July 21, 1925. 1,546,813

J. H. THOMSEN

PORTABLE OBSTETRICAL BED TABLE

Filed Aug. 16, 1924 2 Sheets-Sheet 1

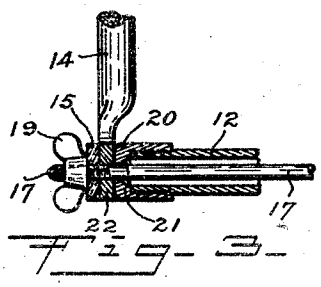


Fig. 3.

Fig. 1.

Fig. 4.

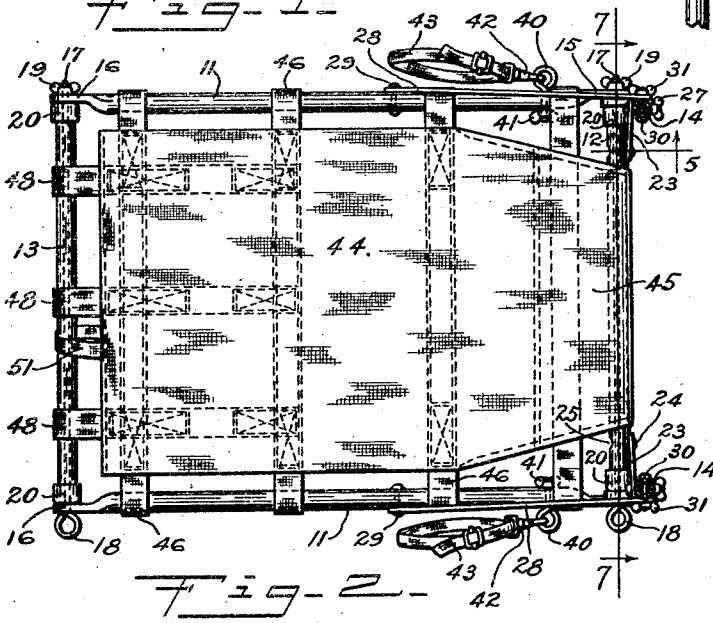


Fig. 2.

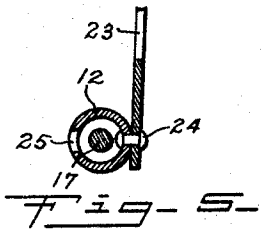


Fig. 5.

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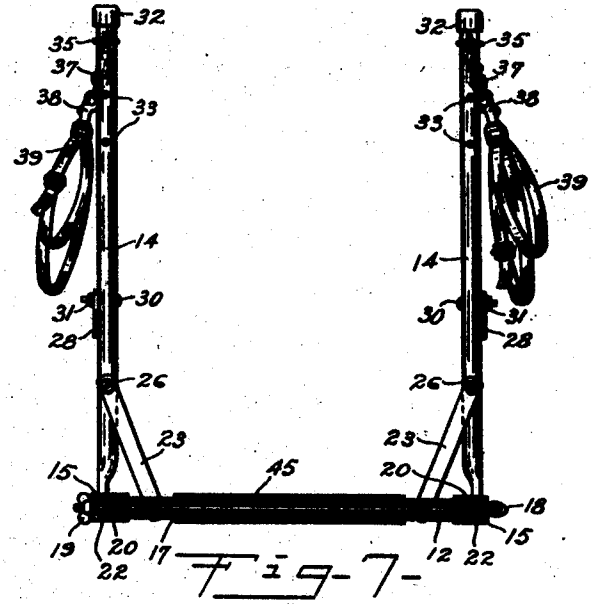


Fig. 7.

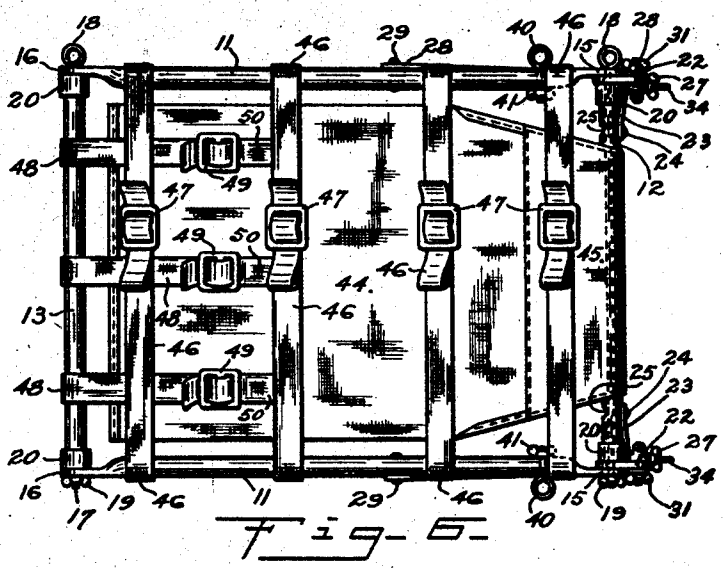


Fig. 6.

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Patented July 21, 1925. 1,546,813

UNITED STATES PATENT OFFICE.

JOHN H. THOMSEN, OF OMAHA, NEBRASKA.

PORTABLE OBSTETRICAL BED TABLE.

Application filed August 16, 1924. Serial No. 732,496.

To all whom it may concern:

Be it known that I, JOHN H. THOMSEN, a citizen of the United States, residing at Omaha, in the county of Douglas and State of Nebraska, have invented certain new and useful Improvements in Portable Obstetrical Bed Tables, of which the following is a specification.

My invention relates to surgical tables, beds and the like, and particularly to devices of this character adapted for use in obstetrics. It is the object of my invention to provide an obstetrical bed so constructed that its parts may be disconnected and formed into a compact bundle, of such small size and weight that the obstetrician may readily convey the same into the home of the patient, and there quickly assemble the parts to form a practical and efficient appliance which, in connection with the usual and well-known accessories, will afford substantially the same facilities in the home or residence as are available in well-equipped maternity hospitals. My appliance may be used also for general surgical purposes, as a table for genital, rectal, and perineal operations and examinations, but is especially designed and suited for obstetrical uses, being adapted for constraining the patient, either while conscious or under anesthesia, to maintain the position or positions best adapted for facilitating delivery, either natural or by the aid of forceps or other instruments; for enabling the attendant to maintain efficient drainage and complete asepsis; and facilitating post-delivery attentions, such as repairs of perineal lacerations and the like. The general purposes and functions of my improved appliance are substantially the same as that disclosed in my co-pending application, filed October 8, 1921, Serial No. 506,443, of which the present application is in part a continuation. My improved structure, however, provides an appliance which is lighter, stronger, and neater in appearance, and which may be carried in a more compact form when its parts are disconnected.

In the accompanying drawings Fig. 1 is a side view of my improved appliance, Fig. 2 is a plan view of the same, partly in section on the horizontal plane of the line 2—2 of Fig. 1, Fig. 3 is a detail partial transverse section on the vertical plane of the line 7—7 of Fig. 1 and Fig. 2, Fig. 4 is a detail side view of one of the posts or standards, with a foot-holding boot carried by the straps thereon, Fig. 5 is a detail section on the vertical plane of the lines 5—5 of Fig. 2, Fig. 6 is a bottom view of the appliance, and Fig. 7 is a complete transverse section on the vertical plane of the line 7—7 of Figs. 1 and 2.

In carrying out my invention the primarily essential structure is a substantially rectangular, flat, thin and rigid base-portion, having rigidly affixed thereto at one end a pair of transversely spaced vertically extending posts or standards, the base-portion being of suitable length and width to receive thereon the trunk of the patient, and being adapted to be placed directly upon an ordinary sleeping-bed or other available elevated support.

In the improved structure illustrated in the drawings, the principal frame-elements are tubular, preferably being made of steel tubing, whereby to secure a maximum strength and rigidity proportional to the weight of the parts, and also to avoid sharp edges and corners upon the frame-members. The tubular frame-elements comprise the longitudinal or side-members 11 of the base, the front and rear transverse end-members 12 and 13 of the base, and the vertical standards or posts 14 which are connected with the base at the front end adjoining the transverse end-member 12. The end-portions of the side-members 11 are flattened to form bar-like terminals 15 and 16 which are disposed vertically edgewise, each of said flattened terminal portions being rounded at their ends, and each having therein a transverse opening for receiving the clamp-rods 17. The clamp-rods 17 have rounded loops or eyes 18 at one end, the opposite ends being conically pointed, and adjoining said pointed ends the rods being threaded to receive the wing-nuts 19. The ends of the transverse tubular members 12 and 13 are threaded, and upon said threaded ends are screwed the caps 20, said caps having axial openings to receive the clamp-rods, which pass through the members 12 and 13 from end to end thereof. The openings through the caps 20 are flared or countersunk at the inner ends, as shown clearly at 21 in Fig. 3, said flared portions of the openings facilitating the insertion of the pointed ends of the clamp-rods when the structure is being assembled. The ends of the caps 20 on the end-member 13 directly abut the flat terminals 16 at the rear ends

of the side-members 11, and said parts are held together by one of the clamp-rods 17, of which the terminal loop 18 and the wing-nut 19 may be grasped and manipulated by hand to securely clamp the parts, without the use of a wrench or other tool. The front end-member 12 is slightly shorter than the member 13, said member 12 being disposed between the flat front terminals 15 of the side-members 11, but its caps 20 being spaced therefrom, and the end-portions 22 of the posts 14 being interposed between said caps and flat terminals. Said end portions 22 of the vertical posts are flattened similarly to the terminals of the side-members 11, and are preferably turned in horizontally so that their ends are offset from the transverse vertical plane of the posts, the amount of the offset being slightly more than the diameter of the posts. Said flattened, inturned ends 22 have openings therein for the clamp-rod which extends through the end-member 12, the clamp-rod holding the parts together transversely of the base. Each of the posts 14 is connected with the transverse base-member 12 by a short diagonally extending brace-bar 23, of which the lower end is pivotally connected with said base-member by a rivet 24 extending through the outer side only of the tubular member, as shown in Fig. 5, the opposite or inner side of the tube having an opening 25 therein to enable convenient insertion of the rivet. The upper ends of the brace-bars 23 are detachably connected with the posts 14 by means of bolts 26, provided with wing-nuts 27, as shown. The posts 14 are connected with the longitudinal base-members 11 by brace-bars 28 of which the lower ends are pivotally connected with said members 11 by means of rivets 29, and the upper ends detachably connected with the posts by bolts 30 and wing-nuts 31. The upper ends of the posts are threaded and have the caps 32 screwed thereon, and in the upper portions of the posts are a series of vertically spaced horizontal holes 33 for receiving the eye-bolts 34. Said eye-bolts are provided with wing-nuts 35, whereby the bolts may be readily removed and transferred to any of the holes 33, being thereby disposed at the desired height upon the posts. Rings 36 are connected with the eye-bolts 34 by links 37, said rings 36 being detachably engaged by the snaps 38 of the foot-straps 39. Eye-bolts 40 extend transversely through the longitudinal base-members 11 near the front ends thereof, said eye-bolts being secured to said members by wing-nuts 41 screwed upon the inner ends of the bolts. The snaps 42 of the hand-straps 43 are detachably engaged with the said eye-bolts 40.

In the rectangular space between the side and end members of the base-frame is disposed a flexible cover 44, preferably of strong fabric, such as canvas, which is connected with the frame so as to be held under tension thereby. At the front end the cover has a wide hem 45 which is looped about the tubular end-member 12, the cover being made narrower at said end, so as to engage only that portion of the frame-member intermediate the lower ends of the braces 23. At the sides the cover is provided with pairs of straps 46 which are passed around the longitudinal frame-members 11 and their ends secured together by buckles 47. At the rear end of the cover straps 48 are secured thereto, said straps being passed about the end-member 13, and their free ends connected by buckles 49 with short straps 50 secured beneath the cover near said end. A separate or free strap 51 is also provided, said strap being looped about the end-member 13, and being employed for the purpose hereinafter mentioned.

It will be seen that in the described structure the frame may be readily disjointed by merely withdrawing the clamp-rods 17, after removing the wing-nuts 19 therefrom, and disconnecting the upper ends of the brace-bars 23 and 28 from the posts 14, by removal of the bolts 26 and 30. The cover 44 is removable, of course, by unbuckling the attaching-straps 46 and 48. After the upper ends of the brace-bars are disconnected from the posts, the longitudinal braces may be folded down parallel with the side-members 11, and the braces 23 folded down parallel with the end-member 12, so that the entire frame is reduced to a group of elongated members which may be formed into a bundle and the cover 44 wrapped about the same, thereby producing a compact package which may be placed in a bag or other suitable container for convenient transportation.

In assembling the described structure, the end-member 12 is first passed through the hem 45 of the cover 44, then the terminals 22 and 15 of the posts 14 and side-members 11 are juxtaposed to the ends of the member 12, and said parts secured together by passing one of the clamp-rods 17 through them and tightening the wing-nut 19 on the threaded end of the clamp-rod. Then the end-member 13 is placed between the terminals 16 of the side-members 11, and said parts secured together by the other clamp-rod. Then the braces 23 and 28 are raised and connected with the posts 14 to retain the same in position perpendicular to the base-frame, and finally the straps 46 and 49 are passed around the side-members and the end-member 13 of the base-frame, drawn taut, and buckled, to hold the cover under suitable tension. Under certain conditions, it may be desired to have the appliance in a fairly compact form, but so that it may be very quickly set up for use, and in such

case the ends of the longitudinal braces 28 may be disconnected from the posts 14, after which both posts may be swung pivotally about the front clamp-rod to positions above and parallel with the side-members 11 of the base-frame. The appliance is thus reduced to a substantially flat form which may be transported with reasonable convenience, and which may be made ready for use by merely raising the posts to the perpendicular position and attaching the braces 28 thereto, to hold them in said position. While the appliance is in actual use, and at times when the posts are not being employed for holding the feet of the patient in elevated position, the braces 28 may be disconnected from the posts and the latter then swung down to a reversed position, at which they hang from the end of the base-frame adjoining the bed, table or other support on which the appliance is sustained.

In a typical or characteristic use of my appliance in obstetrical cases, the base-frame is disposed transversely upon an ordinary sleeping-bed, with the front end of the frame (on which the posts 14 are carried) at one side of the bed and projecting slightly over said side of the bed. The rear end of the frame is connected with the rail at the opposite side of the bed by means of the strap 51, which is passed about the frame-member 13 and the bed-rail, drawn taut, and buckled, to thereby prevent sliding or shifting of the appliance toward the side of the bed at which it is placed. The base-frame may be tilted or inclined toward the front end, if desired, by placing pillows or other suitable and available articles beneath the rear end of the frame. The upper surface of the base is padded by placing folded blankets or the like over the flexible cover 44, and the padding is preferably covered over with a sterile sheet. A Kelly pad is placed upon the front portion of the padded base of the appliance, with the open side of the inflated annular cushion thereof at the front end of the base, so that the drainage apron of the pad extends between the posts and down at the side of the bed to discharge into a suitable receptacle disposed upon the floor.

It is preferable that, before the patient is placed upon the appliance, the hand-straps 43 and foot-straps 39 be detached by releasing the snaps 42 and 38 from the eye-bolts 40 and rings 36; the hand-straps being secured about the hands and wrists of the patient, and the foot-straps secured about the feet and ankles. In order that the feet may be secured without drawing the straps too tightly, I may employ in connection with the foot-straps the foot-holders or boots 52, of which one is shown in Fig. 4, and which are made of flexible material, having secured thereto the loops or guides 53 through which the straps 39 are passed, as shown. After the hand-straps and foot-straps have been secured to the patient, said straps may be connected with the appliance at the proper time by merely engaging the snaps 38 and 42 with the rings 36 and eye-bolts 40. When the patient is placed upon the appliance, the trunk is disposed supine upon the padded base, so that the entire weight of the body is supported thereon, and the pelvic portion of the body is adjacent to the posts, whereby the natural discharges and the antiseptic fluids used for cleansing and sterilizing the parts may be received upon the Kelly pad and conveyed by the apron thereof into the receptacle provided, without soiling or wetting the bedding. The patient is usually first placed upon the appliance after labor has progressed to a stage at which it is desirable that muscular exertions of the patient be employed to assist in the descent of the fetus. For this purpose, both the hand-straps and foot-straps are attached to the base and posts, respectively, and the patient is required to pull forcibly upon the hand-straps, balancing the pull thereon by pushing against the foot-straps, so that the appliance remains in equilibrium. For the "pulling" phase of the delivery, the length and points of connection of the straps to the appliance are so arranged that the arms and legs will be only slightly flexed at the elbows and knees, there being some flexure at the hips, so that the thighs extend at an obtuse angle to the axis of the trunk. Should it be desired that the patient assume the "Walcher" delivery position, the foot-straps may be detached from the posts, and if this position is to be employed for a considerable time the braces 28 may be disconnected from the posts and the latter swung down to the reversed position before mentioned. It is usually preferable at the beginning of the actual delivery to place the patient in a lithotomy position, and in this position the length of the straps and the points of connection with the appliance are so proportioned that the thighs are extended upwardly from the plane of the trunk, the knees being flexed so that the lower legs are approximately horizontal. In the normal lithotomy position the thighs extend in a plane perpendicular to the axis of the trunk, but in some cases an extreme lithotomy postion may be desirable, in which the flexure at the hips is greater than in the normal lithotomy position, so that the thighs extend at an acute angle with the axis of the trunk. The "pulling" position first above mentioned may be regarded as a modified lithotomy position. By suitable adjustments of the straps, either the normal or extreme lithotomy position may be established, and movements of the patient inhibited to the extent required for maintaining the desired position. The at-

tendant is thus enabled to cleanse, shave and sterilize the external parts, establishing thereby an aseptic field, which may be maintained throughout the delivery by flushing away with antiseptic fluids any septic discharges and excretions as the same are voided. The maintaining of the desired position for delivery is fully effective, either when the patient is conscious or under anesthesia, and the obstetrician is thus enabled to carry out any measures that may be required, either surgical or manipulative, unhampered by interference from the patient, and with the assurance of surgical asepsis throughout the period of parturition, and extending to the post-delivery attentions, such as repairs of perineal lacerations and the like. At the conclusion of the operative period, when the patient is released from the appliance, it is merely necessary to swing the body about to a position longitudinal of the bed, removing the appliance therefrom, and thus avoiding entirely the laborious and often hazardous transference of the patient which is required at this time when the delivery is effected elsewhere than upon the sleeping-bed which is to be occupied after delivery, or when the delivery is accomplished in the bed by methods and means which permit wetting or soiling of the bedding, so that the latter must be renewed or replaced before the bed can be occupied by the patient.

Now, having described my invention, what I claim and desire to secure by Letters Patent is:

1. An obstetrical appliance comprising a relatively thin and flat base-portion adapted to receive thereon the supine trunk of a patient so that the pelvic portion of the trunk adjoins the front end of the base and the entire weight of the body rests upon said base to stabilize the same, said base-portion having a rigid frame, upright posts rigidly connected with said rigid base-frame at the sides of the front end thereof, foot-straps detachably connected with the upper portions of said posts and adapted to secure the feet of the patient at such an elevation and longitudinal relation to the trunk as to maintain a lithotomy position of the thighs and legs, and hand-straps detachably engageable with the base-frame adjoining the front end thereof and adapted to secure the hands of the patient thereto and inhibit longitudinal movement of the trunk upon the base-portion.

2. In an obstetrical appliance of the class described, tubular longitudinal base-members having flattened transversely perforate terminal portions, tubular transverse base-members extending between said terminal portions of the longitudinal members, clamp-rods extending through said tubular transverse members and the adjoining terminals of the longitudinal members, tubular posts having flattened lower terminal portions clamped between the terminals of the longitudinal base-members and the ends of one of the transverse members, braces detachably connected at their upper ends with said posts and connected at their lower ends with said longitudinal base-members, and a flexible cover detachably connected marginally with said base-members and held under tension thereby.

3. An obstetrical appliance comprising a substantially flat and rigid base member adapted to be disposed transversely upon a sleeping bed so that one end of the base member is at one side of the bed, said base member being of sufficient length to receive and completely support the trunk of a patient, rigid posts connected with the base member at one end near the corners thereof and adapted to fold longitudinally of the base member upon the same, diagonal braces at the sides of the base member and connected with the posts intermediate the upper and lower ends of the latter to secure the same rigidly in position perpendicular to the base member, foot straps connected with said posts adjacent the upper ends thereof and adapted for fixedly securing in elevated position both the feet and legs of a patient whose body lies upon the base member, and hand straps connected to the base member at the sides thereof adjacent the lower ends of the posts for fixedly securing the hands of the patient to the base member at said points and at the same time permit the patient to grasp the rigid posts directly at points below the feet.

JOHN H. THOMSEN.