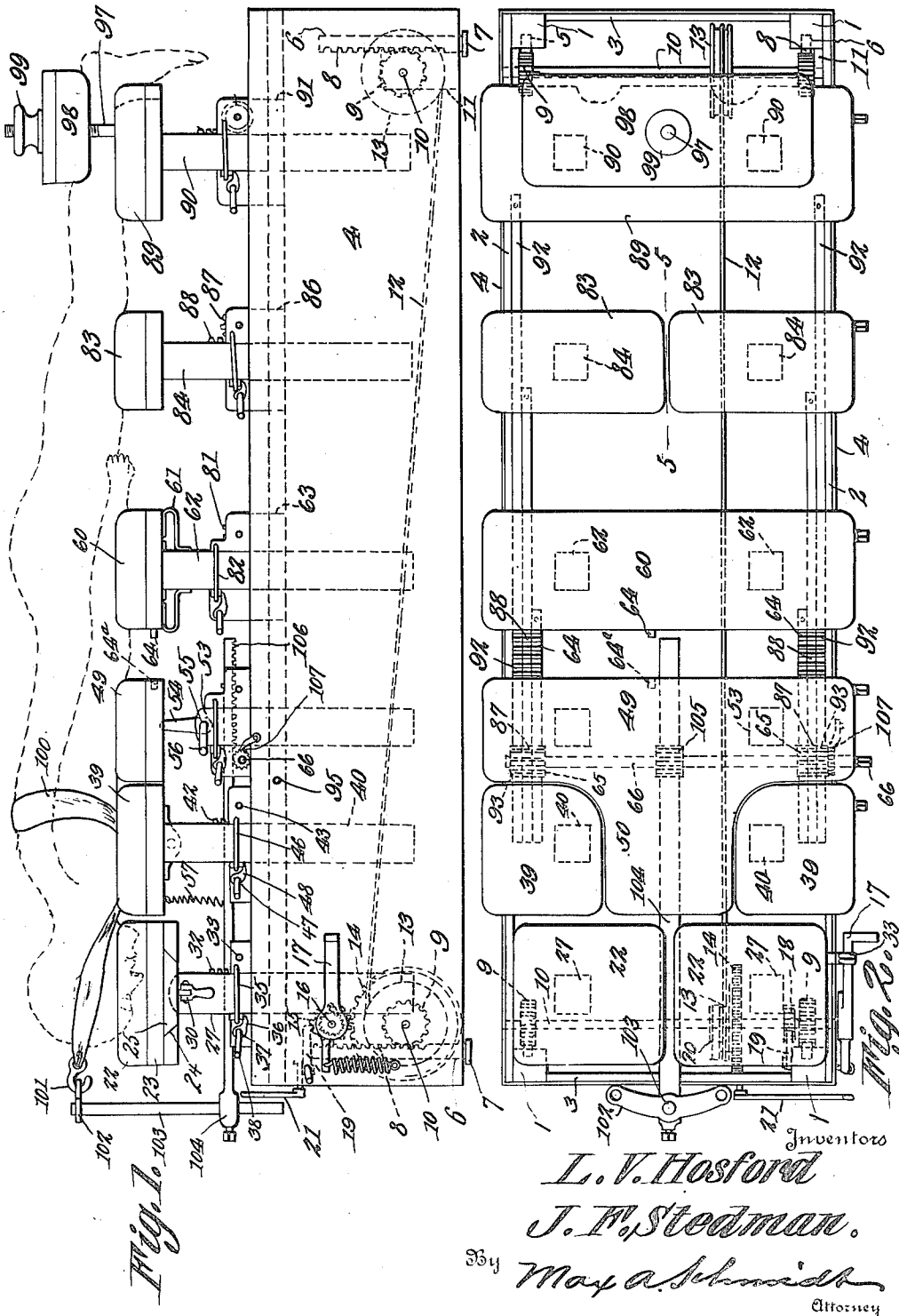


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L. V. HOSFORD & J. F. STEDMAN.

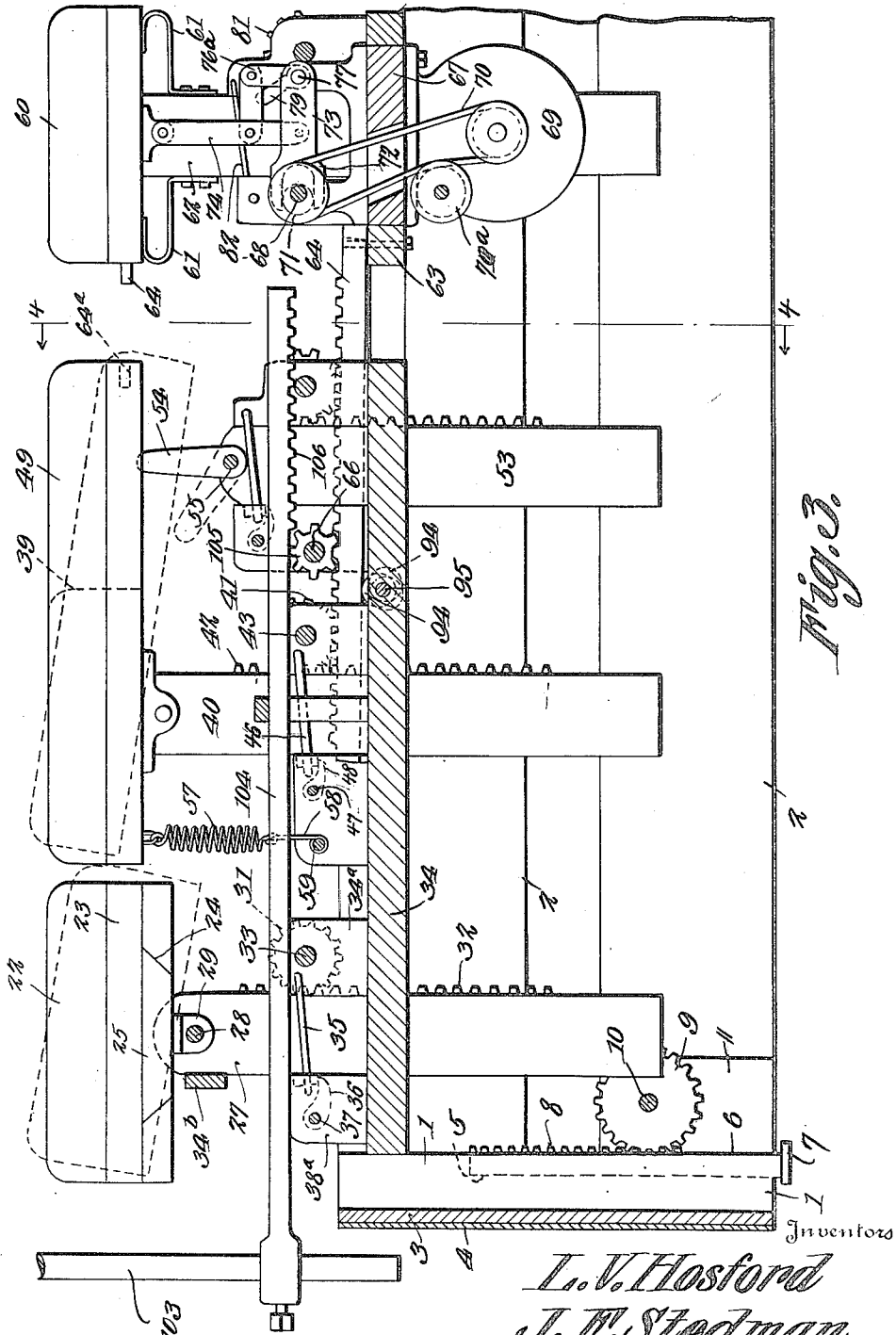
TABLE.

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5 SHEETS—SHEET 2.



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5 SHEETS—SHEET 3.

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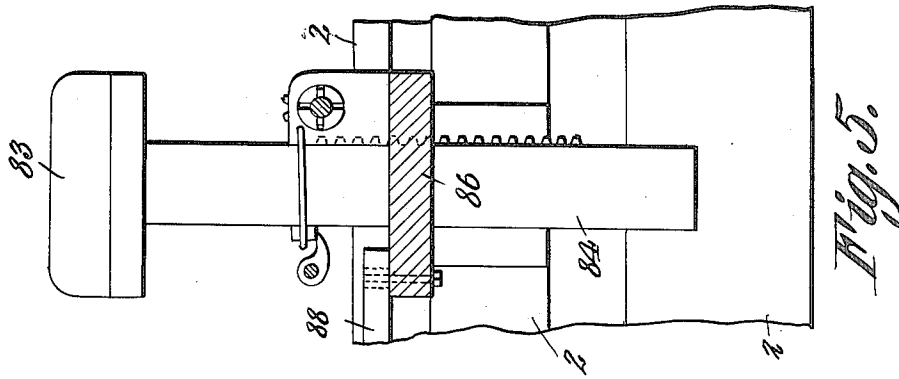


Fig. 5.

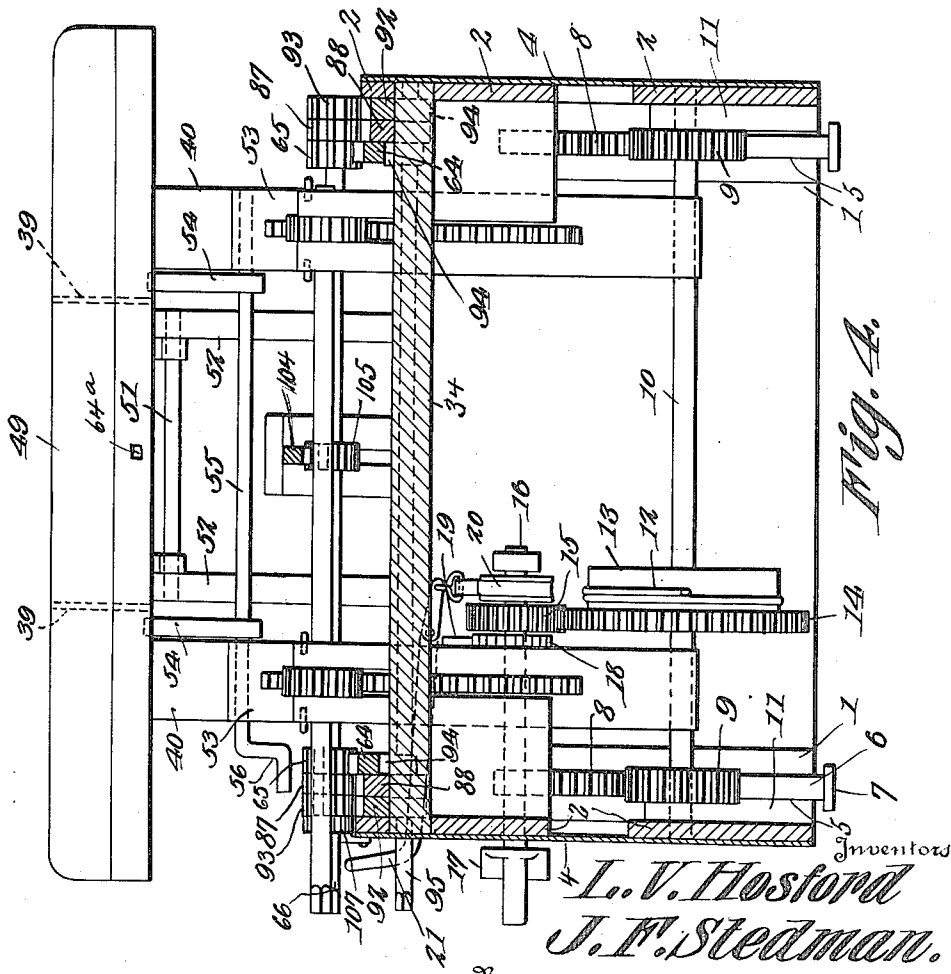


Fig. 4.

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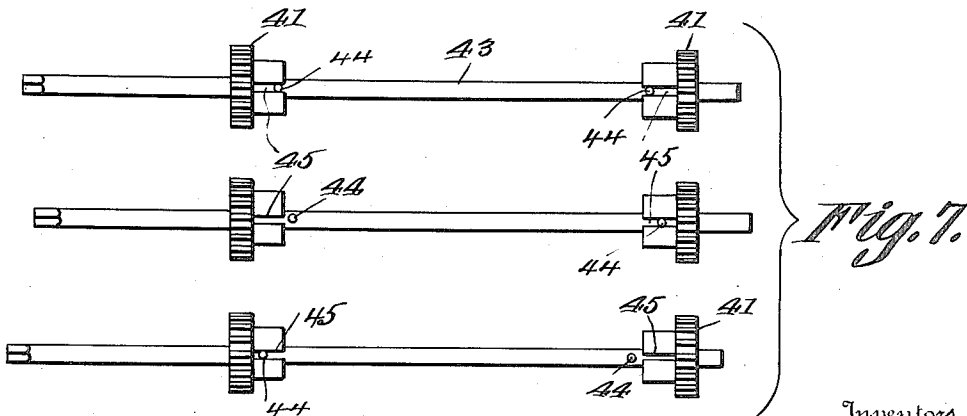
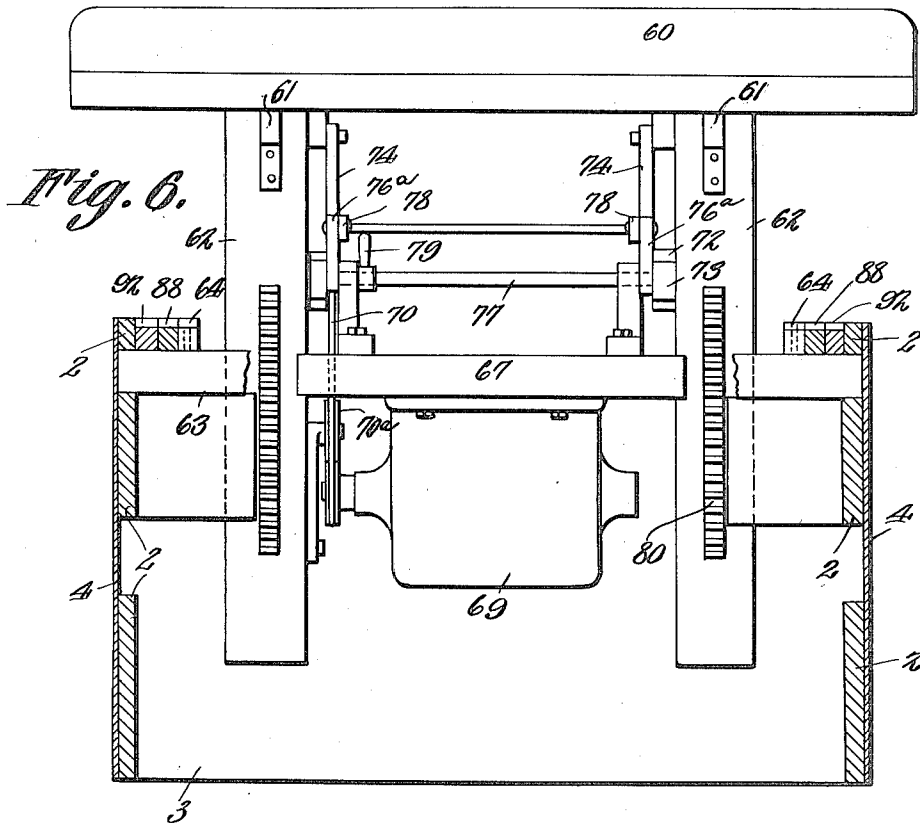


Fig. 7.

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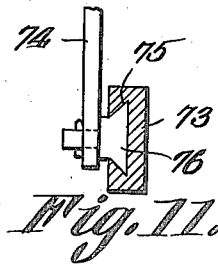
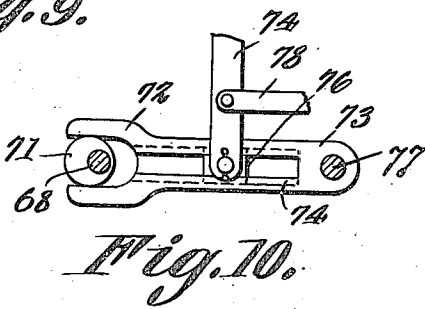
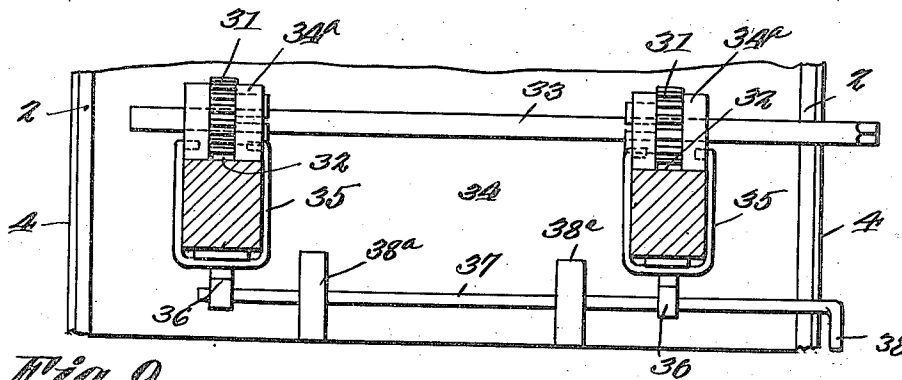
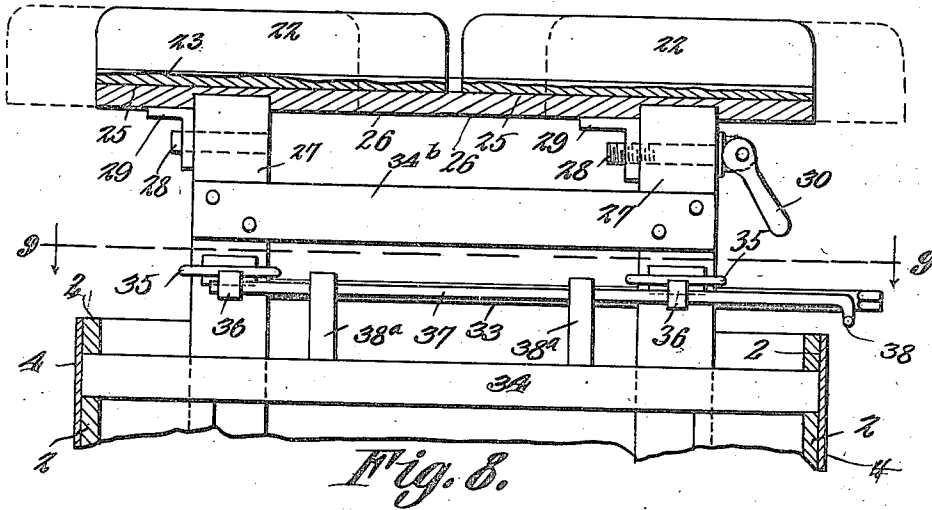
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Patented Oct. 22, 1918.

5 SHEETS—SHEET 5.



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UNITED STATES PATENT OFFICE.

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TABLE.

1,282,580.

Specification of Letters Patent.

Patented Oct. 22, 1918.

Application filed February 23, 1918. Serial No. 218,708.

To all whom it may concern:

Be it known that we, LEONARD V. HOSFORD and JOHN F. STEDMAN, citizens of the United States, residing at Portland, in the county of Multnomah and State of Oregon, have invented certain new and useful Improvements in Tables, of which the following is a specification.

The table which is the subject matter of the present application for patent is designed more particularly for use by physicians in the treatment of bodily ailments by adjusting and correcting spinal lesions and other defects of the body manually.

The invention has for its object to provide a table of the kind stated which has a wide range of adjustability, and which is provided with certain devices whereby various chiropractic operations may be readily effected.

The objects stated are attained by means of a novel combination and arrangement of parts to be hereinafter described and claimed, and in order that the same may be better understood, reference is had to the accompanying drawings forming a part of this specification.

In the drawings—

Figure 1 is a side elevation of the table; Fig. 2 is a plan view thereof; Fig. 3 is an enlarged longitudinal section of the forward end of the table; Fig. 4 is a cross-section on the line 4—4 of Fig. 3; Fig. 5 is an enlarged longitudinal section on the line 5—5 of Fig. 2; Fig. 6 is an end view of an abdominal support; Fig. 7 is a diagram showing a gearing for lowering certain body supporting elements; Fig. 8 is an end elevation, partly in section, of a head support; Fig. 9 is a longitudinal section on the line 9—9 of Fig. 8; Fig. 10 is an elevation of a vibratory mechanism, and Fig. 11 is a cross-section thereof.

Referring specifically to the drawings, the supporting frame of the table has four corner posts or standards 1 connected by longitudinal side bars 2 and transverse end plates 3, resulting in a rigid rectangular frame. This frame carries the entire assembly of body rests or cushions to be presently described, and it may be provided with a sheet metal covering 4 at the sides and ends, this covering being shown partly broken away in some of the views in order that the parts behind the same may appear.

The frame hereinbefore described is ver-

tically adjustable, the following means being provided for this purpose.

Each corner post 1 has a vertical groove or channel 5 in which seats a leg standard 6 having a suitable foot piece 7 at the bottom, and provided on one side with rack teeth 8. In mesh with the rack of each leg standard is a pinion 9. The pinions at each end of the table are fast on a shaft 10, and by operating both shafts simultaneously, it will be evident that all the pinions are simultaneously operated, and through the racks on the leg standards the table is raised or lowered.

The shafts 10 are supported in bearing blocks 11 on the bottom side bars 2. For operating both shafts together, there is provided a cable 12 connected to pulleys 13 on the shafts, but any other suitable connection may be provided.

On one of the shafts 10 is a spur gear 14 which meshes with a pinion 15 on a shaft 16 provided with a ratchet foot lever 17 for turning the same, which provides a simple and convenient means for operating the shaft. The last mentioned shaft also has a ratchet wheel 18 engageable by a spring-actuated pawl 19, whereby the shafts 10 are locked after the table has been adjusted to the desired height. Associated with the shaft 16 is a brake 20 for controlling the lowering of the table, a suitable lever 21 for operating the brake being provided.

The table frame carries the body rests, the same comprising a head support, a shoulder support, a thoracic or chest support, a vibratory abdominal support, a knee support and an ankle support, together with a spinal stretcher and tension apparatus.

The head support is composed of two cushions 22 arranged to be moved transversely or laterally apart as shown dotted in Fig. 8 for accommodating the nose and other portions of the patient's face, it being understood that, ordinarily, the patient lies face downward on the table. The cushions are mounted on a suitable base 23 having a dove-tailed bottom groove 24 in which seats a corresponding tongue 25 on a supporting bar 26 pivotally connected to two laterally spaced vertical standards 27, the connection being made by pivot bolts 28 extending transversely of the table and passing through the standards and through brackets 29 on the bar 26. It will therefore be seen that the cushions can also be simultaneously tilted

forward or backward as shown dotted in Fig. 3, and they are locked in adjusted position by a cam lever 30 pivoted to one of the pivot bolts 28.

5 The head support assembly hereinbefore described is also adjustable vertically, this being effected by pinions 31 meshing with racks 32 on the standards 27. These pinions are on a shaft 33 having one end squared
10 for the application of a crank handle or other suitable shaft operating device. The standards pass slidably through openings in a supporting platform 34 supported between the top and intermediate side bars 2, and
15 this platform has bearings 34^a which support the shaft 33. A cross bar 34^b provides a rigid connection between the standards.

The head support assembly is locked in adjusted vertical position by links 35 straddling the standards 27 and grasping the same. These links are pivoted at one end to the bearings 34^a, and at their other free ends they are engageable by a lifting finger 36 on a rock shaft 37 projecting from one
25 side of the table and being here provided with a crank handle 38. The platform 34 also has bearings 38^a which support the rock shaft.

The shoulder support comprises two laterally spaced cushions 39 mounted on the upper ends of standards 40, which latter are vertically adjustable separately, so that the cushions may be elevated or lowered separately or both at the same time. The raising and lowering means are pinions 41 meshing with racks 42 on the standards 40. In order that the independent or simultaneous adjustment may be made, the shaft 43 carrying the pinions 41 has projecting
40 coupling pins 44, and the hubs of the pinions have slots 45 to seat said pins. The pinions are loose on the shaft 43, and the latter is movable in the direction of its length to three positions illustrated diagrammatically in Fig. 7. In the first position, both pins are coupling the respective pinions to the shaft; in the second position only the pinion to the right is coupled to the shaft, and in the third position the other pinion is
45 coupled to the shaft.

Each standard 40 is also straddled by a locking link 46 similar to the link 35 hereinbefore described. The rock shaft 47 carrying the lifting fingers 48 for the links is
55 movable in the direction of its length so that the lifting fingers may be positioned to release either one or both standards.

The standards 40 pass through openings in the platform 34, and the latter also has
60 suitable bearings supporting the shafts 43 and 47, as well as the links 46.

The chest support comprises a cushion 49 reduced in width at its anterior end, as shown at 50, to seat in the space between the
65 shoulder supporting cushions 39, the main

wide portion of the chest supporting cushion being located to extend transversely back of the cushions 39. At its anterior end, the cushion 49 is pivotally connected on its under side, as shown at 51, to standards 52
70 rising from and supported by the platform 34. Beneath the posterior end of the cushion 49 are two vertically adjustable standards 53 carrying pivoted props 54 at their upper ends to hold up said end of the cushion. 75 These props swing in a vertical plane so that the cushion 49 may be tilted at its posterior end as shown dotted in Fig. 3. The props are operated by a rock shaft 55 to which they are attached, said shaft passing through the standards 53 and having a crank handle 56 on one end. 80

The means for effecting the vertical adjustment of the standards 53 are the same as the adjusting means employed in connection with the head and shoulder supports. 85

To the anterior end of the cushion 49 is connected one end of a pair of tension springs 57 having their other ends connected
90 to cables 58 wound on a shaft 59, so that by turning the latter the tension of the springs may be varied and regulated. These springs serve to hold the cushion 49 up against the patient, putting him at perfect ease and thus inviting complete relaxation. 95

The vibratory abdominal support is a cushion 60 resting on leaf spring 61 carried by a pair of laterally spaced, vertically adjustable standards 62 seating in openings in
100 a support 63 which is slidable in the direction of the length of the table so that the cushion 60 may be adjusted toward and from the cushion 49, and when the two cushions are brought together they may be locked together by means of a tenon 64 projecting from the anterior end of the cushion 60 and seating in a mortise 64^a in the posterior end of the cushion 49. When the two cushions are thus locked, they may be vibrated together, it being understood that the props 54 will be swung down to leave the posterior end of the cushion 49 free, said cushion being now supported in horizontal position by the springs 57. 105 115

The platform 63 is slidably supported on one of the side bars 2, and its longitudinal adjustment is effected by rack bars 64 connected to the forward ends thereof and operated by pinions 65 on a shaft 66 having one
120 end squared for application of a hand crank or other suitable operating device.

The means for vibrating the cushion 60 comprises the following parts:

The standards 62 support and carry a platform 67 having bearings supporting a shaft 68 obtaining motion from an electric motor or other power source 69. The motor is carried by the platform 67 and is belted to the shaft 68, the belt 70 being provided with
130

an idler 70^a which is adjustable in the ordinary way to vary the speed of the shaft, the speed being reduced by slackening the belt so that it can slip. On the shaft 68 are
 5 eccentrics 71 over which are fitted the forked ends 72 of levers 73 pivotally supported at their other ends and connected intermediate their ends by links 74 to the cushion 60. Thus, it will be seen that when the shaft
 10 68 is turning, the cushion 60 is given a direct up and down vibrating motion.

The links 74 are adjustably connected to the levers 73, the latter having dovetailed side slots 75 in which slidably seat blocks
 15 76 to which the links are pivotally connected. The stroke of the links may therefore be varied as desired by sliding the blocks 76 back and forth on the levers. The blocks are shifted by rocker arms 76^a on a shaft 77 and
 20 connected by links 78 to the links 74, said shaft being fitted with a suitable handle 79 for rocking the same. The shaft 77 also serves as the fulcrum or pivot of the levers 73.

25 Vertical adjustment of the standards 62 is effected by racks 80 and pinions 81, and they are locked in adjusted position by links 82. These parts operate in the same manner as the adjusting and locking means of the other
 30 standards hereinbefore described.

The knee support comprises two laterally spaced cushions 83 each supported for independent or simultaneous vertical adjustment by standards 84 having adjusting and locking
 35 means the same as the standards 40. The standards 84 are carried by a slidable support 86 so that the cushions may be moved back and forth in the same manner as the cushion 60, this adjustment being effected
 40 by pinions 87 in mesh with racks 88 connected to the forward end of the support. These pinions are on the shaft 66.

The ankle support is a cushion 89 carried by vertically adjustable standards 90 adjusted in the same manner as the standards
 45 27. This cushion is also movable in the direction of the length of the table, its standards being carried by a slidable support 91 operated by racks 92 meshing with pinions
 50 93 on the shaft 66.

As the pinions 65, 87 and 93 operating the racks 64, 88 and 92 are all on the same shaft 66, it will be seen that some means must be provided for throwing into gear
 55 the racks which are to be operated. This is done by lifting cams 94 on a shaft 95, there being a cam beneath each rack. The cars are so positioned that when the shaft 95 is turned a certain distance, it lifts its rack into mesh with the corresponding pinion; a
 60 further turn of the shaft brings the next cam into play to lift the next rack into gear with its pinion, releasing the first rack, and another turn brings the third cam into play to lift the last rack into gear with its

pinion. The supports or platforms 63, 86 and 91 may therefore be independently operated from the shaft 66.

The spinal stretcher and tension apparatus comprises the following instrumentalities: 70

The ankle support 89 carries an upstanding screw stem 97 which supports a detachable cushion 98 adapted to be lowered down on the ankle to clamp the same to the cushion
 75 89, this being effected by a nut 99 screwed on the stem. The patient being clamped down on the table at the ankles, a strap 100 is placed across the shoulders and under the arms, and tension is applied to the strap.
 80 This strap is connected by hooks 101 to a cross bar 102 on the upper end of a standard 103 positioned at the head end of the table. The standard 103 is carried by a longitudinally slidable bar 104 extending in the direction of the length of the table, and operated
 85 by a pinion 105 meshing with a rack 106 on said bar. The pinion 105 is on the shaft 66. The rack 106 is on the rear end of the bar 104 and the pinion 105 is normally clear
 90 of the same so that the bar is not operated when the shaft 66 is turned to operate the pinions 65, 87 and 93, but when the bar 106 is to be operated, it is drawn forward to come in mesh with the pinion 105. During
 95 the stretching operation, the ankle support 89 is pushed rearward by leaving the racks 92 in mesh with the pinions 93, the racks 64 and 88 being thrown out of gear by the cams as hereinbefore described. It will
 100 therefore be seen that upon operating the shaft 66, tension is applied to the patient at shoulders and ankles, the pull being in opposite directions. The shaft 66 is locked by a pawl and ratchet mechanism 107 to maintain
 105 any desired degree of tension.

The preferred embodiment of the invention has been shown and described, but it will be understood that various changes and modifications in the structural details disclosed may be made without a departure from the spirit and scope of the invention as claimed hereinafter.

We claim:

1. A table of the class described comprising body supporting means including an independent vertically and rectilinearly vibratory abdominal support, and operating means for said support having means for
 115 varying the length of the stroke thereof. 120

2. A table of the class described comprising body supporting means including an independent vertically and rectilinearly vibratory abdominal support, and operating means for said support, said operating
 125 means comprising a lever, means for rocking said lever, and a connection between the lever and the support.

3. A table of the class described comprising body supporting means including an in- 130

dependent vertically vibratory abdominal support, and operating means for said support, said operating means comprising a lever, means for rocking said lever, and a connection between the lever and the support, said connection being adjustable lengthwise with respect to the lever to vary the length of the stroke transmitted thereby.

4. A table of the class described comprising body supporting means including an independent vertically adjustable and vertically and rectilineally vibratory abdominal support, and operating means for said support having means for varying the length of the stroke thereof.

5. A table of the class described comprising body supporting means including an independent vertically and rectilineally vibratory abdominal support, a cushioned supporting means for said support, and operating means for the support having means for varying the length of the stroke thereof.

6. A table of the class described comprising body supporting means including independent chest and abdominal supports, said supports being mounted for vibratory movement, and the abdominal support being adjustable toward the chest support for connection therewith, and means for vibrating the abdominal support.

7. A table of the class described comprising a body supporting means including in-

dependent shoulder and chest supports, the shoulder supports being laterally spaced, and the chest support having its posterior portion located back of the shoulder supports and its anterior portion reduced in width to seat between the shoulder supports.

8. A table of the class described comprising a body supporting means including independent abdominal, knee and ankle supports adjustable lengthwise of the table, and means for effecting such adjustment.

9. A table of the class described comprising a body supporting means including independent abdominal, knee and ankle supports adjustable lengthwise of the table, rack bars connected to said supports, pinions adapted to mesh with said racks, a single shaft carrying the pinions, and means for selectively meshing the racks with the respective pinions.

10. A table of the class described comprising body supporting means including a laterally disposed pair of head supports, and means for supporting said supports for tilting movement, said supports being also adjustable laterally with respect to each other on the supporting means.

In testimony whereof we affix our signatures.

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