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(54) Safety device

(57) A moveable device having a seat portion; a base portion; one or more legs connecting the seat portion to the base portion, and a plurality of wheels or castors attachable to a lower surface of the base, the device further comprising safety device (15) for preventing movement of the device when one or more of the wheels or castors is positioned at a substantially different level to the remaining wheels or castors. By virtue of a high friction engagement between the safety device and the floor, further movement of the device is prevented. The safety device engages the floor if the device goes over an edge, for instance.

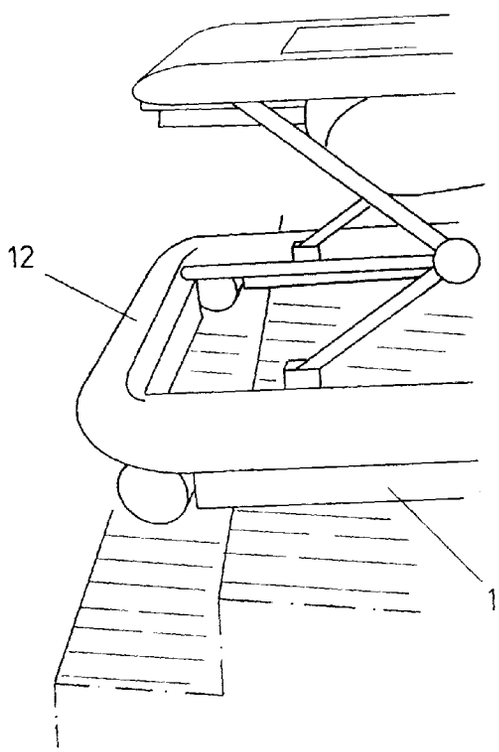


FIG. 3

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Description

This invention relates to a safety device for a moveable object, and to a moveable object incorporating such a safety device. The safety device is particularly, but not exclusively for use with a baby walker.

A baby walker is a device suitable for use with babies from about six months old which will support most of the weight of the baby whilst allowing the baby to practice walking. Such a device generally comprises a support portion such as a seat in which the baby is supported whilst allowing the baby's legs to extend from the support portion and to reach the ground or floor. The baby is able to move by moving his legs in a similar way to the way in which he would move his legs if he were walking. The baby seat is supported by legs which are attached to a base. The base has attached to a lower surface thereof a plurality of wheels or castors. The presence of casters allow the baby seat to move. The wheels or castors extend from the base such that the lower surface of the base is spaced apart from the ground or floor over which the device is to move. This allows for movement of the wheels or castors.

During normal use, the device will be positioned on a fairly flat surface, and the plurality of wheels will be substantially at the same level as one another. Movement of the device will take place over a substantially level ground.

A problem with known baby walkers is that if a baby is left unsupervised, he may move the device with himself positioned inside the device towards an edge. For example, if the baby is left playing on a landing of an upper floor of a building, the baby may move the baby walker towards a staircase. Often a staircase will be protected by the presence of a stairgate, preventing the baby from gaining access to the staircase. If, however, no stairgate or other barrier is present the baby may walk over the edge of the staircase whilst positioned in the baby walker. This can lead to very serious, if not fatal, accidents in that the baby walker will tip over and the baby may tumble down to the bottom of the stairs whilst still entangled in the baby walker.

According to a first aspect of the invention there is provided a moveable device having a seat portion; a base portion; one or more legs connecting the seat portion to the base portion, and a plurality of wheels or castors attachable to a lower surface of the base, the device further comprising safety device for preventing movement of the device when one or more of the wheels or castors is positioned at a substantially different level to the remaining wheels or castors.

According to a second aspect of the invention, there is provided a moveable device having a plurality of wheels or castors, and safety means for preventing movement of the device when one or more of the wheels or castors is positioned at a substantially different level to the remaining wheels or castors.

According to a third aspect of the invention, there is provided a safety device for use in a device according to the first or second aspect of the invention.

Advantageously, the moveable device comprises a baby walker.

In use, if the baby moves the device towards an edge, one or more of the wheels or castors will tip or drop over the edge resulting in the one or more wheels assuming a position at substantially different levels to the remaining wheels. The safety device or safety means will at this point prevent further movement.

Advantageously, the safety device or means comprises a skirt extending from the lower surface of the base towards the floor or ground.

When one or more of the wheels dips to a level lower than the remaining wheels, a portion, or the entire length of the skirt will come into contact with the ground or floor. Frictional forces between the skirt and the ground or floor will prevent further movement of the device.

Preferably, the skirt comprises a gripper positioned on a lower surface of the skirt. The gripper may extend along the entirety of the skirt or only a portion thereof. The gripper grips the floor or ground and increases the force which the device will be able to withstand before further movement will occur.

Conveniently, the gripper comprises a sheet of PVC attached to a lower surface of the skirt.

Alternatively, the gripper comprises a sheet of ribbed rubber attached to a lower surface of the skirt.

The gripper may be smooth or serrated.

Advantageously, the skirt comprises a plurality of skirt portions each of which skirt portions comprises an elongate member having a length which is slightly shorter than the distance between adjacent wheels or castors. Each skirt portion is positioned between adjacent wheel or castors and attachable to the lower surface of the base.

Alternatively, the skirt comprises a plurality of skirt portions having a length which is much smaller than the distance between adjacent wheels or castors, each portion being associated with one wheel or castor.

The skirt or skirt portions may be formed separately from the device, for instance from the base portion.

Alternatively, the skirt may be formed integrally with the base of the device. Generally, the base will be formed from a moulded plastics material, and the skirt may be formed by moulding the base to include the shape of the skirt within the base shape.

Alternatively, the skirt may be formed from a moulded plastics material shaped in a similar shape to that of the base. The skirt may be attachable to a lower surface of the base such that the skirt completely extends around the lower surface of the base. Apertures may be formed in the skirt to allow wheels to be positioned appropriately.

The skirt may be made of any convenient material, for example, wood, or a plastics material.

The base portion may surround an aperture. Pref-

erably the aperture is provided below the seat portion of the device.

The skirt or skirt portions may extend from the outer edge of the base portion to the inner edge of the base portion.

The skirt or skirt portions may be recessed relative to the outside and / or inside edge of the base. Preferably the skirt or skirt portions are recessed relative to both edges. The skirt or skirt portions may form a continuous skirt extending around the aperture. The skirt or skirt portions may extend around four sides or three sides of the aperture, for instance the front and two sides of the aperture.

The skirt or skirt portions may be provided with a groove and / or one or more recesses. The groove and / or recesses may accommodate a portion of the gripper. The groove may be provided with one or more recesses or apertures for receiving a portion of the gripper.

The gripper may have a t-shaped cross section. Preferably the stem of the cross section is received into the groove or recesses of the skirt. The stem of the t may be provided with a tail portion. The tail portion may engage one or more recesses or apertures provided in the groove provided in the skirt.

Embodiments of the invention will now be further described by way of example only with reference to the accompanying drawings in which:

Figure 1 is a schematic representation of a baby walker incorporating a safety device according to the present invention;

Figure 2 is a more detailed representation of the baby walker of Figure 1 showing the safety device in more detail;

Figure 3 is a detailed representation of the baby walker of Figure 1 showing the safety device preventing further movement of the baby walker;

Figure 4 is a detailed representation of the baby walker of Figure 1 showing the safety device preventing further movement of the baby walker;

Figure 5 is a schematic representation of the baby walker of Figure 1 showing the undersurfaces of skirts forming the safety device and showing the presence of gripper portions;

Figure 6 is a schematic representation of the base of a baby walker incorporating a second embodiment of the invention;

Figures 7 and 8 are schematic representations of a further embodiment of a safety device incorporated into a baby walker; and

Figure 9 is a cross sectional illustration of a part of the base of one embodiment of the present invention.

Referring to Figures 1 to 5, a baby walker according to a first aspect of the present invention is generally illustrated. The baby walker comprises a seat portion 10 into which a baby may be positioned such that the baby's legs extend from the seat portion 10 and are able to touch the ground or other surface on which the baby walker is positioned. The baby walker comprises a base 12 and legs 13 which connect the seat portion 10 to the base 12. Attached to a lower surface of the base portion 12 are castor wheels 14. The castor wheels 14 allow the baby walker to move in response to a force applied to the ground by the baby's legs. The device further comprises a safety device comprising skirts 15 in the form of elongate members attached to the underside of the base 12.

In the illustrated embodiment, there are four skirts 15, the length of each of which is slightly less than the distance between adjacent castors 14. The depth of each skirt 15 is slightly less than the distance between the lower surface of the base 12 and the ground or floor over which the baby walker is to move. This means there is a slight clearance between a lower surface of each skirt 15 and the ground or floor in normal use. The undersurface of each skirt 15 has attached thereto a sheet of corrugated or ribbed rubber forming a gripper 16.

If the baby walker is taken to the edge of a staircase, as shown in Figures 3 and 4, one or more of the wheels 14 will pass over the edge of a step of the staircase. This will mean that one or more of the skirts 15 will come into contact with the ground over which the baby walker is moving. This contact will prevent further movement of the baby walker and will prevent the baby walker, with the baby in it, from tumbling down the stairs.

If the skirts 15 were not present, the effect of the baby pushing the baby walker over the stairs to the position shown in Figures 3 and 4 would result in the front end of the baby walker progressing still further and tip down so causing the centre of gravity of the baby walker to move forward. As a result the walker with the baby in it would tumble down the stairs.

Turning now to Figure 6 a second embodiment of the invention is shown. Figure 6 illustrates a base 60 suitable for attachment to a baby walker of the type shown in Figure 1. Instead of having a single elongate skirt member extending between adjacent castors 14, the embodiment shown in Figure 6 includes a skirt portion 61 having a length which is much shorter than the distance between adjacent castors 14. A single skirt 61 is associated with each castor 14, and in the embodiment shown in Figure 6 there are eight castors 14 and eight skirt portions 61. The skirt portions 61 act in the same way as the skirt portions 15 described hereinabove.

Referring now to Figures 7 and 8, a further embodiment of the invention is shown. In the embodiment in Figures 7 and 8, the safety device comprises a continuous skirt 80 formed from moulded plastics and having a shape substantially the same as the shape of the base portion 70. The skirt 80 may be adhesively attached to the base 70 in any convenient way. Apertures may then be formed in the skirt 80 in order that castors or wheels may extend below the skirt 80 and allow the baby walker

to be moveable.

In yet another embodiment, illustrated in Figure 9 the safety device could be formed integrally with the base. The base 100 may be moulded to incorporate the skirts 102 within it. The skirt 102 projects below the level of the base defined by its front edge 104 but is above the level defined by the castor 106 during normal use. The base is strengthened by a series of cross ribs 108 provided within the moulding.

The skirt portion 102 receives a t-shaped gripper 110. The stem 112 of the gripper 110 is received in the skirt portion 102 and an aperture provided in the side 114 of the skirt portion 102 receives the tail 116 of the gripper 110 so as to retain it in position.

Should the castor pass over the edge of a surface, the base will drop slightly so bringing the underface 118 of the gripper 110 into contact with the floor. The high friction contact arising prevents further movement of the device under the forces applyable by a baby.

The tail portions 116 are periodically provided on the gripper portion 102 so as to engage periodically provided apertures. The groove for receiving the stem 112 is continuously provided.

Although the invention has been primarily described as a safety device for a baby walker it is to be understood that the safety device could be suitable for use with any type of moveable object.

Claims

1. A moveable device having a seat portion; a base portion; one or more legs connecting the seat portion to the base portion, and a plurality of wheels or castors attachable to a lower surface of the base, the device further comprising safety device for preventing movement of the device when one or more of the wheels or castors is positioned at a substantially different level to the remaining wheels or castors.

2. A moveable device having a plurality of wheels or castors, and safety means for preventing movement of the device when one or more of the wheels or castors is positioned at a substantially different level to the remaining wheels or castors.

3. A device according to claim 1 or claim 2 in which the moveable device comprises a baby walker.

4. A device according to any of claims 1 to 3 in which the safety device or means comprises a skirt extending from the lower surface of the base towards the floor or ground.

5. A device according to claim 4 in which the skirt comprises a gripper positioned on a lower surface of the skirt.

6. A device according to claim 4 or claim 5 in which the skirt comprises a plurality of skirt portions each of which skirt portions comprises an elongate member having a length which is slightly shorter than the distance between adjacent wheels or castors.

7. A device according to claim 4 or claim 5 in which the skirt comprises a plurality of skirt portions having a length which is much smaller, for instance less than ¼, than the distance between adjacent wheels or castors, each portion being associated with one wheel or castor.

8. A device according to any of claims 4 to 7 in which the skirt or skirt portions are recessed relative to the outside and inside edge of the base.

9. A device according to any of claims 4 to 8 in which the skirt or skirt portions are provided with a groove and / or one or more recesses and the groove and / or recesses accommodate a portion of the gripper.

10. A device according to any of claims 5 to 9 in which the gripper has a t-shaped cross section.

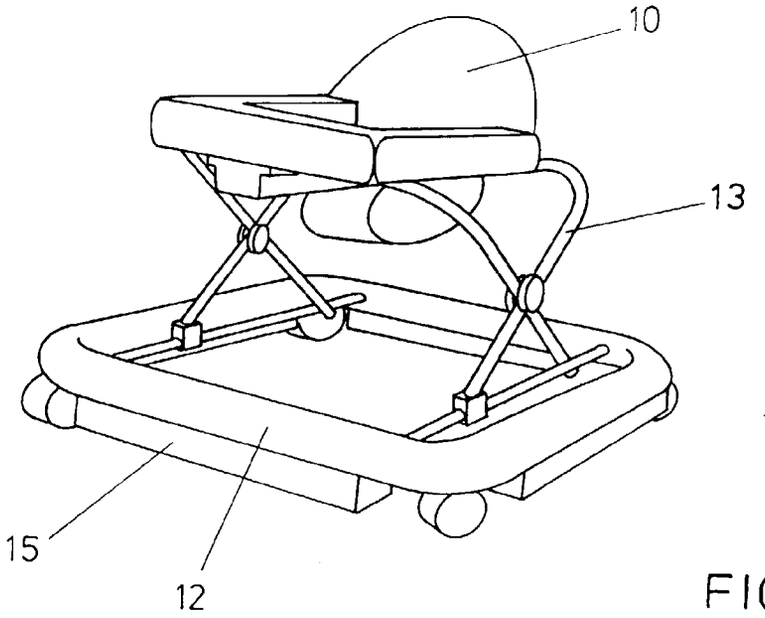


FIG. 1

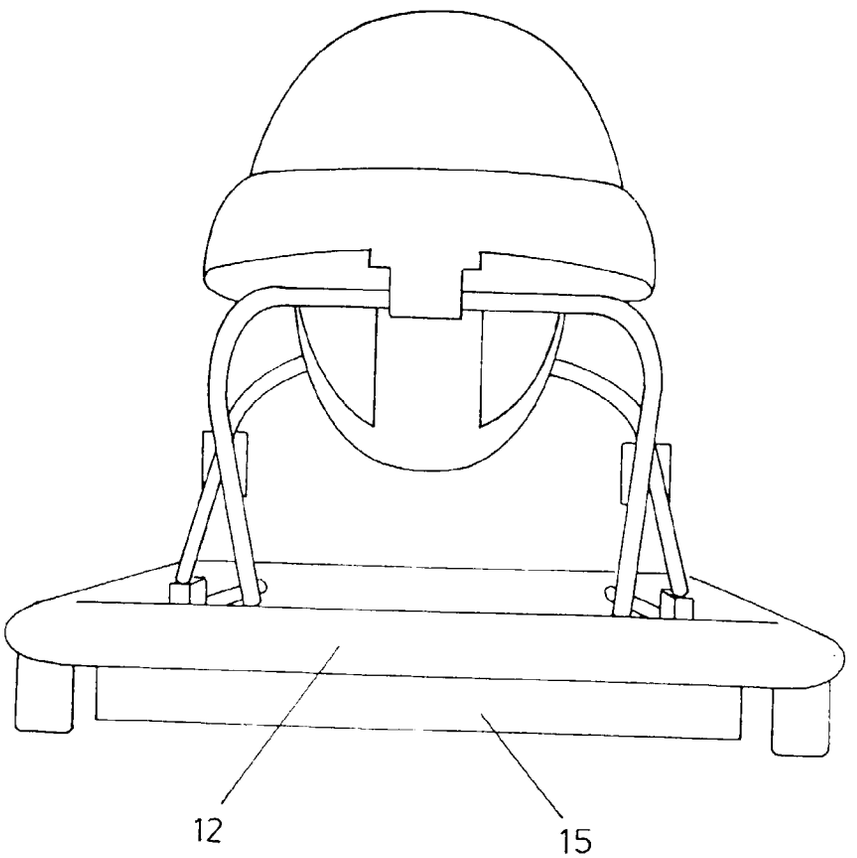


FIG. 2

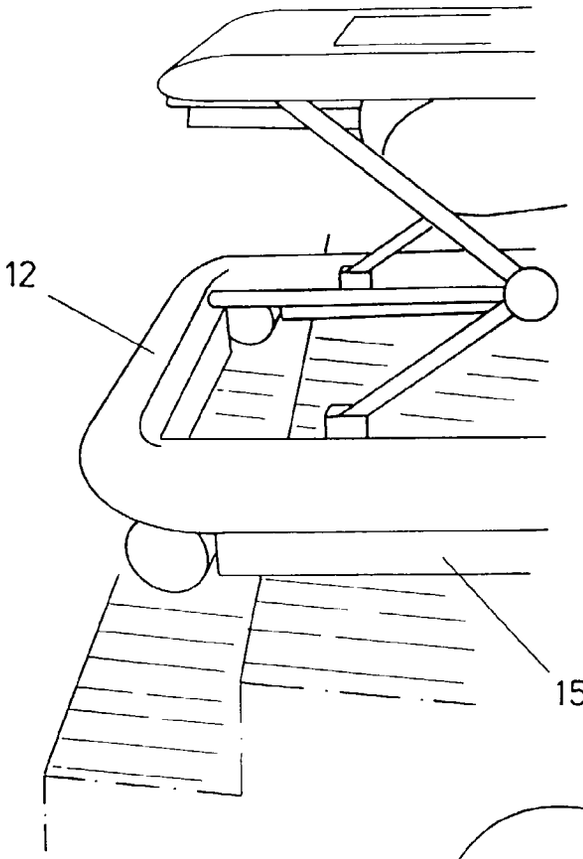


FIG. 3

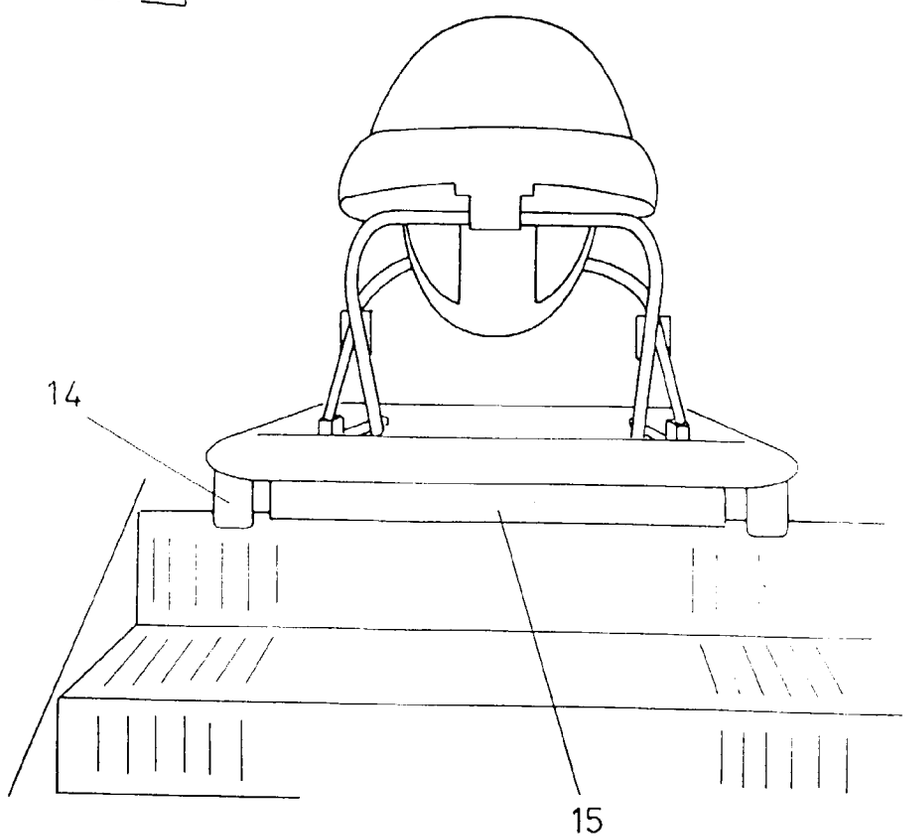


FIG. 4

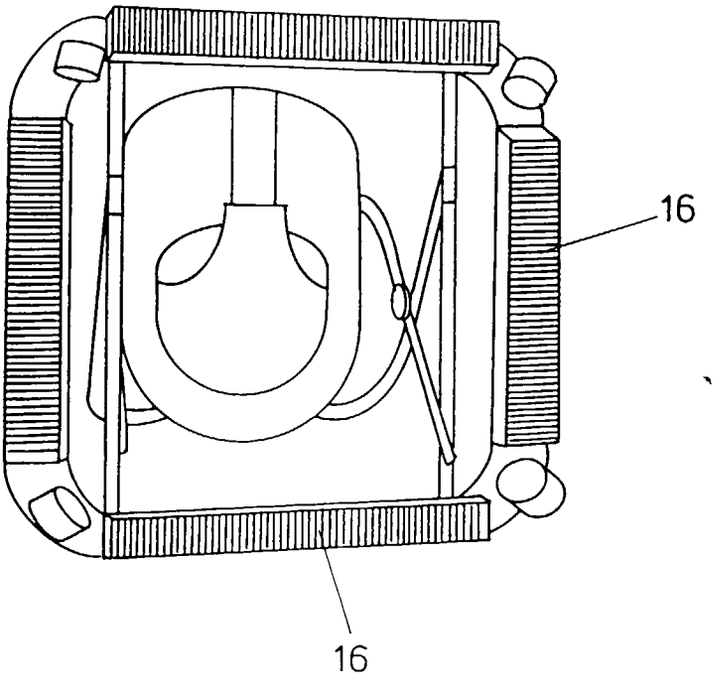


FIG. 5

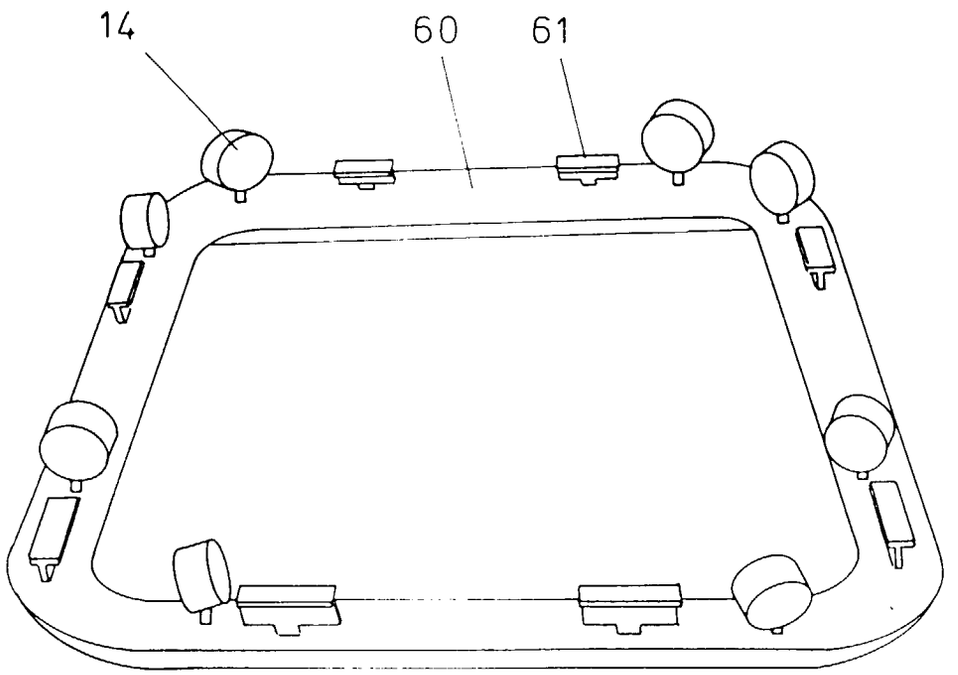


FIG. 6

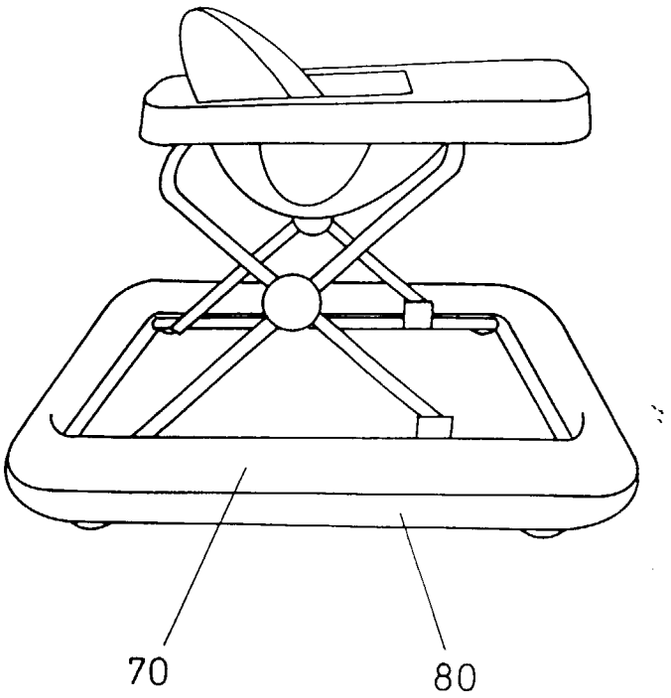


FIG. 7

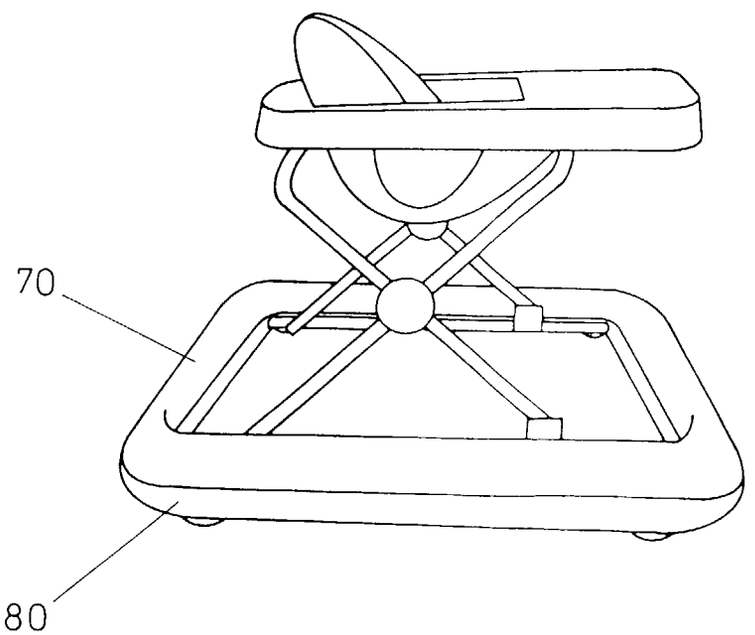


FIG. 8

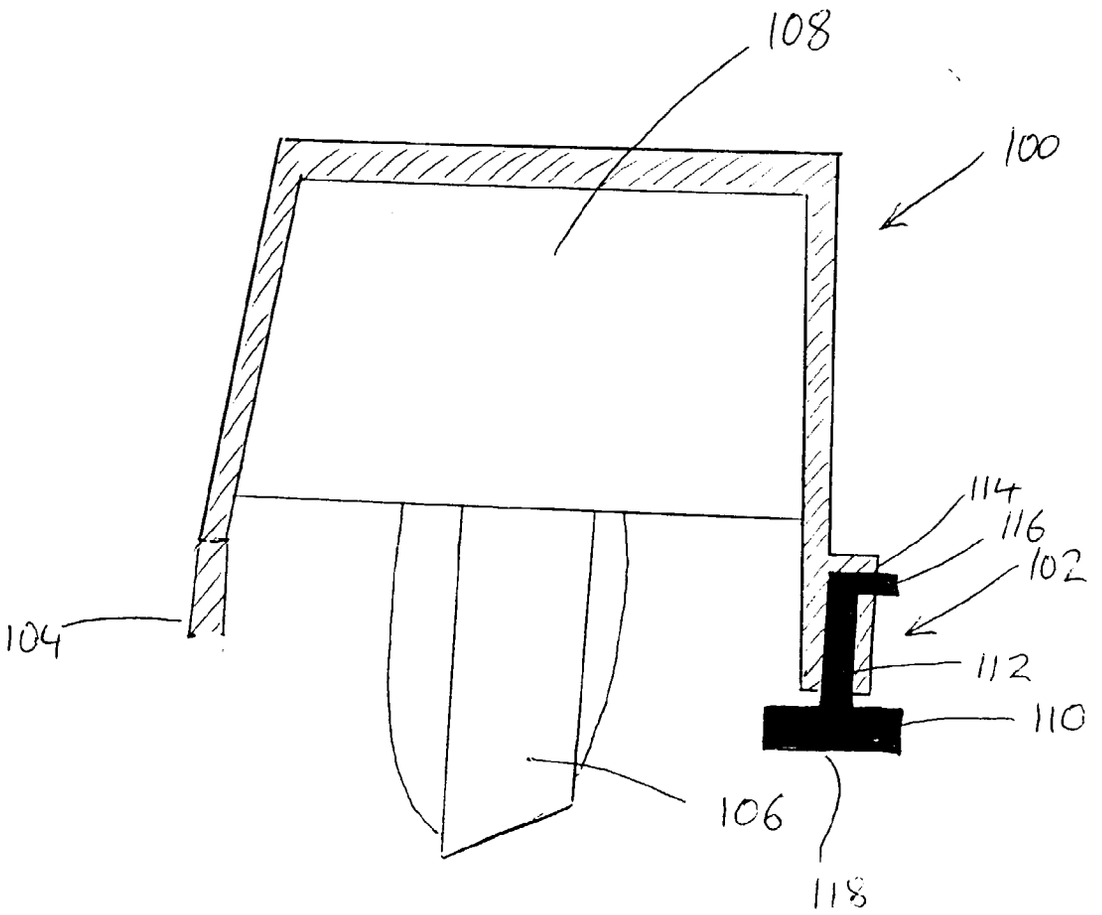


Fig 9