United States Patent

[11] 3,540,774

[72] Inventor **Harold A. Bailey**
Birmingham, Alabama (P.O. Box 250
Pinson, AL 35126)

[21] Appl. No. **752,618**
[22] Filed **Aug. 14, 1968**
[45] Patented **Nov. 17, 1970**

[54] **ORTHOPEDIC AND LIKE CHAIR**
10 Claims, 5 Drawing Figs.

[52] **U.S. Cl.** **297/42,** 297/148
[51] **Int. Cl.** **A47c 4/00**
[50] **Field of Search** ..... 297/Wheel Chair Digest, 148, 183, 195, 45, 42; 280/47.4, 42

[56] **References Cited**
UNITED STATES PATENTS

2,733,754	2/1956	Leslie et al.	297/6
2,810,429	10/1957	Lane et al.	297/42
2,866,495	12/1958	Diehl et al.	297/42
3,142,351	7/1964	Green	297/42

Primary Examiner—James T. McCall
Attorney—Buell, Blenko & Ziesenheim

ABSTRACT: A chair having a horizontal translatable frame carrying upstanding support members at one end thereof. A seat is carried by the upstanding members and extends forwardly thereof over and in vertically spaced relation to the horizontal frame with the seat being supported adjacent the rear thereof by the upstanding members with the forward end of the seat being free. The upstanding members cross each other and are pivotally connected to each other with the seat being supported adjacent the pivotal connection.

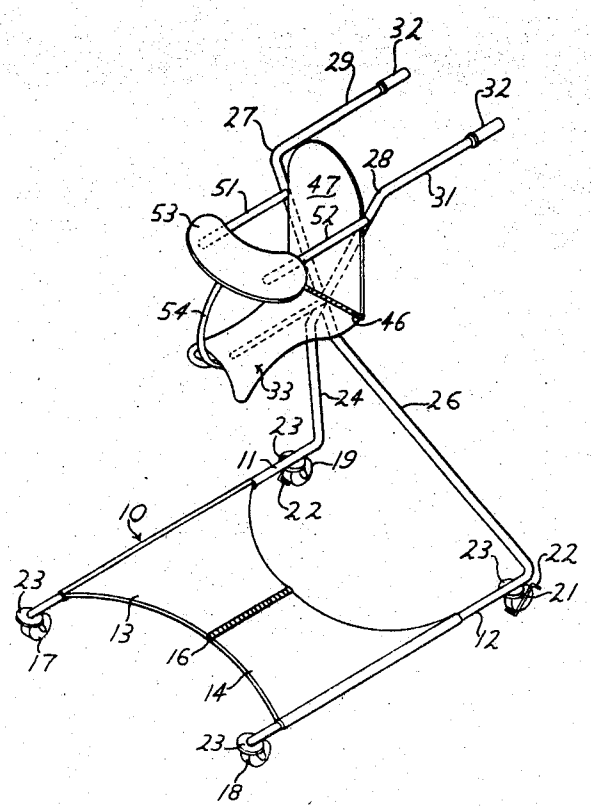
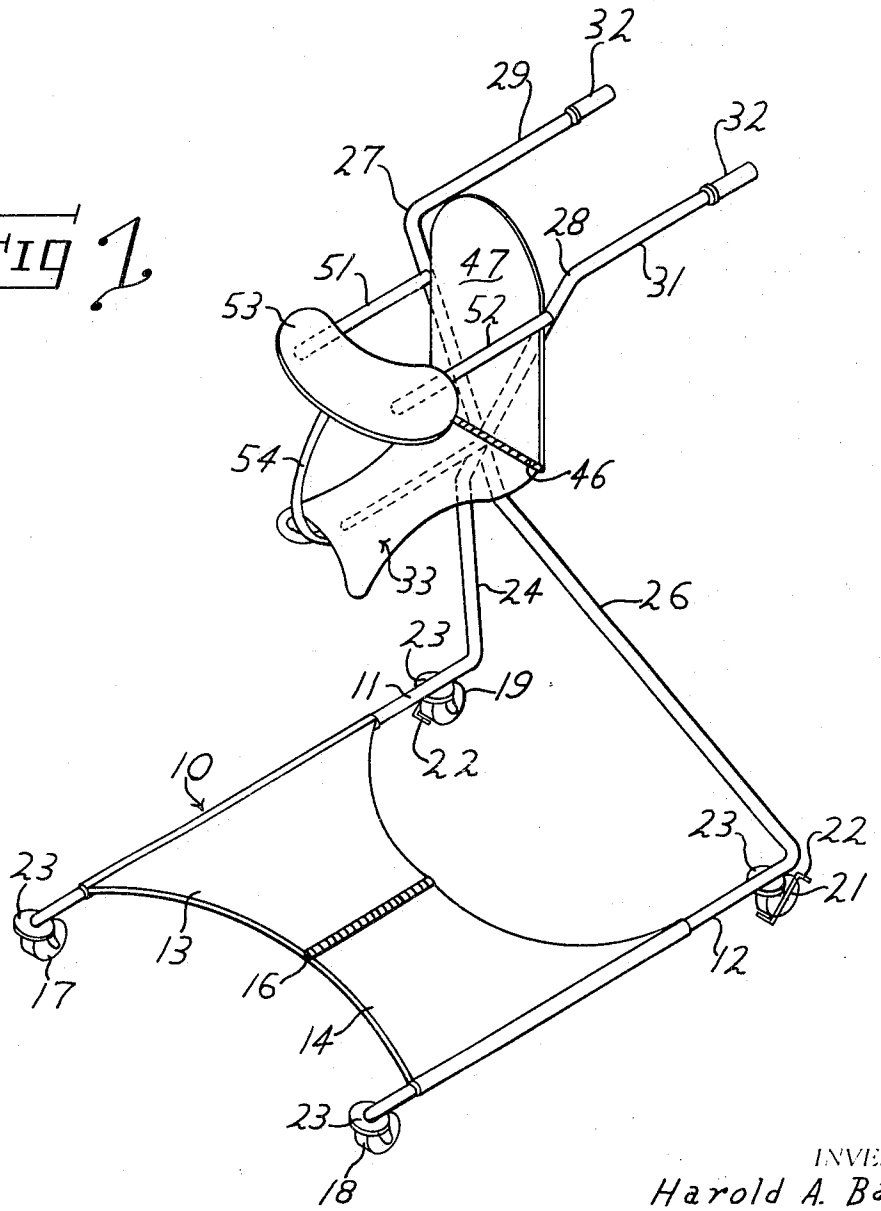


FIG 1.



INVENTOR
Harold A. Bailey
BY
Jennings, Carter & Thompson
Attorneys

FIG 3

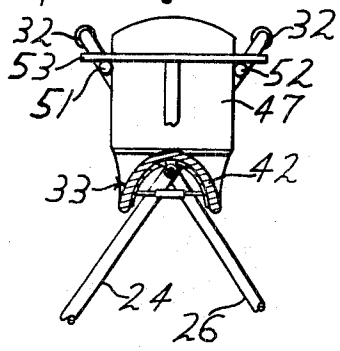
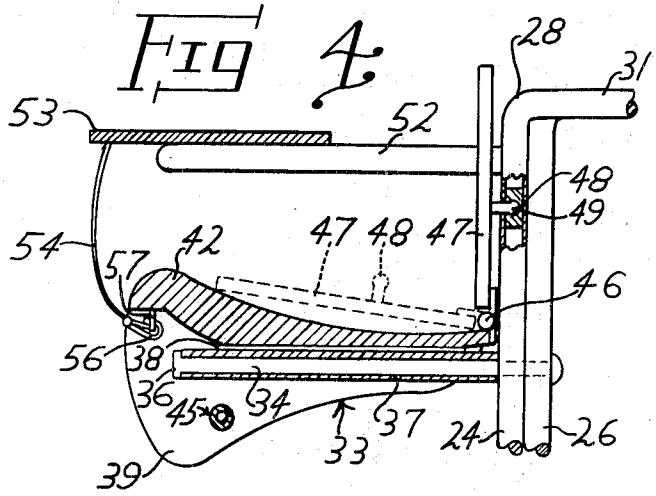


FIG 4



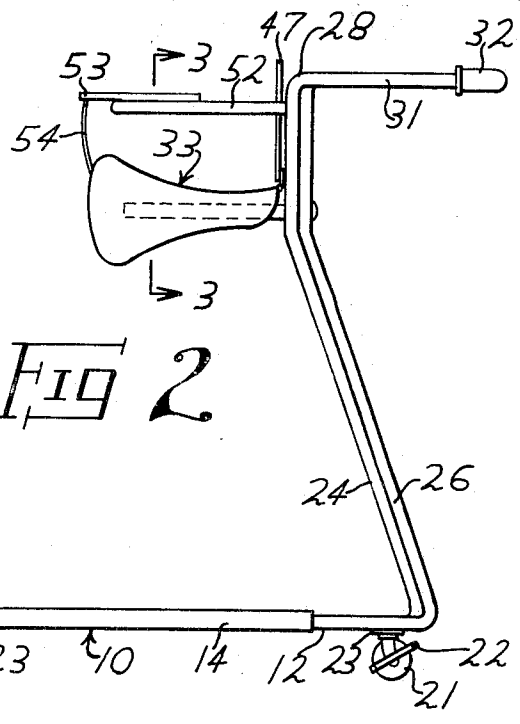


FIG 2

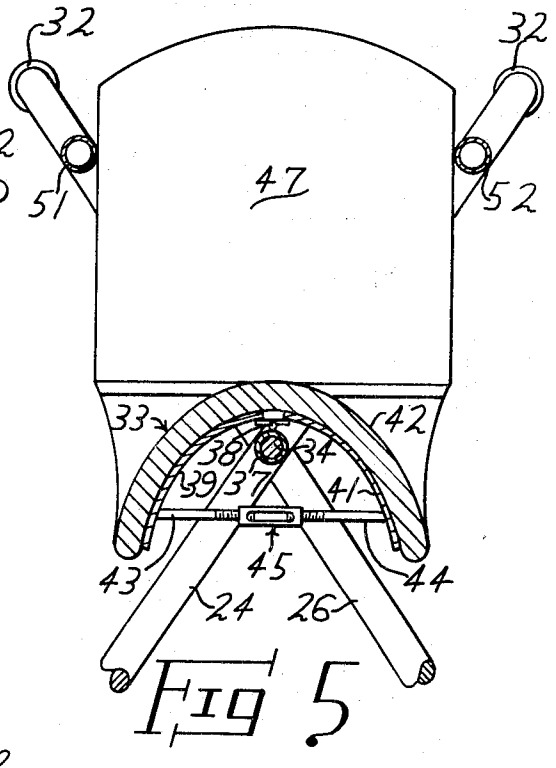


FIG 5

INVENTOR.
Harold A. Bailey
BY
Jennings, Carter & Thompson
Attorneys

ORTHOPEDIC AND LIKE CHAIR

BACKGROUND OF THE INVENTION

This invention relates to a chair and more particularly to such a chair which shall be adapted for use with orthopedic patients in the treatment of fracture cases as well as dislocated hips in both adults and children.

Heretofore in the art to which my invention relates, difficulties have been encountered in supporting persons undergoing orthopedic treatment where it is desired to avoid weight bearing on the fractured area or dislocated joints or where the patient could not sit in a normal sitting position. This is especially true where transverse barlike members are employed to secure the legs of a patient at fixed positions relative to each other while the fracture or dislocated joint is undergoing treatment.

BRIEF SUMMARY OF INVENTION

To overcome the above and other difficulties, I provide a chair having a forwardly extending seat which is mounted adjacent its rear end to upstanding support members whereby the seat is held in vertically spaced relation to and extends over a horizontal translatable frame mounted for movement adjacent a supporting surface. The forward end of the seat is thus free of obstructions, such as support members for the forward end of the seat, whereby the legs of the user are free to extend downwardly alongside and beneath the seat. The chair is adapted to move from a collapsed position to an extended, operating position whereby the chair requires a minimum of space when not in use and when stored.

A chair embodying features of my invention is illustrated in the accompanying drawings, forming a part of this application, in which:

FIG. 1 is a perspective view showing the chair in operating position;

FIG. 2 is a side elevational view of the chair;

FIG. 3 is a sectional view taken generally along the line 3–3 of FIG. 2;

FIG. 4 is an enlarged, fragmental, sectional view showing the manner in which the seat and chair back are supported from the upstanding support members; and,

FIG. 5 is an enlarged view corresponding to FIG. 3, showing the arms broken away and in section with the tray omitted for the sake of clarity.

Referring now to the drawings for a better understanding of my invention, I show a horizontal, translatable frame 10 which comprises elongated side members 11 and 12 which are adapted to be supported in spaced relation to each other, as shown in FIG. 1, while in use. Pivotally connected to the elongated side members 11 and 12 are inwardly extending brace members 13 and 14, respectively. Preferably, the brace members 13 and 14 are provided with rolled edges which define cylindrical openings for receiving the elongated side members 11 and 12. The inner ends of the brace members 13 and 14 are hingedly connected to each other by a suitable hinge 16 whereby the inner ends of the brace members 13 and 14 are adapted to move upwardly while the elongated side members 11 and 12 move inwardly toward each other to a collapsed position. Caster wheels 17 and 18 are mounted at the forward ends of the elongated members 11 and 12 while caster wheels 19 and 21 are mounted beneath the rear ends of the elongated members 11 and 12, as shown. The rear caster wheels 19 and 21 are provided with conventional type locking units 22 which hold the wheels 19 and 21 against rotation while the locking units are engaged in a manner well understood in the art to which my invention relates. Preferably, annular, resilient members 23 surround the upper portion of each caster wheel to prevent the chair from damaging furniture, walls, fixtures and the like that it might contact while in use.

Formed integrally with the rear ends of the elongated side members 11 and 12 are upstanding support members 24 and 26, respectively. As shown in FIGS. 1, 3 and 5, the upstanding

support members 24 and 26 extend inwardly toward each other and cross each other, as shown. The uppermost ends of the upstanding members 24 and 26 are bent as at 27 and 28, respectively, to provide rearwardly extending, spaced apart handle members 29 and 31, respectively. Suitable resilient covers 32 are mounted on the ends of the handle members 29 and 31 to facilitate gripping the handle members.

Pivotally connected to the upstanding support members 24 and 26 at the point the upstanding members cross each other is a seat unit indicated generally at 33. The seat unit comprises an elongated shaftlike member 34 which extends through suitable openings in the upstanding support members 24 and 26 and is secured rigidly to upstanding support member 26. Surrounding the shaftlike member 24 intermediate the upstanding support member 24 and a head member 36 formed on the shaft 34 is an elongated sleeve 37 which is mounted for free rotation on shaft 34. Secured to the top of the sleeve 37 is a hinge 38 which is interposed between and secured to the upper ends of downwardly and outwardly extending side members 39 and 41 of the seat proper. The upper surfaces of the side members 39 and 41 are secured to the inner surface of a curved, resilient cover member 42 for the seat, which is soft and pliable enough to assure that there is no pinching of a person secured in a cast.

Secured to the inner surfaces of the downwardly and outwardly extending side members 39 and 41 are elongated members 43 and 44, respectively, of a turnbuckle unit indicated generally at 45. By rotating the turnbuckle unit 45 in one direction, the depending sides 39 and 41 are moved away from each other to increase the effective contour of the seat 33. On the other hand, upon rotation of the turnbuckle unit 45 in the opposite direction the sides 39 and 41 move toward each other to decrease the contour size of the seat 33.

Hingedly connected to the rear end of the seat 33 by a suitable hinge 46 is a chair back 47 which is adapted to move from the solid line position shown in FIG. 4 to the dotted line position. Secured to and projecting rearwardly of the back 47 are spaced-apart projections 48 which are adapted to snap into recesses 49 carried by the upper ends of the upstanding support members 24 and 26, as shown in FIG. 4. That is, with the projection 48 engaging the recess 49, the chair back 47 is held in the upstanding operating position. To move the chair back 47 to the inoperative, collapsed position, the upper end of the back 47 is moved forwardly and downwardly to the dotted line position whereby the upstanding support members 24 and 26 may be pivoted relative to the shaftlike member 34 to a collapsed position. It will be understood that prior to moving the upper ends of the upstanding members 24 and 26 toward each other, the inner ends of the brace member 13 and 14 are pulled upwardly to permit the elongated members 11 and 12 to move inwardly toward each other as the upstanding members 24 and 26 are pivoted about the shaft 34.

Secured to the upstanding support members 24 and 26 above the shaftlike member 34 are forwardly extending arms 51 and 52 which are in position to extend alongside and engage the sides of the chair back 47 while the back is in the vertical operating position. The engagement of the arms 51 and 52 with the sides of the chair back 47 thus aid in retaining the upper ends of the upstanding support members 24 and 26 in the operating position until the chair back 47 is moved downwardly and inwardly to the dotted line position shown in FIG. 4. Mounted for longitudinal adjustment along the forwardly extending arms 51 and 52 is a transverse tray 53 which may be of a conventional type tray employed on high chairs for small children. The transverse tray 53 may be completely removed from the arms 51 and 52 as the person is positioned on the seat 34 with the legs of the person extending downwardly beneath the seat. After the person is seated, the tray 53 is attached to the forwardly extending arms 51 and 52 and adjusted to the proper position in the usual manner. Where the chair is used by a small child, a strap 54 is attached at its upper end to the under surface of the tray 53 and a suitable catch 56 is provided at the lower end of the strap 54 for en-

gaging an eye member **57** carried by the under portion of the seat **33**, as shown in FIG. **4**.

From the foregoing description, the operation of my improved chair will be readily understood. While the chair is not in use, the transverse tray **53** is removed from the forwardly projecting arms **51** and **52** and the chair back **47** is moved from the solid line position shown in FIG. **4** to the dotted line position. The hinge member **16** connecting the inner ends of the brace member **13** and **14** is then lifted whereby the elongated side members **11** and **12** move inwardly toward each other as the rearwardly extending handle member **29** and **31** move inwardly toward each other. With the chair in the collapsed position, a minimum of space is required for the chair while it is being transported from place to place or stored.

To move the elements of the chair toward extended or operating position, the handle members **29** and **31** and the elongated side members **11** and **12** are moved away from each other whereby the upstanding support members **24** and **26** pivot about the shaftlike member **34** to the operating position with the brace members **13** and **14** extending in a generally horizontal plane. The chair back **47** is moved from the dotted line position shown in FIG. **4** to the solid line position whereupon the projections **48** move into engagement with the recesses **49** carried by upper portions of the upstanding members **24** and **26**. The engagement of the projections **48** with the recesses **49** in combination with the engagement of the forwardly extending arms **51** and **52** with the sides of the back **47** retain the chair in the operating position. With the chair thus assembled, the person to be supported therein is positioned on the seat **33** with the legs of the person depending beneath the seat. The transverse tray **53** may then be detachably connected to the forwardly extending arms **51** and **52** and the lower end of the flexible strap **54** may be attached to the eye member **57**. As shown in FIG. **2**, the point that the person is supported on the seat **33** is directly above the center of the horizontally extending, translatable frame **10** to provide a well balanced unit.

From the foregoing, it will be seen that I have devised an improved chair which is particularly adapted for use with orthopedic cases. By providing a forwardly extending seat which is supported entirely adjacent the rear end thereof by the pivotally mounted upstanding support members, no supporting members obstruct the under surface of the forward portion of the chair seat whereby the legs of a person rigidly connected to each other may be readily inserted beneath the seat as the person is positioned on the seat. By providing releasable lock means for attaching the chair back to the upstanding support members together with the engagement of the forwardly extending arms **51** and **52** with the sides of the chair back, the upstanding members **24** and **26** are held in a stable operating position whereby there is no chance of accidental collapse of the chair. Also, the position of the inwardly extending brace member **13** and **14** prevent inward movement of the elongated side members **11** and **12** until the hinged portion **16** thereof is raised. Furthermore, by providing a rearwardly opening recess at the rear of the translatable frame between the upstanding support members **24** and **26**, the person pushing the chair has ample leg room to permit easy manipulation of the chair as it is moved from place to place.

It will be apparent that a suitable collapsible baglike member may be supported from the handle members **29** and **31** for carrying articles necessary to a child's care, if desired.

While I have shown my invention in but one form, it will be obvious to those skilled in the art that it is not so limited, but is susceptible of various other changes and modifications without departing from the spirit thereof.

I claim:

1. A chair comprising:

a. a horizontally extending translatable frame mounted for movement adjacent a supporting surface;

b. at least one upstanding vertical support member carried by one end of said translatable frame;

c. a single horizontally extending support member fixed at one end to said vertical support member and extending parallel to the frame;

d. a seat carried by said horizontally extending support member and extending forwardly thereof over and in vertically spaced relation to said translatable frame with said seat being supported entirely adjacent the rear thereof by said single horizontally extending member on said upstanding vertical support member with the forward end of said seat being free; and

e. handle means carried by the chair for moving said chair.

2. A chair as defined in claim **1** in which said translatable frame comprises:

a. an elongated side member at each side of said translatable frame with each side member being in spaced relation to the other side member;

b. inwardly extending brace members pivotally connected at their outer ends to said elongated members; and

c. means pivotally connecting the inner ends of said inwardly extending brace members to each other whereby said side members are adapted to move selectively from an operating position in spaced relation to each other to a collapsed position adjacent each other.

3. A chair as defined in claim **2** in which each said elongated side member is formed integrally with an upstanding support member with the upstanding support members extending inwardly across each other and pivotally connected to each other at the point where the single horizontally extending member is fixed.

4. A chair as defined in claim **3** in which the uppermost ends of said upstanding support members extend rearwardly and define spaced apart handle members for moving the chair.

5. A chair comprising:

a. a horizontally extending translatable frame mounted for movement adjacent a supporting surface, said frame having an elongated side member at each side of said translatable frame with each side member being in spaced relation to the other side member;

b. at least one upstanding support member carried by one end of said translatable frame, said frame formed integrally with a said upstanding support member with the upstanding support members extending inwardly across each other and pivotally connected to each other at the point they cross, inwardly extending brace members pivotally connected at their outer ends to said elongated members, and means pivotally connecting the inner ends of said inwardly extending brace members to each other whereby said side members are adapted to move selectively from an operating position in spaced relation to each other to a collapsed position adjacent each other;

c. a seat carried by said upstanding support member and extending forwardly thereof over and in vertically spaced relation to said translatable frame with said seat being supported entirely adjacent the rear thereof by said upstanding support member with the forward end of said seat being free;

d. handle means carried by the chair for moving said chair; and

e. a chair back hingedly connected to said seat adjacent the rear thereof and adapted to move from a collapsed position adjacent said seat to an upstanding operating position adjacent said upstanding support members.

6. A chair as defined in claim **5** in which said chair back is detachably connected to said upstanding support members to retain said chair back and said upstanding support members in operating position.

7. A chair as defined in claim **5** in which forwardly extending arms are carried by said upstanding support members in position to engage the sides of said chair back while said chair back is in vertical operating position to restrain inward movement of said upstanding support members toward each other.

8. A chair as defined in claim **7** in which a tray extends transversely of said forwardly extending arms and is detachably connected to said arms.

9. A chair comprising:

a. a horizontally extending translatable frame mounted for movement adjacent a supporting surface, said frame having an elongated side member at each side of said translatable frame with each side member being in spaced relation to the other side member;

b. at least one upstanding support member carried by one end of said translatable frame, said frame formed integrally with a said upstanding support member with the upstanding support members extending inwardly across each other and pivotally connected to each other at the point they cross, inwardly extending brace members pivotally connected at their outer ends to said elongated members, and means pivotally connecting the inner ends of said inwardly extending brace members to each other whereby said side members are adapted to move selectively from an operating position in spaced relation to each other to a collapsed position adjacent each other;

c. a seat carried by said upstanding support member and extending forwardly thereof over and in vertically spaced relation to said translatable frame with said seat being supported entirely adjacent the rear thereof by said upstanding support member with the forward end of said seat being free, said seat being supported by said upstanding support members at the point they cross; and

d. handle means carried by the chair for moving said chair.

10. A chair as defined in claim 9 in which said seat comprises:

a. a horizontal support bar connected to said upstanding support member adjacent the point they cross;

b. a sleevelike member mounted for rotation on said horizontal bar;

c. side members hingedly connected to said sleevelike member and extending downwardly and outwardly of opposite sides thereof; and

d. means retaining said side members at selected positions relative to each other to vary the effective contour of said seat.