoulders 28 the slide rails are thus mechanically joined with the drawer and they come out slidingly and simultaneously with the drawer. It is felt, however, that the over-all construction and arrangement of parts is clear from the drawings and description and that the method of assembling and removing the movable parts as well as the operation will likewise be clear. Therefore, a more lengthy description is thought to be unnecessary.

Minor changes in the shape, size, materials and arrangement of parts may be resorted to in actual practice without departing from the spirit and scope of the invention, as claimed.

Having described the invention, what is claimed as new is:

1. In a cabinet and sliding drawer construction, a relatively stationary cabinet walled in and providing a sliding drawer enclosure, said cabinet embodying spaced parallel vertical walls, a first track on the interior of one vertical wall, a second track on the interior of the remaining vertical wall, said tracks being horizontal and in the same plane and each track embodying fixed upper and lower spaced parallel wooden rails, each upper rail having a longitudinal channel in its underside providing a guideway for a glide, each lower rail having a smooth flat top surface also providing a companion guideway for another glide, a readily insertable and removable slide rail slidably mounted between each pair of upper and lower fixed rails, self-levelling cushioned anti-friction glides mounted one directly above the other on upper and lower edge portions, respectively, of the trailing inner end portions of said slide rails and tracking against their respective guideways, the inwardly facing vertical sides of said slide rails being longitudinally grooved and providing keyways, and a sliding drawer arranged in said case between said tracks, said drawer having vertical sides provided on their outwardly facing surfaces with fixed longitudinal guide, assembling and keying strips and the latter being keyed in the respective cooperating keyways in their companion slide rails.

2. For use in a wooden cabinet for a wooden sliding drawer, a pair of track assemblies, each assembly comprising a fixed relatively long wooden lower rail rectangular in cross-section having a perfectly smooth and flat top surface, a fixed relatively short upper rail in spaced parallelism above said lower rail, the forward end of said upper rail terminating in inwardly spaced relation from the corresponding end of said lower rail and the underside of said upper rail having a lengthwise channel providing a guideway as well as a keyway, a longitudinally grooved slide rail interposed between said upper and lower fixed rails, said slide rail being readily insertable and removable in and from the space between said fixed rails in a direction at right angles to the latter rails simply by manually angling same and either pressing it in place or lifting it out as the case may be, and rubber cushioned glide buttons mounted on the respective upper and lower edge portions of said slide rail, said glide buttons being situated one above the other at the inward trailing end portion of said slide rail and the resiliency factor of the respective buttons and their special coaction with said flat top surface of the

lower rail and channel in the upper rail constituting the essential ways and means whereby said slide rail is keyed in place and held against accidental displacement from said space.

3. The structure defined in claim 2, wherein the under side of said slide rail is provided with a lengthwise channel, and a third anti-friction rubber cushioned glide mounted on the flat top surface of the fixed lower rail at the outward end of the latter, said third glide being located in said channel and said channel being in slidingly keyed relation thereto and to said lower fixed rail.

4. In combination, a cabinet embodying an enclosed space defining an open-ended sliding drawer compartment including spaced parallel vertical walls, a first track on the interior of one vertical wall, a second track on the interior of the remaining vertical wall, said tracks being horizontal and in the same plane, and each track embodying fixed upper and lower spaced parallel wooden rails, each upper rail having a channel in its underside providing an open-ended guideway for a glide, each lower rail having a smooth, flat top surface extending from one end to the other and providing a guideway for another glide, a floating drawer-accommodating slide rail slidably mounted between each pair of upper and lower fixed rails, and anti-friction glides mounted on the respective upper and lower edge portions of the trailing inner end portions of each of said slide rails, said glides being disposed directly one above the other and tracking against their respective guideways, each glide having an anti-friction head carrying a rigid pin fixed centrally and rigidly to said head and extending therefrom into a hole provided therefor in said slide rail, and a responsively squeezable, self-adjusting cushioning washer encircling the pin and fixed to the head and also attached to the cooperating surface of said slide rail, said washer being of elastic rubber which increases and diminishes in size readily in response to varying pressure demands to permit said slide rail to be readily placed in the space between the fixed rails or bodily removed from said space in a direction at right angles to said fixed rails.

5. The structure defined in claim 4 wherein the underside of each slide rail is provided with a length-wise open-ended channel, and a third anti-friction rubber cushioned glide mounted on the flat top surface of each fixed rail at the outer end of the latter, said glide being located and operating in said channel, and said channel being thus slidably keyed into position on its cooperating fixed rail.

6. In combination, a cabinet embodying an enclosed space defining an open-ended sliding drawer compartment including spaced parallel vertical walls, a first track on the interior of one vertical wall, a second track on the interior of the remaining vertical wall, said tracks being horizontal and in the same plane, and each track embodying fixed upper and lower spaced parallel wooden rails, each upper rail having a channel in its underside providing an open-ended guideway for a glide, each lower rail having a smooth, flat top surface extending from one end to the other and providing a guideway for another glide, a floating drawer-accommodating slide rail slidably mounted between each pair of upper and lower fixed rails, and anti-friction glides mounted on the respective upper and lower edge portions of the trailing inner end portions of each of said slide rails, said glides being disposed directly one above the other and tracking against their respective guideways, each glide having an anti-friction head carrying a rigid pin fixed centrally and rigidly to said head and extending therefrom into a hole provided therefor in said slide rail, and a responsively squeezable, self-adjusting cushioning washer encircling the pin and fixed to the head and also attached to the cooperating surface of said slide rail, said washer being of elastic rubber which increases and diminishes in size readily in response to varying pressure demands to permit said slide rail to be readily placed in the space between the fixed rails or bodily removed from said space in a direction at right angles to said fixed walls, the inwardly facing vertical sides of the respective slide rails being longitudinally grooved and providing keyways, and a sliding drawer arranged in said cabinet between said grooved slide rails and having vertical sides provided on the outwardly facing surfaces with fixed longitudinal guide, assembling and keying strips, and the latter being slidably keyed in respect to cooperating keyways in their companion slide rails.

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