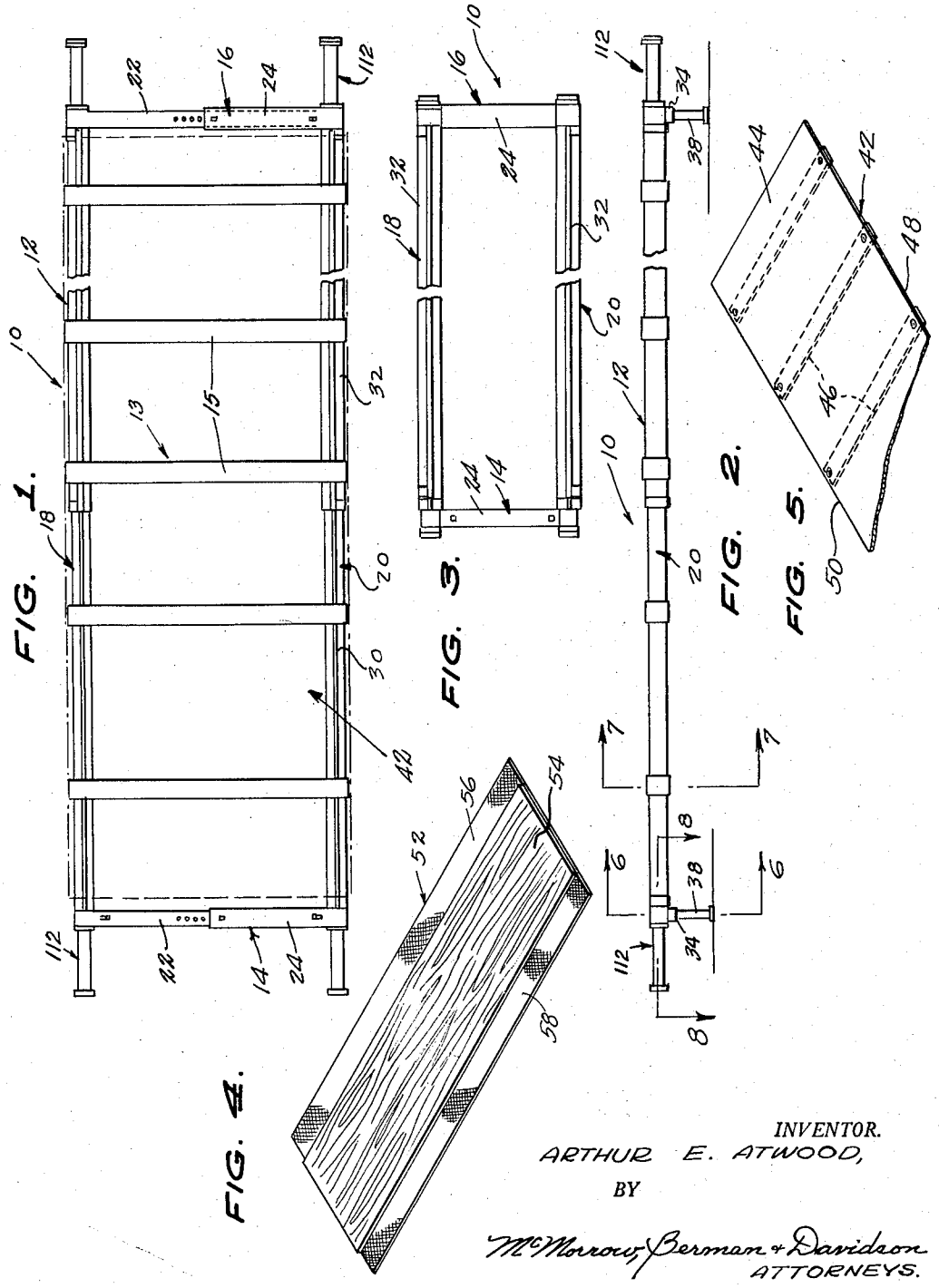
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COLLAPSIBLE STRETCHER

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COLLAPSIBLE STRETCHER

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FIG. 6.

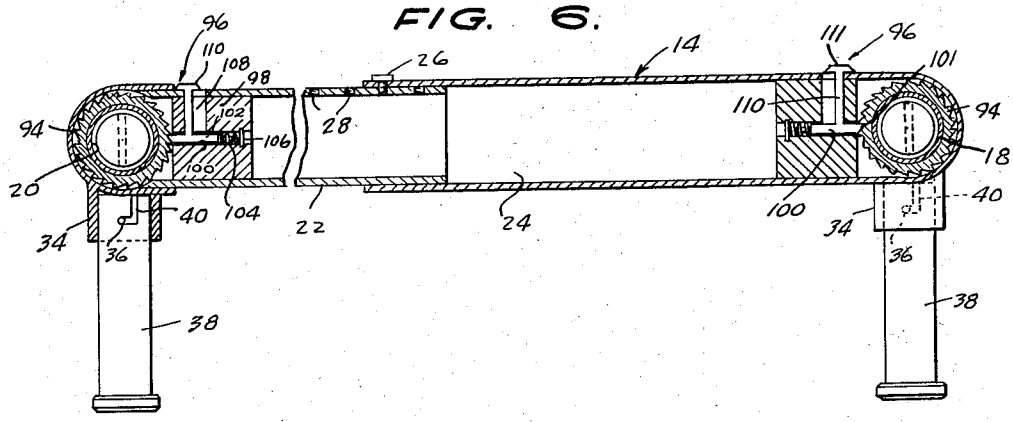
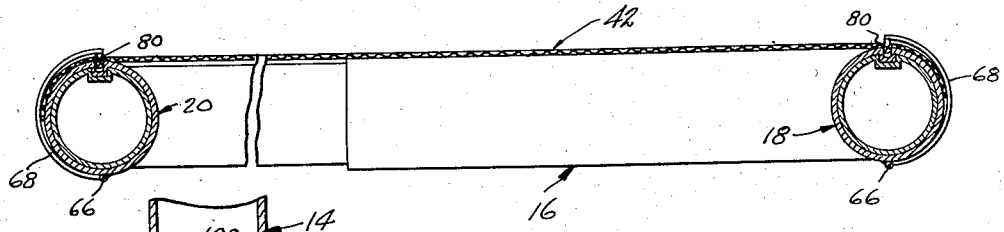


FIG. 7.



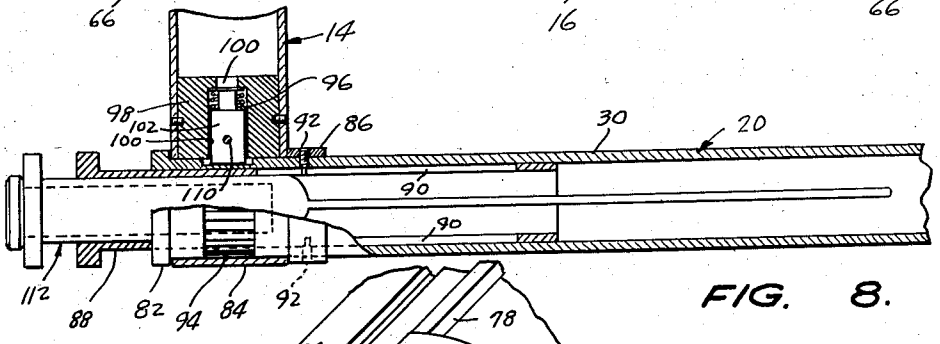


FIG. 8.

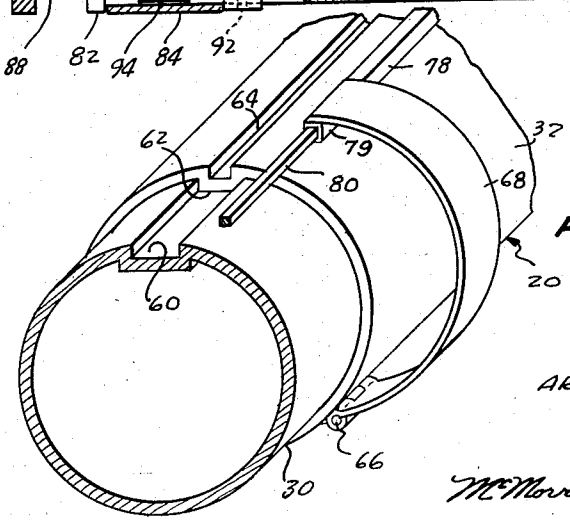


FIG. 9.

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COLLAPSIBLE STRETCHER

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Application August 28, 1956, Serial No. 606,613

3 Claims. (Cl. 5—82)

This invention relates to an improved stretcher which is adjustable as to width and as to length, and for compact storage and transportation.

The primary object of the invention is to provide a practical and efficient stretcher of this kind which is simple in construction, is composed of a small number of simple and easily assembled parts, and whose side members are rotatable to wind and unwind thereon side portions of a flexible patient supporting web extending between the side rails for elevating and lowering a patient thereon.

A further object of the invention is to provide a stretcher of the character indicated above which comprises a frame whose end members and side rails are composed of telescoped sections, and wherein ratchet means act between the ends of end members and side rails for holding a web in slack or in stretched condition.

Another object of the invention is to provide a stretcher of the character indicated, which can be made in well-finished, rugged, and serviceable forms at relatively low cost, is easily used, and is highly satisfactory for the purpose intended.

These together with other objects and advantages which will become apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout the several views, and in which:

Figure 1 is a top plan view of a stretcher of the invention in extended condition;

Figure 2 is a side elevational view of Figure 1;

Figure 3 is a contracted top plan view showing the stretcher telescoped to compact condition;

Figure 4 is a perspective view of another form of body supporting web;

Figure 5 is a fragmentary perspective view of a further form of body supporting web;

Figure 6 is an enlarged vertical transverse sectional view taken substantially on line 6—6 of Figure 2;

Figure 7 is an enlarged vertical transverse sectional view taken substantially on line 7—7 of Figure 2;

Figure 8 is a fragmentary enlarged horizontal sectional view taken substantially on line 8—8 of Figure 2, portions being broken away and in section;

Figure 9 is an enlarged fragmentary perspective view of a telescoping side rail and showing web clamping means thereon.

Referring to the drawings in detail, the illustrated stretcher, indicated generally at **10**, comprises a substantially rigid frame **12** comprised of end bars **14** and **16** and side rails **18** and **20**. The end bars **14** and **16** incorporate telescoping tubular sections **22** and **24** enabling adjusting the width of the frame **12**. A locking screw **26**, see Figure 6, extends through the section **24** and is threadable into any one of a plurality of longitudinally spaced holes **28** provided in section **22**. The side rails **18** and **20** comprise telescoping tubular sections **30** and **32** which may be retained in extended or contracted relationship by any suitable means such as that associated with the telescoping sections **22** and **24** of the end bars. As clearly shown in Figure 3, the stretcher frame **12** can be collapsed as to width and length for transportation and storage. The ends of the end bars **14** and **16** are secured on the ends of the side rails **18** and **20** by means of sleeves on the ends of the end bars, as hereinafter described.

Fixed to and depending from the frame **12** at the intersections of the side rails and the end bars are sockets **34**, see Figures 2 and 6, which have laterally extending pins **36** therein, and removable legs **38** have upper ends engaged in the sockets **34** which incorporate bayonet slots **40** receiving the pins **36** for retaining the legs **38** in the sockets.

Considering Figure 5, a body supporting web is indicated generally at **42** and comprises a rectangular plate or sheet **44**, of any suitable flexible material, having extending transversely thereacross suitably secured straps **46**. The side edges **48** and **50** of the web are clamped around the side rails of the frame **12** with the web in a loose or slack condition and depending from the side rails, so that a patient can be placed on the web without undesirable handling, after which the side rails are rotated to wind the web thereon and thereby elevate the patient substantially to the level of the frame **12**. Thus, it is apparent that the web **42** can be elevated for raising a patient for the purpose of inserting a bed pan beneath the patient, for example.

In Figure 4 is shown another form of web **52** which comprises a rigid panel **54** of plywood or of any other suitable rigid material, having extending from opposite side edges thereof flexible portions **56** and **58** which are adapted to be clamped on the side rails **18** and **20**, the rigid web **52** being especially desirable for use with patients suffering from spine injuries, for example.

The sections **30** and **32** of the side rails **18** and **20**, as shown in Figure 9, have slidably engaged grooves **60** and ribs **62** which prevent relative rotation of these sections, while enabling extension and contraction thereof.

Hinged at **66** on the outer side of the outer section **32** opposite the rib **62**, is one end of an arcuate resilient clamping strap **68** whose outer end is secured at **79** to a longitudinal sleeve **78** of polygonal cross section which is arranged to be seated in a polygonal groove **64** in the outer side of the section **32**, aligned with the rib **62**, so as to clamp a side edge of a web in the groove **64** after having been wound part way around the section **32**.

The outer ends of the sections **30** and **32** are suitably formed. As shown in Figure 8, a section **30** has a lateral annular flange **82** on its outer end, and on the section **30** journalled and bearing against the flange **82**, is a sleeve **84** which is fixed on the adjacent end of end bar **14**. A collar **86** is circumposed on the section **30** and bears against the inward side of the sleeve **84** for retaining the sleeve in place. A tubular handle **88** is slidably telescoped in the outer end of the section **30** and has opposed longitudinal slots **90** therein which have engaged therein screws **92** which are threaded through the collar **86** and the sidewall of the section **30** and hold the collar **86** in place and prevent rotation of the handle in the section **30**.

Because of this arrangement, rotation of the handle **88** causes rotation of the side rail **20** within the sleeve **84** of the end bar whereby the web is stretched or tightened between the side rails.

The outside of the section **30**, within the sleeve **84**, is indented with ratchet teeth **94** therearound which are engaged by a spring-pressed ratchet dog assembly, indicated generally at **96**. The ratchet dog assembly **96** comprises a support block **98** suitably secured in the ends of the sections forming the end bars, said block incorpo-

rating a longitudinally extending bore 100 reciprocably receiving therein a dog 102 which includes a bevelled ratchet end 101 which engages the ratchet teeth 94. A compression spring 104 is confined in the bore 100 behind the ratchet dog 102 by a cross pin 106. The support block 98 further includes a vertical slot 108 intersecting the bore 100, and the dog 102 has a handle 110 in the slot 108 terminating at the outer surface of the end bar in a head 111. The handle 110 is manually operable to withdraw the dog 102 from the ratchet teeth 94 when it is desired to slacken the web by reverse rotation of the side rails 18 and 20.

The patient supporting web shown in Figure 1, and generally designated 13, comprises a plurality of transverse straps 15, spaced along and clamped on the side rails 18 and 20.

Indicated generally at 112, in Figure 8, is a blade which is telescopically stored through the outer end of one of the handles 88, and is removable therefrom and usable for tucking bed clothes, such as a blanket, under a patient disposed on the stretcher web.

The foregoing is considered illustrative only of the principles of the invention. Since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly all suitable modifications and equivalents may be resorted to, as fall within the scope of the appended claims.

What is claimed is:

1. A stretcher comprising a frame composed of end bars and side rails, the end bars and the side rails being composed of telescoped inner and laterally outward sections having outer ends, the end bars being positioned between the side rails and the sections of the end bars having fixed thereon journal sleeves journalled on related sections of the side rails at the ends of the latter, ratchet teeth around the side rail sections within said sleeves, spring-pressed ratchet dog assemblies within the end bar sections at the laterally inward sides of said sleeves and having dogs extending into the sleeves and engaged with the ratchet teeth on related side rail sections, means on each assembly and traversing the related end bar sections and exposed for retracting a ratchet dog out of engagement with the ratchet teeth, means slidably and non-rotatably connecting the sections of the side rails, side rail rotating means on the outer ends of side rails, and a patient supporting web positioned between the side rails and having flexible side edge portions secured to and wound around the side rails, said rotating means comprising an extensible handle slidably and non-rotatably telescoped in an outer end of a side rail section.

2. In a stretcher frame of the type having end bars and side rails extending between and journaled on the end bars a flexible web extending between said side rails and having side edge portions, and clamping means comprising longitudinal grooves in the side rails, arcuate clamping straps hinged at one end on the side rails and having free ends, said side edge portions being wound around the side rails and engaged in the grooves, securing elements on the free ends of said straps, and said arcuate straps being engaged around said web edge portions with said securing elements depressing parts of said edge portions in the grooves.

3. A stretcher frame comprising side rails, tubular end bars extending between the side rails, said end bars having sleeves on their ends in which related ends of the side rails are journaled, said side rails having ratchet teeth circumposed thereon within said sleeves, spring pressed ratchet dog means mounted within the end rails at the laterally inward sides of the sleeves and having dogs traversing the sleeves and engaged with the ratchet teeth on related side rails, said ratchet means having exposed handles traversing the side walls of the end bars for retracting the dogs out of engagement with the ratchet teeth, and means for rotating the side rails, said side rails having open tubular ends, and said rotating means comprises handles non-rotatably telescoped in the tubular ends of the side rails, said rotating handles being telescopable into the ends of the side rails when not in use.

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