

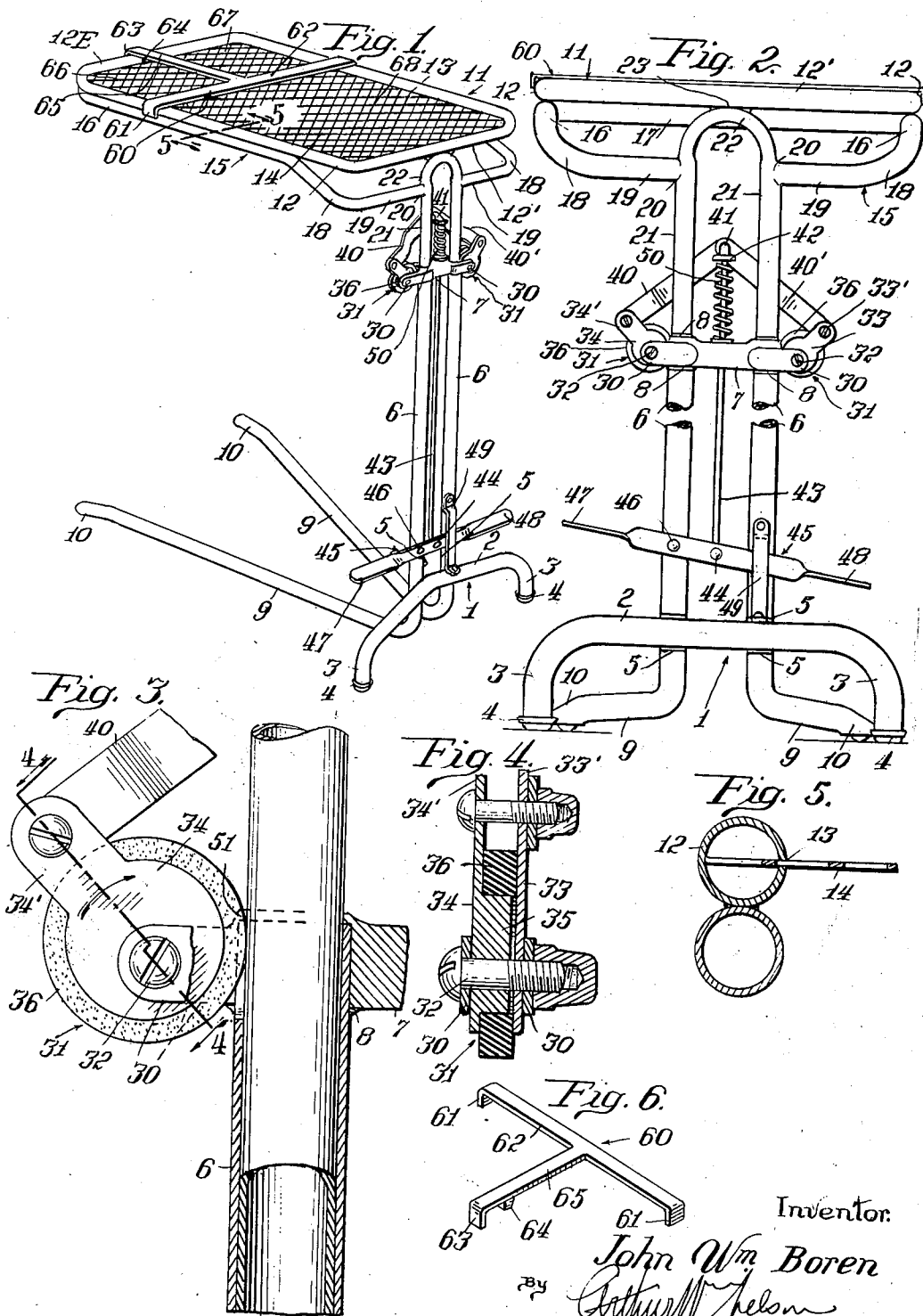
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HOSPITAL TABLE

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## UNITED STATES PATENT OFFICE

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## HOSPITAL TABLE

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The invention relates generally to improvements in hospital tables but relates more particularly to tables which may be raised and lowered and which are adapted for use as a bedside table or an operating room instrument table.

The general object of the invention is to provide a table of this kind which shall be better adapted to the conditions which obtain in hospital practice than those heretofore available.

Another object of the invention is to provide a relatively light table construction in which the table top may be of ample size to accommodate the various instruments, when used as an operating room instrument table, or to accommodate the various items which a patient needs, when the table is used as a bedside table, and yet be of compact size and thoroughly stable and rigid.

Again, it is an object to provide a hospital table which can be readily raised or lowered and in which the top will be automatically locked in placed position.

It is also an object of the invention to provide a hospital table in which the height of the table top can be controlled by a sterile surgical nurse herself by foot controlled lock releasing means, thus permitting her to position the table at desired height while the shelf or top and sides of the table remain covered by sterile linens, thus obviating the necessity of a second nurse who has heretofore been required to make adjustments, and who being unsterile, involves danger of contaminating the sterile field.

Still another object of the invention is to provide an improved table top construction on which the various operating instruments and other items may be placed without danger of their falling off the table, in which the placement of the instruments thereon causes less noise and yet in which there is adequate separation of the instruments by means dividing the top into separated areas.

The above mentioned objects of the invention, as well as others, together with the advantages thereof will more fully appear as the specification proceeds.

In the drawing:

Fig. 1 is a perspective view of a hospital table embodying the invention.

Fig. 2 is an end elevation, portions being broken away to enable the remaining parts to be shown on enlarged scale with respect to Fig. 1.

Fig. 3 is a fragmentary detail view of one of the eccentric locking members and associated parts.

Fig. 4 is a section on the line 4—4 of Fig. 3.

Fig. 5 is a detail fragmentary sectional view on the line 5—5 of Fig. 1, and

Fig. 6 is a perspective view of removable means associated with the table top for dividing the table into compartments or sections for the better segregation of surgical instruments or other items.

The table will be described particularly as used for an operating instrument table because that is one purpose for which it is particularly adapted. This is by way of illustration and not by way of limitation.

The table includes a base frame structure to which the character 1 is generally applied. The base 1 is composed of metal tubing and comprises a transverse member 2 having downwardly curved end portions 3—3, which terminate in enlarged floor engaging parts 4—4.

Welded to the transverse member at 5—5 are two spaced upstanding tubular members 6—6 which are connected at their upper ends by a cross member 7, which member 7 is welded at 8—8 to the tubes 6—6. By virtue of this cross member 7 and the welded union of the tubes 6—6 at 8—8 with the cross member 7, a rigid frame structure is provided.

The lower ends of the tubes 6—6 are bent rearwardly, and extend downwardly, in diverging relationship, as indicated at 9—9 and terminate in toe-like ends 10—10 which engage the floor. The widely separated floor contacting parts 4—4 and 10—10 provide a very rigid and stable support for the table base. Hence the base is able to support a table top of adequate size.

The table top structure is designated generally by the character 11. The top 11 includes a hollow frame 12 of generally rectangular shape in plan. The frame 12 has a continuous slit 13 on its inner side of a size tightly to receive and hold the marginal edge portions of a flat rectangularly shaped perforated metal member 14.

The table top portion 11 is supported by a tubular underframe 15, which has side parts 16—16 and an end part 17. The end part 17 lies directly under an associated end part of the frame 12 in substantially contacting relation.

The side portions 16—16 also lie closely adjacent the side parts of the frame 12 for much of their length, but are bent downwardly as at 18—18 and thence at right angles to the side portion and substantially parallel to the end part 17 of the frame 12 as at 19—19. The portions 19—19 are united at 20—20, as by welding, to two spaced tubular members 21—21. The parts 16—16 and 17 of frame 15 are welded to adjacent

parts of the frame 12. The lower parts of the tubular members 21—21 are telescopically received in the upper parts of the tubes 6—6 of the base. The tops of the parts 21—21 are cross connected by the yoke-like portion 22, which is welded at 23 to the adjacent end member 12' of the frame 12. Thus the frame 12 and the underframe 15 are united into a firm and rigid structure. The table top proper is furthermore supported by the underframe structure so that a long overhang is permissible without danger of making the table unstable. The structure as a whole is very compact and yet it is feasible to provide a table top some six inches longer than is customary in tables generally provided for this purpose. Thus there is provided an ample area for the reception of the various surgical instruments, basins, etc.

The parts 19—19 also form convenient handle grip portions which the operator may grasp when raising or lowering the table top.

The perforated metal member 14, while light, still functions to prevent the dropping of any of the instruments or other items therethrough.

It is essential in a table of this type that elevation control be provided so that the top can be placed in the most advantageous position for the surgeon or nurse as the case may be. Double eccentric means are provided whereby the table top may be locked or held in any placed position. Projecting outwardly from the ends of the base cross member 7 are pairs of spaced ears 30—30, between each pair of which is positioned an eccentric member 31. Since the eccentric structure on each side is essentially the same, a description of one will suffice for both. The eccentric member 31 is carried on a pivot 32, and is composed of spaced plates, 33—34, a circular metallic centerpiece 35, which is permanently secured to the member 34, and a non-metallic washer-like member 36 which is seated on the metallic centerpiece 35. The washer 36 is preferably formed of friction material such as a rubberized fabric, since such material is noiseless in action and provides adequate locking action with little effort.

The plates 33—34 of member 31 are provided with extensions 33'—34', to which one end of a toggle link 40 is pivoted. The toggle link 40 extends upwardly and inwardly to a point centrally of the tubes 21—21 at which point it is pivotally connected to a similar link 40' of the other eccentric locking structure. The pivot 41 connecting links 40—40' has an extension 42 to which the top end of an actuating rod 43 is secured. The rod 43 extends downwardly through a guide hole in the cross member 7, and at its lower end is connected by means of a pivot pin 44, to the foot actuable lever 45. The foot actuable lever 45 is pivoted at 46 to the left hand tubular frame member 6 (see Figs. 1 and 2) and has flattened parts 47, 48 at its ends to provide adequate surfaces for foot engagement. The part 49 is merely a guide to prevent the lever from swinging out of the desired plane in its up and down movements.

Between the cross member 7 and the underside of the extension member 42, an expansion spring 50 is positioned, which normally urges the actuating rod 43 upwardly.

Movement of the actuating rod 43 in an upward direction moves the toggle links in the same direction and thereby causes the eccentric members 31 to swing in the direction of the arrows. The position of the pivot 32 is such that the por-

tion 51 of the washer 36 swings into pressure contact with the adjacent tubular member 21. Similar action of similar parts occurs at the opposite side. Thus, there is a double eccentric action serving to lock the tubular members 21—21 in the tubular parts 6—6 of the base. Hence the table top is firmly held in any placed position. Any slight movement of the tubular members 21—21 downwardly while the eccentrics are in locking position only tends to swing them more firmly in the locking direction. It is, therefore, possible to place any necessary amount of equipment on the table top without imposing a load beyond the capacity of the locking equipment to hold the table parts in desired placed position.

Should it be desired to locate the table top in some other position, it is but necessary to press down on the foot lever surface 48, which moves the toggle lever actuating rod 43 downwardly and thus through the toggle links 40—40' swings the eccentrics in a direction opposite to that indicated by the arrows in Fig. 3, thereby relieving the pressure of the surface of the washers 36, against the adjacent tubular parts 21—21, enough to permit the operator to grasp the table top and push it up or down until the desired position is reached. Upon releasing pressure on the foot lever, the spring 50, automatically restores the eccentric parts and associated mechanism to locking position. If it is desired to lock the parts more firmly than is possible through the action of the spring 50 alone, it is but necessary to press on the foot surface 47 of the foot lever 45, which thereby positively raises the actuator rod 43 and transmits the necessary additional locking action to the eccentrics 31.

In operating practice, it is customary to cover the top of the table with a sterile linen cover which also hangs downwardly around the sides. In attendance there is also a sterile surgical nurse. The structure described enables the sterile nurse herself to control the elevation height of the table by pressing down on the foot lever with one foot, as before described, and then grasp the table top by the hands and applying pressure either to raise or lower it, as desired, without removing or disturbing the sterile linen. Heretofore, operating room surgical tables, which must be adjustable as to height, have required a second nurse to make the adjustments. As frequently but one sterile nurse is in attendance, it has been necessary to depend upon a second nurse, who is unsterile, to make the necessary adjustments. It is almost impossible to do this without contamination of the sterile field by the unsterile nurse. Where, as here, the sterile surgical nurse can herself make the adjustments, danger of contamination is avoided.

In Fig. 6 there is shown a T bar device 60. Its position on the table top is shown in Fig. 1. The ends 61—61 of the cross part 62 frictionally engage the sides of the table top tubular member 12. The projections 63, 64 on the leg 65 of the device 60 are spaced apart a distance just sufficient to span the tube member 12E. These projections locate the member 60 as desired and hold it in position over the metal surface 14, thereby dividing the same into three sections or compartments 66, 67 and 68, in which different surgical instruments, dressings, pans, etc. may be conveniently located and suitably separated for most efficient use. If desired, the

member 60 may be placed on the table before the sterile linen cover is positioned thereon, as the linen will naturally sag until it engages the metal surface 14, thus providing the several compartments. In such position, it is not necessary for the member 60 to be sterile. Or, if desired, the sterile linen may first be placed on the table and the member 60 placed thereover, in which event the member 60 will have been sterilized with the surgical instruments.

A table of this general construction may also be used as a bedside table, if desired, in which event it could be readily equipped with one or more drawers or shelves under the table top.

While describing the invention, I have referred in detail to the form, arrangement and construction of the parts involved, the same is to be considered only in the illustrative sense so that I do not wish to be limited thereto except as may be specifically set forth in the appended claims.

I claim as my invention:

1. A table having a base structure and a top structure, the base structure including a pair of spaced upstanding vertically disposed tubular members, and the top structure including a pair of depending vertically disposed tubular members, the tubular members of the top and bottom telescopically interfitting, means for holding said telescopically interfitting tubular members against relative vertical movement, said means including an eccentric member for each pair of telescopic tubular members, toggle levers connected to the eccentric members and to each other, resilient means urging the toggle levers in a direction serving to swing the eccentric members into locking engagement with the associated tubular members, and manually operable means for moving the toggle levers in the opposite direction.

2. A table of the kind described and embodying therein a base, a top, an upright standard supporting the top from the base, the standard comprising a plurality of legs each including upper and lower leg portions having a sliding guided engagement with each other for relative longitudinal movement, providing different elevations for said top, means carried by like portions of said legs and including parts operating automatically to grip against the other like portions of said legs for holding said upper and lower leg portions against relative longitudinal movement in one desired elevation for the top, and means operative to release the grip of said parts of said first mentioned means from said other like portions of said legs to permit relative longitudinal movement of said upper and said lower leg portions for positioning said top at another desired elevation.

3. A table of the kind described and embodying therein a base, a top, an upright standard supporting the top from the base, the standard comprising a plurality of legs each including upper and lower leg portions having a sliding guided engagement with each other for relative longitudinal movement providing different elevations for said top, means carried by like portions of said legs and including eccentric members operating automatically to grip against the other like portions of said legs for holding said upper and lower leg portions against relative longitudinal movement in one desired elevation for the top, and means connected to said eccentric members and operable to cause said members to release their grip from said other like

portions of said legs to permit said relative longitudinal movement of said upper and said lower leg portions for positioning said top at another desired elevation.

4. A table of the kind described and embodying therein a base, a top, an upright standard supporting the top from the base, the standard comprising a plurality of legs each including upper and lower leg portions having a sliding guided engagement with each other for relative longitudinal movement, providing different elevations for said top, means connecting like portions of said legs together, eccentric means turnably mounted in said means and having peripheral portions adapted to grip against the other like portions of said legs for holding said upper and lower leg portions against relative longitudinal movement in one desired elevation for the top, and means connected to said eccentric means and operative to release the grip of the same from said other like portion of said legs to permit said relative longitudinal movement of said upper and said lower leg portions for positioning said top at another desired elevation.

5. A table of the kind described and embodying therein a base, a top, an upright standard supporting the top from the base, the standard comprising a plurality of legs each including upper and lower leg portions having a sliding guided engagement with each other for relative longitudinal movement providing different elevations for said top, means carried by like portions of said legs and including eccentric members operating automatically to grip against the other like portions of said legs for holding said upper and lower leg portions against relative longitudinal movement in one desired elevation for the top, and means including a pivotally mounted lever connected to said eccentric members, said lever when swung in one direction, operating through said means to cause said eccentric members to increase their grip against said other like portions of said legs, said lever when swung in the other direction operating through said means to release the grip of said eccentric members from said other like portions of said legs to permit said relative longitudinal movement of said upper and lower leg portions for positioning said top at another desired elevation.

6. A table of the kind described and embodying therein a base, a top, an upright standard supporting the top from the base and comprising a pair of laterally spaced legs each including upper and lower portions having a sliding guided engagement with each other for relative longitudinal movement, providing different elevations for said top, means connecting the like portions of said legs together, eccentric members one for each leg turnably mounted in said connecting means and adapted to grip against or to release said other of said leg portions, an arm member connected to each eccentric member, a pivotally mounted lever member, a member connecting said lever member and said arm members, and means operating through one of said last three mentioned members for causing said arm members to move into a position wherein said eccentric members automatically grip against said other of said leg portions.

7. A table of the kind described and embodying therein a base, a top, an upright standard supporting the top from the base and comprising a pair of laterally spaced legs each including upper and lower portions having a sliding guided

engagement with each other for relative longitudinal movement, providing different elevations for said top, means connecting the upper ends of the lower leg portions together, eccentrics, one for each leg mounted for a turning movement in said connecting means, an arm member connected to each eccentric and extending upwardly and inwardly toward each other and where they are operatively connected together, a lever member pivotally mounted on the lower portion of one of said legs toward the base, a rod member connected at one end to said lever member and

connected at its other end to said arm members, and a spring so arranged with respect to one of said last three mentioned members as to cause said eccentrics through said arm members normally to grip against the upper portions of said legs to hold them in the desired relation, said lever member, when swung in one direction, operating through said rod member and said arm members to release the grip of said eccentrics from said upper leg portions.

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