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Lambert

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[54] **ANTI-CREEP BALL BEARING RETAINER FOR A DRAWER SLIDE**

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[52] **U.S. Cl.** **308/3.8**, 312/339

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

[58] **Field of Search** ..... 308/3.8, 6 R, 201, 308/217; 312/348, 339, 334, 337, 343, 344, 341

[56] **References Cited**

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R25,428	7/1963	Manson	312/343
3,488,097	1/1970	Fall	312/339
2,032,054	2/1936	Gussack	312/339
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Assistant Examiner—R. H. Lazarus
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[57] **ABSTRACT**

A drawer slide assembly comprising an elongated first track member, an elongated second track member, load bearing anti-friction elements such as ball bearings movably supporting the second member for longitudinal movement on the first member, a longitudinally extending retainer for such bearings, and an energy-storing spring arrangement for urging the retainer in the direction of movement of the second member.

18 Claims, 5 Drawing Figures

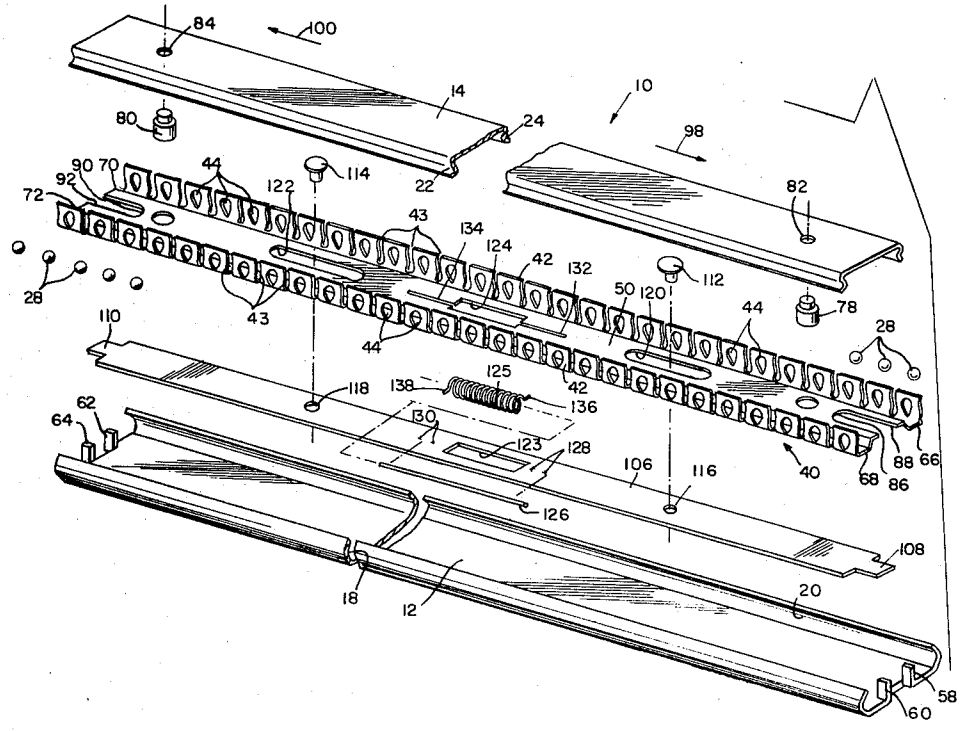
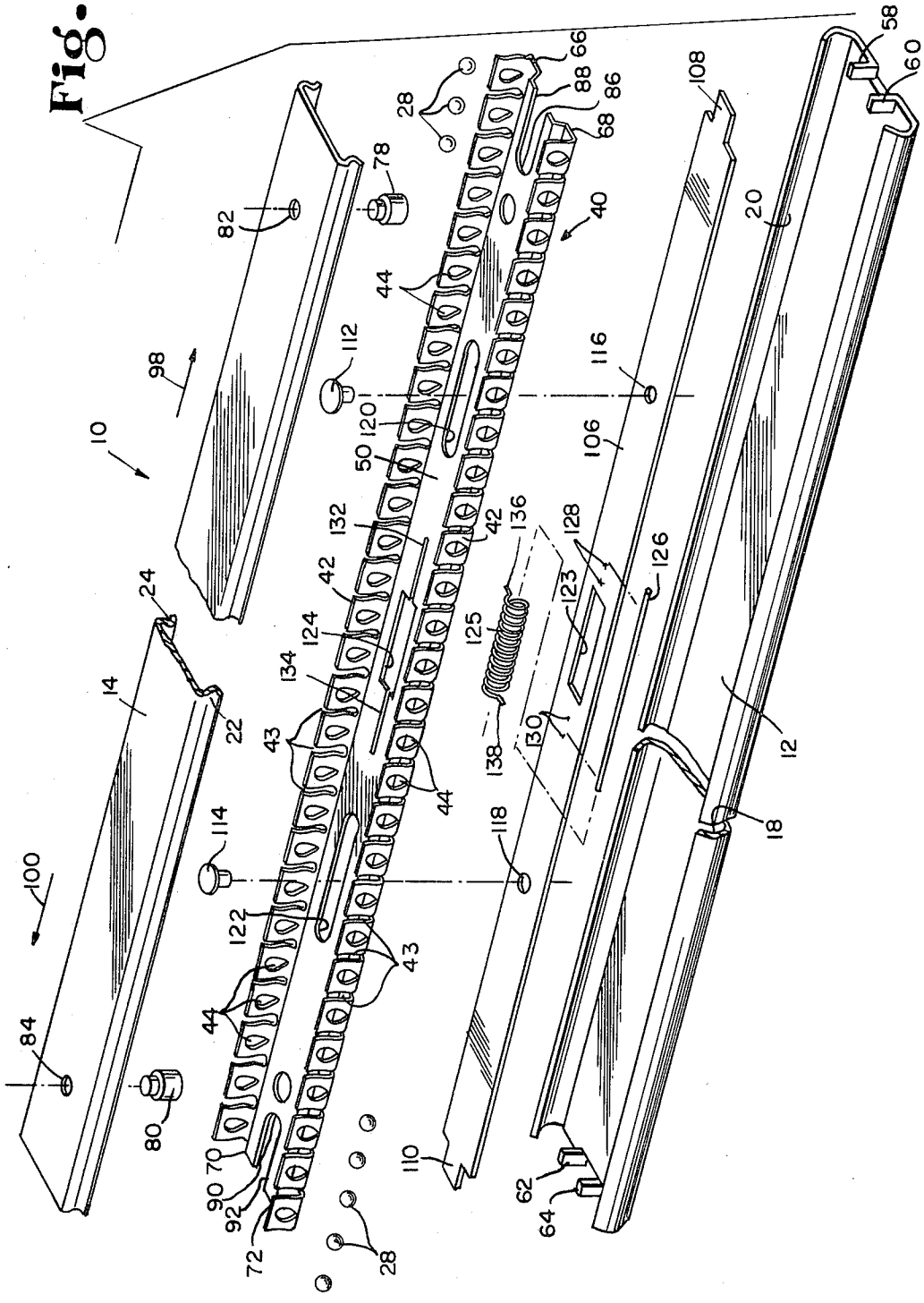


Fig. 1


10
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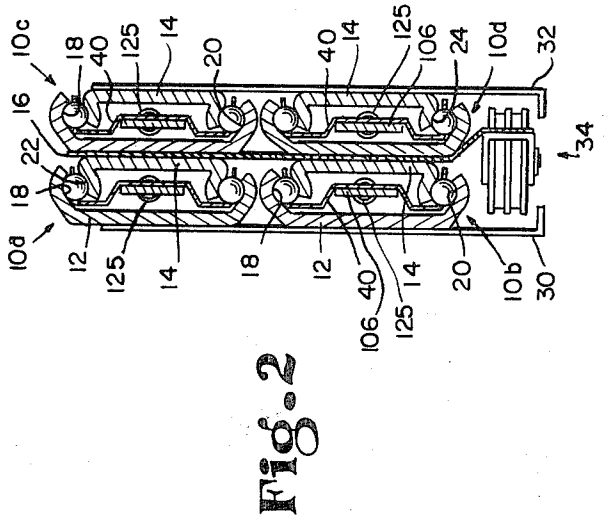


Fig. 2

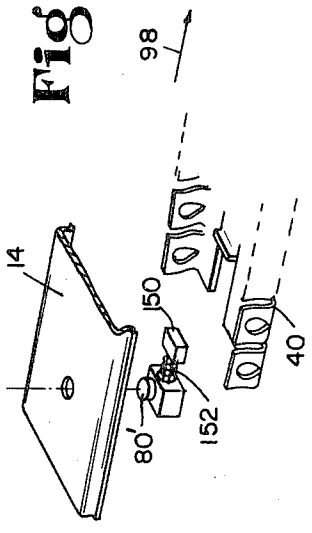


Fig. 4

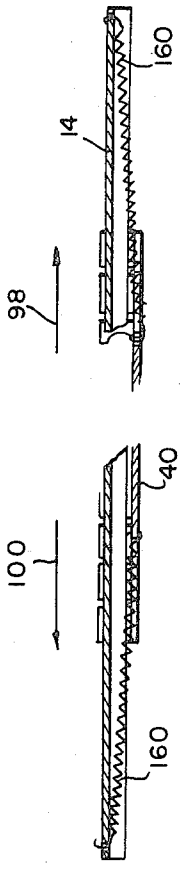


Fig. 5

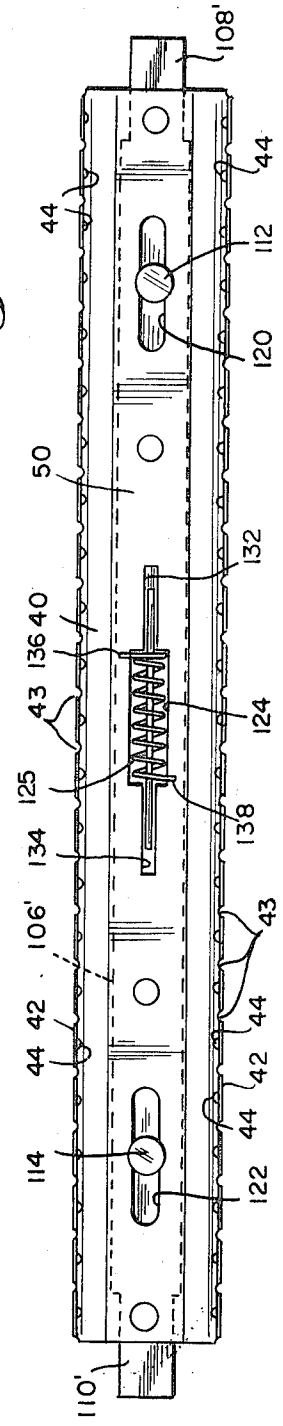


Fig. 3

ANTI-CREEP BALL BEARING RETAINER FOR A DRAWER SLIDE

It is a primary object of the present invention to provide a simple but very effective means for preventing the bearing retainer of a conventional drawer slide from creeping away from its synchronized position relative to the fixed and extensible track members.

In drawer slide assemblies, it is a common practice to have a fixed track member, an extensible track member, and load bearing anti-friction means, such as ball bearings or rollers, supporting the extensible member for longitudinal movement on the fixed member. Conventionally, retainers are used to hold the anti-friction means in longitudinal spaced apart relationship. Such retainers are often referred to as bearing cages or bearing retainers.

Reference is made to the U.S. Pat. No. 3,488,097 issued Jan. 6, 1970 to Fall which refers to an earlier U.S. Pat. No.. 3,205,025 issued Sept. 7, 1964 to Jordan. The device of the present invention is particularly suited for use on the drawer slides disclosed in these two patents. Particularly, these two patents disclose ball bearing drawer slides with the ball bearings held in longitudinal spaced relationship by a bearing retainer.

Reference is also made to copending U.S. Pat. applications Ser. No. 152,250 filed June 11, 1971 and now U.S. Pat. No. 3,687,505; Ser. No. 152,257 filed June 11, 1971; and Ser. No. 152,258 filed June 11, 1971 and now U.S. Pat. No. 3,679,275. These patent applications also disclose the general type of slide which may include the device of the present invention.

In such conventional drawer slides, movement of the extensible track member involves a proportional movement of the bearing retainer. Conventionally, the extensible track member and the fixed track member carry stop members which engage opposite ends of the bearing retainer so that the movement of the extensible member is limited by the length of the bearing retainer. That is, desirably, at the end of the travel of the extensible member, one end of the bearing retainer is engaged by a stop on the fixed track member while the other end of the bearing retainer is engaged by a stop on the extensible track member. Desirably, the stops on the respective track members will engage the opposite ends of the bearing retainer at exactly the same time. This will happen, of course, only as long as the bearing retainer is in synchronization with the extensible track member.

For reasons not fully understood, the bearing retainer creeps in a direction opposite to the direction of movement of the extensible track member. One possible reason for this creeping movement may be that, as the extensible track member moves to the extent of its travel relative to the fixed track member, the load on the track members causes flexing of the raceways in which the balls run so that there is a component of force directed longitudinally along the raceways.

In any event, the creep problem is an additive one in that the bearing retainer is caused to creep rearwardly relative to the fixed track member a small distance, for instance, one-sixteenth inch, each time the extensible member is moved forwardly. That is, each time a drawer is pulled forwardly from a cabinet, the bearing retainer creeps rearwardly a small distance relative to the fixed track member in the cabinet. When this occurs, the stop on the extensible track member will engage the adjacent end of the bearing retainer well before the other end of the bearing will engage the stop on the fixed track member. This means that the person pulling out the drawer must then exert sufficient force to move the bearing retainer frictionally to the end of its travel, i.e., to the point at which its forward end strikes the stop on the fixed track member. When this happens, there is considerable drag because each ball bearing is not rolling against two oppositely moving surfaces.

The present invention provides a solution to the creep problem just described. The present invention involves means for urging the bearing retainer in the direction of movement of the extensible track member. The urging means includes energy storage means effective to urge the retainer in the direction of movement of the extensible track member, i.e., in a direction opposite to the direction it normally creeps. In the illustrative and preferred embodiment, the extensible track member carries stop means positioned and arranged to move against the urging means to store energy in the said energy storage means. The release of that energy is effective to resist whatever forces might tend to create the creeping movement discussed above.

To the accomplishment of the above and related objects, this invention may be embodied in the form illustrated in the accompanying drawings, attention being called to the fact, however, that the drawings are illustrative only, and that change may be made in the specific construction illustrated and described, so long as the scope of the appended claims is not violated.

In the drawings:

FIG. 1 is an exploded perspective view of a drawer slide incorporating the advance of the present invention;

FIG. 2 is a sectional view of a drawer slide assembly including a plurality of the drawer slides of FIG. 1 to provide a double extension drawer slide assembly;

FIG. 3 is an elevational view of a bearing retainer with the anti-creep device of the present invention mounted thereon;

FIG. 4 is a fragmentary somewhat diagrammatical view of an anti-creep device including another type of energy storage means; and

FIG. 5 is a fragmentary somewhat diagrammatical view of an anti-creep including still another type of energy storage means.

Referring now particularly to the drawings, it will be seen that there is illustrated a drawer slide **10** comprising an outer track member **12** and an inner track member **14**, sometimes respectively referred to as the first and second track members. In the illustrative embodiment of FIG. 2, four such drawer slides, indicated generally by the reference numerals **10***a*, **10***b*, **10***c*, **10***d*, are connected together to make a double extension drawer slide assembly. Particularly, a longitudinally extending plate **16** is provided for connecting the inner track members **14** of the slides **10***a* and **10***b* to the outer track members **12** of the slides **10***c* and **10***d*.

The drawer slide **10** of FIG. 1, therefore, is the basic building block of the slide assembly shown in FIG. 2. It will be appreciated that this basic building block may be used with other such basic building blocks in a variety of ways to support heavy or light loads and to provide single or double extension capability.

In the illustrative and preferred embodiment, the outer track member **12** is formed to provide a longitudinally and outwardly extending first downwardly fac-

ing raceway **18** along its upper edge and a longitudinally and outwardly extending first upwardly facing raceway **20** along its lower edge while the inner track member **14** is formed to provide a longitudinally and inwardly extending second upwardly facing raceway **22** along its upper edge and a longitudinally and inwardly extending second downwardly facing raceway **24** along its lower edge. The relationship of these raceways **18, 20, 22, 24** and the ball bearings **28** carried thereon is best seen in FIG. **2.** Particularly, ball bearings **28** are carried on the first upwardly facing raceway **20** and under and in rolling contact with the second downwardly facing raceway **24** and additional ball bearings **28** are carried on the second upwardly facing raceway **22** and under and in rolling contact with the first downwardly facing raceway **18.** Each inner member **14,** therefore, is longitudinally extensible relative to its associated outer member **12.** In the illustrative embodiment of FIG. **2,** the outer members **12** of the slides **10***a*, **10***b* are rigidly connected together by a plate **30** and, for instance, to a cabinet structure while the inner members **14** of the slides **10***c*, **10***d* are rigidly connected together by a plate **32** and, for instance, to a drawer mounted in the cabinet. In such an embodiment, the two outer members **12** of the slides **10***c*, **10***d* move with the inner members **14** of the slides **10***a*, **10***b* relative to the cabinet structure; and the inner track members **14** of the slides **10***c*, **10***d* move relative to the outer track members **12** of the slides **10***c*, **10***d*. A cable-drive synchronizing mechanism of the type disclosed in the said prior U.S. Pat. No. 3,687,505 is indicated generally by the reference numeral **34** in FIG. **2.** As clearly disclosed in this prior application, the cable-drive synchronizing mechanism synchronizes the movement of the plate **16** and the plate **32.**

A drawer slide **10** includes a longitudinally extending bearing retainer **40** formed to provide longitudinally and outwardly extending flange sections **42** along its upper and lower edges. In the illustrative and preferred embodiment, these flange sections **42** are divided into a plurality of longitudinally spaced flange tabs by slots **43.** Each flange tab is then provided with a bearing aperture **44** which receives a ball bearing **28.** The ball bearings **28** are retained in these apertures **44** for movement with the retainer **40.**

The bearing retainer **40** is also provided with a longitudinally extending intermediate section **50** which is formed to provide a longitudinally extending channel best seen in cross section in FIG. **2.**

In the illustrative and preferred embodiment, stop means are provided on the inner track member **14** for engaging the ends of the bearing retainer **40** and stop means are provided on the outer track member **12** for engaging the ends of the bearing retainer **40.** Since the bearing retainer **40** may be, for instance, approximately one-half the length of the outer and inner track members **12, 14,** the track member **14** may be extensible a distance approximately equal to its length less the length of the bearing retainer **40.**

In the illustrative embodiment, the right-hand end (FIG. **1**) of the outer track member **12** is provided with spaced apart stop tabs **58, 60** while the left-hand end of the member is provided with similar stop tabs **62, 64.** The stop tabs **58, 60** engage, respectively, the engaging portion **66, 68** of the right-hand end of the bearing retainer **40** while the stop tabs **62, 64** engage similar portions **70, 72** of the left-hand end of the bearing retainer. Then, stops **78, 80** are rigidly connected to opposite end portions of the track member **14.** The illustrative stops **78, 80** are rivet stops which are secured in the illustrated openings **82, 84.** The stop **78** engages the axially inner end **86** of the elongated slot **88** entering the right-hand end of the bearing retainer while the stop **80** engages the axially inner end **90** of the slot **92** entering the left-hand end of the bearing retainer. It will be appreciated that the engagement of the stops **78, 80** against the inner ends of the slots **88, 92** is merely a design choice and the stops may, in some cases as indicated in FIG. **3,** engage the squared off ends of the bearing retainer.

Assuming that the member **12** is the fixed track member and that the member **14** is the extensible track member, i.e., movable in both directions as indicated by the arrows **98, 100** relative to the fixed member, it will be appreciated that the movement of the extensible member **14** in the direction of the arrow **98** is halted when the right-hand end of the bearing retainer **40** is against the stop tabs **58, 60** and the stop **80** is against the axially inner end **90** of the slot **92.** Conversely, movement of the member **14** in the direction of the arrow **100** is halted when the left-hand end of the bearing retainer **40** is against the stop tabs **62, 64** and the stop **78** is against the axially inner end **86** of the slot **88.**

Desirably, when the member **14** moves to the end of its travel relative to the member **12,** the applicable stops on the members **12** and **14** will simultaneously engage the opposite ends of the bearing retainer **40.** Of course, this will happen only when the bearing retainer **40** is in synchronization with the member **14** and the member **12.** If the bearing retainer creeps out of synchronization, the stop on one of the members **12, 14** will engage one end of the retainer before the stop on the other member engages the opposite end of the retainer. Particularly, when the member **14** is extended in the direction of the arrow **98,** the retainer **40** tends to creep in the direction of the arrow **100** and when the member **14** is pulled in the direction of the arrow **100,** the retainer **40** tends to creep in the direction of the arrow **98.** The amount of this creep may be, for instance, only one-sixteenth inch each time. However, the creep is additive such that, if the member **14** is pulled in the direction of the arrow **98** more times than it is pulled in the direction of the arrow **100,** the bearing retainer **40** will creep gradually in the direction of the arrow **100** as much as two or three or more inches. This occurs quite often when a drawer movable out the front and the back of a cabinet is pulled from the front many more times than it is pulled from the rear or vice-versa. Although the slide **10** is constructed so that the member **14** is extensible in both directions, the present invention and the creep problem are applicable to slides in which the movable member is extensible in only one direction.

Thus, if the bearing retainer **40** creeps a considerable distance in the direction of the arrow **100,** and the member **14** is pulled in the direction of the arrow **98,** the stop **80** will engage the inner end **90** of the slot **92** well before the points **66, 68** engage the stop tabs **58, 60.** When this happens, in order to get the member **14** to the extent of its travel in the direction of the arrow **98,** a force great enough to cause the ball bearings **28** to slide against the raceways **18, 20** must be exerted. It will be appreciated that this sliding action unduly wears the raceways and that, depending upon the load, may

require a great degree of extension force. In other words, the extensible track member **14** will move freely as it is supposed to only as long as the retainer **40** is moving in the opposite direction.

The present invention includes means for urging the retainer **40** in the direction of movement of the member **14**, the urging means including energy storage means effective to overcome the tendency of the retainer to creep in the direction opposite to the movement of the member **14**. This may be accomplished by providing an engaging portion movable relative to the retainer **40**, spring means for resisting movement of the engaging portion relative to the retainer **40**, and arranging the engaging portion such that it is moved relative to the retainer in the direction of movement of the member **14** as the member **14** approaches the limit of its travel.

In the illustrative embodiment, the member providing the said engaging portion or portions is an elongated pressure bar **106** proportioned and designed to lie in the channel of the longitudinally extending intermediate section **50** of the bearing retainer **40**, this bar providing engaging portions **108, 110** at its opposite ends. When the pressure bar **106** is in its normal position in the channel of the section **50**, the engaging portion **108** is disposed to the right of the axially inner end **86** of the slot **88** and the engaging portion **110** is disposed to the left of the axially inner end **90** of the slot **92**. Thus, the stops **78, 80** engage the engaging portions, respectively, **108, 110** before they engage the slot ends **86, 90**.

The bar **106** is connected to the bearing retainer **40** for longitudinal movement relative to the bearing retainer. In the illustrative embodiment, this is accomplished by rivets **112, 114** which are secured to the openings **116, 118** in the bar **106**. The bearings retainer **40** intermediate section **50** is provided with elongated slots **120, 122** through which the shanks of the rivets **112, 114** extend, the heads of the rivets **112, 114** being wider than the slot **120, 122** to keep the bar **106** in the channel section of the bearing retainer.

The bar **106** is provided with an elongated, rectangularly shaped aperture **123** intermediate its ends and the retainer **40** is provided with an elongated, rectangularly shaped aperture **124** intermediate its ends. These two apertures **123, 124** are preferably identical in size and disposed such that, when the bar **106** is in its normal position relative to the retainer **40**, the apertures are in registry to receive a coiled compression spring **125**. The spring **125** may be secured in the aperture **123**, for instance, by a wire **126** extending axially through the coils of the spring to have its ends spot-welded to the bar **106** at the points indicated at **128, 130**. Then, the retainer **40** may be provided with clearance slots **132, 134** for the ends of the wire **126**, these slots leading away from the opposite ends of the aperture **124**. The ends **136, 138** of the wire forming the compression spring **125** are disposed to hook over the longitudinally extending edges of the aperture **124** in the bearing retainer as best seen in FIG. **3**. Since the spring **125** is disposed in both apertures **123, 124** and held there by the wire **126** on the bar **106** and the ends **136, 138** hook over the longitudinal edges of the aperture **124**, movement of the pressure bar **106** longitudinally relative to the bearing retainer **40** is yieldably resisted by the spring. That is, the scissors action of the apertures **123, 124** compresses the spring **125**. In accordance with the present invention, longitudinal shifting of the pressure bar **106** from its normal position relative to the retainer **40** stores energy in the spring **125**, which energy, upon release, is effective to resist the creeping motion of the retainer **40**.

The stop tabs **58, 60** and the stop tabs **62, 64** are spaced apart by a distance such that the engaging portions **108, 110**, respectively, can move between the stop tabs.

With the structure as described, it will be appreciated that, when the member **14** is extended in the direction of the arrow **98**, the stop **80** on the member **14** will engage the end portion **110** of the bar **106** and move the bar **106** in the direction of the arrow **98** relative to the retainer **40**. The amount of movement of the bar **106** relative to the retainer **40** is equal to the normal distance between the end of the engaging portion **110** and the axially inner end **90** of the slot **92**. That is, the stop **80** engages the end portion **110** and moves it to the right until the stop also engages the end **90** of the slot **92**. Thus, when the member **14** is at the extent of its travel in the direction of the arrow **98**, the stop **80** is against the inner end **90** of the slot **92** and the engaging portion **110** of the bar while the stop tabs **58, 60** are against the point **66, 68** on the right-hand end of the retainer. In this condition, the spring **125** is compressed and storing energy. When the member **14** is retracted in the direction of the arrow **100**, the spring **125** urges the retainer **40** in the direction of the arrow **98** as long as the stop **80** is against the end portion **110**. In other words, energy is stored in the spring **125** as the track member **14** approaches the end of its travel to be released as the track member **14** starts back toward its fully retracted position.

It will be appreciated that the anti-creep device just described is symmetrical in that, when the track member **14** moves in the direction of the arrow **100** to the extent of its travel, the stop **78** will move the pressure bar **106** in the direction of the arrow **100** relative to the retainer **40** to load the spring **125** to resist creeping in the direction of the arrow **98**.

In the embodiment of FIG. **3**, the pressure bar **106'** is shown with engaging portion **108', 110'** which extend beyond the squared-off ends of the bearing retainer **40**. These engaging portions **108', 110'** are disposed to be engaged, respectively, by the stop **78, 80** on the track member **14** or other stops placed upon the track member **14**.

Thus, the anti-creep structure solves the creeping problem by applying a pressure on the retainer **40** during the final portion of extension of the track member **14** and in the direction of extension of the track member **14**. This pressure causes a creep forwardly, i.e., in the direction of extension of the track member **14**, sufficient to overcome any rearward creep during the rest of the extension-retraction cycle of the track member **14**. If this forward creeping movement should become excessive, the retainer **40** will move out of the range of the stop mechanism applying the forward pressure and the natural tendency of the rearward creep will move the retainer rearwardly to its desired position. The result of this operation is a balance in the location of the retainer **40** which may vary only slightly depending upon the amount of energy stored in the spring **125** and the distance over which it is applied.

While a single compression spring **125** is illustrated as being the energy storage means or spring means for

the anti-creep structure of FIGS. 1, 2 and 3, it will be appreciated that the single compression spring is merely illustrative and that any number of spring arrangements may be used. For instance, the engaging portions **108, 110** could be separate and could be separately connected to the retainer **40** for movement relative thereto and then such movement could be resisted by separate springs. Further,any such relative movement of an engaging portion could be resisted by a tension spring arranged such that energy will be stored therein as the track member **14** moves through its travel during extension and released during its travel during retraction.

Further, the energy storage means or spring means might be carried, for instance, by the stops **78, 80.** In FIG. **4,** there is illustrated a stop **80'** rigidly connected to the extensible track member **14'** and carrying a plunger **150** which engages the adjacent end of the bearing retainer **40.** This plunger **150** is urged to its projected position by a compression spring **152** as illustrated. When the track member **14'** moves in the direction of the arrow **98,** the plunger **150** will engage the left-hand end of the retainer **40** to compress the spring before the rigid stop **80'** contacts the retainer.

Still further, a tension spring could be connected between the right-hand end of the bearing retainer and the right-hand end of the track member **14** and another such tension spring could be connected between the left-hand end of the bearing retainer and the left-hand end of the track member **14.** In such a case, with the spring properly selected or calibrated, when the track member **14** moves in the direction of the arrow **98,** the tension spring connected to the right-hand end of the retainer would urge it in the direction of the arrow **98** to overcome any tendency to creep in the direction of the arrow **100.** Conversely, when the member **14** moves in the direction of the arrow **100,** the tension spring connected to the left-hand end of the retainer **40** would urge the retainer in the direction of the arrow **100** to overcome any tendency of the retainer to creep in the direction of the arrow **98.** Such an arrangement is suggested in the diagrammatical view of FIG. **5** showing the tension springs **160.**

What is claimed is:

1. A slide assembly comprising an elongated first track member, an elongated second track member, load bearing anti-friction means movably supporting said second member for longitudinal movement on said first member, said anti-friction means including a plurality of longitudinally spaced apart anti-friction elements and a longitudinally extending retainer for said elements, and means for urging said retainer in the direction of movement of said second member, said urging means including storage means effective to urge said retainer in said direction of movement.

2. The slide assembly of claim **1** in which said second member carries stop means, said stop means being positioned and arranged to move against said urging means to store energy in said energy storage means.

3. The slide assembly of claim **1** in which said urging means is operatively connected to said retainer and positioned such that movement of said second member through a portion of its travel relative to said first member stores energy in said storage means.

4. The slide assembly of claim **2** in which said urging means includes an engaging portion disposed in the path of said stop means, means for connecting said engaging portion to said retainer for longitudinal movement relative to said retainer, and said energy storage means including spring means yieldably resisting movement of said engaging portion relative to said retainer.

5. The slide assembly of claim **4** in which said stop means is arranged to move against said retainer, said urging means being disposed on said retainer so that said stop means engages and moves said urging means relative to said retainer before engaging said retainer.

6. A drawer slide comprising a fixed elongated track member, an extensible elongated track member, load bearing anti-friction means supporting said extensible member for longitudinal movement on said fixed member, said anti-friction means including a plurality of longitudinally spaced apart anti-friction elements and a longitudinally extending retainer for said elements, and spring means for urging said retainer in the direction of extension of said extensible member.

7. The drawer slide of claim **6** in which said extensible track member is movable a predetermined distance relative to said fixed track member, the last portion of which is against the urging of said spring means, said spring means being disposed such that energy is stored therein to urge said retainer in said direction as said extensible track member moves through said last portion.

8. The drawer slide of claim **7** in which said spring means includes a compression spring which is compressed as said extensible track member moves through said last portion.

9. The drawer slide of claim **8** including an engaging portion movable relative to said retainer, said compression spring being disposed to resist such relative movement of said engaging portion, said engaging portion being disposed to be moved by said extensible track member as it moves through said last portion.

10. A drawer slide comprising a fixed elongated track member, an extensible elongated track member, a plurality of ball bearings for movably supporting said extensible member on said fixed member, an elongated retainer for said bearings, stop means on said extensible member for engaging said retainer, an engaging portion, means for movably connecting said engaging portion to said retainer, spring means for yieldably resisting movement of said engaging portion relative to said retainer, said stop means being disposed to engage said engaging portion to move it against the urging of said spring means in the direction of movement of said extensible member and relative to said retainer.

11. A drawer slide as in claim **10** including second stop means on said fixed track member for engaging said retainer and stopping its movement, thereby stopping movement of said extensible track member.

12. A drawer slide as in claim **11** in which said first mentioned stop means includes first stops adjacent respectively opposite end portions of said extensible member and said second stop means includes second stops adjacent respectively opposite end portions of said fixed member, said retainer providing opposite end portions engageable by said stops, said extensible member being movable in both directions along said fixed member with the movement in both directions being limited by said retainer being engaged at one end by said first stop adjacent one end portion of said extensible member and at its opposite end by said second stop adjacent an opposite end portion of said fixed member.

13. A drawer slide as in claim 12 in which said engaging portion includes a bar extending longitudinally along said retainer, said bar providing opposite end portions extending respectively longitudinally outwardly from the adjacent end portions of said retainer.

14. A drawer slide as in claim 13 in which said end portions of said bar and said second stops are proportioned and positioned such that said second stops do not engage said bar, said first stops being proportioned and positioned to engage respectively the adjacent ends of said bar to move said bar relative to said retainer.

15. A drawer slide comprising a first elongated track member formed to provide a longitudinally and outwardly extending first downwardly facing raceway along its upper edge and a longitudinally and outwardly extending first upwardly facing raceway along its lower edge, a second track member formed to provide a longitudinally and inwardly extending second upwardly facing raceway along its upper edge and a longitudinally and inwardly extending second downwardly facing raceway along its lower edge, ball bearings carried on said first upwardly facing raceway and under and in rolling contact with said second downwardly facing raceway and additional ball bearings carried on said second upwardly facing raceway and under and in rolling contact with said first downwardly facing raceway, a bearing retainer having longitudinally spaced apart apertures therein for receiving, respectively, said ball bearings, stop means on said second track member, an engaging portion, means for movably connecting said engaging portion to said retainer, spring means for yieldably resisting movement of said engaging portion relative to said retainer, said stop means being disposed to engage said engaging portion to move it against the urging of said spring in the direction of movement of said second member and relative to said retainer.

16. The drawer slide of claim 15 in which said retainer is formed with a longitudinally extending intermediate section and longitudinally and outwardly extending flange sections along its upper and lower edges, said apertures being disposed in said flange sections, said intermediate section being formed to provide a longitudinally extending channel, said engaging portion being a bar disposed in said channel for longitudinal movement therein.

17. The drawer slide of claim 16 in which said bar is elongated to provide an abutment portion adjacent each end of said retainer, said stop means being disposed to engage said abutment portions to move said bar relative to said retainer.

18. The drawer slide of claim 17 in which said bar is formed to provide a longitudinally extending first aperture intermediate its ends, said channel being formed with a longitudinally extending second aperture in registry with said first aperture, said spring means including a coiled compression spring disposed in said apertures to bear against the ends thereof when said bar is in its normal position relative to said retainer.

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