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COMBINATION INVALID'S CHAIR AND SAFETY BELT

Filed Aug. 24, 1965

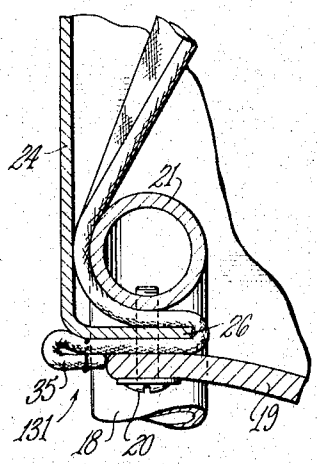


FIG. 5.

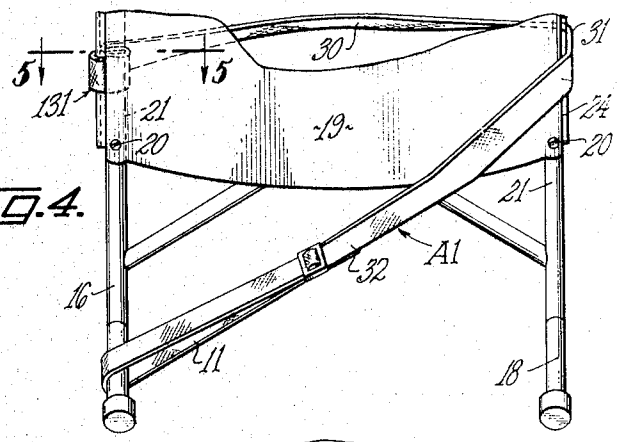


FIG. 4.

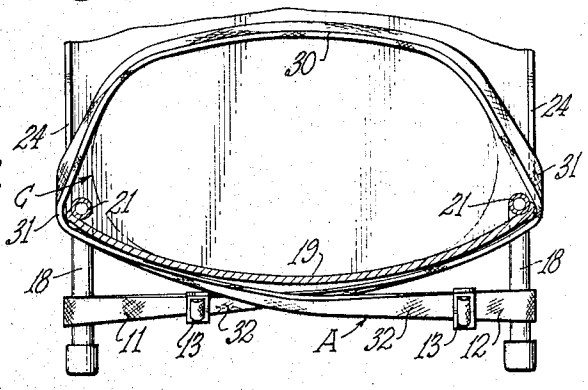


FIG. 3.

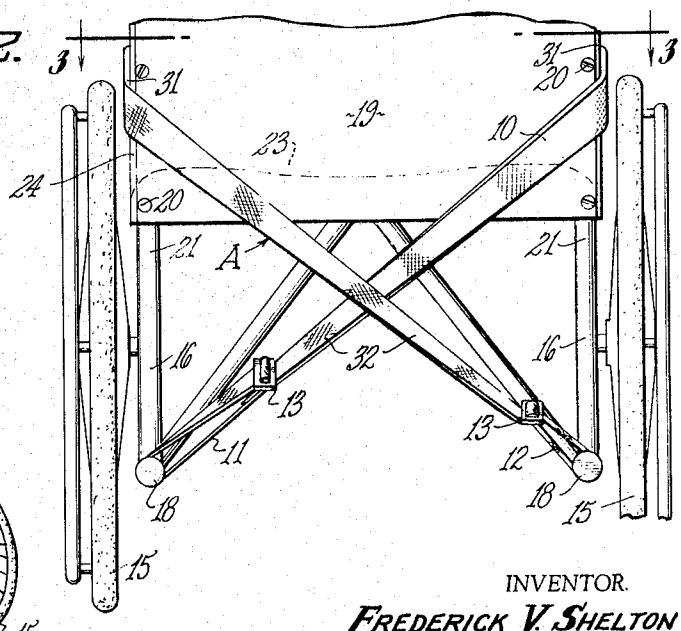


FIG. 2.

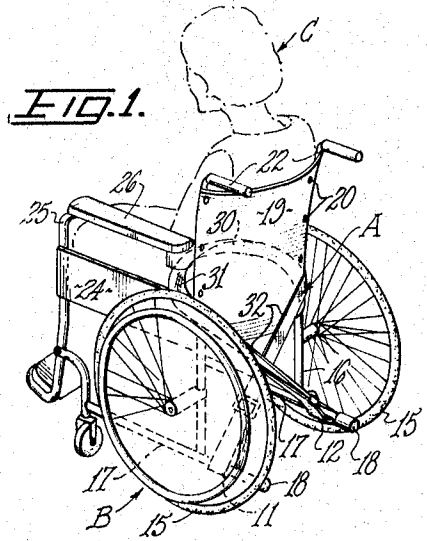


FIG. 1.

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COMBINATION INVALID'S CHAIR AND SAFETY BELT

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This invention relates to invalid's chairs such as wheel chairs and the like, and has as its general object to provide an improved combination of such a chair and a safety belt which will reliably secure an occupant such as an invalid in the chair, protecting him from leaving the chair either accidentally or voluntarily. To the attainment of this general object, the invention provides a combination of an invalid's chair and safety belt:

(1) Adapted to secure an incapacitated person (either physically disabled or mentally deficient) in the chair in a manner such as to hold him against either falling or climbing out of the chair, and such as to prevent him from releasing himself from the strap;

(2) Wherein the safety belt is adapted to be anchored and released rapidly and easily by an attendant;

(3) wherein the chair embodies one or more spurs projecting rearwardly from the back of the chair below the seat level, and wherein the safety belt has at least one end thereof attached to one of the spurs so as to provide an anchorage that cannot be reached by the occupant of the chair.

Other objects and advantages will become apparent in the ensuing specification and appended drawing in which:

FIG. 1 is a perspective view of a wheel chair with safety strap embodying one form of my invention, an occupant being shown in phantom;

FIG. 2 is a fragmentary rear elevational view of the same;

FIG. 3 is a fragmentary sectional view thereof, taken on the line 3—3 of FIG. 2;

FIG. 4 is a fragmentary view of a modified form of the invention, looking obliquely downwardly and forwardly from directly behind the chair; and

FIG. 5 is a fragmentary detail sectional view taken on the line 5—5 of FIG. 4.

Referring now to the drawing in detail, and in particular to FIGS. 1–3 thereof, I have shown therein, as an example of one form in which the invention may be embodied, a safety belt A and a wheel chair B of a well-known folding type, to which the belt A is adapted to be readily attached and detached in an arrangement including a medial body loop passing around the body of an occupant C, and ends anchored to the lower rear extremities of the chair frame, behind its back, where such ends are completely inaccessible to the occupant.

The belt A comprises a strap body **10** and a pair of end loops **11** and **12**, at least one of which embodies a takeup slide **13** by means of which the length of the respective loop can be adjusted.

The wheel chair B comprises a pair of drive wheels **15** having respective hubs journalled on stub axles secured to vertical rear legs **16** of a frame having a pair of laterally spaced rails **17** the rear ends of which are extended beyond the legs **16** to provide a pair of spurs **18**. A flexible back rest pad **19** is secured by screws **20** to back frame bars **21** formed as upward extensions of legs **16**, the bars **21** terminating in handles **22**. A seat **23**, indicated in dotted lines in FIG. 2, is flanked by vertical side panels **24** extending between and attached to the back bars **21** and a pair of foot-rest bars **25**. Arm rests **26** are connected between back bars **21** and the upper ends of foot-rest bars **25**. The chair shown is a foldable type which is well known. The foldable features are not important in the present invention, and are not illustrated. The rearward ends of side panels **24** (FIG. 5) have inwardly-bent flanges **26** which are secured between the side marginal portions of back rest **19** and back bars **21** by the fastener screws **20**.

The belt A, when installed, has a body loop **30** which is provided by the intermediate portion of strap **10** and is extended around the waist of the occupant C, securing his torso against the back rest **19**. The lateral portions of loop **30** extend through the lower rear corners of rectangular spaces that are defined between arm rests **26** and side panels **24**. In FIGS. 1–3 these lateral portions are drawn downwardly at **31** across the upper edges of side panels **24** adjacent the back bars **21** and are continued in end portions **32** which extend diagonally downwardly behind the back of the chair in crossed relation, each crossing over from one side of the chair to the other and terminating in a respective end loop **11** or **12**, anchored to a respective spur **18**. When both loops **11** and **12** are attached, the belt is drawn tight by adjusting one of the slides **13** upwardly along its respective strap portion **32**, thus placing the lateral portions **31** of loop **30** under tension and drawing the loop **30** snugly around the occupant's waist.

In FIGS. 4 and 5, one side of the body loop **30** terminates in a permanent anchorage **131** to a back bar **21**, the other side being extended beneath an arm rest **26** and downwardly at **31** over the upper edge of the associated side panel **24**, and terminating in a downwardly and laterally inclined end portion **32**, attached to a spur **15** by an adjustable end loop **11**, the same as in FIGS. 1–3.

In the preferred form of the invention, both ends of the belt A are readily attachable and detachable by slipping the respective loops **11**, **12** forwardly onto or rearwardly off of the spurs **18**, although an attendant may prefer to leave one end attached and to release a patient by detaching only one end of the belt, pulling it through the space beneath the one arm rest, removing it from in front of the occupant's waist, and draping it over the other arm rest.

In the modified form of the invention, the permanent anchorage **131** is made by loosening a corner of a panel **24**, forcing a bound end **35** of the belt between the panel **24** and the opposed side surface of back bar **21**, thence around the bar **21** and between it and the flange **26**, then folding it outwardly around the edge of flange **26** and between the flange and the opposed marginal portion of back rest **19**, and then drawing the bound end **35** against the margin of back rest **19**, pressing the latter forwardly against the bar **21**, and then reinserting the screw **20** to clamp the folded end portion of the strap between the bar **21**, the flange **26** and the back rest **19**.

The belt A1 of FIGS. 4, 5 is attached and released by means of the single adjustable loop **11**.

I claim:

1. In combination: an invalid's chair including a back, a seat and a frame having a pair of spurs projecting rearwardly behind the back and below the seat level, and a safety belt including an intermediate portion looped forwardly of said back and above said seat and around the sides of said back to provide a patient-restraining body loop, and an end portion extending obliquely downwardly and laterally behind said back, crossing from one side to the other and terminating in an end loop which is looped over one of said spurs and thereby anchored, and means for anchoring the other end of the belt to the chair with a connection which cannot be released by the chair occupant.

2. The combination defined in claim **1**, wherein said loop includes means for adjusting its length for tightening the belt.

3. The combination defined in claim **2**, wherein said

belt has respective end portions both extending obliquely downwardly from side to side in crossed relation behind said back, and terminating in respective loops attachable to respective spurs, at least one of said loops including means for adjusting its length.

4. The combination defined in claim 1, wherein said means for anchoring the other end of the belt comprises a folded end portion of the belt, said chair including a vertical back bar, a side panel having a rear end portion overlapping the outer side of said bar and terminating in a flange bent laterally and inwardly behind said bar, a back panel overlapping the rear side of said back bar, and a fastener extending through said back panel and secured in said back bar and clamping said folded end portion of the belt between said back panel and said flange and between said flange and said back bar, said

belt extending from said folded portion around the outer side of said back bar and between the same and said side panel and thence forwardly into said body loop.

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