United States Patent

Craft et al.

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[45] **Mar. 14, 1972**

[54] **SITZ BATH**

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[52] **U.S. Cl.** **4/6**, 4/173

[51] **Int. Cl.** **A47k 3/22**

[58] **Field of Search** 4/6, 7, 112, 113, 110, 173

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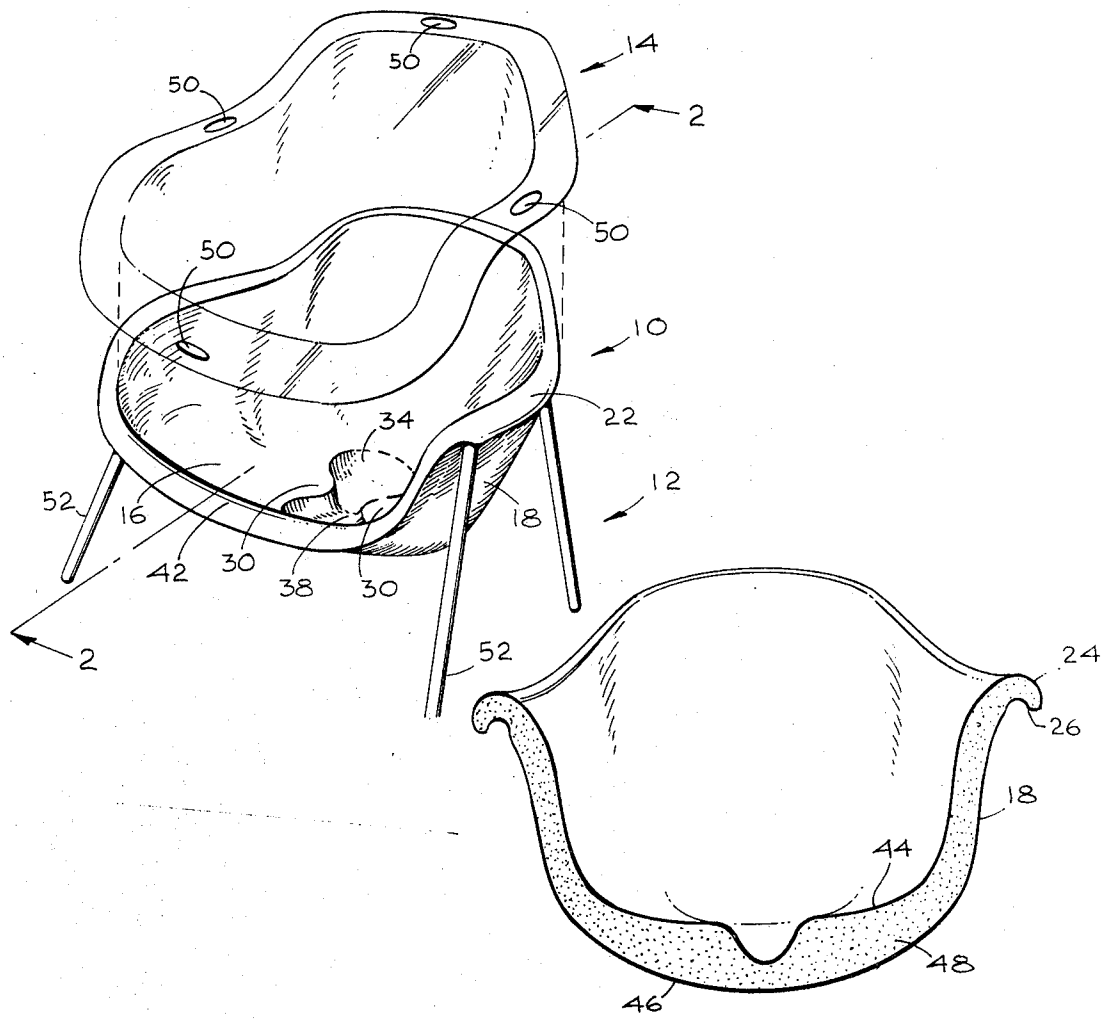
[57] **ABSTRACT**

A lightweight unit for perineal hydrotherapy including a lightweight unitary tub having an integral seat, armrest and a back rest; a supporting frame structure for the tub and a disposable liner for lining the tub during use. A recessed area is provided beneath the perineal area of the patient opening wider fore and aft of the ischeal tuberosity to provide a reservoir of heated water in which the traumatic perineal areas are immersed.

9 Claims, 5 Drawing Figures



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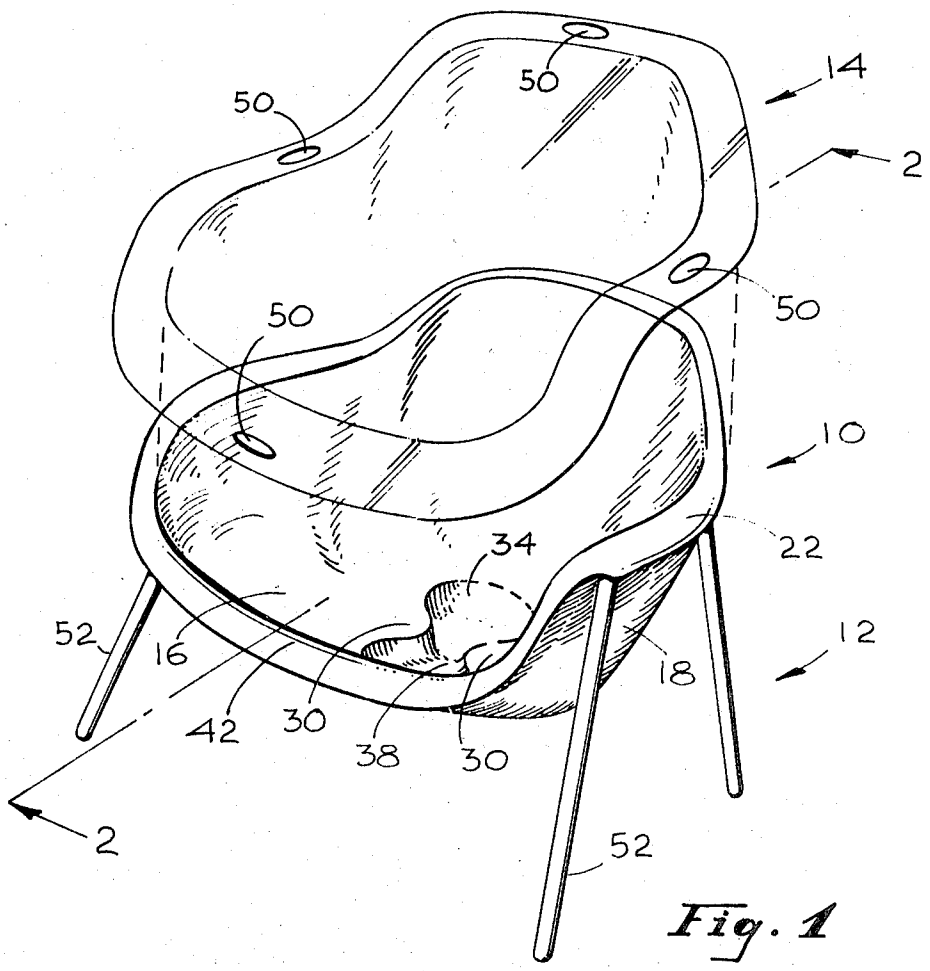

Fig. 1

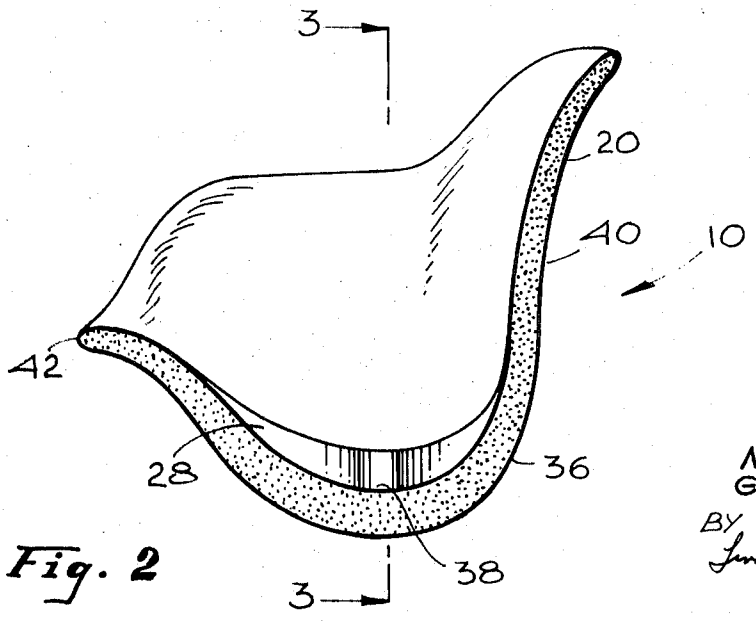

Fig. 2

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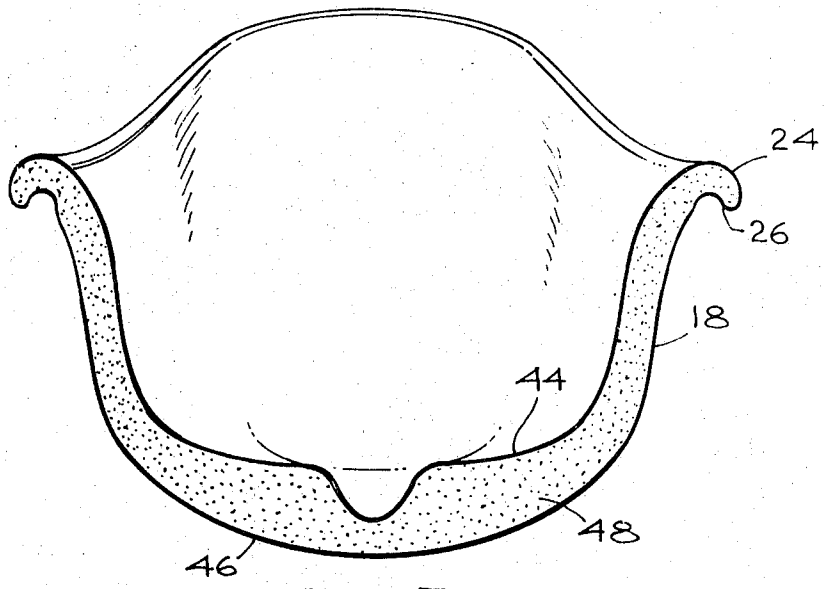

Fig. 3

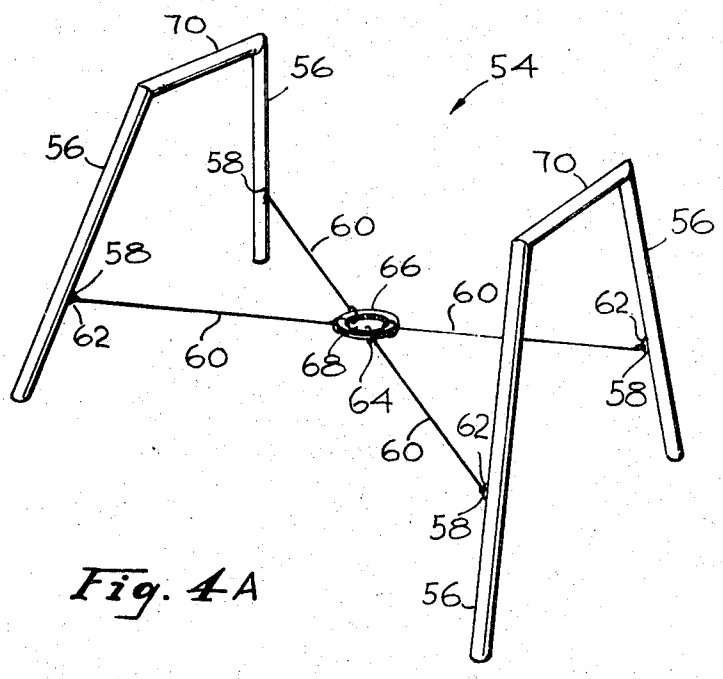

Fig. 4A

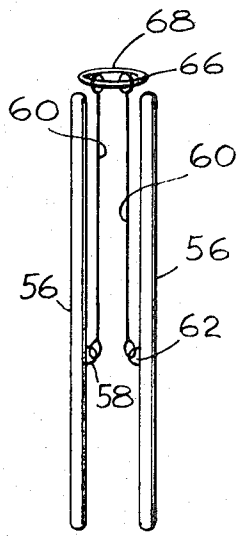

Fig. 4B

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SITZ BATH

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention relates to an improved perineal hydrotherapy apparatus.

2. Description of the Prior Art

A sitz bath is a hydrotherapy that is commonly prescribed by doctors for post-rectal surgery, post-partum, most perineal surgery and nonsurgical conditions such as boils, lesions, fistulas, etc., as well as certain conditions of the pelvic and perineal areas.

Sitz bath hydrotherapy relieves pain and provides comfort to the patient as well as aids in healing the condition. The treatment is conducted by placing the rectal or the perineal and genital areas of the body in a tub or container filled with heated water. The length of treatment is from 15 to 30 minutes and the number of treatments can range from two to five per day and sometimes more. The patient is often required to continue the treatment for up to 20 days.

Presently there are four different types of facilities which are utilized for sitz baths: The built-in sitz tub, the bath tub, the mobile sitz tub and the disposable sitz tub.

The built-in sitz tub is specially designed for sitz baths and is constructed of stainless steel or vitreous china. These tubs must be permanently installed as they are too heavy to be portable and require permanent plumbing facilities and the privacy of a special room. Because these units require floor space which serves only this special use, hospitals are not prone to install many of these units. In fact, many hospitals have only one built-in sitz bath per floor which may not be adequate to accommodate all the patients requiring this therapy. Furthermore, there are usually very few units in relation to the number of patients. Most often the facility will be some distance from the patient's room which will require moving the patient to and from the bath several times a day and in the case of weak or older patients this can entail quite an expenditure of time and effort.

The built-in facility has a high initial cost in both terms of the equipment and installation cost. Most built-in units are close to the floor like a bath tub. The patient is required to completely disrobe to use the unit and therefore requires the privacy of a special room. The heated water covers far more of the anatomy than necessary. Due to the closeness to the floor, assistance is often required to both enter and exit the tub. With some older or more feeble patients this can be quite difficult. The bottom of the tub is not designed for comfortable seating for long periods of time, and when seated the buttocks are pressed together and placed next to the tub surface, thereby allowing little of the heated water to reach the affected area.

Since metal and/or ceramic have relatively good thermal conductivity, it is necessary to warm the tub with heated water and is also necessary to add heated water to the tub during use to maintain the temperature. Another type of built-in sitz bath is available which has a higher, chairlike position with the seat of the tub recessed beneath the perineal area. Otherwise it has all the disadvantages of the other built-in units. However, the seating height has compromised the tub depth so that the water depth is inadequate and the water has a tendency to flow down the patient's legs onto the floor. In all built-in units, the tub must be washed and sanitized after each use and before use by the next patient. This type of cleaning is laborious and time-consuming.

The bath tub is used in many hospitals where specialized sitz facilities do not exist, and also as a means to augment present overloaded sitz facilities. Again the patient must completely disrobe and sit in the heated water. This has all the disadvantages of the built-in sitz unit with the additional disadvantage in that it does not provide a flexed seating position, more water is required, entry and exit are usually more difficult. This use also ties up the bath tub facility so that it is not available for intended uses.

A mobile sitz bath unit is available which takes the form of a stainless steel tub on wheels with back and armrests, having an appearance similar to a commode chair. This unit has a removable suspension seat made of two strips of stainless steel. This suspends the patient away from the walls of the tub. Some models incorporate external heaters to help maintain water temperature which otherwise would quickly cool due to the noninsulated, high thermal conductivity tub and the large exposed water surface. This unit is rather uncomfortable to sit in and the angle between the seat and back rests allow the patient to rotate his hips forward, thus lifting some of the perineal area out of the water.

This bath may be taken to a patient's room for use, but since it is too heavy to lift or carry easily, it must be rolled to location on its casters. After use, the water is drained through a valve, which required placement near a drain or the use of a vessel to contain the drainage. Draining through the valve can take as long as 3 to 4 minutes. Although the tub can be lifted out for drainage, it usually holds about 3 gallons of water, so that the total weight could exceed 25 pounds. This weight is far too much for a nurse or nurses' aide to lift. Also, if the chair is moved with the water in it, it will tend to slosh and splash over the sides, requiring cleaning of the floor area.

The use of electric heaters requires an electrical outlet in the area of use. Also, the combination of electricity and water is quite frightening to patients, who many times refuse to take such a bath. This bath does not require full disrobing of the patient, but does require a full terminal cleaning of washing and sanitizing the unit after each patient's use. Even though it is portable, each unit requires as much storage floor space as a built-in unit. Initial expense for this unit is quite high.

The disposable sitz tub is a small flanged basin that is designed to fit on the top of a toilet or bedside commode. Complete disrobing is not necessary. The unit is attached to a water source such as a water reservoir bag or a faucet and excess water flows out into the toilet bowl. A warm water flow is required to maintain the water temperature, because the unit does not hold heat very well. This type of unit has a low initial cost per unit depending on the type and number of accessories included, such as valves, tubing, fittings, etc. However, for use, the unit requires the additional facilities of a toilet, and since the patient requires frequent and somewhat lengthy treatment, the facilities often are not available for other use.

The units are assigned to individual patients and do not require washing and sterilizing after each use. However, frequent cleaning is required for good hygiene. The cost of the unit is too high to be disposed of after each use and many hospitals actually reprocess the units and reuse them many times. The greatest problem with this type of sitz bath is that it is just too small. All of the perineal area cannot be immersed in water and large or overweight patients can get little or no water to the affected area. Also, being placed upon a toilet does not provide a comfortable seating position for the patient to help him relax, which is a basic part of the therapy.

One area of concern in all sitz tubs is the height from the floor. This height is important because, if it is too high it will put pressure in the popliteal area of the leg (behind the knee) and can affect the blood circulation in the legs. This is especially a problem with women preceding and following childbirth and can affect other patients as well. All of the existing sitz bath units have the following front tub heights:

Built-in sitz	14½inches–15
Mobile sitz	15½inches
Disposable sitz (placed on toilet)	15 inches (average)

This height could cause problems for about 20 to 40 percent of the women users. A tub front height of 14 inches would accommodate about 95 percent of the women causing no circulatory impairment in the popliteal area and below into the legs.

Sitz baths are an area of concern for hospitals. Adequate sitz bath facilities can entail a large initial investment. They can consume valuable floor area in storage and in use. They often require plumbing and electrical facilities, even when mobile units are used. Built-in units require time and labor to assist the patient to and from as well as entering and exiting the tub. Washing and sanitizing after each patient's use is laborious and time consuming. Because of initial expense and consumed floor area, which is at a premium, most hospitals have an inadequate number of sitz facilities. Even augmenting the system by use of the disposable units has not really helped in the long run as these disposable units in themselves are judged inadequate by nurses and doctors alike.

SUMMARY OF THE INVENTION

The sitz bath in accordance with the invention substantially overcomes all of the disadvantages encountered with prior art units and provides a low cost portable and attractive unit. A lightweight comfortable tub unit is provided of unitary rugged construction, and with an outer surface being formed of an easily cleaned, scuff and fracture resistant material.

The unit can be used for extended periods with great comfort to the patients since the tub seat is adequately sized to accommodate large and overweight patients as well as small and thin patients. The back and seat of the tub are designed so that when seated the knees of the patient are flexed and the body held to a sharper angle at the waist and normal to keep the perineal area in the water. Additional comfort is provided by arm and back rests incorporated into the unitary tub. The front tub height is no more than 14 inches from the floor to accommodate a greater percentage of women patients without causing pressure in the popliteal area. The tub is recessed to allow water depth up to 6 inches for full coverage of the affected area.

The recessed area beneath the perineal area opens wider fore and aft of the ischeal tuberosity area so as to provide a greater reservoir of heated water to the perineal area. The seat portions adjacent the recess are designed to provide proper support for the ischeal tuberosities and yet provide adequate clearance for the recess.

The tub seat is formed of material of high thermal insulation to retard the cooling of the heated water during the bath period. The insulated tub and the patient's anatomy covering the top of the water create a sealed containment area so that the bath water does not cool appreciably during the bathing period. Therefore, neither heaters nor the constant introduction of heated water is required.

A soft disposable liner is used with the tub. This liner provides a clean surface for the patient and eliminates the need for washing and sanitizing the tub between patients. When the bathing period is finished the liner is simply removed and taken to a drain area and emptied and the liner is disposed. The liner can be provided with grip areas and a quick drain device to facilitate emptying. The sitz bath unit according to the invention does not require plumbing attachments for either water addition or drainage and does not require electricity giving it maximum flexibility so that it can be placed and used in any location and even right next to the patient's bed.

The framework of the unit is foldable or alternately is provided with fixed legs permitting the stacking of units. In either case the unit can be carried and compactly stored. The ability to store several lightweight units in a small area not only demands less hospital floor space but allows a hospital to keep an adequate number of sitz baths on hand so that patients can have frequent and adequate sitz therapy without confusion, loss of time and labor.

These and other attendant advantages of the invention will become readily apparent as the invention becomes better understood by reference to the following detailed description when considered in conjunction with the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is a perspective view of the sitz bath unit in accordance with the invention;

FIG. **2** is a sectional view of the tub portion of the sitz bath unit in accordance with the invention;

FIG. **3** is a sectional view through line 3—3 of FIG. **2**;

FIG. **4***a* is a perspective view of an alternate support stand for use with the sitz bath unit in accordance with the invention; and

FIG. **4***b* is a front elevational view of the stand of FIG. **4***a* shown in a closed position.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

The sitz bath unit is a portable chairlike apparatus designed to stand on the floor. The unit consists of tub **10**, a stand or support structure **12** and a disposable liner **14**.

The tub **10** is a unitary structure formed of a seat portion **16** joined by two side walls **18** and a backrest **20**. The upper portions of the side walls **18** form an armrest **22**. The armrest **22** may be formed of a widened horizontal flange member **24**. The inner surface of the flange may be recessed to form a lip **26**. The lip **26** may be utilized as a retainer for the stand or support structure **12** as will be further described below.

Referring further not to FIGS. **2** and **3**, the seat portion **16** of the tub **10** is provided with a recess **28** for receiving a reservoir of water in which the affected body areas of the patient are immersed during treatment. The recess **28** is positioned beneath the perineal area of the patient.

The recess **28** is formed in a generally "hour glass" configuration such that opposed protrusions **30** on the seat **16** support the ischeal tuberosity areas of the patient. The recess opens wider fore of the ischeal tuberosity support **30** along the seat portion **16** to form a first recessed area **32** and also opens wider aft of the tuberosity support protrusions **30** to form a second recessed area **34** extending along the curve **36** joining the seat portion **16** and backrest **20**, and extending partially up the backrest wall.

This provides a greater reservoir of heated water to the perineal area. The bottom wall **38** of the recess is disposed below the seat wall **16** a depth up to 6 inches to provide full coverage of the affected areas. The seat design in accordance with the invention provides proper support for the ischeal tuberosity and yet provides adequate clearance to receive the affected areas within the recess.

The backrest **20** is formed with a slightly convex arcuate curve **40** for maintaining the occupant in a more erect position. The backrest **20** diverges slightly with respect to the vertical while the seat portion **16** slants downwardly from the outer lip **42** of the seat toward the curve **36** joining the back **20** and seat **16**. The angle between the backrest **20** and seat portion **16** is maintained between 65 to 85°. The space between the side walls **18** is maintained between about 22 to 24 inches to accommodate large people. The front lip **42** of the tub is maintained at a height from the floor no greater than 14 inches.

Thus, when seated, the patient's knees are bent at an angle less than 90° and the hips are bent at an angle less than 90°. This position gives maximum exposure to the perineal area to the bath water. This is quite different than normal seating where the hip, knee and ankle angles are at 90° or greater. However, when seated in the sitz unit in accordance with the invention the ankle angle is 90° or more with the feet flat on the floor to help reduce pressure in the popliteal area.

The tub **10** is constructed of a lightweight composite material formed of an upper skin **44** or a lower skin **46** which are filled with a lightweight insulating foam **48**. The skins are suitably formed of a smooth plastic material such as a fiberglass reinforced polyester resin and the foam filler **48** can be a cellular plastic such as polystyrene or polyurethane foam. The composite structure provides adequate support, good thermal insulation and the outer surfaces can be formed quite smooth to be easily cleaned but yet provide substantial scuff and fracture resistance.

The tub 10 is designed to be used with a liner 14 constructed of soft, water proof material. The liner is suitably formed of a relatively thin film of plastic such as a vinyl, or polyethylene or polypropylene containing sufficient strength and a high enough melting point to receive 1 to 3 gallons of hot water. The liner is sufficiently large to extend beyond the tub surfaces to provide full coverage. The liner can be provided with a plurality of hand holds 50 gripping areas, perforated hand holds or other equivalent may be provided to facilitate removal of the liner from the tub seat with the bath solution in it. The liner is capable of holding the bath solution which may range from 1 to 3 gallons. A quick drain feature such as a pull tab, or a hose molded into the recessed area which may be cut to quickly drain the liner may be provided on the liner.

The support structure stand may take the form of a pair of U-shaped legs 52 affixed to the side walls 18 of the tub by suitable fastening means. The legs 52 diverge such that a plurality of the units can be stacked one on top of another for storage.

A foldable structure 54 may be utilized as the stand, as illustrated in FIGS. 4*a* and 4*b*. The foldable stand 54 contains two U-shaped leg members 56. The legs each contain a clevis 58. Four cross frame members 60 are pivotably joined to the clevis 58 by pins 62. The outer ends of the frame members 60 terminate in an eyelet 64 which is inserted into apertures in a ring 66. A snap spring 68 covers the ring 66 and eyelets 64. When stored the frame members 60 pivot to a vertical position to provide a very compact configuration.

During use the support structure is opened by pulling the legs 56 apart to rotate the frame member 60 horizontal. This provides a spacing of 22 to 24 inches between the front legs. The tub seat 10 is lowered such that the cross arms 70 are received under the lip 26 of the armrest. The liner 14 is then placed on the tub 10 and hot water poured into the recess 28. After the bathing period the liner 14 is removed and emptied. The tub 10 is removed from the foldable support 54. The support 54 is folded and stored while the tub 10 is stacked in a pile with tubs of similar shape.

The sitz bath unit in accordance with the invention can be used for many different patients since the disposable liner maintains it in hygienic condition. It does not require running water, an independent water reservoir, a drain or electricity during use of the well insulated tub. The highly insulated tub and the over lying patient's anatomy covering the top of the water create a sealed containment area so that the bath water does not cool appreciably during the bath period. This obviates the need for heaters of the constant introduction of heated water.

The unit can be used in a patient's room, next to a bed if necessary so the patient does not require being moved to a bathroom or special room for treatment. Therefore, the hospital does not have to devote valuable floor space to built-in sitz bath facilities or tie up facilities for other use. Furthermore, the unit is moderately priced and convenient to use and therefore becomes available for home usage.

The disposable liner can be folded into a small packet for easy storage. The folding frame and stacking tub seat or stackable units require less storage space and conventional units.

The seat is designed to accommodate a hundred percent of men patients and 95 percent of women patients without affecting circulation in the popliteal areas of the legs. The seat is designed to hold the body at the proper angle to keep treatment area in the water, and is also designed for proper seating support of the human anatomy. The seat design is such that the buttocks are not pressed together thus allowing warm water to reach the affected area. The recess in the tub seat fully exposes the treatment area to water, and provides a larger quantity of warm water in the treated area. The tub seat accommodates small as well as large heavy set people.

The entire unit is of lightweight construction easy for a nurse to carry and set up. The tub seat is of one piece construction, easy cleaning required and the tub seat skin is constructed of a high impact material that resists scuffing and breakage.

It is to be understood that only preferred embodiments of the invention have been described and that numerous substitutions, alterations and modifications are all permissible without departing from the spirit and scope of the invention as defined in the following claims.

What is claimed is:

1. A portable perineal hydrotherapy unit comprising:
   - a lightweight, unitary, integral, chair-shaped tub formed of a lightweight, high-impact resistant material having very good thermal insulating properties, said tub having a seat, a backrest, side walls and a cavity having a depth of up to 6 inches formed in the seat and having an opening below the perineal areas of the human subjects;
   - the middle portion of the cavity at the surface of the seat being narrowed to form an ischeal tuberosity support area and the open surface of the cavity widens fore and aft of the narrowed support area;
   - the angle between the seat and backrest is from 65° to 85°; and
   - a support stand for the tub having a vertical extension such that the front lip of the tub seat is no more than 14 inches from the floor.

2. A unit according to claim 1 in which the stand is attached to the tub.

3. A unit according to claim 1 in which the stand is foldable and the tub is freely supported in the stand.

4. A unit according to claim 3 in which the foldable stand includes a plurality of up-standing support members for receiving the tub and pivotable cross members attached to the up-standing support members.

5. A unit according to claim 1 in which the tub is formed of a composite including an upper and lower skin filled with a foamed organic resin.

6. A unit according to claim 1 further including a thin, water-impervious liner for lining the tub.

7. A unit according to claim 1 in which the seat and backrest are joined by a curved portion and the aft opening of the cavity extends into the curved portion and partially up the back wall of the tub.

8. A unit according to claim 7 in which the backrest of the tub includes a convex arcuate portion for maintaining the subject in a more erect position.

9. A unit according to claim 7 in which the seat slants downwardly from the lip of the seat to said curved portion and the angle between the backrest and a horizontal plane is more than 90°.

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