

(19)



(11)

EP 2 401 942 B1

(12)

EUROPEAN PATENT SPECIFICATION

(45) Date of publication and mention
of the grant of the patent:
22.07.2015 Bulletin 2015/30

(51) Int Cl.:
A47D 9/00 (2006.01)

(21) Application number: **11171216.2**

(22) Date of filing: **23.06.2011**

(54) **A collapsible cot**

Zusammenklappbare Liege

Lit de camp démontable

(84) Designated Contracting States:
**AL AT BE BG CH CY CZ DE DK EE ES FI FR GB
GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO
PL PT RO RS SE SI SK SM TR**

(30) Priority: **30.06.2010 NL 2005002**

(43) Date of publication of application:
04.01.2012 Bulletin 2012/01

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Description

FIELD OF THE INVENTION

[0001] The invention relates to a collapsible cot comprising at least an upper frame, a lower frame, flexible sidewalls extending between the upper frame and the lower frame, and at least two members being pivotably connected at pivots to the upper frame and slideably movable with respect to the lower frame, wherein all members are coupled to each other to simultaneously move the members with respect to the lower frame from an unfolded position wherein the upper frame and the lower frame are spaced apart by the members to a folded position wherein the upper frame and the lower frame are located relatively close to each other and vice versa.

BACKGROUND OF THE INVENTION

[0002] EP2151365A1. discloses a vehicle comprising an undercarriage on which a rigid bottom plate is carried in a supporting manner. An upper edge displaceable relative to the bottom plate is held a distance from the bottom plate by means of spacers. A wall part formed from a fabric or a canvas, is stretched between the bottom plate and the upper edge. Together with the upper edge and the bottom plate, the wall part forms a tub for placing a load therein, for instance consisting of goods or children. Lower outer ends of the spacers are connected to operating members. The operating members are connected at ends remote of the spacers to a loop. By moving the loop in upward direction, the lower outer ends are moved toward each other and the tub will be folded down.

[0003] In case that a mattress is located on the bottom plate, this mattress need to be removed to be able to collapse the tub.

SUMMARY OF THE INVENTION

[0004] It is an object of the invention to provide a collapsible cot, which can easily be folded and unfolded, without the need to remove a mattress or the like from the cot.

[0005] This object is achieved by the cot according to claim 1 in that all members are coupled to an actuation member being accessible from the outside of the cot, which actuation member extends through the lower frame or through at least one of the sidewalls or is accessible via an opening or slit in the lower frame, whereby in use by means of operating the actuation member all members are simultaneously movable with respect to the lower frame.

[0006] The actuation member extends through the lower frame or through at least one of the sidewalls or is accessible via an opening or slit in the lower frame. The actuation member can be formed by one of the members being pivotably connected to the upper frame and slidably movable with respect to the lower frame. It is also

possible that the actuation member is an actuation knob being connected to the members directly or via intermediate elements. Since a mattress inside the lower frame does not have to be removed for movement of the actuation member and thus movement of the members, the cot can easily be folded.

[0007] Since the members are slideably with respect to the lower frame and are simultaneously movable a controlled movement of the upper frame with respect to the lower frame during folding and unfolding is obtained. The lower and upper frame can only be moved with respect to each other by pivoting the members.

[0008] The members can be slideably connected to the lower frame itself or can be slideable in elements connected to the lower frame.

[0009] The members can be moved simultaneously in the same direction, in which case the members are both being pivoted with respect to the upper frame in clockwise direction or counterclockwise direction. It is also possible that the members are simultaneously be moved in opposite directions, in which case one member is being pivoted with respect to the upper frame in clockwise direction whilst the other member is being pivoted with respect to the upper frame in counterclockwise direction.

[0010] It has to be noted that a collapsible cot is known from GB840478. The cot is provided with U-shaped members each comprising two limbs and a horizontal part. The upper extremities of the limbs are pivotably connected to the upper frame. In the unfolded position, each horizontal part is engaged with a corresponding spring clip fastened to the lower frame and the limbs extend perpendicular to the lower frame and the upper frame. To collapse the cot, the horizontal parts of each member need to be disengaged from the corresponding spring clip, after which the member can be pivoted with respect to the upper frame to a folded position in which the limbs extend almost parallel to the upper frame. Due to the flexible sidewalls and gravity, the upper frame will be move towards the lower frame until they are located relatively close to each other.

[0011] A disadvantage of this known cot is that to collapse it, all horizontal parts need to be disengaged individually from the spring clips, after which each member need to be individually pivoted. Furthermore, the spring clips can only be reached after a mattress normally located in the lower frame, is removed. Yet another disadvantage of this known cot is that after the members are disconnected from the spring clips, the upper frame is only connected to the lower frame by means of the flexible sidewalls, so that the position of the upper frame with respect to the lower frame is not well defined and, for example the frames can move in directions parallel to the lower and upper frames.

[0012] An embodiment of the cot according to the invention is characterized in that each member comprises two leg portions and a bridge portion located between the leg portions, wherein ends of the leg portions remote of the bridge portion are pivotably connected to the upper

frame, whilst the bridge portion is slideably movable with respect to the lower frame.

[0013] The two leg portions and the bridge portion form a U-shaped member. By having two U-shaped members, there are four pivots to connect the two U-shaped members to the upper frame. Usually, such a frame has a rectangular shape, so that on each longitudinal side two pivots can be located. Due to the U-shaped members a good connection between the upper frame and lower frame is obtained.

[0014] Another embodiment of the cot according to the invention is characterized in that near the lower frame the members are movable towards each other to move from the unfolded position to the folded position, whilst the members are movable away from each other to move from the folded position to the unfolded position or vice versa.

[0015] The movements of the members are mirror symmetric due to which a stable construction is obtained. The members are pivotable connected to the upper frame at the pivots. In case that near the lower frame the members are movable towards each other when moving from the unfolded position to the folded position, the pivots of the two members can be located relatively far apart, which further improves the stability of the unfolded cot.

[0016] In case that the members are movable away from each other when moving to the folded position, the pivots of the two members need to be located relatively close to each other to ensure that in the folded position the members will not extend outside the lower frame.

[0017] A further embodiment of the cot according to the invention is characterized in that the lower frame comprises at least a fixed rod located at a side of the first of the two members opposite to the second of the two members as well as a strap connected with ends to the first member and the second member, which strap extends around the fixed rod, wherein by moving the first member towards the second member, the second member is pulled towards the first member by the strap, whilst by moving the second member away from the first member, the first member is pulled away from the second member by the strap.

[0018] Due to the flexible strap and the fixed rod, movement of one member automatically results in a simultaneous movement of the other member. The members can extend partly outside the lower frame so that a user can easily move the desired member in the desired direction or the members can be reachable through a slit in the bottom of the lower frame.

[0019] A further embodiment of the cot according to the invention is characterized in that the lower frame comprises at least an additional fixed rod located at a side of the second member opposite to the first member as well as an additional strap connected with ends to the first member and the second member, which additional strap extends around the additional fixed rod, wherein by moving the first member towards the second member, the second member is pulled towards the first member by

the strap, whilst by moving the first member away from the second member, the second member is pulled away from the first member by the additional strap.

[0020] Due to the additional flexible strap and the additional fixed rod, the user can always move the same member, wherein movement of the first member automatically results in a simultaneous movement of the second member. By always moving the same member, the operation of the cot is very simple.

[0021] Since the strap and additional strap are connected to the first and second member, the members are automatically slidably guided by the strap and additional strap for movement in a direction towards the fixed rod or the additional fixed rod. No additional guidance of the members near the lower frame is necessary.

[0022] A further embodiment of the cot according to the invention is characterized in that the lower frame comprises at least a fixed guiding rod located at a side of the fixed rod opposite to the first member as well as an endless actuation strap which is located around the additional fixed rod and the guiding rod, which actuation strap is connected to the first member.

[0023] The actuation strap can easily be guided through two relatively small slits in the lower frame to a position outside the lower frame so that the actuation strap is easily accessible. By moving the actuation strap, the first member will be moved as well. A mattress inside the lower frame does not have to be removed for movement of the actuation strap and thus the members.

[0024] A further embodiment of the cot according to the invention is characterized in that the actuation strap is provided with an actuation knob located at a side of the lower frame opposite to the upper frame.

[0025] The actuation knob makes it easy for a user to move the actuation strap.

[0026] A further embodiment of the cot according to the invention is characterized in that each member is provided with a threaded rod, whilst an actuation knob is provided with a gear wheel, which cooperates with the threaded rods, wherein by rotating the gear wheel by means of the actuation knob, the threaded rods and the members connected thereto are slideably movable with respect to the lower frame.

[0027] By such a gear wheel-threaded rod-combination the members can easily and reliably be moved from an unfolded position to a folded position and vice versa.

[0028] A further embodiment of the cot according to the invention is characterized in that the cot can be locked in the folded and/or unfolded position.

[0029] Such a lock will prevent accidentally folding or unfolding of the cot.

[0030] A further embodiment of the cot according to the invention is characterized in that the cot is provided with means for detachably connect the cot to a stroller frame.

[0031] In this manner the cot can easily be transported by means of the stroller. To store the cot and stroller, the cot is being folded and disconnected from the stroller.

BRIEF DESCRIPTION OF THE DRAWINGS

[0032] The invention will be explained in more detail with reference to the drawings, in which

figure 1 is perspective view of a cot according to a first embodiment of the invention in an unfolded position,
 figure 2 is a side view of the cot as shown in figure 1,
 figure 3 is a top view of the cot as shown in figure 1,
 figure 4 is a bottom view of the cot as shown in figure 1,
 figure 5 is side view of the cot according to the invention in an folded position,
 figure 6A-6D are a top view, two cross sections and a schematic perspective view respectively of the cot as shown in figure 1 in an unfolded position,
 figure 7A-7D are a top view, two cross sections and a schematic perspective view respectively of the cot as shown in figure 1 in an folded position,
 figure 8A-8D are a top view, two cross sections and a schematic perspective view respectively of a cot according to a second embodiment of the invention in an unfolded position,
 figure 9A-9D are a top view, two cross sections and a schematic perspective view respectively of the cot as shown in figure 8A-8D in an folded position,
 figure 10A-10D are a top view, two cross sections and a schematic perspective view respectively of a cot according to a third embodiment of the invention in an unfolded position,
 figure 11A-11D are a top view, two cross sections and a schematic perspective view respectively of the cot as shown in figure 10A-10D in an folded position,
 figure 12A-12C are a top view, a cross section and a schematic perspective view respectively of a cot according to a fourth embodiment of the invention in an unfolded position,
 figure 13A-13C are a top view, a cross section and a schematic perspective view respectively of the cot as shown in figure 12A-12C in an folded position,
 figure 14A-14C are a top view, a cross section and a schematic perspective view respectively of a cot according to a fifth embodiment of the invention in an unfolded position,
 figure 15A-15C are a top view, a cross section and a schematic perspective view respectively of the cot as shown in figure 14A-14C in an folded position,
 figure 16A-16B are a top view and a bottom view of a cot according to a sixth embodiment of the invention in an unfolded position.

Like parts are indicated by the same reference numbers in the figures.

DETAILED DESCRIPTION OF EMBODIMENTS

[0033] Figures 1-7D show different views of a collaps-

ible cot 1 according to a first embodiment of the invention. The cot 1 comprises an upper frame 2, a lower frame 3 and flexible sidewalls 4 extending between the upper frame 2 and the lower frame 3. The flexible side walls 4 can be made of a textile like cotton. The frames 2, 3 have a rectangular shape with rounded corners. The lower frame 3 is smaller than the upper frame 2, so that in the folded position (see figure 5) the lower frame 3 can be positioned at least partly in the upper frame 2. Each longitudinal side 5 of the lower frame 3 is provided with a connecting element 6 for detachably connecting the cot 1 to a stroller (not shown). Such connecting pieces are well known in the art and are therefor not further explained.

[0034] The cot 1 is provided with a sun shield 7 being swivelably connected to the upper frame 2 at swivel 8.

[0035] The cot 1 is provided with a mattress located inside the lower frame. In the top view as shown in figure 3, the mattress has been removed to clearly see the connection between the upper frame 2 and the lower frame 3.

[0036] As can be seen in figure 3, the cot 1 comprises two U-shaped members 9, 10. The first member 9 comprises two leg portions 11 and a bridge portion 12 located between the leg portions 11. Remote of the bridge portion 12, ends of the leg portions 11 are pivotably connected at pivots 13 to opposite longitudinal sides 14 of the upper frame 2. The bridge portion 12 is slidably connected to the lower frame 3 as will be explained here below.

[0037] The second member 10 comprises two leg portions 15 and a bridge portion 16 located between the leg portions 15. Remote of the bridge portion 16, ends of the leg portion 15 are pivotably connected at pivots 17 to the opposite longitudinal sides 14 of the upper frame 2. The bridge portion 16 is slidably connected to the lower frame as will be explained here below.

[0038] The leg portions 11, 15 comprise some bended parts to follow the shape of the lower frame.

[0039] The pivots 13, 17 of the two members 9, 10 on the same longitudinal side 14 are spaced apart so that a stable construction is obtained.

[0040] The lower frame 3 is provided with a fixed rod 18 located at a side of the first member 9 opposite to the second member 10, an additional fixed rod 19 located at a side of the second member 10 opposite to the first member 9 and a fixed guiding rod 20 located at a side of the fixed rod opposite to the first member. The rods 18, 19, 20 extend between the longitudinal sides 5. The rods 18, 19, 20 are located in about the same plane as the bridge portions 12, 16 and extend parallel thereto.

[0041] The cot 1 is provided with a strap 21 connected with one end to the bridge portion 12 of the first member 9 and with another end to the bridge portion 16 of the second member 10, which strap 21 extends around the fixed rod 18. In figure 6C a cross section of the figures 3 and 6A in the directions VIC-VIC is shown wherein the path of the strap 21 from the bridge portion 12, in clockwise direction around the fixed rod 18 and towards the bridge portion 16 is clearly visible.

[0042] The cot 1 is provided with two additional strap 22 located on both sides of the strap 21. Each strap 22 is connected with one end to the bridge portion 12 of the first member 9 and with another end to the bridge portion 16 of the second member 10, which strap 22 extends around the additional fixed rod 19. In figure 6B a cross section of the figures 3 and 6A in the directions VIB-VIB is shown wherein the path of the strap 22 from the bridge portion 12, in counterclockwise direction around the additional fixed rod 19 and towards the bridge portion 16 is clearly visible.

[0043] The cot 1 is further provided with an endless actuation strap 23 which is located around the additional fixed rod 19 and the guiding rod 20. The actuation strap 23 is connected at connection 24 to the bridge portion 12 of the first member 9. In figure 6C a cross section of the figures 3 and 6A in the directions VIC-VIC is shown wherein the path of the endless actuation strap 23 around the additional fixed rod 19 and the guiding rod 20 is clearly visible. As can be seen, the strap 21 is located inside the actuation strap 23.

[0044] The actuation strap 23 extends through two slits 25 in the lower frame 2, which slits 25 are located near the additional fixed rod 19 and the guiding rod 20 respectively so that about half of the actuation strap 23 is located on a side of the lower frame 3 directed towards the upper frame 2, whilst the other half of the actuation strap 23 is located on the outer side of the lower frame 3 directed opposite of the upper frame 2. On the outer side the actuation strap 23 is provided with an actuation knob 26 (see figure 4). The actuation knob 26 is guided between two guiding rails 27 extending parallel to each other and to the straps 21, 22, 23.

[0045] The operation of the cot 1 to move from the unfolded position as shown in figures 1, 2, 3, 4, 6A-6D to the folded position as shown in figures 5 and 7A-7D is as follows. The mattress need not to be removed from the cot 1 to fold or unfold the cot.

[0046] A user places its hand 28 (see figure 2) on the actuation knob 26 on the bottom side of the lower frame 3 of the cot 1. The user moves the actuation knob 26 in the direction as indicated by arrow P1 in figure 6C, due to which movement the actuation strap 23 will be moved counterclockwise around the additional fixed rod 19 and the guiding rod 20. At the connection 24 a pulling force F2 will be exerted on the bridge portion 12 due to which the bridge portion 12 will be moved in a direction as indicated by arrow P2, opposite to the direction P1. By moving the bridge portion 12, also the strap 21 will be moved due to which a pulling force F3 will be exerted on the bridge portion 16 of the second member 10 so that the bridge portion 16 will be moved in the direction P1 towards the bridge portion 12 (see figures 7A-7C). By moving the bridge portions 12, 16 towards each other, the members 9, 10 will be pivoted about the pivots 13, 17 in clockwise direction respectively counterclockwise direction (see figure 7D) so that the upper frame 2 will be moved in a controlled manner towards the lower frame

3 to collapse the cot 1.

[0047] During these movements the additional straps 22 will be guided around the additional fixed rod 19 to follow the movements of the bridge portions 12, 16.

[0048] To unfold the cot 1 from the collapsed folded position to the unfolded position, the user places again its hand 28 (see figure 2) on the actuation knob 26 on the bottom side of the lower frame 3 of the cot 1. Now, the user moves the actuation knob 26 in a direction as indicated by arrow P₃ in figure 7C, due to which movement the actuation strap 23 will be moved clockwise around the additional fixed rod 19 and the guiding rod 20. At the connection 24 a pulling force F₄ will be exerted on the bridge portion 12 due to which the bridge portion 12 will be moved in a direction as indicated by arrow P₄, opposite to the direction P₃. By moving the bridge portion 12, also the additional straps 22 will be moved due to which a pulling force F₅ will be exerted on the bridge portion 16 of the second member 10 so that the bridge portion 16 will be moved in the direction P₃ away from the bridge portion 12 (see figures 6A-6C). By moving the bridge portions 12, 16 away from each other, the members 9, 10 will be pivoted about the pivots 13, 17 in counterclockwise direction respectively clockwise direction (see figure 6D) so that the upper frame 2 will be moved in a controlled manner away from the lower frame 3 to the unfolded position of the cot 1.

[0049] During these movements the strap 21 will be guided around the fixed rod 18 to follow the movements of the bridge portions 12, 16.

[0050] As is clear from the above, the strap 21 is being used for exerting a pulling force on the bridge portion 16 when folding the cot 1, whilst the additional straps 22 are being used for exerting a pulling force on the bridge portion 16 when unfolding the cot 1.

[0051] Due to the two additional straps 22 on both sides of the centrally located strap 21 and the centrally located actuation strap 23, the pulling force exerted by the straps 21, 22 on the bridge portions 12, 16 is always applied on the centre of the bridge portions.

[0052] The bridge portions 12, 16 are guided by the straps 21, 22, 23 so that no additional guiding of the bridge portions 12, 16 for a slideable movement with respect to the lower frame 3 is needed.

[0053] This first embodiment has the advantages that by moving one single actuation knob 26 the folding and unfolding of the cot 1 can be realised. Due to the relatively small slits 25 for the actuation strap 23, the construction for moving the members 9, 10 is hidden from view and the stability of the lower frame 3 is hardly affected.

[0054] Figures 8A-9D show different views of a cot 101 according to a second embodiment of the invention. The cot 101 differs from cot 1 that only one additional strap 22 is provided. In this case a central axis 102 of the cot 101 lying symmetrically between the longitudinal sides 5 is located between the actuation strap 23 and the additional strap 22 to obtain a good force distribution on the bridge portions 12, 16.

[0055] The operation of the cot 101 is the same as of the cot 1.

[0056] Figures 10A-11D show different views of a cot 201 according to a third embodiment of the invention. The cot 201 differs from cot 1 that it does not have guiding rod 20, an actuation strap 23 and an actuation knob 25.

[0057] The cot 201 is provided with a strap 21 connected with one end to the bridge portion 12 of the first member 9 and with another end to the bridge portion 16 of the second member 10, which strap 21 extends around the fixed rod 18. In figure 10C a cross section of the figure 10A in the directions XC-XC is shown wherein the path of the strap 21 from the bridge portion 12, in clockwise direction around the fixed rod 18 and towards the bridge portion 16 is clearly visible.

[0058] The cot 201 is provided with two additional strap 22 located on both sides of the strap 21. Each strap 22 is connected with one end to the bridge portion 12 of the first member 9 and with another end to the bridge portion 16 of the second member 10, which strap 22 extends around the additional fixed rod 19. In figure 10B a cross section of the figure 10A in the directions XB-XB is shown wherein the path of the strap 22 from the bridge portion 12, in clockwise direction around the additional fixed rod 19 towards the bridge portion 16 is clearly visible.

[0059] The cot 201 is provided with a longitudinal slot in the lower frame 3 through which a user has access to the bridge portion 12. In order to collapse the cot 201 from the position as shown in figures 10A-10D, the user moves the bridge portion 12 in a direction as indicated by arrow P201 due to which the bridge portion 16 will be pulled by strap 21 towards the bridge portion 12 and the members 9, 10 will be pivoted towards each other so that the cot 201 will fold (see figures 11A-11D).

[0060] To unfold the cot 201 from the position as shown in figures 11A-11D, the user moves the bridge portion 12 in a direction as indicated by arrow P202 due to which the bridge portion 16 will be pulled by the additional strap 22 away from the bridge portion 12 and the members 9, 10 will be pivoted away from each other so that the cot 201 will unfold (see figures 10A-10D).

[0061] Figures 12A-13C show different views of a cot 301 according to a fourth embodiment of the invention. The cot 301 differs from cot 1 that it does only has a fixed rod 18 and a strap 21 to move the members 9, 10. The bridge portions 12, 16 comprise extensions directed towards the longitudinal slides 5. The extensions are being guided in slots in the longitudinal sides 5.

[0062] The cot 301 is provided with a strap 21 connected with one end to the bridge portion 12 of the first member 9 and with another end to the bridge portion 16 of the second member 10, which strap 21 extends around the fixed rod 18. In figure 12B a side view of the figure 12A is shown wherein the path of the strap 21 from the bridge portion 12, in clockwise direction around the fixed rod 18 and towards the bridge portion 16 is clearly visible.

[0063] The cot 301 is provided with two longitudinal slots in the lower frame 3 through which a user has access

to the bridge portion 12 and to the bridge portion 16.

[0064] In order to collapse the cot 301 from the position as shown in figures 12A-12C, the user moves the bridge portion 12 in a direction as indicated by arrow P301 due to which the bridge portion 16 will be pulled by strap 21 towards the bridge portion 12 and the members 9, 10 will be pivoted towards each other so that the cot 301 will fold (see figures 13A-13C).

[0065] To unfold the cot 301 from the position as shown in figures 13A-13C, the user moves the bridge portion 16 in a direction as indicated by arrow P301 due to which the bridge portion 12 will be pulled by the strap 21 away from the bridge portion 16 and the members 9, 10 will be pivoted away from each other so that the cot 301 will unfold (see figures 12A-12C).

[0066] Figures 14A-15C show different views of a cot 401 according to a fifth embodiment of the invention. The lower frame 3 of the cot 401 is provided with a fixed rod 18 and an additional fixed rod 19 between which the bridge portions 12, 16 of the members 9, 10 are located. A endless strap 402 is connected to both the bridge members 12, 16 and extends around the fixed rods 18, 19. Like the endless actuation strap 23, the strap 402 extends through slits in the lower frame 3 and is provided with an actuation knob 403 at the bottom of the lower frame 3.

[0067] In order to collapse the cot 401 from the position as shown in figures 14A-14C, the user moves the actuation knob 403 in a direction as indicated by arrow P401 due to which both bridge portions 12, 16 will be pulled by strap 402 in a direction as indicated by arrow P402 so that both members 9, 10 will be pivoted counterclockwise and the cot 401 will fold (see figures 15A-15C).

[0068] To unfold the cot 401 from the position as shown in figures 15A-15C, the user moves actuation knob 403 in a direction as indicated by arrow P403 due to which both bridge portions 12, 16 will be pulled by strap 402 in a direction as indicated by arrow P404 so that both members 9, 10 will be pivoted clockwise and the cot 401 will unfold (see figures 14A-14C).

[0069] Figures 16A and 16B show a top view and bottom view of a collapsible cot 501 according to a sixth embodiment of the invention. The cot 31 is similar to the cot i, in that it also comprises an upper frame 2, a lower frame 3, flexible sidewalls 4, connecting elements 6 and two U-shaped members 9, 10. The first member 9 comprises two leg portions 11 and a bridge portion 12 located between the leg portions 11. The second member 10 comprises two leg portions 15 and a bridge portion 16 located between the leg portions 15.

[0070] The cot 501 differs from the cot 1 in that each member 9, 10 is provided with a threaded rod 502, 503, which extend parallel to the longitudinal direction of the cot 501. Between the two threaded rods 502, 503 a gear wheel 504 is located being in mesh with the two threaded rods 502, 503. The gear wheel 504 is pivotable with respect to the lower frame 3 about a pivot axis 505. The pivot axis 505 extends through the bottom of the lower frame 3 and is provided on the side remote of the upper

frame 2 with a actuation knob 506. By rotating the actuation knob 506 in a direction indicated by arrow P501, the threaded rods 502, 503 are being moved in longitudinal direction, whereby the bridge portions 12, 16 will be moved towards each other and the cot 501 will be folded.

[0071] By rotating the actuation knob 506 in a direction opposite to the direction as indicated by arrow P501, the bridge portions 12, 16 will be moved away from each other, wherein the cot 501 will be unfolded.

[0072] By the embodiments as shown in figures 1-13, the members 9, 10 are being pivoted towards each other to collapse the cot. However, it is also possible to pivot the members away from each other to collapse the cot, in which case the bridge portions 12, 16 are located closer to each other in the unfolded position than in the folded position. The same constructions can be used for moving the members 9, 10 but will be operated in opposite manner. For example, in the unfolded position, the straps, rods and members will be in the position as shown in figures 7A-7D, whereby the legs 13, 15 of the members 9, 10 will extend upright. To fold the cot, the bridge portions 12, 16 will be moved to the positions as shown in figures 6a-6D, whereby the member 9 will be pivoted in a counterclockwise direction, whilst the member 10 will be pivoted in a clockwise direction. In the unfolded position, the pivots 13, 17 will be located relatively close to each other so that the cot will be less stable than the cot 1.

[0073] It is possible to provide the actuation knob with locking means which need to be unlocked before the actuation knob can be moved.

[0074] It is also possible to provide the lower frame with locking means for locking bridge portion 12, bridge portion 16 or both bridge portions 12, 16 in the unfolded position and/or folded position, which locking means can be operated from outside the lower frame.

[0075] It is also possible to extend a bridge portion through a slit to outside the lower frame 3, wherein a user can use the extension to move the bridge portion with respect to the lower frame.

[0076] Instead of U-shaped members it is also possible to use a number of L-shaped members, whereby a first leg portion is pivotably connected to the upper frame 2, whilst a second leg portion is slidably movable with respect to the lower frame 3.

Claims

1. A collapsible cot (1) comprising at least an upper frame (2), a lower frame (3) providable inside with a mattress, flexible sidewalls (4) extending between the upper frame (2) and the lower frame (3), and at least two members (9, 10) being pivotably connected at pivots to the upper frame (2) and slideably movable with respect to the lower frame (3), wherein all members (9, 10) are coupled to each other to simultaneously move the members (9, 10) with respect to

the lower frame (3) from an unfolded position wherein the upper frame (2) and the lower frame (3) are spaced apart by the members (9, 10) to a folded position wherein the upper frame (2) and the lower frame (3) are located relatively close to each other and vice versa, **characterized in that** all members (9, 10) are coupled to an actuation member (26, 403, 506) being accessible from the outside of the cot (1), which actuation member (26, 403, 506) extends through the lower frame or through at least one of the sidewalls or is accessible via an opening or slit in the lower frame, whereby in use by means of operating the actuation member (26, 403, 506) all members (9, 10) are simultaneously movable with respect to the lower frame without the need to remove said providable mattress from the cot (1).

2. A collapsible cot (1) according to claim 1, **characterized in that** each member (9, 10) comprises two leg portions (11, 15) and a bridge portion (12, 16) located between the leg portions (11, 15), wherein ends of the leg portions (11, 15) remote of the bridge portion (12, 16) are pivotably connected to the upper frame (2), whilst the bridge portion (12, 16) is slidably movable with respect to the lower frame (3).

3. A collapsible cot (1) according to claim 1 or 2, **characterized in that** near the lower frame (3) the members (9, 10) are movable towards each other to move from the unfolded position to the folded position, whilst the members (9, 10) are movable away from each other to move from the folded position to the unfolded position or vice versa.

4. A collapsible cot (1) according to claim 3, **characterized in that** the lower frame (3) comprises at least a fixed rod (18) located at a side of the first of the two members (9) opposite to the second of the two members (10) as well as a strap (21) connected with ends to the first member (9) and the second member (10), which strap (21) extends around the fixed rod (18), wherein by moving the first member (9) towards the second member (10), the second member (10) is pulled towards the first member (9) by the strap (21), whilst by moving the second member (10) away from the first member (9), the first member (9) is pulled away from the second member (10) by the strap (21).

5. A collapsible cot (1) according to claim 4, **characterized in that** the lower frame (3) comprises at least an additional fixed rod (19) located at a side of the second member (10) opposite to the first members (9) as well as an additional strap (22) connected with ends to the first member (9) and the second member (10), which additional strap (22) extends around the additional fixed rod (19), wherein by moving the first member (9) towards the second member (10), the

second member (10) is pulled towards the first member (9) by the strap (21), whilst by moving the first member (9) away from the second member (10), the second member (10) is pulled away from the first member (9) by the additional strap (22).

6. A collapsible cot (1) according to claim 5, **characterized in that** the lower frame (3) comprises at least a fixed guided rod (20) located at a side of the fixed rod (18) opposite to the first member (9) as well as an endless actuation strap (23) which is located around the additional fixed rod (18) and the guided rod (20), which actuation strap (23) is connected to the first member (9).
7. A collapsible cot (1) according to claim 6, **characterized in that** the actuation strap (23) is provided with an actuation knob located at a side of the lower frame (3) opposite to the upper frame (2).
8. A collapsible cot (1) according to one of the preceding claims 1-3, **characterized in that** each (9, 10) member is provided with a threaded rod (502, 503), whilst an actuation knob (506) is provided with a gear wheel (504), which cooperates with the threaded rods (502, 503), wherein by rotating the gear wheel (504) by means of the actuation knob (506), the threaded rods (502, 503) and the members (9, 10) connected thereto are slideably movable with respect to the lower frame (3).
9. A collapsible cot (1) according to one of the preceding claims, **characterized in that** the cot (1) can be locked in the folded and/or unfolded position.
10. A collapsible cot (1) according to one of the preceding claims, **characterized in that** the cot (1) is provided with means for detachably connect the cot (1) to a stroller frame.

Patentansprüche

1. Zusammenklappbare Liege (1) mit mindestens einem oberen Rahmen (2), einem unteren Rahmen (3), der auf seiner Innenseite mit einer Matratze ausgestattet werden kann, mit flexiblen Seitenwänden (4), die zwischen dem oberen Rahmen (2) und dem unteren Rahmen (3) verlaufen, und mit mindestens zwei Bauteilen (9, 10), die an Drehzapfen schwenkbar mit dem oberen Rahmen (2) verbunden werden können und bezüglich des unteren Rahmens (3) gleitend beweglich sind, wobei alle Bauteile (9, 10) miteinander gekoppelt sind, um sie bezüglich des unteren Rahmens (3) gleichzeitig aus einer entfalteten Lage, in der oberer Rahmen (2) und unterer Rahmen (3) durch die Bauteile (9, 10) beabstandet sind, in eine gefaltete Lage, in der oberer Rahmen (2) und

unterer Rahmen (3) relativ nahe beieinander liegen, und umgekehrt zu bewegen, **dadurch gekennzeichnet, dass** alle Bauteile (9, 10) an ein Betätigungselement (26, 403, 506) gekoppelt sind, das von der Außenseite der Liege (1) zugänglich ist, wobei das Betätigungselement (26, 403, 506) durch den unteren Rahmen oder durch wenigstens eine Seitenwand verläuft oder durch eine Öffnung oder einen Schlitz im unteren Rahmen zugänglich ist, wobei im Gebrauch mittels Betätigung des Betätigungselements (26, 403, 506) alle Bauteile (9, 10) gleichzeitig bezüglich des unteren Rahmens beweglich sind, ohne dass die vorgesehene Matratze von der Liege (1) entfernt zu werden braucht.

2. Zusammenklappbare Liege (1) nach Anspruch 1, **dadurch gekennzeichnet, dass** jedes Bauteil (9, 10) zwei Stützteile (11, 15) und ein zwischen den Stützteilen (11, 15) angebrachtes Brückenteil (12, 16) umfasst, wobei die vom Brückenteil (12, 16) entfernten Enden der Stützteile (11, 15) schwenkbar mit dem oberen Rahmen (2) verbunden sind, während das Brückenteil (12, 16) bezüglich des unteren Rahmens (3) gleitfähig bewegbar ist.
3. Zusammenklappbare Liege (1) nach Anspruch 1 oder 2, **dadurch gekennzeichnet, dass** die Bauteile (9, 10) nahe beim unteren Rahmen (3) aufeinander zu beweglich sind, um sich aus der entfalteten in die gefaltete Lage zu bewegen, während die Bauteile (9, 10) voneinander weg beweglich sind, um sich aus der gefalteten in die entfalteten Lage zu bewegen, oder umgekehrt.
4. Zusammenklappbare Liege (1) nach Anspruch 3, **dadurch gekennzeichnet, dass** der untere Rahmen (3) mindestens einen fixierten Stab (18), der auf der dem zweiten der beiden Bauteile (10) gegenüberliegenden Seite des ersten der beiden Bauteile (9) angebracht ist, sowie einen mit den Enden mit dem ersten Bauteil (9) und dem zweiten Bauteil (10) verbundenen Gurt (21) umfasst, wobei der Gurt (21) um den fixierten Stab (18) verläuft, wobei durch Bewegen des ersten Bauteils (9) auf das zweite Bauteil (10), zu das zweite Bauteil (10) durch den Gurt (21) zum ersten Bauteil (9) hingezogen wird, während durch Bewegen des zweiten Bauteils (10) vom ersten Bauteil (9) weg, das erste Bauteil (9) durch den Gurt (21) vom zweiten Bauteil (10) weg gezogen wird.
5. Zusammenklappbare Liege (1) nach Anspruch 4, **dadurch gekennzeichnet, dass** der untere Rahmen (3) mindestens einen weiteren fixierten Stab (19), der auf der dem ersten Bauteil (9) gegenüberliegenden Seite des zweiten Bauteils (10) angebracht ist, sowie einen weiteren, mit den Enden mit dem ersten Bauteil (9) und dem zweiten Bauteil (10)

verbundenen Gurt (22) umfasst, wobei der weitere Gurt (22) um den weiteren fixierten Stab (19) verläuft, wobei durch Bewegen des ersten Bauteils (9) auf das zweite Bauteil (10) zu, das zweite Bauteil (10) durch den Gurt (21) zum ersten Bauteil (9) hin gezogen wird, während durch Bewegen des ersten Bauteils (9) weg vom zweiten Bauteil (10), das zweite Bauteil (10) durch den weiteren Gurt (22) vom ersten Bauteil (9) weg gezogen wird.

6. Zusammenklappbare Liege (1) nach Anspruch 5, **dadurch gekennzeichnet, dass** der untere Rahmen (3) mindestens einen fixierten geführten Stab (20), der auf der dem ersten Bauteil (9) gegenüberliegenden Seite des fixierten Stabs (18) angebracht ist, sowie einen endlosen Betätigungsgurt (23), der um den weiteren fixierten Stab (18) und den geführten Stab (20) verläuft, umfasst, wobei der Betätigungsgurt (23) mit dem ersten Bauteil (9) verbunden ist.
7. Zusammenklappbare Liege (1) nach Anspruch 6, **dadurch gekennzeichnet, dass** das Betätigungsgurt (23) mit einem Betätigungsknopf versehen ist, der auf der dem oberen Rahmen (2) gegenüberliegenden Seite des unteren Rahmens (3) angebracht ist.
8. Zusammenklappbare Liege (1) nach einem der vorangehenden Ansprüche 1 bis 3, **dadurch gekennzeichnet, dass** jedes Bauteil (9, 10) mit einem Gewindestab (502, 503) versehen ist, während ein Betätigungsknopf (506) mit einem Zahnrad (504) versehen ist, welches mit den Gewindestäben (502, 503) zusammenwirkt, wobei durch Drehung des Zahnrads (504) mittels des Betätigungsknopfes (506) die Gewindestäbe (502, 503) und die mit diesen verbundenen Bauteile (9, 10) bezüglich des unteren Rahmens (3) gleitend bewegbar sind.
9. Zusammenklappbare Liege (1) nach einem der vorangehenden Ansprüche, **dadurch gekennzeichnet, dass** die Liege (1) in gefalteter und/oder entfalteter Lage verriegelt werden kann.
10. Zusammenklappbare Liege (1) nach einem der vorangehenden Ansprüche, **dadurch gekennzeichnet, dass** die Liege (1) mit Mitteln zum lösbaren Verbinden der Liege (1) mit dem Rahmen eines Sportwagens versehen ist.

Revendications

1. Berceau pliable (1) comprenant au moins un cadre supérieur (2), un cadre inférieur (3) pouvant être pourvu d'un matelas en son intérieur, des parois latérales flexibles (4) s'étendant entre le cadre supé-

rieur (2) et le cadre inférieur (3), et au moins deux éléments (9, 10) étant raccordés de façon pivotante au niveau de pivots au cadre supérieur (2) et mobiles de façon coulissante par rapport au cadre inférieur (3), dans lequel tous les éléments (9, 10) sont couplés les uns aux autres pour déplacer simultanément les éléments (9, 10) par rapport au cadre inférieur (3) d'une position dépliée dans laquelle le cadre supérieur (2) et le cadre inférieur (3) sont espacés par les éléments (9, 10) à une position pliée dans laquelle le cadre supérieur (2) et le cadre inférieur (3) sont situés relativement proches l'un de l'autre et vice versa, **caractérisé en ce que** tous les éléments (9, 10) sont couplés à un élément d'actionnement (26, 403, 506) auquel on peut accéder depuis l'extérieur du berceau (1), lequel élément d'actionnement (26, 403, 506) s'étend à travers le cadre inférieur ou à travers au moins l'une des parois latérales ou est accessible via une ouverture ou une fente dans le cadre inférieur, de sorte que en utilisation au moyen de la mise en oeuvre de l'élément d'actionnement (26, 403, 506), tous les éléments (9, 10) sont simultanément mobiles par rapport au cadre inférieur sans qu'il soit nécessaire d'enlever ledit matelas pouvant être pourvu du berceau (1).

2. Berceau pliable (1) selon la revendication 1, **caractérisé en ce que** chaque élément (9, 10) comprend deux portions de branche (11, 15) et une portion de pont (12, 16) située entre les portions de branche (11, 15), dans lequel des extrémités des portions de branche (11, 15) à distance de la portion de pont (12, 16) sont raccordées de façon pivotante au cadre supérieur (2), alors que la portion de pont (12, 16) est mobile de façon coulissante par rapport au cadre inférieur (3).
3. Berceau pliable (1) selon la revendication 1 ou 2, **caractérisé en ce qu'**à proximité du cadre inférieur (3), les éléments (9, 10) sont mobiles l'un vers l'autre pour se déplacer de la position dépliée à la position pliée, alors que les éléments (9, 10) sont mobiles en éloignement l'un de l'autre pour se déplacer de ladite position pliée à la position dépliée ou vice versa.
4. Berceau pliable (1) selon la revendication 3, **caractérisé en ce que** le cadre inférieur (3) comprend au moins une tige fixe (18) située au niveau d'un côté du premier des deux éléments (9) opposé au second des deux éléments (10) ainsi qu'une sangle (21) raccordée au niveau des extrémités du premier élément (9) et du second élément (10), laquelle sangle (21) s'étend autour de la tige fixe (18), dans lequel en déplaçant le premier élément (9) vers le second élément (10), le second élément (10) est tiré vers le premier élément (9) par la sangle (21), alors qu'en déplaçant le second élément (10) en éloignement du premier élément (9), le premier élément (9) est

tiré en éloignement du second élément (10) par la sangle (21).

5. Berceau pliable (1) selon la revendication 4, **caractérisé en ce que** le cadre inférieur (3) comprend au moins une tige fixe supplémentaire (19) située au niveau d'un côté du second élément (10) opposé aux premiers éléments (9) ainsi qu'une sangle supplémentaire (22) raccordée au niveau des extrémités du premier élément (9) et du second élément (10), laquelle sangle supplémentaire (22) s'étend autour de la tige fixe supplémentaire (19), dans lequel en déplaçant le premier élément (9) vers le second élément (10), le second élément (10) est tiré vers le premier élément (9) par la sangle (21), alors qu'en déplaçant le premier élément en éloignement du second élément (10), le second élément (10) est tiré en éloignement du premier élément (9), par la sangle supplémentaire (22).

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6. Berceau pliable (1) selon la revendication 5, **caractérisé en ce que** le cadre inférieur (3) comprend au moins une tige guidée fixe (20) située au niveau d'un côté de la tige fixe (18) opposée au premier élément (9) ainsi qu'une sangle d'actionnement sans fin (23) qui est située autour de la tige fixe supplémentaire (18) et de la tige guidée (20), laquelle sangle d'actionnement (23) est raccordée au premier élément (9).

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7. Berceau pliable (1) selon la revendication 6, **caractérisé en ce que** la sangle d'actionnement (23) est dotée d'une molette d'actionnement située au niveau d'un côté du cadre inférieur (3) opposé au cadre supérieur (2).

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8. Berceau pliable (1) selon l'une des revendications 1 à 3 précédentes, **caractérisé en ce que** chaque élément (9, 10) est doté d'une tige filetée (502, 503), alors qu'une molette d'actionnement (506) est dotée d'une roue d'engrenage (504), qui coopère avec les tiges filetées (502, 503), dans lequel en mettant en rotation la roue d'engrenage (504) au moyen de la molette d'actionnement (506), les tiges filetées (502, 503) et les éléments (9, 10) raccordés à celles-ci sont mobiles de façon coulissante par rapport au cadre inférieur (3).

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9. Berceau pliable (1) selon l'une des revendications précédentes, **caractérisé en ce que** le berceau (1) peut être verrouillé dans la position dépliée et/ou pliée.

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10. Berceau pliable (1) selon l'une des revendications précédentes, **caractérisé en ce que** le berceau (1) est doté d'un moyen permettant de raccorder le berceau (1) de façon détachable à un cadre de poussette.

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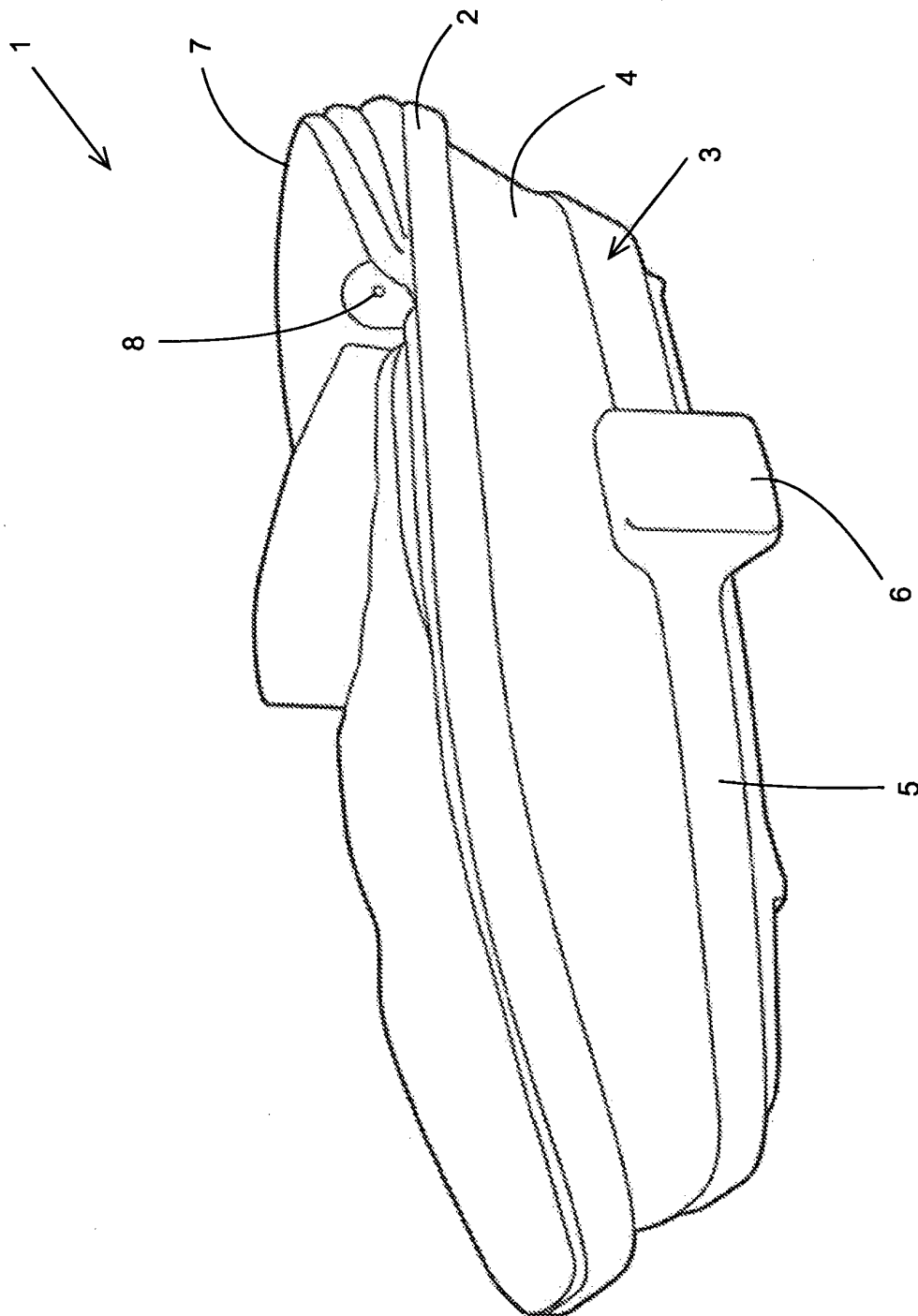


Fig. 1

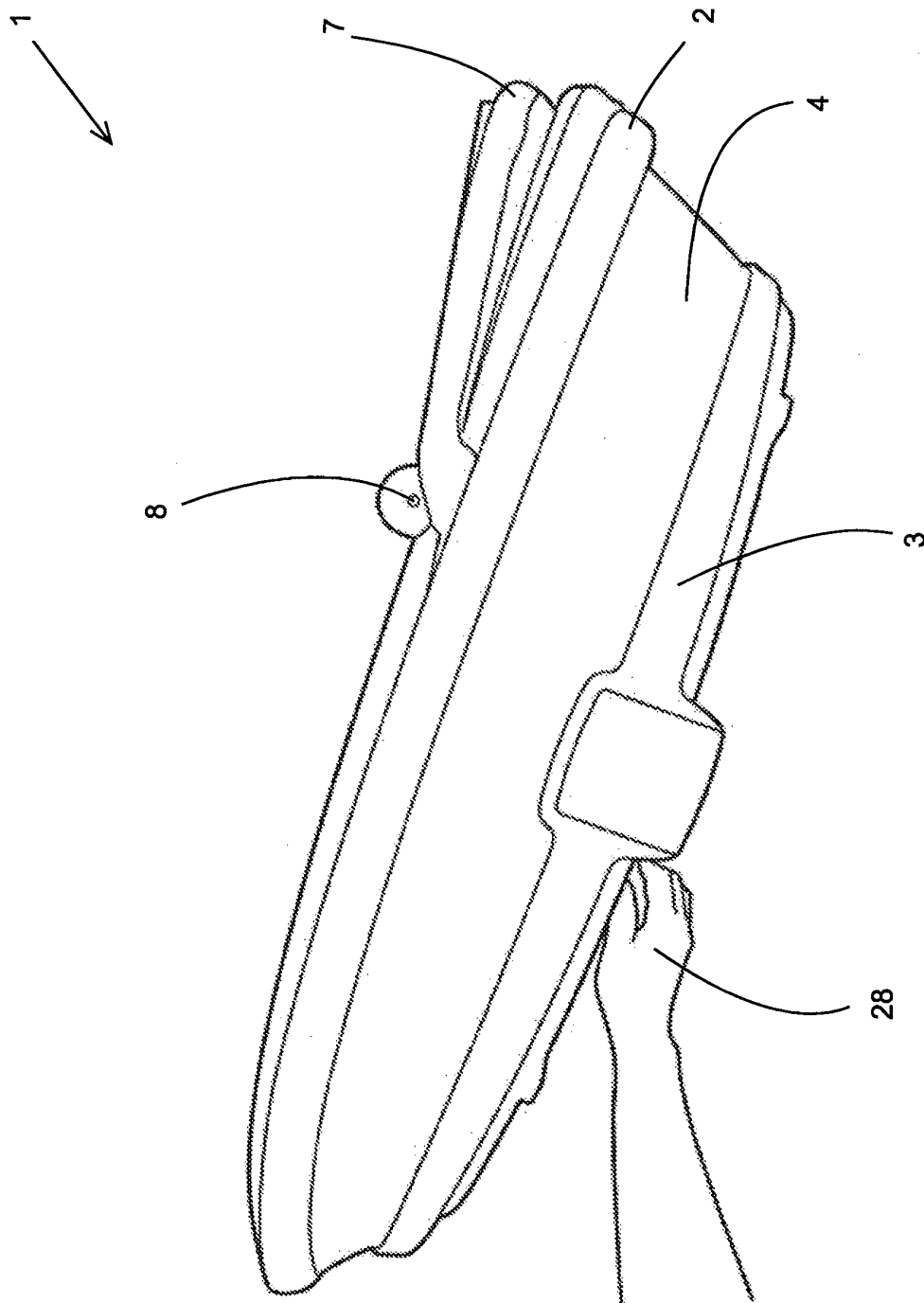


Fig. 2

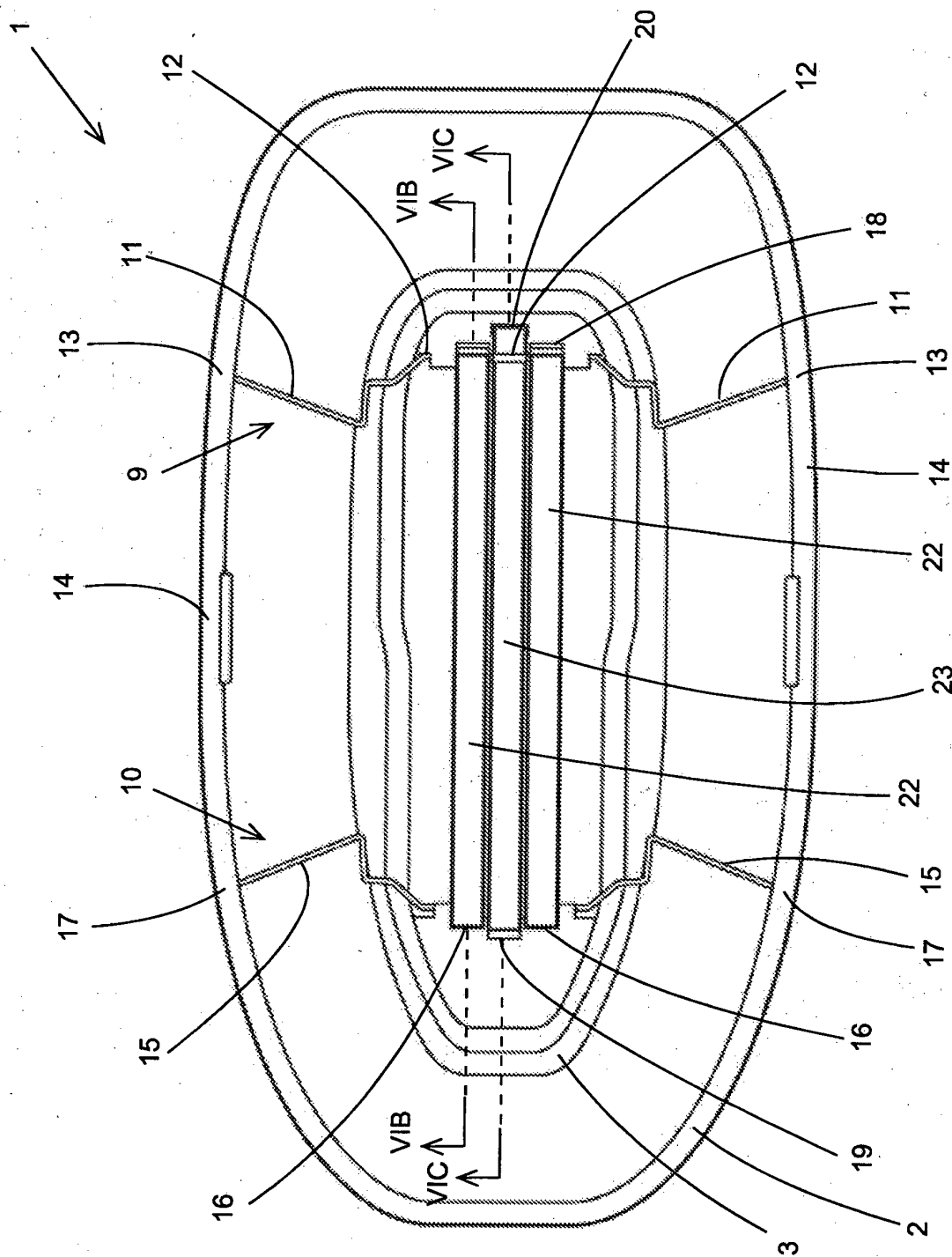


Fig. 3

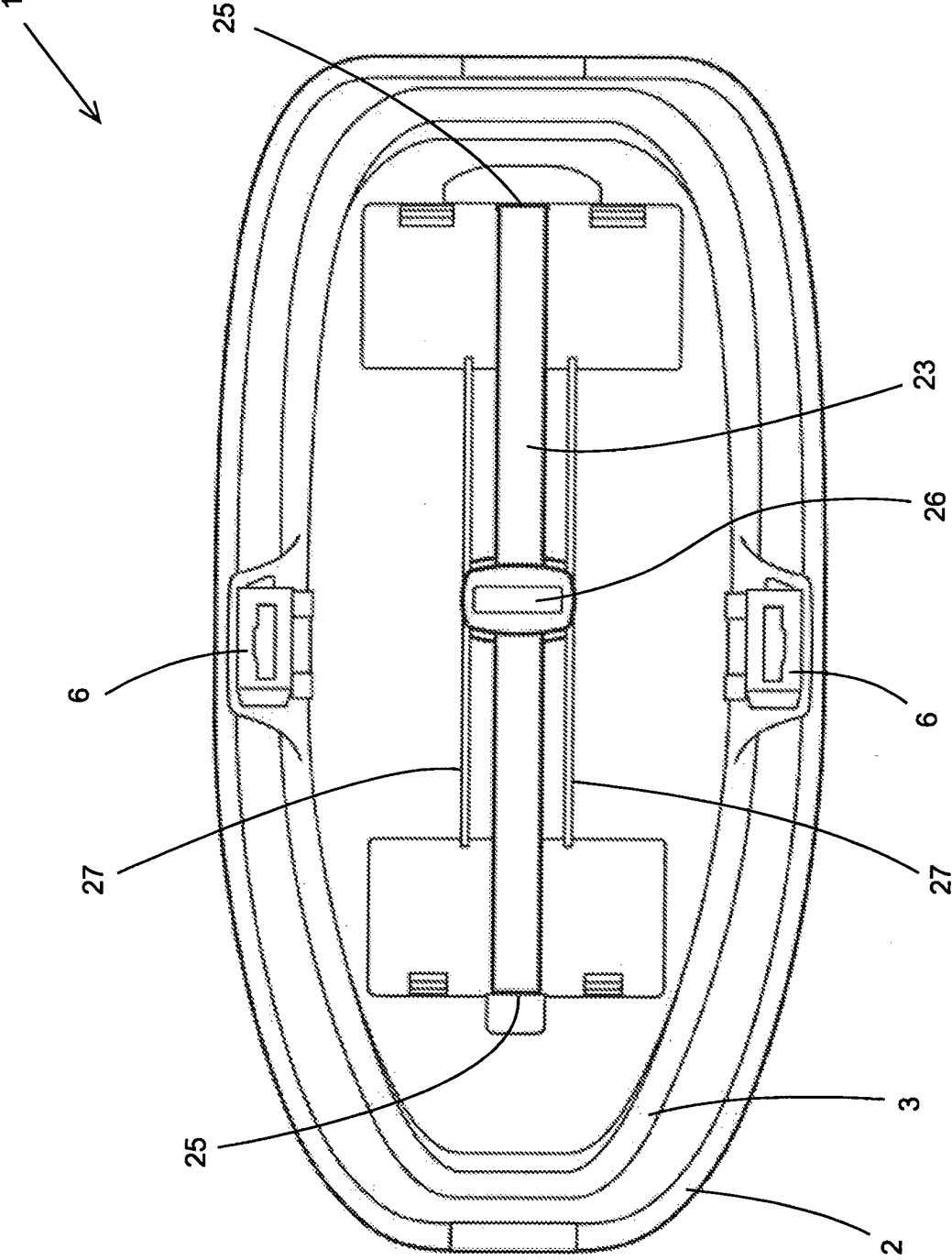


Fig. 4

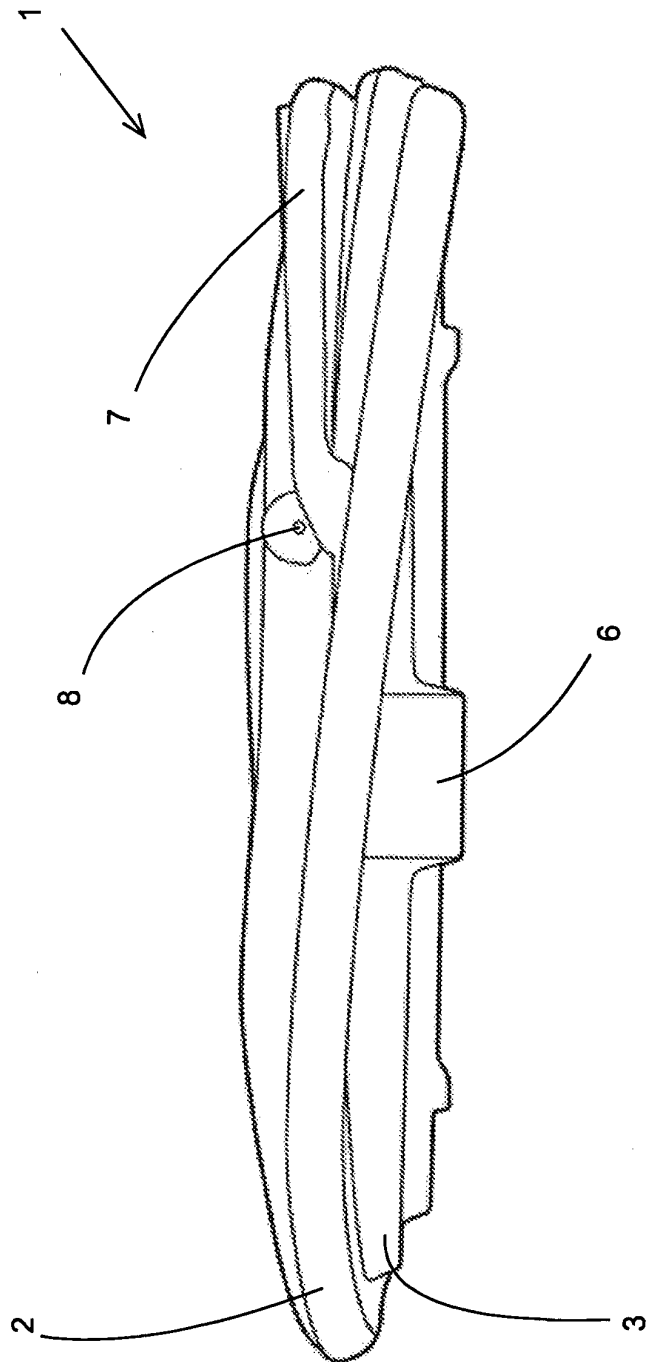


Fig. 5

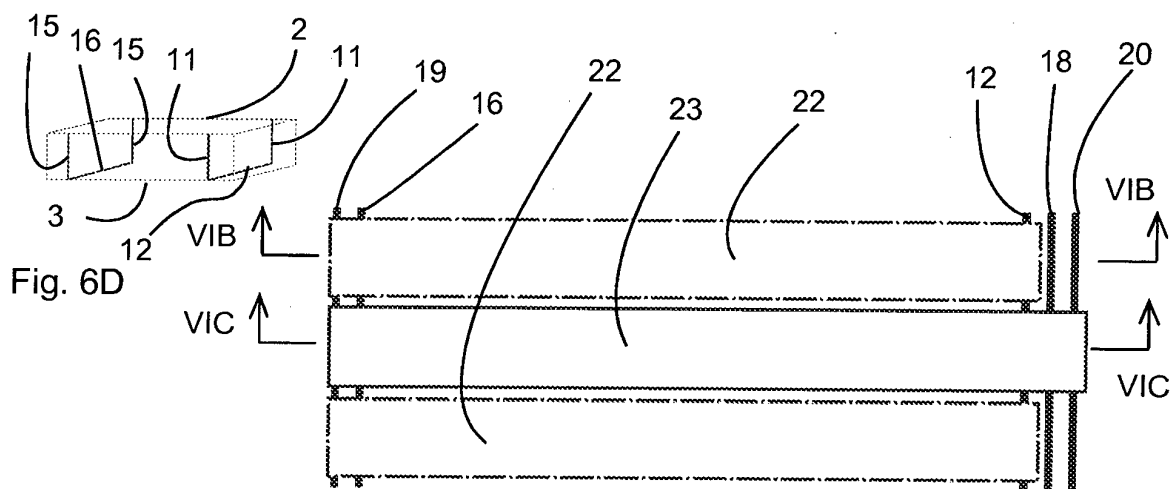


Fig. 6A

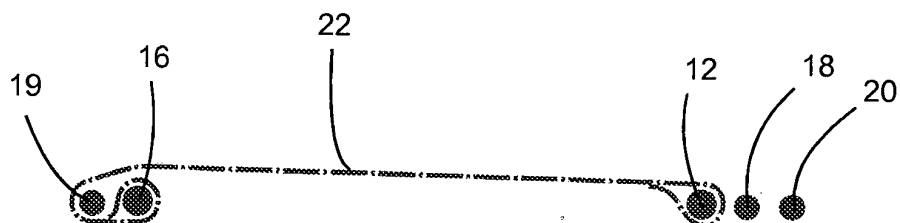


Fig. 6B

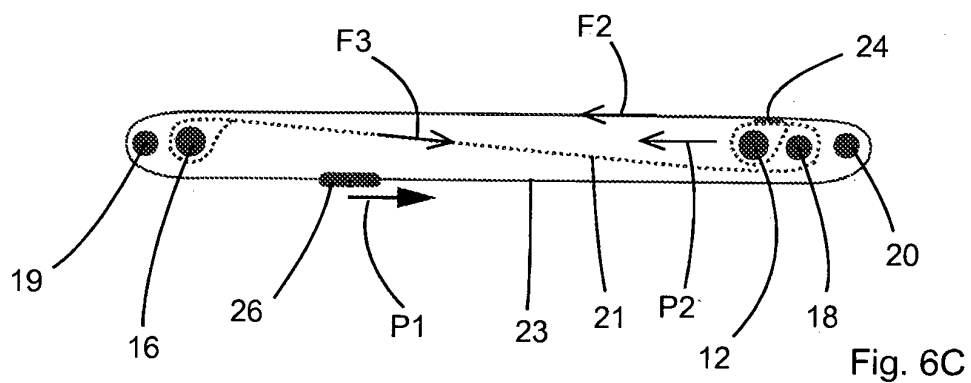
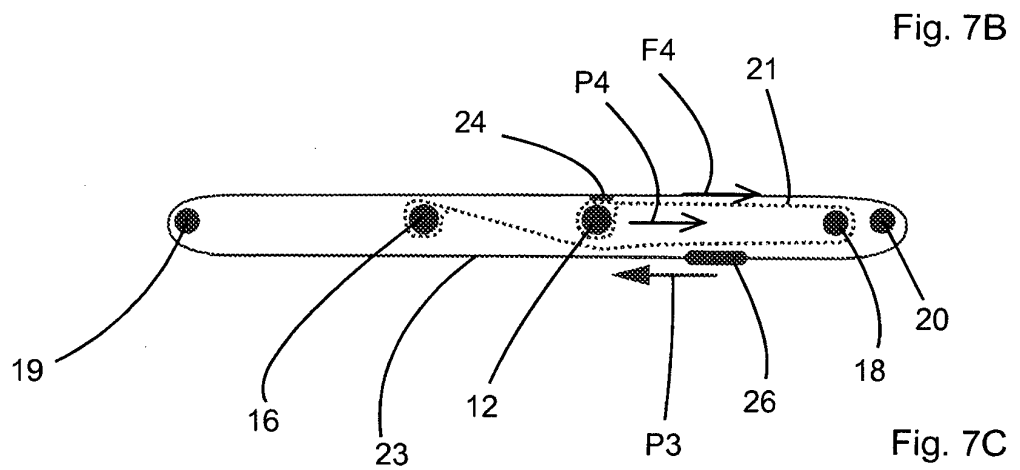
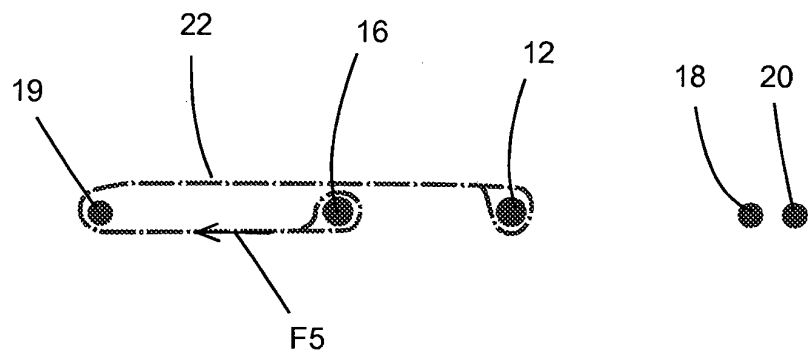
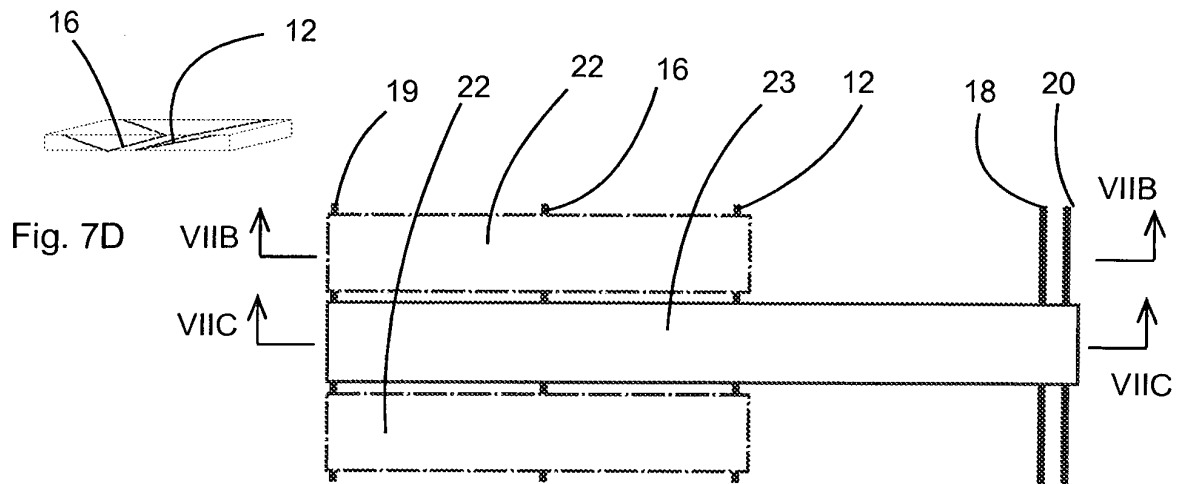


Fig. 6C



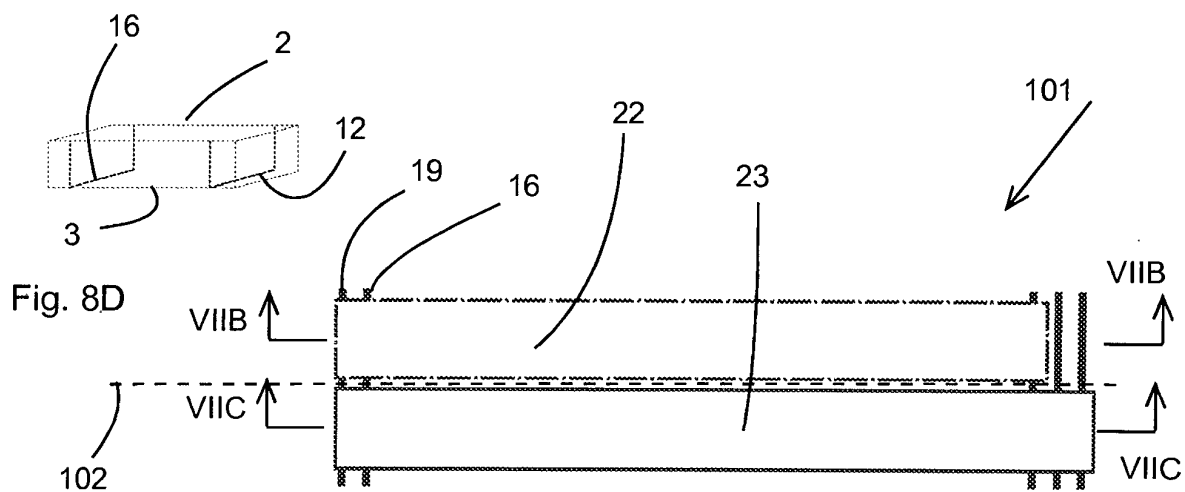


Fig. 8A

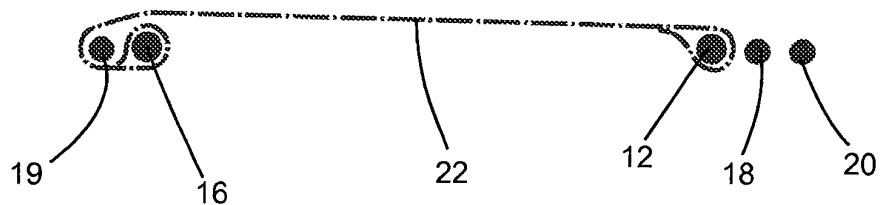


Fig. 8B

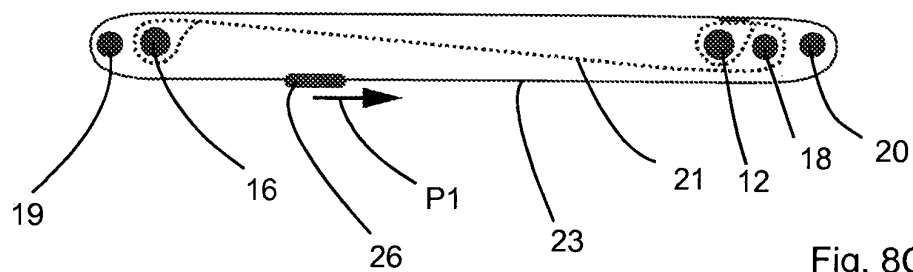


Fig. 8C

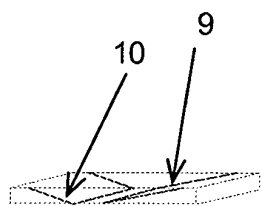


Fig. 9D

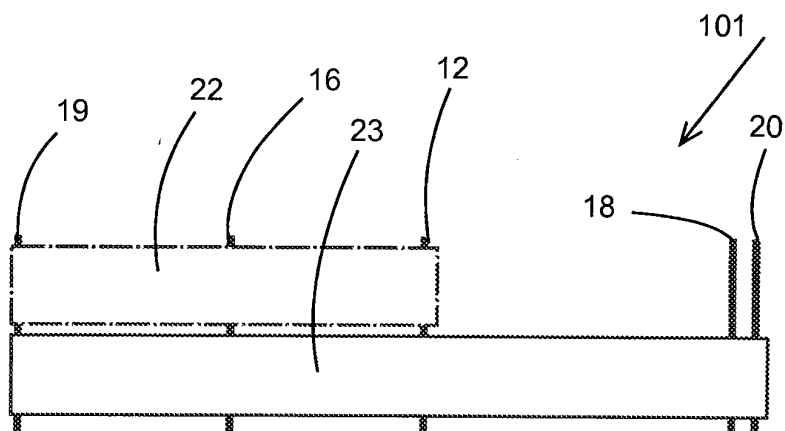


Fig. 9A

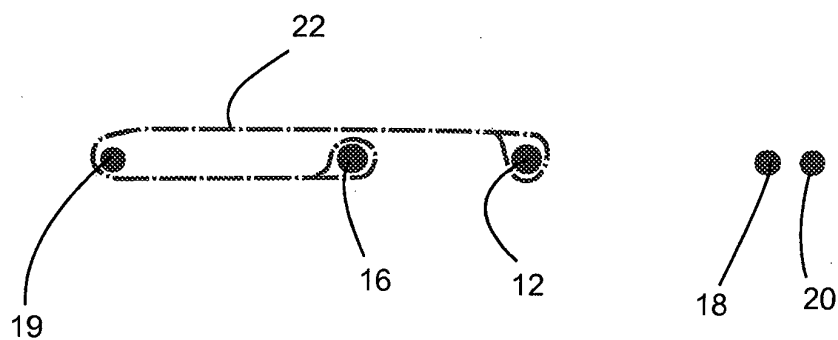


Fig. 9B

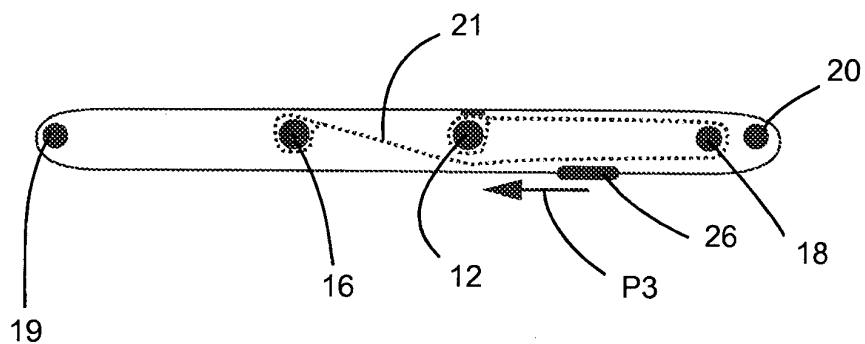


Fig. 9C

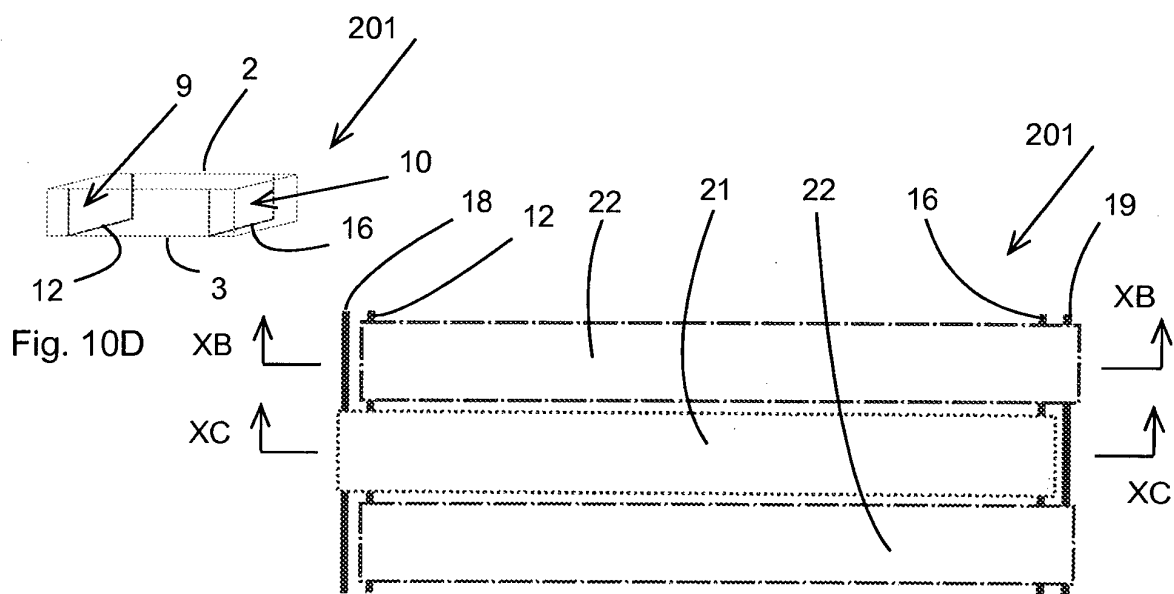


Fig. 10A

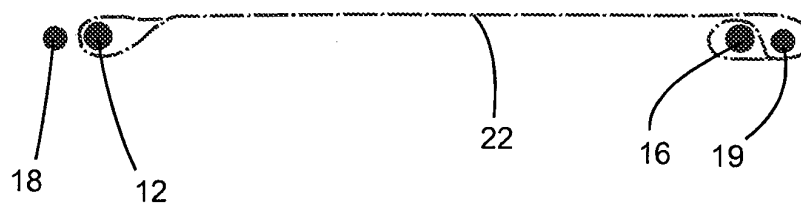


Fig. 10B

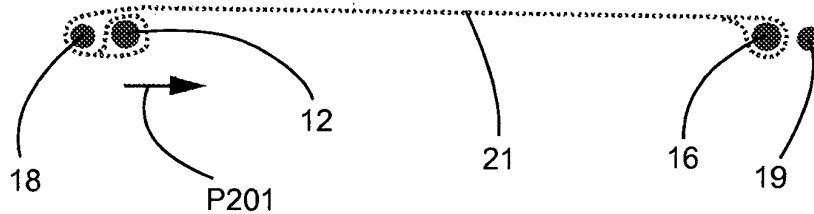
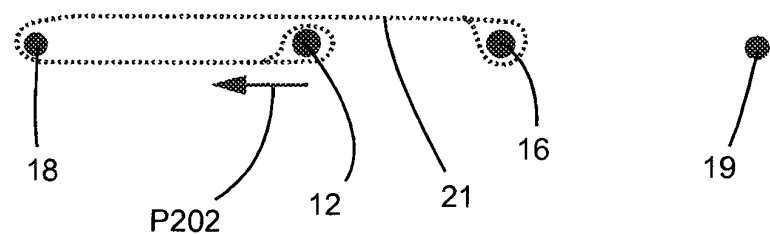
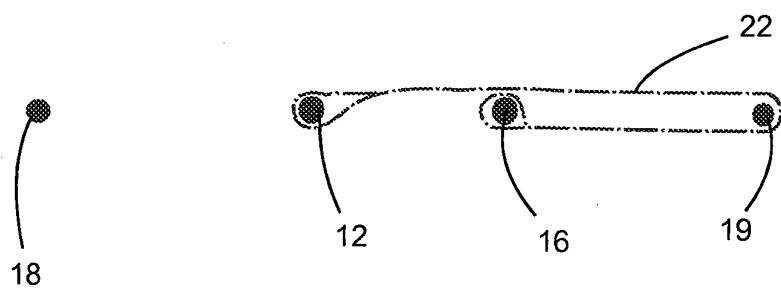
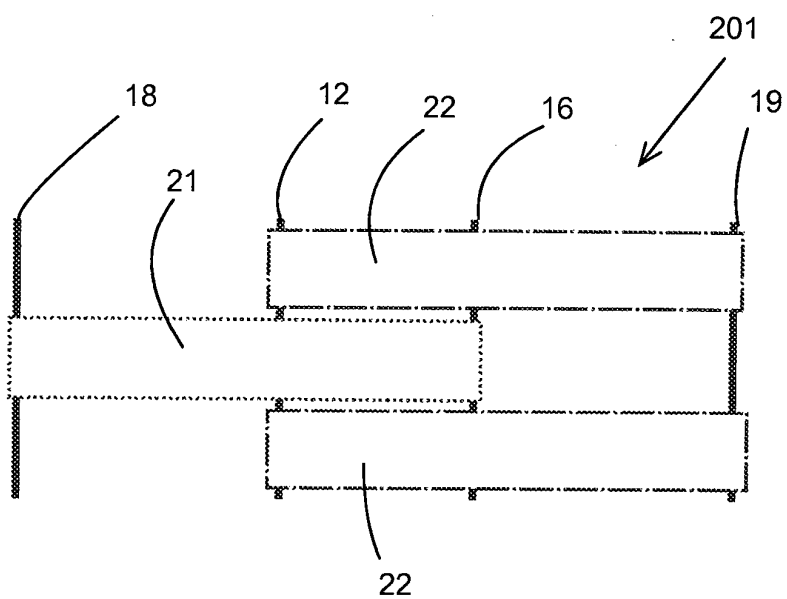
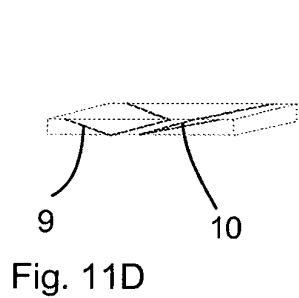
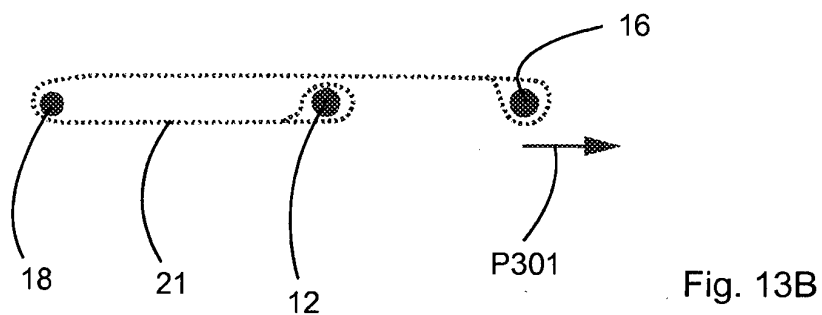
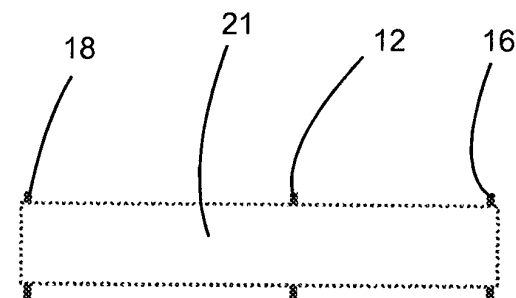
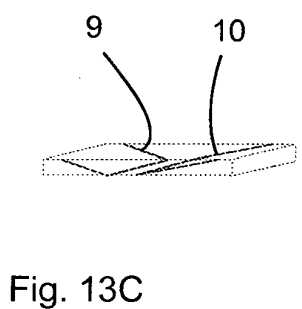
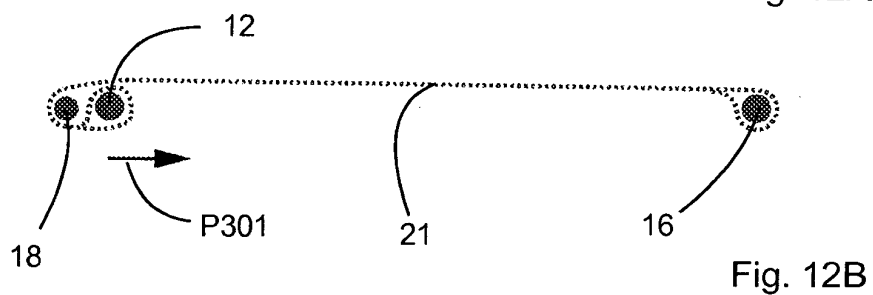
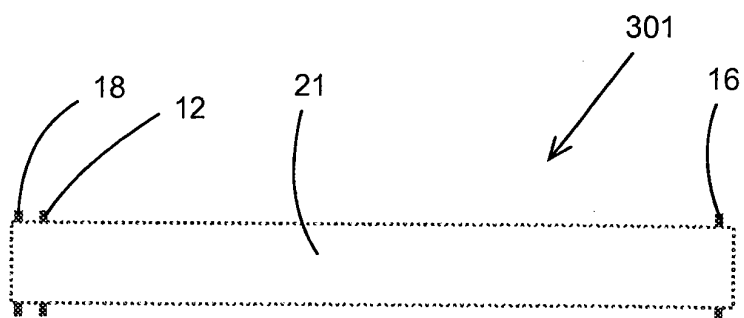
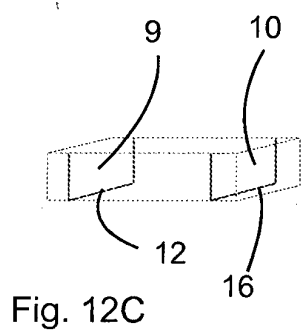
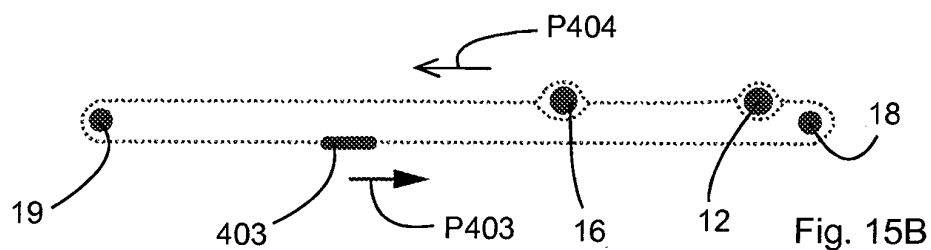
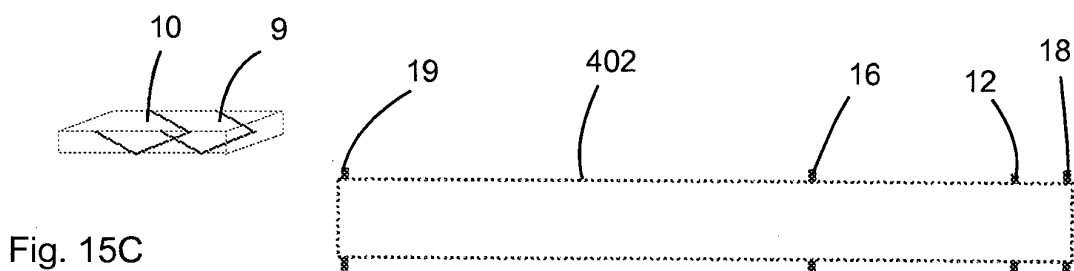
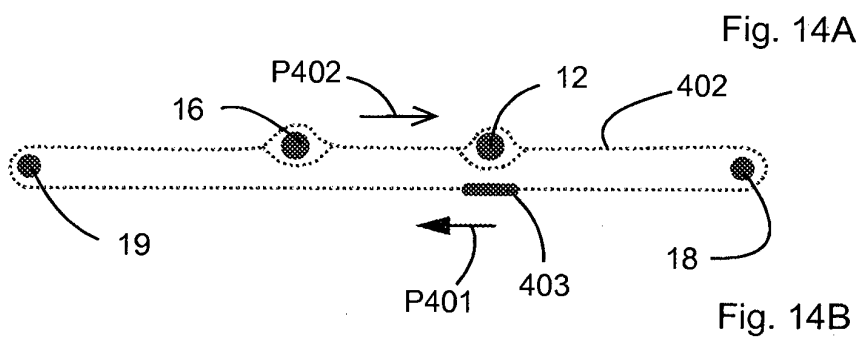
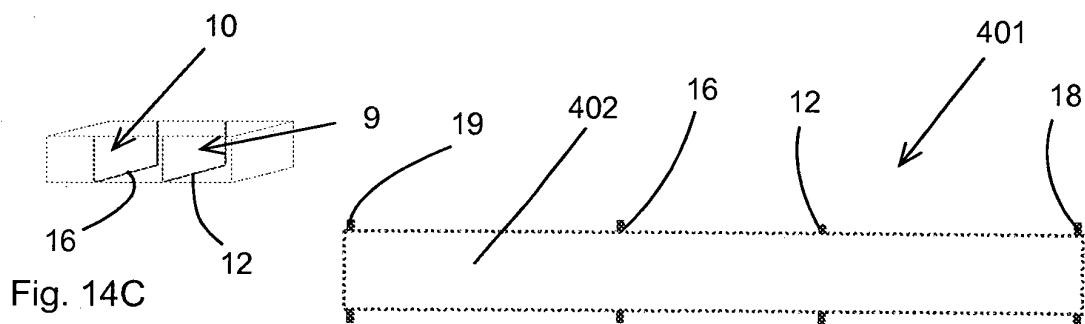
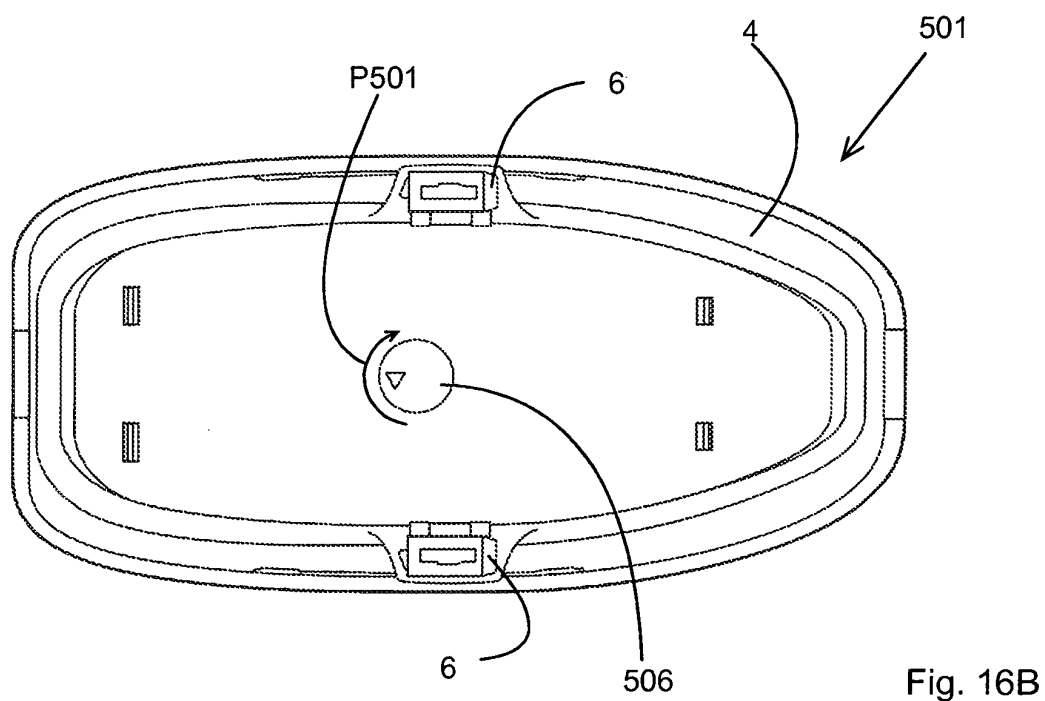
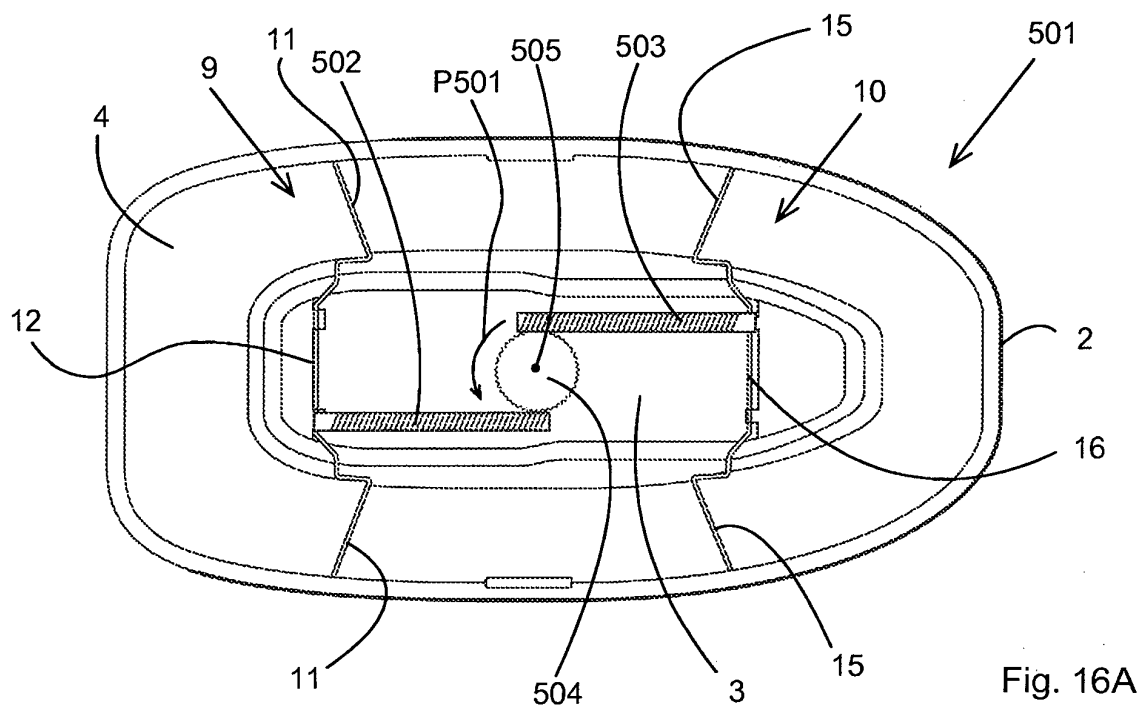


Fig. 10C









REFERENCES CITED IN THE DESCRIPTION

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