Aug. 8, 1967 J. S. HOXENG ETAL 3,334,360

COLLAPSIBLE BED BATH

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Fig. 1

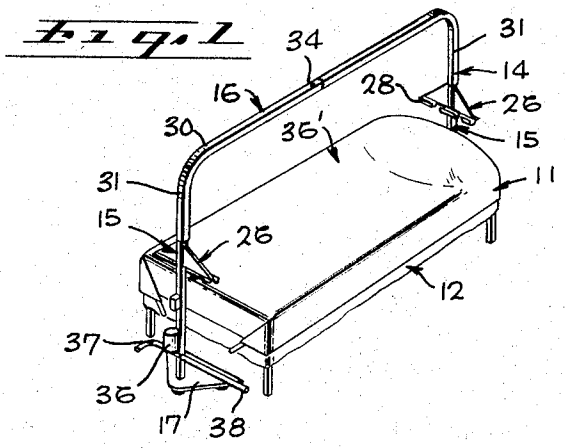


Fig. 2

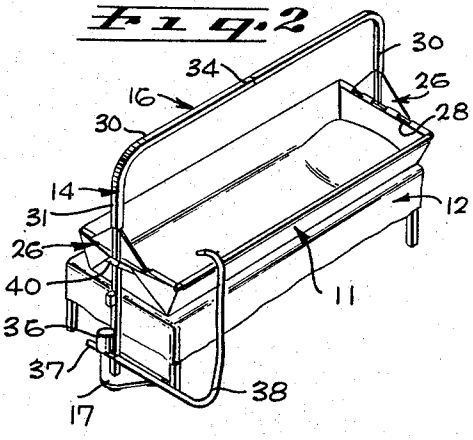


Fig. 3

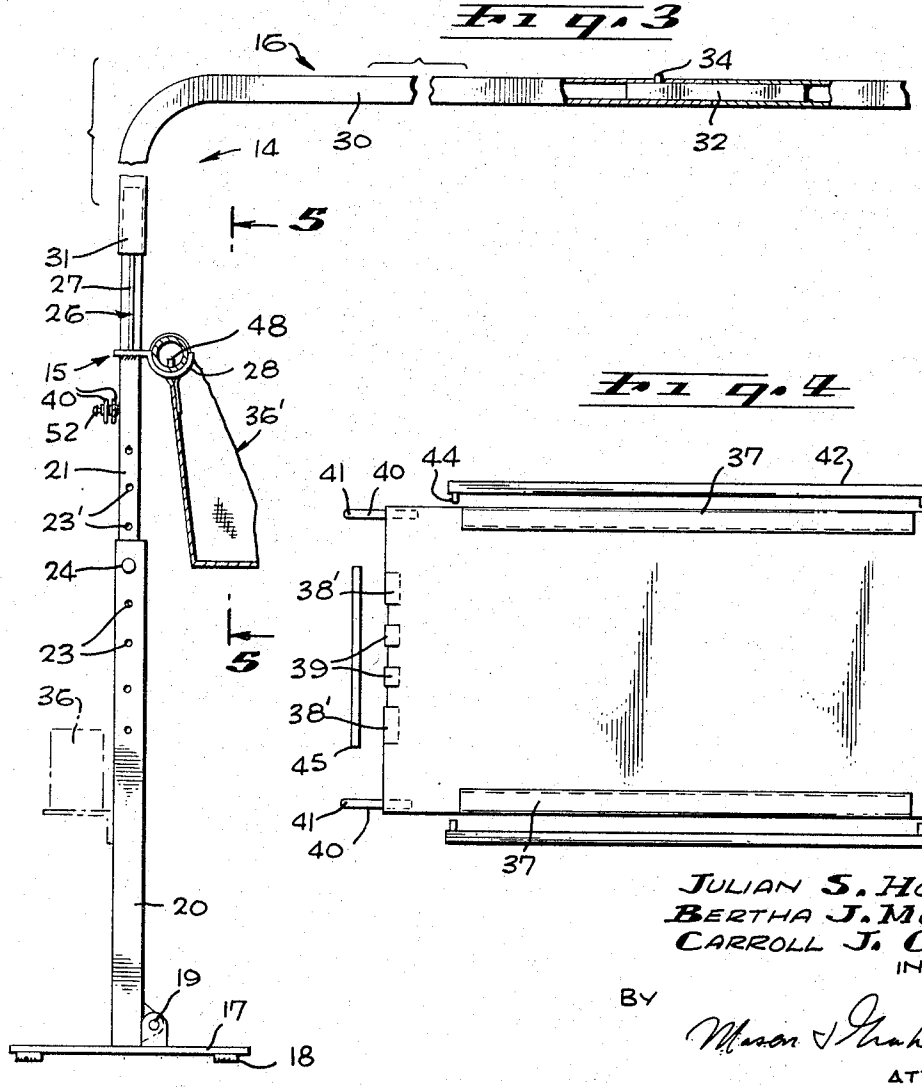


Fig. 4

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Fig. 5

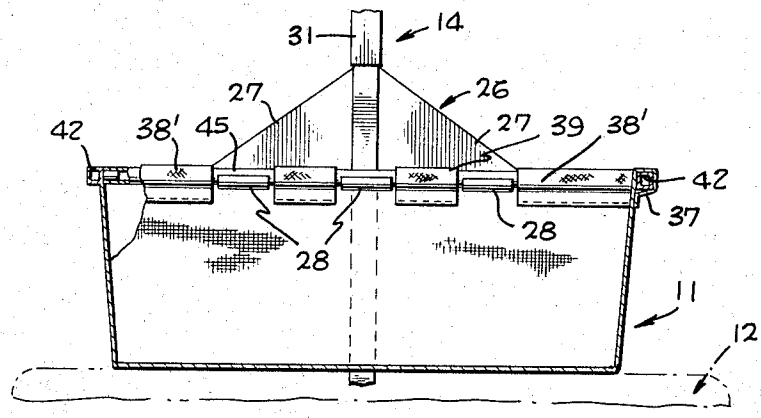


Fig. 6

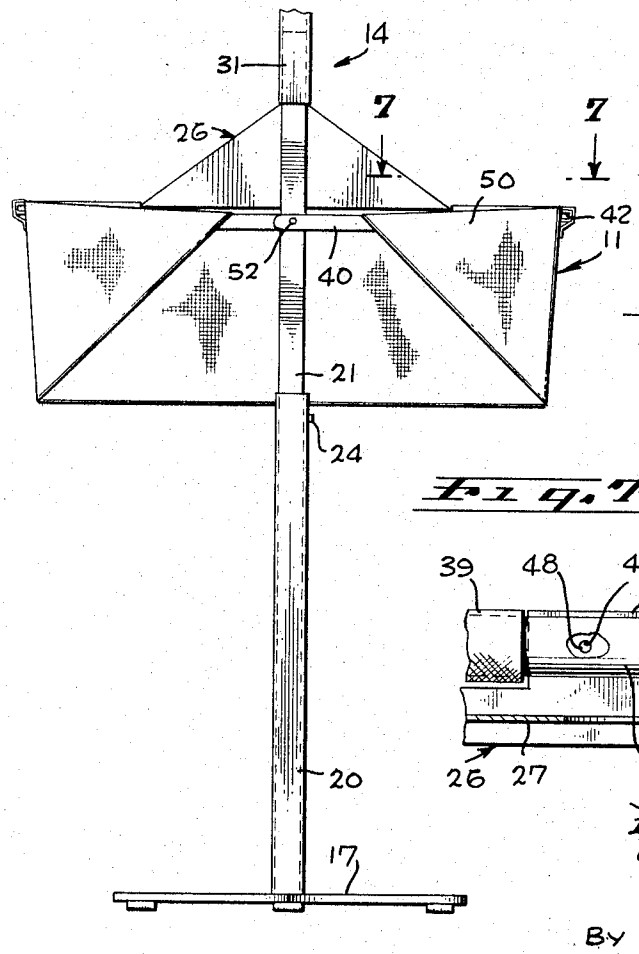


Fig. 8

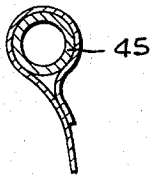


Fig. 9

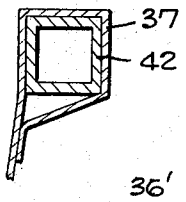
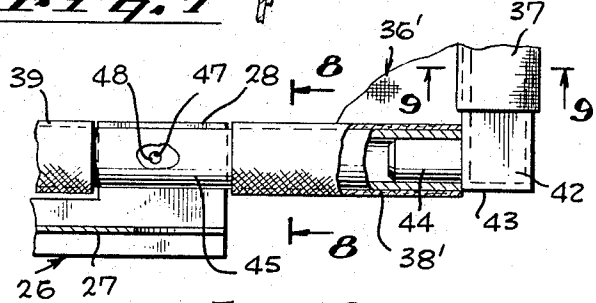


Fig. 7



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Fig. 10

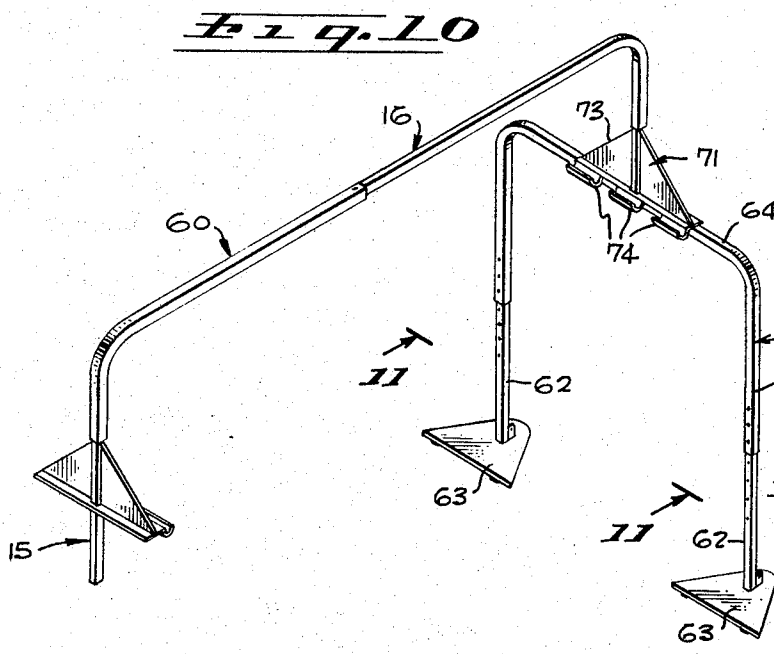


Fig. 12

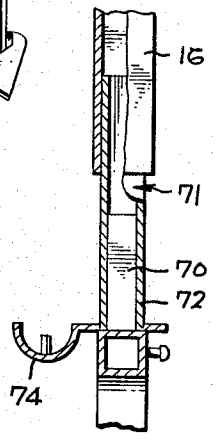
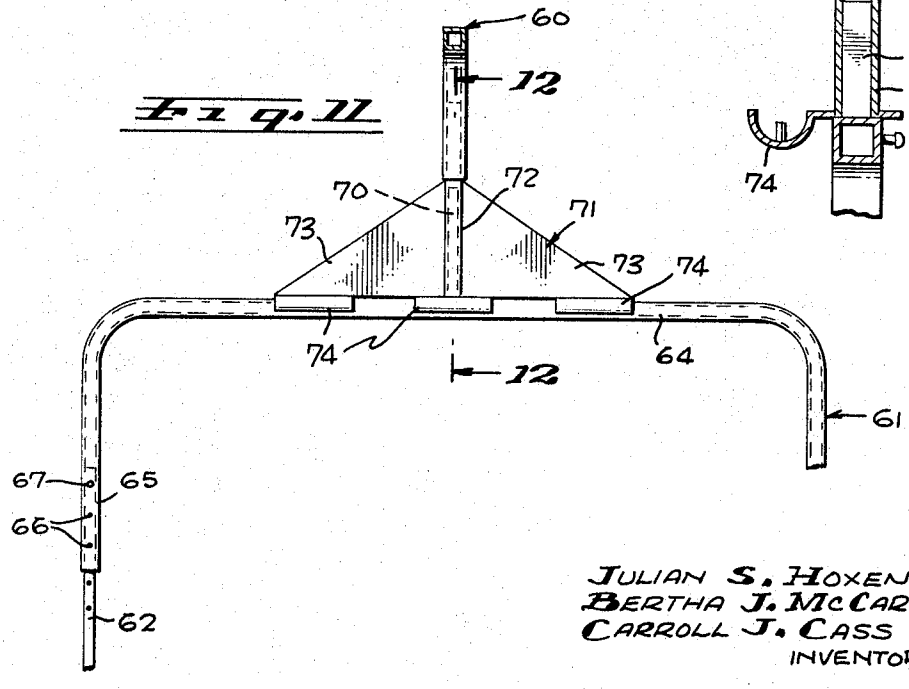


Fig. 11



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3,334,360

COLLAPSIBLE BED BATH

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Filed May 3, 1965, Ser. No. 452,560
12 Claims. (Cl. 4—177)

This invention has to do generally with bathing facilities for invalids and more particularly with collapsible bathtubs for use in conjunction with a bed upon which an invalid is supported.

An object of the invention is to provide a new and improved collapsible bathtub including supporting framework for use in bathing invalids confined to bed.

Another object is to provide novel means readily capable of being assembled about an invalid or patient in bed to provide a bathtub whereby the patient or invalid can be partially submerged in water without leaving the bed.

A further object is to provide a completely collapsible bathtub structure of the type indicated which can be stored in a relatively small space when collapsed and which can be readily assembled and disassembled by a single person.

Still another object is to provide a novel supporting structure independently of a bed on which the invalid lies for partially supporting a bathtub made of flexible, waterproof sheet material in position on a bed.

These and other objects will be apparent from the drawings and the following description. Referring to the drawings:

FIG. 1 is an isometric view of apparatus embodying the invention in partially assembled condition with the bathtub member lying over a bed;

FIG. 2 is a view similar to FIG. 1, but with the structure fully assembled;

FIG. 3 is a side elevational view of one end of the apparatus, partly in section, but on a larger scale;

FIG. 4 is an exploded plan view of the flexible sheet of which the tub is formed and of the rails used therein;

FIG. 5 is a fragmentary sectional view on line 5—5 of FIG. 3;

FIG. 6 is an elevational view of one end of the device on the same scale as FIG. 3;

FIG. 7 is a fragmentary sectional plan view on line 7—7 of FIG. 6;

FIGS. 8 and 9 are sectional views on lines 8—8 and 9—9, respectively, of FIG. 7;

FIG. 10 is a fragmentary isometric view of a modification;

FIG. 11 is a fragmentary elevational view on line 11—11 of FIG. 10; and

FIG. 12 is a sectional view on line 12—12 of FIG. 11, but on a larger scale.

More particularly describing the invention, in general the collapsible bathtub and its supporting structure includes a bathtub **11** which is placed on and has its lower wall resting upon a bed **12** on which the patient or invalid (not shown) rests. Numeral **14** generally designates a tub-supporting frame which rests or stands upon the floor independently of the bed.

With reference to the tub-supporting frame **14**, this comprises a pair of upright posts **15** and a detachable top bar **16** connecting the same. Each of the posts includes a floor plate **17** and this is preferably fitted with glides **18** for convenience. Hingedly secured at **19** to the plate is a lower post member **20** and this receives an upper post member **21** which telescopes therein. The lower member is provided with a series of holes **23** in two of its opposite side walls, the holes in one wall being in register with those in the other for the reception of a pin **24**. The upper member also has a series of similar holes **23'** to adjust the height of the upper member **21** with respect to the floor by limiting the distance it can telescope within the lower post member **20**. Preferably the parts **20** and **21** are made of tubular stock which is substantially square in cross section.

The upper post member **21** is formed to provide a hanger **26** spaced somewhat below its upper end. This comprises two triangular-shaped plates **27** welded or otherwies secured to opposite sides of member **21** and extending longitudinally thereof in a common plane. The plates are provided with three integral upwardly concave ledges or supports **28** which extend laterally with respect to the plane of the plates. As will later appear, the hangers support the walls of the assembled tub.

When the parts are assembled the top bar **16** which comprises a main section **30** and two end sections **31** at right angles thereto, is positioned to receive the upper ends of the upper post members **21**. Preferably the top bar is made in two parts with a pin **32** in the end of one fitting into the end of the other and the parts detachably secured by a catch **34**.

The frame may also support an electric water pump **36** shown as having hoses **37** and **38** attached to it.

The tub itself is formed in part of a flexible sheet of plastic or waterproof fabric, designated generally by **36'**, which is generally rectangular. The sheet is formed at each side to provide an open-ended hem **37**. At each end the sheet is formed to provide two outer open-ended hems **38'** and two inner hems **39**, the inner hems being somewhat shorter than the outer ones with the fabric being recessed therebetween. At each corner a webbing strip **40** is provided which extends longitudinally beyond the ends and each strip is provided with a grommet **41**.

For the purpose of forming the sheet into a tub and suspending its upper edge from the tub-supporting frame, we provide two side rails **42** which are preferably of substantially square tubular cross section. These are received in the hems **37**, respectively. At their ends, the rails are provided with closed end sections **43** and laterally projecting circular pins **44**.

We also provide two end rails **45** which are shown as being formed of tubular stock of cylindrical cross section. These are received in the end hems of the tub sheet and in turn receive the pins **44** of the side rails. The end rails are provided with holes **47** adapted to recieve upwardly projecting pins **48** on the outermost ledges **28** of the hangers.

In the use of the apparatus, assuming that a patient or invalid is on the bed, the tub-supporting frame is assembled and brought into position relative to the bed. The procedure for placing the invalid on the tub member is the same as is used in changing sheets on an invalid's bed. Thus the tub sheet is disposed beneath the invalid and over the bed much as is shown in FIG. 1. The side and end rails are then inserted and joined and the end rail supported upon the hangers **26**. The ends **50** of the tub sheet are folded around as shown in FIG. 6 and the webbing strips **40** secured to the uprights by fitting them over an outstanding button-headed pin **52** thereon. After this the tub may be filled partially with water by means of a hose **38** from a suitable source. After the patient has been bathed a pump **36** on the frame may be brought into operation to remove the water from the tub through the hose. The tub and parts are then disassembled.

In FIGS. 10–12 we show a modification of the frame structure wherein a special post structure is provided at one end for use in straddling the head end portion where it is impossible or impractical to place the post structure beyond the head end of the bed, as where the bed is against the wall. In these figures, the frame is designated generally by numeral **60** and this includes the top

bar **16** and post **15**, both of which are the same as previously described, and a special dual post assembly **61**. The latter is designed to straddle a bed and includes two lower post members **62**, these each being hingedly mounted on a foot plate **63**. A U-shaped frame member **64** of tubular stock receives the posts in its legs **65**, respectively, the parts telescoping and being adjustable by spaced registering holes **66** and pins **67**. The base of frame member **64** has a centrally disposed, upright **70** over which a hanger **71** fits, the latter having a center tube **72**, triangular plates **73** and the upwardly concave hanger ledges **74**. One end of the top bar **16** receives the upper portion of the center tube **72** of the hanger.

The tub is suspended from the frame **60** in the same manner as from the frame **14**, however, in this case, the structure **61** straddles or bridges the bed near one end.

Although we have illustrated and described a preferred form of our invention, we contemplate that various changes and modifications can be made therein without departing from the invention, the scope of which is indicated by the following claims.

We claim:

1. In a collapsible bed bath for use in bathing an invalid in bed, a bathtub formed of flexible sheet material folded to provide a bottom wall adapted to rest upon the bed, a pair of side walls and a pair of end walls extending upwardly therefrom, rails secured to the upper edge portions of said side and end walls, a tub-supporting frame standing on the floor and including an upright post at each end free of the bed, a hanger on each post, said rails being detachably connected to and supported by said hangers.

2. The collapsible bed bath set forth in claim **1** in which means is provided to enable vertical adjustment of said hangers.

3. The collapsible bed bath set forth in claim **1** in which the posts of the tub-supporting frame each include a pair of telescoping members and means for securing the same in a selected telescoped position.

4. The collapsible bed bath set forth in claim **1** in which said tub-supporting frame includes a top bar detachably connected to and extending between the upper ends of said posts.

5. In a tub-supporting frame, a post structure comprising a foot plate, a lower post member mounted at its lower end on said plate, an upper post member, said post members being telescopically associated, means carried by one of said upper and lower post members for limiting the telescopic relationship thereof to a selected amount, and a hanger carried by said upper post member, said hanger including plate means extending laterally of the post member to two sides thereof and means thereon providing a cradle-like support extending normal to the plane of said plate means.

6. The post structure set forth in claim **5** in which said lower post member is hingedly mounted on said foot plate.

7. In a tub-supporting frame for use as described, a pair of posts, each post including a foot plate, a lower post member hingedly mounted on the plate, an upper post member telescopically associated with the lower post member, and adjustable means limiting telescopic relation of the upper and lower post members, a top bar detachably connecting the upper ends of said upper post members, and hanger means on each upper post member, said hanger means, in each case, extending laterally of the post and including a cradle-like support means normal thereto, and extending toward the other post.

8. In a collapsible bed bath, a bathtub member formed of a generally rectangular waterproof sheet having open-ended hems at its margins, rails received in said hems, said rails having means detachably securing the same together at their adjacent ends, the rails at the ends of said sheet being substantially shorter than the width of the sheet, and a tub-supporting frame including an upright post at each end of the bathtub member and a top bar above the bathtub member connecting the upper ends of the posts, said posts each having a hanger including a horizontal trough-like means receiving the rail at the adjacent end of the bathtub member whereby the edge portions of the bathtub member are suspended from said frame.

9. The collapsible bed bath set forth in claim **8** in which the material at each corner of the bathtub member is folded to form a double-walled flap and in which the flap is folded back upon the end wall of the bathtub member resulting from its suspension and is secured to said frame.

10. A bathtub member comprising an elongated generally rectangular waterproof sheet formed to provide an open-ended hem at each side margin, said sheet being formed to provide open-ended hem means at each end thereof spaced inwardly a substantial distance from the sides of the sheet, and an apertured strap at each corner of the sheet extending longitudinally thereof beyond its ends.

11. In a tub-supporting frame for use as described, a pair of post structures, each post structure including a U-shaped frame with the legs thereof inverted, a pair of lower post members telescopically connected to the said legs and having means for limiting telescoping thereof, an upright, centrally disposed, central post on said U-shaped frame, and a hanger carried by said central post, and a connecting bar extending between the upper portions of said post structures.

12. In a tub-supporting frame having a post adapted to stand on the floor at one end with a tub hanger means thereon, and having a top bar extending laterally from the post, a dual post structure at the other end of said frame and connected to said bar at a distance from said post, comprising a pair of laterally spaced lower post members, a U-shaped frame having its legs telescoped with said lower post members, respectively, said U-shaped frame having a horizontal main section between its legs provided with a centrally disposed upright, and a tub hanger detachably mounted on said upright, said top bar being detachably connected to said hanger.

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