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(54) **Play station with activity trays**

(57) A baby play station has a baby seat (54) and main tray (12) disposed in front of the seat (54). One or more activity trays (13) are mounted on the main tray

(12) so as to overlie the main tray when in the operative position and movable to a retracted position exposing the main tray when not in use.

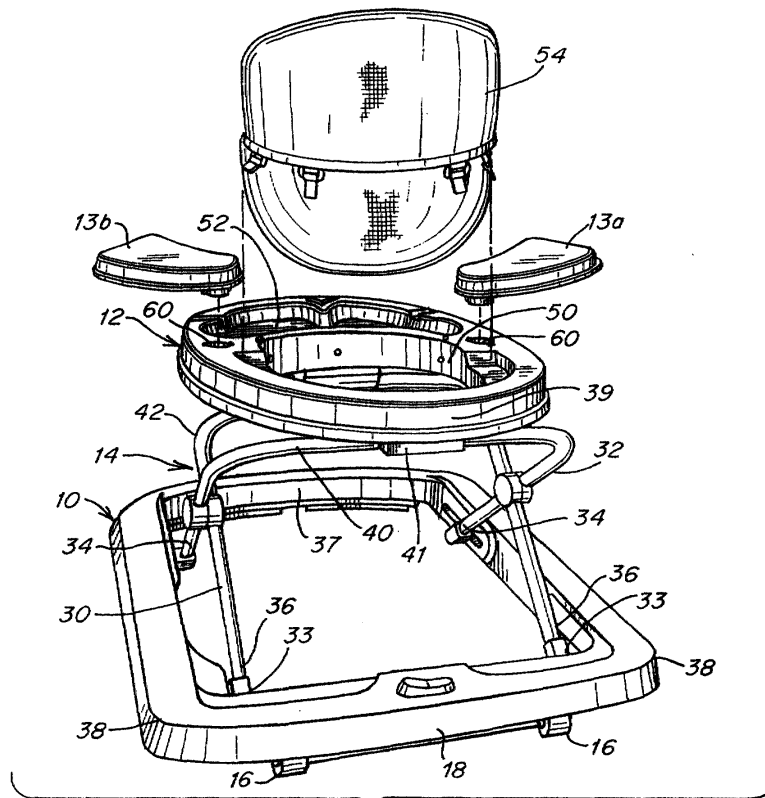


Fig. 3

Description

[0001] This invention relates to baby walkers as well as to a variety of other baby furniture and toys such as activity stations in which a baby is seated. For example, the invention may be embodied in high chairs, booster seats and other such products especially designed for small children. In the present application, the invention is described in detail as it is applied to a baby walker but its other uses are intended to fall within the scope of the invention.

[0002] Baby walkers, baby activity centers and the many other types of baby furniture to which this invention applies, include a seat and play/snack tray, and in accordance with the present invention, one or more movable activity trays are selectively available in place of the conventional tray normally incorporated into such furniture so as to create an additional activity center for the baby seated in it.

[0003] It is the object underlying the present invention to provide an improved baby walker or baby station.

[0004] The present invention is specified in the claims.

[0005] An advantage of the present invention is to provide an expanded activity surface for babies either in fixed or movable furniture such as stationary walkers, movable walkers, high chairs, booster seats, etc. Another advantage of this invention is to provide an activity tray that may be conveniently removed from the furniture in which it is incorporated so that the tray may be cleaned and remounted on the furniture.

[0006] Yet another advantage of the present invention is to provide a movable activity tray that is firmly held in any selected position and will not swing freely, a condition that would be hazardous to the baby as its hands, fingers or other body parts could be pinched or banged by the tray.

[0007] To accomplish these and other objects, preferably a pair of pivotally mounted trays are superimposed upon the regular tray of the furniture and may be moved from one extreme position in which the activity trays are essentially out of the way of the child and fully expose the conventional tray, and a fully active position in which the activity trays cover the conventional tray. In accordance with the preferred embodiment of the present invention, the activity trays carry a number of different playthings for the baby such as play rings, simulated telephone, noise makers, music and light toys, simulated flowers and animals, etc. When the trays are in their active position, all of the toys on them are readily accessible to the baby. When the trays are swung to their inactive position, they are removed from in front of the child and expose the main tray that may be used for feeding, playing or other activity. The activity trays in the embodiments shown are detachably mounted on the main tray of the furniture and are keyed to it so that they can only be removed by a precise manipulation of the trays and a release of the latches disposed preferably

out of the reach of the child in the seat such as beneath the regular tray. Therefore, while the activity trays can easily be removed, a very young child cannot perform the necessary manipulations to do so. The latches also will lock the activity trays so that they cannot swing freely unless the latches are released, and they are located in a position that cannot be easily reached by a child seated in the furniture.

[0008] In the preferred embodiment the two movable activity trays, when in their active positions, together conform generally to the shape of the main tray below so as to essentially cover it. When swung to their inactive position the main tray is available for feeding or for other play activities.

[0009] Preferred embodiments of the present invention are exemplified in the present figures.

FIG. 1 is a perspective view of a baby walker embodying the activity trays of the present invention and with the trays in their active position;

FIG. 2 is a view similar to FIG. 1 but with the trays moved to or toward their inactive position to expose the main tray;

FIG. 3 is an exploded perspective view of the walker;

FIG. 3A is a bottom plan view of the base;

FIG. 4 is a top plan view of the main tray assembly with the activity trays removed;

FIG. 5 is a bottom perspective view of one of the activity trays;

FIG. 6 is a fragmentary perspective view of one of the tray latches normally attached to the bottom of the main tray and the rail guide carried on the bottom of the activity tray showing how they interengage; and

FIG. 7 is a fragmentary perspective view of the bottom of the main tray assembly and showing one latch assembly for an activity tray mounted in place on it;

FIG. 8 is a cross sectional view of the latch for locking one of the activity trays;

FIGS. 9 and 9A are top and bottom views, respectively of the main tray assembly and showing one activity tray mounted on it and in the inactive position; and

FIG. 10 is a fragmentary bottom plan view of the main tray assembly with one of the activity trays mounted on it and in the inactive position.

[0010] In FIGS. 1 and 2 a baby's walker embodying the present invention is shown having a base 10, an upper frame member 12 (sometimes called the main tray assembly) supported on the base by a pair of intermediate frame members 14, and activity trays 13 that are pivotally and removably attached to the upper frame member 12. The base 10 is generally rectangular in shape (see FIGS. 3 and 3A) and includes a pair of fixed wheels 16 on its rear side 18 and a pair of pivotal casters

20 at its front corners 22. The base also includes on its lower surface, a number of friction pads 24 designed to engage the floor and prevent the base from moving when a wheel or caster rolls off the edge of the floor at stairs or other surface edges. Such devices are well known in the art.

[0011] The intermediate frame 14 includes two inverted U-shaped tubular metal members 30 and 32. Tubular member 30 is connected at its lower ends 36 at fixed pivots 33 to the rear portion of the base 10 adjacent the rear corners 38 while the lower ends 34 of the other U-shaped member 32 are slidably connected to the base 10 adjacent the front side 37 thereof. The top end 40 of the U-shaped member 32 is pivotally connected to the rear side 39 of the upper frame 12 by a fixed pivot 41. The upper end 42 of the frame U-shaped member 30 is slidably coupled to the underside of the top frame 12 and may be retained in any one of a number of positions by a sliding latch mechanism. This arrangement enables the height of the top frame to be adjusted to suit the child's size and also allows the top frame 12 to be collapsed onto the base for travel or storage of the walker as is well known in the art.

[0012] Upper frame 12 has an opening 50 at the rear portion thereof and a tray 52 disposed in front of the opening. The tray 52 is defined by a shallow recess in the molded upper frame member 12 and is conventionally used for play or feeding. A sling-type scat 54 fits into the opening 50 and is removably attached in place by snap fasteners or other well known expedients so that it may be removed for washing and cleaning all as is well known in the art.

[0013] In the embodiment of the invention illustrated, a pair of double keyhole shaped openings 60 are provided in the upper frame member 12 rearwardly of the outside ends 62 of the tray 52. (see FIG. 4) The keyhole shaped openings 60 provide means by which the activity trays 13 are attached to the upper frame member 12. A pair of guide slots 66 are also provided, one on each side of the main tray 52 to receive a guide 96 (see FIGS. 5 and 6) on the bottom of each activity tray, as is further explained below. Extending upwardly from beneath the main tray assembly 12 and registering with each slot 66 is a latch 68 that selectively engages one of a series of slots in the guide 96 on the bottom of each of the activity trays 13 so as to releasably hold the activity trays in any one of a number of selected positions. The manner in which the activity trays 13 are mounted on the main tray assembly 12 and held in place by the latches 68 in the embodiment illustrated is described in greater detail below. The description is confined to one activity tray 13 and the means by which it is mounted, but it is to be understood that the description applies equally to each of the two activity trays.

[0014] The activity tray 13 includes a generally horizontal top wall 82 and a downwardly extending peripheral flange 83. The upper surface 84 of the top wall 82 may carry a number of different activity toys such as

beads, rattles, simulated telephone etc. some of which are shown in FIGS. 1 and 2, and the toys may either be molded as an integral part of the tray 13 or be attached to the upper surface 84 of the top wall 82 by any conventional means. The lower surface 86 of the horizontal wall 82 of the activity tray 13 at one corner 88 (see FIG. 5) carries a wing lock 70 that has a pair of wings 90 that are angularly disposed to one another in the same relationship as the keyhole slots 64 in the opening 60 in the upper frame 12. The tray 13 shown in FIG. 5 is the tray 13b in FIGS. 1 and 2, and the other tray 13a is the mirror image thereof. The slots 64 and wings 90 are at other than 180° apart so that they may register with one another in but one position for installation and removal. A seat 91 may be integrally molded with the bottom side of wall 82 of the activity tray 13 and include an internally threaded recess (not shown) for receiving a screw 92 that holds the wing lock 70 firmly in place.

[0015] The bottom surface 86 of the top wall 82 also has a plurality of posts 94 for attaching the guide 96 that rides in one of the slots 66 in the periphery of the main tray 52. In addition a number of flanges 95 are molded in the bottom side 86 of the top wall 82 for precisely orienting the guide 96. The guide 96 as shown in FIGS. 5-10 has a plurality of teeth 98 along its lower edge 100 that extend beyond the sides of the guide. The spaces 102 between each adjacent pair of teeth 98 are sized to receive the vertical blade 103 of the latch 68 so as to firmly hold the activity tray 13 in any one of a number of selected positions while the wing lock 70 is retained in the double key lock opening 60. It will be appreciated that the wing lock 70 and double keyhole slots 60 establish a fixed pivot for the activity tray 13, and when the latch 68 is withdrawn beyond the bottom of the teeth 98, the activity tray may pivot between the extreme positions suggested in FIG. 1 and the left activity tray 13a in FIG. 2.

[0016] The latch 68 includes a housing 110 secured to the bottom of the main tray assembly 12 by means of slotted ears 104 formed as an integral part of the housing 110 and fasteners such as screws, rivets, clips, etc. as shown in FIG. 7. The housing defines a guide for the blade 103 that has a handle 114 at its lower end. The head 107 of the housing extends upwardly through an opening 66a in the bottom of the guide slot 66 so that the head 107 is exposed and in position to receive the teeth 98 of guide 96. The blade 103 is biased by means of a spring 106 (see FIG. 8) to a raised position wherein the blade engages one of the spaces 102 between adjacent teeth 98 in the guide 96. By pulling down on the handle 114 the blade 103 may be withdrawn from the space 102 between the teeth, and the guide 96 is then free to move through the head 107 in slot 66. It will be noted in FIG. 6 that the teeth 98 are captured in the undercut sides 108 of the slot 109 in the head 107 of latch housing 110 so that the activity tray 13 cannot be lifted off the main tray assembly 12 when the guide 96 is positioned in the slot 66 and disposed within the slot 109

of the housing. The edge of the activity tray is also captured in slots 111 and 113 in the center of the front and back walls of the main tray 52. As noted in FIG. 5 the activity tray 13 has two outwardly extending flanges 120 and 122, flange 120 being located on the curved side 124 of the activity tray adjacent corner 126 and flange 122 located at the corner 128. The flanges 120 and 122 extend into the slots 111 and 113, respectively and retain the activity tray in the intended plane closely adjacent the top of the main tray when the activity tray is in the active position.

[0017] Thus the slots 111 and 113 and flanges 120 and 122 also prevent a child from forcing its fingers under the activity tray and above the main tray and being pinched between them. A stop 118 mounted on the end 116 of the guide 96 prevents the activity tray from being pivoted outwardly beyond its extreme outward position shown in FIG. 2 by preventing the guide from detaching from the slot 109 in that direction. The several spaces 102 between the teeth 98 on the guide 96 also enable the tray to be locked in several intermediate positions.

[0018] To mount an activity tray in position, the wing lock 70 and its wings 90 are aligned with the keyhole opening 60 and its slots 64. This alignment is achieved with the activity tray positioned outwardly in a position somewhat further displaced in a clockwise direction than is the tray 13a in FIG. 2. After the wing lock is inserted through the keyhole opening, the tray is turned in a counterclockwise direction as viewed in FIG. 2 without registering the guide 96 with the slot 66 in the edge of the main tray nor with the slot 109 in the latch 68. To do this, the tray is slightly distorted so that the guide 96 travels over the edge of the main tray and head 107 of latch 68 to a position beyond the normal active position shown in FIG. 1. The other activity tray must either be swung outwardly away from the active position or detached from the main tray assembly. The tray 13a must travel in a counter clockwise direction a sufficient distance so that the end 130 of the guide 96 is disposed inwardly of the slot 66 in the main tray and slot 109 of the latch, and care must be taken to prevent the flanges 120 and 122 from engaging the corresponding slots 111 and 113 in the main tray. From that extreme position, the tray is swung in a clockwise direction and care must be taken to insure that the end 130 of the guide 96 enters the guide slot 109 in the latch 68. To do so, the latch handle 114 must be pulled down away from the main tray so as to remove the blade 103 from the guide slot 109. In this manner, the guide 96 is placed in registration with the guide slot and the tray may be moved outwardly to the extreme position shown for activity tray 13a in FIG. 2. When the tray is to be moved to the active position shown in FIG. 1, it is only necessary to pull down on the latch handle and pivot the tray in a counter clockwise direction. As the tray moves toward the active position shown in FIG. 1, the tabs 120 and 122 will register with the slots 111 and 113, and further counter clockwise motion of the activity tray will be prevented by means of the

stop 140 on the front end of the main tray.

[0019] To remove the activity tray from the main tray assembly, the procedure described above for installing the activity tray is reversed. That is, the tray is pivoted from its operative position shown in FIG. 1, a short distance clockwise so as to free the tabs 120 and 122 from their respective slots 111 and 113 in the main tray. Thereafter, the activity tray is somewhat distorted by lifting up at the corner 128 and the tray is again turned in a counter clockwise direction. With the corner 128 lifted, the tabs 120 and 122 will not enter their respective slots 111 and 113 and the tray must be pivoted fully counter clockwise until the end 130 of the guide 96 is freed from the guide slot 109 of the latch. Thereafter, the activity tray is turned clockwise with the guide 96 out of slot 109 until the wings 90 of the wing lock 70 are aligned with the slots 64 in the keyhole 60. When alignment is achieved, the tray may simply be lifted off the main tray assembly.

[0020] It should be appreciated that to install or remove either of the activity trays 13, the other activity tray, if already attached to the main tray assembly should be swung to its outward or inactive position a sufficient distance so as not to interfere with the swinging motion required of the activity tray being removed or attached to the main tray assembly.

[0021] In the foregoing description, a detailed disclosure has been made of the preferred embodiment of this invention and particularly of the activity trays and mechanism employed to attach and lock the activity trays in position. While the preferred system is illustrated and described it should be appreciated that other mechanisms may be used. What is essential is that the system used to support and lock the activity tray in position not create a relationship between the activity tray and the main tray that would enable a child to catch its fingers or other extremities so as to pinch or otherwise injure the child. Preferably, the latch or other locking device used should not be within the reach of the child sitting in the seat that would enable child to release the tray him or herself. While in the preferred embodiment, the invention includes a pair of activity trays, it is within the scope of the present invention to have but a single tray or even more than two trays that carry the activity toys. It is even contemplated that in its broadest sense, the activity tray or trays may be removed when not in use, although such an arrangement is considerably less convenient than the preferred embodiment of this invention. Furthermore, while in the preferred embodiment, the trays are pivotally supported for a swinging motion essentially in a horizontal plane, the activity trays may be differently mounted so that they fold or pivot downwardly over or off the main tray assembly edges so as to expose the main tray.

[0022] In light of the many variations that will occur to those skilled in the art, the breadth of the present invention should not be limited to the single preferred embodiment illustrated and described. Rather, the scope of the

invention should be determined by the appended claims and their equivalents.

Claims

1. A baby walker comprising
- a base and a seat mounted above the base,
a main tray disposed in front of the seat,
and an activity tray attached to the main tray
and movable between an active position
wherein it overlies the main tray for accessibility
to the child and an inactive position wherein it
exposes the main tray.
2. A baby station comprising
- a frame carrying a seat and main tray, said main
tray being disposed in a usable position with re-
spect to the seat, and
an activity tray supported by the frame and
movably mounted so as to overlie the main tray
in an active position and so as to expose the
main tray for use when the activity tray is in an
inactive position.
3. A baby station as described in claim 2 wherein the
activity tray has two sections that are movable to-
ward and away from one another to the active po-
sition and inactive position respectively.
4. A baby station as described in claim 2 or 3 wherein
the frame includes a base with rollers.
5. A baby station as described in any one of claims 2
to 4 wherein the frame is collapsible for storage or
travel.
6. A baby station as described in any one of claims 3
to 5 wherein each of the activity tray sections is piv-
otally mounted on the main tray.
7. A baby station as described in claim 6 wherein each
tray section pivots independently of the other.
8. A baby station as described in any one of claims 3
to 7 wherein each activity tray section pivots in a
substantially horizontal plane.
9. A baby station as described in any of claims 2 to 8
wherein the activity tray carries at least one toy.
10. A baby station as described in any one of claims 6
to 9 wherein latches are operatively connected to
the activity tray sections for locking each of them in
a plurality of selected positions.
11. A baby station as described in any one of claims 2
to 10 wherein a guide and guide slot are operatively
connected to the activity tray and main tray for con-
trolling the movement of the activity tray with re-
spect to the main tray.
12. A baby station as described in any one of claims 2
to 11 wherein the activity tray has two sections each
independently mounted on the main tray.
13. A baby station as described in claim 12 wherein
guides and guide slots are operatively connected to
each of the activity tray sections and main tray for
controlling the movement of the activity tray sec-
tions with respect to the main tray.
14. A baby station as described in claim 11 wherein the
guide is connected to the bottom of the activity tray
and the guide slot is connected to the main tray.
15. A baby station as described in claim 13 wherein
each tray section is pivotally mounted with respect
to the main tray for movement toward and away
from one another about vertical axes.
16. A baby station as described in claim 15 wherein the
guides are connected to the tray sections and the
slots are connected to the main tray.
17. A baby station as described in any one of claims 2
to 16 wherein the tray sections together are of gen-
erally the same shape and size as the main tray.

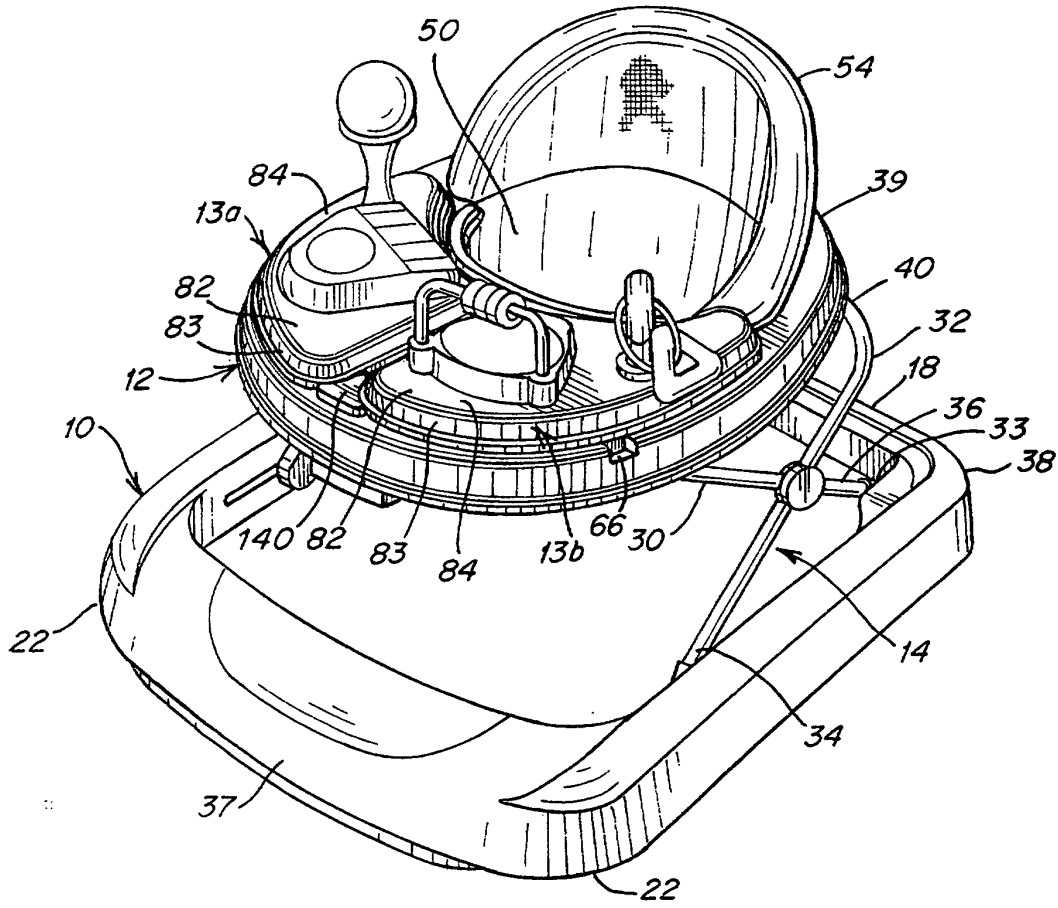


Fig. 1

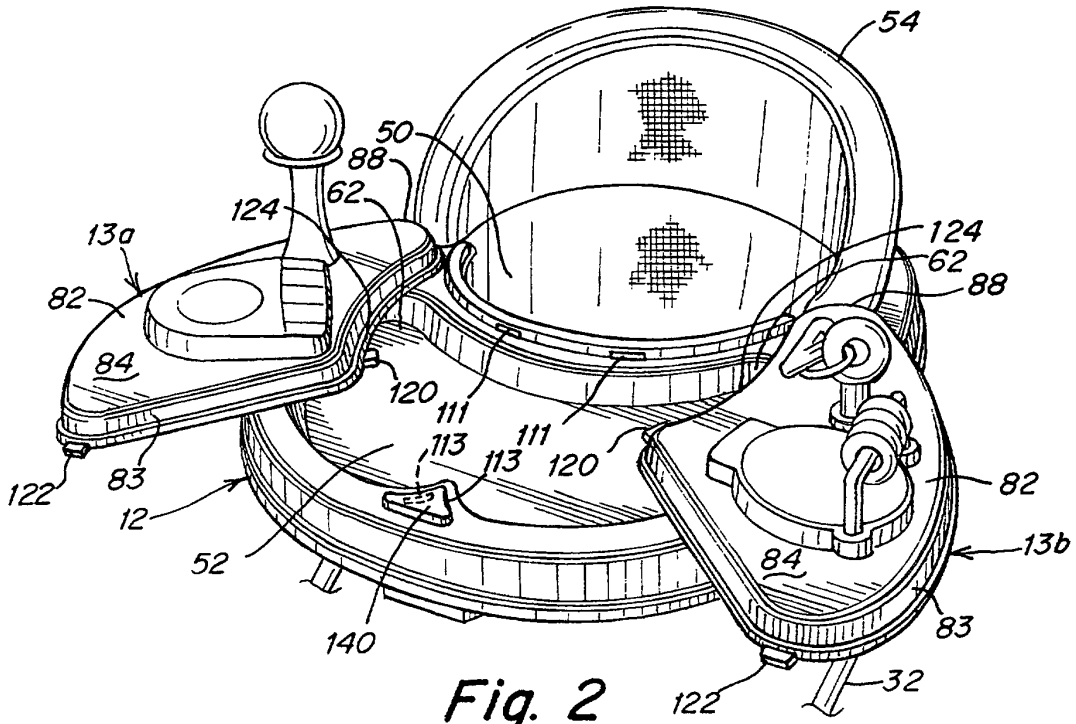


Fig. 2

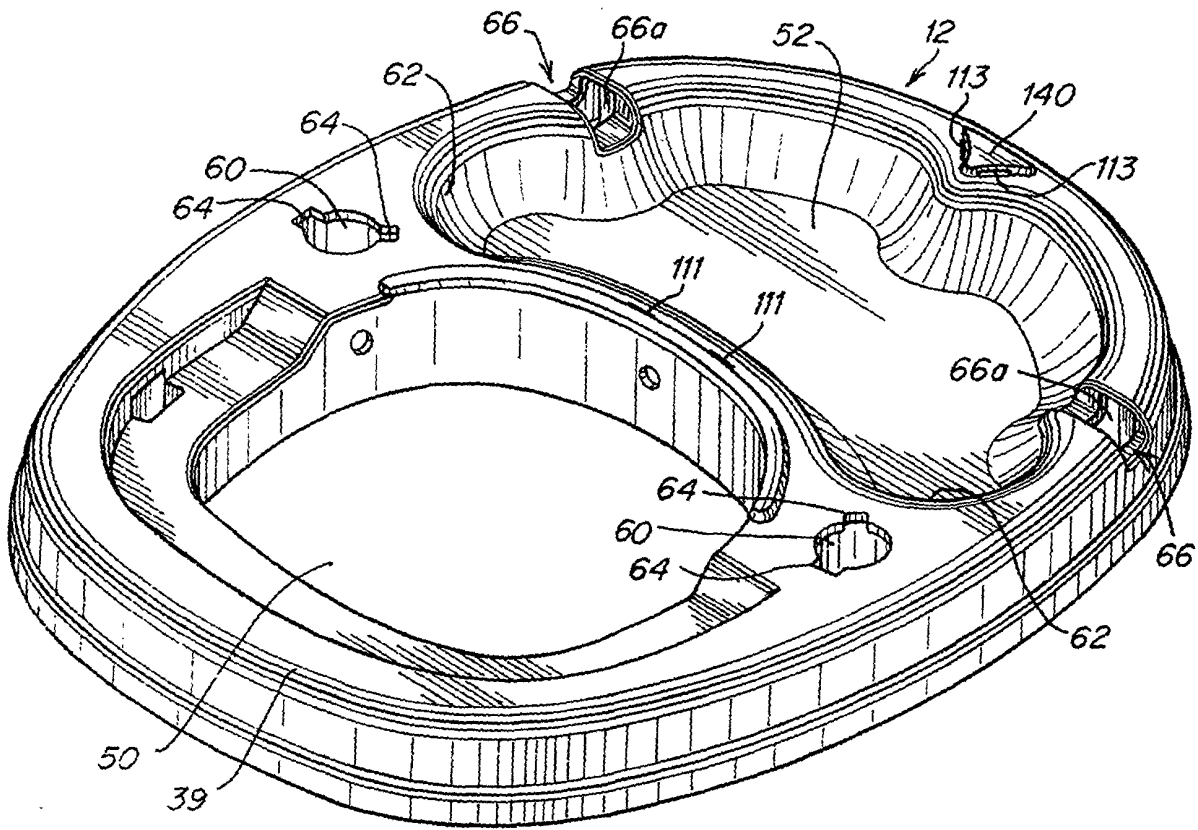


Fig. 4

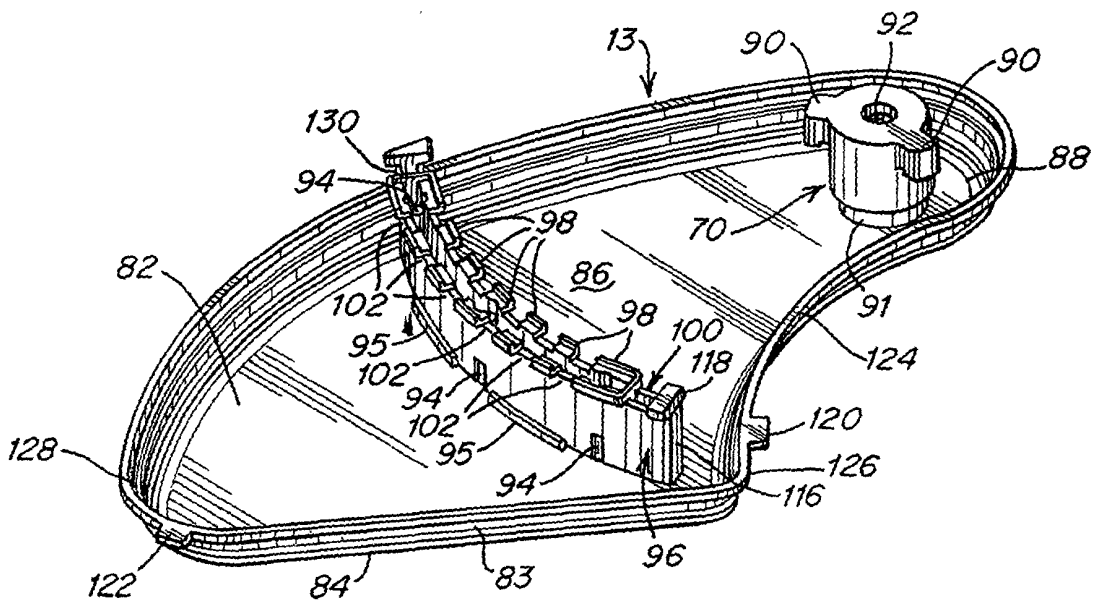
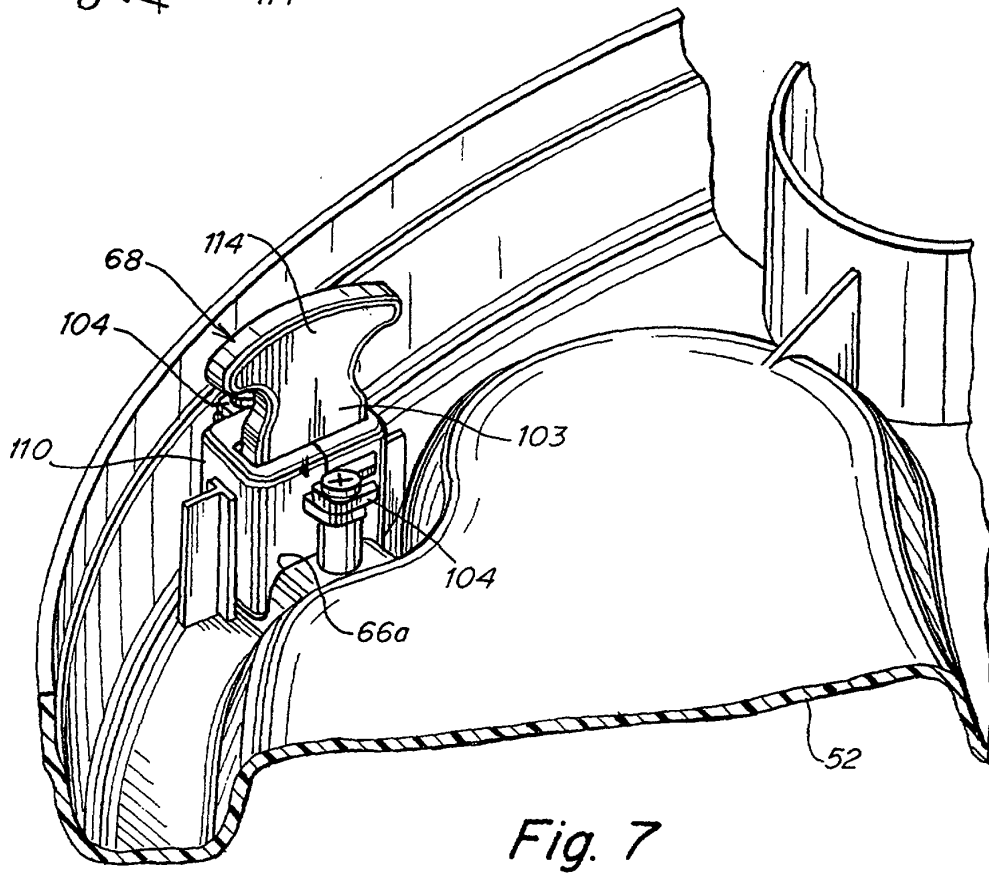
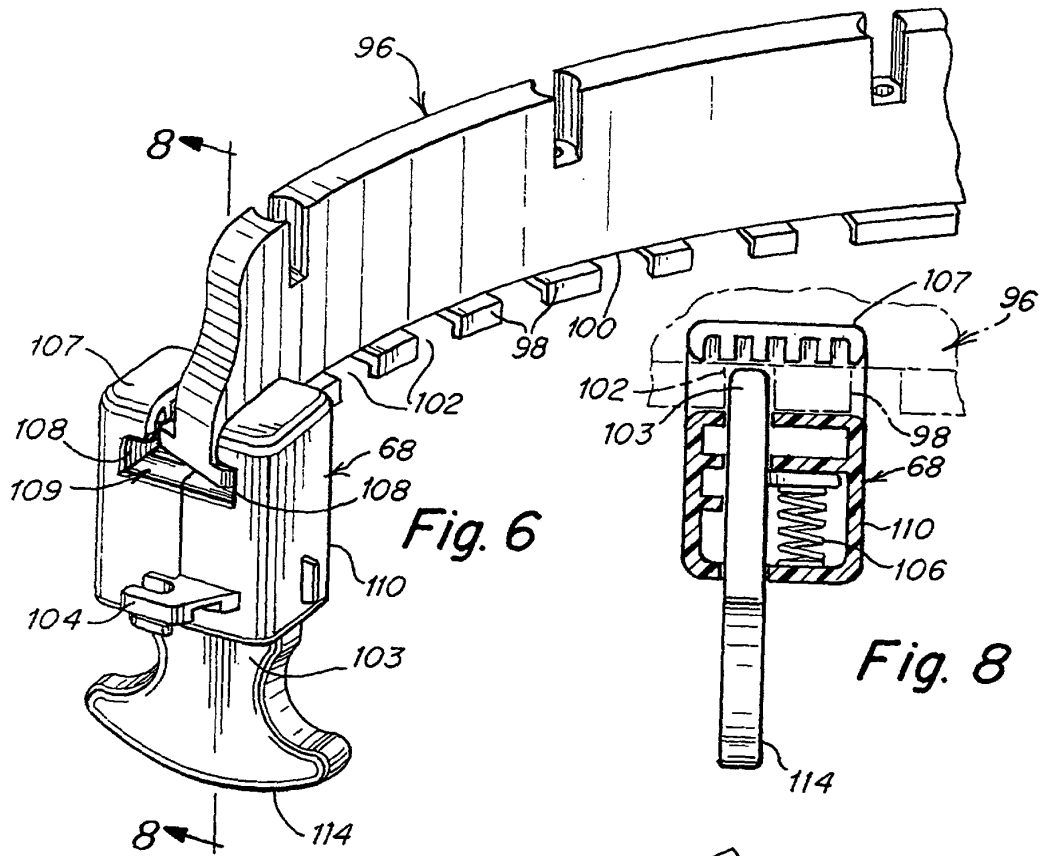
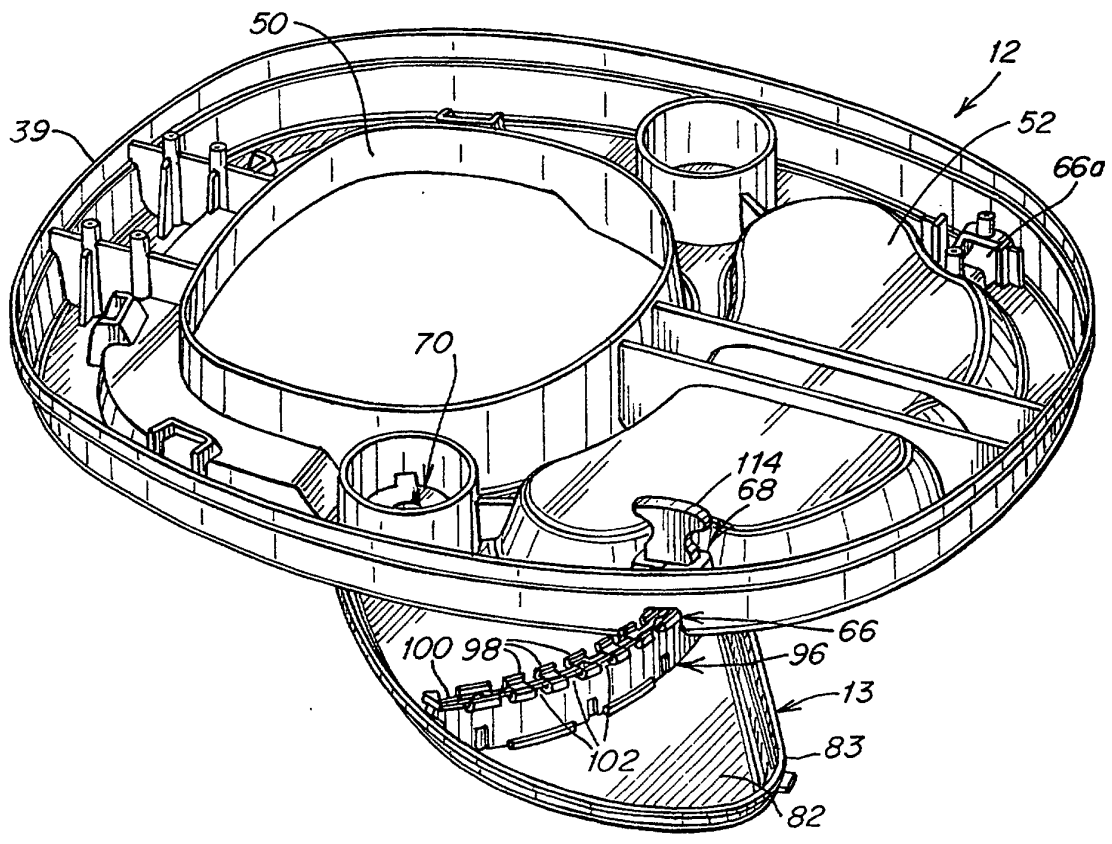
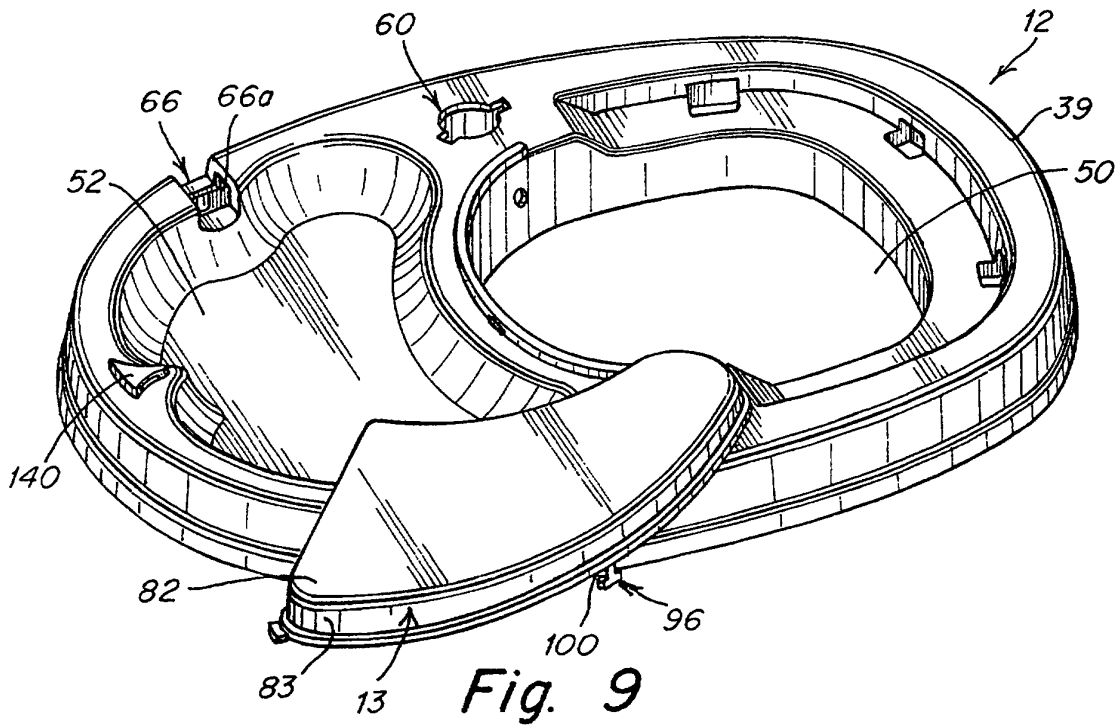


Fig. 5





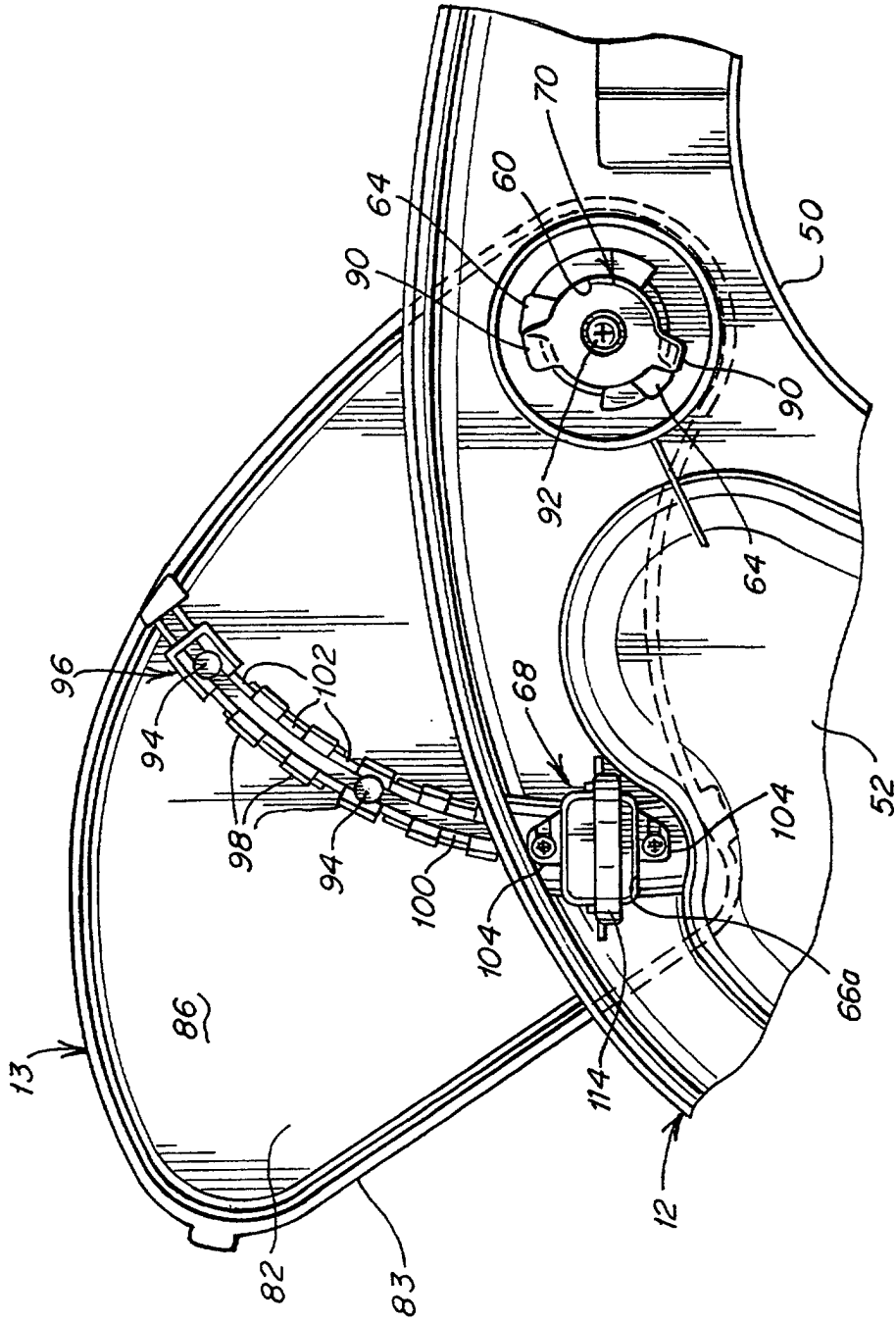


Fig. 10



European Patent
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EUROPEAN SEARCH REPORT

Application Number
EP 01 11 3578

DOCUMENTS CONSIDERED TO BE RELEVANT			
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The present search report has been drawn up for all claims			
Place of search		Date of completion of the search	Examiner
THE HAGUE		2 August 2001	Joosting, T
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