The present invention is directed to a guide device for sliding doors (1) in furniture, particularly for heavy sliding glass doors. The guide device comprises a guide element which is constructed as a cylindrical bar (6) and at least two running rollers (3) which are fastened to the sliding door (1) by fastening elements (5). The bar (6) is fastened to the furniture body (2) by holding elements (7, 17). The running rollers (3) have a running surface (4) such that the running surface (4) rests completely on the bar (6) at the point of contact between the running surface (4) and the bar (6).
UNIVERSAL GUIDING DEVICE FOR SLIDING DOORS IN A PIECE OF FURNITURE

DESCRIPTION

[0001] The present invention is directed to a universal guide device for sliding doors in furniture, according to the preamble of patent claim 1, having at least one bar which can be fastened to a furniture body. The sliding door is mounted at the bar so as to be displaceable by means of at least two running rollers.

[0002] Guide devices of the generic type are known in many different embodiment forms. For mounting a sliding door element on furniture, a guide device is usually needed in the bottom end area of the sliding door element and another guide device is usually needed in the top end area of the sliding door element. Two guide devices are also usually used at the furniture body in a lower area to enable reliable displacement of the sliding door, namely, one guide device in an upper area of the furniture body and one guide device in a lower area of the furniture body.

[0003] A guide device for sliding doors which has a guide rail having a C-shaped fastening groove in its central cross-sectional area for receiving fastening means is known from EP 1 057 963 A2. Guide grooves are provided above and below the fastening groove for guiding running rollers. However, a guide device of this kind is suitable for heavy sliding doors such as glass doors in particular only under certain conditions.

[0004] Therefore, it is the object of the present invention to provide a guide device for sliding doors, particularly for glass doors, which is economical to produce, provides a simple, stable construction and is suitable for different kinds of mounting.

[0005] This object is met by a guide device having the characteristic features of claim 1. Advantageous further developments are the subject matter of the subclaims.

[0006] The guide device according to the invention comprises at least one guide element which is fastened by holding elements to a furniture body and at least two running rollers which are fastened to the sliding door simultaneously by fastening elements. The sliding door is supported at the guide element by the running rollers so as to be displaceable. According to the invention, the guide element is constructed as a cylindrical bar and the running rollers have a running surface such that this running surface always rests completely on the bar at the point of contact between the running roller and the bar. In other words, the running rollers have a partially circular shape in section. This provides for a simply constructed, stable guide device which is particularly suitable for heavy sliding doors, e.g., constructed, stable guide device which is particularly suitable for heavy sliding doors, e.g., sliding glass doors. The guide device comprises parts which are constructed in a simple manner so that they can be manufactured relatively inexpensively. Further, it is impossible for the sliding doors to fall off accidentally in a construction of this kind using an upper bar and lower bar.

[0007] The guide device according to the invention preferably has two cylindrical bars. One of the bars is preferably arranged in an upper area of the furniture body and the other bar is fastened to the furniture body in a lower area. A particularly secure guiding of the sliding door is made possible in this way.

[0008] According to another preferred construction of the present invention, two bars are arranged adjacent to one another, either at an upper part of the furniture body or at a lower part of the furniture body. The sliding door is accordingly guided only at an upper or lower area and the opposite area of the sliding door is clear of the furniture body. Nevertheless, the sliding door is securely mounted and guided at two bars arranged parallel to one another.

[0009] The guide device preferably has one or more continuously adjustable stops to prevent the sliding door from falling off the guide device accidently. The stop or stops is/are preferably fastened to the bar.

[0010] The continuously adjustable stops are constructed in such a way that they form a closed annular area which is slid onto the bar. A projection which forms a soft stop on one side for the guide rollers of the sliding doors projects orthogonally from the annular body of the stops. At the same time, the projection contains a threaded bore hole in which a stud screw is inserted. The stop is accordingly secured to the bar by tightening the stud screw. Therefore, this stop can also be adjusted continuously simply by loosening the stud screw in a corresponding manner.

[0011] Each running roller is preferably fastened to the sliding door by means of a fastening element. The fastening element is guided through a through-opening formed in the sliding door. The fastening is preferably punctiform and terminates flush with the pane of glass on the outer side of the sliding door.

[0012] In this embodiment example, the fastening element is an integral component part of the running roller construction. This eliminates any additional type of fastening. The aim of this, in particular, is that no other additional structural component parts need be applied when using glass doors. The through-opening inside the sliding door can be constructed in a stepped manner; it is also possible that a conical area with a larger diameter adjoins a cylindrical area toward the outer side of the sliding door. As a result of this shape, the fastening element is used with a complementary shape inside this through-opening. The outer side of the fastening element terminates flush with the outer side of the sliding door.

[0013] The running roller is constructed in such a way that the running surface has a rubber-like convex configuration, wherein the stationary shaft connected to the fastening element is mounted relative to the rotatable part of the running roller by a bearing.

[0014] In a particularly preferable manner, the cylindrical bars of the guide device are arranged at the outer side of the furniture body. Accordingly, it is possible for the sliding door to be larger than an opening provided in the furniture body. The bar is fastened to a surface of the front side of the furniture body or to the upper or lower surfaces (surfaces parallel to the ground) in a particularly preferred manner.

[0015] According to another preferred construction of the present invention, the bar is fastened to the furniture body by an angle. In this way, the sliding door can also be guided inside the furniture body in a simple manner. However, the bars can also be fastened in or on the furniture body by holding elements.

[0016] The holding elements for the bars are preferably constructed in such a way that they engage around the bars
only partially. In a particularly preferable manner, the holding elements engage around the bar in such a way that the holding elements do not interfere with the running of the running rollers on the bar. In other words, the area of the bar on which the running rollers run is not covered by the holding elements. In a construction of the holding elements for joining a plurality of furniture bodysides, the holding elements can also engage completely around the bars.

[0017] In accordance with the invention, bore holes arranged in the running rail or the like or a two-part construction of the actual running rail receptacle can be dispensed with and the individual adjusting bearings of the individual holding elements associated with a running rail or the like can be aligned after the holding element is connected, e.g., to a wall, so that they form aligned supporting points for the frictionally-locking support of the respective running rail receptacles. For this purpose it is only necessary to know the different distances between the individual adjusting bearings and the substrate construction and to arrange the individual adjusting bearings so as to be aligned relative to one another. A holding element preferably comprises a fastening member and a running rail receptacle (bar receptacle).

[0018] The fastening member connected to the substrate construction is preferably formed as a cup-shaped fastening bushing whose base contacts the substrate construction so that the adjusting bearing can be rotatably supported by a complementary external thread in an internal thread of the fastening bushing. This provides the possibility of changing the distance between the adjusting bearing, which is preferably formed as an adjusting disk, and the substrate construction after the fastening bushing has been connected to the substrate construction and the surface of the adjusting disk remote of the substrate construction forms an adjusting surface which contacts the running rail receptacle. This ensures an exactly aligned arrangement of the running rail receptacles of the holding elements when using running rail receptacles of the same type of construction.

[0019] In a further construction of the invention, the wall of the cup-shaped fastening bushing has an external thread on which a fitting can be screwed by means of a complementary internal thread.

[0020] The running rail receptacle itself comprises a holding area which receives the running rail, the carrying or holding bar, and a hollow-cylindrical continuation which is formed integral with the holding area, is directed toward the substrate construction and is supported at the adjusting surface of the adjusting bearing by a counter-surface, preferably with an annular supporting surface. Running rail receptacles in which the hollow-cylindrical continuation directed toward the substrate construction has different lengths to compensate for tolerances can be used depending upon space conditions.

[0021] A stud screw which can be adjusted toward the running rail or the carrying or holding bar is arranged in an internal thread of the hollow-cylindrical projection and can bring about a frictionally-engaging clamping of the running rail or the carrying or holding bar relative to the holding area.

[0022] The fitting is secured to the hollow-cylindrical continuation of the running rail receptacle in such a way that the fitting is secured to the running rail receptacle so as to be rotatable and fixed against axial displacement by means of a clamping ring fitting into an outer groove of the hollow-cylindrical continuation of the running rail receptacle. The fitting engages by a flange between a shoulder at the outer wall of the hollow-cylindrical continuation and the clamping ring. This type of fastening makes it possible to screw the fitting onto the external thread of the fastening member which is formed as a cup-shaped fastening bushing and, on the other hand, fixes the distance between the running rail receptacle and the adjusting bearing.

[0023] The holding area of the running rail receptacle can be constructed in different ways. The running rail or the carrying or holding bar can be grasped around little more than half of the circumference or completely. The running rail or the carrying or holding bar can be additionally secured relative to the rail clamping section in that the rail clamping section has a threaded bore hole for receiving a stud screw.

[0024] Referring to the invention described above, by “running rail” is meant a rail or a bar at which sliding elements of different types of construction, e.g., a rolling-type construction, can be guided. However, the clamping holders described above can also be used in rails whose only function is to carry, e.g., curtains or the like. Further, the clamping holders are suitable for fastening, e.g., handle elements which were defined generically as holding bars.

[0025] According to another advantageous construction of the present invention, a second guide element is constructed as a U-shaped rail in which one end of the sliding door is guided. This enables a particularly stable fastening of the sliding door at the furniture body. However, there is increased friction with the U-shaped rail compared with the use of running rollers.

[0026] In order for the sliding door to slide with as little noise as possible, the running rollers are preferably constructed in multiple parts, the running surface being made of plastic.

[0027] The sliding door is particularly preferably constructed as a sliding glass door.

[0028] The invention will be described in the following with reference to embodiment examples which are shown schematically.

[0029] FIG. 1 shows a perspective view of a guide device according to the invention according to a first embodiment example;

[0030] FIG. 2 is a partial side view of the guide device shown in FIG. 1;

[0031] FIG. 3 shows a side view in the direction of arrow A in FIG. 2;

[0032] FIG. 4 shows an enlarged perspective partial view of the guide device shown in FIG. 1;

[0033] FIG. 5 shows a perspective view of a guide device according to a second embodiment example of the present invention;

[0034] FIG. 6 shows a perspective view of a guide device according to a third embodiment example of the present invention;
0035] FIG. 7 shows a perspective view of a guide device according to a fourth embodiment example of the present invention;

[0036] FIG. 8 shows a perspective view of a guide device according to a fifth embodiment example of the present invention;

[0037] FIG. 9 shows a side view of a holding element;

[0038] FIG. 10 shows a view similar to FIG. 9 in section with the holding area open axially;

[0039] FIG. 11 shows a view similar to FIG. 9, but with the holding area closed;

[0040] FIG. 12 shows a view similar to FIG. 9 but with the holding area open on the side;

[0041] FIG. 13 shows a base part of a holding element according to FIG. 9;

[0042] FIG. 14 shows a fitting in section;

[0043] FIG. 15 is a front view showing a running roller with fastening element;

[0044] FIG. 16 shows a view similar to FIG. 15 in section;

[0045] FIG. 17 is a top view of a stop;

[0046] FIG. 18 shows a view similar to FIG. 17 in section;

[0047] FIG. 19 shows a first fastening element in a front view;

[0048] FIG. 20 shows a first fastening element according to FIG. 19 in section;

[0049] FIG. 21 shows a closure cap; and

[0050] FIG. 22 shows a second fastening element.

[0051] A first embodiment example according to the present invention will be described in the following with reference to FIGS. 1 to 4.

[0052] As is shown in FIG. 1, a guide device has two guide elements (running rails) which are formed as cylindrical bars 6. A sliding door 1 is supported at the bars 6 so as to be displaceable by means of four running rollers 3. The running rollers 3 are fastened to the sliding door 1 by means of fastening elements 5. The sliding door 1 is constructed as a glass door and has through-openings through which the fastening elements 5 are inserted in order to fasten the running rollers 3 and the sliding door 1 at the same time.

[0053] The through-openings inside the glass door can be constructed as stepped bore holes or as a bore hole with a cylindrical shoulder and a conical area. The fastening element 5 which is constructed so as to complement the latter is inserted into the bore hole with the aid of a glass protector 54 and is accordingly fastened against the stationary part 56 of the running roller 3. The fastening element is fastened by a connection screw 52 which is screwed into a threaded bore hole by its thread, not shown in more detail, within the stationary part 56.

[0054] The fastening element 5 is shown in detail in FIGS. 19 and 20. The fastening element 5 has a through-hole 57 in its base, which through-hole 57 can be constructed as a cylindrical bore hole or elongated hole. A conical area 66 in the fastening element 5 adjoins a cylindrical area 59. A pocket hole 60 is introduced into the fastening element 5, the through-hole 57 being situated at the base of the pocket hole 60. The fastening element 5 is closed by a closure cap 62 in the area of the conical area 66. The closure cap 62 has an undercut 63 in which a spring element is inserted. This spring element presses against an undercut 61 of the fastening element 5. The closure cap can therefore be removed in a simple manner in order to remove the pane of glass.

[0055] FIG. 22 shows another construction of a fastening element 58. The geometric construction of this fastening element is the same as that of fastening element 5 with respect to its outer dimensions. However, fastening element 58 is constructed from one piece and has a threaded projection 64 adjoining the cylindrical area 59. The threaded projection 64 is screwed into the stationary part 56 of the running roller 3. Tool application points in the form of bore holes 65 are located at the outer side of the fastening element 58 so that the fastening element 58 can be screwed into the stationary part 56.

[0056] As is shown in FIG. 1, the two bars 6 are arranged at the furniture body 2 in such a way that a bar is fastened to an upper area of the furniture body 2 and the second bar is fastened to a lower area of the furniture body 2. The bars 6 are fastened to the furniture body 2 by means of holding elements 7 or 17. As can be seen particularly from FIG. 1, a stop 13 with an elastic element 14 is provided at the upper bar 6 at each of its two lateral ends in order to limit the displacement path of the sliding door 1. The adjustable stop 13 is fastened directly to the bar 6 and limits the displacement path of the running rollers 3 to the right-hand and left-hand sides.

[0057] The adjustable stop 13 comprises a ring 24 on which a projection 23 is formed orthogonally. Inside the ring 24 is located a through-hole 20 for receiving the bar 6. There is a threaded bore hole 22 in the projection 23 which extends diagonal to the center axis of the stop 13. A stud screw 21 is screwed into this threaded bore hole 22 for fastening the stop 13 to the bar 6. An elastic element 14 for limiting the running path of the running rollers 3 is located on one side of the projection 23. The stop 13 has a bevel 25 at the projection 23 to give it an attractive appearance. The construction of the stop 13 is shown in FIGS. 17 and 18.

[0058] As is shown particularly in FIGS. 2 and 3, the holding element 7 comprises three parts, namely, a holding part 8 which has an external thread and a receiving area 9 for the bar 6 (see FIG. 3), a base part 10 which is fastened to the furniture body 2, and a lock nut 11. The base part 10 and the lock nut 11 are screwed to the external thread area of the holding part 8. The bar 6 is fixed in the receiving area 9 of the holding part 8 by means of a stud screw 12 (see FIG. 3). In particular, the holding element 7 according to the invention enables a height adjustment of the bar 6 by screwing the holding part 8 into or out of the base part 10. The distance between the bar 6 and the furniture body 2 is changed in this way. The final position of the holding element 7 can then be secured by the lock nut 11. In this way it is possible that the bar can be aligned again in a simple manner particularly also after mounting and by the end user himself or herself.

[0059] A second construction of a holding element 17 is shown in FIGS. 9 to 12. The holding element 17 essentially comprises a running rail receptacle 26 which is supported
indirectly at a base part 29. The base part 29 is connected in a frictional engagement with a substrate construction, not shown, of any kind by means of a fastening screw 18. Other essential components of the holding element 17 are an adjusting bearing 31 and a fitting 19.

[0060] The base part 29 adjoining the substrate construction is constructed as a cup-shaped fastening bushing, its cup base 30 adjoining the substrate construction, not shown. A wall 67 (see FIG. 13) of the base part 29 has an internal thread 44 and an external thread 45. An adjusting bearing 31 which is constructed as an adjusting disk 32 can be screwed into the internal thread 44. The running rail receptacle 26 has a hollow-cylindrical continuation 34 which forms a supporting sleeve 33 and is supported at an adjusting surface 37 of the adjusting bearing 31 by an annular supporting surface 37.

[0061] The support is carried out by means of a fitting 19 which is secured by a flange 40 to an outer wall 68 of a hollow-cylindrical continuation 34 so as to be rotatable and fixed with respect to axial displacement. It is secured through the support of the flange 40 at a shoulder 35 of the hollow-cylindrical continuation 34 on the one hand and by a clamping ring 41 fitting into a groove 39 of the hollow-cylindrical continuation on the other hand.

[0062] The defined support of the annular supporting surface 38 of the supporting sleeve 33 at the adjusting surface 37 of the adjusting bearing 31 is carried out by screwing the fitting 19 onto an external thread 45 of the base part 29 (see FIG. 15).

[0063] The running rail or bar, not shown, can be secured within the holding area 27 of the running rail receptacle 26 by a stud screw 43 which is screwed into an internal thread 42 of the hollow-cylindrical continuation 34. Alternatively, a stud screw 43 can be inserted into a threaded bore hole 28 in the holding area 27.

[0064] As shown in FIGS. 10 to 12, different constructions of the holding area 27 are possible.

[0065] The mounting of the holding element 17 is carried out by means of a frictional connection of the fastening member 18 at the respective substrate construction, the adjusting bearing 31 screwed to the fastening member 18 being aligned subsequently. The clamping in of the running rail receptacle 26 in a frictional engagement is carried out by means of subsequently screwing the fitting 19 to the fastening member 18 until the supporting sleeve 33 contacts the adjusting bearing 31.

[0066] As is shown particularly in FIG. 1, the bars 6 are fastened to an upper area (top of furniture) or lower area (bottom of furniture) of the furniture body 2 by holding elements 7 or 17. In this way it is possible that the sliding door 1 can be arranged at only a slight distance h from the open area of the furniture body 2 (see FIG. 3).

[0067] As can also be seen from FIGS. 2 and 3, the receiving area 9 of the holding part 8 for receiving the bar 6 is constructed in such a way that it has two arc-shaped arms which project out over a center axis X-X of the bar 6. Therefore, the bar 6 can not be removed from the holding elements 7 or 17 upward or downward, but rather must always be guided out of the holding elements 7 in the direction of its longitudinal axis X-X.

[0068] As can further be seen from FIG. 3, the distance between the sliding door 1 and the furniture body 2 can be changed in a simple manner by arranging washers between the fastening element 5 and the running rollers 3.

[0069] In the following, a second embodiment example according to the present invention is described with reference to FIG. 5. Identical parts or parts having an identical function are designated by the same reference numbers as in the first embodiment example.

[0070] The second embodiment example corresponds substantially to the first embodiment example. In contrast to the first embodiment example, however, the bar 6 of the guide device is fastened to a front area of the furniture body 2 by the holding elements 7. The sliding door 1 can accordingly have smaller dimensions compared to the first embodiment example. Further, the distance between the sliding door 1 and the furniture body 2 can be adjusted in any way within certain limits. Compared with the first embodiment example, the receiving area 9 of the holding part 8 is arranged so as to be rotated by 90°, so that the open portion of the receiving area 9 faces upward again so that there is no hindering of the running roller 3 when rolling over the holding element 7. In other respects, the second embodiment example corresponds to the first embodiment example, and reference is had to the description of the first embodiment example.

[0071] FIG. 6 shows a guide device according to a third embodiment example of the present invention. Identical parts or parts having an identical function are designated by the same reference numbers as in the embodiment examples described above.

[0072] As is shown in FIG. 6, in contrast to the preceding embodiment examples, the bar 6 is fastened to an angle 16 which is fastened in turn to the furniture body 2. The angle 16 is fastened in the interior of the furniture body. As in the second embodiment example, the bar 6 is then fastened by holding elements 7 to the area of the angle 16 directed toward the front. A U-shaped rail 15 in which the lower part of the sliding door 1 is guided is arranged in the lower area of the furniture body 2. Accordingly, a bar 6 and a U-shaped rail 15 are provided as guide elements in the third embodiment example. It should be noted that the U-shaped rail 15 can also be arranged in the upper area of the furniture body 2 and the bar 6 can be arranged in the lower area of the furniture body 2. Due to this arrangement of the invention shown in FIG. 6, it is also possible in particular that the sliding door 1 is guided in the interior of the furniture body 2 so that it does not jut out over the furniture body 2.

[0073] A guide device according to a fourth embodiment example of the present invention is shown in FIG. 7. Identical parts or parts having an identical function are designated by the same reference numbers as in the embodiment examples described above.

[0074] In contrast to the embodiment examples described above, two bars 6 used as guide elements are arranged immediately adjacent to one another in the fourth embodiment example. Accordingly, it is possible that the two guide bars 6 are arranged, for example, only at an upper area or lower area of the furniture body 2 and accordingly only an upper or lower end of the sliding door 1 is secured to the furniture body 2. The other end of the sliding door 1 can be constructed without a guide device. As is shown in FIG. 7,
the running rollers 3 are guided at the lower bar 6 in the lower area of the bar. Of course, the running rollers 3 of the lower bar 6 can also be guided at their upper area.

[0075] A guide device according to a fifth embodiment example of the present invention is described in FIG. 8. Identical parts or parts having an identical function are designated by the same reference numbers as in the preceding embodiment examples.

[0076] As is shown in FIG. 8, an angle 16 is fastened to an outer area of the furniture body 2, more exactly to the upper surface of the furniture body. The bar 6 is fastened to the angle 16 via holding elements 7. Many different design possibilities for arranging the guide device according to the invention are provided by turning the angle 16. In other respects, the fifth embodiment example corresponds to the embodiment examples described above so that any further description can be dispensed with.

[0077] The present invention is accordingly directed to a guide device for sliding doors of furniture, particularly for heavy sliding glass doors. The guide device comprises at least one guide element constructed as a cylindrical bar 6 and at least two running rollers 3 which are fastened to the sliding door 1 by fastening elements 5. The bar 6 is fastened to the furniture body 2 by holding elements 7. The running rollers 3 have a running surface 4 such that the running surface 4 rests completely on the bar 6 at the point of contact with the bar 6.

[0078] Naturally, the alternative holding element 17 can also be used instead of the holding element 7 described in FIGS. 1 to 8.

[0079] As was already mentioned above, the running roller 3 simultaneously also forms the connection to the sliding door 1 by means of the fastening element 5. This requires fewer individual parts and also does not detract from the visible area of the sliding door 1. The running roller 3 is composed of two half-shells 49 and 50. Half-shell 50 is screwed into half-shell 49. After the half-shells 49 and 50 are screwed together, the running surface 4 is embedded between their free ends. The running surface 4 is preferably produced from a rubber-like material in order to ensure a quiet running of the sliding door 1. Part 56 is then screwed into the half-shell 50 and is subsequently stationary. A bearing 51 whose outer ring is supported in the half-shell 49 is located in the part 56. The race of the bearing 51 is mounted on the stationary part 56. The bearing 51 is held at the stationary part 56 by means of a retaining ring 69.

[0080] The stationary part 56 has a projecting area 70 which projects out of the running roller 3. A threaded bore hole not designated more fully is located inside the stationary part 56. With the aid of a glass protector 55 which contacts the outer surface of the projecting area 70 the sliding door 1 is brought into contact with the glass protector 55 in order to connect the sliding door 1 to the running roller 3. The fastening element 5 is inserted in the through-opening located in the sliding door 1. A connecting screw 52 is used for the frictional and positive engagement of the holding element 5 and, therefore, the clamping of the sliding door 1 with the stationary part 56. A closure cap in the form of a closure element 53 is inserted into the fastening element 5 for a neat outer termination of the holding element 5 flush with the surface of the sliding door.

[0081] In a construction of this kind, the running roller 3 is connected directly to the sliding door 1 by the fastening element 5.

[0082] Reference Numbers

[0083] 1 sliding door
[0084] 2 furniture body
[0085] 3 running roller
[0086] 4 running surface
[0087] 5 fastening element
[0088] 6 bar
[0089] 7 holding element
[0090] 8 holding part
[0091] 9 receiving area
[0092] 10 base part
[0093] 11 lock nut
[0094] 12 stud screw
[0095] 13 stop
[0096] 14 elastic element
[0097] 15 U-shaped rail
[0098] 16 angle
[0099] 17 holding element
[0100] 18 fastening screw
[0101] 19 fitting
[0102] 20 bore hole
[0103] 21 stud screw
[0104] 22 threaded bore hole
[0105] 23 projection
[0106] 24 ring
[0107] 25 bevel
[0108] 26 running rail receptacle
[0109] 27 holding area
[0110] 28 threaded bore hole
[0111] 29 base part
[0112] 30 cup base
[0113] 31 adjusting bearing
[0114] 32 adjusting screw
[0115] 33 supporting sleeve
[0116] 34 hollow-cylindrical continuation
[0117] 35 shoulder
[0118] 36 external thread
[0119] 37 adjusting surface
[0120] 38 annular supporting surface
[0121] 39 outer groove
[0122] 40 flange
1. Guide device for sliding doors (1) of furniture, comprising holding elements (7, 17), by which at least one guide element is fastened to a furniture body (2), and at least two running rollers (3) which are fastened to the sliding door (1) by means of punctiform fastening elements (5), so that the sliding door (1) is mounted at the guide element so as to be displaceable, wherein the guide element is constructed as a cylindrical bar (6) and the running rollers (3) have a running surface (4) which is constructed in such a way that the running surface (4) completely contacts the bar (6) at the point of contact between the running surface (4) and the bar (6).

2. Guide device according to claim 1, characterized in that there are two cylindrical bars (6), wherein one of the bars (6) is arranged in an upper area of the furniture body (2) and the other bar (6) is arranged in the lower area of the furniture body (2).

3. Guide device according to claim 1, characterized in that two bars (6) are provided, wherein the two bars (6) are arranged immediately adjacent to one another, either at an upper area of the furniture body (2) or at a lower area of the furniture body (2).

4. Guide device according to one of claims 1 to 3, characterized by an adjustable stop (13) for limiting the displacement path of the sliding door (1).

5. Guide device according to claim 4, characterized in that the stop (13) is arranged on the bar (6).

6. Guide device according to one of claims 1 to 5, characterized in that the running roller is fastened to the sliding door (1) by means of a fastening element (5), wherein a through-opening through which the fastening element (5) is guided is formed in the sliding door (1).

7. Guide device according to one of claims 1 to 6, characterized in that the fastening element (5) comprises a round structural component part which has a cylindrical area (59) adjoined by a conical area (66).

8. Guide device according to one of claims 1 to 6, characterized in that the holding element (5) has a pocket hole (60) whose base is adjoined by a through-hole (57), wherein the pocket hole is closed in its front area by a closure cap (62).

9. Guide device according to one of claims 1 to 6, characterized in that the bar (6) is fastened to the outer side of an upper or lower surface of the furniture body (2).

10. Guide device according to one of claims 1 to 6, characterized in that the bar (6) is fastened to a front side of the furniture body (2).

11. Guide device according to one of claims 1 to 10, characterized in that the bar (6) is fastened to the furniture body (2) by an angle (16).

12. Guide device according to one of claims 1 to 11, characterized in that the holding elements (7, 17) of the bar (6) are constructed in such a way that the bar (6) is grasped only partially by a receiving area (9) of the holding element (7).

13. Guide device according to one of claims 1 to 12, characterized in that the holding elements (7, 17) grasp the bar (6) by their holding area (27) in a frictional engagement by more than half of the circumference.

14. Guide device according to one of claims 1 to 13, characterized in that the holding elements (7) are constructed in such a way that their length is adjustable in the mounted state.

15. Guide device according to one of claims 1 to 14, characterized by a U-shaped rail (15) in which one side of the sliding door (1) is guided.

16. Guide device according to one of claims 1 to 15, characterized in that the running roller (3) is constructed in multiple parts, wherein the running surface (4) is produced from plastic.

17. Guide device according to one of claims 1 to 16, characterized in that the sliding door is constructed as a sliding glass door.

18. Guide device according to one of claims 1 to 17, characterized in that the holding element (17) has an adjusting bearing (31) between a base part (29) of a running rail receptacle (26) connected to the furniture body, the distance of the adjusting bearing (31) from the base part (29) can be changed and the running rail receptacle (26) is supported at the adjusting bearing (31).
19. Guide device according to one of claims 1 to 18, characterized in that the base part (29) is constructed as a cup-like fastening bushing which contacts the furniture body by its cup base.

20. Guide device according to one of claims 1 to 19, characterized in that the adjusting bearing (31) is supported so as to be rotatable with a complementary external thread (36) in an internal thread (44) of the base part (29).

21. Guide device according to one of claims 1 to 20, characterized in that the adjusting bearing (31) is constructed as an adjusting disk (32) and the surface of the adjusting disk (32) remote of the furniture body forms an adjusting surface (37) contacting the running rail receptacle (26).

22. Guide device according to one of claims 1 to 21, characterized in that a wall (67) of the cup-like base part (29) has an external thread (45).