Feb. 29, 1944. W. A. HILLENBRAND 2,342,631

TABLE TOP MOUNTING MEANS

Filed Nov. 18, 1941 2 Sheets-Sheet 1

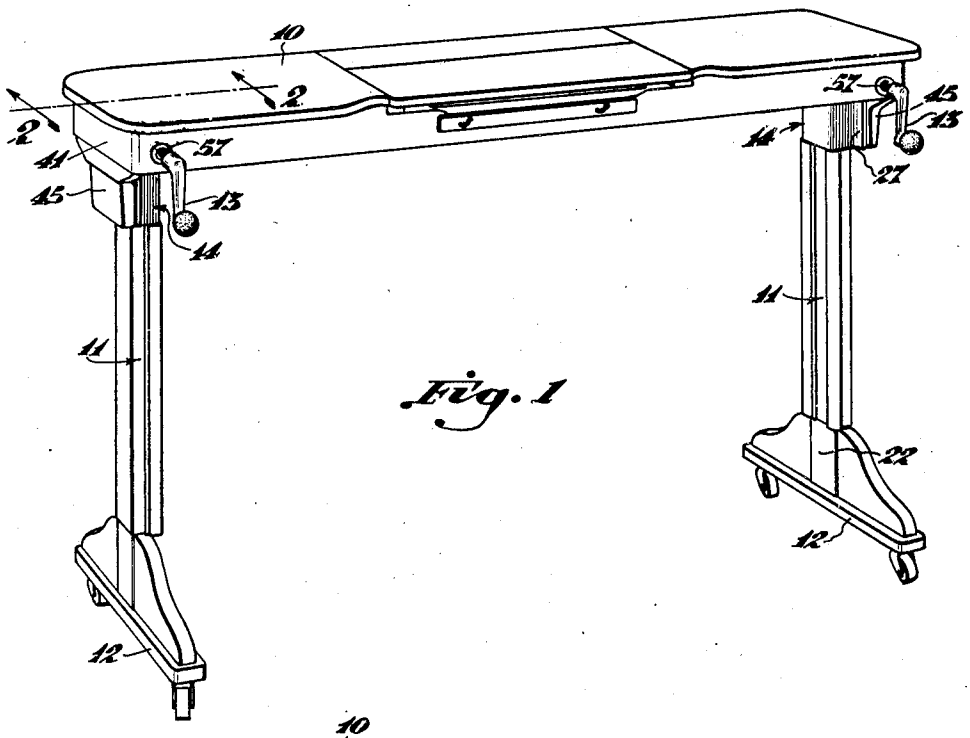


Fig. 1

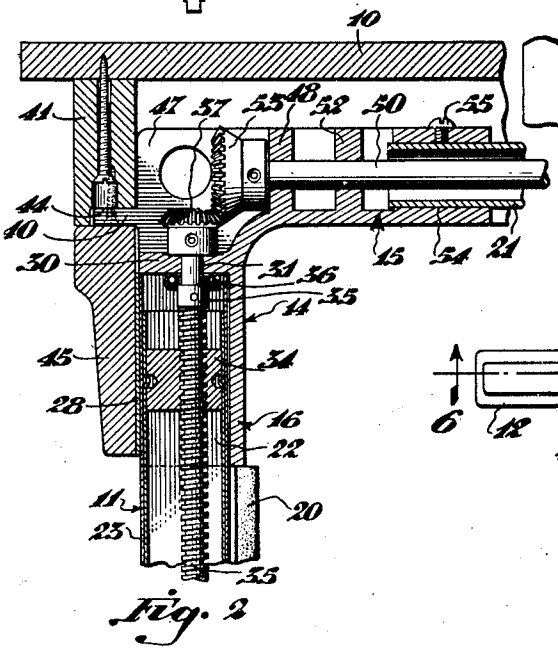


Fig. 2

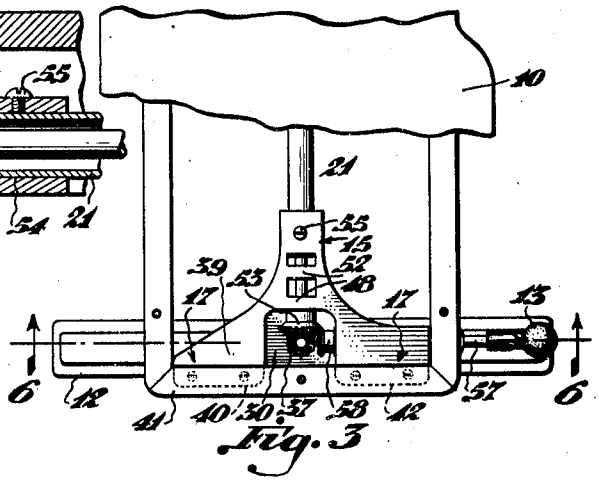


Fig. 3

INVENTOR.
William A. Hillenbrand
BY
Wood, Arey, Herron & Evans
ATTORNEYS

Feb. 29, 1944. W. A. HILLENBRAND 2,342,631

TABLE TOP MOUNTING MEANS

Filed Nov. 18, 1941 2 Sheets-Sheet 2

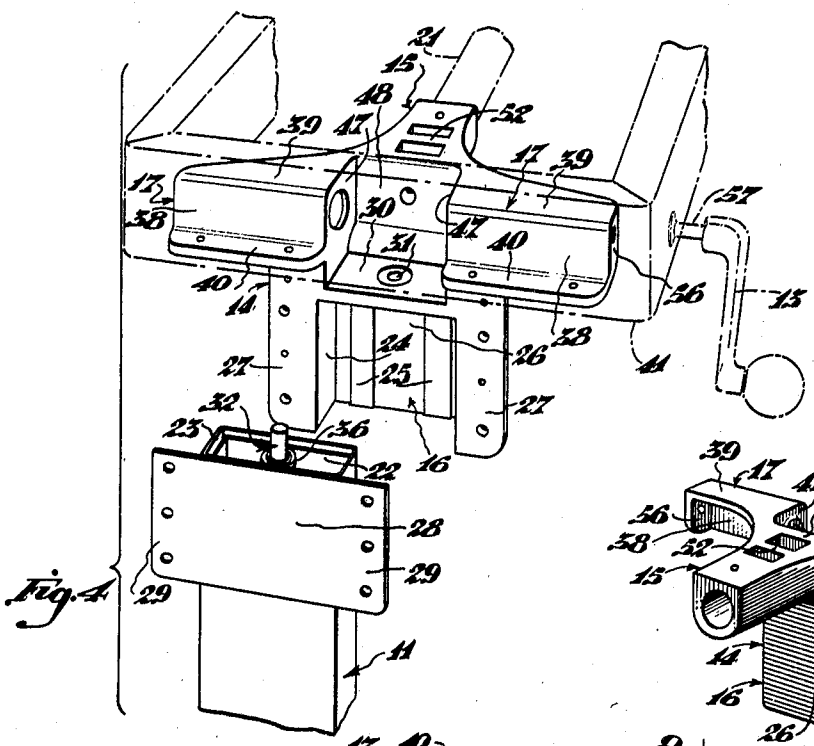


Fig. 4

Fig. 5

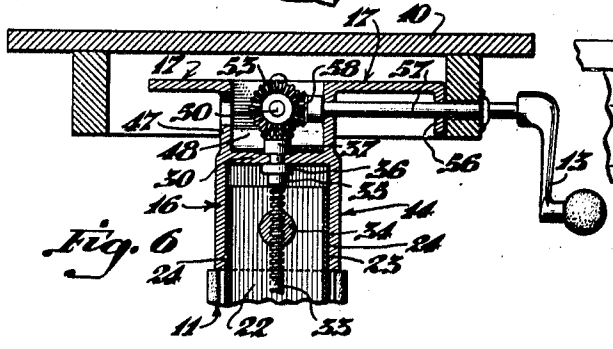


Fig. 6

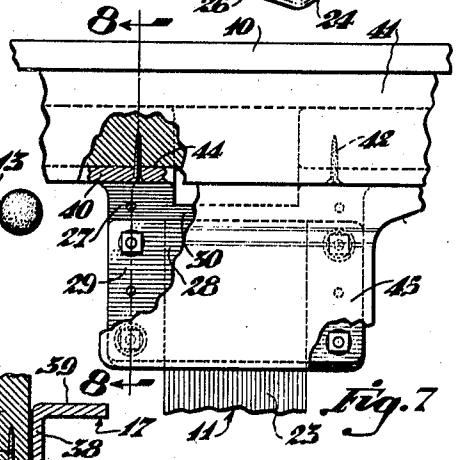


Fig. 7

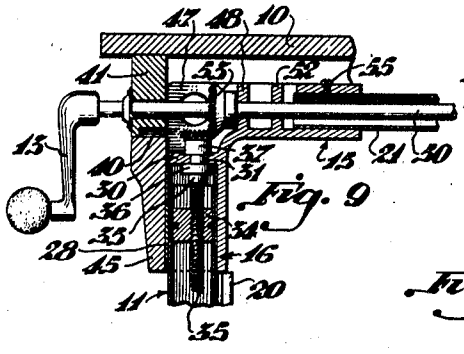


Fig. 9

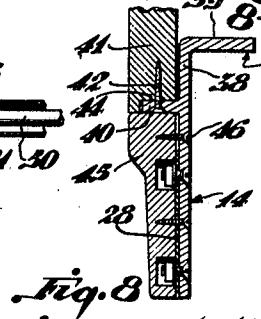


Fig. 8

INVENTOR.

BY William A. Hillenbrand

Wood, Arey, Herrin & Evans

ATTORNEYS

Patented Feb. 29, 1944 2,342,631

UNITED STATES PATENT OFFICE

2,342,631

TABLE TOP MOUNTING MEANS

William A. Hillenbrand, Batesville, Ind., assignor to Hill-Rom Company, Inc., Batesville, Ind., a corporation of Indiana

Application November 18, 1941, Serial No. 419,619

5 Claims. (Cl. 311—39)

This invention relates to table construction and is particularly directed to tables of the type known as overbed tables particularly adaptable to use in hospitals. More particularly, the invention is directed to improvements in the top structure of a table of this type incorporating two legs or pedestals; that is, one at each end of the table.

In view of the fact that tables of this character must present an unobstructed clearance beneath the top and between the legs so that they can be moved easily over the bed, there is no opportunity for bracing. Thus, a considerable problem arises in the structure of the means connecting the top to the legs or pedestals.

Accordingly, it has been an object of the present inventor to provide a new and improved bracket structure for fastening the legs to the table, which structure despite the fact that it does not include diagonal bracing, is extremely rigid and results in a table assembly which will not sway.

In this type of table it is necessary to raise and lower the top in order to adjust the height of the table with respect to the bed or the patient in the bed. Therefore, the top mounting means must incorporate a mechanism for elevating the table top.

Accordingly, it has been a further object of the present inventor to provide a bracket structure for connecting the top to the legs or pedestals which embodies elevating mechanism and which permits an arrangement of the manipulating means relative thereto, whereby it is conveniently operable by the patient.

It has been a still further object of the present inventor to provide a bracket structure which incorporates an elevating transmission consisting of bevel gears and providing an operating shaft extending directly at right angles to the length of the table; that is, directly out of the side of the bracket and wherein the bracket includes an extended supporting or bearing means for the operating shaft. This shaft carries the crank handle, at the side of the table toward the occupant of the bed over whom the table is disposed.

It has been a still further object of the present inventor to provide a buffer arrangement on the post which is arranged so that the metal bracket will not come in contact with the bed and therefore, will not scuff or mar the finish of the bed.

Other objects relate to the structure of the bracket whereby the wooden top elements may be associated therewith in position substantially entirely concealing any metal, and wherein the brackets may be interconnected within the table top construction apart from the table top elements for further stiffening the structure.

Other objects and certain advantages of the invention will be more fully apparent from the following description of the drawings in which:

Figure 1 is a perspective view of a double pedestal overbed table incorporating the elements of the present invention.

Figure 2 is a sectional view taken on line 2—2 of Figure 1.

Figure 3 is a fragmentary top plan view with parts broken away to more clearly illustrate the elements of the invention.

Figure 4 is an exploded view in perspective showing the bracket and pedestal construction in detail.

Figure 5 is a perspective view showing the details of the inner face of the bracket.

Figure 6 is a sectional view taken on line 6—6 of Figure 3.

Figure 7 is a fragmentary end view of the table with parts broken away to show details of the construction.

Figure 8 is a fragmentary sectional view taken on line 8—8 of Figure 7.

Figure 9 is a view taken similarly to Figure 2 showing a modified crank and gear arrangement.

Referring to the drawings, Figure 1 shows an overbed table to which the present invention is applicable. The table comprises a top 10 and a pair of pedestals or legs 11—11 which include base pieces 12—12. The base pieces are mounted on casters in order that the table be moved easily. The height of the table is changed by means of crank handles 13—13 which are located at the front of the table. These cranks are positioned near the respective ends of the table and are interconnected so that either one may be used. The legs 11—11 of the table telescope and are adapted to be lengthened or shortened for regulating the height of the table by means of screw mechanisms located inside of the legs and operated by the cranks 13—13.

Each leg is joined to the top of the table by an angle bracket 14. The brackets are preferably made of cast iron. Generally speaking, each bracket comprises a horizontally extended arm 15 and a vertically extended arm 16. At the top of each bracket, where the two arms 15 and 16 join, attachment members 17—17 extend outwardly from the sides of the bracket.

The brackets are constructed to provide the greatest possible clearance beneath the table in order that there be no parts interfering with

movement of the table over a bed. It will be noted in Figure 2 that there is no angular brace between the two arms of the bracket, that the horizontal extension 15 of the angle bracket does not depend below the apron of the top 10 and that the vertical extension 16 of the bracket does not extend inwardly beyond the inner face 20 of the leg 11.

The vertical extensions 16 of the brackets are adapted to be attached to the respective legs 11; whereas, the attachment members 17—17 are adapted to be fixed to the respective end aprons of the table top. The horizontally extended arms 15 of the respective brackets are linked together by means of a tube 21 which serves to further strengthen and stiffen the table structure. Both ends of the table are substantially identical and therefore, the following will be directed to one end only in order to simplify the description of the parts.

The legs of the table are made of rectangular tubing. Each leg includes two telescopically fitting tubes. One of these, the inner one, indicated at 22, is fixed to the base piece 12; whereas, the other, or outer one, indicated at 23, is secured to the vertical arm 16 of the bracket. The vertical arm 16 is channel-shaped, as shown in Figure 4.

The channel 16 opens toward the end of the table and is adapted to receive the upper end of the outer rectangular tube 23 of the leg. The inside of the channel is formed so that the tube fits snugly in the channel; that is, the tube is as wide and deep as the channel. In assembly, to fit the tube so that the outer face of the tube is flush with the outer edges of the side walls 24—24 of the channel, it is suggested that a pair of ribs 25 be provided on the back wall 26 of the channel and then these ribs may be ground off to the required level. At the outer edges of the side walls 24 of the channel, flanges 27 extend outwardly at right angles to the sides of the channel. A plate 28 (Figure 4) is spot welded to the outer face of the upper end of the tube 23 and its ends 29—29 overhang the edges of the tube. Thus, when the tube is seated in the channel, the ends 29 of the plate 28 and the flanges 27 engage and are bolted together to join the leg and bracket (see Fig. 8).

A wall 30 is provided across the upper end of the channel and a vertical bore 31 is provided therein (Figure 2). The bore is located in parallelism with the leg and provides the journal for a screw mechanism 32 for adjusting the height of the table. The screw mechanism includes a screw shaft 33 and a nut element 34. The upper end of the shaft 33 is rotatably journalled in the bore 31 and carries a collar 35 which supports a ball bearing element 36 in engagement with the under side of the wall 30 and a bevel gear 37 which rests on the upper side of the wall 30. The screw shaft depends into the inner rectangular tube 22 of the leg and is in threaded engagement with the nut element 34 which is fixed in the tube. The leg is lengthened or shortened depending upon the direction of rotation of the screw. The length of the screw is determined by the length of the leg tubes used. A stop such as a cross pin and washer (not shown) may be provided on the lower end of the screw to limit the height of adjustment of the table.

The attachment members 17—17 are formed as integral parts of the bracket. Each attachment member is angular, having a vertical wall 38 and a horizontal wall 39. Referring to Figures 4 and 5, the vertical walls 38 are continuations of the respective flanges 27 of the channel 16; whereas, the horizontal walls 39 extend from the top of the walls 38 and curve inwardly and join the horizontal arm 15 of the bracket at the top thereof. The wall 39, as shown in Figure 4, provides a corner brace between the arm 15 and the attachment member 17.

At the bottom of each wall 38, a flange 40 is extended outwardly at right angles to the wall. The bracket is attached to the end apron, indicated at 41, of the table top. The bottom of the apron rests on the respective flanges 40, and the inner face of the apron 41 rests against the vertical walls 38 of the attachment member. The apron is fixed to the two flanges by screws 42 which extend up through the flange 40 and into the apron.

For appearance, the flanges 40 may be countersunk into the bottom of the apron, as shown at 44 in Figures 2 and 8, in order that the edge of the flange does not show. Also, it is suggested that a cover plate 45 be fastened over the face of the plate 28. Thus, the end of the bracket is completely hidden from view.

The cover plate 45 is fastened in place by screws 46 which pass through appropriate apertures in the respective channel flanges 27 and the plate 28 and into the inner face of the cover plate 45. Appropriate niches are cut into the inside face of the cover plate to clear the bolts which hold the legs 11 to the bracket.

At the inner ends of the attachment members, walls 47—47 are provided. These walls, although slightly closer together, are continuations of the side walls 24—24 of the channel 16. The space between these walls 47—47 and a back wall 48, which is a continuation of the back wall 26 of the channel 16, constitutes a gear box for the gears of the screw adjustment mechanism; the wall 30 forming the bottom of the box.

The screw mechanisms in the two legs are linked, so that they work together, through a cross shaft 50 which extends from one end of the table to the other. Each end of the cross shaft is rotatably journalled in the respective horizontal arm 15 of the bracket and extends through a journal bore in the wall 48 into the gear box 49. In the arm 15, the shaft 50 is journalled in a wall 52 which is similar to the wall 48 and spaced therefrom in parallel relationship (Figure 2). In the gear box a bevel gear 53 is fixed to the end of the shaft and this bevel gear 53 is in mesh with the gear 37 of the screw mechanism.

The cross shaft extends from one bracket to the other through the tube 21, mentioned above. The ends of the tube 21 are fixed in axial bores 54 in the inner ends of the arms 15. A set screw 55 is provided for holding the tube in place. The tube thus protects the cross shaft.

Referring to Figure 6, the attachment member 17 of the bracket which extends toward the front of the table includes an end wall 56 at the forward end of the member. A shaft 57 extends from the gear box through appropriate journal bores in the walls 47 and 56 and through the front of the table apron. At the front of the apron, the shaft 57 carries one of the cranks 13. A bevel gear 58 is pinned to the inner end of the shaft 57. This gear 58 is in mesh with the gear 53 on the cross shaft. Thus, when either one of

the cranks is rotated, the cross shaft is rotated and both screw mechanisms operated together.

If, instead of having the cranks located at the front of the table, it is desired to have them located at the ends of the table a simple change in the mechanism can be made. This modified form of the crank arrangement is shown in Figure 9. In this form, the cross shaft **50** is extended through the gear box and end apron **41** of the table and the crank is fixed directly on the end of the cross shaft. In this form, it is not necessary to have the bevel gears **53** or the shafts **57**.

The present bracket includes a very heavy socket portion and its structure has resulted in the elimination of any necessity for diagonal bracing for the bracket. Thus, complete clearance is provided between the legs of the bed. The buffer strips **20** project beyond the line of the socket (Figure 2) and prevent contact of the metal bracket with the structure of the bed.

By the use of bevel gears and the laterally extended wing portions of the bracket, it has been possible to mount the operating shaft **57** directly at right angles to the longitudinal shaft **50**. Through the provisions of the flanged portion **56**, the operating shaft is adequately supported.

Having described my invention, I claim:

1. A bracket for use in attaching one end of a table top to the upper end of a post, comprising a metallic element having a vertically disposed socket, adapted to fit over the top of a post, a lateral horizontal extension for receiving means attaching said bracket to another bracket and wing portions extending outwardly from each side of the element at right angles to the lateral horizontal extension, for receiving and supporting the end apron of the table top.

2. A bracket for use in attaching a table top to the upper end of a post, comprising a metallic element having a vertically disposed rectangular socket adapted to fit over the top of a rectangular post, a laterally extended portion disposed at right angles to the widest walls of the rectangular socket, said element including a chamber disposed in the corner thereof at the intersection of the socket and the laterally extended portion, said chamber forming a space for receiving elevating mechanism, and wing portions extending outwardly from each side of the chamber at right angles to the laterally extended portion, said wing portions including horizontally disposed lips for receiving and supporting the end apron of the table top.

3. A bracket for use in attaching the respective ends of a table top to the upper end of a post, comprising a metallic element having a vertically disposed socket adapted to fit over the top of a post, an extension disposed horizontally and laterally relative to said socket, and wing portions extending outwardly from each side of the element at right angles to the lateral extension and having side faces disposed in the same plane, said side faces including horizontally disposed lips for receiving and supporting the end apron of the table top in position against the side faces of the respective wing portions.

4. A bracket for use in mounting a table top on a table leg, comprising an element having a downwardly extended socket, a laterally horizontally extended socket and, wing portions extending outwardly at right angles to the axis of the laterally horizontally extended socket, said downwardly extended socket having one side open, and a post element adapted to fit in the socket and including a plate having laterally extended portions adapted to engage and be attached to the portions of the downwardly extended socket at either side of the post element.

5. A table structure, comprising a bracket having a downwardly extended socket, horizontal wing portions extending outwardly at each side of the downwardly extended socket, a post element having its upper end fitted in the socket, said wing portions having outer faces disposed in the same plane, an end apron for the table top mounted on said faces, a top mounted on said end aprons and front and back aprons extended between said end aprons for concealing said bracket.

WILLIAM A. HILLENBRAND.