United States Patent [19]

Barber

[11] **3,771,849**

[45] **Nov. 13, 1973**

[54] **BAYONET-MOUNTING MEANS FOR SLIDING DRAWERS**

[75] Inventor: **Lloyd L. Barber**, Santa Ana, Calif.

[73] Assignee: **Standard Precision Inc.**, Santa Fe Springs, Calif.

[22] Filed: **Mar. 6, 1972**

[21] Appl. No.: **231,965**

[52] **U.S. Cl.** **312/350,** 308/3.8

[51] **Int. Cl.** **F16c 29/00**

[58] **Field of Search** 312/350, 351, 341; 211/162; 308/3.8, 3.6

[56] **References Cited**

UNITED STATES PATENTS

3,702,570	11/1972	Stikkers	74/242.15 R
1,934,644	11/1933	Rand	312/350
2,594,571	4/1952	Lundberg	312/350
2,822,232	2/1958	Lhota	312/341 R
2,815,649	12/1957	Angelus	312/350
2,686,704	8/1954	Wolters	312/350

FOREIGN PATENTS OR APPLICATIONS

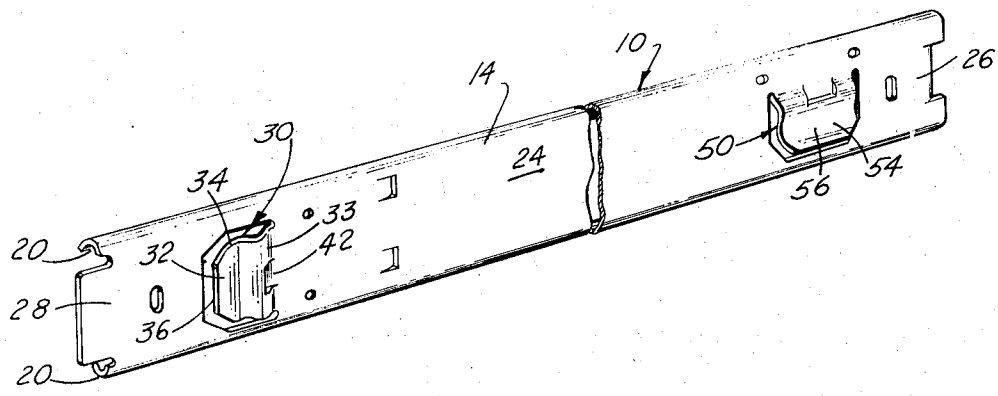
17,522	/1899	Great Britain	74/242.12
362,193	7/1962	Switzerland	312/350

Primary Examiner—Charles J. Myhre
Assistant Examiner—R. H. Lazarus
Attorney—J. Carroll Baisch

[57] **ABSTRACT**

There is disclosed a bayonet mounting means in combination with a drawer-slide device used in conjunction with file and desk drawers. The drawer-slide device is of the type having oppositely-disposed rails operably interconnected by ball rollers wherein one rail is fixedly attached to the side of a drawer, while the opposite rail is removably attached to the inner cabinet frame by means of bayonet, spring-loaded clips formed as an integral part of the removable rail by stamping out, at each end thereof, a main finger and at least one limiting rib member. One bayonet clip is positioned in a horizontal plane while the oppositely-disposed clip is positioned vertical to the center line of the rail, and each clip is adapted to be removably received in slots formed in the frame of the file cabinet or desk, thereby providing a simple and easy method of installing desk and file drawers in their related structures.

8 Claims, 5 Drawing Figures



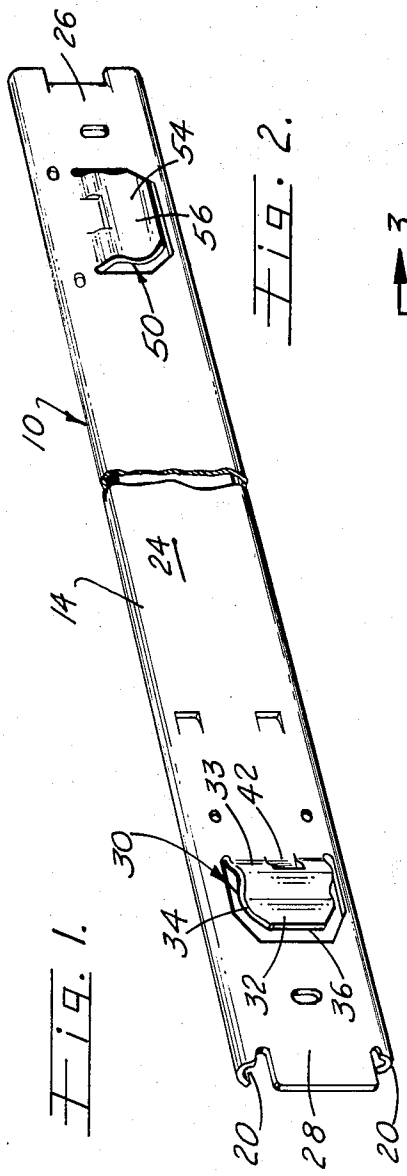


Fig. 1.

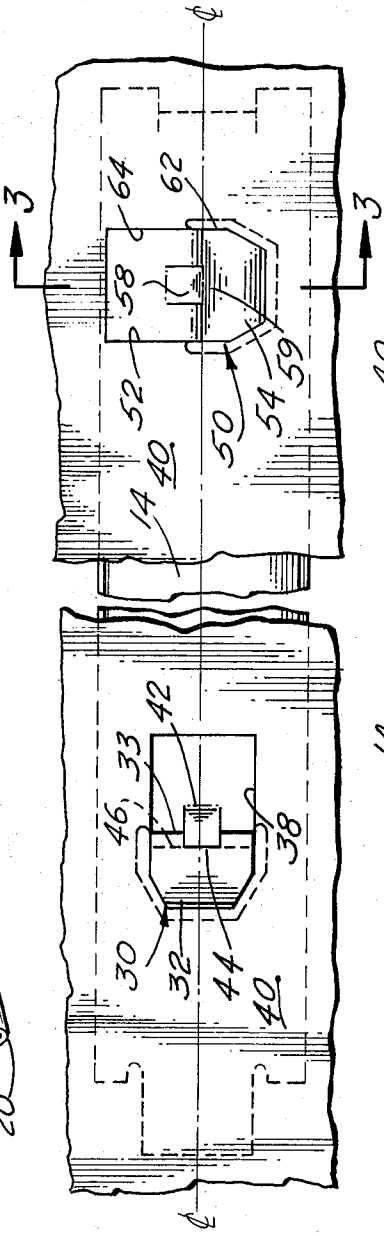


Fig. 2.

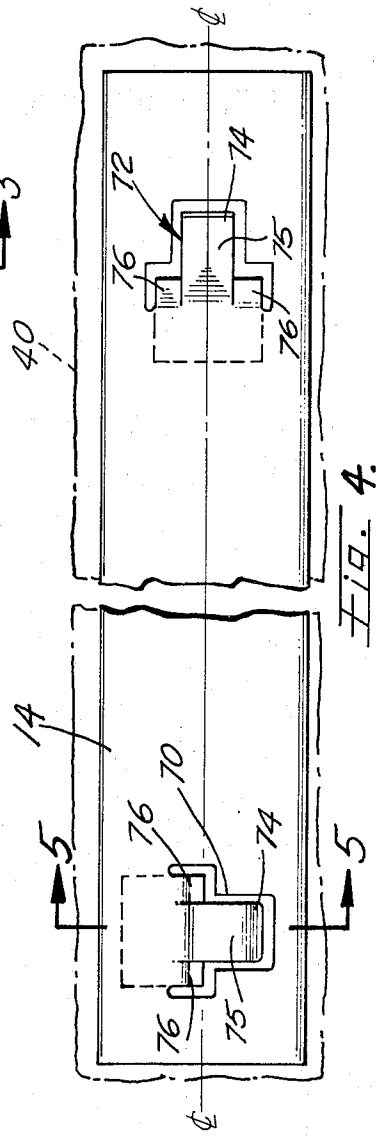


Fig. 4.

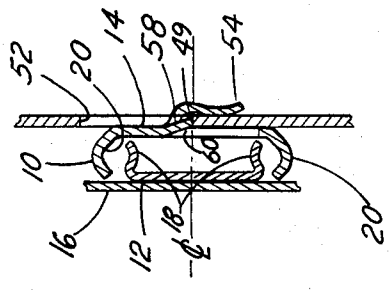


Fig. 3.

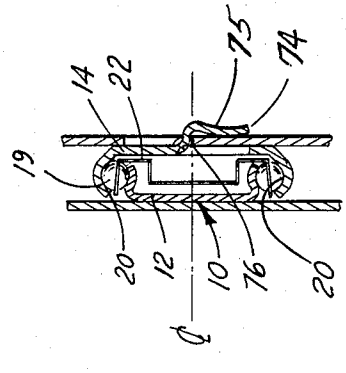


Fig. 5.

BAYONET-MOUNTING MEANS FOR SLIDING DRAWERS

BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention relates to bearing-type drawer slides and, more particularly, to a quick-connect and disconnect means, in combination with a slide, to provide easy removal or insertion of drawers in file cabinets and the like.

2. Description of the Prior Art

As is well known in the art, various problems and difficulties are and have been encountered with respect to inserting and removing file drawers from file cabinets or desks. Removal of drawers for adjustment or relocation, sometimes with their contents still disposed therein, creates problems, particularly with those individuals who are not acquainted with the construction of office equipment, wherein damage to the equipment, as well as injury to the individual, are most probable. Due to the complicated devices relating to slides for removing drawers from file cabinets and the like, it is generally necessary to remove all the material stored therein. This is time consuming and messy.

Therefore, to the applicant's knowledge, there is no device available whereby a drawer is provided with a simple device, in combination with the drawer slide, that makes it possible for anyone to remove drawers from cabinets or desks in a quick and easy manner.

SUMMARY OF THE INVENTION

The present invention discloses a drawer-slide device including a quick-connect and disconnect means which is formed as an integral part of the slide. The slide herein described comprises the type having oppositely-disposed, horizontal rails adapted to be operably mounted to each other by ball-bearing rollers disposed therebetween, whereby each rail is capable of moving relative to the other. Generally, one rail is fixedly secured to the drawer while the second, outer rail is provided with a quick-connect and disconnect means formed as an integral part thereof. This means includes a pair of bayonet, spring-loaded clips positioned at opposite ends of the second, outer rail. One bayonet clip is formed in a vertical relationship to the center line of the rail while the second bayonet clip is formed in a horizontal relationship thereto. The slide device is secured to each side of a drawer, wherein the bayonet clip closest the inserting end is provided with a spring-loaded, main finger stamped therein which extends rearwardly in a horizontal plane, together with at least one limiting rib member. This clip is inserted into a slotted opening provided in the cabinet frame. As the first horizontal clip is installed, the limiting rib or ribs engage the adjacent edge of the slot, limiting further inward movement of the slide and drawer. At this point, the second bayonet clip is directly in line with the forward slotted opening, also provided in the framework of the file cabinet or desk. However, this clip is formed with a depending, spring-loaded finger which is clipped within the forward slot at right angles to the rail center line by lowering the front of the drawer downwardly until the adjacent limiting means engages the lower edge of the slot. The limiting means consists of at least one depending rib member which has sufficient length whereby, when the rib engages the edge of the slot, the slide device is disposed in a secure, level, horizontal plane. The reverse is true, however, when the drawer is to be removed. The drawer is lifted upwardly and pulled outwardly, disengaging easily the bayonet clips for removal of the drawer.

Therefore, the present invention provides a means whereby drawers to be installed in desks, file cabinets and the like can be readily received and supported therein in a simple and efficient manner.

OBJECTS AND ADVANTAGES OF THE INVENTION

The present invention has for an important object a provision whereby a drawer having a slide attached thereto can be inserted or removed from a cabinet or the like by a simple, quick-connect and disconnect means.

It is another object of the presen invention to provide a quick-connect and disconnect, drawer slide which includes bayonet-type, spring-loaded clips.

It is still another object of the invention to provide a quick-connect and disconnect, drawer slide that is capable of being removed when said drawer is still loaded with material.

It is a further object of the present invention to provide a device of this character that is easy to operate under various working conditions.

It is still a further object of the invention to provide a device of this character that is easy to service and maintain.

Still another object of the invention is to provide a device of this character that is relatively inexpensive to manufacture.

It is still another object of the invention to provide a device of this character that is simple and rugged in construction.

A still further object of the invention is to provide a device of this character that is so simple and easy to install that a substantial reduction in the cost of installation results therefrom.

Other characteristics, advantages and objects of this invention can be more readily appreciate from the following description and appended claims. When taken in conjunction with the accompanying drawings, this description forms a part of the specification wherein like references and characters designate corresponding parts in several views.

DESCRIPTION OF THE DRAWINGS

Referring more particularly to the accompanying drawings, which are for illustrative purposes only:

FIG. 1 is a perspective view of the slide rail having the present invention formed therein;

FIG. 2 is a side-elevational view of the invention attached to a frame member of a cabinet;

FIG. 3 is a cross-sectional view taken along line 3—3 of FIG. 2 which illustrates the rear, vertical, bayonet clip attached to the frame member of a cabinet;

FIG. 4 is a side-elevational view of a slide rail having an alternative, bayonet clip arrangement; and

FIG. 5 is an enlarged, cross-sectional view taken along line 5—5 of FIG. 4.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring more particularly to the drawings, there is shown a drawer-slide device **10** comprising a pair of operably-disposed rails **12** and **14**, respectively. Rail **12**

will hereinafter be referred to as the first or inner rail, and rail **14** will be referred to as the second or outer rail. The first rail **12**, as shown in FIG. **3**, is fixedly secured to the side **16** of a drawer adapted to be received within a cabinet or desk (not shown). This first rail **12** is generally smaller in width than the second rail **14** and is provided with bearing runways **18** in which ball-bearing rollers **19** are movably disposed. These ball-bearing rollers act as a means for operably attaching the two rails together by movably interconnecting each rail through runways **18** of rail **12** and runways **20** of the second enlarged rail **14.** To effect a more efficient movement between each rail, a bearing-spacing means **22** is provided to control the space between each adjacent bearing roller **19.**

Rail **14**, as seen in FIG. **1**, is provided with a substantially-flat, elongated wall **24** to which there is defined a front end **26** and a rear end **28.** Said front end **26** is that end which is positioned relative to the front end of a drawer, and said rear end **28** is positioned relative to the rear end of the drawer or the end of the drawer that enters the cabinet first when inserted therein.

In the past, outer rail **14** has been permanently affixed within a cabinet or the like by various means, such as bolts or screws passing through holes provided in wall **24** of said rail. Because of this type of mounting, difficulties are encountered when there arises a need to remove a file drawer. Therefore, the present invention provides a means whereby file drawers can be readily removed and replaced in a very simple operation. This means comprises a pair of bayonet, spring-loaded clips disposed adjacent each end **26** and **28** of the outer rail **14.**

The bayonet clip, generally indicated at **30**, disposed adjacent the rear end **28** is formed as an integral part of wall **24** by being stamped therefrom. When stamped, said bayonet clip **30** comprises a protrusive tongue member **32** extending outwardly from said wall **24** at **33** in the same horizontal plane of the rails **12** and **14** and along the center line thereof, as shown in FIG. **2.** To provide a spring tension to tongue **32**, a slight arcuate bend is formed at **34**, as shown in FIG. **1.** As the drawer having the slide device **10** operably secured thereto is inserted in the cabinet, said protruding tongue member **32**,having an outward projection at **36**, is received within a slotted opening **38** disposed in a portion of the frame member **40** of the cabinet, or the like. Hence, the drawer, at this point, is removably supported by bayonet clip **30.** However, it is also necessary to provide a means, as at **42**, for limiting the rearward movement of said slide. This means comprises a lip member centrally disposed in tongue **32** in the area of bend **33**, said lip being stamped therefrom to project outwardly a suitable distance, whereby the free edge **44** of lip **42** makes a positive contact with the rear, vertical edge **46** of slot **38.** Hence, at this point, the bayonet clip **50**, adjacent the front end **26** of slide rail **14**, is positioned for reception in a second slot **52** in frame **40.** The drawer is then lowered, allowing the tongue **54** of clip **50** to engage slot **52.** This is accomplished because the tongue **54** of this clip is stamped from rail **14** in a depending manner at right angles to the center line (See FIG. **2.**), said tongue member **54** being formed in a like manner to that of tongue **32**, in which said tongue **54** extends outwardly from the surface of wall **24** and is provided with an arcuate portion **56** whereby tension-engaging action takes place between said tongue and said wall or frame **40** of the cabinet. Again, there is a need to limit the movement of said rail **14** at this point and, therefore, a limiting means is disposed in clip **50**, as indicated by lip **58.** Said lip extends downwardly, normal to the plane of the center line of rail **14**, as illustrated in FIGS. **1** and **3.** The length of lip **58** is limited. That is, it extends downwardly to a point where free edge **59** contacts the lower edge **60** of the slot **52**, said lower edge **60** being disposed along the center line, causing drawer-and-slide device **10** to lie in a level plane to that of the cabinet or desk where it is supported therein.

Thus, rearward movement of slide **10** is prevented by lip member **42**; downward movement is prevented by lip member **58** of clip **50**; and any forward movement, when the drawer is fully opened, is stopped by edge **62** of clip **54** engaging vertical edge **64** of slot **52.**

It, therefore, can be seen that, when the drawer is required to be removed from a cabinet or the like, the drawer is lifted upwardly, disengaging beyonet clip **50** and then pulling said drawer outwardly until bayonet clip is disengaged from slot **38.**

Referring now to FIGS. **4** and **5**, in which an alternative arrangement of bayonet clip is shown, this arrangement for the quick-connect and disconnect operation is identical to that previously described. However, bayonet clips **70** and **72** comprise a tongue **74** which is spring loaded by the arcuate portion **75.** Said tongue **74** is centrally disposed between oppositely-disposed, limiting, lip members **76.** Bayonet clip **70** corresponds to bayonet clip **30** in that it is positioned adjacent the rear end of rail **14**; and clip **72** corresponds, in retrospect, to clip **50** of the first arrangement. That is, clip **70** is disposed horizontally to the center line, and clip **72** is disposed vertically and normal to the center line.

The invention and its attendant advantages will be understood from the foregoing description and it will be apparent that various changes may be made in the form, construction and arrangement of the parts of the invention without departing from the spirit and scope thereof or sacrificing its material advantages, the arrangement hereinbefore described being merely by way of example, and I do not wish to be restricted to the specific form shown or uses mentioned, except as defined in the accompanying claims.

I claim:

1. A quick disconnect mounting means in combination with a drawer slide device having operably disposed, interconnected rails received within a cabinet or the like frame, said mounting means comprising:

a first bayonet clip formed as an integral part of one of said rails in a horizontal plane thereto at one end thereof;

a second bayonet clip formed as an integral part of said rail in a vertical plane thereto and disposed at the opposite end of said first bayonet clip;

said first bayonet clip includes means for limiting rearward movement of said rails, and said second bayonet clip includes means for limiting downward movement of said second clip;

said limiting means of said first and second clips comprising at least one adjacent lip member which has a free end for direct engagement with said frame.

2. A quick-disconnect mounting means as recited in claim **1**, wherein each of said bayonet clips comprises a protruding tongue member having an arcuate bend to

provide a spring tension therein when connected to said frame.

3. A quick-disconnect mounting means as recited in claim **2**, wherein said lip member of each bayonet clip is centrally disposed within said tongue member and positioned in the same plane as that of its related tongue member thereof.

4. A quick-disconnect mounting means as recited in claim **2**, wherein said limiting means of said first and second bayonet clips comprises a pair of lip members, each oppositely disposed on adjacent sides of said protruding tongue members, each of said lip members being formed in the same plane relative to the adjacent tongue member.

5. A sliding drawer device comprising:

a first elongated rail for securing to a drawer;

a second elongated rail operably connected to said first rail;

bearing means disposed between said first and second rails for relative movement between each of said rails; and

a pair of bayonet clips formed as an integral part of said second rail and stamped therefrom;

independent lips which have a free end portion for limiting movement of said second rail from downward or rearward movement when said second rail is in place.

6. A sliding-drawer device as recited in claim **5**, wherein one of said bayonet clips is disposed in a horizontal plane to that of said second rail and disposed at one end thereof, and wherein the other bayonet clip is disposed at the opposite end of said rail in vertical position relative to the plane of said second rail.

7. A sliding-drawer device as recited in claim **6**, wherein said limiting means comprises a lip member centrally disposed within said bayonet clip.

8. A sliding-drawer device as recited in claim **6**, wherein said limiting means comprises a pair of lip members, each being oppositely disposed adjacent said bayonet clips.

* * * * *