

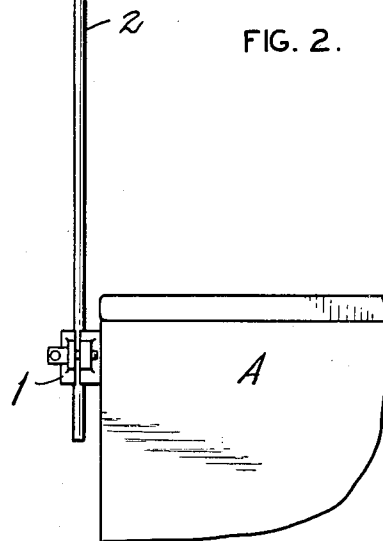
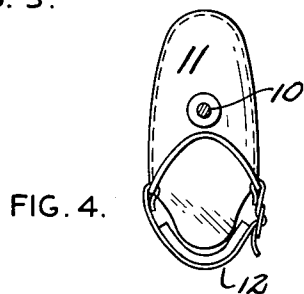
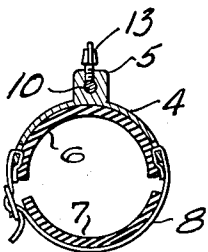
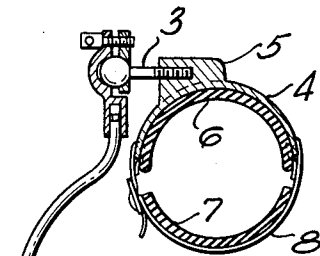
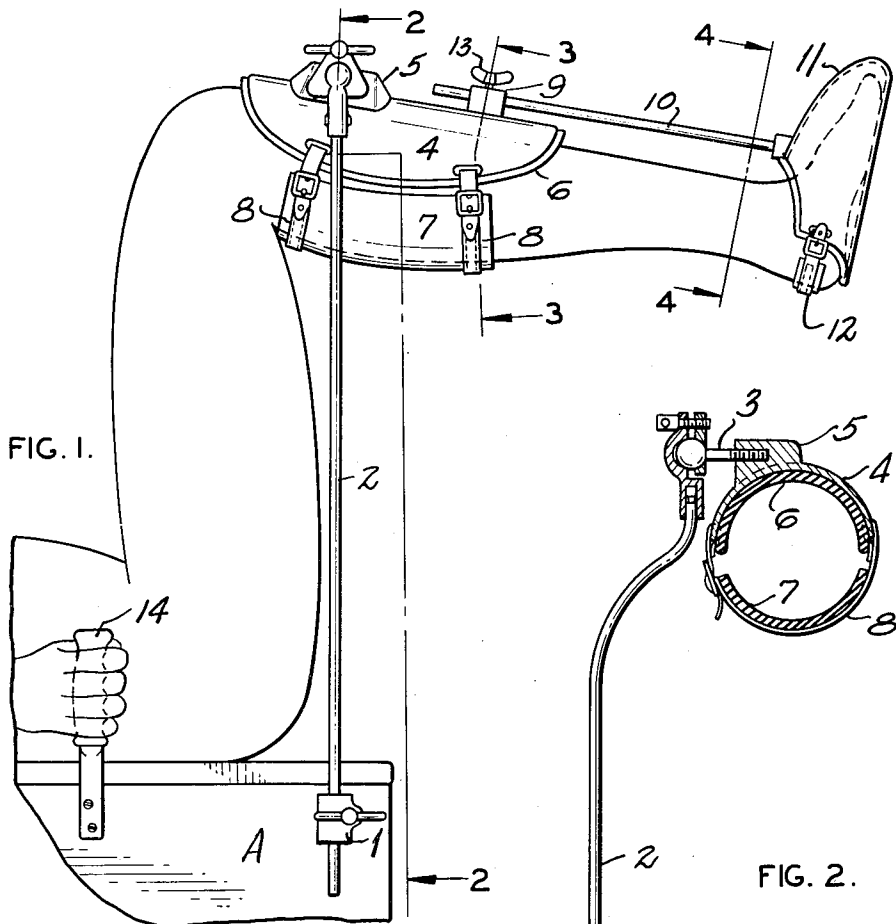
July 31, 1956

T. W. BROESEL.

2,757,058

DELIVERY CRUTCH FOR OBSTETRICAL TABLES

Filed March 2, 1953



INVENTOR

Tad W. Broesel

BY Rodney Bedell
ATTORNEY

1

2,757,058

DELIVERY CRUTCH FOR OBSTETRICAL TABLES

Tad W. Broesel, Webster Groves, Mo.

Application March 2, 1953, Serial No. 339,835

2 Claims. (Cl. 311-11)

This invention relates in general to surgical devices and, more particularly, to a delivery crutch for obstetrical tables adapted to provide leg thrust-resistance without causing injury to a patient.

Great emphasis has been placed upon the treatment of thrombosis and other circulatory afflictions of the lower limbs brought on by childbirth. This emphasis on treatment has tended to ignore simple preventive measures in connection with the mechanics of childbirth.

Proper crutch design and adjustment are important factors where danger of thrombosis and other venous troubles of the lower limbs is present.

The earliest and most satisfactory type of leg holder from the standpoint of comfort and safety for the patient consisted of a nurse or attendant holding a leg at each side of the obstetrical table but for obvious reasons mechanical leg holders are desirable.

Many metal, trough-like crutches or leg holders have been used into which the padded leg could be strapped and held firmly in position. However, in labor, the forward thrust of the patient's body subjected the veins at the tender under side of the knee to injury and irritation against the metal edge of the crutch and such devices were improved by adding an adjustable footpiece. This footpiece transmitted a great part of the labor pressure from the underside of the knee to the bottom of the foot. However, the trough was still beneath the knee and exerted considerable pressure, particularly if the footpiece and the straps over the knee were not properly adjusted. All such crutches were conceived with the primary purpose of merely lifting the legs into position, completely neglecting the advantageous use of the crutch at the time it is needed.

In labor the patient pulls on the traction handles of the obstetrical table and transmits this force towards the foot end of the table via the flexed legs. The most natural place to oppose this force and hold the flexed legs in position would be at the knee cap. However, the trough-shaped crutches merely provide straps over the knee which will usually stretch, thus allowing the tender underside of the leg to press against the solid metal of the trough.

The present invention embodies inverting the rigid trough and attaching a footpiece or stirrup from above, so that positive resisting forces are established at the knee and the foot where they cannot cause injury to soft tissue or veins—because all pressure is at the points designed by nature to carry weight, as is evidenced when a child first learns to crawl and walk. A padded strap is provided beneath the inverted trough merely to support the leg when it is relaxed. When the traction handles are pulled in labor, the knee presses against the solid but padded "kneecap" and it is impossible for the tender underside of the leg to become injured because there is no substantial pressure upon that side.

It is an object of this invention to provide a delivery crutch for obstetrical tables which incorporates a resistance-forming member for disposition against the up-

2

wardly presented portion of the patient's knee and lower leg when in delivery position for opposing the upward component of the leg pushing, and a resilient sling suspended from such member for supporting the leg when relaxed, whereby the soft portions of the patient's legs are not injuriously contacted.

Another object of this invention is to provide a delivery crutch embodying a downward concave member and a lengthwise adjustable footpiece for respectively opposing the upward and forward components of leg thrusts during delivery.

Another object of this invention is to provide a delivery crutch for obstetrical tables which has the characteristics mentioned above and is adapted for ready adjustment to accommodate various leg sizes and to comfortably support the patient's legs in desired raised attitudes; which crutch contains yielding means for disposition immediately about the patient's leg to comfortably enclose same.

A further object is to provide a delivery crutch which may be economically manufactured, the use of which is non-injurious to the patient; and which is easily operated and may be mounted on existing obstetrical tables without difficulty.

These and other detailed objects of the invention will be apparent from the following description and accompanying drawings, in which:

Figure 1 is a side view of a delivery crutch showing the same in operative position on a table.

Figure 2 is a transverse section taken on the line 2-2 of Figure 1.

Figure 3 is a transverse section taken on the line 3-3 of Figure 1.

Figure 4 is a transverse section taken on the line 4-4 of Figure 1.

The crutch is utilized in pairs but a single unit is illustrated. An obstetrical table A has a clamping socket 1 mounted at each side adjacent its normally forward end for mounting an elongated upright 2, socket 1 being adapted for swinging about its horizontal axis. Upright 2 is curved inwardly near its upper end to extend above the top of table A and at its upper extremity carries a bolt 3, having a universal joint mounting on the upright.

A downwardly concaved thrust plate 4 has a boss 5 on its upper convex face threaded to receive bolt 3.

A resilient pad 6 is secured to the concave face of plate 4 and cooperates with a companion pad 7 to substantially surround a portion of the patient's lower leg, pad 7 being suspended from plate 4 by straps 8 passing through slots in the plate. Pads 6, 7 are fabricated of any suitable yielding material, such as foam rubber or the like.

The upper face of plate 4 carries a mounting block 9 near its forward end and a rod 10, slidably received in the block, projects forward beyond plate 4 and carries a substantially rigid shoe-shaped footpiece 11 having an open, downwardly presented heel portion provided with pad-covered heel straps 12 for securing a patient's foot in the footpiece. Mounting block 9 receives a set screw 13 for frictionally engaging rod 10 to maintain footpiece 11 in desired spaced relation to plate 4.

In use, the pad-covered inner face of plate 4 is placed against the patient's kneecap and shin; rod 10 and footpiece 11 are adjusted to receive the patient's foot; pad 7 is placed against the calf of the patient's leg and straps 8 are buckled; and heel straps 12 are then secured for supporting the patient's foot. Upright 2 and bolt 3 may then be adjusted for holding the patient's leg in requisite position.

During delivery, a patient will exert a pull upon the usual traction handles 14 with the onset of each labor pain and will simultaneously exert a forward and upward leg thrust. The forwardly directed component of this

3

pushing will be opposed by footpiece 11 while plate 4 will resist the upward component. However, limited resistance to the forward thrust will be made by plate 4 because of the snug enclosure of the leg by pads 6, 7 or by an inclination of the plate downwardly from the angle shown. Such pressure-creating exertion of the legs will not cause any injurious contact thereof with a rigid plate as may occur with currently used crutches, since the calf of the leg only contacts with the yieldable pads and no substantial pressure is exerted against the fleshy back portions of the upper and lower leg. Any leg thrust is applied mainly through the knee cap which is naturally adapted for such purpose. Consequently, rupture of blood vessels with the development of clots and other venous trouble is obviated.

The details of construction may be varied substantially without departing from the spirit of the invention and the exclusive use of those modifications coming within the scope of the claims is contemplated.

What is claimed is:

1. Accessory fixtures for an obstetrical table comprising an upright frame member adjustably mounted at each side of said table near the delivery end thereof, a shin bone saddle adjustably attached to the inner side of each of said frame member over said end of the table, and straps with adjusting means attached under said saddle

4

to support the patient's leg when relaxed, said shin bone saddle extending over a suitable surface of the upper portion of the leg.

2. Accessory fixtures for an obstetrical table comprising an upright frame member adjustably mounted at each side of said table near the delivery end thereof, a stiff downwardly facing leg bone engaging saddle adjustably attached to the inner side of each of said frame members over said end of the table, and upwardly facing means associated with each saddle and spaced therefrom to support the patient's leg when relaxed, said shin bone saddle extending over a suitable area of the upper surface of the leg beyond the thigh.

15

References Cited in the file of this patent

UNITED STATES PATENTS

542,390	Linn	July 9, 1890
988,923	Bauerfeind	Apr. 4, 1911
1,516,795	Schwarting	Nov. 25, 1924
1,622,313	Gellhorn	Mar. 29, 1927
2,067,891	Comper	Jan. 19, 1937
2,119,325	Goodhart	May 31, 1938
2,257,491	Armstrong	Sept. 30, 1941
2,308,747	Froelich	Jan. 19, 1943

25