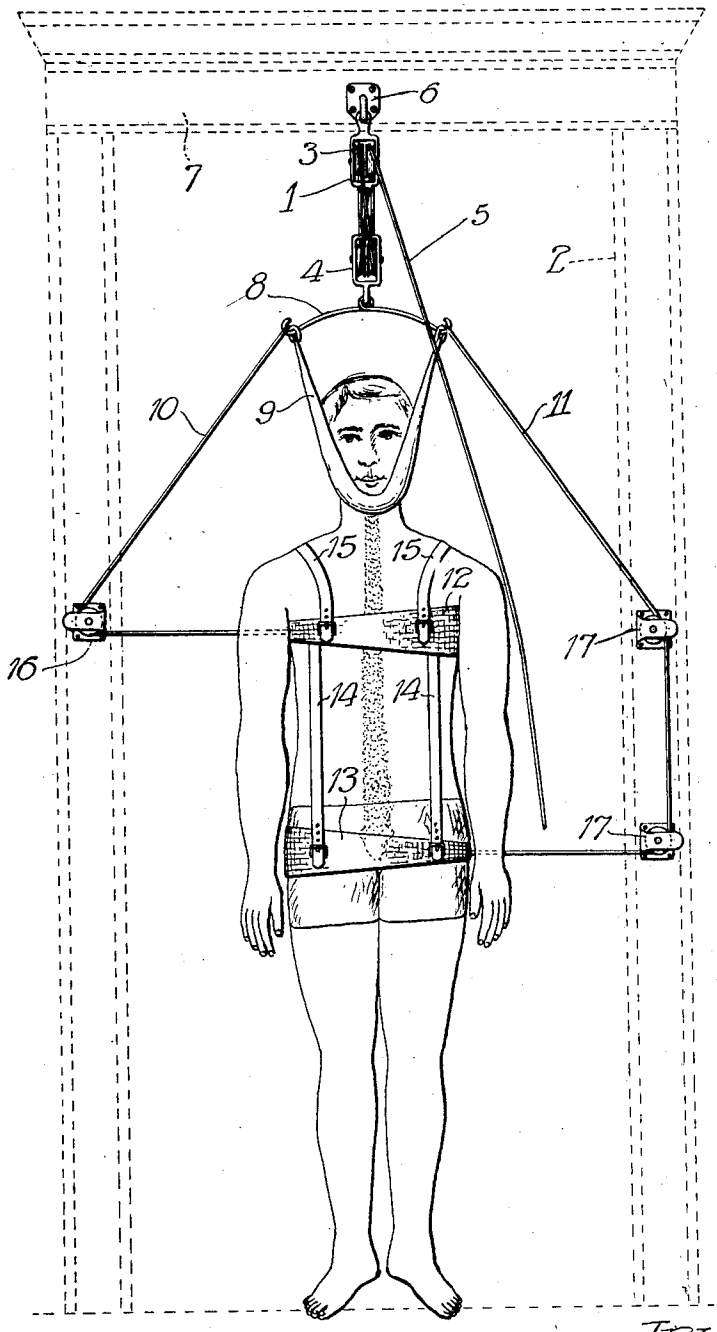
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APPARATUS FOR RECTIFYING SPINAL DEFORMITIES.

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APPARATUS FOR RECTIFYING SPINAL DEFORMITIES.

1,347,913. Specification of Letters Patent. Patented July 27, 1920.

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To all whom it may concern:

Be it known that I, HAROLD J. RINK, a citizen of the United States of America, and a resident of Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Apparatus for Rectifying Spinal Deformities, of which the following is a specification.

The main objects of this invention are to provide an improved form of exercising apparatus for rectifying spinal deformities; to provide an improved form and arrangement of the parts of such apparatus whereby the manipulation of certain parts to exert a pull on the spine in a longitudinal direction will cause a simultaneous transverse pull on a certain part or parts of the spine; to provide such an improved arrangement of the parts of an apparatus of this kind whereby the transverse pull on said spine at different points may be in opposite directions depending upon the curvature or deformity of the spine; and to provide an exerciser of this type which is particularly suitable for use in a doorway or similar opening in a wall.

An illustrative embodiment of this invention is shown in the accompanying drawings wherein the improved apparatus of this kind is shown as applied to a man standing in a doorway which is indicated in dotted outline.

The improved form of exercising apparatus, as shown in the drawings, comprises a hoisting or stretching mechanism, a harness and sidewise pulling means. The apparatus is herein shown as mounted on a door-case in such a way that the patient may stand in the doorway and raise and lower, and apply sidewise pulls on his body.

The hoisting or stretching mechanism comprises a tackle 1, a bracket 8 and a sling 9. The tackle includes the usual pair of pulley blocks 3 and 4 and an operating rope 5, the free end of which is suspended in position to be grasped by the user. A hook 6 or other fastening means is fastened to the lintel 7 of the door-case to which the block 3 of the apparatus may be readily attached or removed. The bracket 8 consists of a piece of resilient heavy wire secured to the block 4. The sling 9 is made of suitable fabric or other material so constructed as to permit the insertion of the head.

The harness by means of which the sidewise pulls are applied to the body, comprises body bands or belts 12 and 13 constructed to embrace the trunk of the body and suspended on the body one above the other by a plurality of straps 14 and 15. The connection of the straps 14 and 15 to the bands is made adjustable so as to control the relative positions of the bands on the patient.

The means by which the sidewise pull is communicated to the harness, comprises a pair of cables 10 and 11, and pulleys 16 and 17. The upper ends of the cables are secured to the hooked ends of the hanger 8, and the lower or other ends are connected to the respective bands 13 and 14 at opposite sides of the body. The intermediate portions of these cables run over pulleys 16 and 17 respectively which are attached to the opposite sides of the door-casing, or other frame with which the apparatus is to be used.

The device herein illustrated is used in substantially the following manner:

To correct a lateral curvature of the spine, the body is positioned as shown in the drawings, and the shoulder straps 15 are adjusted so as to position the belt 12 at the point of curvature. The supporting straps 14 are then adjusted so as to position the lower belt 13 at the hips of the body or at a point of opposite curvature with respect to that at the point where the belt 12 is placed. When the belts have been properly adjusted, the patient pulls on the free end of the rope 5, by means of which the body is stretched and, if desired, elevated from the floor. At the same time, the cables and their respective body bands exert a pull on the trunk in opposite directions transverse to the pull on the spine. If the spine, to be rectified, is curved toward the left-hand side of the body, the person is positioned with respect to the apparatus so that the cable 12 exerts a pull from the right-hand side of the trunk, as shown in the drawings. If the curvature of the spine is toward the right-hand side of the trunk, the body faces in a directly opposite direction from that shown in the drawings. The apparatus may also be used to rectify a spine which is curved toward the front or rear of the body, in which case the body faces one side of the door-case and the cables 10 and 11 are secured to the belts so as to exert a pull from the front and rear of the body instead of from the sides.

The apparatus is also adapted to be used by a person lying flat, in which case the

tackle 1 may be secured to the head of the bed or table and the pulleys 16 and 17 may be secured to the side rails or other suitable supports. The feet of the person would, in such case, be held in suitable slings secured to the foot of the bed or table.

Although but one specific embodiment of this invention has been herein shown and described, it will be understood that numerous details of the construction shown may be altered or omitted without departing from the spirit of this invention as defined by the following claims.

I claim:

1. An apparatus of the class described, comprising mechanism adapted for attachment to an extremity of the body and to be used for exerting a pull on the spine in a longitudinal direction, and means adapted for attachment to the body adjacent to one extremity of the spine and to be used for exerting a pull on said spine in a transverse direction, said mechanism and means being arranged so as to be manipulated in unison.

2. An apparatus of the class described, comprising mechanism adapted for attachment to an extremity of the body and to be used for exerting a pull on the spine in a longitudinal direction, and means adapted for attachment to the body adjacent to one extremity of the spine and to be used for exerting a pull on said spine in a transverse direction, said mechanism and means being connected together in such manner that the manipulation of said mechanism will actuate said means.

3. An apparatus of the class described, comprising mechanism adapted for attachment to an extremity of the body and to be used for exerting a pull on the spine in a longitudinal direction, and means adapted for attachment to the body adjacent to one extremity of the spine and to be used for exerting a pull on said spine in a transverse direction, said mechanism and means being connected together in such manner that the manipulation of said mechanism will simultaneously actuate said means and thereby produce simultaneous strains on the spine in longitudinal and transverse directions.

4. An apparatus of the class described, comprising mechanism adapted for attachment to an extremity of the body and to be used for exerting a pull on the spine in a longitudinal direction, and means adapted for attachment to the body at a plurality of points along the spine and to be used for simultaneously exerting a pull on said spine at several points in opposite transverse directions, said means being connected to said mechanism in such manner that the manipulation of said mechanism will actuate said means.

5. The combination with a supporting frame of an apparatus for rectifying spinal curvature, comprising a tackle adapted to be secured to one end of said frame, a sling attached to said tackle and adapted to be fastened to one end of the body of the patient whereby said tackle may be manipulated for exerting a pull on the spine in a longitudinal direction, a harness adapted to embrace the body of the patient, a cable having one end thereof secured to said tackle and the other end secured to said harness and an intermediate portion slidingly engaging one side of said frame, whereby the manipulation of said tackle will simultaneously actuate said cable to exert a pull on the body in a transverse direction.

6. The combination with a supporting frame of an apparatus for rectifying spinal curvature, comprising a tackle adapted to be secured to one end of said frame, a sling attached to said tackle and adapted to be fastened to one end of the body of the patient whereby said tackle may be manipulated for exerting a pull on the spine in a longitudinal direction, a harness adapted to embrace the body of the patient, and a pair of cables slidingly connected to the opposite sides of said frame and having one end of each secured to said tackle and the other end of each connected to said harness at opposite sides of the body and at points spaced apart longitudinally of the body, whereby the manipulation of said tackle will simultaneously actuate said cables so as to exert a pull on certain parts of the body transversely of the spine in respectively opposite directions.

7. The combination with a supporting frame of an apparatus for rectifying spinal curvature, comprising a tackle adapted to be secured to one end of said frame, a bracket mounted on said tackle, a sling attached to said bracket and adapted to be fastened to one end of the body of the patient whereby said tackle may be manipulated for exerting a pull on the spine in a longitudinal direction, a harness adapted to embrace the body of the patient, and a pair of cables slidingly connected to the opposite sides of said frame and having one end of each secured to said bracket and the other end of each connected to said harness at opposite sides of the body and at points spaced apart longitudinally of the body, whereby the manipulation of said tackle will simultaneously actuate said cables so as to exert a pull on certain parts of the body transversely of the spine in respectively opposite directions.

Signed at Chicago this 18th day of December, 1919.

HAROLD J. RINK.