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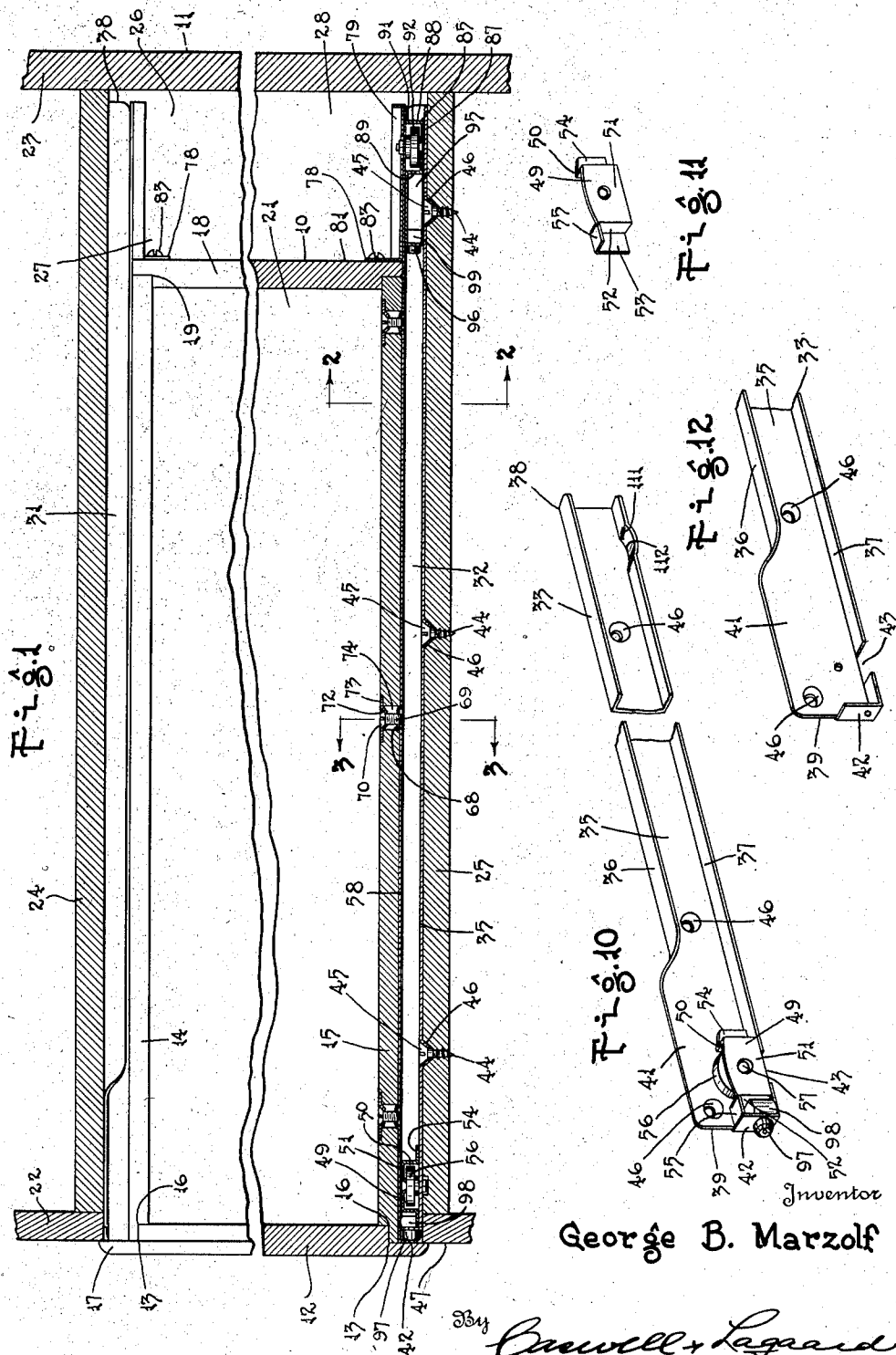
G. B. MARZOLF

2,293,210

SLIDING SUSPENSION

Filed April 1, 1940

4 Sheets-Sheet 1



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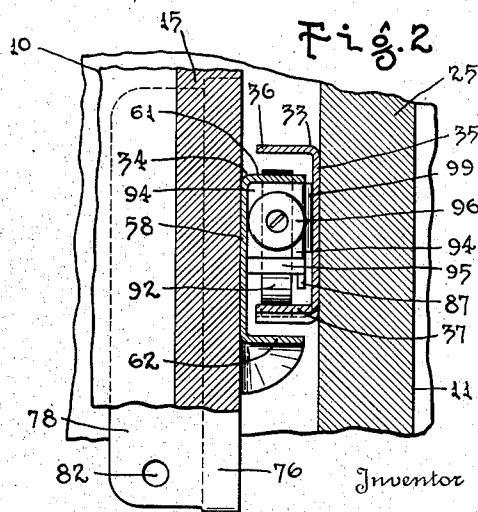
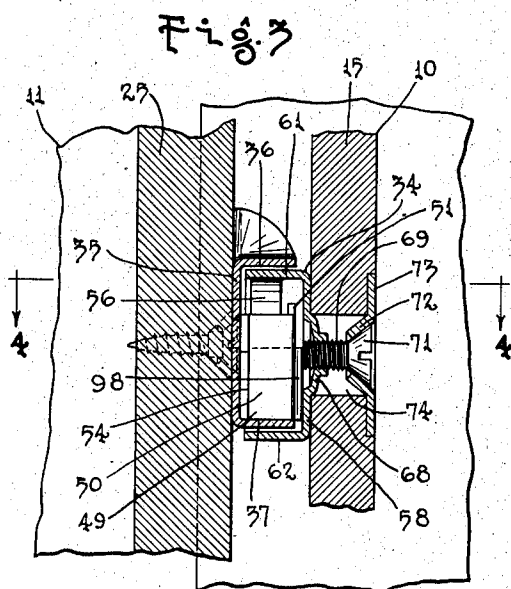
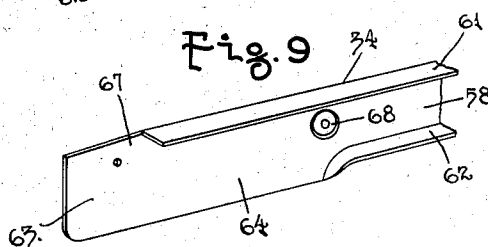
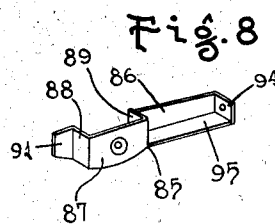
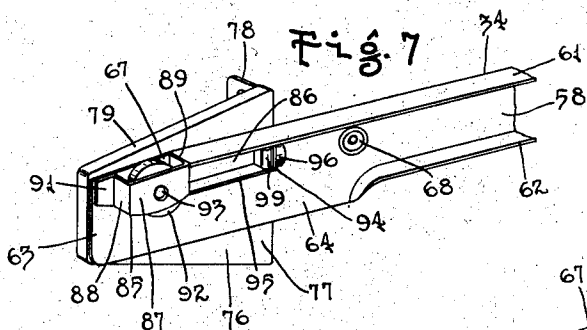
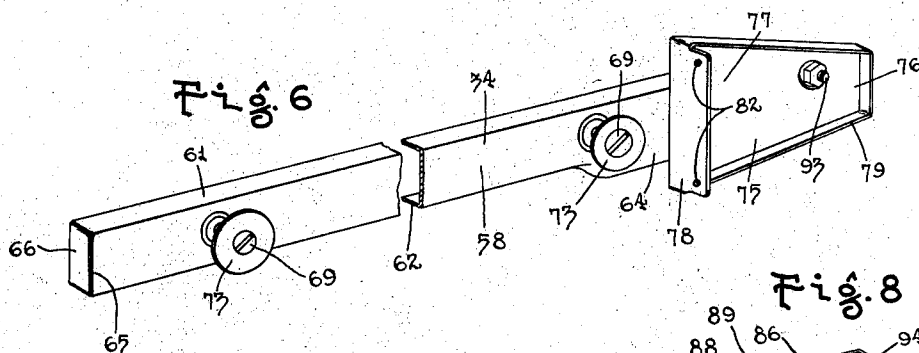
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SLIDING SUSPENSION

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4 Sheets-Sheet 2



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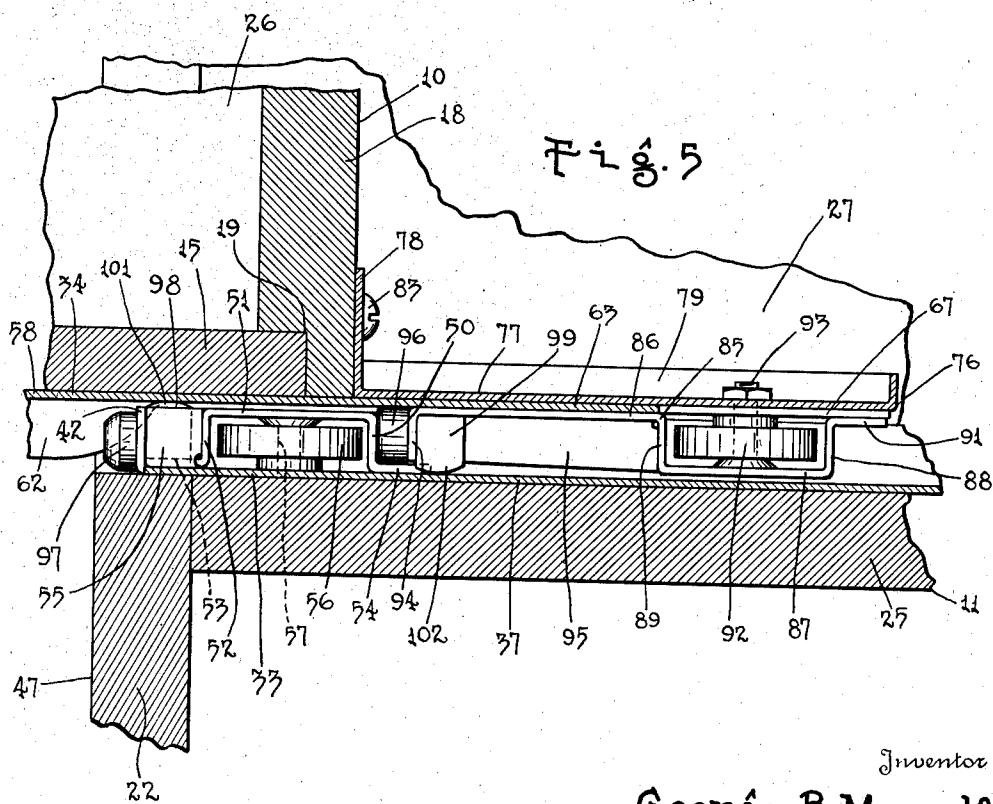
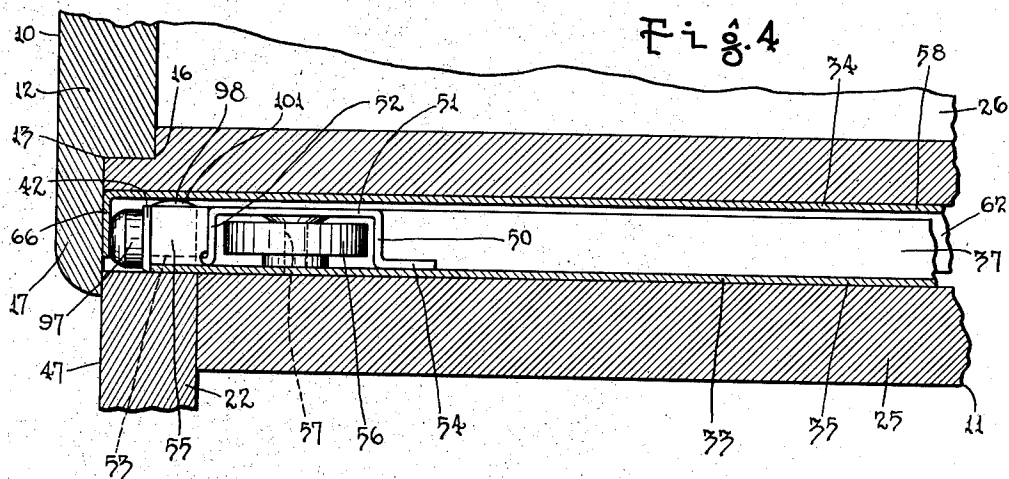
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2,293,210

SLIDING SUSPENSION

Filed April 1, 1940

4 Sheets-Sheet 3



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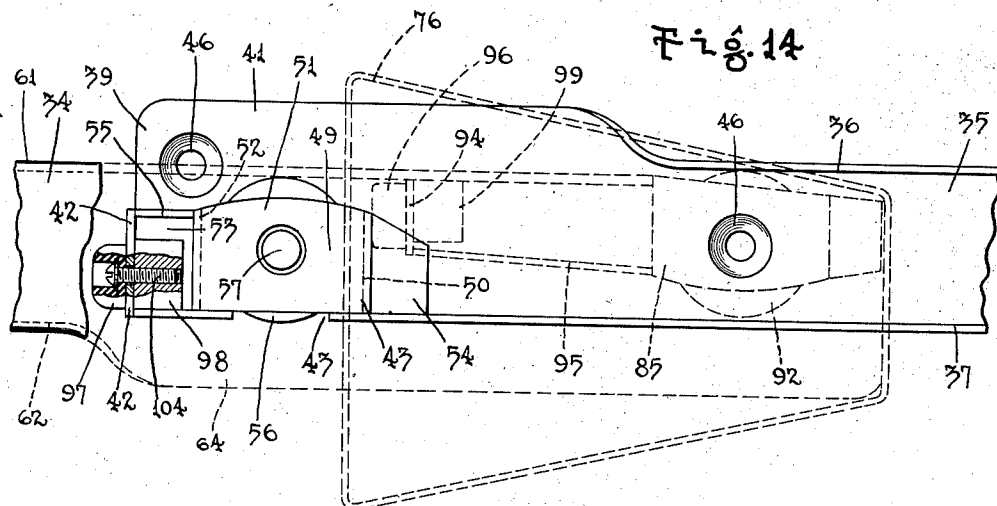
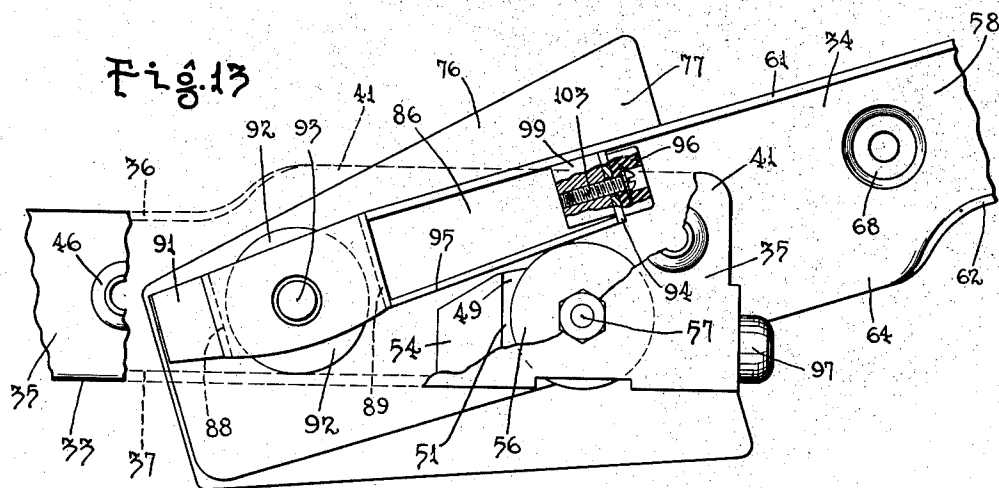
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G. B. MARZOLF
SLIDING SUSPENSION

2,293,210

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4 Sheets-Sheet 4



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UNITED STATES PATENT OFFICE

2,293,210

SLIDING SUSPENSION

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Application April 1, 1940, Serial No. 327,273

16 Claims. (Cl. 45—77)

My invention relates to sliding suspensions and particularly to a suspension adapted to be used for slidably supporting a drawer in the cabinet or other supporting structure in which the drawer is disposed.

An object of the invention resides in providing a suspension by means of which the drawer may be easily moved from open to closed position and vice versa.

Another object of the invention resides in providing a sliding suspension capable of sustaining considerable weight in the drawer when the drawer is in open position.

Another object of the invention resides in providing a suspension which will be extremely inexpensive and which will be simple and easy to manufacture.

An object of the invention resides in providing a suspension by means of which the drawer may be easily removed from the cabinet in which it is used.

A feature of the invention resides in providing a suspension which will be quiet and operate smoothly.

In carrying out my objects, I employ a fixed rail and a movable rail, each constructed channel-shaped in cross section with a vertically disposed web and flanges issuing horizontally outwardly at the upper and lower edges of the web, and arrange the flanges so that the upper and lower flanges of one rail overlie the upper and lower flanges of the other rail.

Other objects of the invention reside in the novel combination and arrangement of parts and in the details of construction hereinafter illustrated and/or described.

In the drawings:

Fig. 1 is a part plan and part sectional view portraying a portion of a cabinet with a drawer therein in closed position and with portions of the cabinet and drawer broken away and illustrating the application of an embodiment of my invention to said cabinet and drawer.

Fig. 2 is a fragmentary cross sectional view taken on line 2—2 of Fig. 1 and drawn to a larger scale.

Fig. 3 is a view similar to Fig. 2 taken on line 3—3 of Fig. 1.

Fig. 4 is a fragmentary elevational sectional view similar to Fig. 1 taken on line 4—4 of Fig. 3 and drawn to the same scale as Fig. 3, said view showing the drawer in closed position.

Fig. 5 is a view similar to Fig. 4 showing the drawer in fully open position.

Fig. 6 is a perspective view of the movable

rail of the invention detached from the drawer and viewed from one side thereof.

Fig. 7 is a perspective view of a portion of the structure shown in Fig. 6 and viewed from the other side thereof.

Fig. 8 is a perspective view of the mounting detached from the rail.

Fig. 9 is a view similar to Fig. 7 of the rail with the bracket and mounting detached therefrom.

Fig. 10 is a perspective view of the fixed rail of the invention detached from the cabinet and viewed from one side thereof.

Fig. 11 is a perspective view of the mounting for the roller of the rail shown in Fig. 10 and detached from the rail.

Fig. 12 is a view similar to Fig. 10 of the rail with said mounting detached therefrom.

Fig. 13 is a fragmentary elevational view of the two rails detached from the drawer and cabinet and showing the method of applying the movable rail to the fixed rail.

Fig. 14 is a view similar to Fig. 13 viewed from the opposite side thereof and showing the parts in assembled relation.

For the purpose of illustrating the application of my invention, I have shown in Figs. 1 to 5 inclusive, a drawer 10 mounted for sliding movement in a cabinet 11. It can readily be comprehended that the cabinet may be a desk, table, counter or any other structure in which slidable drawers are mounted, and that the drawer may be constructed of any suitable material in any suitable manner.

The drawer 10 comprises a drawer front 12 which is rabbeted at 13 to receive two drawer sides 14 and 15. The drawer sides 14 and 15 are themselves rabbeted, as designated at 16, where the same fit the rabbets 13. The rabbet 13 is formed on all of the edges of the drawer front and provides a lip 17 which extends perimetricaly about the drawer front 12 and which fits against the front wall of the cabinet 11. The drawer 10 is further constructed with a back 18 which is rabbeted at 19 to receive the ends of the drawer sides 14 and 15. A bottom 21, provided for the drawer, is connected to the walls thereof.

Only a portion of the cabinet 11 has been shown in the drawings which comprises a front wall 22, a rear wall 23 and side walls 24 and 25 connected therewith. The cabinet also includes a bottom 26 and a top, not shown, which form a compartment 27 in which the drawer is received. The drawer 10 is somewhat shorter than the

compartment 27 to leave a space 28 at the end of the said compartment between the back 18 of the drawer and the rear wall 23 of the cabinet.

My invention proper utilizes two suspensions indicated at 31 and 32 respectively, which are disposed one on each of the sides 14 and 15 of the drawer 10 and which have parts attached to the drawer sides 14 and 15 and the side walls 24 and 25 of the cabinet 11. The suspension 31 has been shown in detail in Figs. 6 to 12 inclusive, while the method of attachment of and use of the suspension 32 has been shown in the remaining figures. It is to be noted, however, that the only difference between the two suspensions is that one is left handed and the other right handed to fit on the respective sides of the drawer. Due to the similarity of the two devices, the same reference numerals will be used to designate the corresponding parts.

The suspension 31 comprises a fixed rail 33 shown in Fig. 10 and a movable rail 34 shown in Fig. 6. The movable rail 34 is attached to the drawer side 14 and follows along with the drawer, while the fixed rail 33 is attached to the wall 24 of cabinet 11 and remains stationary. These two parts are constructed as follows and cooperate with one another in a manner to be presently described.

The fixed rail 33 is constructed from an elongated strip of sheet metal of uniform width which is bent along two spaced longitudinally extending lines to make the rail channel-shaped in cross section. The said rail is thus formed with a web 35 and flanges 36 and 37 extending outwardly from the web. The flanges 36 and 37 extend up to the inner end 38 of the rail, while the flange 37, as shown in Fig. 12, extends up to the outer end 39 of the rail. The metal from which the flange 36 is constructed and which is situated at the outer end 39 of the rail is not bent with the said flange 36, but is retained in the plane of the web 35 so as to form an extension of said web at the forward end of the rail, which extension is designated by the reference numeral 41. By means of this construction the width of the web 35 is increased at the forward end of the rail which permits of applying the two rails to one another as will hereinafter be described in detail. At the forward end 39 of the rail 33 is provided an ear 42 which is bent outwardly from the web in the same direction as the flanges 36 and 37. This ear is disposed at the lowermost portion of the web, the web being free above the same. In the flange 37, as shown in Fig. 12, is formed a clearance opening 43, the purpose of which will be presently explained.

The rails 33 of the suspensions 31 and 32 are attached to the side walls 24 and 25 of the cabinet 11 by means of screws 44 which extend through the webs 35 of the said rails and which have countersunk heads 45 seated in sockets 46, formed in the webs 35 of the rails, which sockets are themselves countersunk into the cabinet walls 24 and 25. This construction is best shown in conjunction with the suspension 32 in Fig. 1. The rails 33 are so situated that the ears 42 thereof lie inwardly of the front surface 47 of the front wall 22 of the cabinet and so that the inner ends 38 of the rails extend into the space 28 of compartment 27.

At the forward end 39 of the rail 33 is mounted a mounting 49 which is constructed from sheet metal and which is bent to provide a yoke 51 shown in detail in Fig. 11. This yoke has two

legs 52 which are attached to two base members 53 and 54 which, in turn, are fastened, preferably by spot welding, to the web 35 of rail 33. Bent outwardly from the base member 53 is a strut 55 whose edge engages the leg 52. The mounting 49 is so positioned that the strut 55 also engages the ear 42. This strut, when the mounting is welded to the flange 35, resists forces applied to the ear 42 in a longitudinal direction. Disposed between the web 35 of rail 33 and the yoke 51 is a roller 56 preferably constructed with a tread of silencing material such as rubber or the like, which roller is rotatably mounted on a pintle 57 extending between the yoke 51 and the web 35. The roller 56 is of a diameter somewhat less than the distance between the flanges 36 and 37 of the rail 33 and is so situated that it projects into the clearance opening 43.

The rail 34, as previously stated, is shown in Figs. 6 to 9 inclusive. This rail is constructed similarly to the rail 33 from an elongated strip of sheet metal of uniform width which is bent along two spaced longitudinal lines to form a web 58 and flanges 61 and 62 extending outwardly therefrom. These flanges are spaced apart the same distance as the flanges 36 and 37 of rail 33. The flange 62 is considerably foreshortened at the inner end 63 of the rail 34 so as to provide a web extension 64 to the web 58, similar to the web extension 41 at the outer end of the rail 33. The outer end 65 of the rail 34 is formed with an ear 66 drawn therefrom, as best shown in Fig. 6. This ear 66, extending throughout the height of the web 58, spans the space between the outer ends of the flanges 61 and 62. At the inner or forward end of the rail 34, the flange 61 is slightly foreshortened to provide a notch-like opening 67 defined by the inner terminal edge of said flange 61 and the continuing upper edge of the web 58.

The rails 34 of the suspensions 31 and 32 are attached to the drawer sides 14 and 15 by a construction, best shown in Fig. 3. At suitable localities along the web 58 of the rails 34 are formed bosses 68 which project outwardly beyond the outer surfaces of the webs 58 and which are threaded to receive screws 69. Screws 69 have countersunk heads 71 which are received in sockets 72 formed in washers 73. The drawer sides 14 and 15 are formed with cylindrical holes 74 extending through the same at proper localities to receive the bosses 68 on the webs 58 of the rails 34. These bosses serve to locate and mount the rails with respect to the drawer sides. The washers 73 are countersunk into the inner surface of the drawer sides 14 and 15, as shown in Fig. 3, and the sockets 72 are preferably of such dimensions as to fit snugly within the holes 74. By means of this construction the washers 73 and the bosses 68 are centered relative to the holes 74 so that, when the screws 71 are screwed into the bosses 68, the rails 34 become rigidly attached to the drawer sides 14 and 15, the attaching structure being flush with the drawer sides upon the interior of the drawer.

The length of the rail 34 is such that the end 63 thereof projects into the space 28 of compartment 27. To this end of the rail 34 is attached a bracket 75 constructed of sheet metal which is trapezoidal in shape. The smaller end 76 of this bracket is disposed at the extreme end 63 of the rail 34, while the larger end 77 of the said bracket is disposed inwardly thereof with a portion of the said end projecting both above

and below the web 58 of the rail. This bracket is spot welded at suitable intervals to the web 58, whereby the said bracket is firmly secured to the rail. The bracket 75 has a deep flange 78 drawn outwardly therefrom at the wide end thereof and a shallow flange 79 drawn outwardly therefrom at the narrow end and at the top and bottom thereof. These flanges stiffen and reinforce the bracket. The flange 78 overlies the rear surface 81 of the back 18 of the drawer 10 and is drilled at 82 to receive screws 83 which are screwed to the back 18 of the drawer. In this manner the portion of the rail 34, which projects rearwardly of the drawer 10, is greatly stiffened and reinforced, and securely attached to the drawer.

Attached to the end 63 of the rail 34, as shown in Fig. 7, is a mounting 85. This mounting is constructed as shown in Fig. 8 and comprises a yoke 87 provided with legs 88 and 89. The legs 88 and 89 have issuing outwardly from them base members 91 and 86 which are fastened, preferably by spot welding, to the web 58 of rail 34 at the position shown in Fig. 7. Disposed between the yoke 87 and the web 58 of rail 34 is a roller 92 which is journaled on a pintle 93 carried by the said yoke and web. This roller 92 is of the same diameter as the roller 56 and is so situated that its uppermost portion is received in the notch-like opening 67 and extends slightly above the upper surface of the flange 61.

The two rails are shown in operative relation in Fig. 3 with the upper flange 36 of the rail 33 overlying the upper flange 61 of the rail 34 and with the lower flange 37 of the rail 33 overlying the lower flange 62 of the rail 34. The roller 56 is adapted to engage the flange 61 of the rail 34 and will engage the flange 62 when the drawer is lifted to limit such movement and the roller 92 is adapted to engage either of the flanges 36 or 37 of the rail 33. It will thus be seen that the rail 34, supported by the two rollers 56 and 92, may be slid relative to the rail 33 with a minimum amount of friction and the parts held assembled.

It will be readily comprehended that, as the drawer opens, the distance between the two rollers decreases and the weight of the opening drawer causes an increasing strain upon the suspension by reason of the increasing leverage. To limit this strain the opening of the drawer and the consequent diminution of the spacing of the rollers is controlled by the mounting 85. As will be noted in Fig. 8, the base member 86 of the said mounting is of considerable length. This base member has issuing outwardly from its inner end an ear 94 similar to the ear 42 of the end of the rail 33. This base member also has issuing from it a strut 95 which extends between the ear 94 and the leg 89 of the yoke 87. This strut resists the stress imparted to the ear 94. Attached to the ear 94 of the mounting 85 is a bumper 96 (Figs. 13 and 14) which is adapted to engage the leg 50 of the mounting 49. By means of this construction the movement of the drawer to fully extended position is limited.

A bumper 97, similar to the bumper 96, is attached to the ear 42 on rail 33 and is adapted to engage the ear 66 on rail 34 when the drawer is moved to its fully closed position. This relieves the strain on the lip 17 of the drawer front 12 so that breakage of the same is prevented.

To maintain the two rails 33 and 34 in spaced relation so that the flanges of the said rails do not scrape along the webs of the opposite rails and cause unnecessary noise, two silencing shoes 98 and 99 are employed. The shoe 98 is attached

to the ear 42 of rail 33, while the shoe 99 is attached to the ear 94 of the mounting 85. Said shoe 98 has a convex surface 101 which projects outwardly beyond the mounting 49 and which engages the inner surface of the web 58 of rail 34. The shoe 99 has a similar surface 102 which engages the inner surface of the web 35 of the rail 33. The method of engagement of these surfaces of the respective rails is best shown in Fig. 5.

It will be noted in Fig. 13 that the bumper 96 is disposed on the opposite side of the ear 94 from the shoe 99. These two parts are held together by means of a screw 103 which extends through the bumper 96 and the ear 94 and is threaded into the shoe 99. In a similar manner, the bumper 97 is attached to the shoe 98 by means of a screw 104 which extends through the said bumper and the ear 42 and is threaded into the shoe 98. Both of the shoes 98 and 99 are constructed from a plastic or fibre or other suitable material which acts with the metal of the two rails 32 and 34 so as to prevent undue wear and minimize any noise produced by the sliding of the rails relative to one another.

To maintain the drawer 10 in closed position, the flange 37 of rail 33 is formed with a depression 111, which provides a ramp or drop-off indicated by the reference numeral 112. The roller 92 of rail 34 entering the depression 111 rolls down on the ramp 112. This causes the drawer in the final stage of its closing movement to gravitate slidingly into fully closed position and to remain in such position by gravity.

Due to the interruption of the flange 62 at the rearward end of rail 34 and due to the interruption of the flange 36 at the forward portion of the rail 33, the drawer, upon being first tilted, may be started into the compartment 27 of the cabinet and thence slid along therein into closed position. Reversing this procedure, said drawer may be slid back into open position and thence removed from the cabinet. In Fig. 13, I have shown the arrangement of parts as the drawer is being inserted into the cabinet. In applying the rail 34 to the rail 33, the roller 92 is first raised sufficiently to clear the roller 56. As the roller 92 passes in back of the roller 56, the same would engage the shoe 99 were it not for the strut 95, which serves as a runner for guiding the roller 92 past the said shoe and the bumper 96. When the bumper 96 passes the roller 56, the parts become arranged as shown in Fig. 14. The parts of the suspension are now disposed so that the drawer may operate in the usual manner.

In using a drawer equipped with my improved suspension, the drawer is merely moved toward opening or closing position by a force exerted on the pull or handle thereof. Due to the rollers 56 and 92 the drawer slides easily regardless of the weight carried by the same. When the drawer reaches its fully open position, the bumper 96 engages the leg 50 of mounting 49 and limits the further opening of the drawer. When said drawer is being closed, the bumper 97 engages ear 66 and limits the closing movement. Since both bumpers strike metal parts integral with the opposite rails to which they are attached, movement of the drawer is terminated in both directions without any undue strain on the drawer itself or on parts of the cabinet. When the drawer is to be applied to the cabinet or removed therefrom, the process is readily carried out as previously described.

The advantages of my invention are manifest.

The drawer suspension constructed as described can be made of exceedingly great strength without the use of an unnecessary amount of material. I have found that rails only one and one-quarter inches in height used on a desk drawer would give no indication of failure with a person of average weight standing on the drawer when at its fully open position. I have found that repeated slamming of the drawer into both open and closed positions does not injure the suspension. My invention can be constructed at an economical cost and is simple and easy to manufacture. The suspension may be easily applied to the drawer and cabinet with which the drawer is used and is firmly and rigidly attached to both the said parts. With my invention, the drawer can be easily removed from a cabinet or replaced whenever desired.

Changes in the specific form of my invention, as herein disclosed, may be made within the scope of what is claimed without departing from the spirit of my invention.

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

1. A sliding suspension for supporting a drawer in a case, said suspension comprising a rail fixed relative to the case, and a movable rail attached to the side of the drawer, a rail extension formed on said movable rail and extending rearwardly of the drawer, a roller rotatably mounted at the rearward end of the rail extension of the movable rail and engaging the fixed rail, a bracket secured to said rail extension and engaging the back of the drawer, and another roller rotatably mounted at the forward end of the fixed rail and engaging the movable rail.

2. A sliding suspension for supporting a drawer in a case, said suspension comprising a rail fixed relative to the case, and a movable rail attached to the side of the drawer, a rail extension formed on said movable rail and extending rearwardly of the drawer, a roller rotatably mounted at the rearward end of the rail extension of the movable rail and engaging the fixed rail, a bracket secured to said rail extension, a flange formed on said bracket and attached to the back of the drawer, and another roller rotatably mounted at the forward end of the fixed rail and engaging the movable rail.

3. A sliding suspension for supporting a drawer in a case, said suspension comprising a rail fixed relative to the case, and a movable rail attached to the side of the drawer, a rail extension formed on said movable rail and extending rearwardly of the drawer, a roller rotatably mounted at the rearward end of the rail extension of the movable rail and engaging the fixed rail, a bracket secured to said rail extension and extending up to the back of said drawer, said bracket at the locality of the back of the drawer projecting above and below the movable rail, attaching means engaging the portions of the bracket above and below the movable rail and secured to said drawer for attaching the rail extension to the drawer, and another roller rotatably mounted at the forward end of the fixed rail and engaging the movable rail.

4. A sliding suspension comprising a movable rail and a fixed rail, a roller carried by one of said rails and engaging the other rail, a mounting for said roller attached to the first rail and rotatably supporting said roller, a resilient bumper carried by said mounting and adapted to engage a part fixed relative to said other rail, and means carried by the other rail and engaging

the first rail for further supporting the rails for relative sliding movement.

5. A sliding suspension comprising a movable rail and a fixed rail spaced from one another, a roller carried by one of said rails and engaging the other rail, a mounting for said roller attached to the first rail and rotatably supporting said roller, a silencer shoe carried by said mounting and disposed between said rails, said shoe engaging said second rail and reducing the noise produced by said rails, and means carried by the other rail and engaging the first rail for further supporting the rails for sliding movement.

6. A sliding suspension comprising a movable rail and a fixed rail spaced from one another, a roller carried by one of said rails and engaging the other rail, a mounting for said roller attached to the first rail and rotatably supporting said roller, a silencer shoe carried by said mounting and disposed between said rails, said shoe engaging said second rail and reducing the noise produced by said rails, a bumper carried by said mounting and adapted to engage a part fixed relative to said other rail, and means carried by the other rail and engaging the first rail for further supporting the rails for sliding movement.

7. A sliding suspension comprising a movable rail and a fixed rail spaced from one another, a roller carried by one of said rails and engaging the other rail, a mounting for said roller attached to the first rail and rotatably supporting said roller, an ear extending outwardly from said mounting, a silencer shoe attached to said ear on one side thereof and disposed between said rails, said shoe engaging said second rail, a bumper attached to said ear on the other side thereof and adapted to engage a part fixed relative to said other rail, and means carried by the other rail and engaging the first rail for further supporting the rails for sliding movement.

8. A sliding suspension comprising a movable rail and a fixed rail spaced from one another, a roller carried by one of said rails and engaging the other rail, a mounting for said roller attached to the first rail and rotatably supporting said roller, an ear extending outwardly from said mounting, a silencer shoe disposed on one side of said ear and situated between said rails, said shoe engaging the other rail, a bumper disposed upon the other side of said ear and adapted to engage a part fixed relative to said rail, and a screw extending through said ear and engaging both said shoe and bumper for holding the same attached to said ear, and means carried by the other rail and engaging the first rail for further supporting the rails for relative sliding movement.

9. A sliding suspension comprising a movable rail and a fixed rail, a roller carried by said movable rail and engaging the fixed rail, a mounting for said roller attached to the movable rail and rotatably supporting said roller, a bumper carried by said mounting and adapted to engage a part fixed relative to said fixed rail, said bumper being spaced from said roller, a runner carried by said mounting and extending between said roller and bumper, and a second roller carried by the fixed rail and engaging the movable rail for further supporting the movable rail for sliding movement, said runner being adapted to ride over said second roller upon application of the movable rail to the fixed rail.

10. A sliding suspension comprising a movable rail and a fixed rail, a roller carried by said

movable rail and engaging the fixed rail, a mounting for said roller, said mounting comprising a base member attached to said movable rail and a yoke connected to said base member and straddling the roller, a pintle extending through said yoke and a part fixed relative to said rail, an ear extending outwardly from said base member and spaced from said yoke, a bumper secured to said ear and adapted to engage the part fixed relative to said fixed rail, and a runner extending outwardly from said base member and disposed between said yoke and ear and resisting movement of said ear upon engagement of the bumper with the cooperating part of the fixed rail, and means carried by the fixed rail for engaging the movable rail for further supporting the rails for relative sliding movement.

11. A sliding suspension comprising a movable rail and a fixed rail, a roller carried by one of said rails and engaging the other rail, a mounting for said roller comprising a base member attached to said first rail, a yoke issuing from said base member and straddling said roller, a pintle extending through said yoke and journaling said roller, an ear extending outwardly from said base member and spaced from said yoke, a bumper attached to said ear and a structure extending outwardly from said base member and disposed between said yoke and ear and resisting the pressure created by engagement of the bumper with the cooperating part of the other rail, and means carried by the other rail and engaging the first rail for further supporting the rails for relative sliding movement.

12. A sliding suspension comprising a movable rail and a fixed rail, one of said rails being formed of sheet metal bent to form a channel-shaped structure having a vertically extending web and horizontally disposed upper and lower flanges, the end of one of said flanges having a quarter twist therein connecting it with the web of the rail, a roller carried by the other rail and adapted to engage said flange having the quarter twist, said roller being disengageable from said flange beyond said quarter twist, said quarter twist serving to assist in guiding the roller into engagement with said flange and reinforcing said flange at the end thereof, and means on said channel-shaped rail for guiding said other rail for relative sliding movement.

13. A sliding suspension comprising a movable rail and a fixed rail, each of said rails being channel-shaped and formed with a vertically extending web and horizontally disposed upper and lower flanges at the upper and lower edges of the web, the upper flange of the fixed rail overlying the upper flange of the movable rail and the lower flange of the fixed rail overlying the lower flange of the movable rail, the upper flange of the movable rail falling short of the inner end of the web thereof, the lower flange of the fixed rail falling short of the outer end of the web thereof, a roller carried by the outer end of the web of the fixed rail and disposed outwardly beyond the outer end of the lower flange thereof and with the lower portion thereof below said flange, said roller being engageable with either flange of the movable rail and a roller carried by the inner end of the web of the movable rail and disposed inwardly beyond the inner end of the upper flange of said rail and with the upper portion thereof above said flange, said roller being engageable with either flange of the fixed rail.

14. A sliding suspension comprising a movable

5 rail and a fixed rail, each of said rails being constructed from a strip of metal of uniform width fashioned to provide a vertically extending web and horizontally disposed upper and lower flanges at the upper and lower edges of the web, the material from which one of the flanges of one of the rails is formed being disposed in the plane of the web at one end of the rail to increase the lateral extent of said web at such locality and the other flange of said rail falling short of the same end of the web, a roller pivotally mounted on said rail at such locality and projecting laterally past said second named flange and adapted to engage either flange of the other rail, the flange of the other rail remote from the first named flange of the first named rail falling short of the end of the web of said other rail at the opposite end thereof and the other flange of said second named rail falling short of the same end of the web thereof, and a roller pivotally mounted on said end of said web and disposed beyond the end of the second named flange thereof with a portion of said roller projecting laterally past said flange, said last named roller being engageable with either flange of the first named rail.

15. A sliding suspension comprising a movable rail and a fixed rail, each of said rails being constructed from a strip of metal of uniform width fashioned to provide a vertically extending web and horizontally disposed upper and lower flanges at the upper and lower edges of the web, the upper flange of the fixed rail overlying the upper flange of the movable rail and the lower flange of the fixed rail overlying the lower flange of the movable rail, the material from which the lower flange of the movable rail is formed being disposed in the plane of the web at the inner end of the rail to provide a web extension for increasing the lateral extent of said web, the upper flange of said movable rail falling short of the same end of the rail, the material from which the upper flange of the fixed rail is formed being disposed in the plane of the web at the outer end of the rail to provide a web extension for increasing the lateral extent of the web of said fixed rail, the lower flange of said fixed rail falling short of the laterally extended end of the rail, a roller rotatably mounted at the inner end of the movable rail at the locality of the web extension thereof and disposed beyond the upper flange thereof, said roller having a portion projecting above the upper flange and adapted to engage either of the flanges of the fixed rail, and a roller rotatably mounted at the outer end of the fixed rail at the locality of the web extension thereof and disposed beyond the lower flange of said rail, said roller having a portion projecting below the lower flange of said rail and adapted to engage either of the flanges of the movable rail.

16. A sliding suspension comprising a movable rail and a fixed rail, each of said rails being channel-shaped and formed with a vertically extending web and horizontally disposed upper and lower flanges at the upper and lower edges of the web, the upper flange of the fixed rail overlying the upper flange of the movable rail and the lower flange of the fixed rail overlying the lower flange of the movable rail, the upper flange of the movable rail falling short of the inner end of the web thereof, the lower flange of the fixed rail falling short of the outer end of the web thereof, a roller carried by the outer

end of the web of the fixed rail and disposed outwardly beyond the outer end of the lower flange thereof and with the lower portion thereof below said flange, said roller being engageable with either flange of the movable rail and a roller carried by the inner end of the web of the movable rail and disposed inwardly beyond the inner end of the upper flange of said rail and with the upper portion thereof above said flange, said roller being engageable with either 10

flange of the fixed rail, said flanges of the movable rail limiting up and down movement of the movable rail through engagement with the roller carried by the fixed rail and at the locality of engagement of said roller with the fixed rail, said flanges of the fixed rail limiting up and down movement of the movable rail at the inner end thereof through engagement with the roller carried thereby.

GEORGE B. MARZOLF.