

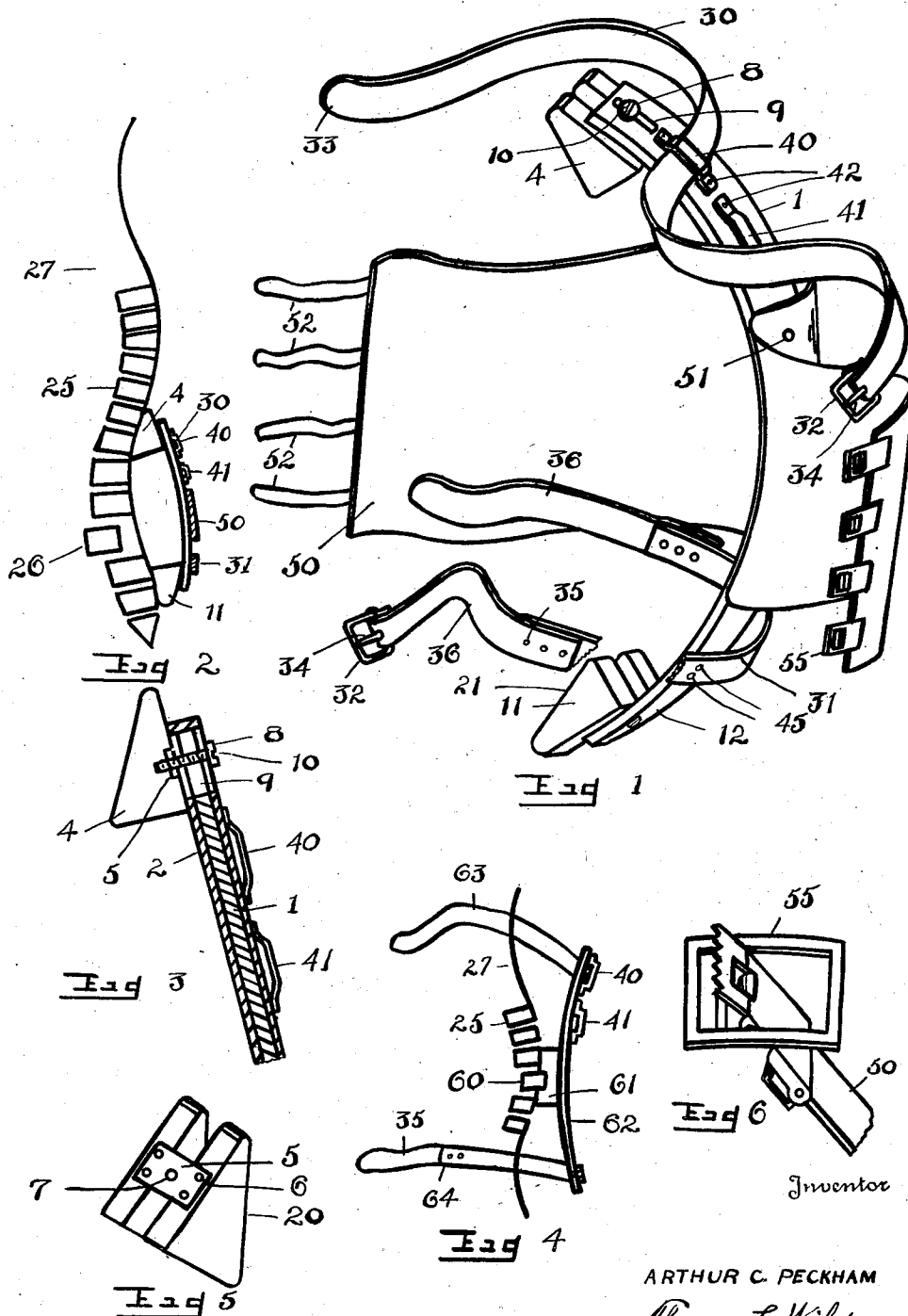
May 30, 1939.

A. C. PECKHAM

2,160,709

SEPARATOR FOR ADJUSTING THE HUMAN VERTEBRAE

Filed March 13, 1936



Inventor

ARTHUR C. PECKHAM

Thomas L. Wilder

Attorney

UNITED STATES PATENT OFFICE

2,160,709

SEPARATOR FOR ADJUSTING THE HUMAN VERTEBRAE

Arthur C. Peckham, Watertown, N. Y.

Application March 13, 1936, Serial No. 68,676

1 Claim. (Cl. 128—78)

My invention relates to an adjustable spine brace and I declare the following to be a full, clear, concise and exact description thereof sufficient to enable anyone skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawing in which like reference characters refer to like parts throughout the specification.

The object of the invention is to produce a spinal brace that will exert pressure at two different locations on the spine, whereby to effect a stretching of the spine or what is known in medical science as a hyper extension or hyper flexion of the spine. Furthermore, this pressure will effect a specific immobilization and thereby allow for correction of the vertebrae in the spine in any area from the sacrum to the occiput.

It is a well known fact that due to abnormal conditions from time to time vertebrae in the spinal column become misplaced, that is, either moved too far in or too far out of alignment with the contiguous vertebrae. If under these conditions a stretching or pressure is applied to the spine in opposite directions the contiguous vertebrae will separate and thereby allow the unaligned vertebra to move back into alignment. The brace will also be corrective in spondylolisthesis, kiphosis, or abnormal pressure of one vertebra to another, fractures of the vertebrae and in any condition in which it is desired to relieve abnormal weight bearing between one vertebra and another, or any group of vertebrae and others.

The object will be more fully understood by the drawing in which:

Fig. 1 is a perspective view of the brace and its immediate belts for connecting the same to the body of the wearer.

Fig. 2 is a side elevation, parts being in section showing the brace applied to the wearer to correct for one of the vertebrae that is moved inward.

Fig. 3 is a detail enlarged view showing a central vertical section of the fragment of the brace.

Fig. 4 is a modification showing the brace inverted and applied to the body to correct for a vertebra that is moved outward.

Fig. 5 is a detail enlarged view showing a perspective of one of the parts employed.

Fig. 6 is a detailed enlarged view showing a perspective of a buckle employed.

Referring more particularly to the drawing the brace embodies a spring 1 made of flat piece of resilient metal and arched to form a concavo-

convex surface for a purpose hereinafter explained. Spring 1 is covered with some suitable material such as chamois, rubber, leather, or woven fabric 2, whereby the metal part will not come directly in contact with the body. There is attached to the upper end 3 of spring 1 twin pads 4, 4.

Pads 4, 4 are made preferably of gum rubber or some resilient material. They are held together in spaced relation to each other by a metallic plate 5 which is imbedded in the adjacent upper surfaces of pads 4, 4, whereby to be flush with the upper surfaces, and held thereto by vulcanizing or rivets 6. A screw threaded aperture 7 is made in plate 5 and is engaged by threaded bolt 8, whereby to hold said twin pads 4, 4 to spring 1.

Pads 4, 4 are adjustable within certain limits relative to the end 3 of spring 1. The means embodies an elongated aperture 9 formed by an opening through spring 1 and its covering 2 in which aperture 9, bolt 8, that project there-through slides and engages plate 5 attached to pads 4, 4. The headed end of bolt 8 has a slot 10 for application of a screw driver, whereby to turn said bolt and thereby draw plate 5 tightly against the contiguous surface of spring 1, whereby to hold it rigidly in place.

Two similar twin pads 11, 11 are mounted to the lower end 12 of spring 1 unless pads are to be applied to sacrum in which instance it will be a single pad rather than a twin pad.

Pads 4, 4 and pads 11, 11 are approximately triangular in shape, whereby the outer or free surfaces 20 of pads 4, 4 and 21 of pads 11, 11 when placed in contact with any part of the vertebrae from the sacrum to the occiput and pressure inward is applied at its central portion to spring 1 will cause pads 4, 4 and 11, 11 to exert a force in opposite directions on the spine, whereby to aid in separating the vertebrae 25. This force exerted on the spine to separate the luxated or sub-luxated vertebrae 25 which is equivalent to a pull on either end of the spine will assist or allow the unaligned vertebra 26 to move back into normal position as shown in Fig. 2.

The means for attaching spring 1 and its connecting pads to the body 27 of the wearer embodies belts 30 and 31. The upper belt 30 has the usual buckle 32 which engages end 33 of belt 30. Belt 30 is made of heavy rubber. When end 33 thereof engages buckle 32 and drawn to a predetermined tightness about the body, tongue 34 will pierce a hole through the adjacent part of

end 33, whereby to hold said belt to predetermined tightness about the body.

Belt 30 can be adjusted relative to its position on spring 1 by means of loops 40, 41. Loops 40, 5 41 are attached by rivets 42 and adjacent the upper end 3 of spring 1.

The lower belt 31 is made of metal and encircles the body about half way and to the ends of which are attached by rivets 35 heavy rubber belts 36, 10 36. The metal band 31 is permanently attached, however, by rivets 45, or otherwise adjacent to the lower end 12 of spring 1.

In addition to belts 30, 31 there is also a wider belt 50 which is attached by rivets 51 or otherwise 15 to spring 1. One end of wide belt 50 has tabs 52, four or more in number which engage automatic friction holding buckles 55, whereby to draw the central portion of spring 1 to any predetermined tightness against the vertebrae 25 of the spine.

In operation the brace will be applied to that 20 portion of the spine in which one or more of the vertebrae 26 are displaced as for instance, that shown in Fig. 2. It will be observed that when belt 50 is tightened to a more or less degree about 25 the body of the wearer, spring 1 will be forced more or less toward a flat plane, whereby its upper end 3 and its lower end 12 will tend to separate or move away from each other and thereby force pads 4, 4 and 11, 11 in opposite 30 directions. This force exerted on pads 4, 4 will tend to stretch that portion of the spinal column therebetween, whereby the vertebrae 25 will sep-

arate and create an opening between the same to allow the displaced vertebrae 26 to move in towards normal position in the spine.

The modification shown in Fig. 4 is for correct- 5 ing a vertebra as 60 which has moved not inwardly as shown in Fig. 2 but outwardly. In this modification spring 1 is reversed. Twin pads 61, 61 made of a resilient gum rubber or other suitable substance is attached to the concavo-convex 10 surface adjacent the central part of spring 62. In this instance belts 63 and 64 will be employed similar to the arrangement of belts 30 and 31 in the former construction. Belts 63 will be adjust- 15 able relative to its position on spring 1 and belt 64 will be permanently attached and be made of metal to encircle the body about half way with heavy rubber belts 35, 35 attached thereto to complete the circle.

Having thus described my invention what I 20 claim as new and desire to secure by Letters Patent is as follows:

A separator for adjusting the human vertebrae, consisting of a resilient arched member of a length of a plurality of vertebrae, having pads 25 at the extremity thereof on the concave side of said arched member and a belt on the resilient member overlying the convex side approximately at the middle thereof for attachment to the body, whereby tightening said belt the pads will separate and spread the vertebrae between the pads. 30

ARTHUR C. PECKHAM.