United States Patent

[11] **3,591,874**

[72] Inventor **Niel Anthony O'Kennedy**
Vevay, Church Road, Ballybrack, Ireland

[21] Appl. No. **834,449**
[22] Filed **June 18, 1969**
[45] Patented **July 13, 1971**

[54] **STRUCTURAL AIDS FOR INVALIDS**
9 Claims, 3 Drawing Figs.

[52] **U.S. Cl.** **5/81,** 5/92, 297/423
[51] **Int. Cl.** **A61g 7/10,** A47c 7/50
[50] **Field of Search** ..... 5/81—86, 92, 317, 327; 297/4—6, 423; 272/57, 79; 248/121

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Primary Examiner—Casmir A. Nunberg
Attorneys—Ralph E. Bucknam, Jesse D. Reingold, Robert R. Strack and Henry A. Marzullo, Jr.

ABSTRACT: A structural aid for an invalid, said structural aid comprising a frame supporting a bar or other member which is adapted to be gripped by an invalid when in a seated position, the frame being so constructed that the force applied by the invalid in raising himself from the seated to a standing position serves to stabilize the frame against movement in response to said force.

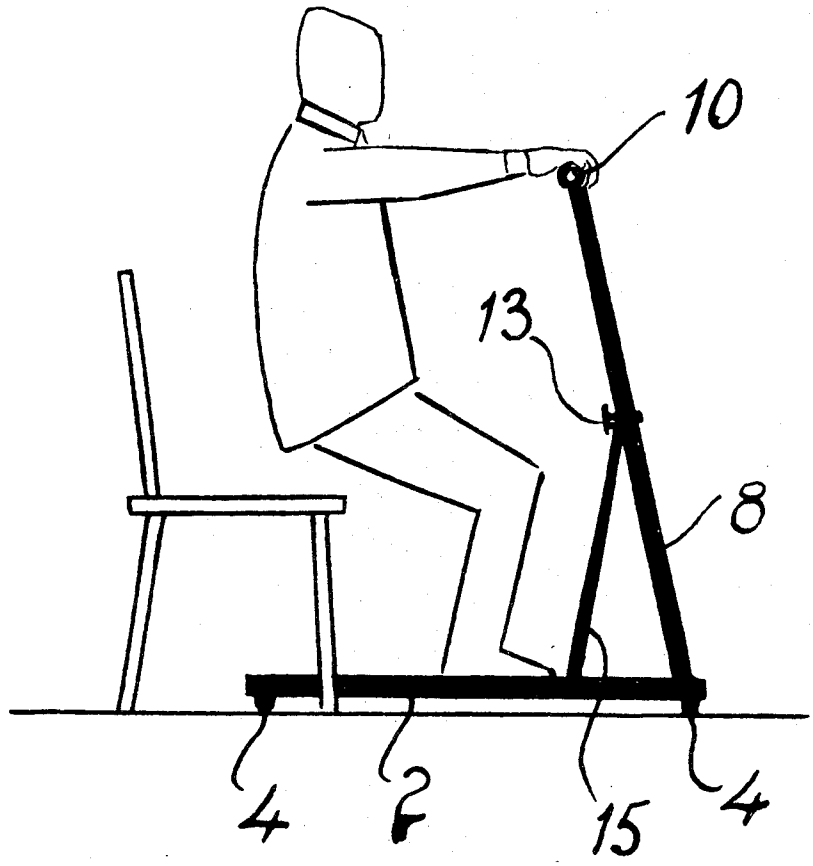
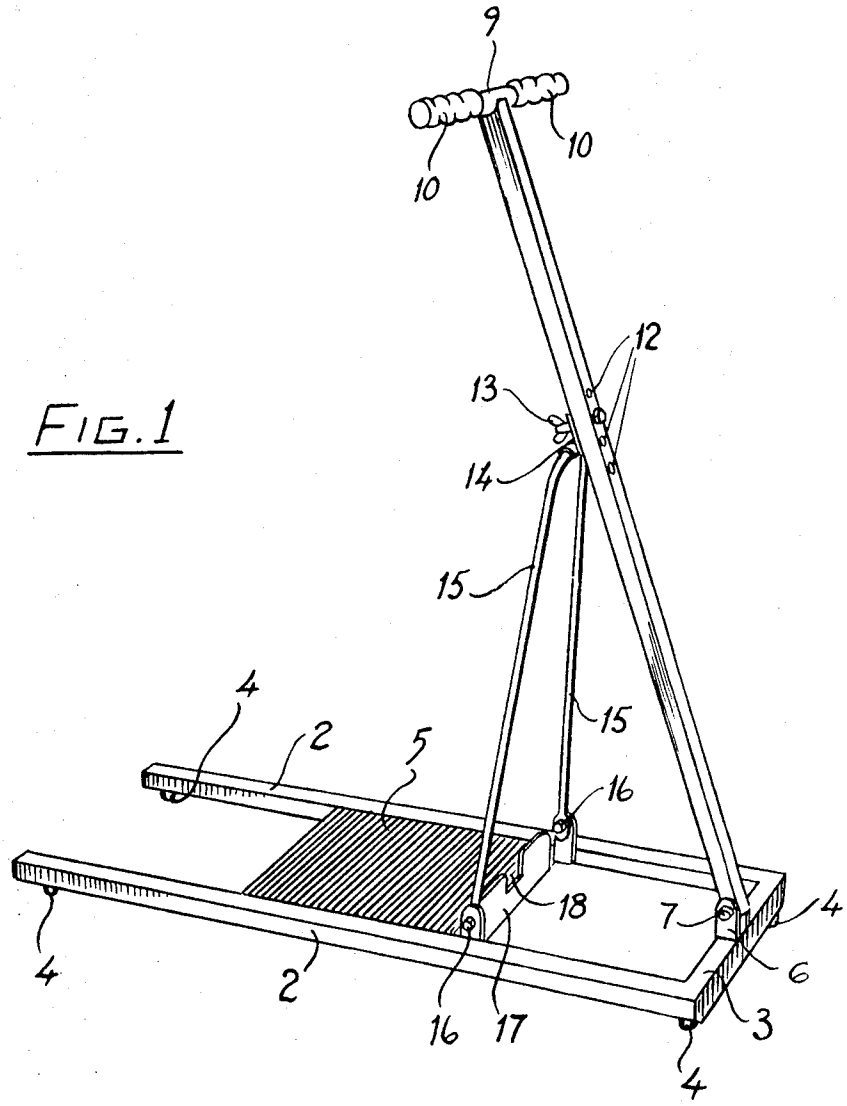


FIG. 1



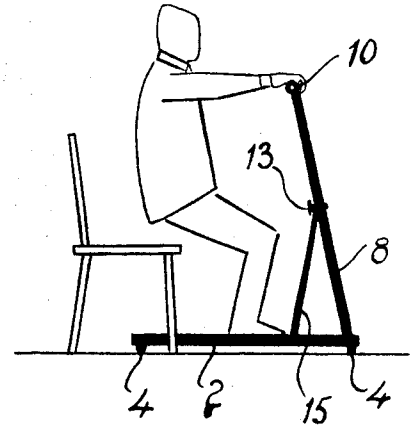


FIG. 2

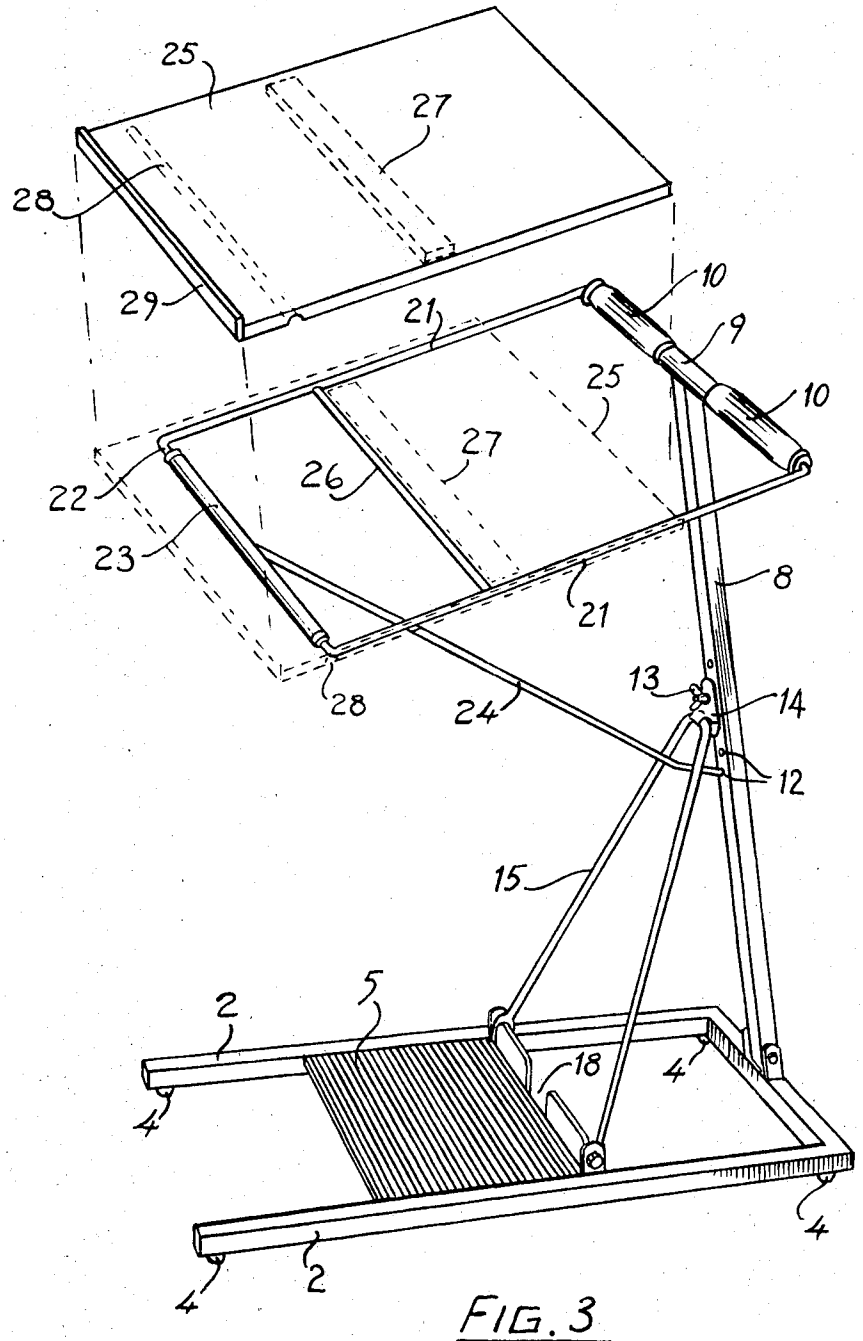


FIG. 3

STRUCTURAL AIDS FOR INVALIDS

The present invention relates to a structural aid for invalids and the invention is particularly concerned with a unit whereby an elderly or partially disabled person may rise from a seated to a standing position, and vice versa, without extraneous assistance.

Many invalids who are capable of walking are not sufficiently strong to raise themselves from a seated to a standing position and, accordingly, for this purpose require the assistance of a nurse or other party. An object of the present invention is to provide a structural aid by means of which many such invalids may be permitted to elevate themselves from a seated into a standing position.

According to the invention, there is provided a structural aid for an invalid, said structural aid comprising a frame supporting a bar or other member which is adapted to be gripped by an invalid when in a seated position, the frame being so constructed that the force applied by the invalid in raising himself from the seated to a standing position serves to stabilize the frame against movement in response to said force.

Advantageously, the frame comprises a horizontal platform integral with an upwardly extending member or members, the latter supporting a bar elevated above but disposed substantially parallel to the platform, means being associated with the platform so as to prevent movement of the latter from its horizontal position when an invalid places his or her feet on the platform and rises with the aid of said bar. Said means may include a bar or bars extending from the platform in the direction of the force exerted by an invalid in rising onto the platform.

In a preferred construction according to the invention, the frame includes a substantially U-shaped base member between the limbs and spaced from the bridge member of which is a platform, a support member pivotally connected to said bridge member for movement from a folded position adjacent the platform to an erected position at an acute angle to the plane of the platform, a brace member for securing said support member in the erected position of the latter, and a handle-supporting bar carried by the free end of said support member, said bar being parallel to the platform.

Advantageously, the brace member is pivotally connected adjacent one end of the platform and is movable from a folded position parallel to the platform to said erected position in which it is disposed at an obtuse angle to the platform.

The invention will hereinafter be described more particularly with reference to the accompanying drawings which illustrate, by way of example only, a preferred embodiment thereof, and wherein,

FIG. 1 is a perspective view of a structural aid according to the invention,

FIG. 2 is a diagrammatic side elevation, and

FIG. 3 is an exploded perspective view of the structural aid together with an attachment therefor.

Referring to the drawings, the structural aid comprises a U-shaped base member having limbs 2, a bridge piece 3 and resilient support elements 4. Between the limbs 2 is secured a platform 5 and projecting upwardly from the bridge piece 3 is a bracket 6 supporting a pivot pin 7 which passes through one end of a member 8, to the other end of which is secured a bar 9 provided with handles 10.

Intermediate the ends of the member 8 are apertures 12 for receiving a bolt 13 associated with a slidable connection 14 for securing, at one of the apertures 12, the adjacent end of a substantially V-shaped brace member 15 the other ends of which are pivotally connected, by pins 16 to a support member 17 located at one end of the platform 5 and disposed between the limbs 2 of the base member.

Each end of the bar 9 has an aperture therein for receiving the inturned ends of the limbs 21 of a substantially U-shaped table support, having, on the bridge piece 22 thereof, a tubular rotatable member 23 to which is secured one end of a brace

24, the other end of which is bent to facilitate entry into one of the apertures 12 provided in the member 8.

A table top 25 is adapted to rest upon the table support and to facilitate the positioning of the table top on the table support, the latter has a further bridge member 26 against which a transverse locating bar 27 secured to the underside of the table top 25 is adapted to bear. The table top 25 has a transverse channel 28 in the underside thereof for receiving the rotatable member 23 when the table top 25 is placed upon the table support. An end piece 29, which projects above the plane of the table top 25, serves to prevent matter from sliding off the table top in its inclined position of use.

When intended to be used without the table top and supporting framework, the structural aid may be placed in front of a seat containing an invalid, the free ends of the limbs 2 extending beneath the seat, as indicated in FIG. 2. When the invalid desires to rise, it is merely necessary for the invalid to place his or her feet on the platform 5, to grip the handles 10 of the bar 9 and to rise in the manner shown in FIG. 2. It will readily be appreciated that the force applied by the Patient whose weight is on the platform serves to stabilize the structural aid.

When not required for use, the V-shaped brace member 15 may be disconnected from the member 8 and folded in the direction of the free ends of the limbs 2 until the brace member 15 contacts and rests upon the platform 5. The member 8 may also be folded in the same direction to rest upon the platform 5, the support member 17 having a cutout 18 therein to receive and accommodate the member 8 in the folded position of the latter. When in the folded position, the structural aid may conveniently be transported.

If desired, casters may be provided on the structural aid to enable the latter to be moved in its erected position from one seat or position to another by an invalid.

It will be appreciated that the structural aid may be constructed from wood or tubular steel or a combination of both. As the structural aid is adapted to be stabilized by an invalid user, the aid may be light in construction.

I claim:

1. A structural aid for invalids, said structural aid comprising a base frame of elongated form, a foot rest carried by said base frame at a position spaced from one extremity thereof and adapted to be engaged by a foot or feet of a person seated at a position adjacent to said one extremity, and a handle member mounted on said base frame at a position spaced from said one extremity and adapted to be gripped by such person when in the seated position, to assist him in raising himself from the seated to a standing position, whereby downward pressure exerted on said foot rest serves to stabilize said base frame against tilting movement about said one extremity thereof which tends to occur under the action of force applied to said handle member.

2. A structural aid as claimed in claim 1, including support means for said handle member comprising at least one elongated member extending upwardly from the other extremity of said base frame and inclined towards said one extremity, with said handle member mounted at the upper part thereof, and at least one brace member extending upwardly from a point on said base frame intermediate between said extremities thereof to a point intermediate the length of said elongated member, whereby when a person pulls on said handle member to assist in raising himself, downward pressure is applied by said brace member to said base frame.

3. A structural aid as claimed in claim 1, in which said base frame is of generally U-shape, having side limbs and a bridge member, said side limbs having their free ends defining said one extremity of said base frame and said bridge member forming the other extremity of said base frame, and in which said foot rest comprises a substantially horizontal platform located at an intermediate position of said base frame, between said side limbs, and said handle member includes a bar spaced above said platform and extending transversely relatively to said base frame and parallel to said platform and

at least one elongated support member extending generally upwardly from said base frame to support said bar.

4. A structural aid as claimed in claim 3, in which said support member is pivotally mounted on said bridge member for movement between an erected position in which it extends generally upwardly at an acute angle to the plane of said U-shaped base frame, and a folded position in which it extends parallel to the plane of said base frame, and wherein said aid includes a brace member adapted to extend between an intermediate point of said base frame and an intermediate point of the length of said elongated support member to maintain the latter in its erected position.

5. A structural aid as claimed in claim 4, in which said brace member is pivotally connected adjacent one end of said platform and is movable between a folded position in which it extends generally parallel to said platform and a position in which it is disposed at an obtuse angle to said platform and supports said support member in its erected position.

6. A structural aid as claimed in claim 5, in which said brace member is substantially V-shaped, the free ends of the arms of said V-shaped brace member being pivotally connected adjacent said platform and means being provided for detachably connecting the apex of said V-shaped brace member to said support member.

7. A structural aid as claimed in claim 6, in which said detachable connecting means comprise a movable connection on said brace member which can be bolted to said support member at a number of alternative positions on said support member, spaced apart apertures being provided in said support member and defining said alternative positions.

8. A structural aid as claimed in claim 3, in which said support member is pivotally connected to said bridge member through the intermediary of a pivot pin carried by a bracket welded to said bridge member.

9. A structural aid as claimed in claim 3, in which each end of said bar has a recess for receiving the inturned ends of a generally U-shaped table top supporting element, and in which a brace member is provided to extend between said support member and said table top supporting element to support the latter.