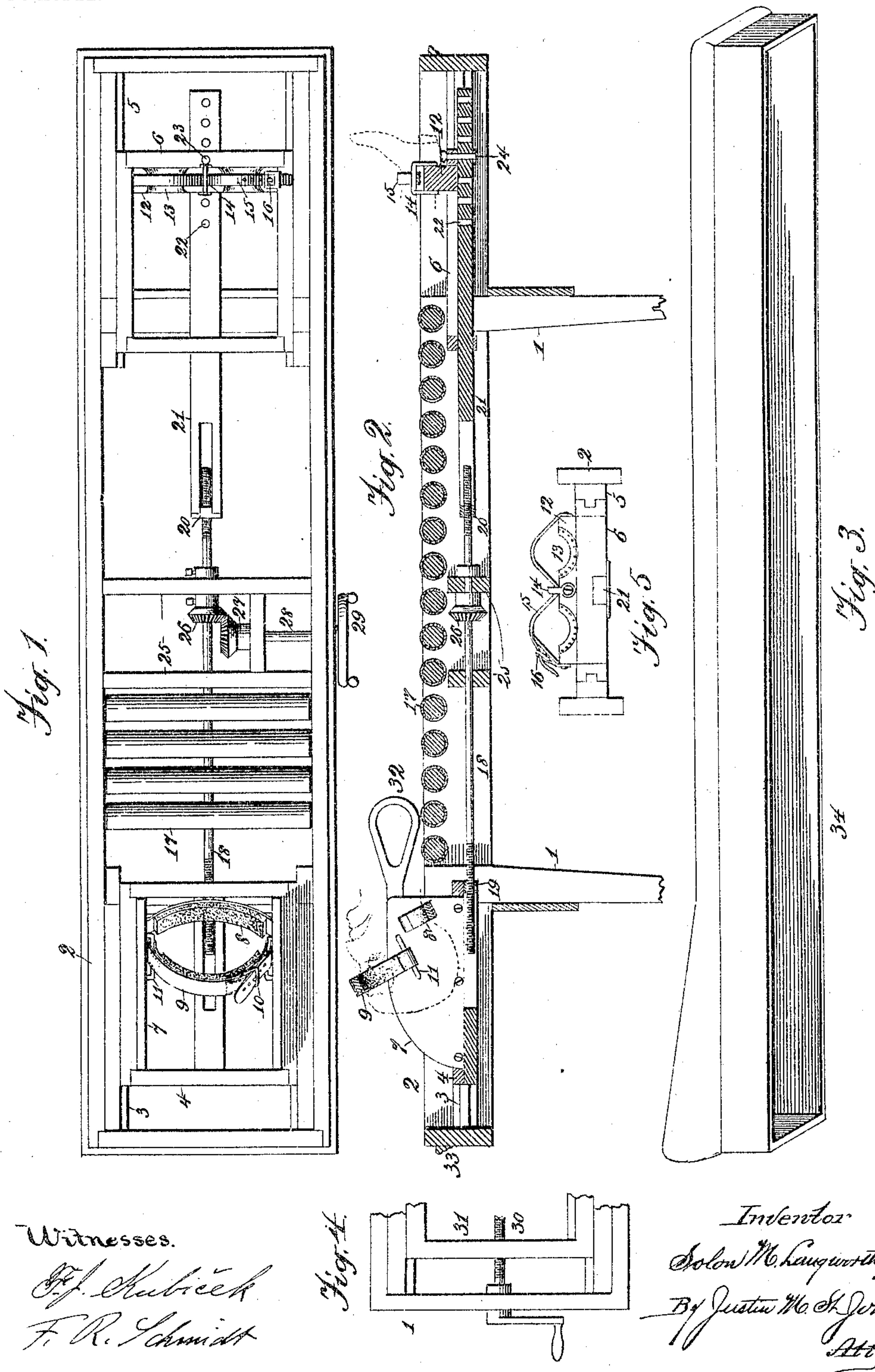


No. 776,335.

PATENTED NOV. 29, 1904.

S. M. LANGWORTHY.
VERTEBRAL STRETCHER.
APPLICATION FILED MAY 4, 1904.

NO MODEL.



UNITED STATES PATENT OFFICE.

SOLON M. LANGWORTHY, OF CEDAR RAPIDS, IOWA.

VERTEBRAL STRETCHER.

SPECIFICATION forming part of Letters Patent No. 776,335, dated November 29, 1904.

Application filed May 4, 1904. Serial No. 206,424. (No model.)

To all whom it may concern:

Be it known that I, SOLON M. LANGWORTHY, a citizen of the United States, residing at Cedar Rapids, in the county of Linn and State of Iowa, have invented certain new and useful Improvements in Vertebral Stretchers, of which the following is a specification.

This invention relates to the treatment of the vertebral column for affections peculiar to it, and more particularly distortions or compression of the intervertebral cartilages.

The object of the invention is to provide simple, convenient, and easily-operated mechanism whereby the vertebral column may be stretched or extended and kept in that position so long as circumstances may require with a view to relieving pathological conditions due to abnormal or natural compression of the cartilages and the possible restoration of the subject to health and strength.

The invention, which is simple, will be clearly understood from the description and claims following, reference being had to the accompanying drawings, in which—

Figure 1 is a plan view of my vertebral stretcher, but with some of the parts removed the better to show its construction. Fig. 2 is a central longitudinal section of the same complete. Fig. 3 is a removable top by which the machine may be quickly converted into an operating-table. Fig. 4 is a fragmentary view showing stretching mechanism for one end only. Fig. 5 is an end view showing the device for holding the patient at the ankles.

On suitable legs 1 is mounted a rectangular frame 2, provided with guides 3 for the head-carriage 4 and similar guides 5 for the foot-carriage 6. In the main these carriages are similar, but differ in the means for attaching to the head and feet, respectively, of the patient under treatment. The head-carriage is provided with side boards 7. Near one end is attached a padded strap 8, forming a support for the head and adapted, in connection with the frontal strap, to be described presently, to grip the head at the posterior base of the skull. Another strap, 9, suitably padded, embraces the forehead, as shown. This strap is provided with a buckle 10 or the like for adjustment to different-sized heads. Pro-

vision is also made for adjustment with respect to the strap 8, the strap 9 being looped in stirrups 11, attached to the side boards. This forms a very secure as well as comfortable fastening for the head and avoids the possibility of injuring teeth or jaws, as might happen if the attachment were below the jaws.

To the foot-carriage is secured a block 12, hollowed at 13 to take the patient's ankles and padded to prevent discomfort. Between the hollows is a stirrup 14, and under this is passed a strap 15, fastened to the block at one end. To the other end of the block is secured a short strap with a buckle 16, and by means of these the ankles are fastened securely in position.

In the main frame between the carriages is mounted a series of padded rollers 17, on which the body of the patient rests. The rollers give free movement of the body longitudinally and make the stretching operation much easier than if it rests on a plane surface.

In the preferred construction, shown in the principal figures, both the head and foot carriages are made movable and are moved by means of a right-and-left screw 18, engaging nuts 19 and 20, attached to the head and foot carriages, respectively. In the latter case the connection is to a slide-bar 21, provided with holes 22, registering with a hole 23 in the foot-carriage and adjustable therein by means of a pin 24. By this means the machine is quickly adjusted to the height of different persons. The screw is journaled in the cross-bars 25 and is provided with a miter-gear 26, meshing with a similar gear 27 on a short cross-shaft 28. This has a crank-wheel 29, which in practice is within easy reach of the patient, who may thus apply his own treatment, if he desires, regulating it to the limits of his capacity therefor. A simpler type is illustrated in Fig. 4, having but a single screw 30 to engage one movable carriage, the other being fixed. As it is not important whether the movable carriage be at the head or foot, it may be designated by the number 31. To the head-carriage is also attached a pair of stirrups 32, one only being shown, but it being understood that the other is attached to the opposite side board in the same way. These stirrups take the patient's

arms at the armpits and serve instead of the head connection when all the stretch necessary is below the shoulders or as a means of varying the connection for the greater comfort of the patient.

The outside of the frame is provided with a ledge 33, which may be an ornamental band of molding. This serves as a support for the upholstered top 34 to fit down over the frame, concealing the mechanism and converting it into an operating-table for general use.

By means of this device it is possible to apply the treatment in gradually-lengthening periods, and so eventually permit nature to effect a restoration.

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

1. In a vertebral stretcher, the combination with means for holding the head or feet, of a movable carriage, means for attaching the opposite extremity of the body thereto, and a screw engaging said carriage.

2. In a vertebral stretcher, the combination of movable carriages at the head and foot, a supporting-frame therefor, means for attaching the patient's head and feet to said carriages, and a right-and-left screw engaging said carriages, with means for turning the same.

3. In a vertebral stretcher, the combination of a suitable frame provided with carriage-guides, carriages mounted to slide thereon, fasteners for the head and feet of the patient attached to said carriages, respectively, a right-and-left screw engaging with the carriages, a cranked cross-shaft, and miter-gears connecting the same operatively with the screw.

4. In a vertebral stretcher, the combination of a supporting-frame, a body-support composed of a closely-set series of rollers, and

means for extending the spinal column, substantially as described.

5. In a vertebral stretcher, having means for holding the patient's feet, a sliding head-carriage, a screw engaging the same, and a connection for the head to said carriage, comprising a lower strap to engage the head at the base of the skull, and an overstrap to engage the forehead.

6. In a vertebral stretcher, having a suitable frame and means for holding the patient's feet, a carriage sliding in said frame, means for forcibly moving the same, and a head-hold, comprising an understrap to take the base of the skull, an overstrap to engage the forehead, and stirrups to connect said strap adjustably with said carriage.

7. In a vertebral stretcher, the combination with a supporting-frame and means for holding the patient's head, of a sliding foot-carriage mounted in said frame, a screw to move the same, a slide-bar connecting with said screw, and means for adjusting said bar with respect to the carriage.

8. In a vertebral stretcher, the combination with a supporting-frame and means for holding the patient's head, of a foot-carriage, a hollowed ankle-block attached thereto, a stirrup between the hollows, and a holding-strap passing from the ends of the block under said stirrup.

9. In a vertebral stretcher, the combination of a supporting-frame, means for holding the patient's feet, a sliding carriage, a screw engaging the same, and arm-stirrups attached to said carriage.

In testimony whereof I affix my signature in presence of two witnesses.

SOLON M. LANGWORTHY.

Witnesses:

F. J. KUBICEK,
J. M. ST. JOHN.