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(54) FURNITURE HINGE HAVING A DAMPING MECHANISM

MÖBELSCHARNIER MIT DÄMPFUNGSMECHANISMUS

CHARNIÈRE DE MEUBLE DOTÉE D'UN MÉCANISME D'AMORTISSEMENT

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Description

Technical Field of the Invention

[0001] The present invention relates to a furniture hinge with a damping mechanism for deceleration of a door while being closed onto a furniture cabin. The present invention particularly relates to a furniture hinge having a compact damping mechanism requiring a very small place within the hinge body and adaptable to be used in variable traditional furniture hinges.

Prior Art

[0002] Hinges having a damping member are well known from the prior art. Such hinges provides a first bracket generally known as a hinge cup which is secured to a door of a furniture; a second bracket generally known as a hinge body which is secured to a furniture cabin; linkage member(s) which connect(s) the first bracket and the second bracket; a torsion spring which provides a closing force on the linkage member(s); and a damping member which generates a damping action while the door is closed onto the furniture cabin. Such hinges may comprise the damping member either within the first bracket or the second bracket.

[0003] Such known hinges with the damping member have some disadvantages such that providing the damping member within the hinge body increases the hinge dimensions which is not preferable for the manufacturers and as well as the consumers. The present furniture hinge provides a compact damping mechanism which is easily accommodated in variable hinge bodies. In order to provide such an advantage, the damping mechanism having a damper and a housing is located inside the hinge body such that the housing is slidebly guided within the hinge body by means of a linkage member and a cylinder body of the damper which is extended out from the housing is securely supported by a pin provided in the hinge body and when the hinge cup is articulated in relation to the hinge body, the housing is driven over the damper with the help of the linkage member in order to damp the movement of the furniture door.

[0004] CN 109 236 082 A discloses a furniture hinge with the function of adjusting a buffer angle, and belongs to the technical field of hinges. The hinge includes a pocket part, a main body straight arm, a four-hole part, a rolling part, at least one torsional spring and a buffer damping rod device; the pocket part can be fixed to a door or a flap cover; the main body straight arm is used for being fixedly mounted on a base; the pocket part is pivotably mounted on the main body straight arm through the four-hole part and the rolling part; the torsional springs include first pins and second pins, the pocket partis the force application object of the first pins, the main body straight arm is the force application object of the second pins, and the pocket part is preliminarily tensioned at a closing position through the torsional springs; the buffer damping rod device includes a damper shell, a piston rod and a damper auxiliary part, wherein the piston rod is used for damping closing movement of the pocket part, and the damper auxiliary part can adjust the position of the damper shell in the route direction of the piston rod. By adopting the hinge with the function of adjusting the buffer angle, the route range of a damper can be adjusted, and in this way, it can be set that when the hinge is closed, an appropriate angle is selected to generate damping to meet requirements.

[0005] WO 2019/140908 A1 discloses a hydraulic buffer hinge, comprising a hinge container, a hinge body, a supportive hinge arm, a driving hinge arm, a torsion spring that drives the driving hinge arm to swing a door shut, and a damper that buffers the driving hinge arm swinging the door shut; a housing that reciprocates relative to a hinge shaft of the supportive hinge arm is mounted within the hinge body, the damper being embedded within the housing; an end portion of a piston rod of the damper is paired with and blocked by the hinge shaft end of the supportive hinge arm; a swinging end of the driving hinge arm and an end of the housing that is adjacent to the piston rod are respectively formed with a hook portion and a stopping portion that resist each other when the driving hinge arm swings to shut the door. Since the damper of the hinge is additionally provided with a housing, hooking engagement is simultaneously formed between the housing and the swinging end of the driving hinge arm. When closing a door, the swinging end of the driving hinge arm directly hooks the housing to swing, and the housing then drives the damper to move and compress, and as such a cylinder of the damper is well protected, effectively extending the service life of the damper.

Brief Description of the Invention

[0006] The present invention relates to a furniture hinge having a damping function which comprises a first bracket adapted to be secured to a furniture door; a second bracket adapted to be secured to a furniture cabin by a mounting plate; a first linkage member, one end of which is adapted to be rotationally connected to the second bracket by means of a third pin and the other end of which is rotationally connected to the first bracket by means of one arm of a u-shaped connector; a second linkage member, one end of which is adapted to be rotationally connected to the second bracket by means of a first pin and the other end of which is rotationally connected to the first bracket by means of the other arm of a u-shaped connector; a torsion spring which is fitted around the first pin for urging the furniture door to move from an opened position to a closed position relative to the furniture cabin wherein one end of the torsion spring is secured to the second bracket so as to be retained immovable by a second pin and the other end of the torsion spring leans onto the u-shaped connector; a damping mechanism having a damper and a housing

which is slidebly holded within the second bracket and supported by the first linkage member. The damping mechanism is configured such that when the furniture door is closed onto the furniture cabin, the first linkage member drives the housing over the damper, thereby the damping effect is achieved. The damper comprises a cylinder body which is partially extended out from the housing and abuts against the second pin at its free end and a piston rod which moves in relation to the cylinder body and is supported within the housing from its free end. The piston rod is slidebly moved relative to the cylinder body resulted from the sliding movement of the housing. Advantageously, the piston rod may have a knob at the free end which is supported by the housing.

[0007] The furniture hinge further comprises a first adjustment element by means of which an outer body of the second bracket is connected to the mounting plate or an inner body and a second adjustment element by means of which the second bracket is aligned in relation to the mounting plate in the transverse direction.

[0008] The housing of the furniture hinge comprises a rim supported by the first linkage member such that when the furniture door is closed onto the furniture cabin the first linkage member pulls the housing over the cylinder body by means of the rim in order to provide a damping effect.

[0009] The housing further comprises a limiting surface whereby the free end of the piston rod is supported. The housing also comprises a front opening through which the cylinder body is extended out from the housing and a rear opening which is partially closed with a limiting surface.

[0010] In one embodiment, the first linkage member comprises a supporting portion interacting with the housing such that when the furniture door is closed onto the furniture cabin the supporting portion pulls the housing on the cylinder body in order to damp the movement of the furniture door.

[0011] The supporting portion may comprise two claws provided correspondingly on both end sides of the first linkage member, the claws being supported by a rim of the housing in order to drive the housing over the cylinder body.

[0012] The housing comprises guiding webs on each side which are supported via connection flaps formed on the second bracket such that the guiding webs slide on the connection flaps. The second bracket may comprise an inner body where a track mechanism is introduced, the track mechanism having a spring and a latching for detachably connecting the second bracket to the mounting plate.

Description of the Figures

[0013] The invention will be explained in more detail hereinbelow with the exemplary embodiments that are illustrated in the drawings;

Figure 1 shows an embodiment of the furniture hinge of the present invention in a perspective view wherein the furniture hinge having a first bracket, a second bracket which is pivotally connected to the first bracket and a mounting plate to which the second bracket is fastened.

Figure 2 shows the furniture hinge of the figure 1 in a side view.

Figure 3 is an exploded view of the furniture hinge of the figure 1.

Figure 4 is a perspective view of the damping mechanism having a damper and a housing wherein the damper is placed within the housing.

Figure 5 is a perspective view of the damping mechanism wherein the damper faces the housing in a insertion direction.

Figure 6 shows the perspective views of the housing both from a rear view and a front view.

Figure 7 is a sectional view of the damping mechanism wherein the damper inserted into the housing in a released position.

Figure 8 shows a sectional view of the second bracket detached from the mounting plate and being pivotally mounted to the first bracket.

Figure 9 shows another embodiment of the furniture hinge of the present invention in a perspective view wherein the second bracket is fastened to the mounting plate with the help of a track mechanism.

Figure 10 shows the furniture hinge of the figure 9 in a perspective view wherein the second bracket is detached of the mounting plate.

Figure 11 is an exploded view of the second bracket of the furniture hinge with the track mechanism detached from the mounting plate.

Figure 12 shows a sectional side view of the second bracket with the track mechanism detached from the mounting plate, and being pivotally mounted to the first bracket.

Reference List

[0014]

10 Furniture hinge
10.1 Connection holes
10.2 Pin hole
20 First bracket

21 Mounting flange
22 Cup region
22.1 Base
22.2 Wall
22.3 Central region
22.4 Connection region
22.5 External face
23 U-shaped connector
30 Second bracket
31 Outer body
31.1 Connection flaps
32 Inner body
32.1 Second mounting slot
32.2 Fourth screw hole
32.3 Body slot
32.4 Hook
32.5 Knurled surface
32.6 Clamping nails
32.7 Anchoring pins
32.8 Second seating surface
33 First pin
34 Second pin
35 Third pin
36 First adjustment element
36.1 Stopper head
36.2 Guide portion
37 Second adjustment element
38 First screw hole
39 Second screw hole
39.1 Knurled area
40 Mounting plate
41 First Mounting slot
41.1 First seating surface
42 Third screw hole
42.1 Knurled ways
43 Connection channels
44 Openings
45 Housing slot
50 Track mechanism
51 Spring
52 Latching
53 Fifth screw hole
54 Nest
55 Pressing point
60 First linkage member
61 Main body
62 Fastening hole
63 Supporting portion
63.1 Claws
63.2 Nail portion
70 Second Linkage member
80 Torsion spring
80.1 Short arm
80.2 Long arm
90 Damping mechanism
91 Damper
91.1 Cylinder body
91.2 Piston rod
91.3 Knob
91.4 Enlarged body portion
92 Housing
92.1 Rim
92.2 Limiting surface
92.3 Dished face
92.4 Flat face
92.5 Guiding webs
92.6 Ramp
92.7 Front opening
92.8 Rear opening

Detailed Description of the Invention

[0015] Figure 1 shows one embodiment of a furniture hinge (10) for connecting a furniture door to a furniture cabin in a pivotable manner. The furniture hinge (10) comprises a first bracket (20) and a second bracket (30) mounted on a mounting plate (40). The furniture hinge (10) also comprises a first linkage member (60) and a second linkage member (70) which are articulated within the first bracket (20) and the second bracket (30) and connect them each other in a pivotable manner. The second bracket (30), generally known as a hinge arm/hinge body, is configured to be mounted to a furniture cabin via the mounting plate (40) while the first bracket (20), generally known as a hinge cup, is configured to be mounted to a furniture door. On account thereof, the furniture door is pivoted on a furniture cabin between an opened position and a closed position via the furniture hinge (10).

[0016] The mounting plate (40) is fastened to the furniture cabin via screws through connection holes (10.1) and the second bracket (30) is connected to the mounting plate (40) and aligned therewith by means of first and second adjustment elements (36, 37). The first bracket (20) is set in a bore in the furniture door and connected thereto via screws guided through connection holes (10.1) cut out on a mounting flange (21) that is molded on the first bracket (20).

[0017] Figure 2 shows the furniture hinge (10) in an assembled position from a side view. Herein the first bracket (20) is connected to the second bracket (30) in an articulated manner via the first and the second linkage members (60, 70) and the second bracket (30) is mounted onto the mounting plate (40). One end of the second linkage member (70) is fastened to the second bracket (30) by means of a first pin (33) and the other end of the second linkage member (70) is fastened to the first bracket (20) by means of one arm of a u-shaped connector (23). On the other hand, one end of the first linkage member (60) is fastened to the second bracket (30) by means of a third pin (35) and the other end of the first linkage member (60) is fastened to the first bracket (20) by means of the other arm of the u-shaped connector (23). The first linkage member (60) and the second linkage member (70) are connected between the first bracket (20) and the second bracket (30) such that the

first linkage member (60) and the second linkage member (70) are spaced apart each other. Preferably, the side walls of the second linkage member (70) enclose the first linkage member (60).

[0018] Figure 3 shows the furniture hinge (10) of the Figure 2 in an exploded state and the components of the furniture hinge (10) are seen here in a greater detail. The first bracket (20) comprises a cup region (22) formed as a depression proceeding from an external face (22.5) which defines a stop for the mounting travel of the first bracket (20) into the bore opened on the furniture door. The cup region (22) which has a base (22.1) and a wall (22.2) rising up to the external face (22.5) is formed by a central region (22.3) and a connection region (22.4) that has a narrower internal space than the those of the central region (22.3) and transitions to the central region (22.3) in the same depression. The connection region (22.4) is embodied in the same cup region (22) with the central region (22.3) which is formed substantially in a rounded manner, while the connection region (22.4) provides an outwardly extended form in relation to the central region (22.3). When the furniture door is closed onto the furniture cabin, the first bracket (20) is articulated relative to the second bracket (30), the first and second linkage members (60, 70) are pivoted at the connection region (22.4) and housed in the cup region (22). The connection region (22.4) includes two pin holes (10.2) cut-out in the wall (22.2) which correspond to other two pin holes (10.2) formed on the opposite wall (22.2), by means of those pin holes (10.2) the first linkage member (60) and the second linkage member (70) are connected to the first bracket (20) via the u-shaped connector (23) so as to be spaced apart each other, as seen in figure 8.

[0019] The second linkage member (70) includes two pin holes (10.2) as cut-out in a side wall of the second linkage member (70) which correspond to two pin holes (10.2) in the opposite side wall. Said pin holes (10.2) are advantageously provided near ends of the side walls of the second linkage member (70). By way of those opposed pin holes (10.2) the second linkage member (70) is pivotally connected to the second bracket (30) with the help of the first pin (33), and to the first bracket (20) with the help of one arm of the u-shaped connector (23), as seen in figure 2.

[0020] As seen in the figure 3, the first linkage member (60) comprises a main body (61) having a fastening hole (62) at one end which may be formed by being bended of the main body (61). The first linkage member (60) is connected to the first bracket (20) by means of one arm of the u-shaped connector (23) which passes through the respective pin holes (10.2) in the connection region (22.4) and the fastening hole (62).

[0021] The first linkage member (60) further comprises a supporting part (63) formed on the other end of the main body (61). The supporting part (63) comprises two claws (63.1) disposed at sides of the end of the main body (61). Each of said claws (63.1) comprises a pin hole (10.2) and a nail portion (63.2). The first linkage member (60) is pivotally connected to the second bracket (30) by means of the third pin (35) which is guided through the pin holes (10.2) cut out in the claws (63.1). The further aims of the supporting portions (63) of the first linkage member (60) will be explained later in the following.

[0022] The furniture hinge (10) further comprises a torsion spring (80) fitted around the first pin (33) for urging the furniture door to move from an opened position to a closed position relative to the furniture cabin. The torsion spring (80) is connected around the first pin (33) to be strained in the space between the first linkage member (60) and the second linkage member (70) and has a short arm (80.1) configured to be secured to internal face of the second bracket (30) so as to be retained immovably there by a second pin (34) and a long arm (80.2) configured to lean on the u-shaped connector (23).

[0023] The second bracket (30) comprises an outer body (31) having a first screw hole (38) and a second screw hole (39) formed as a slot surrounded by a knurled area (39.1). The second bracket (30) is connected to the mounting plate (40) by means of the first adjustment element (36) which is guided through the first screw hole (38). Further the second bracket (30) is also connected to the mounting plate (40) and aligned therewith by means of the second adjustment element (37) which is guided through the second screw hole (39). The transverse adjustment of the outer body (31) according to the mounting plate (40) is realized via the second adjustment element (37) interacting with the knurled area (39.1). The first screw hole (38) corresponds to a first mounting slot (41) formed on the mounting plate (40), while the second screw hole (39) corresponds to a third screw hole (42) of the mounting plate (40).

[0024] The first adjustment element (36) includes a stopper head (36.1) and a guide portion (36.2) to which a first seating surface (41.1) of the first mounting slot (41) is introduced such that the stopper head (36.1) is located underside of the first seating surface (41.1) in the mounting position and prevents detachment of the second bracket (30) from the mounting plate (40). The third screw hole (42) includes straight knurled ways (42.1) at its both sides which cooperate with the knurled area (39.1) of second screw hole (39). By way of screwing the second adjustment element (37) through the second screw hole (39) and the third screw hole (42), the knurled area (39.1) and the knurled ways (42.1) allow the longitudinal progress of the second adjustment element (37) thereon and provide transverse adjustment of the second bracket (30) according to the mounting plate (40).

[0025] The second bracket (30) further comprises connection flaps (31.1) incorporated in the side walls of the outer body (31) and by way of which a damping mechanism (90) having a damper (91) and a housing (92) is slidebly held inside the second bracket (30). The connection flaps (31.1) may be formed as protrusion by inwardly bending of a portion of the side walls of the outer body (31). A housing slot (45) is disposed on the mounting plate (40) into which the housing (92) is introduced in a

linearly movable manner.

[0026] Figure 4 shows the damping mechanism (90) removed from the second bracket (30) wherein the damper (91) in the released state is partially extended out from the housing (92). Figure 5 shows the damper (91) and the housing (92) for receiving the damper (91) in a perspective exploded illustration. The illustration shows the damper (91) facing the housing (92) in an insertion direction. The damper (91) comprises a cylinder body (91.1) and a piston rod (91.2) received into the cylinder body (91.1) in a slideble manner. The damper (91) advantageously provides an enlarged body portion (91.4) surrounding the end of the cylinder body (91.1) opposite to the free end thereof. The enlarged body portion (91.4) may be the contact surface with the inner periphery of the housing (92) in order to reduce the friction surface between the cylinder body (91.1) and the housing (92) while damping movement. This results in the reduction of the wearing between the components as well as noise during damping.

[0027] In a mounted position of the damping mechanism (90) within the second bracket, the free end of the cylinder body (91.1) which is extended out from the housing (92) bears on the second pin (34) and the free end of the piston rod (91.2) is supported inside the housing (92). The piston rod (91.2) may have a knob (91.3) in the free end thereof. In this case, the knob (91.3) is supported in the housing (92). Thereby, in case the articulation of the first bracket (20) in relation to the second bracket (30), the movable housing (92) drives the piston rod (91.2) into the cylinder body (91.1) which is securely supported by the second pin (34) on the free end thereof.

[0028] The housing (92) comprises a flat face (92.4) molded onto a dished face (92.3) into which the damper (91) is introduced. In the assembled position, the flat face (92.4) slidebly seats on the inner face of the outer body (31). The flat face (92.4) provides guiding webs (92.5) on both sides, by way of which the housing (92) is slidebly held onto the connection flaps (31.1) of the second bracket (30). A ramp (92.6) may be disposed on the rear end of the flat face (92.4) for providing more compact form besides ease of sliding movement of the housing (92) within the second bracket (30).The rear side of the housing (92) is received within the housing slot (45) of the mounting plate (40) in a linearly movable manner in relation to therein.

[0029] The figure 6 shows the housing (92) in both rear view and front view respectively in a perspective manner. As seen in the figure, the dished face (92.3) is formed with a front opening (92.7) through which the damper (91) is introduced into the housing (92) and with a rear opening (92.8) partially closed with a limiting surface (92.2) which is molded on the rear side of the flat face (92.4) and supports the free end of the piston rod (91.2), preferably the knob (91.3).

[0030] The housing (92) further comprises a rim (92.1) molded on the front side of the flat face (92.4) opposite to the limiting surface (92.2). The front opening (92.7) of the dished face (92.3) is incorporated into the rim (92.1) of the housing (92), thereby the cylinder body (91.1) of the damper (91) is extended out from the front opening (92.7) on the rim (92.1). To this end, the damper (91) is supported between the limiting surface (92.2) of the housing (92) onto which the free end of the piston rod (91.2) bears and the second pin (34) pivotably mounted on the second bracket (30) onto which the free end of the cylinder body (91.1) bears.

[0031] The figure 7 shows a sectional view of the damping mechanism (90) wherein the damper (91) is extended out from the housing (92) in the released position. The damper (91) is housed within the housing (92) by being supported by the limiting surface (92.2) over the end of the piston rod (91.2), preferably the knob (91.3). The enlarged body portion (91.4) of the cylinder body (91.1) is in contact with the inner periphery of the housing (92), and the rest portion may advantageously provide a clearance from inner periphery of the housing (92).

[0032] The figure 8 shows the sectional view of the furniture hinge (10) in the assembled form without a mounting plate (40). The damping mechanism (90) is slidebly secured inside the outer body (31) via the connection flaps (31.1) such that the guiding webs (92.5) are engaged on the connection flaps (31.1) of the second bracket (30) and the free end of the cylinder body (91.1) bears onto the second pin (34). The knob (91.3) of the damper (91) is supported by the limiting surface (92.2) of the housing (92). The supporting portion (63) of the first linkage member (60) rests against to the rim (92.1) of the housing (92). In the articulation of the first bracket (20) in relation to the second bracket (30), the housing (92) is pulled by the supporting portion (63) of the first linkage member (60) with the help of the rim (92.1) of the housing (92) and the piston rod (91.2) is pushed into the cylinder body (91.1), the free end of which is secured on the second pin (34). Thereby the damping impact occurs on the furniture door while being closed onto the furniture cabin.

[0033] The figure 9-12 show another embodiment of the furniture hinge (10) which comprises the damping mechanism (90) within the second bracket (30) wherein the second bracket (30) is detachably connected to the mounting plate (40) with a track mechanism (50) having a spring (51) and a latching (52).

[0034] The figure 9 shows the furniture hinge (10) wherein the second bracket (30) mounted onto the mounting plate (40) with the help of the track mechanism (50). In figure 10, the second bracket (30) of the furniture hinge (10) is unfastened from the mounting plate (40).

[0035] The furniture hinge (10) with the track mechanism (50) comprises an inner body (32) cooperating with the track mechanism (50) for the alignment of the second bracket (30) according to the mounting plate (40). The furniture hinge (10) with the track mechanism (50) is shown in figure 11 in an exploded manner and in figure 12 in an assembled manner. The inner body (32) com-

prises a second mounting slot (32.1) for receiving the first adjustment element (36) in order to provide a connection between the outer body (31) and the inner body (32). The guide portion (36.2) of the first adjustment element (36) is driven to a second seating surface (32.8) of the second mounting slot (32.1) such that the stopper head (36.1) is located underside of the second seating surface (32.8) in the mounting position and prevents detachment of the outer body (31) from the inner body (32).

[0036] The inner body (32) also provides a fourth screw hole (32.2) surrounded by a knurled surface (32.5) which cooperates with the knurled area (39.1) of the second screw hole (39) and the second adjustment element (37). By way of screwing the second adjustment element (37) through the second screw hole (39) and the fourth screw hole (32.2), the knurled area (39.1) and the knurled surface (32.5) allow the axially longitudional progress of the second adjustment element (37) thereon and provide transverse adjustment of the second bracket (30) in relation to the mounting plate (40).

[0037] The inner body (32) further comprises clamping nails (32.6) cooperating with connection channels (43) provided on the mounting plate (40). There is also formed on the inner body (32) anchoring pins (32.7) which are engaged with openings (44) cut out in the mounting plate (40) in order to stabilize the position of the second bracket (30) onto the mounting plate (40). The inner body (32) provides a body slot (32.3) in the insertion direction into the outer body (31) for receiving the rear side of the housing (92) of the damping mechanism (90) by cooperating with the housing slot (45) formed on the mounting plate (40).

[0038] The track mechanism (50) is received into the inner body (32) and secured there with the second adjustment element (37) which reaches into the fifth screw hole (53). The spring (51) of the track mechanism (50) is placed between a hook (32.4) which is formed as a protrusion bended down and a nest (54) formed in the latching (52). The track mechanism (50) also includes a pressing point (55) when an operator pushes on the pressing point (55), the spring (51) is strained between the hook (32.4) and the nest (54) and release the second bracket (30) from the mounting plate (40).

Claims

1. A furniture hinge (10) having a damping function, comprising:

a first bracket (20) adapted to be secured to a furniture door;
a second bracket (30) adapted to be secured to a furniture cabin by a mounting plate (40);
a first linkage member (60), one end of which is adapted to be rotationally connected to the second bracket (30) by means of a third pin (35) and the other end of which is rotationally connected to the first bracket (20) by means of one arm of a u-shaped connector (23);
a second linkage member (70), one end of which is adapted to be rotationally connected to the second bracket (30) by means of a first pin (33) and the other end of which is rotationally connected to the first bracket (20) by means of the other arm of a u-shaped connector (23);
a torsion spring (80) which is fitted around the first pin (33) for urging the furniture door to move from an opened position to a closed position relative to the furniture cabin;
a damping mechanism (90) having a damper (91) and a housing (92) being slidebly holded within the second bracket (30) and supported by the first linkage member (60), the damper (91) having a cylinder body (91.1) which is partially extended out from the housing (92);
the damping mechanism (90) is configured such that when the furniture door is closed onto the furniture cabin, the first linkage member (60) drives the housing (92) over the cylinder body (91.1);
characterized in that
one end of the torsion spring (80) is secured to the second bracket (30) so as to be retained immovable there by a second pin (34) and the other end of the torsion spring (80) leans onto the u-shaped connector (23); and
the cylinder body (91.1) abuts against to the second pin (34).

2. A furniture hinge (10) according to claim 1 wherein the housing (92) comprises a rim (92.1) supported by the first linkage member (60) such that when the furniture door is closed onto the furniture cabin the first linkage member (60) pulls the housing (92) over the cylinder body (91.1) by means of the rim (92.1) in order to provide a damping action.

3. A furniture hinge (10) according to claim 1 wherein the first linkage member (60) comprises a supporting portion (63) interacting with the housing (92) such that when the furniture door is closed onto the furniture cabin the supporting portion (63) pulls the housing (92) over the cylinder body (91.1) in order to damp the movement of the furniture door.

4. A furniture hinge (10) according to claim 3 wherein the supporting portion (63) comprises two claws (63.1) provided correspondingly on both end sides of the first linkage member (60), the claws (63.1) being supported by a rim (92.1) of the housing (92) in order to drive the housing (92) over the cylinder body (91.1).

5. A furniture hinge (10) according to claim 1 wherein the housing (92) comprises guiding webs (92.5) on

each side which are supported via connection flaps (31.1) formed on the second bracket (30) such that the guiding webs (92.5) slide on the connection flaps (31.1).

6. A furniture hinge (10) according to claim 1 wherein the damper (91) comprises a knob (91.3) at the free end of the piston rod (91.2).

7. A furniture hinge (10) according to claim 1 wherein the housing (92) comprises a limiting surface (92.2) whereby the free end of the piston rod (91.2) is supported.

8. A furniture hinge (10) according to claim 1 wherein the housing (92) comprises a front opening (92.7) through which the cylinder body (91.1) is extended out from the housing (92) and a rear opening (92.8) which is partially closed with a limiting surface (92.2).

9. A furniture hinge (10) according to claim 1 wherein the second bracket (30) comprises an inner body (32) where a track mechanism (50) is introduced, the track mechanism (50) having a spring (51) and a latching (52) for detachably connecting the second bracket (30) to the mounting plate (40).

10. A furniture hinge (10) according to claim 1 wherein the furniture hinge (10) comprises a first adjustment element (36) by means of which an outer body (31) of the second bracket (30) is connected to the mounting plate (40) or an inner body (32) and a second adjustment element (37) by means of which the second bracket (30) is aligned in relation to the mounting plate (40) in the transverse direction.

Patentansprüche

1. Möbelscharnier (10), das eine Dämpfungsfunktion hat, das aufweist:

einen ersten Halter (20), der dazu angepasst ist, an einer Möbeltür fixiert zu werden;
einen zweiten Halter (30), der dazu angepasst ist, durch eine Montierplatte (40) an einer Möbelkabine fixiert zu werden;
ein erstes Verknüpfungselement (60), dessen eines Ende dazu angepasst ist, mit dem zweiten Halter (30) mittels eines dritten Stifts (35) drehbar verbunden zu sein, und dessen anderes Ende mit dem ersten Halter (20) mittels eines Arms eines U-förmigen Verbinders (23) drehbar verbunden ist;
ein zweites Verknüpfungselement (70), dessen eines Ende dazu angepasst ist, mit dem zweiten Halter (30) mittels eines ersten Stifts (33) drehbar verbunden zu sein, und dessen anderes Ende mit dem ersten Halter (20) mittels des anderen Arms eines U-förmigen Verbinders (23) drehbar verbunden ist;
eine Torsionsfeder (80), die um den ersten Stift (33) gepasst ist, zum Drängen der Möbeltür, sich von einer geöffneten Position zu einer geschlossenen Position relativ zu der Möbelkabine zu bewegen;
einen Dämpfungsmechanismus (90), der einen Dämpfer (91) und ein Gehäuse (92) hat, der gleitbar innerhalb des zweiten Halters (30) gehalten ist und durch das erste Verknüpfungselement (60) gestützt ist, wobei der Dämpfer (91) einen Zylinderkörper (91.1) hat, der teilweise aus dem Gehäuse (92) heraus erstreckt ist;
wobei der Dämpfungsmechanismus (90) derart gestaltet ist, dass, wenn die Möbeltür auf die Möbelkabine geschlossen ist, das erste Verknüpfungselement (60) das Gehäuse (92) über den Zylinderkörper (91.1) treibt,
dadurch gekennzeichnet, dass
ein Ende der Torsionsfeder (80) an dem zweiten Halter (30) fixiert ist, sodass es dort durch einen zweiten Stift (34) unbeweglich festgehalten ist, und das andere Ende der Torsionsfeder (80) sich auf den U-förmigen Verbinder (23) lehnt, und
der Zylinderkörper (91.1) gegen den zweiten Stift (34) in Anlage ist.

2. Möbelscharnier (10) gemäß Anspruch 1, wobei das Gehäuse (92) einen Rand (92.1) aufweist, der durch das erste Verknüpfungselement (60) gestützt ist, sodass, wenn die Möbeltür auf die Möbelkabine geschlossen ist, das erste Verknüpfungselement (60) das Gehäuse (92) mittels des Randes (92.1) über den Zylinderkörper (91.1) zieht, um eine Dämpfungswirkung bereitzustellen.

3. Möbelscharnier (10) gemäß Anspruch 1, wobei das erste Verknüpfungselement (60) einen Stützabschnitt (63) aufweist, der mit dem Gehäuse (92) interagiert, sodass, wenn die Möbeltür auf die Möbelkabine geschlossen ist, der Stützabschnitt (63) das Gehäuse (92) über den Zylinderkörper (91.1) zieht, um die Bewegung der Möbeltür zu dämpfen.

4. Möbelscharnier (10) gemäß Anspruch 3, wobei der Stützabschnitt (63) zwei Klauen (63.1) aufweist, die korrespondierend an beiden Endseiten des ersten Verknüpfungselements (60) vorgesehen sind, wobei die Klauen (63.1) durch einen Rand (92.1) des Gehäuses (92) gestützt sind, um das Gehäuse (92) über den Zylinderkörper (91.1) zu treiben.

5. Möbelscharnier (10) gemäß Anspruch 1, wobei das Gehäuse (92) Führungsstege (92.5) auf jeder Seite

aufweist, die mittels Verbindungslaschen (31.1) gestützt sind, die an dem zweiten Halter (30) ausgebildet sind, sodass die Führungsstege (92.5) an den Verbindungslaschen (31.1) gleiten.

6. Möbelscharnier (10) gemäß Anspruch 1, wobei der Dämpfer (91) einen Knauf (91.3) an dem freien Ende der Kolbenstange (91.2) aufweist.

7. Möbelscharnier (10) gemäß Anspruch 1, wobei das Gehäuse (92) eine Beschränkungsfläche (92.2) aufweist, wodurch das freie Ende der Kolbenstange (91.2) gestützt ist.

8. Möbelscharnier (10) gemäß Anspruch 1, wobei das Gehäuse (92) eine Vorderöffnung (92.7), durch die der Zylinderkörper (91.1) aus dem Gehäuse (92) heraus erstreckt ist, und eine Hinteröffnung (92.8) aufweist, die teilweise mit einer Beschränkungsfläche (92.2) geschlossen ist.

9. Möbelscharnier (10) gemäß Anspruch 1, wobei der zweite Halter (30) einen Innenkörper (32) aufweist, wo ein Spurmechanismus (50) eingeführt ist, wobei der Spurmechanismus (50) eine Feder (51) und eine Arretierung (52) zum abnehmbaren Verbinden des zweiten Halters (30) mit der Montierplatte (40) hat.

10. Möbelscharnier (10) gemäß Anspruch 1, wobei das Möbelscharnier (10) ein erstes Einstellungsbauteil (36), mittels dessen ein Außenkörper (31) des zweiten Halters (30) mit der Montierplatte (40) oder einem Innenkörper (32) verbunden ist, und ein zweites Einstellungsbauteil (37) aufweist, mittels dessen der zweite Halter (30) bezüglich der Montierplatte (40) in der Querrichtung ausgerichtet ist.

Revendications

1. Charnière de meuble (10) présentant une fonction d'amortissement, comprenant :

un premier support (20) adapté pour être fixé à une porte de meuble ;
un deuxième support (30) adapté pour être fixé à un caisson de meuble par une plaque de montage (40) ;
un premier élément de liaison (60), dont une extrémité est adaptée pour être reliée de manière rotative au deuxième support (30) au moyen d'un troisième axe (35) et dont l'autre extrémité est reliée de manière rotative au premier support (20) au moyen d'un bras d'un connecteur en forme de u (23) ;
un deuxième élément de liaison (70), dont une extrémité est adaptée pour être reliée de manière rotative au deuxième support (30) au moyen d'un premier axe (33) et dont l'autre extrémité est reliée de manière rotative au premier support (20) au moyen de l'autre bras d'un connecteur en forme de u (23) ;
un ressort de torsion (80) qui est monté autour du premier axe (33) pour amener la porte de meuble à se déplacer à partir d'une position ouverte vers une position fermée par rapport au caisson de meuble ;
un mécanisme d'amortissement (90) présentant un amortisseur (91) et un logement (92) retenu de manière coulissante dans le deuxième support (30) et supporté par le premier élément de liaison (60), l'amortisseur (91) présentant un corps cylindrique (91.1) qui est en partie déployé à partir du logement (92) ;
le mécanisme d'amortissement (90) est configuré de telle sorte que lorsque la porte de meuble est fermée sur le caisson de meuble, le premier élément de liaison (60) entraîne le logement (92) au-dessus du corps cylindrique (91.1);
caractérisée en ce que
une extrémité du ressort de torsion (80) est fixée au deuxième support (30) de manière à y être retenue fixe par un deuxième axe (34) et l'autre extrémité du ressort de torsion (80) est inclinée vers le connecteur en forme de u (23) ; et
le corps cylindrique (91.1) est en butée contre le deuxième axe (34).

2. Charnière de meuble (10) selon la revendication 1 dans laquelle le logement (92) comprend un bord (92.1) supporté par le premier élément de liaison (60) de telle sorte que lorsque la porte de meuble est fermée sur le caisson de meuble le premier élément de liaison (60) tire le logement (92) au-dessus du corps cylindrique (91.1) au moyen du bord (92.1) afin de fournir une action d'amortissement.

3. Charnière de meuble (10) selon la revendication 1 dans laquelle le premier élément de liaison (60) comprend une partie de support (63) interagissant avec le logement (92) de telle sorte que lorsque la porte de meuble est fermée sur le caisson de meuble la partie de support (63) tire le logement (92) au-dessus du corps cylindrique (91.1) afin d'amortir le mouvement de la porte de meuble.

4. Charnière de meuble (10) selon la revendication 3 dans laquelle la partie de support (63) comprend deux griffes (63.1) prévues de manière correspondante sur les deux côtés d'extrémité du premier élément de liaison (60), les griffes (63.1) étant supportées par un bord (92.1) du logement (92) afin d'entraîner le logement (92) au-dessus du corps cylindrique (91.1).

5. Charnière de meuble (10) selon la revendication 1 dans laquelle le logement (92) comprend des bandes de guidage (92.5) sur chaque côté qui sont supportées par le biais de volets de liaison (31.1) formés sur le deuxième support (30) de telle sorte que les bandes de guidage (92.5) glissent sur les volets de liaison (31.1).

6. Charnière de meuble (10) selon la revendication 1 dans laquelle l'amortisseur (91) comprend un bouton (91.3) au niveau de l'extrémité libre de la tige de piston (91.2).

7. Charnière de meuble (10) selon la revendication 1 dans laquelle le logement (92) comprend une surface de limitation (92.2) par laquelle l'extrémité libre de la tige de piston (91.2) est supportée.

8. Charnière de meuble (10) selon la revendication 1 dans laquelle le logement (92) comprend une ouverture avant (92.7) par l'intermédiaire de laquelle le corps cylindrique (91.1) est déployé à partir du logement (92) et une ouverture arrière (92.8) qui est en partie fermée avec une surface de limitation (92.2).

9. Charnière de meuble (10) selon la revendication 1 dans laquelle le deuxième support (30) comprend un corps intérieur (32) où un mécanisme de piste (50) est introduit, le mécanisme de piste (50) présentant un ressort (51) et un verrouillage (52) pour relier de manière détachable le deuxième support (30) à la plaque de montage (40).

10. Charnière de meuble (10) selon la revendication 1 dans laquelle la charnière de meuble (10) comprend un premier élément de réglage (36) au moyen duquel un corps extérieur (31) du deuxième support (30) est relié à la plaque de montage (40) ou un corps intérieur (32) et un deuxième élément de réglage (37) au moyen duquel le deuxième support (30) est aligné par rapport à la plaque de montage (40) dans la direction transversale.

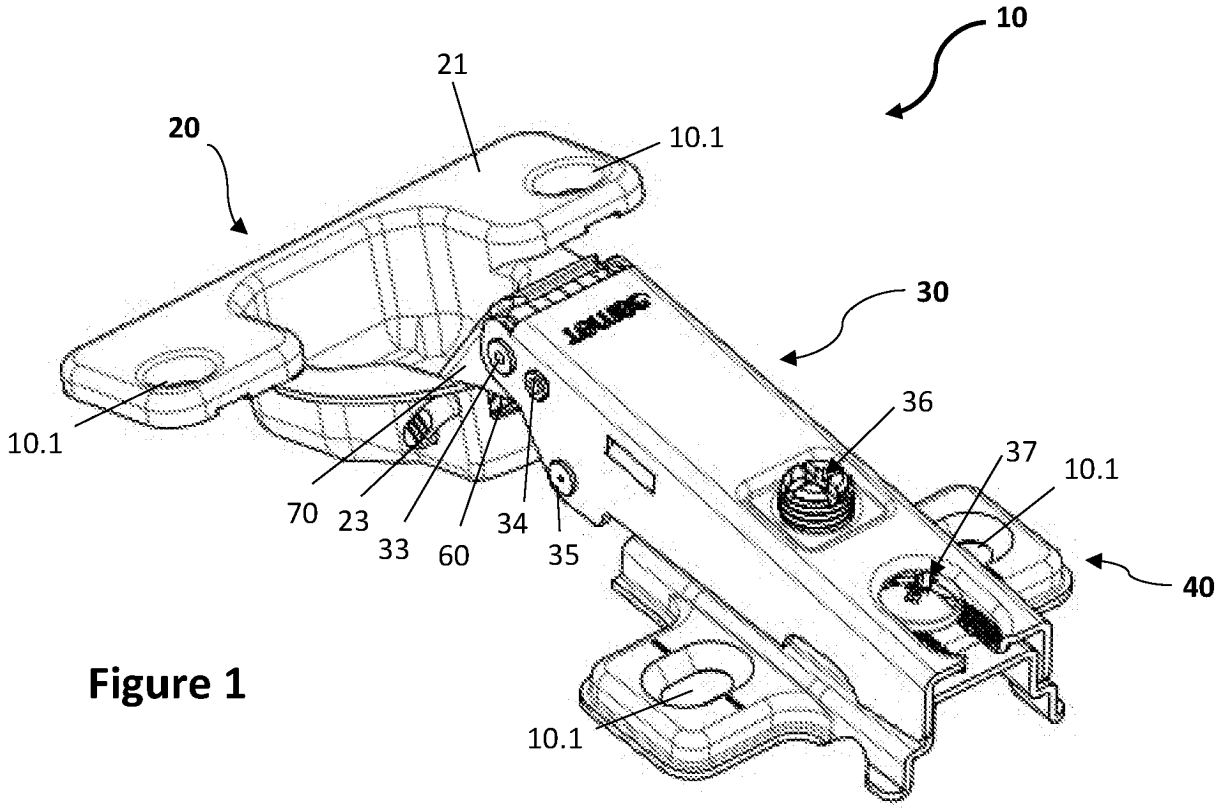


Figure 1

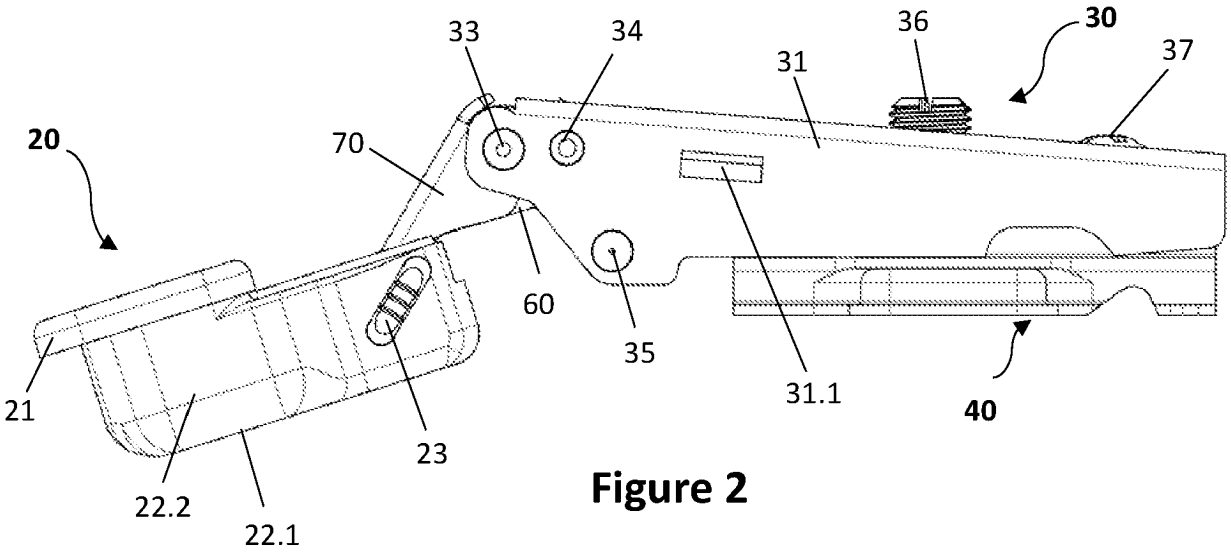
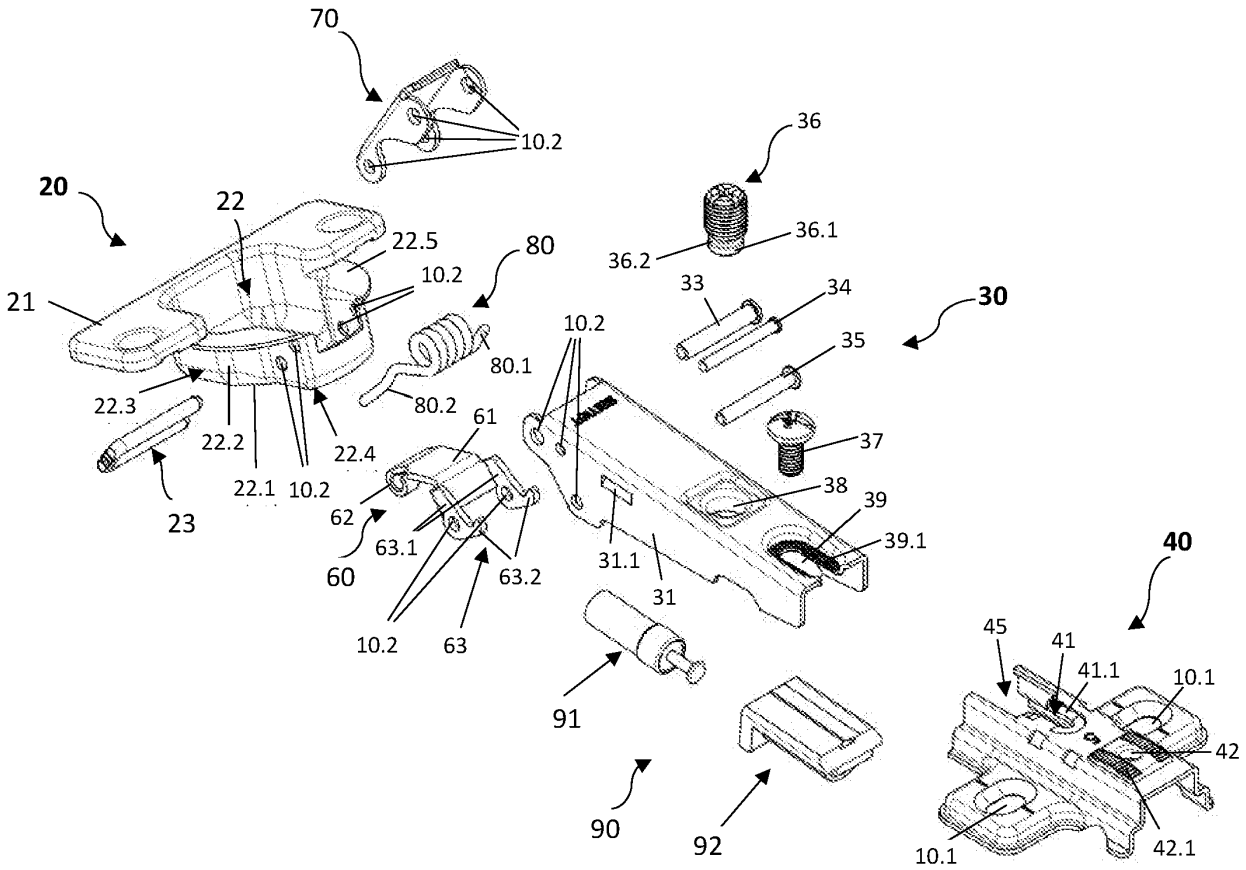


Figure 2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42.1

Figure 3

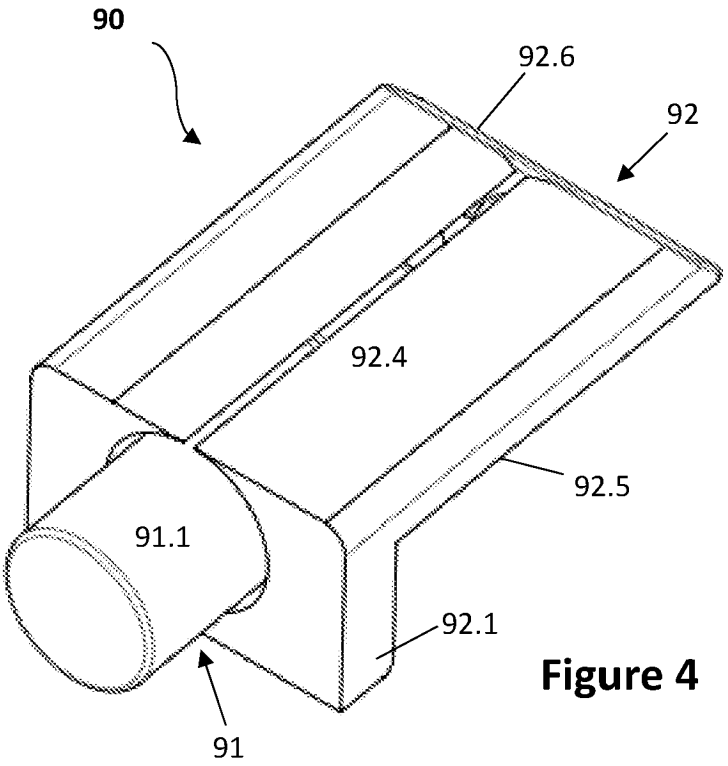


Figure 4

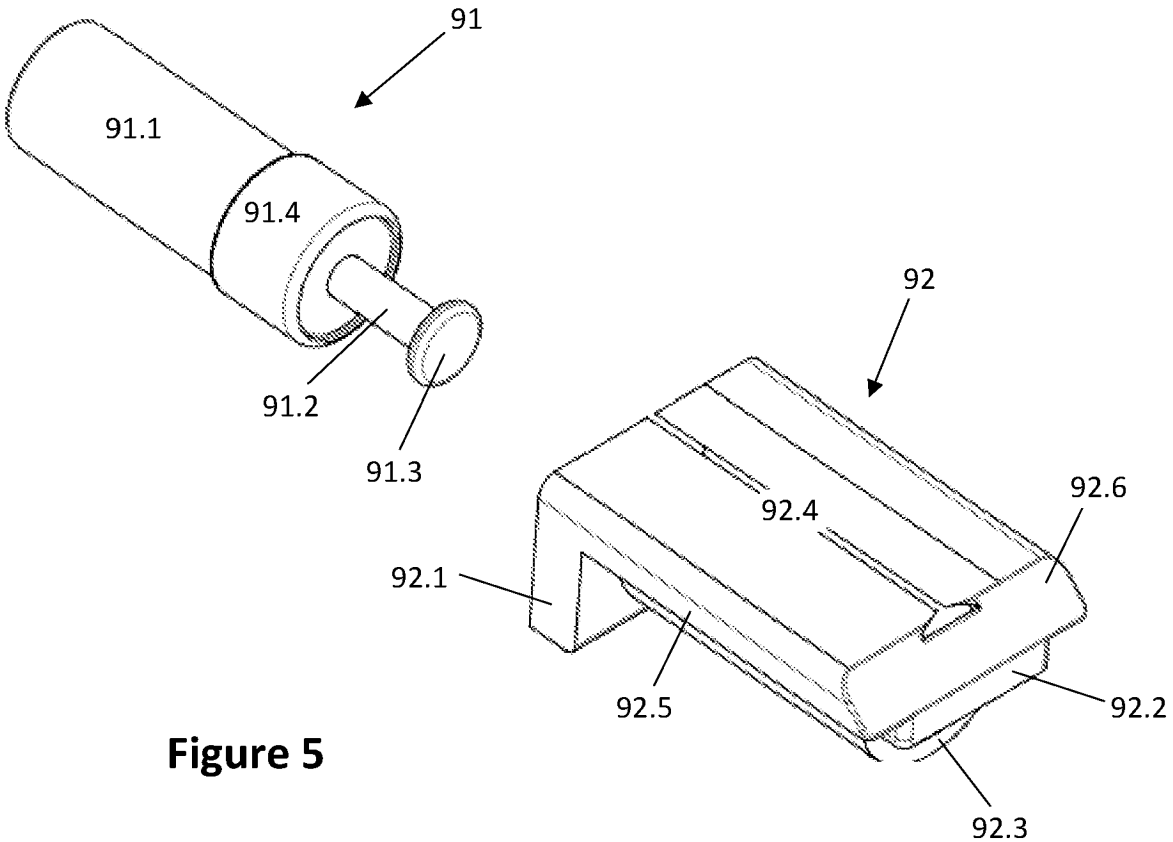


Figure 5

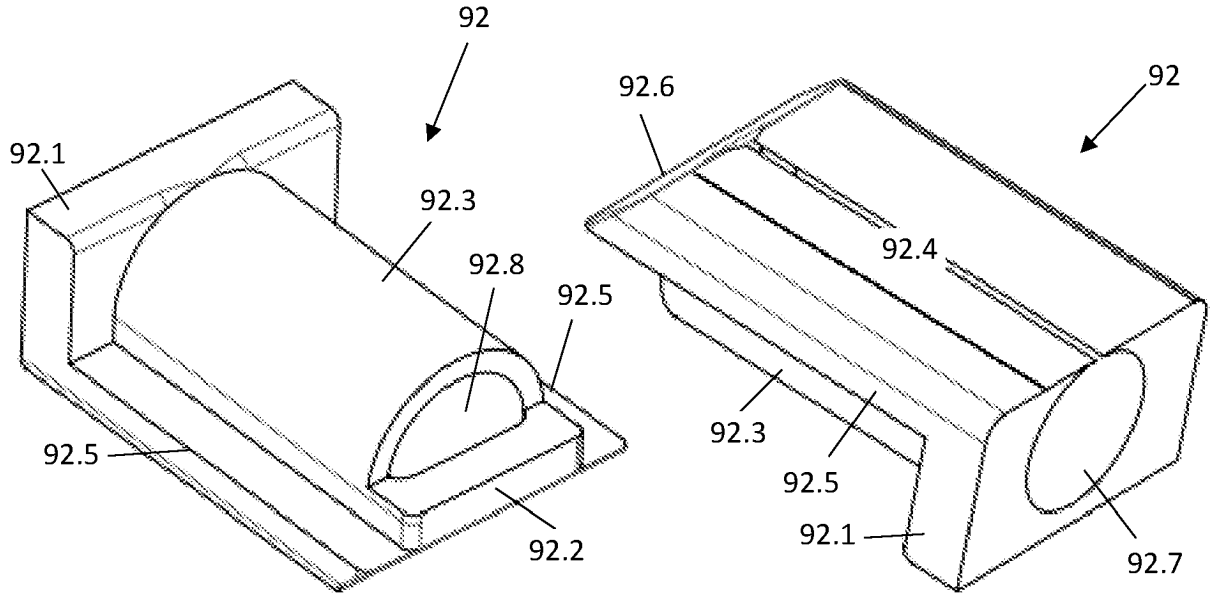


Figure 6

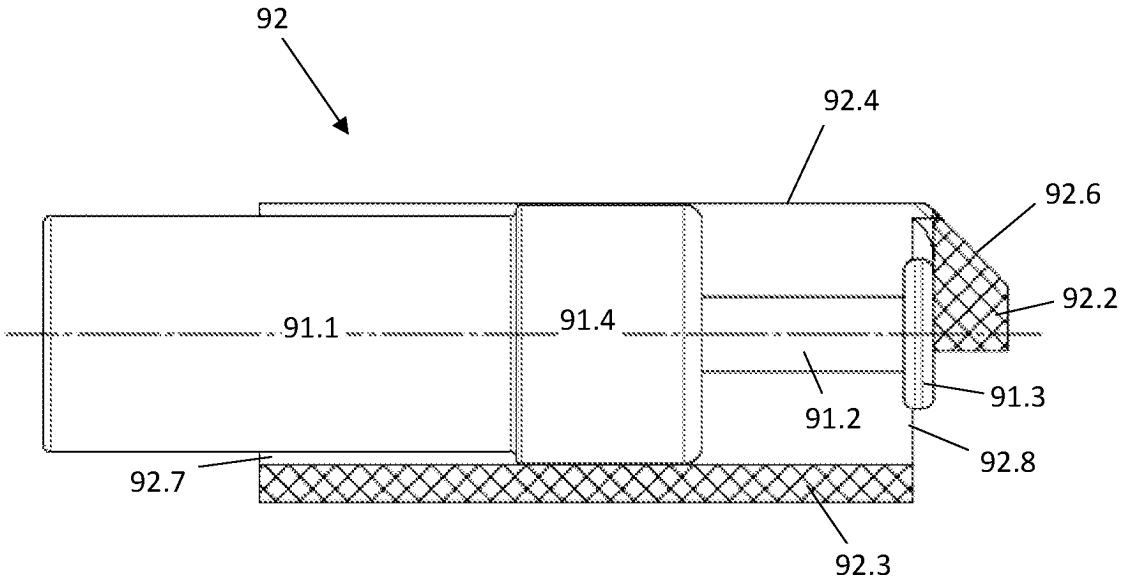


Figure 7

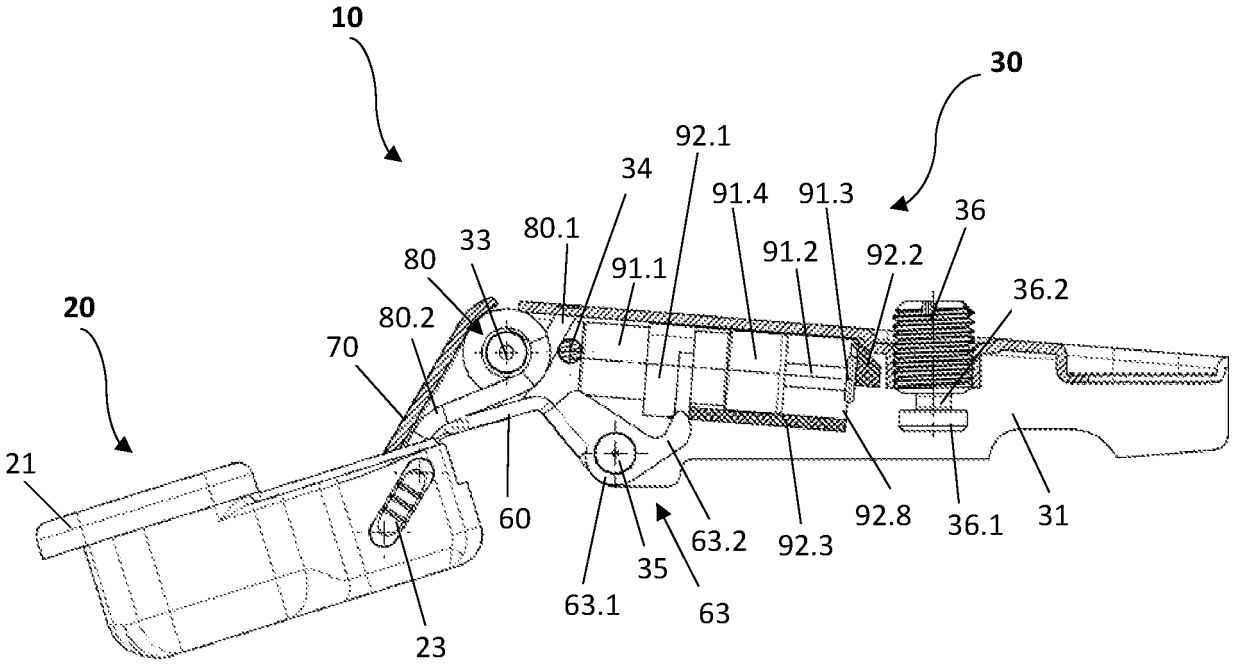


Figure 8

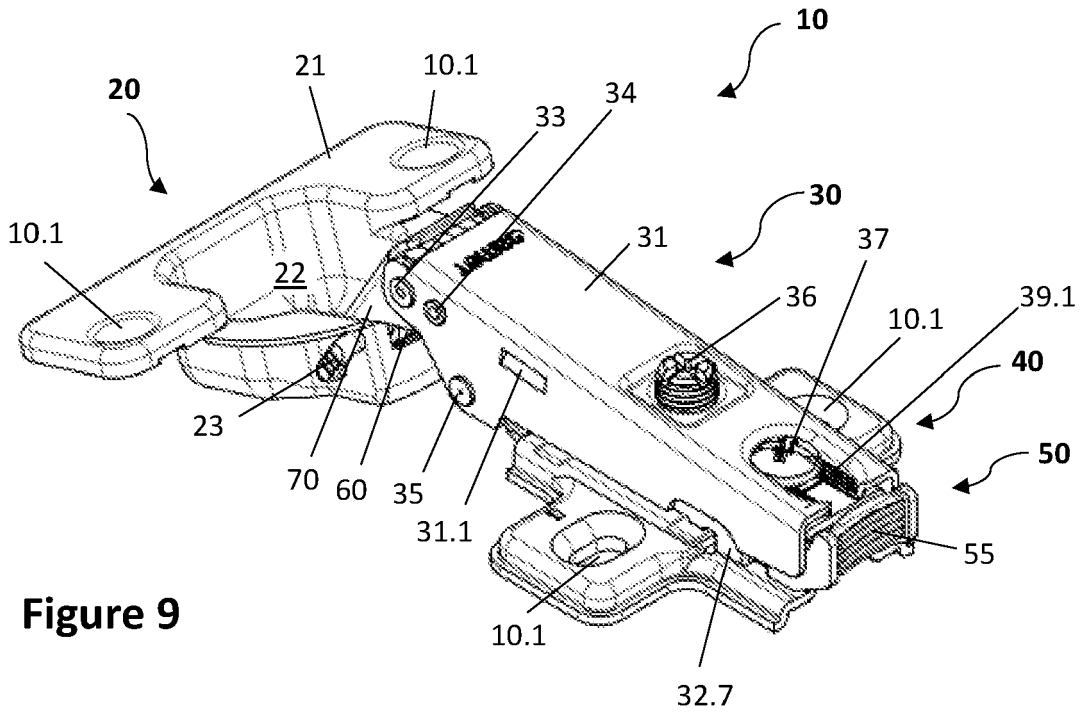


Figure 9

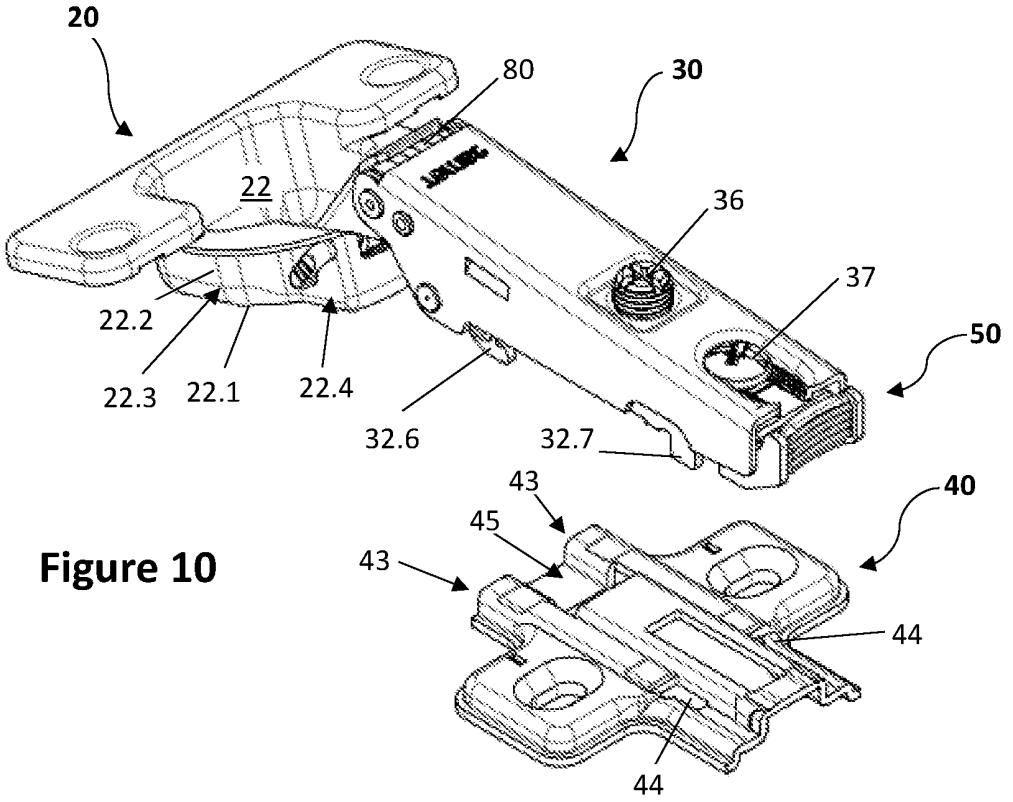


Figure 10

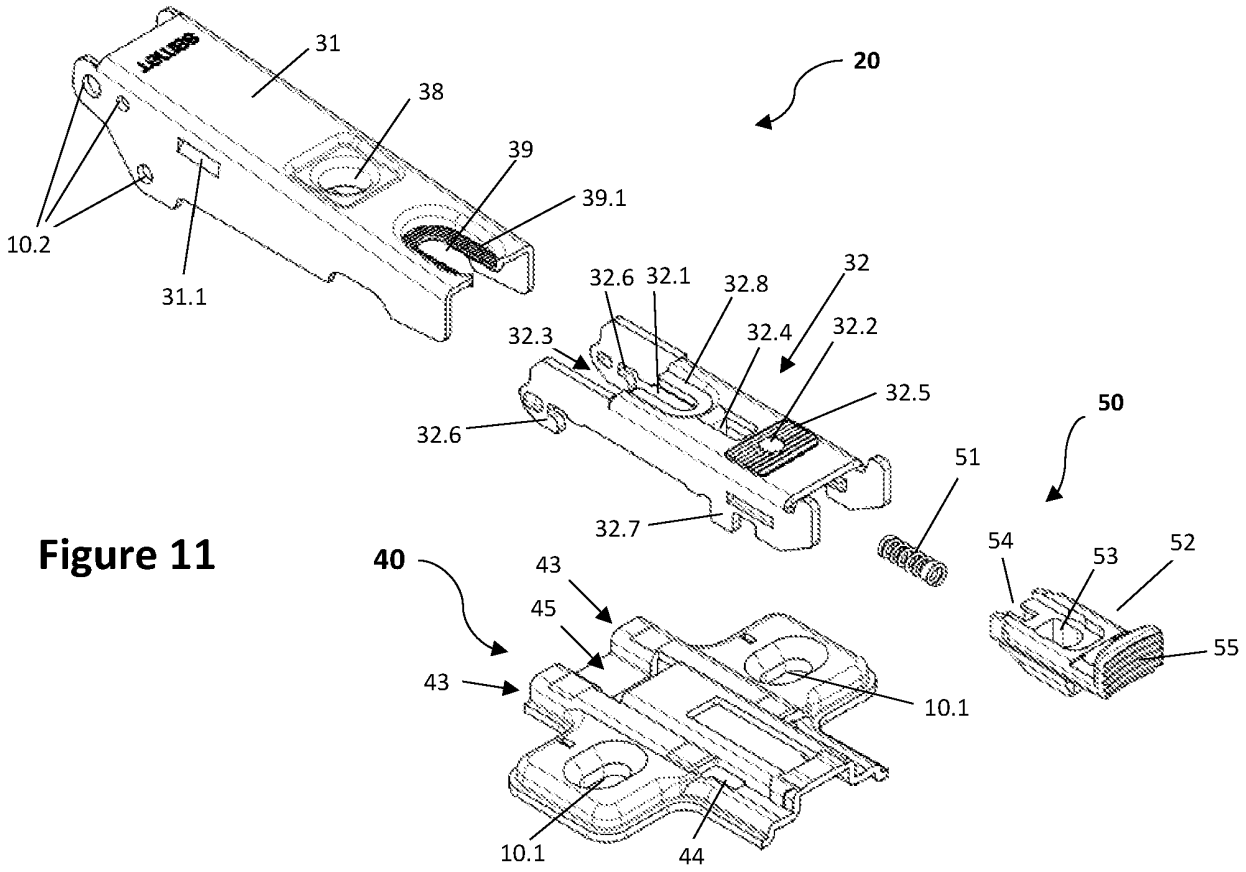
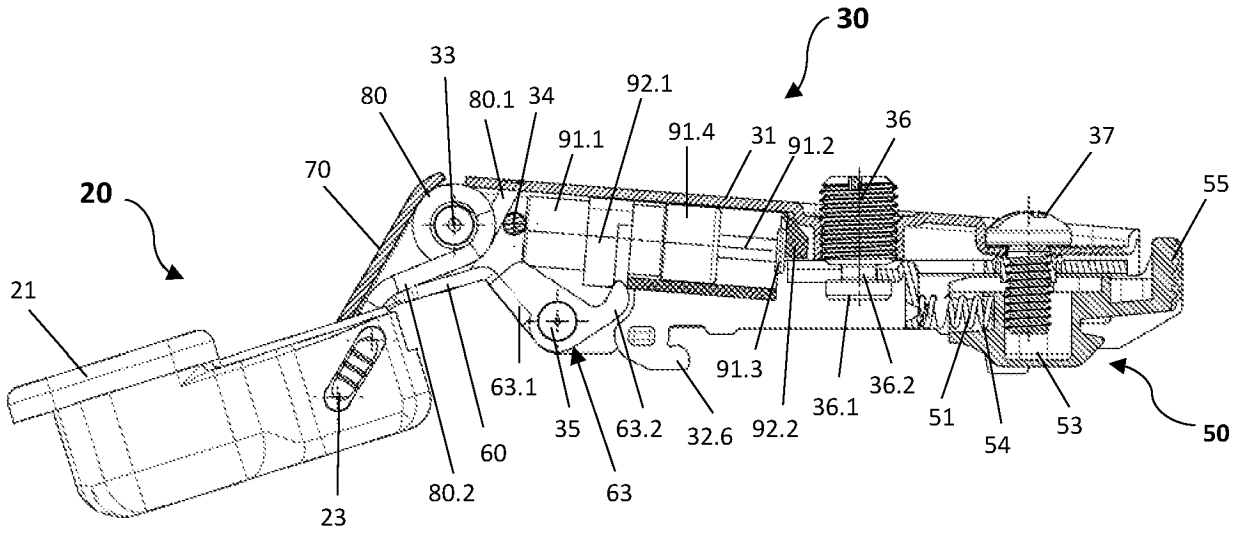


Figure 11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91.3
92.2
36.1
36.2
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54
53
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60
80.2
63
23

Figure 12

REFERENCES CITED IN THE DESCRIPTION

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- WO 2019140908 A1 **[0005]**