

March 4, 1969

M. TYNDALL

3,431,020

THERAPEUTIC SUPPORTING DEVICE

Filed Oct. 24, 1966

Sheet 1 of 2

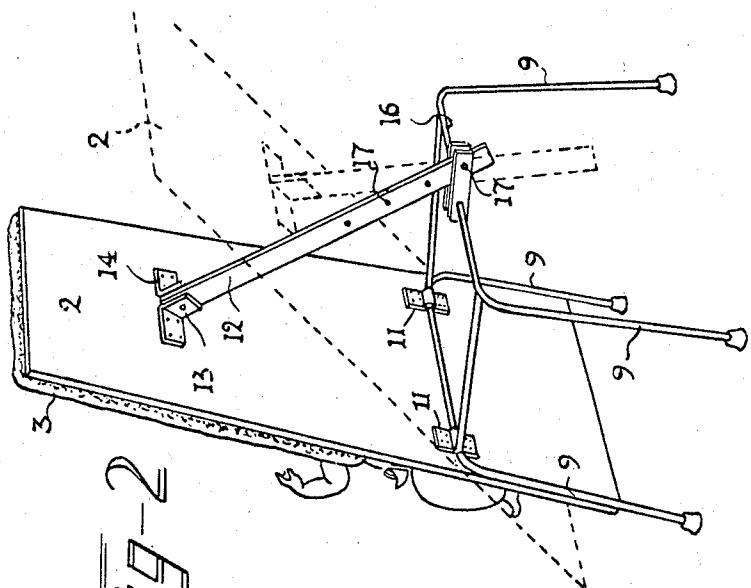


Fig. 2

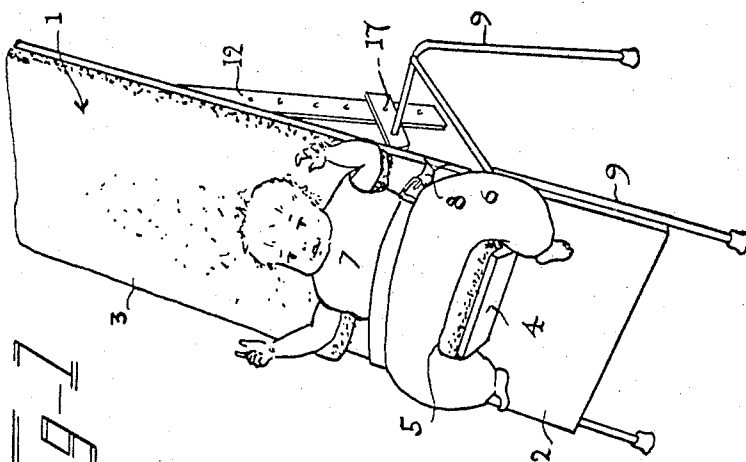


Fig. 1

MAURICE TYNDALL
INVENTOR

By *Edmund Emory Bishop*
ATTORNEY

March 4, 1969

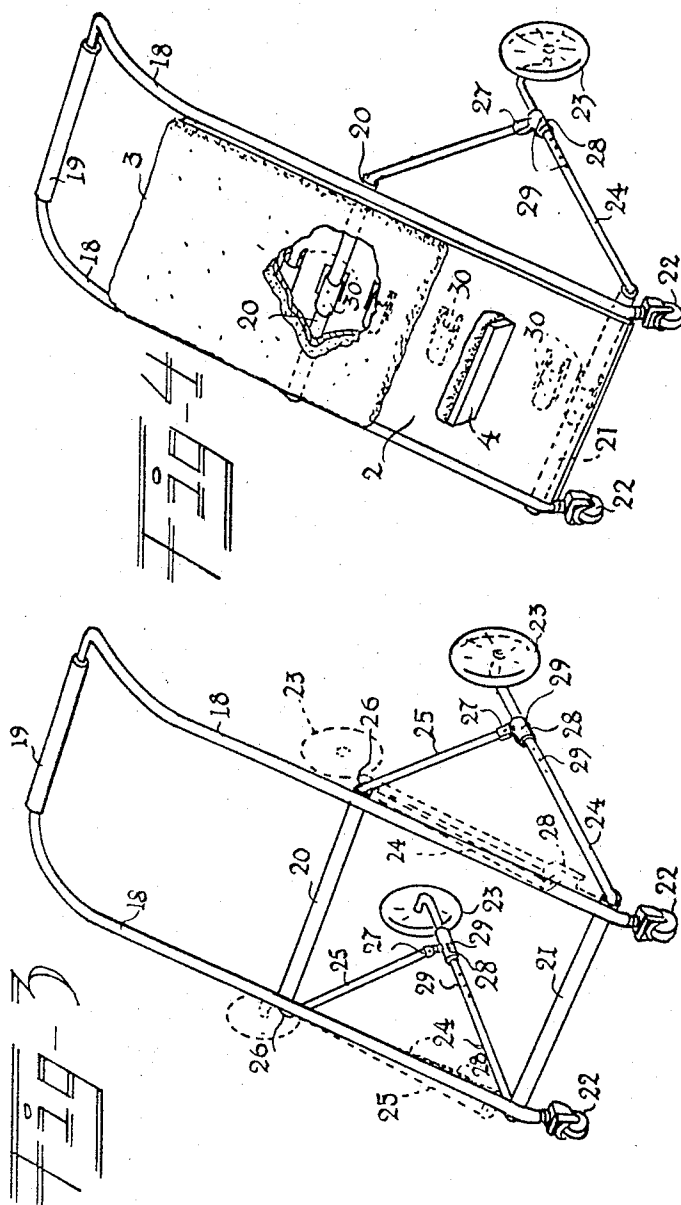
M. TYNDALL

3,431,020

THERAPEUTIC SUPPORTING DEVICE

Filed Oct. 24, 1966

Sheet 2 of 2



MAURICE TYNDALL

INVENTOR

BY *Edward Emory Bishop*
ATTORNEY

1

2

3,431,020

THERAPEUTIC SUPPORTING DEVICE

Maurice Tyndall, 5503 91st Ave.,

Edmonton, Alberta, Canada

Filed Oct. 24, 1966, Ser. No. 589,068

U.S. Cl. 297-378

Int. Cl. B60n 1/02; B60r 21/10

1 Claim

ABSTRACT OF THE DISCLOSURE

Apparatus for supporting a child encased in a congenital hip cast. It includes a flat back board tiltably mounted on a supporting framework. A crotch block, which fits snugly between the legs of the cast supports the weight of the child and cast and prevents them from tipping to either side. A strap is provided to secure the child to the board. Means are provided to fix the board at any upright angle in spaced relation above the floor.

This invention relates to a supporting device for persons whose lower extremities are encased in a cast.

Medical corrective measures for children suffering from a congenital hip condition usually comprise the encasing of the waist and legs of the child in a cast with the legs spread at an angle close to 180° in the cast. As the hip joint forms, the cast is then altered gradually to reduce the angle of the legs. Owing to the nature of this condition and the fact that the healing process is slow, it is not uncommon for a child to wear such a cast over a period of a year or more.

For the correct formation of the hip joint, it is important that the legs be held immovable while in the cast and it is frequently necessary to utilize a rigid brace between the legs of the cast to ensure this immobility.

Since this condition is usually discovered in children when they first begin to walk, it becomes necessary that the child wear the cast during its early years of life and, in many cases, when the child will require considerable attention for feeding, cleanliness and other functions.

It has been found that the weight of the growing child coupled to the weight of the cast is such that it is difficult or impossible for the mother to support the child in an upright position during the feeding process and, since great care must be exercised in that no damage should occur to the cast or its supporting brace, feeding of the child or amusement of the child becomes a tremendous problem.

Since the size of the cast and the position of the children's legs is such that the prone or lying position appears to be best, this is the position most frequently utilized by parents or people responsible for care and attention to these children with the result that the child must spend long periods in a lying position. As stated before, this generally is during the first formative years of the child's life and unless considerable and constant attention is paid to the child's needs and wants, severe behavior patterns and physical problems can result from the child not being able to amuse itself or develop its natural instincts.

An object of my invention is to provide a support for a child whose lower limbs are encased in a cast to correct a congenital hip condition.

A further object is to provide a support for a child whose lower limbs are encased in a cast to correct a congenital hip condition that will support the child in an upright, seated position.

A further object is to provide a support that will support a child as hereinbefore stated, such device being transportable while the child is supported.

A still further object is to provide a support for a

child as described that will support the child in an upright position without damage to the cast.

A still further object is to provide a device of the type described that may be adjusted to conform to casts of various sizes and shapes.

A still further object is to provide a device of this nature that may be adjusted to change the position of a child supported thereon from the upright position to the prone position while still supporting the child.

My invention is designed to overcome the above and other difficulties present in the care and handling of children suffering from a congenital hip condition and, in use, will provide a device on which such a child may be supported in an upright seated position. My device is transportable so that the child may be moved with ease when required, may be positioned close to a table or other device so that the child may amuse itself and, while still in the cast, may learn to feed itself.

In addition, the child will be supported in an upright position without there being any danger or damage to the cast and the device may be adjusted to conform to casts of various sizes and shapes. Further, my device may be collapsed quickly and easily so that it may be transported with a minimum of difficulty and then reassembled with equal ease.

With reference now to the drawings:

FIGURE 1 is a projected illustration of my device mounted on a supporting framework and with an infant seated thereon.

FIGURE 2 is a projected reverse view of the device illustrated in FIGURE 1 and illustrating in dotted lines the tilting of the device.

FIGURE 3 is a projected view illustrating a wheeled supporting framework for my device also shown in the collapsed position.

FIGURE 4 is another projected view of the wheeled supporting framework in the extended or operating position and illustrating the backpiece mounted on the framework.

With reference now to the drawings, my device comprises the flat backpiece indicated generally at 1 and which may comprise a rectangular member 2 of wood or like material with suitable padding 3 on one side. A seat or crotch block 4 is secured to the backpiece 2 by any suitable means to extend outwardly substantially at right angles from the backpiece 2 and the seat 4 is provided with suitable padding and covering material 5 similar to the covering 3. In the embodiment illustrated, the seat 4 is shown fixed rigidly to the backpiece 2 and of the correct width to fit snugly within the concave crotch portion by the cast 6. I have found that the seat 4 need only be constructed in two or three widths to fit casts of varying sizes and dimensions. The seat 4 must fit snugly within the concave crotch portion so as to prevent the cast from tilting to either side. While the seat 4 could be secured detachably to the backpiece 4 so that seats of various widths could be substituted, I have not found this necessary and, in general, the seat may be secured firmly to the backpiece and if a seat of different width is required, the seat may be installed when the device is constructed. Obviously, a simple bolt and nut means to secure the seat 4 to the back 2 could be provided if many changes in the seat widths were necessary.

As seen in FIGURE 1 in the drawings, the infant 7 is seated on the seat 4 with the cast 6 extending on opposite sides of the seat and the infant is secured on the seat by restraining means such as a simple safety belt 8 connected to the backpiece 2. A framework consisting of legs 9 and cross members 10 and 15 supports the backpiece 2. The backpiece is secured to the cross member 10 by the

3

clamps 11 or like means so that the backpiece 2 may be tilted as indicated by the dotted lines in FIGURE 2.

Adjustment of the angle of the backpiece 2 with relation to the framework is governed by the adjusting arm 12 connected at 13 to the bracket 14 on the backpiece 2 and slideable through the slotted member 15 on the cross member 16 of the framework. Securement of the arm 12 in the slotted member 15 is by way of a pin or like device extending through mating openings 17 in the slotted member 15 and the adjusting arm 12.

A wheeled framework for my device is illustrated in FIGURES 3 and 4 in the drawings. The wheeled framework consists of the U-shaped member including the handle 19 and arm 18 with cross members 20 and 21 secured to the arms 18 and with front castor wheels 22 mounted in the ends of the arms 18. Rear wheels 23 are secured at the ends of wheel arms 24 which are secured rotatably in the ends of the cross member 21 and foldable from a horizontal operating position to a folded position alongside the arms 18. Bracing arms 25 are secured rotatably at 26 in the ends of the crosspiece 20 and are connected rotatably at 27 at their opposite ends to the sleeves 28 operating slidably along the wheel arms 24. Securement of the sleeves 28 in the desired position on the arms 24 is accomplished through simple pins or like means extending through mating openings 29 in the arms 24 and sleeves 28.

The backpiece 2 with the seat 4 projecting therefrom is secured on the cross members 20 and 21 by simple spring clamps 30. The principle requirement of the clamps 30 is that the backpiece 2 should be capable of being clamped securely and at the same time released without difficulty so that the framework may be collapsed for transportation. The backpiece 2 then may be transported with a child seated thereon or may be stored or transported separately from the wheeled or other framework.

In operation, the backpiece 2 would be constructed with suitable padding and the seat 4 would be either secured rigidly to the backpiece 2 or would be secured detachably through a simple bolt or like means so that the seat could be changed if desired. Thereafter, the backpiece 2 could be attached either to the framework as illustrated in FIGURES 1 and 2 if the child did not require to be moved about or if it were necessary to move the child about, the backpiece 2 would be attached to the wheeled framework illustrated in FIGURES 3 and 4.

As described previously, the cast 6 generally is altered in shape as the hip socket is formed and, usually, the cast

4

is formed so that the legs of the infant are brought progressively closer together and are pointing in a more forward direction than illustrated. When this is done, and, if the seat 4 is of too great a width, it is only necessary to remove the seat from the backpiece, substitute a seat of the correct width and the device will provide support as before.

What I claim as my invention is:

1. Apparatus for supporting a child having its legs and waist encased in a cast for correction of congenital hip condition which comprises:

(A) A flat backpiece for supporting the child and cast;

(B) A crotch piece, secured to and extending outwardly from the front surface of the backpiece, adapted to fit snugly within the concave crotch portion of the cast for supporting the child and cast when the backpiece is in a substantially upright position and preventing the cast from tilting to either side when supported thereby;

(C) A supporting framework;

(D) Said backpiece being tiltably mounted on the support structure whereby it may be moved between horizontal and upright positions;

(E) Adjustable means connecting the supporting framework and the backpiece to support the backpiece in a particular upright position; and

(F) Restraining means connected to the backpiece for securing the child thereto.

References Cited

UNITED STATES PATENTS

2,509,040	5/1950	Kibbe	297—255
2,655,982	10/1953	Christensen	297—338 X
2,777,138	1/1957	Gallagher	297—377 X
2,894,267	7/1959	Owens	297—68 X
2,947,998	8/1960	Murphy	5—77
3,239,271	3/1966	Bergersen	297—130
3,290,050	12/1966	Ezqherra	297—130
3,337,263	8/1967	Reynolds	297—182
3,339,544	9/1967	Kravitz	128—80

BOBBY R. GAY, *Primary Examiner*.

G. O. FINCH, *Assistant Examiner*.

U.S. Cl. X.R.

297—384; 5—62, 8.1