

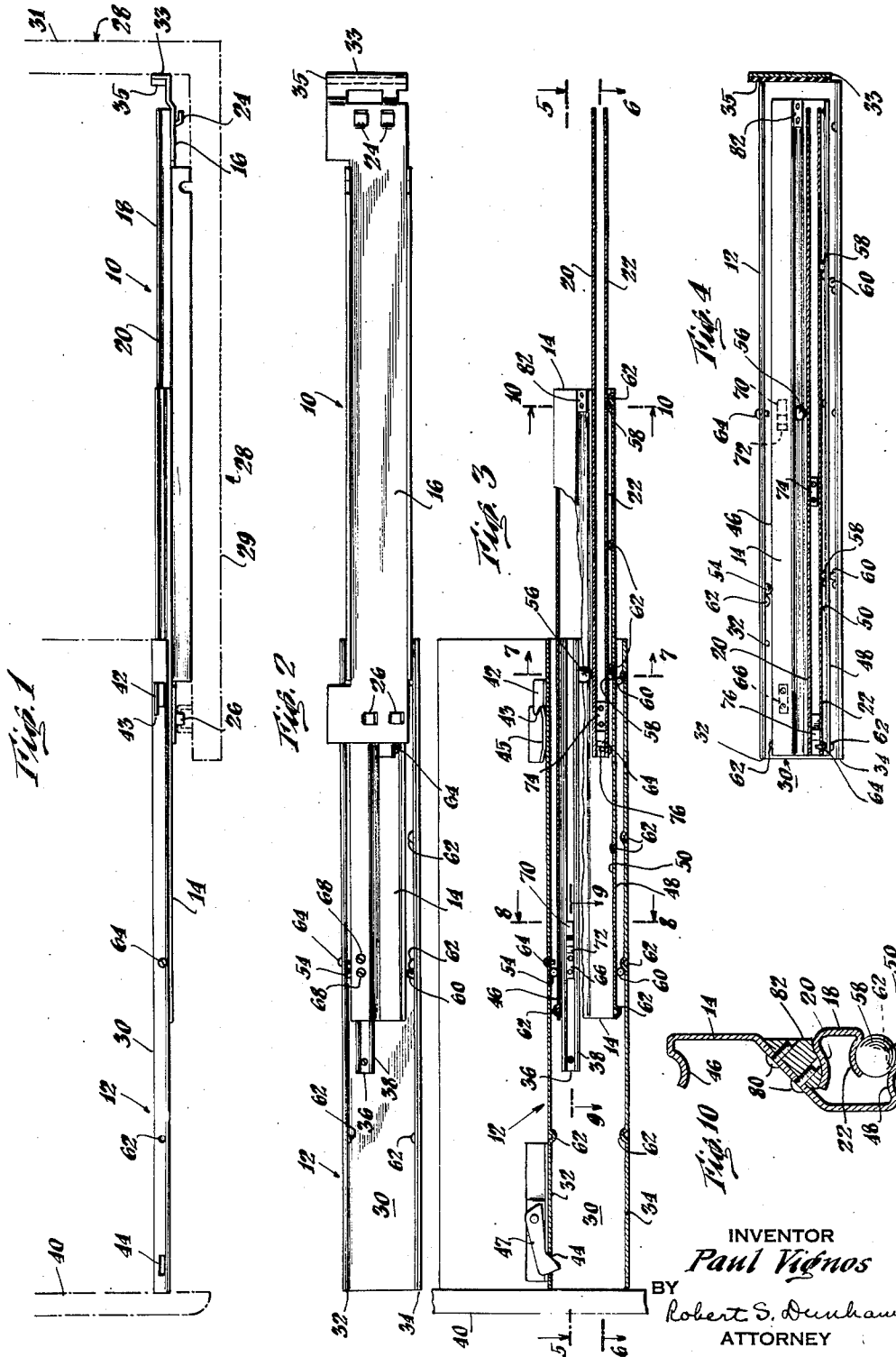
March 9, 1954

P. VIGNOS
DRAWER SUSPENSION

2,671,699

Filed May 29, 1951

2 Sheets-Sheet 1



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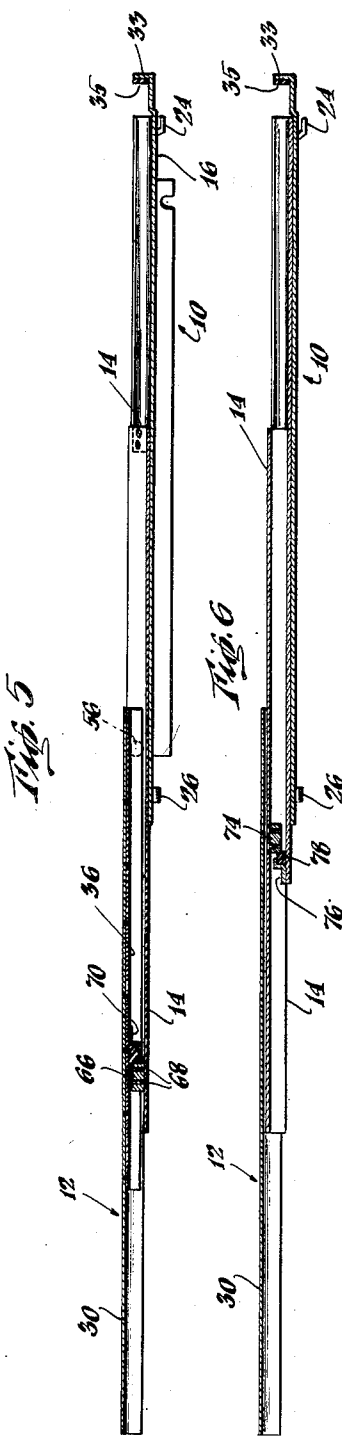
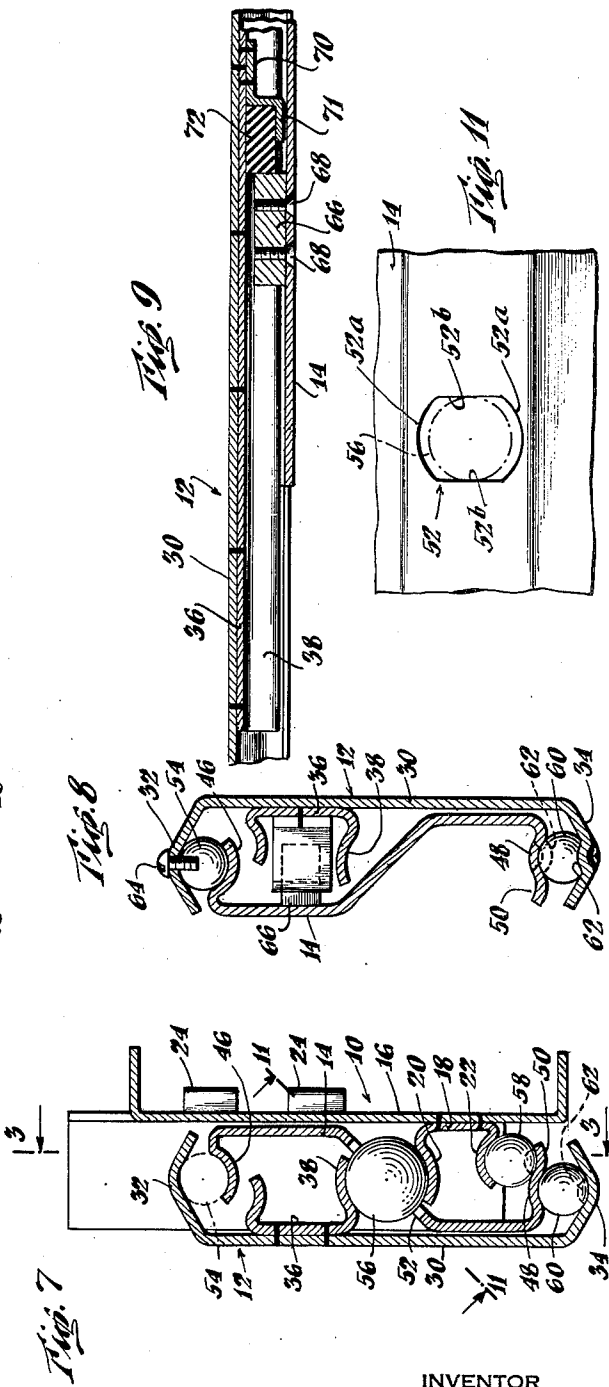
P. VIGNOS

2,671,699

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2 Sheets-Sheet 2



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DRAWER SUSPENSION

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12 Claims. (Cl. 308—3.8)

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This invention relates to a drawer slide for a heavy or heavily loaded drawer such as a file drawer in a desk or the drawers of a filing cabinet and the like, and more particularly pertains to a construction wherein the sliding elements are mounted on balls for easy movement of the parts relative to each other.

Such a drawer slide must provide a rigid and substantial suspension which will adequately support a heavily loaded drawer when the latter has been opened, i. e. pulled out from the cabinet. The drawer slide must, further, operate easily and should operate with a minimum of noise.

The invention, in addition to fulfilling the above requirements is also of simple, inexpensive construction, and provides means whereby the drawer can be easily removed from the drawer slide, and means whereby the drawer slide can be easily removed from the cabinet.

My drawer slide is of novel construction, in which a stationary member is carried by the cabinet, a member carries the drawer, and a floating member is intermediate the first two members. The drawer-carrying member may be alternatively called the drawer-secured member, to emphasize the fact that it is attached directly to the drawer, with no intervening elements. Said members are provided with appropriate substantially horizontal tracks or runners which complement each other to form ball-retaining races. Balls are in the races to ease the relative movement of the various parts. One of said races is defined by a track of the cabinet-carrying member and a track of the drawer-carrying member. One of the balls, which may preferably be larger than the others, tractionally engages the tracks of the last-mentioned race, and is held captive against movement lengthwise of the floating member by means of a hole in the floating member in which said larger ball is located. The hole may preferably be located about midway of the ends of the floating member. Suitable stops may be provided to limit movement of the parts relative to each other and to minimize noise.

Thus, when the drawer and the drawer-carrying member are pulled out from the cabinet, the captive ball forces the floating member to follow the drawer-carrying member at a definite fraction of the speed of the latter.

Accordingly, it is an important object of the invention to provide a rigid and substantial drawer slide of novel construction which will adequately support a heavily loaded drawer when the latter has been pulled out from the cabinet.

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It is another object to provide a drawer slide which will operate easily.

It is a further object to provide a drawer slide which will operate with a minimum of noise.

It is still another object to provide a drawer slide such that the drawer can be easily removed therefrom, and such that the drawer slide can be easily removed from the cabinet.

The above and other objects and advantages will appear more clearly from the following description, taken together with the accompanying drawings, in which:

Fig. 1 is a plan view of a right-hand drawer slide embodying the invention with the cabinet and the drawer indicated schematically, the drawer slide being shown in its fully extended position, i. e. with the drawer pulled out from the cabinet as far as it will go;

Fig. 2 is a side elevational view of the drawer slide of Fig. 1, the cabinet and the drawer being omitted;

Fig. 3 is a sectional view of the drawer slide taken along line 3—3 of Fig. 7, showing also the means for removably mounting the drawer on the drawer-carrying member;

Fig. 4 is a side elevational view partly in section of the drawer slide in its fully retracted position, i. e. with the drawer (not shown) pushed into the cabinet (not shown);

Fig. 5 is a sectional view taken along line 5—5 of Fig. 3;

Fig. 6 is a sectional view taken along line 6—6 of Fig. 3;

Fig. 7 is an enlarged sectional view taken along line 7—7 of Fig. 3;

Fig. 8 is an enlarged sectional view taken along line 8—8 of Fig. 3;

Fig. 9 is an enlarged sectional view taken along line 9—9 of Fig. 3;

Fig. 10 is an enlarged sectional view taken along line 10—10 of Fig. 3; and

Fig. 11 is a fragmentary view taken along line 11—11 of Fig. 7, showing the shape of the hole in the floating member for holding the enlarged ball captive.

Like reference numerals designate like parts in the various views.

Referring to the drawings, the drawer slide comprises a stationary, cabinet-carried member 10, a movable drawer-carrying member 12, and a floating, intermediate member 14.

The cabinet-carried member 10 is formed of a body portion 16, and suitably mounted thereon, as by spot welding, is a channel-like portion 18, which is divided into upper and lower horizontal

tracks 20 and 22, respectively, concave upward and downward, also respectively. The member 10 is shown (Fig. 1) removably mounted in a cabinet 28 which is shown schematically as having a side 29 and a back 31. It will be understood that the cabinet 28 may be a pedestal of a desk, or may be constituted by the stationary structure of a conventional filing cabinet having one or a plurality of drawers, or may be any other drawer-carrying enclosure. The illustrated means for removably mounting the cabinet-carried member 10, as aforesaid, include a pair of tongues 24 near the right-hand end of the member 10. The tongues 24 protrude from the body portion 16 and extend horizontally toward the back 31 of the cabinet 28. The tongues 24 are adapted to engage corresponding recesses in the side 29 of the cabinet 28, near the back thereof. Also included in the mounting means are a pair of tongues 26 near the left-hand end of the member 10. The tongues 26 protrude from the body portion 16 and extend vertically downward therefrom. The tongues 26 are engaged in corresponding recesses in the side 29 of the cabinet 28, near the front thereof.

Thus, to remove the cabinet-carried member 10 from the cabinet 28, it is only necessary to lift the front or left-hand end of the member 10 slightly upward to disengage the tongues 26 from their corresponding recesses, and then to pull the member 10 out of the cabinet 28. Simultaneously, the tongues 24 will be disengaged from their corresponding recesses.

To replace the cabinet-carried member 10 in the cabinet 28, the process is repeated in reverse order.

The drawer-carrying member 12 includes a body portion 30 which is formed to provide a horizontal, concave-downward track 32 along its upper edge and a horizontal, concave-upward track 34 along its lower edge. Suitably mounted, as by spot welding, on the body portion 30 of the drawer-carrying member 12 is a channel-like portion 36 which is provided with an intermediate, horizontal, concave-downward track 38. The track 38 may preferably extend throughout only a portion of the length of the drawer-carrying member 12.

Means are provided for removably mounting a drawer 40 (shown schematically in Figs. 1 and 3) on the drawer-carrying member 12. The illustrated means include, near the rearward or right-hand end of the drawer-carrying member 12, an element 42 (Figs. 1 and 3) which projects upwardly from the top flange or track 32 of the member 12 and which has a hook-like portion 43 facing the forward end of the member 12, and a horizontal slot 44 in the top flange 32 of the member 12 and near the forward or left-hand end thereof. The hook-like portion 43 of the element 42 is adapted to engage a corresponding element, as preferably a flange 45 (Fig. 3) carried by the side of the drawer, and a corresponding downwardly extending projection of the drawer may be freely fitted into the slot 44. Said downwardly extending projection may preferably be a freely-pivoted finger 47 (Fig. 3) arranged to drop into the slot 44. Thus, to remove the drawer 40 from the member 12, it is only necessary to lift the drawer 40 carrying the finger 47 from the slot 44 and pull the drawer 40 away from the element 12. To mount the drawer 40 on the element 12 it is only necessary to slide the flange 45 along the top of the element 12 until the flange 45 engages the portion 43. At this point, the finger 47

will automatically drop into place in the slot 44, and the drawer 40 is mounted.

The right-hand end of the cabinet-carried member 10 is bent at right angles inwardly of the cabinet 28 to provide a flange 33 for abutting the drawer-carrying member 12 when the drawer slide is in its fully retracted position, i. e., with the drawer 40 in the cabinet 28 as far as it will go (Fig. 4). The flange 33 may be provided with a strip of suitable material such as leather 35 to deaden the noise resulting from the impact of the end of the drawer-carrying member 12 on the flange 33 when the drawer 40 is slammed shut.

The intermediate, floating member 14 is of Z-like construction and is horizontally disposed between the cabinet-carried member 10 and the drawer-carrying member 12. The member 14 is of substantially Z-shaped cross-section (Figs. 7 and 8) and has a horizontal upper track 46 along the upper arm of the Z and first and second horizontal lower tracks 48 and 50 along the lower arm of the Z. The tracks 48 and 50 are concave downwardly and upwardly, respectively.

In the diagonal portion of the Z, and at about the longitudinal midpoint of the floating member 14, a hole 52 is provided, the purpose of which will appear more clearly below.

It will be appreciated, particularly by referring to Figs. 7 and 8, that the construction of the members 10, 12 and 14 provides several complementary sets of tracks or slide runners, which form suitable ball-retaining and guiding races.

Thus, starting at the top of Fig. 7 and proceeding downward: a first such race is formed by the complementary tracks 32 and 46 of the members 12 and 14, respectively; a second race (preferably larger than any of the others) is formed by the complementary tracks 38 and 20 of the members 12 and 10, respectively; a third race is formed by the complementary tracks 22 and 50 of the members 10 and 14, respectively; and a fourth race is formed by the complementary tracks 48 and 34 of the members 14 and 12, respectively.

Each race is provided with one or more anti-friction devices, which may preferably be balls and which tractionally engage the respective tracks of that race, so that the members 10, 12 and 14 can easily move lengthwise of each other in a progressive telescoping fashion, with a minimum of effort on the part of the operator.

The weight of the members 10, 12 and 14 (together with, or preferably even without the weight of the drawer 40) and the tightness of fit of the parts are such that substantially no slipping of the balls along the tracks of their respective races can occur.

Thus, in the illustrated drawer slide, a single ball 54 is in the first race, tractionally engaging the tracks 32 and 46 thereof. A somewhat larger diameter propeller ball 56 is in the second race tractionally engaging the tracks 38 and 20 thereof. The ball 56 is also disposed in the hole 52 in the diagonal portion of the Z of the floating member 14. Two balls 58, preferably of the same size as the ball 54, are in the third race, tractionally engaging the tracks 22 and 50 thereof. Finally, two balls 60, also preferably of the same size as the ball 54, are in the fourth race, tractionally engaging the tracks 48 and 34 thereof.

By reason of its disposition in the hole 52 in the diagonal portion of the Z of the floating member 14, the propeller ball is held captive against movement lengthwise of the floating

member 14, but is free to turn or roll along the tracks 38 and 20. The plane of the hole 52 may preferably pass through the center of the propeller ball 56.

By referring especially to Fig. 11, it will be appreciated that the hole 52 (in the diagonal web portion of the floating member 14) is not exactly round, but is composed of upper and lower arcs 52a of a circle, which is concentric with and of larger diameter than the ball 56. The arcs 52a are bounded front and back by parallel squared-off portions 52b which are preferably separated by a distance approximately equal to the diameter of the ball 56. With this arrangement, suitable clearance is provided between the ball 56 and the top and bottom of the hole 52 so that the ball 56 can rotate freely, and yet snug engagement between the ball 56 and the hole 52 is assured, so that the ball 56 can push the member 14 back and forth without noticeable "play" or lost motion. Other configurations of the hole 52, such as an ellipse, will suggest themselves to those skilled in the art.

It should now be appreciated that: as the drawer-carrying member 12 is moved in or out of the cabinet 28, the captive propeller ball 56 is rotated due to its rolling or tractional engagement with its tracks 38 and 20; therefore, the central portion of the ball 56 pushes against the side of the hole 52 in the direction of motion of the member 12; and this pushing impels the floating member 14 to follow the movement of the drawer-carrying member 12, but at a fraction of the speed thereof. Specifically, in the arrangement shown, the floating member 14 travels back and forth at one-half the speed of the drawer-carrying member 12, so that for any given displacement of the drawer 40 outwardly or inwardly of the cabinet the floating member or runner 14 is displaced in the same direction but only one-half as far. In this way the floating runner always maintains a half-way extended position of support intermediate the drawer-carrying runner 12 and the stationary runner assembly 10 in the cabinet, in substantially exact proportion to the outward extension of the runner or member 12 and of the drawer 40 which carries the latter.

The members 12 and 14 are of approximately the same length and are arranged so that when the drawer slide is in its fully retracted position (Fig. 4) their ends approximately correspond with each other. Thus when the drawer slide is in its fully extended position (Figs. 1-3, 5 and 6) the floating member 14 will adequately support the drawer-carrying member 12 (and indeed a heavily-loaded drawer as well) by reason of its positive supporting engagement of both the member 12 and the stationary member 10 over essentially one half of the length of each.

Suitable means may be provided to prevent the balls 54, 58 and 60 from slipping out of their races and to limit their lengthwise travel. As illustrated, such means may include dimples projecting slightly into the tracks, as at 62, and screws 64. Thus the one ball 54 is confined between the members 12 and 14 toward the forward (left-hand) portion of the member 12 by a dimple 62 and a screw 64, both projecting downwardly from the track 32 of the member 12. A dimple 62 in the track 46 at the forward end thereof prevents the ball 54 from spilling out when the slide is in its extended position. One of the two balls 58 is retained toward the forward (left-hand) end of the member 14 between the

first and second (from the left) dimples 62 projecting upwardly from the track 50 of the member 14. A screw 64 has its head projecting downwardly from the track 22 near its forward end to prevent said ball 58 from spilling out of its race when the drawer slide is in its extended position. The other ball 58 is similarly retained toward the rearward end of the member 14 between the third and fourth dimples 62 projecting upwardly from the track 50. One of the two balls 60 is retained toward the forward (left) end of the member 12 between the first and second (from the left) dimples 62 projecting upwardly from the track 34. A dimple 62 projecting downwardly from the track 48 at the extreme left-hand end thereof prevents said ball 60 from spilling out of its race when the drawer slide is in its extended position. The other ball 60 is similarly retained toward the rearward end of the member 12 between the third and fourth dimples 62 projecting upwardly from the track 34.

As best seen in Fig. 10, a rigid block 82 of generally triangular cross-section, is rigidly secured, as by screws 80, to the underside of the diagonal web of the floating member 14, and at the extreme rearward or right-hand end thereof (see Figs. 3 and 4). The underside of the block 82 is designed to bear against the track 20, in sliding relation therewith. The purpose of the block 82 is to provide additional support for the floating member 14, particularly when the drawer slide is extended. More especially, the block 82 prevents jamming of the parts and/or spilling out of balls, if, for example, the drawer-carried member 12 is inadvertently subjected to upward pressure. Thus, without the block 82, it would be possible for the floating member 14 to be pivoted clockwise (as seen in Fig. 3) relative to the cabinet-carried member 10, about an axis passing substantially through the ball 56, with the possible result that the rearward ball 58 would spill out. The block 82 prevents such possibility.

Also, suitable stops may be preferably provided to limit the travel of the members 10, 12 and 14 relative to one another. These stops prevent the drawer slide from coming completely apart. One such stop is shown enlarged in Fig. 9, and includes a rigid block 66 secured as by screws 68 to the floating member 14 near the left-hand end thereof. In alignment with the block 66 and secured, as by welding, to the central portion of the channel-like piece 36 of the drawer-carrying member 12 and to the right of the block 66 (as seen in Fig. 9), is a bracket 70 which has a lip 71 spaced from the body of the piece 36 and which carries a piece of resilient material, such as rubber 72, between the lip 71 and the block 66. Thus when the drawer-carrying member 12 is moved to the left, the block 66 and the bracket 70 (and the rubber 72) approach each other, until they meet. At this point, further similar movement is impossible.

A similar stop is provided between the floating member 14 and the cabinet-carried member 10. This stop (Fig. 6) includes a rigid block 74 carried by the floating member 14 and a bracket 76 mounted upon the cabinet-carried member 10 to the left of the block 74. A piece of resilient material, such as rubber 78, is affixed to the bracket 76 so as to project between the bracket 76 and the block 74, and thus to be struck by the block at the desired outer limit of movement of the floating member 14 relative to the stationary runner assembly 10.

The rubber pieces 72 and 78 serve to deaden the noise of impact as the drawer is opened to its fullest extent.

The various parts may be greased to ease movement, particularly (if desired) between the closely adjacent vertical web portions of the floating member 14 and the members 10 and 12.

Only a right-hand drawer slide has been illustrated, it being understood that a similar left-hand slide will be applied to the other side of the drawer.

In operation, when the drawer 40 is opened, and the drawer-carrying member 12 is pulled out, the propeller ball 56 pushes the floating member 14 outward at half the speed of the member 12, thus providing necessary support for the drawer-carrying member 12 and the drawer 40 itself. This operation can be continued, the parts rolling on the balls 54, 56, 58 and 60, until further movement is prevented by the intervention of the stops. When the drawer 40 is pushed back into the cabinet 28, the process is repeated, but in reverse order.

The invention thus represents a notably effective and smooth-operating slide suspension for a drawer, such as a file drawer in a desk, filing cabinet or the like. In particular, the illustrated arrangement of tracks and resulting ball races affords a secure support for the drawer at all positions, satisfactorily balanced against undue or localized strains, yet at the same time constituted of essentially simple parts, which may be fashioned of heavy sheet material (e. g. steel) in an economical manner. An especially important feature of the invention resides in the structure and arrangement of the floating member 14, with regard to its engagement of the central, translating ball 56, and also its cooperative relation in providing guide tracks with both of the other slide runner members, i. e. two ball tracks for one of the members and one for the other.

Specifically, the central, diagonal web portion of the member 14 is advantageous in achieving full engagement with the central ball 56, i. e. in a direct equatorial relation to the ball, while avoiding any interference with the cooperating tracks (of the other members) between which the ball rolls. Thus as shown in Fig. 7, there are no parts of the floating member at the horizontal sides or at the top or bottom of the ball. The ball may therefore have a relatively large dimension; yet the diagonal web arrangement permits the floating member to be a relatively narrow structure, i. e. in a direction between the body parts of the members 10 and 12, and at the same time to have good equatorial engagement with the ball. In other words, the proportional displacement function of the ball 56 is made more effective, and slippage or other difficulty is fully obviated or minimized, by utilizing a relatively large ball, while the assembly need not be correspondingly cumbersome or occupy undue space at the sides of the drawer. The diagonal arrangement of the central web portion of the floating member also contributes materially to the strength and rigidity of this part, for example by avoiding right-angle bends at central regions (i. e. along central lines longitudinally of the member), which without reinforcement might impair the vertical rigidity.

Furthermore, the arrangement of the oppositely extending, integral, upper and lower flanges (46 and 48—50) at the top and bottom edges of the floating member is particularly convenient, i. e. in that their disposition likewise

avoids impairment of the overall structural rigidity, while at the same time they may be effectively shaped to provide the desired multiplicity of tracks, i. e. one at the top and two at the bottom (the latter two by a single flange) for mutual support between the floating member and the drawer and stationary members, respectively.

While I have described my invention as embodied in concrete form in accordance with the provisions of the patent statutes, it should be understood that I do not limit my invention thereto, since various changes and modifications may be made without departing from the scope of the invention as defined by the accompanying claims.

Having thus described my invention, I claim:

1. A drawer slide for a drawer in a cabinet and the like, comprising: a cabinet-carried member including an upwardly-facing track; a floating member including upper and lower tracks; a drawer-secured member including upper and lower tracks forming ball races with the upper and lower tracks of said floating member, respectively, and an intermediate, downwardly-facing track forming a central ball race with the upper track of said cabinet-carried member; balls in all said races, including a ball in said central race; means integral with said floating member and spanning said ball in said central race to hold said ball captive against movement lengthwise of said floating member, so that said ball in said central race will propel said floating member in the direction of movement of said drawer-secured member at a fraction of the speed thereof.

2. A drawer slide for a drawer in a cabinet and the like, comprising: a cabinet-carried member including an upper track and a lower track; a floating member including an upper track and a lower track, a central portion connecting said last-mentioned tracks and a hole in said central portion; a drawer-secured member including upper and lower tracks complementing respectively, the upper and lower tracks of said floating member and forming therewith first and second ball races, and an intermediate track complementing the upper track of said cabinet-carried member and forming therewith a central ball race; balls in said first and second races; a ball tractionally engaging the tracks of said central race and held captive against movement lengthwise of said floating member by reason of being in said hole and being adapted to propel said floating member in the direction of movement of said drawer-secured member at a fraction of the speed thereof.

3. A drawer slide for a drawer in a cabinet and the like, comprising: a cabinet-carried member including an upper track and a lower track, concave upward and downward respectively; a floating member of substantially Z-shaped cross-section and including an upper track concave upward along the upper arm of said Z and first and second lower tracks along the lower arm of said Z and concave downward and upward respectively, said second track complementing the lower track of said cabinet-carried member and forming a first ball race, and a hole substantially midway of the ends of said floating member and in the diagonal portion of said Z; a drawer-secured member including upper and lower tracks complementing, respectively, the upper track and the first lower track of said floating member and forming second and third ball races, and further including an intermediate down-

wardly concave ball track complementing the upper ball track of said cabinet-carried member and forming therewith a central ball race; a captive ball in said hole and tractionally engaging the upper track of said cabinet-carried member on one side and the intermediate ball track of said drawer-secured member on the other side; and further balls in said first, second and third races.

4. The invention set forth in claim 2 wherein a first stop is provided between said drawer-secured member and said floating member to limit the maximum distance to which said drawer-secured member can be separated from said floating member, and a second stop is provided between said floating member and said cabinet-carried member to limit the maximum distance to which said floating member can be separated from said cabinet-carried member, each said stop including a rigid block and a bracket.

5. The invention set forth in claim 4 wherein a piece of resilient, sound-deadening material is inserted between said block and said bracket.

6. A drawer slide for a drawer in a cabinet or the like, comprising cabinet-carried and drawer-secured members respectively having elongated tracks complementarily facing each other and vertically spaced to constitute a ball race between the members, a ball in said race in rolling engagement with the tracks, and a floating member longitudinally disposed between the first-mentioned members and slidably supported on said cabinet-carried member and slidably supporting said drawer-secured member, said floating member having a web portion extending diagonally between the members intermediate the tracks and having an opening surrounding the ball, for engagement by the ball to displace the floating member by rolling travel of the ball when one of the first-mentioned members is moved lengthwise of the other.

7. A drawer slide for a drawer in a cabinet or the like, comprising cabinet-carried and drawer-secured members respectively having elongated tracks complementarily facing each other and mutually spaced to constitute a race for a rolling member, a rolling member in said race in rolling engagement with the tracks, and an elongated floating member disposed in longitudinally sliding relation between the first-mentioned members for support of one by the other, said floating member comprising an elongated, vertically extending, plate-like structure including a web portion extending lengthwise of the floating member and diagonally between the first-mentioned members at a locality diagonally crossing the space between the tracks, said diagonal web portion including an opening around the rolling member, for engagement of the floating member by said rolling member to displace the floating member in predetermined proportion to lengthwise displacements of the drawer-secured member relative to the cabinet-carried member.

8. A drawer slide for a drawer in a cabinet or the like, comprising cabinet-carried and drawer-secured members respectively having elongated, mutually spaced, complementary tracks to constitute a race for a rolling member, a rolling member in said race in rolling engagement with the tracks, and an elongated, vertically extending, plate-like floating member disposed intermediate the first-mentioned members and including a central, diagonal web portion extending lengthwise of said floating member and having an opening around the rolling member for

operative engagement by the latter, said floating member having oppositely extending flanges at its upper and lower longitudinal edges, to constitute runner tracks, and cooperating flanges projecting from the first-mentioned members to constitute tracks cooperating with the said tracks of the floating member, for sliding support of the drawer-secured member on the floating member and of the floating member on the cabinet-carried member.

9. A drawer slide as described in claim 8, wherein one of the edge flanges of the floating member is shaped to constitute a ball track, the cooperating track of one of the other members complementarily constituting a ball track for provision of a ball race therewith, the other flange of the floating member being shaped to provide two laterally adjacent, oppositely facing ball tracks, and the cabinet-carried and drawer-secured members respectively having tracks complementarily cooperating with said last-mentioned ball tracks to constitute ball races therewith.

10. A drawer slide for a drawer in a cabinet or the like, comprising cabinet-carried and drawer-secured members respectively having elongated tracks complementarily facing each other and vertically spaced to constitute a ball race between the members, a ball in said race in rolling engagement with the tracks, and an elongated, vertically extending, plate-like floating member longitudinally disposed between the first-mentioned members, said floating member including a diagonal web portion integrally extending throughout the length thereof and diagonally traversing the space between the aforesaid tracks, said diagonal web portion having an opening equatorially surrounding the ball intermediate the tracks, for engagement of the ball with the diagonal web portion to displace the floating member in predetermined portion to mutual longitudinal displacement of the first-mentioned members as the ball rolls between the tracks, said floating member being arranged for sliding support of the drawer-secured member and for sliding support by the cabinet-carried member.

11. A drawer slide as described in claim 10 wherein the plate-like floating member includes integral, substantially horizontal, longitudinal flanges along its upper and lower edges, respectively extending above and below the diagonal web portion to provide a substantially Z-shaped section for the floating member, the upper flange portion being curved to constitute a longitudinal ball track, the lower flange portion being shaped in laterally adjoining, oppositely vertically facing concave curves to constitute oppositely facing ball tracks, said cabinet-carried member having upper and lower ball tracks projecting therefrom, respectively in vertically spaced relation to the upper ball track of the floating member and one of the lower ball tracks thereof, to provide ball races therewith, and the cabinet-carried member having a ball track complementarily disposed in vertically spaced relation to the other ball track of the lower flange of the floating member, to constitute a ball race therewith, said slide including balls in said races between the floating member and the cabinet-carried and drawer-secured members for the aforesaid sliding support of the drawer-secured member on the floating member and of the floating member on the cabinet-carried member.

12. A drawer slide for a drawer in a cabinet and the like, as defined in claim 6, in which said

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hole has a diameter in the direction of motion of the ball only slightly greater than the ball diameter to form a sliding fit therewith, so that the floating member moves longitudinally concurrently with the ball substantially without lost motion, said hole also having a diameter in a direction transverse to the ball motion substantially greater than the ball diameter so that said web portion transmits no vertically acting force to said ball.

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