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 [45] Patented Aug. 17, 1971
 Continuation-in-part of application Ser. No. 447,657, Apr. 13, 1965, now abandoned.

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[54] **EXAMINATION TABLE**
 17 Claims, 17 Drawing Figs.

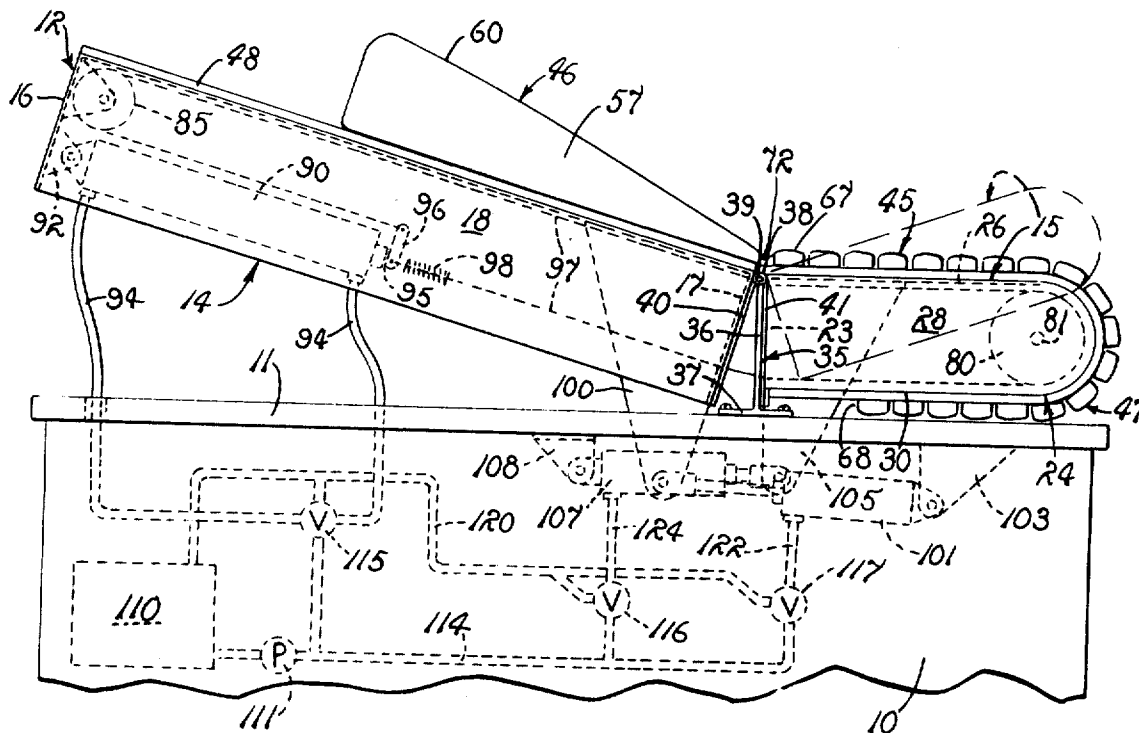
[52] U.S. Cl..... 269/325,
 269/322
 [51] Int. Cl..... A61g 13/00
 [50] Field of Search..... 269/322-
 — 328; 5/90, 60—62, 67; 312/209; 297/283, 312,
 316, 329, 355

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ABSTRACT: A patient examination table having a support frame comprising two sections which are mounted on a base and are actuated by hydraulic mechanisms. A longitudinally movable carriage means consisting of a rigid portion and a flexible portion formed from hinged slatlike members is mounted for movement on the tracks on the support frame sections. Hydraulic mechanisms are also provided to move the carriage means. A removable section is provided in the flexible portion to further facilitate examinations and provide greater access to examining areas.

A second form is provided which is driven by electric motors and gearing. The flexible portion of the movable carriage is replaced by a telescopic structure whereby the movable carriage passes over a fixed carriage portion.



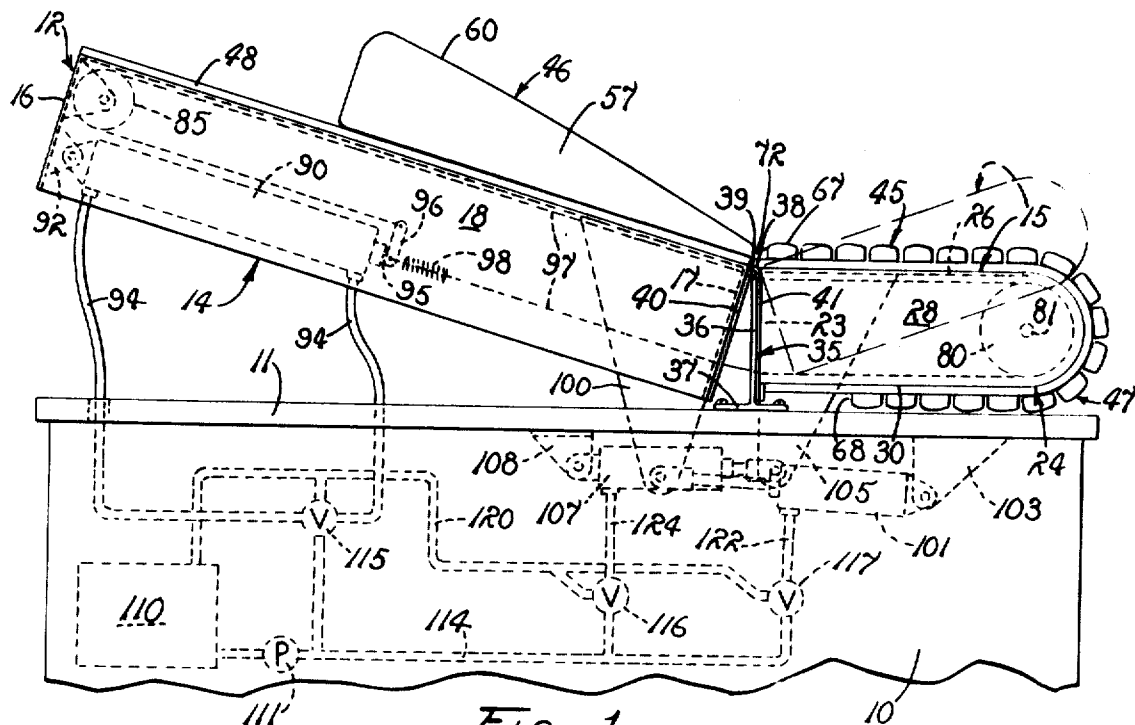


FIG. 1.

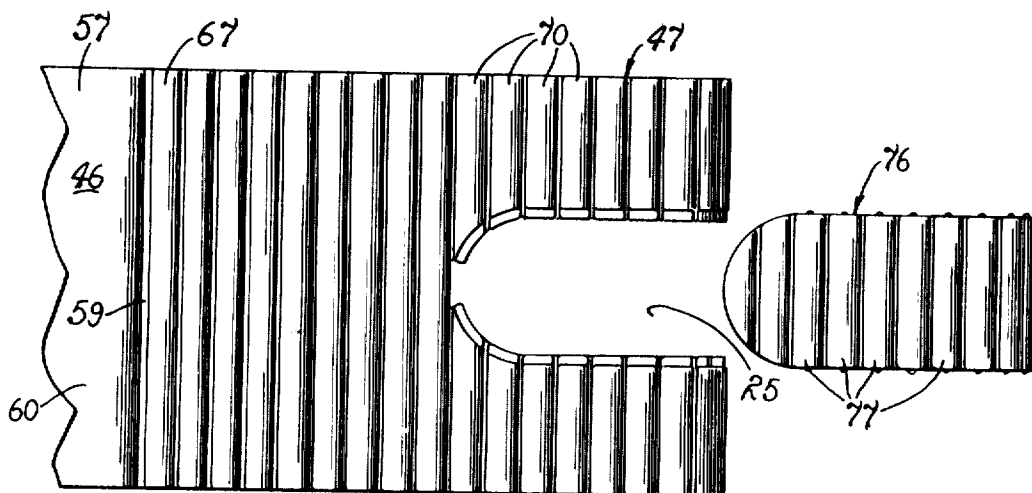


FIG. 2.

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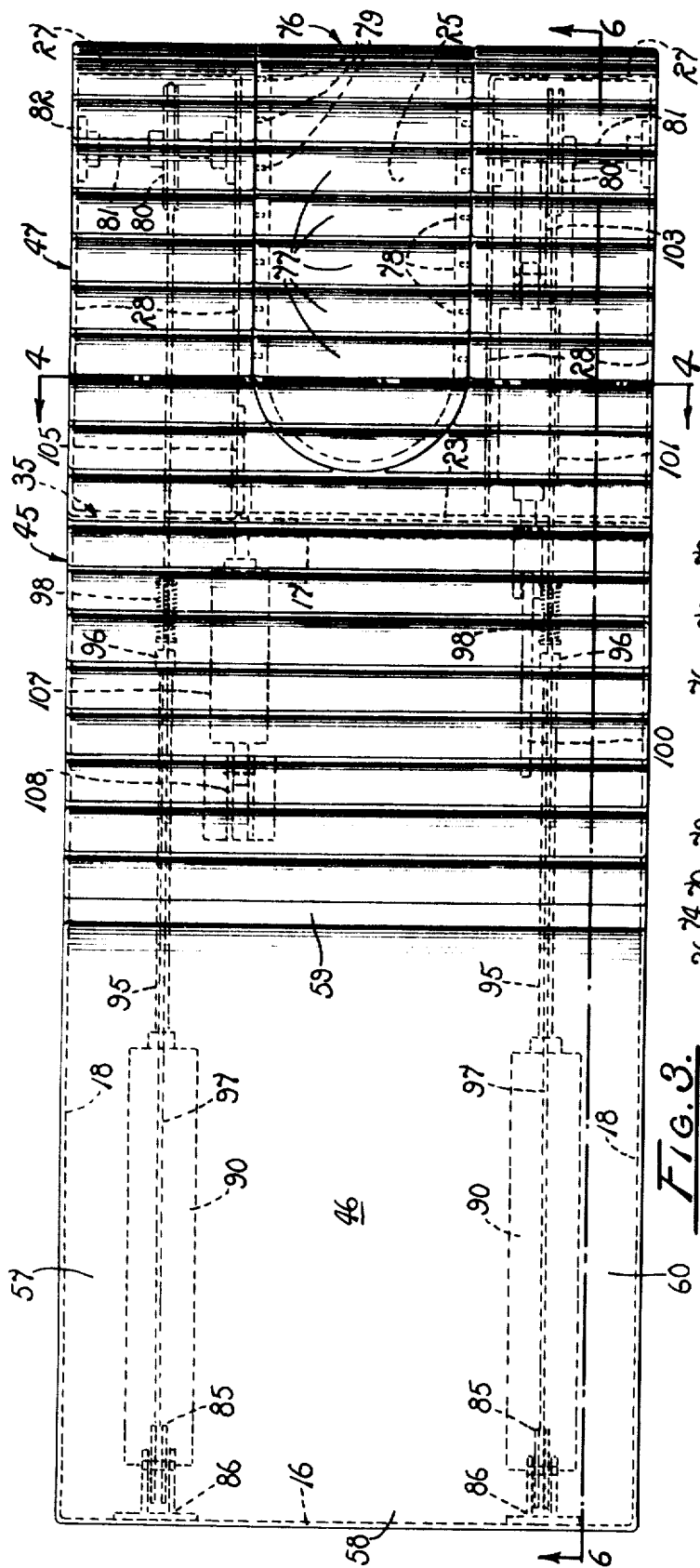


FIG. 3.

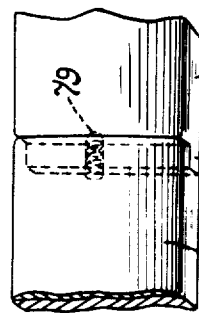


FIG. 5.

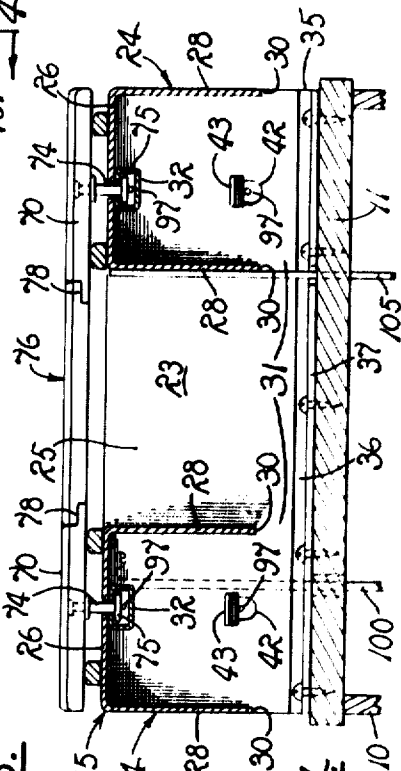


FIG. 4.

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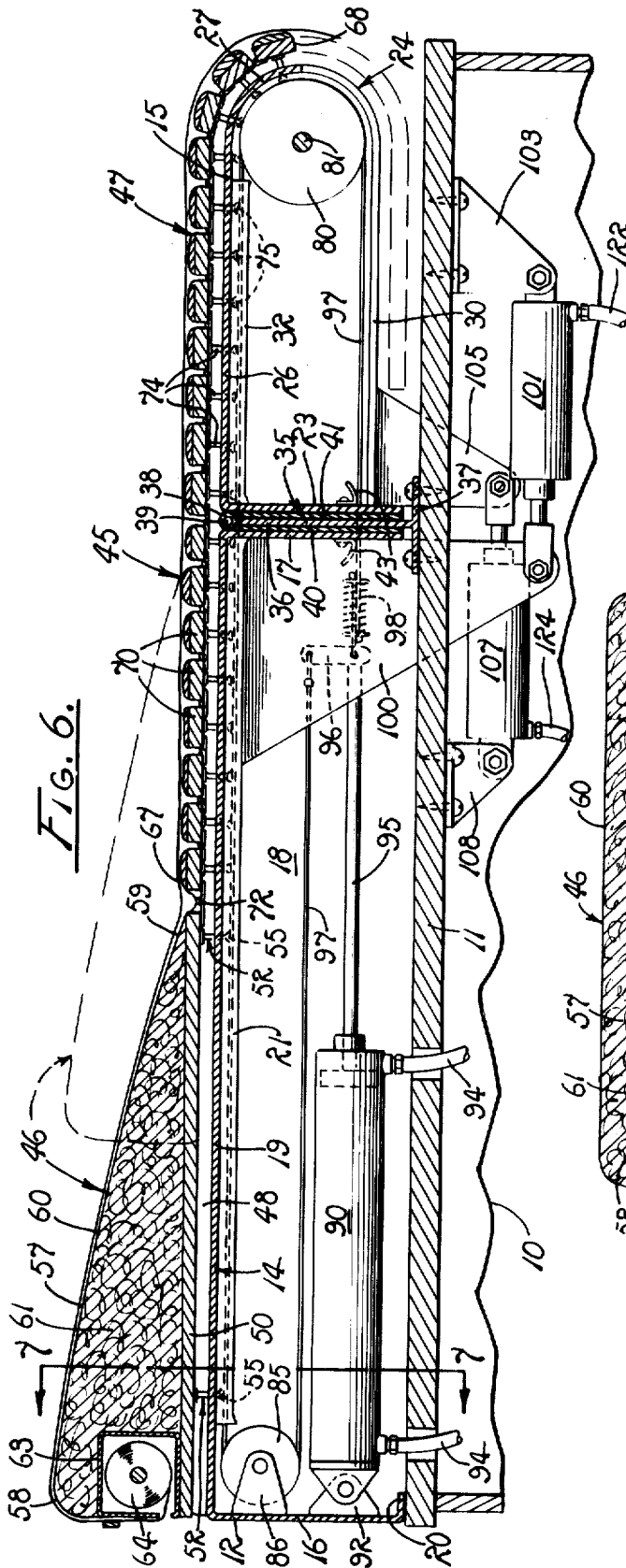


FIG. 6.

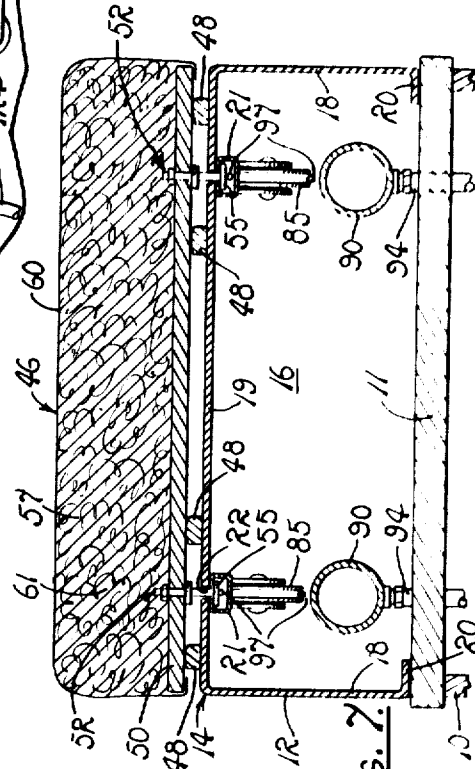


FIG. 7.

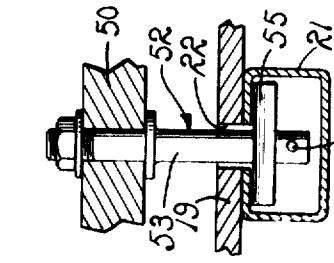


FIG. 8.

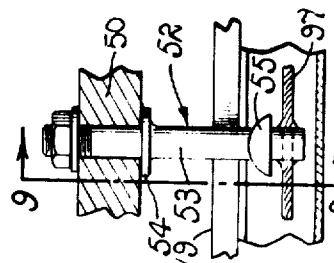


FIG. 9.

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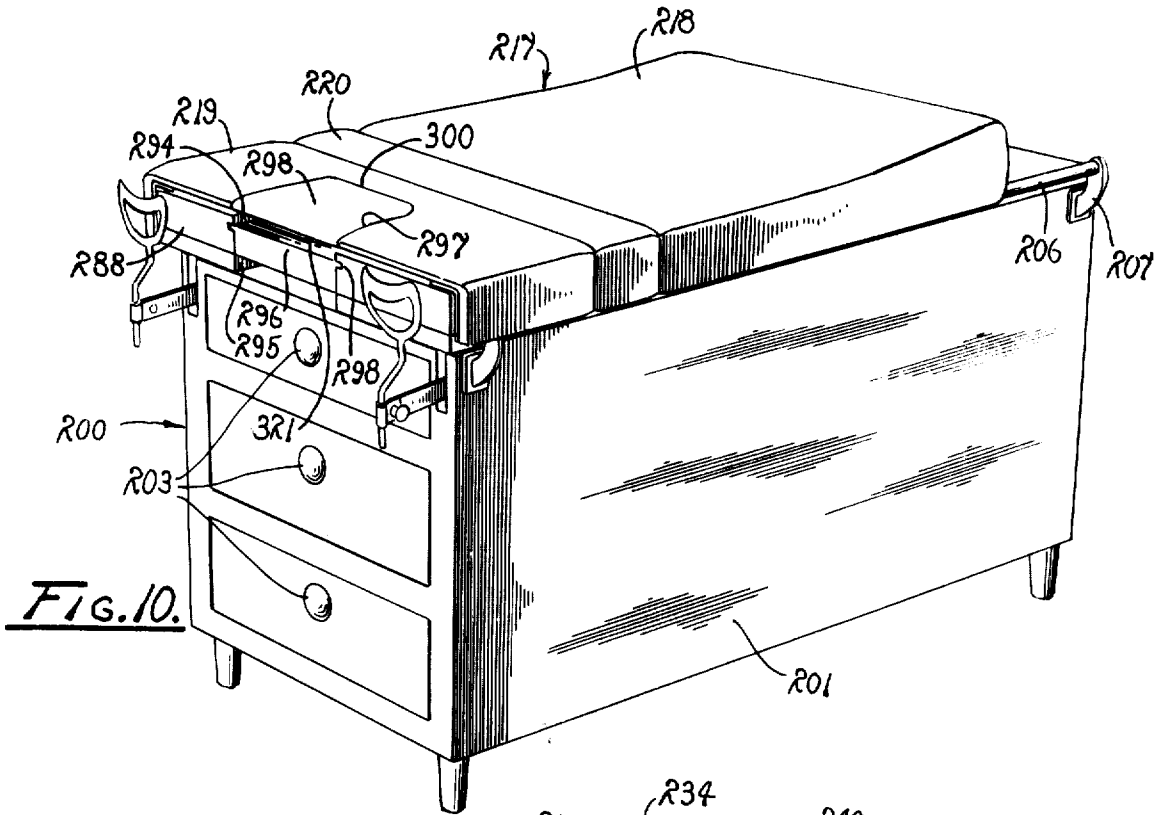


FIG. 10.

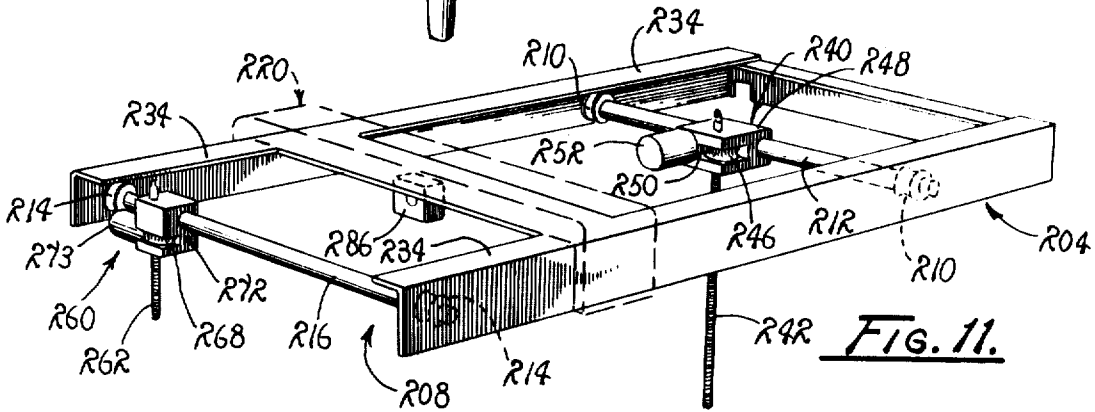


FIG. 11.

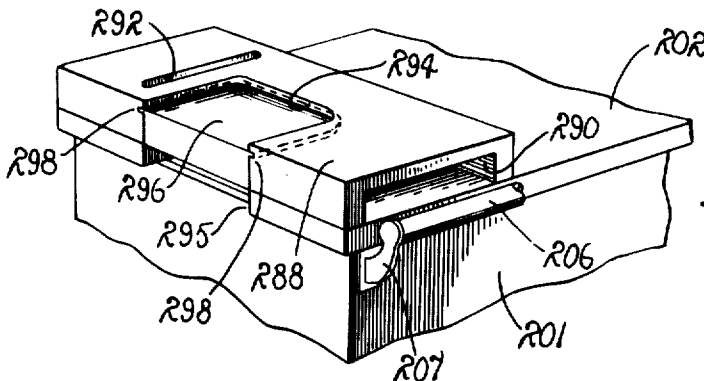


FIG. 12.

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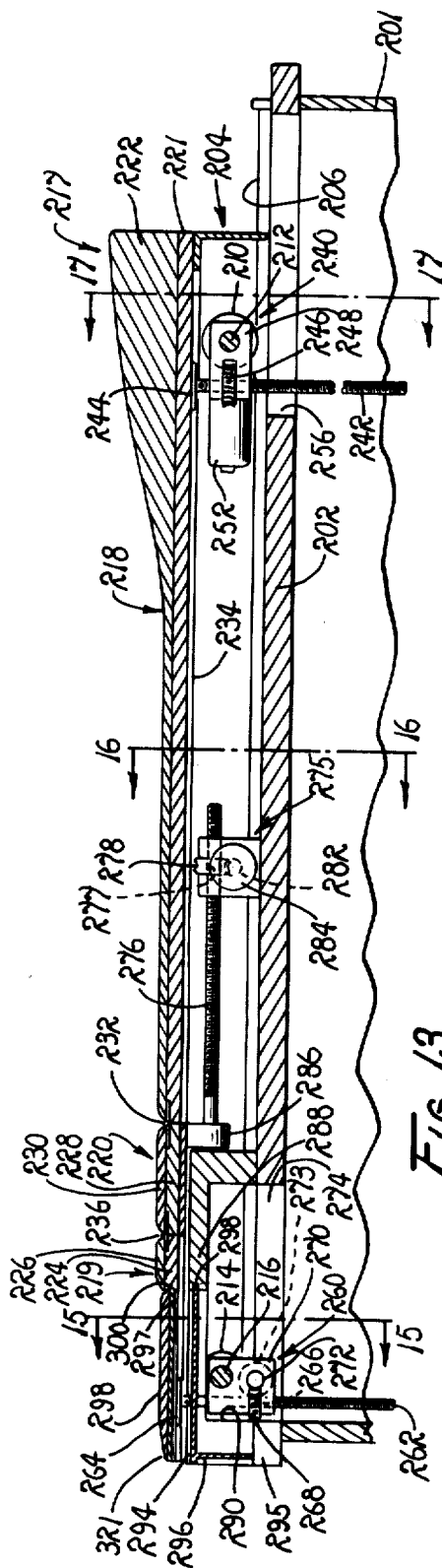


FIG. 13.

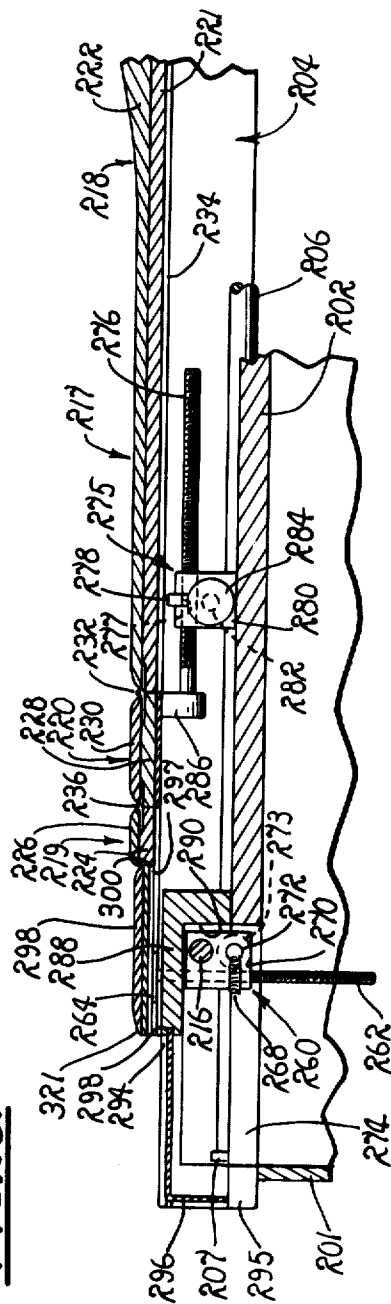
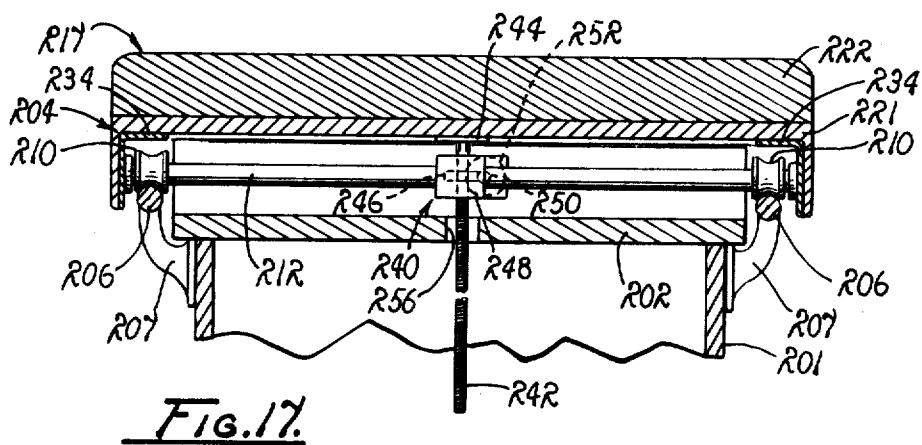
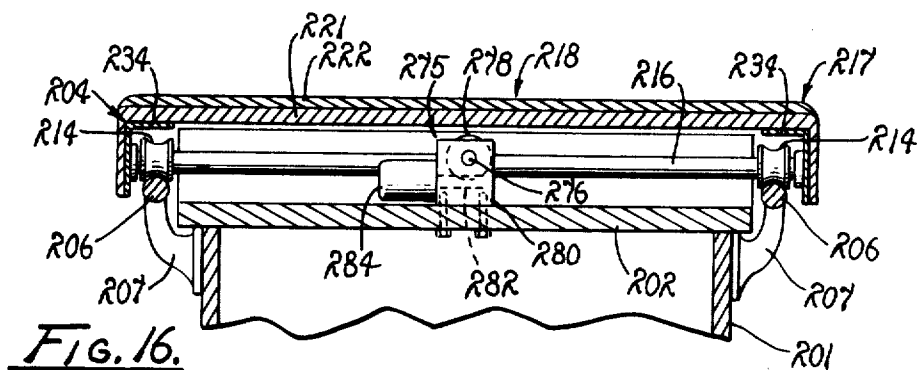
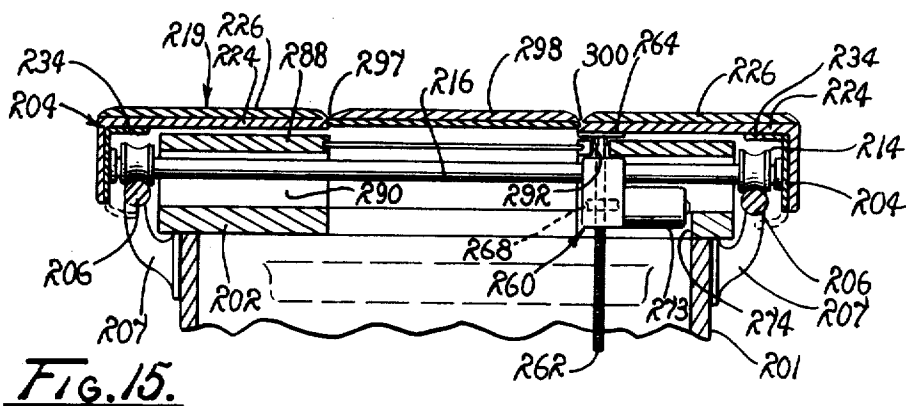


FIG. 14.

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EXAMINATION TABLE

This application is a continuation-in-part of application Ser. No. 447,657 now abandoned, filed by applicant Apr. 13, 1965 and entitled Examination Table.

The present invention relates to an examination table and more particularly to such a table having a base and a movable support borne by the base for positioning patients thereon relative to the base through a predetermined range of rectilinear movement. The movable support also includes individually manipulatable end portions which are elevationally adjustable automatically to shift a patient thereon to optimum examining attitudes and positions.

Conventional examining tables employed in clinics and the like are intended to permit the disposition of patients in such attitudes and positions as to permit most effective examination and surgical attention with a minimum of patient disturbance or discomfort. However, they have been only partially successful in the attainment of these goals. For example, it is frequently necessary to shift patients longitudinally of such a table, toward and from an examining position at an end of the table, to perform the examination. Conventional tables make no provision for such movement of patients and the attendant doctor or assistant must lift and arrange the patient in the desired successive positions. Many times this is painful for the patient. With mature adults it is difficult for the doctor or assistant to accomplish without injury to himself or without aggravating the patient's condition.

Therefore, it is an object of the present invention to provide an improved examination table.

Another object is to provide such a table adapted to adjust to a multiplicity of patient-examining positions.

Another object is to provide an examination table which is capable of shifting a patient thereon to varied examination positions without requiring a doctor or assistant to lift or move the patient.

Another object is to provide such a table which is power driven between its various positions.

Another object is to provide such a power-adjustable table which is subject to precise control.

Another object is to provide an examination table having a base and patient support which is capable of both elevational tilting and longitudinal sliding movement relative to the base.

Another object is to provide such a table which is readily adapted for use with both male and female patients.

Another object is to provide an examination table providing a flexible patient support surface which includes a removable portion for greater access to an examining area.

Another object is to provide such a table having a base adapted to accommodate a treatment basin below the support surface which is accessible through an opening provided by the removable portion throughout the entire range of movement of the support.

Other objects and advantages of the present invention will become more fully apparent in the subsequent description in the specification.

In the drawings:

FIG. 1 is a side elevation of the examination table of the present invention having a patient support shown in one operating position and with an alternate operating position indicated in broken lines.

FIG. 2 is a partial top plan view showing the patient support surface providing a flexible slotted end section including a dropout portion removed therefrom.

FIG. 3 is a somewhat enlarged top plan view with the support surface shown in another position of adjustment from that of FIG. 1 and with the dropout portion of the flexible end thereof shown in an assembled position.

FIG. 4 is a transverse horizontal section through the table taken on line 4-4 of FIG. 3.

FIG. 5 is a somewhat enlarged fragmentary perspective of a dropout-panel-locking device.

FIG. 6 is a longitudinal section through the table taken on line 6-6 of FIG. 3.

FIG. 7 is a transverse horizontal section through the table on a plane represented by the line 7-7 of FIG. 6.

FIG. 8 is a somewhat enlarged fragmentary section through the flexible slotted end section of the table showing a slot-mounting member.

FIG. 9 is a fragmentary section of the slot-mounting member taken on a vertical plane represented by the line 9-9 of FIG. 8.

FIG. 10 is a perspective view of an alternate form of the examination table in which a telescoping end portion is utilized in place of the flexible slotted end section.

FIG. 11 is a perspective view of the carriage frame of the alternate form examination table shown in FIG. 8, with portions of the support surface removed.

FIG. 12 is a partial perspective view of the face of the alternate form examination table shown in FIG. 8, showing particularly the fixed portion of the telescoping section.

FIG. 13 is a sectional side elevational view of the alternate form of the examination table.

FIG. 14 is a partial sectional side elevational view similar to FIG. 13 but showing the movable carriage in its forwardmost position with the fixed portion of the telescopic section exposed.

FIG. 15 is a partial sectional end elevational view taken on line 13-13 in FIG. 13.

FIG. 16 is a partial sectional and elevational view taken on line 14-14 in FIG. 13.

FIG. 17 is a partial sectional end elevational view taken on line 15-15 in FIG. 13.

Referring more particularly to the drawings, an examination table embodying the principles of the present invention is shown providing an elongated substantially rectangular base member 10 which supports a substantially flat tablelike top 11. The base may be constructed of any suitable material, such as sheet metal, wood or the like as decorative purposes may suggest. Also, the base may permit a plurality of shelves and/or drawers, not shown, for equipment storage. A support frame 12 is disposed in substantially superimposed relation on the top 11 of the base and includes opposite head and foot box end sections 14 and 15. The head end section 14 of the frame provides opposite outer and inner substantially erect end panels 16 and 17 respectively, which are joined by opposite side panels 18. The end and side panels combine to support a substantially flat top panel 19 in spaced relation to the top 11 of the base. The head end section 14 is supported on the top 11 of the base in such a position upon flange 20 inwardly continuously extended from the lower edge of the side and outer end panels of the frame. A pair of opposite transversely spaced guide channel members 21 is rigidly secured within the head end section of the frame to the underside of the top panel 19 in longitudinally extending, transversely spaced, substantially parallel relation. Access to the channel members is provided by suitable elongated openings 22 aligned therewith through the top panel 19.

The foot end section 15 of the frame provides an inner end panel 23 of a size corresponding to the inner end panel 17 of head end section of the frame. As best shown in FIG. 4, the inner end panel supports a pair of opposite transversely spaced box sections 24 which define between them a cavity 25. Inasmuch as both box sections 24 are identical, similar reference characters are given to corresponding parts thereof for convenience of description. Each of the box sections provides a top panel 26 which in the position of FIG. 3 is disposed in coplanar relation with the top panel 19 of the head end section of the frame and includes an arcuately downwardly curved outer end portion 27. A pair of opposite transversely spaced side panels 28 extends in depending relation from the top panel and terminates in lower edges 30 upwardly spaced from the top 11 of the base to define therebetween a slot 31 transversely of the top of the base. A guide channel member 32 is secured substantially transversely centrally of each of the box sections to the underside of the top panels 26 in longitudinally extending substantially parallel relation and in alignment with their respective guide channel members 21 in the head end section of the frame.

A hinge 35 is positioned between the inner end panels 17 and 23 of the head end section 14 and the foot end section 15 of the frame 12. The hinge provides a substantially upright support member 36 having a foot portion 37 secured to the top 11 of the base by a plurality of screws or other suitable fastening members. The support member includes an upper tubular portion 38 having a pintle 39 therethrough pivotally supporting a pair of oppositely depending hinge plates 40 and 41. The hinge plates 40 and 41 are respectively rigidly secured to the inner end panels 17 and 23 of the end sections of the frame thereby pivotally to permit swinging of the end sections of the frame relative to each other in elevationally spaced relation from the top 11 of the base. A pair of opposite transversely spaced openings 42 is formed through the hinge plates 40 and 41 and the inner end panels 17 and 23 below and in alignment with the guide channel members 21 and 32. A cable guide shoe 43 is mounted immediately above each of the openings on the inner end panels 17 and 23 in upwardly arcuately curved relation therefrom.

A patient support carriage, generally indicated at 45, includes a substantially rigid head end portion 46 and an opposite flexible foot end portion 47. The carriage is disposed in upwardly spaced substantially parallel relation to the top panels 19 and 26 of the frame by two sets of pairs of rail members 48 mounted on the top panels. The rail members are longitudinally extended along the frame in transversely spaced substantially parallel relation and secured to the top panels by screws or the like. The head end portion 46 of the carriage provides a substantially rigid unitary panel 50 which is constrained in superimposed relation above the frame by pairs of slide members 52 secured in depending relation therefrom in alignment with the guide channel members 32. As best shown in FIGS. 7, 8 and 9, the slide members have an elongated rod portion 53 which includes a screw-threaded end extended through the panel 50 and an opposite lower end. An annular flange 54 is disposed intermediate the ends of the rod to abut the under surface of the panel and is drawn tightly thereagainst by a screw-threaded nut received on the upper end of the rod. The lower end of each of the rods extends into its respective guide channel members 21 through the adjacent openings 22 in the top panel 19. The slide members also include an integral crosshead portion 55 disposed transversely of the channel having an upwardly disposed arcuately curved wear surface thereagainst. The lower end of the rod extends below the crosshead to provide a hole 56 therethrough longitudinally aligned with the channel members.

The panel mounts a wedge-shaped pad 57 which has an outer headrest portion 58 sloping downwardly and inwardly to an inner end 59. As best shown in FIG. 6, the pad provides an outer upholstered surface 60 of a suitably durable material which constrains an inner resilient packing 61 of fibrous or sponge rubber material. An elongated transversely extended paper table cover-dispensing container 63 is carried within the pad adjacent to the outer end thereof to constrain a roll of sanitary paper 64 which is extended through a suitable transverse slot in the pad.

The flexible foot end portion 47 of the carriage 45 has an inner end 67, an outer end 68 and a plurality of successively longitudinally disposed transversely extended slats 70 between the ends. The slat at the inner end 67 is pivotally secured to the adjacent edge of the panel 50 by a pianolike hinge 72. Each of the slats 70 is similarly joined and includes upper padded surfaces similar to the pad 57 of the panel 50. Each of the slats 70 also includes a pair of transversely spaced slide members 74 identical to the slide members 52 of the panel 50. The slide members 74 include crosshead portions 75 identical to the crossheads 55 of the slide members 52 which are received within the guide channels 32 in the box sections 24.

The flexible foot end portion 47 of the carriage also includes a centrally disposed longitudinally extended flexible dropout panel 76 which extends from the outer end 68 of the flexible foot end portion of the carriage and terminates short of the inner end 67 thereof in arcuately curved configuration. The dropout panel provides a plurality of slats 77 which are

transversely continuously aligned with the slats 70 of the flexible foot end portion of the carriage. As best shown in FIG. 5, a lipped connection 78 is provided between the aligned slats 77 and 70 so that the dropout panel 76 can be removed from the flexible foot end portion of the carriage, as in FIG. 2 of the drawing, either as by axial sliding movement or by elevational lifting movement relative thereto. The dropout panel is constrained in the position shown in FIG. 3 by a plurality of spring-loaded detent locking members 79 disposed within the mitered joint between each of the slats 70 and the dropout panel slats 76.

Each of the box sections 24 of the foot end section 15 of the frame provides a roller or sheave 80 which is nonrotatably mounted upon a shaft 81 rotatably journaled in the side panels 28 by bearing caps 82. The shaft 81 is positioned concentrically with respect to the outer curved end 27 of the top panel 26 of the box sections with the sheave positioned thereon in alignment with the guide channel 32. A pair of rollers or sheaves 85 is rotatably mounted on brackets 86 secured to the outer end panel 16 of the head end section 14 of the frame 12 in alignment with the guide channels 21 thereof.

A pair of double-acting hydraulic jacks 90 are individually connected at their head ends to brackets 92 secured to the outer end panel 16 of the head end section 14 of the frame 12 below the roller brackets 86. The jacks are fed hydraulic fluid through a pair of hoses 94 adjacent to their head and rod ends with the hoses being extended through suitable openings in the top panel 11 of the base. Each of the jacks has a cylinder rod 95 which rigidly mounts a cable-connecting bracket 96 at its outer end. An elongated flexible cable 97 is connected at one end to the upper portion of the bracket 96 and is trained over the aligned sheave 85, through the holes 56 in the lower ends of the slide members 52 on the panel 50, through the holes in the slide members 74 on the slats 70, around the roller 30 and through the opening 42 in the hinge 35 and inner end panels 17 and 23. The end of the cable is connected through a spring-loaded expansion member 98 to the lower end of the bracket 96. The cable is rigidly secured to the slide members 52 and to the slide member 74 on the slat 70 at the inner end 67 of the flexible foot end portion of the carriage 45 by a suitable adhesive. Relative movement between the cable and the remaining slide member 74 is permitted to preclude binding as the slats 70 traverse the sheaves 80. It is to be understood that a single hydraulic jack having sufficient capacity to motivate the carriage 45 when loaded could be employed in place of the pair of jacks 90. In such event a crossbar arrangement would be employed transversely of the cables 97 with the single jack being centrally located thereon.

A leg 100 secured in depending relation from the head end section 14 of the frame 12 extends through a suitable opening in the top 11 of the base for connection to the rod end of a single-acting hydraulic jack 101. The jack is mounted in depending relation from the underside of the top 11 of the base by a bracket 103. A leg 105 is rigidly secured in depending relation from the foot end section 15 of the frame and is extended through the top 11 of the base through a suitable opening therein for connection with the rod end of the hydraulic jack 107. The jack is mounted at its head end on a bracket 108 rigidly secured in depending relation from the underside of the top 11 of the base in transversely staggered relation to the jack 101 of the head end section of the frame.

The control system for actuating the hydraulic jacks 90, 101, and 107 is located in the base 10 and is shown schematically in FIG. 1. Such system provides a fluid reservoir tank 110 which supplies fluid to a motor-driven constant delivery pump 111. The pump supplies fluid under pressure through a main supply line 114 to a plurality of control valves 115, 116 and 117 respectively connected to the jacks 90, 101, and 107. The hydraulic hoses 94 of the hydraulic jacks 90 are connected to the valve 115 selectively to receive fluid under pressure from the main supply line 114 through the valve 115. The low-pressure line 94 of the jack is concurrently opened to the reservoir through the valve 115 by way of an exhaust line 120. The con-

trol valve 116 is connected through a supply line 122 to the head end of the jack 101 which also may be selectively connected to the exhaust line 120 through the valve 116. A supply line 124 interconnects the control valve 117 with the head end of the jack 107 which also may be connected with the exhaust line 120. The control valves are of the electrical solenoid-operated type which may be actuated by pushbuttons, not shown, mounted exteriorly on opposite sides of the base so that the table can be operated from either side. Although not shown, it is to be noted that an opening can be formed through the top 11 of the base beneath the cavity 25 in the foot end section 15 of the frame 12 to receive a treatment basin, not shown. Such area is continually accessible by way of cavity 25 in any position of the carriage 45 whereby such a drain basin can be utilized without interrupting the examination or the patient disposed upon the table.

OPERATION

The operation of the described embodiment of the subject invention is believed to be clearly apparent and is briefly summarized at this point. A patient to be examined is initially placed upon the table of the present invention with the carriage 45 disposed in the full line positions of FIGS. 3 and 6. The head end portion 46 of the carriage may then be elevated to the full line position of FIG. 1 by manipulation of the control valve 117 to open the jack supply line 122 to the high-pressure supply line 114. With such actuation, the rod of the jack 101 is extended to swing the leg 100 and the head end portion of the carriage about the pintle 39 of the hinge 35. The flexible foot end portion 47 of the carriage may also be similarly positioned by actuation of the control valve 116 to connect the supply line 124 of the jack 101 to the pump by way of line 114. In such instance, the rod end of the jack is extended to swing the leg 105 and the flexible foot end of the carriage about the pintle 39 to the broken line position of FIG. 1.

Either before or after the above-described tilting of the carriage, the patient may be shifted longitudinally of the table by actuation of the control valve 115 to open the main supply line 114 from the pump to the hose 94 connected with the rod end of the jack. Fluid under pressure in the rod end of the jack causes the cylinder to retract therein to move the cable bracket 96 from right to left, as viewed in FIG. 6 in the drawings. With such movement, the cable is caused to move in a circuitous path about the rollers 80 and 85 by the connections formed between the cable and the crosshead portions 55 and 75 of the slide members 52 and 74, respectively. The head end portion 46 of the carriage is carried along in sliding engagement with the rails to the broken line position of FIG. 6. It will be noted that the extent of movement provided the head end portion of the carriage positions the inner end 59 thereof in substantial alignment with the hinge 35. Concurrently, the flexible foot end portion 47 of the carriage 45 is carried by the cable around the rollers 80 in return bend travel into the slot 31 to the full line position of FIG. 1. The cable guide shoes 43 above the openings 42 provide a wear surface for the cable when actuated with either of the head or foot sections of the carriage tilted with respect to the base. For return travel of the carriage from the broken line position of FIG. 6 to the full line position thereof, the control valve 115 is actuated to drain the rod end of the jack to the reservoir and to pressurize the head end thereof. During carriage movement in either direction, the crossheads 55 and 75 of the slide members 52 and 74 respectively slide against the upper portions of the guide channel members 21 and 32. When either of the head or foot end portions of the frame are angularly disposed, as in FIG. 1, the crossheads thereby maintain the flexible foot end portion of the carriage in substantially parallel relation to the top panel 26 of the boss sections 24 while the upper arcuate surfaces thereof are adapted readily to transverse the angle formed between the foot and head sections of the frame.

The dropout panel 76 may also be removed from the flexible foot end portion 47 of the carriage 45 in any adjusted position thereof. With the carriage disposed, as in FIG. 3, the dropout panel may easily be removed by longitudinal sliding movement relative to the carriage or may be lifted and peeled therefrom when disposed in the shifted position of FIG. 1. It is to be noted that with the dropout panel removed, the opening through the flexible foot end of the carriage provided thereby is continuously open to the examining area throughout the entire range of movement of the carriage.

Referring now to FIGS. 10 through 17, an alternate form of my examination table is described. In this alternate form, the examination table 200 has a substantially rectangular base member 201 which supports a substantially flat tablelike top 202. The base member 201 may be constructed of any suitable material, such as sheet metal, wood or the like, in the same manner as the base member 10 of my first embodiment. The base member 201 has a plurality of drawers 203 for equipment storage. A support frame 204 is mounted on the base member 201 in substantially superimposed relationship with the top 202 by means of a pair of oppositely disposed parallel rails 206 which are mounted on the base member 201 adjacent the top 202. The parallel rails 206 are each supported by a pair of brackets 207 extending outwardly from the base member 201. The support frame 204 is generally rectangular but open at one of its shorter ends 208. The support frame 204 is mounted on the rails 206 by means of two pairs of roller wheels, a pair of forward roller wheels 210 rotatably mounted on opposite ends of an axle 212 and a pair of rearward roller wheels 214 rotatably mounted on opposite ends of an axle 216.

The support frame 204 supports a patient carriage 217 consisting of a head end section 218, a foot end section 219 and a hinge section 220. The head end section 218 consists of a head end support panel 221 which has upholstery 222 on its upper surface to permit comfortable patient contact. (See FIG. 13.) The foot end section 219 consists of a foot end support panel 224 which also has upholstery 226 on its upper surface for patients' comfort. The hinge section 220 has a hinge section support panel 228 with upholstery 230 on its upper surface for patients' comfort.

The hinge section support panel 228 is rigidly affixed to the support frame 204, as best shown in FIG. 11. The head end section support panel 221 is pivotally connected to an adjacent edge of the hinge section support panel 228 by means of hinge 232 and normally rests upon flange 234 on the support frame 204. The foot end section support panel 219 is pivotally connected to the opposite edge of the hinge section support panel by means of a hinge 236 and also normally rests on the flanges 234 of the support frame 204. Thus mounted, the head section support panel 218 and foot section support panel 219 are pivotally movable upwardly from the support frame 204 about their respective hinges.

To actuate the pivotal movement of the head end section upwardly from the support frame 204, a head end lift mechanism 240 is provided. The head end lift mechanism 240 consists of a screw rod 242 which is pivotally connected by means of a bracket 244 to the underside of the head end support panel 221 at approximately its center point laterally. The screw rod 242 passes through a threaded hub portion of a worm pinion gear 246 which is mounted in a gear housing 248 supported by the forward end axle 212. A spindle worm gear 250 is engaged with the periphery of the pinion worm gear 246 and is also carried by the housing 248. An electric head section motor 252 is mounted on the housing 248 and drivingly connected to the spindle worm gear 252. Rotation of the spindle worm gear 252 rotates the pinion worm gear 248 which causes linear movement of the screw rod 246 by means of its threaded engagement with the threads at the hub of the pinion gear. A slot 256 is provided in the tabletop 202 to permit passage of the rod 246 into the base member 201.

The foot end section 219 has a similar elevating mechanism 260. This mechanism consists of a screw rod 262 pivotally connected to the foot end support panes 224 by means of a

pivotal bracket 264. The screw rod is threadably engaged with a threaded hub 266 in the center of a pinion worm 268 which is mounted in a housing 270. A spindle worm gear 272 is rotatably mounted in the housing 270 and is driven by an electric foot section motor 273 also attached to the housing. A slot 274 is provided in the tabletop 202 to permit the rod to extend down into the base member 201.

To move the support frame 204 and the patient carriage 217 longitudinally along the pair of rails 206, a support frame drive mechanism 275 is provided. A support frame drive mechanism consists of an elongated screw rod 276 disposed in a generally horizontal position intermediate the long sides of the support frame 204 and above the tabletop 202. The screw rod 276 is engaged with the threaded hub 277 of a pinion worm gear 278 which is mounted in a housing 280. The pinion worm gear is, in turn, engaged by a spindle worm gear 282 which is also mounted in the housing 280. Attached to the housing 280 and drivingly connected to the shaft worm 282 is an electric longitudinal drive motor 284. The screw rod 276 is secured by connector block 286 to one end of the hinge section support panel 228 and the drive mechanism housing 280 is connected to the base member 201.

At the foot end of the tabletop 202 a fixed support panel 288 is provided which extends above the tabletop and is disposed in telescopic relationship with the foot end section 218. The fixed support panel 288 has a lateral passage 290 disposed therethrough to allow longitudinal travel of the rear axle 216 of the support frame 204. The fixed support panel 288 also has a vertically directed longitudinally extended slot 292 which corresponds with the slot 274 at the foot end of the tabletop 202 to permit passage of the screw rod 262.

The fixed support panel 288 also has a U-shaped recess 294 which opens toward the foot end and contains a removable pullout frame 296. The pullout frame 296 is mounted in the recess 294 by means of a tongue and groove 298. Below the recess 294, a corresponding opening 295 is provided in the tabletop 202. Also, in the foot end section 219 of the patient carriage 217 a corresponding U-shaped recess 297 is provided which contains a patient carriage pullout frame 298 affixed in position by a tongue and groove 300. When in place the patient carriage pullout frame 298 provides a relatively flush upper supporting surface for the patient, and is disposed above the pullout frame 296 when the patient carriage 217 is positioned at the foot end. (See FIG. 13.)

To provide a support surface transition between the fixed support panel 288 and the foot end of the foot end section 219, the foot end section support panel 224 and its upholstery 226 are beveled to a transition edge 321.

In operation, the alternate form of my examination table is used as follows. The patient carriage 217 is positioned as far as possible toward the head end by operation of the longitudinal drive motor 284, placing the foot end section 219 in the position shown in FIG. 19. The patient then mounts the table from the foot end by sitting on the foot end section 219 and hinge section 220 with his knees bent about the foot end and his lower legs and feet extending downwardly therefrom. The patient then lies down with his back on the head end section 218 and places his feet in the foot stirrups on each side of the foot end of the table.

Operation of the head section motor 252 will then raise and lower the patient's head, and operation of the foot section motor will raise or lower his thighs. When close inspection of the groin area is desired the support frame 204 is driven rearwardly by operation of the longitudinal drive motor 284, while the patient's feet remain in the stirrups, until the foot end of the patient carriage 217 reaches the foot end of the fixed support panel 288. If desired, the pullout frames 296 and 298 which then are disposed in vertical alignment may be removed to expose a catch basin in the base member 201 below the opening 295.

By similar operations, the table can be adjusted for easy dismounting by the patient.

From the foregoing it is readily apparent that the examination table of the present invention provides an improved mechanism for arranging a patient thereon to attain the optimum position for examination or surgical treatment. Such positioning is conveniently and easily accomplished with precision control and without physical effort on the part of the patient or the attendant with a minimum of discomfort to both. The table of the present invention is also readily adapted to support a patient in a wide variety of attitudes with respect to the base and to maintain such attitudes during shifting of the patient through a predetermined range of rectilinear movement longitudinally of the table. Also, the dropout sections at the foot end of the table may be easily removed in any adjusted position of the carriage to provide ready access to an examining area throughout the entire range of carriage movement.

Having described my invention, what I claim as new and desire to secure by Letters Patent is:

1. An examining table comprising: a base; an elongated support frame mounted on the base having opposite pivotally mounted end sections; movable support means slidably mounted on the frame; powered means borne by the base having manipulatable driving connection to said frame sections for pivoting the latter relative to the base; and power means mounted in the frame having manipulatable connection to said movable support means to shift the same longitudinally of the frame.

2. An examination table as described in claim 1 in which: said base is elongated and has opposite ends; said elongated support frame is superimposed on the base and has opposite pivotally mounted end sections; said movable support means includes a movable support member mounted on said frame; said powered means includes control means connected between the base and said frame sections operable to pivot the latter between extended positions upwardly of the base and retracted positions rested on the base; and said powered means is drivingly connected to said movable support member.

3. An examination table of the type described in claim 1 in which: said support frame is superimposed on the base and has opposite head and foot end sections, and includes means mounted on the base pivotally joining said sections intermediate the ends of the base; said movable support means includes a carriage mounted on said frame having rigid and flexible portions, and means pivotally interconnecting said rigid and flexible portions of the carriage; said powered means includes means mounted between the base and said frame sections pivotally to swing the latter between extended positions upwardly of the base, and retracted positions rested on the base; and said powered means have driving connection to said carriage longitudinally to shift the same between a position superimposed on the frame, and a shifted position with said connecting means between said rigid and flexible portions of the carriage contiguous with said means joining the head and foot end sections of the frame.

4. An examination table comprising an elongated slats having opposite ends; a support frame superimposed on the base having opposite head and foot end sections; means mounted on the base pivotally joining said sections intermediate the ends of the base; a carriage mounted on said frame having rigid and flexible portions, said flexible portion including a plurality of transversely disposed hinged slats adjacent to said foot end section of the support frame, said rigid portion of the carriage providing an elongated unitary panel adjacent to said head end section of the support frame; means pivotally interconnecting said slats and said panel; first powered means mounted between the base and said frame sections to pivot the latter between positions extended upwardly of the base and retracted positions extended upwardly of the base and retracted positions rested on the base; second powered means mounted in the frame having driving connection to said carriage to shift the carriage longitudinally between a position with said panel thereof disposed adjacent to the head end of

the frame and a shifted position with said panel disposed intermediate the ends of the base wherein said connection between the panel and said slats of the carriage is contiguous with said means joining the head and foot end sections of the frame; and means slidably interconnecting said slats and the frame for constraining the slats in substantially parallel relation to adjacent portions of the frame during such pivotal movement thereof.

5. An examination table as described in claim 4 in which: said pivotally joining means include a hinge mounted on the base pivotally joining said sections intermediate the ends of the base; and said means slidably interconnecting said slats and the frame include a plurality of slide members extended inwardly of the frame in depending relation from the slats and guide means mounted on the frame slidably to receive said depending slide members of the slats to constrain the slats in substantial parallel relation to adjacent portions of the frame during such pivotal movement thereof; and which further includes rotary means journaled in the foot end section of the frame providing a return bent path of travel for said slats during such longitudinal movement of the carriage to said shifted position.

6. An examination table as described in claim 4 in which said second powered means includes two sets of pairs of sheaves rotatably journaled in the head and foot end sections of the frame, respectively, a pair of flexible cables individually extended longitudinally of the frame and trained about said sets of sheaves for movement therebetween, said cable being rigidly connected to at least one of the slats and the panel and having driving connection with said second powered means.

7. An examination table as described in claim 4 in which: the flexible portion of the carriage includes a centrally disposed longitudinally extended drop panel having a plurality of hinged slats aligned with said slats of the flexible portion of the carriage when assembled, and when removed therefrom providing an opening through the carriage adjacent the foot end section of the frame.

8. An examination table comprising an elongated base having opposite ends; a support frame superimposed on the base having opposite head and foot end sections; a carriage mounted on said frame having rigid and flexible portions, said flexible portion including a plurality of transversely disposed hinged slats adjacent to said foot end section of the support frame, and said rigid portion of the carriage providing an elongated unitary panel substantially equal in size to said flexible portion, normally disposed adjacent to said head end section of the support frame; and powered means mounted in the frame having driving connection to said carriage to shift the same longitudinally between a position substantially superimposed on the frame, and a shifted position with said rigid portion disposed intermediate the ends of the base and with said flexible portion return flexed about said foot end section of the frame.

9. An examination table as described in claim 8 in which: said rigid portion of the carriage includes a rigid panel having a longitudinal dimension at least equal to one-half the longitudinal dimension of the flexible portion; and said powered means includes space rotary means journaled in the head and foot end sections of the frame, said rotary means at the foot end section of the frame being disposed for flexed return of said flexible portion thereabout, elongated flexible means trained about said rotary means for circuitous movement thereabout and means interconnecting said flexible means with the carriage.

10. An examination table comprising a base; an elongated support frame operatively associated with said base and having oppositely disposed end sections; moveable support means disposed on said support frame; and power means operatively associated with said support frame and interconnected with said moveable support means to shift said moveable support means longitudinally with respect to said support frame.

11. An examination table as described in claim 10 in which: said support frame is superimposed on said base and said op-

positely disposed end sections constitute a head section and a foot section; said moveable support means includes a movable carriage operatively disposed on said support frame, said carriage having a rigid portion and a flexible portion; and said power means is drivingly connected to said carriage to shift said carriage longitudinally with respect to said support frame between the position where said rigid portion and said flexible portion are both imposed upon said support frame, to a position where said rigid portion is disposed adjacent the foot end section of said support frame and said flexible portion is return flexed about said foot end section of said support frame.

12. An examination table as described in claim 10 in which said moveable support means is slidably mounted on said frame for supporting a patient thereon and has a head portion and a foot portion; and also includes means defining a removable section in the foot portion of said moveable support means.

13. An examination table comprising: a base; a support frame operatively associated with said base and disposed to support a patient thereon, said base having a head portion and a foot portion; and means defining a removable section in the foot portion of said support frame.

14. An examination table as described in claim 10 in which: said support frame opposite ends comprise a foot and a head end, and said support frame includes fixed support means at said foot end; and said moveable support means includes travel means operatively associated with said support frame and disposed to shift said moveable support means longitudinally along said support frame from a position adjacent the head end thereof to a position adjacent the foot end thereof, and said moveable support means further includes an elongated carriage having a head section and a foot section, said foot section being disposed to overlie said fixed support means when said moveable support means is shifted by said travel means to said position adjacent said foot end.

15. An examination table as described in claim 10 in which: said support frame opposite ends comprise a foot end and a head end, and said support frame includes fixed support means at said foot end disposed to support a patient thereon; and said moveable support means includes a pair of elongated tracks disposed longitudinally with respect to said support frame and in parallel spaced relationship, and roller means operatively associated with said moveable support means and said tracks and disposed to move said moveable support means longitudinally along said support frame from a position adjacent the head end thereof to a position adjacent the foot end thereof, and said moveable support means further includes an elongated carriage having a head section and a foot section, said foot section being formed and disposed to telescopically receive and overlie said fixed support means when said moveable support means is moved to said position adjacent said foot end.

16. An examination table as described in claim 10 in which: said support frame opposite end comprises a foot end and a head end, and said support frame includes fixed support means at said foot end; and said moveable support means includes travel means operatively associated with said support frame and disposed to shift said moveable support means longitudinally along said support frame from a position adjacent the head end thereof to a position adjacent the foot end thereof, and said moveable support means further includes an elongated carriage having a head section and a foot section, each hinge mounted for pivotal movement from a substantially horizontal position to an upwardly slanting position, said foot section being disposed to overlie said fixed support means when said moveable support means is shifted by said travel means to said position adjacent said foot end.

17. An examination table as described in claim 10 in which: said support frame opposite ends comprise a foot end and a head end, said support frame includes fixed support means at said foot end; and said moveable support means includes travel means operatively associated with said support frame and disposed to shift said moveable support means longitudinally

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along said support frame from a position adjacent the head end thereof to a position adjacent the foot end thereof, and said movable support means further includes an elongated carriage having a head section and a foot section, said foot section being disposed to overlie said fixed support means when said movable support means is shifted by said travel means to said position adjacent said foot end; and which

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further includes a removable section in fixed support means adjacent the foot end of said support frame, and a corresponding removable section in the foot section of said moveable support means disposed to overlie said fixed support means removable section when said moveable support means is shifted to said position adjacent said foot end, as aforesaid.

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