

May 12, 1931.

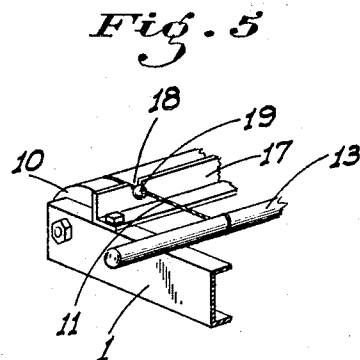
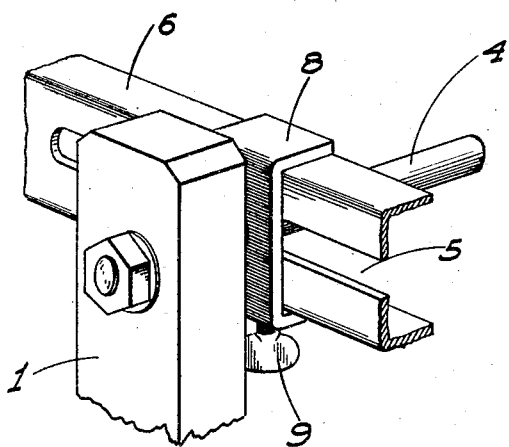
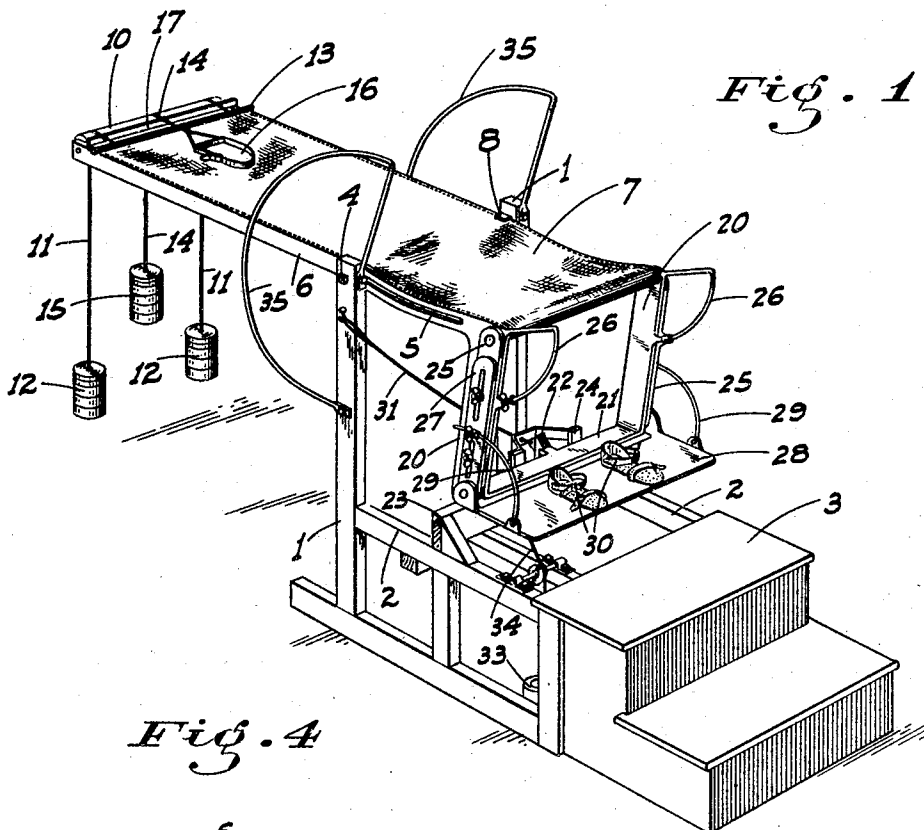
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1,804,441

VERTEBRÆ STRETCHER

Filed Nov. 24, 1930

2 Sheets-Sheet 1



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Fig. 2

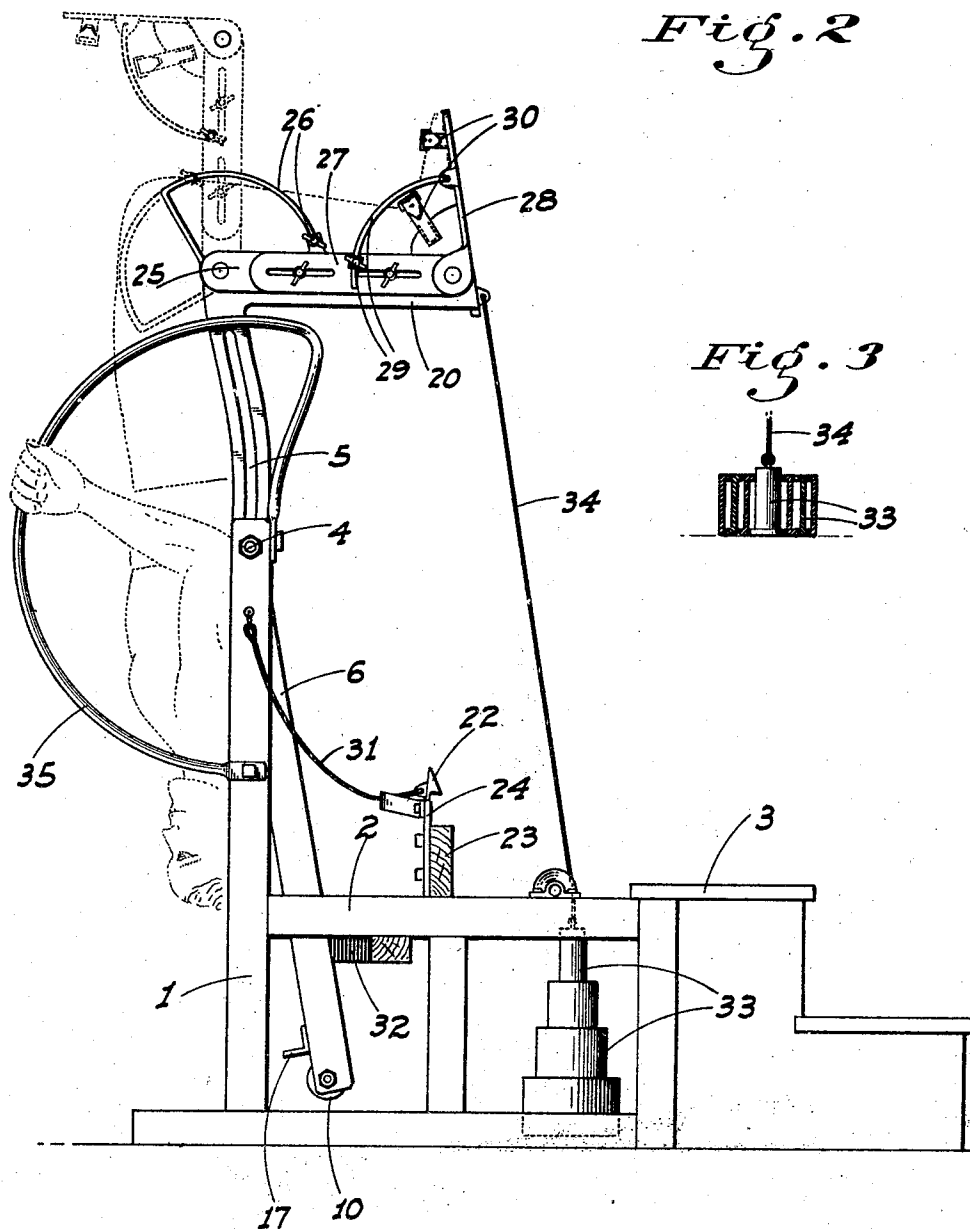
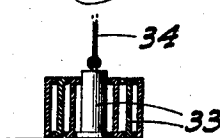


Fig. 3



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VERTEBRÆ STRETCHER

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This invention relates to body and vertebræ stretching devices such as are used in the application of the science or theory of tension therapy for health giving purposes.

The principal objects of my invention are to provide an apparatus of this general character and for the above purpose so arranged that the vertebræ and limbs of the occupant or patient may be stretched either by means of separate weights or by the weight of the body of the occupant alone, as may be desired; which may if necessary be readily manipulated by the occupant without assistance from others; and which may be easily adjusted so that persons of different height may be accommodated with equal facility.

These objects I accomplish by means of such structure and relative arrangement of parts as will fully appear by a perusal of the following specification and claims.

In the drawings similar characters of reference indicate corresponding parts in the several views:

Fig. 1 is a perspective view of the stretcher as positioned to be used when the stretching is to be accomplished by the weights.

Fig. 2 is a side elevation of the device with the body supporting structure positioned for use when the stretching is to be done by the weight of the occupant.

Fig. 3 is a sectional view of a telescopic counterweight unit.

Fig. 4 is a fragmentary perspective view showing the adjustable supporting structure for the rails.

Fig. 5 is a fragmentary perspective view showing a means for maintaining the weight cords in place when idle.

Referring now more particularly to the characters of reference on the drawings, the supporting framework of the apparatus comprises a pair of transversely spaced uprights 1, joists 2 projecting horizontally from said uprights on one side of the same intermediate their ends and some distance from the floor, and a platform 3 supported on said joists at their outer ends. A shaft 4 is supported by and extends between the uprights at their upper ends, which shaft passes through longitudinally extending slots 5 pro-

vided in normally horizontal side rails 6 intermediate the ends of the same. A concaved flexible covering 7 such as canvas or the like extends between and is connected to the rails for their full length so as to support a human body in a reclining position.

The shaft between the rails and the uprights passes through C-clamps 8 which slidably straddle the rails and are adapted to be clamped to the same at any desired position by clamping screws 9. By this means the point of pivotal connection between the uprights and rails relative to the ends of the latter may be altered to suit different conditions.

At the ends of the rails opposite the joists and platform is a roller or sheave unit 10 journaled in connection with and extending between said rails. Transversely spaced cords 11 pass about said roller and at their lower ends are attached to weights 12. At their upper ends these cords are connected to a common hand bar 13. Another independent cord 14 passes about the roller between the cords 11, said cord 14 having a weight 15 on its lower end and a head engaging strap or clamping device 16 on its upper end. The weight and cord units are removable and to hold them in place in a certain neutral position before the operator desires to make use of the same I provide a cross bar 17 extending between the rails in front of the roller. This bar is notched from the top down in line with the cords, as shown at 18, and both the cords are provided with knots 19 or the like which are incapable of passing through the notches at the bottom of the same.

At their opposite ends the rails overhang the joists somewhat and rigid legs 20 depend from said rails at that end. At their lower ends the legs are connected together by a cross-bar 21 which is adapted to be engaged on its forward side by a spring catch 22 mounted on a cross member 23 supported by the joists. When the catch is thus engaged the rails are horizontal and are prevented from tipping down at their head or weighted end. To prevent the legs from tending to move past the catch rigid stops 24 are mounted on and project upwardly from the mem-

ber 23 to engage the forward side of the cross-bar 21.

Pivoted in connection with the rails at their junction with the legs are auxiliary legs 25 which extend down alongside the legs 20 and are held at any desired angle relative thereto by a quadrant and clamping device such as is indicated at 26. Slidable along and adjustable relative to the auxiliary legs are straps 27 to the lower end of which a foot platform 28 is pivoted. This platform is normally disposed substantially at right angles to the legs and projects toward the platform 3. It is maintained at any desired angle relative to said legs by a suitable quadrant and clamping device 29 arranged between the platform 28 and the straps 27. Adjusting the angularity of the auxiliary legs therefore adjusts the platform 28 also, but adjustment of the latter relative to the auxiliary legs may be accomplished independently of the adjustment of the legs themselves or of the sliding of the straps 27. The platform 28 is provided with fixed shoe or foot locating and strapping devices of suitable character such as indicated at 30.

In operation the pivoted body supporting structure is first placed and held in a horizontal position, as shown in Fig. 1. The occupant first sits on the rear end of the cover 7 with his feet engaging the clamping devices 30. Then if necessary he adjusts the height of the platform 28 from the rails so as to conform to the length of his legs from the knees down. His feet having been strapped onto the members 30 he reclines on the covering 7 and engages the head strapping device 16 with his head. This brings the weight 15 into operation and it exerts a constant pressure on the vertebrae and the upper portion of the legs. The weight 15 may of course be one of a multiple unit type so that its effectiveness may be altered to suit. If it is desired to stretch or exercise the arms the occupant reaches back and grasps the bar 13 with the hands, slightly raising the bar so as to release the knots 19 from the notches in the holding bar so that the weights 12 can function.

If the operator desires to stretch himself by his own weight, the weight and cord units are first removed. After taking his seat and fastening his feet onto the platform 28 the operator releases the catch 22 by means of a conveniently positioned pull cord 31 or the like attached thereto. If he then reclines the full length on the member 7 the rails will be overbalanced toward their head end and will tip down or so that the body will occupy a vertical position in a downward direction from the knees to the head, as shown in Fig. 2. Downward movement of the rails is limited and cushioned by suitable bumpers 32 mounted on the supporting frame. The occupant is then supported from his knees and

if he desires to stretch himself from his feet he first adjusts the auxiliary legs so that they form longitudinally alined extensions of the rails, the platforms 28 being then disposed at right angles to the rails, as indicated in dotted lines in Fig. 2.

Too sudden tilting of the body supporting structure is prevented by the use of a plurality of telescopic counterweights 33 normally resting on the floor and attached to the legs 20 by a cable 34. These weights are arranged to engage and lift each other in succession as the cable is drawn up with the raising of the legs so that the effectiveness of the counterweight as a whole is gradually increased and the speed of tilting of the body supporting structure is correspondingly retarded.

When the occupant wishes to raise himself to a horizontal position he may make use of hand rails 35 mounted on the uprights and positioned so as to be grasped by the operator regardless of his position. When the supporting rails are again horizontally disposed the catch 22 automatically engages the cross bar 21 to hold the structure against further movement, enabling the operator to then let go of the hand rails.

It will thus be seen that all of the above operations may be performed without assistance by the operator himself if necessary, though of course it may be more convenient if he is aided by an attendant. Adjusting the pivotal connection of the rails 6 enables the structure to be accommodated to short persons, in which case the pivotal shaft is moved further along toward the foot end of the rails, so as to provide the necessary over-balancing distribution of weight when it is desired to have the rails tilt to a vertical position. In making such an adjustment the services of an attendant are necessary, since the structure must first be raised clear of the catch and stops and then slid along relative to the pivot shaft 4 with the clamps 8 slack; the latter being again tightened when the desired location of the shaft has been reached.

From the foregoing description it will be readily seen that I have produced such a device as will substantially fulfill the objects of the invention, as set forth herein.

While this specification sets forth in detail the present and preferred construction of the device, still in practice such deviations from such detail may be resorted to as do not form a departure from the spirit of the invention, as defined by the appended claims.

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

1. A vertebrae and body stretching apparatus comprising a normally horizontal body supporting structure, a platform mounted in connection with said structure at one end substantially parallel thereto but

below the same a distance approximately that between the knee and foot of a person, foot securing means on said platform, head engaging means adjacent and above the opposite end of the structure, and weight means
5 applied to the head engaging means tending to move the same toward said end of the structure.

2. An apparatus as in claim 1, with means
10 for adjusting the vertical distance between the platform and structure to suit legs of varying length.

3. A vertebræ and body stretching apparatus comprising a normally horizontal body
15 supporting structure, a platform mounted in connection with said structure at one end substantially parallel thereto but below the same a distance approximately that between the knee and foot of a person, foot securing
20 means on said platform, a hand bar extending transversely of and above said structure adjacent its opposite end, and weight means applied to said bar tending to move the same toward said end of the structure.

25 4. A vertebræ and body stretching apparatus comprising a normally horizontal body supporting structure, a platform disposed at one end of the structure, means pivotally supporting said platform to enable the same
30 to be positioned parallel to and below the structure or at right angles to and above the same, foot securing means on said platform, and means pivotally supporting said structure to enable the same to be tilted to a vertical position with the platform uppermost.

5. A vertebræ and body stretching apparatus comprising a normally horizontal body supporting structure, a platform mounted in
40 connection with said structure at one end substantially parallel thereto but below the same a distance approximately that between the knee and foot of a person, foot securing means on said platform, means pivotally supporting said structure to enable the same to be tilted
45 to a vertical position with the platform uppermost, and releasable catch means normally holding the structure against tilting movement.

6. A vertebræ and body stretching apparatus comprising a normally horizontal body
50 supporting structure, a platform mounted in connection with said structure at one end substantially parallel thereto but below the same a distance approximately that between the knee and foot of a person, foot securing
55 means on said platform, means pivotally supporting said structure to enable the same to be tilted to a vertical position with the platform uppermost and counterweight means applied to the structure and arranged to retard its movement when tilting in proportion as the tilting speed of the structure tends to increase.

In testimony whereof I affix my signature.

65 ANTONE J. SILVA.