Oct. 9, 1934. A. O. SPRIGGS ET AL 1,976,100

TWO-PIECE TOP OPERATING TABLE

Filed Feb. 6, 1934 2 Sheets-Sheet 1

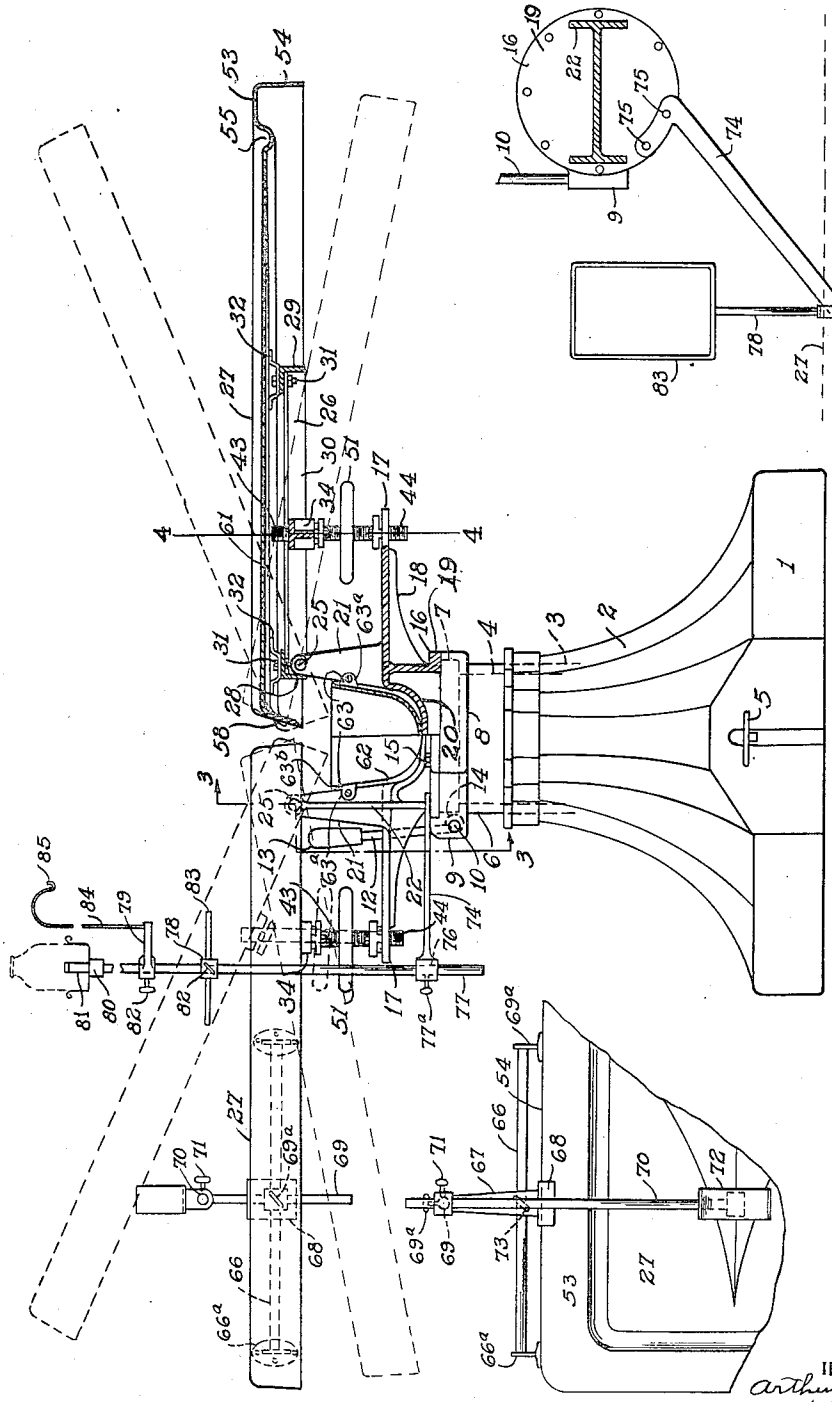


Fig. 1.

Fig. 8.

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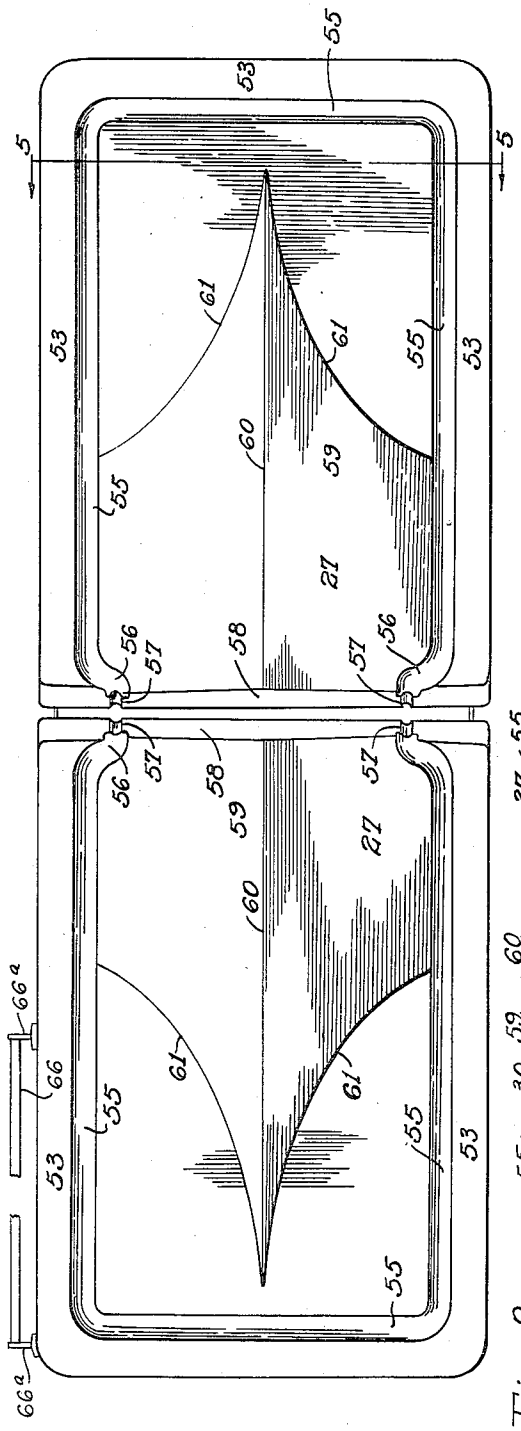


Fig. 2.

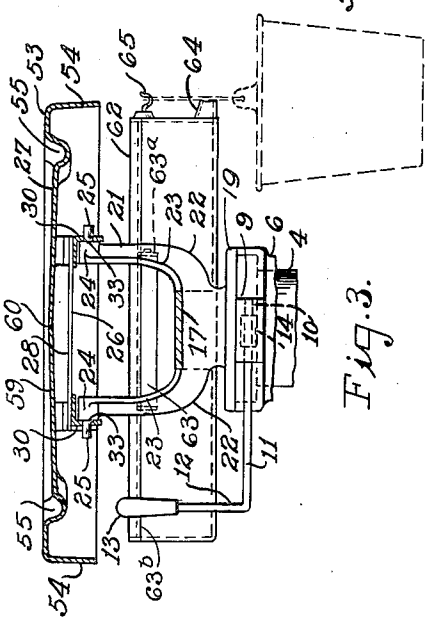


Fig. 3.

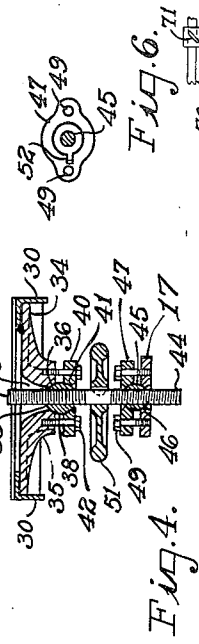


Fig. 4.

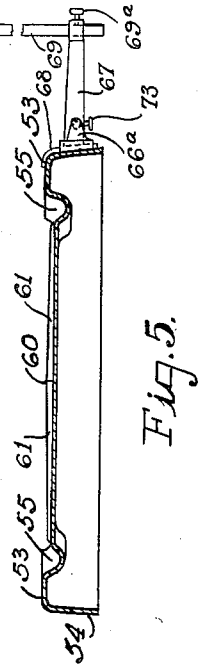


Fig. 5.

Fig. 6.

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UNITED STATES PATENT OFFICE

1,976,100

TWO-PIECE TOP OPERATING TABLE

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Application February 6, 1934, Serial No. 709,977

1 Claim. (Cl. 45—50)

This invention relates to a two-piece operating table, and more particularly to a table designed and constructed especially for the use of embalmers during the operation of embalming the human dead.

It is frequently necessary during the process of embalming to elevate one extremity of a corpse and to lower the other extremity, or to elevate or lower both extremities or to raise one extremity without changing the position of the opposite extremity. This is necessary for the proper draining of blood and for the securing of the proper distribution of embalming fluid to a given part of the body.

Frequently in bodies in which there has occurred a local oedema or dropsical condition, it becomes necessary to elevate the dropsical part of the body more than the remainder of the body in order that gravitation may assist in the proper drainage of dropsical fluid and in order that the embalming fluid capacity of the dropsical portion may be increased by the removal of dropsical fluid. In such cases, it is also of advantage to be able to elevate one part of the body more than another in order that the dropsical fluid gravitating to the less affected parts of the body may bring about a secondary dilution of the embalming fluid in the less affected parts and thereby prevent an over dehydration which otherwise might result from the use of the large amount of embalming fluid necessary on this type of subject.

It is, therefore, a principal object of our invention to provide a two-piece operating table which effects drainage of blood and proper distribution of fluid in the average normal dead body, for the reason that through the elevation of a part of the body gravity assists in removing the blood from the part, and the veins thus emptied offer additional capacity, in the part, for preservative solutions.

When embalming an accident case in which there has been a severe head injury it is of advantage to have the body placed on a steep incline and to inject the fluid in the femoral artery toward the head, the head being the most elevated part. This permits a high fluid level to be built up in the body before leakage from the injured part occurs.

It is another object of the invention to provide an operating table so constructed that blood drainage from the body does not run under the body and soil the skin with blood stains.

It is a further object of our invention to provide a table so constructed that when the body is placed on a steep incline, the table itself offers a support without additional adjustment to prevent the body from sliding downward.

It is also of advantage to have the drainage from the body received at the central part of the table rather than the foot or head to eliminate the danger of the drainage overflowing the edge of the table.

It is another object of the invention to provide a drain trough attached to the table in such a manner that it can be easily removed for cleaning without the use of tools. It is of further advantage to have the outlet of such a drain trough so arranged and constructed that the flow from the trough will strike in the center of the receiving vessel rather than against the sides in order to avoid the possibility of said drainage over-shooting and spilling upon the floor.

A further object of the invention is to provide on such a two-piece operating table, a sliding head rest so that when long or short bodies are placed upon the table, the position of the body may always be such that the buttocks will be near the central point of drainage.

Our two-piece operating table is so designed that when the head end is elevated and the foot end is lowered, forming a steep incline, the medial end of the foot end of the table is higher than the medial end of the head part of the table, thus forming a support to prevent the body from sliding downward when placed on the steep incline.

Other important and incidental objects will be brought out in the following specification and particularly set forth in the subjoined claim.

In the accompanying drawings, Figure 1 is a side view of our two-piece operating table, showing one end thereof in longitudinal section. Figure 2 is a top plan view of the table. Figure 3 is a cross sectional view taken on the line 3—3 of Figure 1, showing one of the pivotal supports. Figure 4 is a sectional view taken on the line 4—4 of Figure 1, showing the adjusting means employed with each section of the table. Figure 5 is a cross sectional view taken on the line 5—5 of Figure 2, showing the drainage provisions. Figure 6 is a detail view of one of the ball and socket connections. Figure 7 is a fragmentary plan view of one end of the table, showing the head rest. And Figure 8 is a plan view showing the instrument tray and bottle support.

Referring now to the drawings for a detail description of our improved operating table, the numeral 1 designates a rectangular table base terminating in a tapering pedestal 2. This pedestal has a central aperture 3 in which a table support

or column 4 is vertically adjustable by the conventional hydraulic means actuated by a pedal 5. (See Figure 1).

The projecting upper end of the column 4 enters a cylindrical casing 6, is rotatable therein and is secured against axial movement by a flange 7 provided at its upper end. This flange is received by a recess in an enlarged top portion 8 of the casing. The latter is adapted to be rotated around the column 4 to a desired position in which it may be locked by the following means.

On one side of the enlarged end 8 of the casing 6 is a boss 9 having a bore 10, tangential to the flange 7. Rotatably mounted in the bore 10 is a shaft 11 whose projecting end 12 is bent at right angles to the bore and has secured thereto a handle grip 13 by which the shaft may be revolved. Also secured to the shaft 11 within the bore 10 is an eccentric collar 14 which, when the shaft is rotated, will engage the flange 7 to prevent rotation of the casing 6 about the column 4. (See Figures 1 and 3).

Secured by bolts 15 to the face of the enlarged portion 8 of the casing 6, is a main table bracket 16 having oppositely disposed arms 17, 17, positioned horizontally and supported by ribs 18, 18 that terminate in a flange 19 forming the base of the bracket 16.

At their adjacent inner ends the arms 17, 17 are joined by a semi-circular, flat, web member 20, positioned substantially above the support and extending transversely with respect to the arms 17, 17. Formed at the inner end of each arm is a U shaped trunnion bracket 21, positioned at right angles to the arms. These brackets 21, 21 are reinforced by vertical ribs 22, 22, one on the outer face of each side member 23 of the brackets and joining the flange 19. (See Figures 1 and 3).

At its upper free end the member 23 of each bracket is formed with a boss 24. Fixed in horizontal alinement in the bosses 24, 24, are outwardly projecting trunnions 25, 25 respectively. Pivotally mounted on the trunnions 25, 25 of each bracket 21, is a rectangular supporting frame 26 for a table section 27. Each frame 26 is constructed of transverse inner and outer angle members 28 and 29, welded or otherwise secured at their ends to longitudinal angle members 30, 30. These latter members are secured at each end by bolts 31, 31 to clips 32, 32, spot welded to the lower face of each table section 27. The longitudinal members 30, 30 are provided with oppositely disposed apertures 33, 33, adjacent their inner ends, to receive the trunnions 25, 25. (See Figures 1, 2, 3 and 4).

In our improved table we have employed two oppositely disposed table sections 27, 27 whose adjacent edges at the center of the table and above the support are slightly spaced. As shown in Figure 1, the frames 26 are secured to these sections relatively close to their inner ends; and since these frames 26 are also pivotally mounted on their respective trunnions 25, 25 at the inner end of each frame 26, there will be a relatively small movement of the adjacent edges of the table sections as they are elevated at their outer ends.

In order to raise or lower the outer free end of each section 27 of our table to achieve the objects for which it was designed, I have provided the following adjusting means. (See Figure 4). Secured between the longitudinal angle members 30, 30 of each frame 26, is a transverse bracket member 34 formed with a center boss 35. In its lower face the boss 35 has a semi-spherical recess 36 communicating with the restricted end of a conical recess 37 that extends through the top face of the bracket 34.

Positioned in the recess 36 is a spherical nut 38 having a threaded aperture 39. The nut 38 is retained within the recess by a cap 40 having a like semi-spherical recess 41 and secured to the face of the boss 35 by bolts 42, 42.

Adjustably positioned in the nut 38 is a shaft 43, provided with right-hand threads at its upper end where received by the nut. The lower end 44 of the shaft is formed with left-hand threads for insertion in another spherical nut 45, provided with left-hand threads. Thus nut 45 is positioned in a semi-spherical recess 46 in the top face of the outer end of the arm 17 beneath the table section 27, and in which it is retained by a recessed cap 47, secured to the arm 17 by bolts 49, 49. Formed in the opposite face of the cap is a conical recess communicating with the semi-spherical recess and through which the lower end 44 of the shaft passes for entrance into the nut 45.

Secured to each shaft 43 between its threaded ends is a hand wheel 51 by which the shaft may be rotated to raise or lower the frame 26 by virtue of the right-hand and left-hand threads on it. (See Figures 4 and 6).

The ball and socket connections permit the necessary angular adjustment of the axis of the shaft with respect to the arm 17 and the bracket member 34 as the frame 26 moves about its pivotal connection at the trunnions. A key 52 in each spherical nut 38 and 45 engages a keyway in its respective cap to prevent rotation of the nuts with the shaft when it is turned. (See Figure 6).

Each of my table sections 27 constitutes one half of the entire table surface and is substantially rectangular in form. Surrounding each section along its parallel edges and outer end is a raised curb portion 53 whose outer face is formed downwardly to provide a deep marginal flange 54.

Parallel with the inner face of the curb, I have provided a semi-circular depression or gutter 55 in the top face of the section extending across its outer end and along each side to the inner end of the section. At the inner end of the section the opposite ends of the gutters are formed inwardly toward each other in sharp curved portions 56, 56, where they terminate above vertical drain channels 57 provided in the face of an inclined marginal flange 58 that forms a continuation of the marginal flange 54. (See Figures 1, 2, 3 and 5.)

The top surface of each section 27, confined by the gutter 55, slopes toward the sides and toward the medial ends. It has a raised portion 59 at its inner end. This raised portion 59 has a raised center 60 exteding lengthwise of the top, and from which the top slopes gradually toward the gutter at each side thereof. Where the raised portion 59 extends toward the outer end of the section, its outer edges are defined by oppositely disposed curves 61, 61 converging sharply at the raised center 60 near the outer edge of the section. It is the purpose of the curved edges 61, 61 to divert into the gutter 55 all fluid that may collect on the table surface beyond them when the table section is inclined. (See Figures 2 and 5).

Beneath the drain channels 57, 57, and under the ends of, the adjacent sections 27, 27, there is an elongated container 62 supported above the web member 20 and slidably mounted on side rails 63, 63 secured to the opposite brackets 21, 21 by

outwardly disposed ears 63[a], 63[a] formed at the ends of the rails 63, 63. When desired the container may be removed by sliding it endwise along the rails upon which it is supported by its flanged rim sides 63[b], 63[b].

At one end of the container we have provided a drain spout, 64 while above it, there is also secured to the end of the container a hook 65, upon which a bucket or other suitable container may be suspended to receive the liquid discharged through this outlet. The latter is so constructed and arranged that the flow from the trough will strike in the center of the receiving vessel. (See Figures 2 and 3).

As shown by the dotted lines in Figure 1, the two sections of the table top may be inclined as desired, either one or the other, or both, to correspondingly position a corpse thereon.

To the outer face of the left marginal flange 54 of one of the table sections 27 we have attached a bracket rod 66 spaced from the flange and supported thereon by end fittings 66[a], 66[a]. Adjustably mounted on the rod 66 is a head rest bracket 67 to whose inner end a curved plate 68 is secured. This plate 68 bears against the flange 54 to prevent rotation of the bracket 67 about the rod 66. (See Figures 1 and 7).

The outer end of the bracket 67 contains an aperture that is perpendicular to the surface of the table section 27 and in which there is slidably mounted a vertical rod 69. This rod is locked in its adjusted position by a thumb nut 69[a] in the bracket 67.

In the enlarged upper end of the rod 69 there is provided a hole in which there is positioned a horizontal head rest support 70. This support is at right angles to the rod 69 and extends transversely across that end of the section 27 to which the bracket rod 66 is secured.

The head rest support is held in its adjusted position by another thumb screw 71 in the upper end of the rod 69, and to the inner end of the support 70 a head rest 72, comprising a crescent shaped band of metal, is attached.

The bracket 67 is adjustable longitudinally on the rod 66, to properly support the heads of bodies of various lengths, and is held in its desired position by a thumb screw 73.

By means of the rods 69 and 70 the head rest 72 may also be adjusted vertically and transversely to the desired position. (See Figures 1, 5 and 7).

Certain operations require that one or both ends of the table be raised or lowered as previously set forth, and in order that the instrument tray and bottle holder will not be disturbed, we have provided means for supporting them directly from the pedestal. This supporting means consists of a flat bracket arm 74 extending diagonally from the center of the table, and secured to the top face of the bracket 16 by bolts 75, 75. (See Figure 8).

In an aperture 76, in the outer end of the arm 74, there is a vertical supporting rod 77 locked in its adjusted position by a thumb screw 77[a] carried by the arm 74. This rod extends vertically above the table to receive thereon an adjustable instrument tray bracket 78, a percolator support bracket arm 79, and upon its extreme upper end, a receptacle 80 having yieldable clamp members 81. Within this receptacle 80 a bottle of embalming fluid or the like may be supported.

The bracket 78 and the arm 79 are secured in their adjusted positions by set screws 82. To the outer end of the arm 78 an instrument tray 83 is attached. When in use it may be conveniently positioned above the table at a desired height, or rotated to one side thereof when not used. (See Figures 1 and 8).

In the outer end of the arm 79 there is mounted a vertical rod 84 whose upper end is formed to provide a hooked end 85 upon which a percolator (not shown) may be supported.

When the table top is rotated upon the pedestal support, the arm 74 will move with it, thus retaining the rod 77 in a fixed relation with the top, and adjacent its side. Whenever desired, either the head rest supporting rod 68 or the rod 77 may be removed from their respective supports to permit an unobstructed use of the surface of the table.

The receptacle 80 may be adjusted to a desired height above the table to secure the proper elevation for gravity drainage. By the axial adjustment of the bracket 67 on the rod 66, the head rest is adjusted to receive bodies of various lengths, so that a body may be placed upon it with the buttocks at the medial point of the table for drainage.

We do not wish to be limited to the details of construction and arrangement herein shown and described, and any changes or alterations may be made therein within the scope of the subjoined claim.

Having described our invention, we claim:

In an operating table of the type described, a support, two spaced table top sections positioned end to end and pivotally secured at their adjacent ends to said support, each table top section formed at each side with a drainage groove terminating near said adjacent end in an inwardly turned portion, and a trough removably mounted on the support beneath the adjacent ends of said sections to receive the fluid which is directed between them by the terminal ends of the drainage grooves.

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