Oct. 6, 1970 R. M. LILLIBRIDGE 3,532,356

THERAPEUTIC CREEPING DEVICE

Filed June 24, 1968

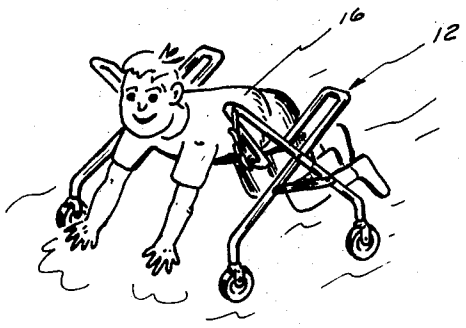


FIG. 1

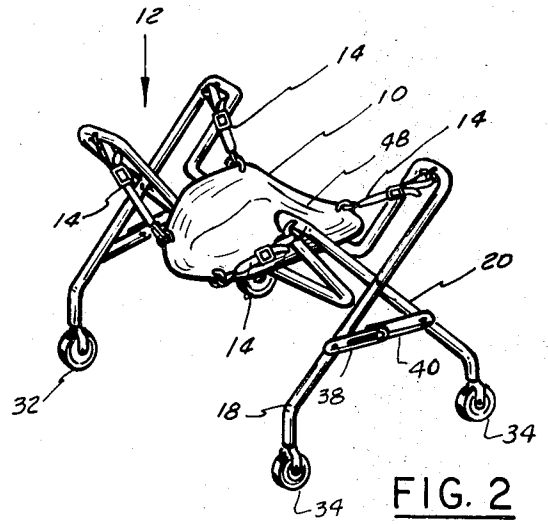


FIG. 2

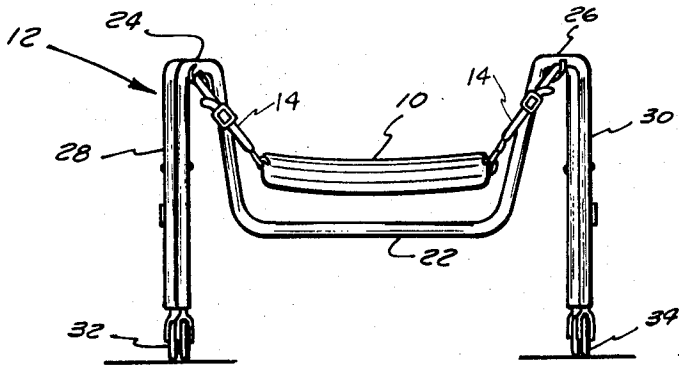


FIG. 3

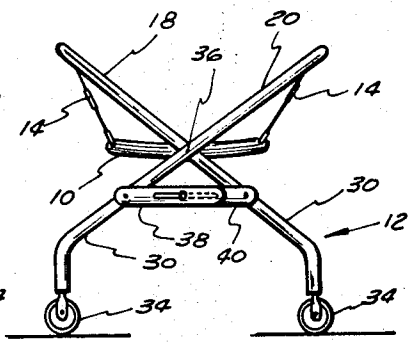


FIG. 4

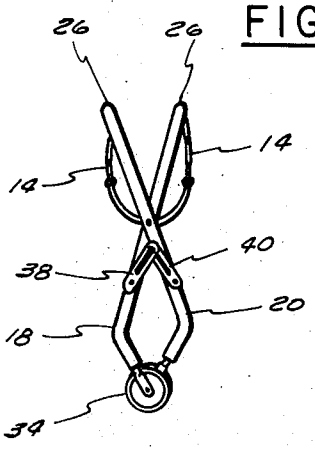


FIG. 5

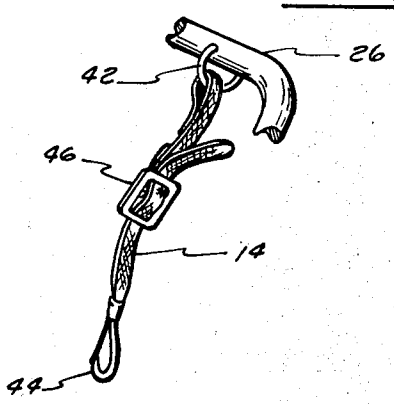


FIG. 6

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THERAPEUTIC CREEPING DEVICE

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ABSTRACT OF THE DISCLOSURE

A therapeutic creeping device is disclosed comprising a wheeled frame with a suspended saddle for supporting the trunk of a patient in a creeping position so that his arms and legs can reach the ground to advance the frame along the ground. The height of the saddle is adjustable to accommodate the length of the patient's arms and legs.

BACKGROUND OF THE INVENTION

This invention relates to a creeping device for assisting physically and mentally retarded persons in the performance of creeping exercises.

One system for treating retarded children which is receiving considerable attention, is based on the theory that the nervous system of each human being must go through a definite series of developmental stages before his brain can operate at its full potential. If a child skips or skimps a phase in this developmental sequence because of brain injury or lack of opportunity, there is likely to be inadequate development at higher levels. It has been found, for example, that many of the "slow" children never had an opportunity to learn to crawl or creep well; they were imprisoned in play pens or play chairs until they could walk.

The treatment in this system includes a highly formalized, concentrated pattern of exercises, which includes creeping and crawling and which are designed to stimulate and build up a child's neurological organization; that is, the step by step development of the central nervous system. The distinction between crawling and creeping for purposes of treatment is that in crawling, the child inches forward by pulling with the arms and pushing with the legs, both at the same time with his stomach on the floor; whereas in creeping his stomach is off the floor and the child advances by reaching with one arm and pushing with the opposite leg, and then repeating this pattern with the other arm and leg. It is often difficult to motivate the child to advance from a crawling phase to the creeping phase, that is to lift his stomach off the ground so that it is supported by his arms and legs. One of the purposes of the present invention is to provide a device to assist a child in performing creeping exercises by supporting his body in a creeping position.

Other studies have been conducted to determine why independent walking is delayed for blind babies. These studies have indicated that in the natural stages of development, creeping must precide walking and that blind children exhibit a marked lag in the achievement of creeping. It was found that in sighted children, the early creeping pattern results from attempts by the child to reach for out-of-range objects. Thus early creeping is a reach and a collapse sequence which gradually smooths out and becomes a motor pattern of creeping. However, for the blind baby there is no stimulus for reaching so he does not have a motivation for propelling himself forward. Thus another purpose of the present invention is to provide a creeping aid for such children, to assist in their motor development and to provide a substitute for the visual stimulus of reaching.

SUMMARY

The preferred embodiment of the present invention, which will be subsequently described in greater detail, comprises a pad or saddle having a concave side adapted for receiving a portion of the breast and belly of the patient's body and suspended by a series of adjustable slings from a wheeled frame. The frame is assembled from a pair of similarly shaped frame members pivotally connected to one another so that they may be conveniently collapsed into a relatively compact, closed condition for purposes of storage and shipping, and an open condition in which they cooperate in forming a substantially self-supporting structure for the saddle.

The saddle is suspended at a suitable height above the wheels by a series of adjustable straps which may be lengthened or shortened in order to adjust the height of the saddle above the supporting surface. Normally, the saddle is adjusted so that the arms and legs of a child whose torso is supported in the saddle can touch the supporting surface in order to propel the device across the ground.

In addition, to the advantage of height adjustability, another advantage in suspending the saddle from the frame is that it allows the child sufficient room to move his head. It therefor tends to stimulate the child to exercise and to improve their mental development because of the improvement in motor development. Still other advantages of the present invention will readily occur to one skilled in the art to which the invention pertains upon reference to the following detailed description.

DESCRIPTION OF THE DRAWING

The description refers to the accompanying drawing in which like reference characters refer to like parts throughout the several views and in which:

FIG. 1 is a perspective view of a child supported in a creeping device illustrating the preferred embodiment of the present invention;

FIG. 2 is a perspective view similar to FIG. 1 but in which the child has been removed from the device in order to show the details thereof;

FIG. 3 is a front elevational view of the preferred creeping device;

FIG. 4 is a side view of the preferred creeping device;

FIG. 5 is a view showing the device of FIG. 1 in its collapsed condition; and

FIG. 6 is an enlarged view of one of the height-adjusting straps disconnected from the saddle.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring to the drawings, the preferred creeping device comprises a pad or saddle **10** suspended from a frame generally indicated at **12** by four slings or adjustable straps **14**. The length of the straps to support the saddle **10** at a suitable height above a supporting surface so that a user **16** supported in the saddle **10** can touch the supporting surface with his hands, knees and feet.

The frame means **12** comprises a pair of similarly shaped frame members **18** and **20**, each of which has a U-shaped mid-section **22** connected at their upper ends by a pair of reverse bends **24** and **26** to the upper ends of a pair of spaced parallel legs **28** and **30**. A pair of wheels **32** and **34** are carried at the lower end of the legs **28** and **30** of each frame for swivelling about their respective legs. The frame members **18** and **20** are each preferably formed of a one piece tubular section and the two frame members connected together by pivot means **36** at the mid-section of their legs so that they are movable relative to one

another between an open position, illustrated in FIG. 4, in which the wheels of the frame **18** are spaced from the wheels of the frame **20**, and a closed, collapsed condition, illustrated in FIG. 5, in which the wheels of the frame **18** are adjacent the wheels of the frame member **20**. Similarly when the frame members **18** and **20** are in their open position, the reverse bends **24** and **26** of each of the frame members are spaced from one another so that they provide four spaced points from which the saddle **10** is suspended. In the closed condition, the reverse bends of the two frame members are slightly spaced from one another.

A pair of cooperating links **38** and **40** are connected to each pair of pivotally connected legs of the frame members **18** and **20** to limit the angular motion of the two frame members in their open position as they are opened. Thus in the open position, the two frame members are self supporting.

Referring to FIG. 6, each strap **14** is connected to a reverse bend of one of the frame members at their upper end by a ring **42**, and carries a quick disconnect coupling **44** at its lower end which is engagable with a suitable opening formed adjacent the marginal edge of the saddle **10**. Each strap **14** carries a buckle **46** which forms the strap **14** into a loop having a length that can be either reduced or increased in order to selectively adjust the height of the saddle **10** in its suspended position above the supporting surface.

The saddle **10** may be formed of a sheet of plastic, or other suitable material covered with leather or the like and preferably has a concave surface **48** on its upper side adapted to receive the trunk of a child or a person in a creeping position.

Thus it is to be understood that I have described in detail a novel creeping device which can be employed as a therapeutic aid to assist a patient in the performance of a creeping exercise. The preferred device is lightweight, stable in its open condition, and collapses into a relatively compact closed condition for storage in shipping. The suspended saddle allows the device to accommodate patients of different physical dimensions.

Although I have described but one embodiment of my invention, it is to be understood that various changes and revisions can be made therein without departing from the spirit of the invention as expressed in the scope of the appended claims.

Having thus described my invention, I claim:

1. A creeping device, comprising:

(a) a frame;

(b) wheel means carried on the bottom of the frame for supporting the frame on a supporting surface for motion;

(c) a saddle adapted to receive a portion of the breast and belly of a person in a creeping position;

(d) sling means having upper ends connected to said frame and lower ends connected to said saddle to support the saddle in a suspended position; and

(e) means on said frame for adjusting the height of the saddle above the wheel means to accommodate the length of the arms and legs of a person supported in the saddle.

2. The creeping device as defined in claim **1**, in which the frame is formed of a pair of frame members, each supporting a pair of wheels on their lower portions and having upper portions adapted to support the saddle, said pair of frame members being pivotally connected together for relative motion between an open condition in which the wheels of one of the frame members are spaced from the wheels of the second of the frame members, and a collapsed condition in which the wheels of one of the frame members are adjacent the wheels of the frame member and including means interconnecting the two frame members for limiting their relative motion in their open condition so that they cooperate in supporting the saddle in its suspended position.

3. A creeping device as defined in claim **1**, in which said sling means comprises a series of elongated straps, means connecting the upper end of each strap to said frame and their lower ends to said saddle so that the saddle is suspended from said frame by said straps and means for adjusting the length of said straps to vary the distance the saddle is suspended below the connection between the upper ends of the straps and the frame.

4. A creeping device as defined in claim **1**, in which the frame comprises a pair of frame members, each formed of an elongated tubular element having its ends bent to form a pair of spaced, parallel legs and a U-shaped mid-section joined to the upper end of each leg by a reverse bend, means pivotally joining the legs of one of the frames to the legs of the second of the frames at a point between the reverse bend and the lower end of each leg so that the frame members are relatively movable between an open condition in which the reverse bends of one of the frame members is spaced from the reverse bends of the second of the frame members, and a closed condition in which the reverse bends of the two frame members are closely spaced from one another, and wherein the sling means have their upper ends connected to the reverse bends of the frame members and their lower ends connected to the marginal edges of the saddle to suspend the saddle above the U-shaped mid-section of the frame members.

5. The invention as defined in claim **4**, wherein the sling means comprises a plurality of elongated, flexible straps with a buckle on each strap forming the strap into a loop of a selectively variable size and including means for providing a first connection between each loop and the reverse bend of each frame member and means providing a second connection between each loop and the marginal edge of the saddle.

6. The invention as defined in claim **5**, wherein the saddle is formed of a molded pad having a concave side for receiving the trunk of a body.

7. A creeping device for supporting a user in a position for performing a creeping exercise in which he reaches with his arms and pushes with his legs by motions below his body, said device comprising:

(a) a frame;

(b) wheel means connected to opposite sides of the frame for supporting it above a supporting surface;

(c) a saddle mounted on the frame to form an opening beneath the saddle adjacent the wheel means at such times as they are disposed on a supporting surface, the saddle being formed to receive the breast and belly of a user such that his arms and legs depend downwardly from the saddle; and

(d) adjustable means mounted on the frame and connected to the saddle for supporting it at a height above the supporting surface that is selected such that the user can move his hands and his knees to position beneath the saddle to contact the supporting surface as he performs a creeping exercise and thereby advance the device on said wheel means.

8. A creeping device as defined in claim **7**, in which the frame has four mutually spaced legs, and the wheel means comprises a wheel carried on the end of each leg.

9. A creeping device as defined in claim **7**, in which said frame comprises a pair of leg members, and structure connecting the leg members for motion relative to one another such that they may be disposed in a first relative position in which they cooperate to support a person in the saddle, and a second relative position in which the frame is collapsed.

10. A creeping device as defined in claim **7**, in which the frame comprises a pair of frame members, each having a pair of legs, structure connecting the two frame members such that their respective legs are spaced with

respect to one another for supporting a person in the saddle; and the wheel means comprises a wheel carried on the end of each of said legs.

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LEO FRIAGLIA, Primary Examiner

U.S. Cl. X.R.

248—431; 272—58, 70.3; 280—32.6, 41