

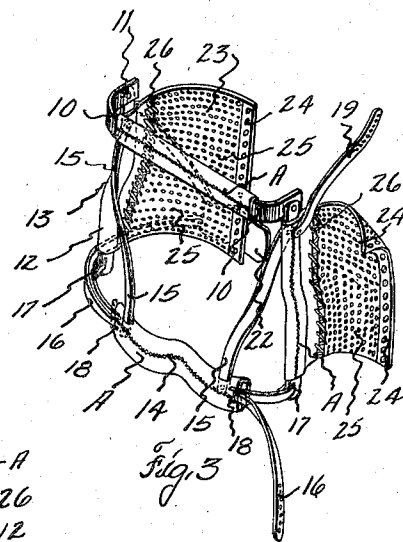
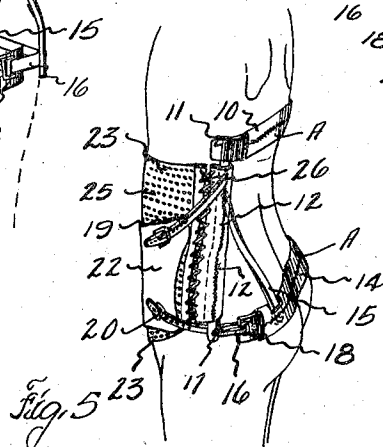
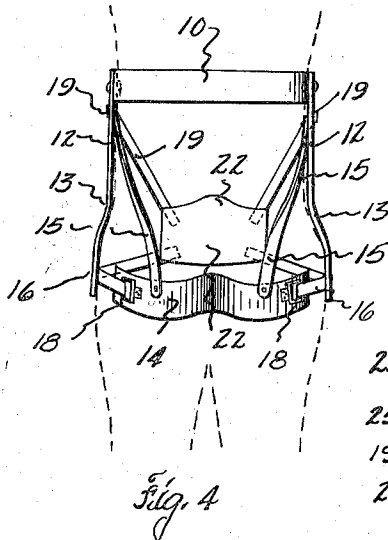
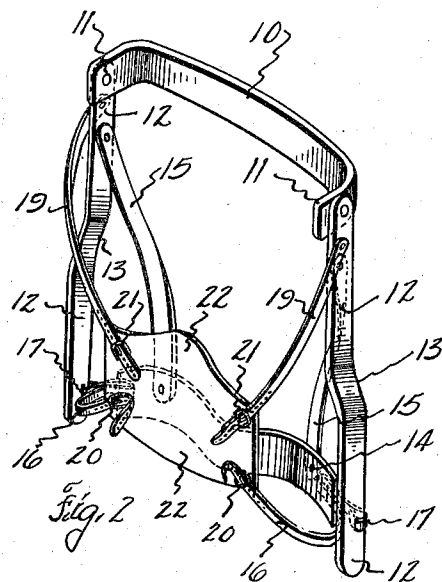
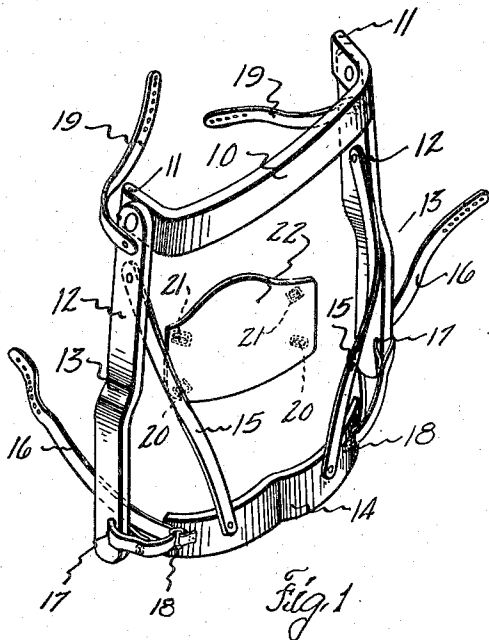
June 13, 1939.

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2,162,189

BRACE

Filed Jan. 30, 1936



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UNITED STATES PATENT OFFICE

2,162,189

BRACE

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Application January 30, 1936, Serial No. 61,566

5 Claims. (Cl. 128-78)

This invention relates to new and useful improvements in braces.

One object of the invention is to provide an improved brace, which when applied to the body will correct the posture to overcome or alleviate lordosis or anterior curvature of the spine.

An important object of the invention is to provide an improved brace which is designed to correct lordosis of the lumbo-sacral region of the spine by accomplishing a forward roll of the pelvis which restores the lower lumbar spine to its normal position.

Another object of the invention is to provide an improved brace which when applied to the body will exert a pressure against three points on the body, namely, at a point approximately 2 inches below the angle of the scapula, at the third or fourth sacral segment, and at the lower abdomen below the umbilicus.

Still another object of the invention is to provide an improved brace which will shift the weight of the trunk from the posterior margin of the inter-vertebral disks of the lumbar and lumbo-sacral spine, to the center of the disk, or the portion in which the nucleus pulposus is located, thereby reducing subluxation of the facets and restoring the diameter of the foramina through which the segmental nerves traverse.

A further object of the invention is to provide a brace of the character above described which is adaptable to persons within a given range of size, whereby said brace may be made in standard sizes, thus eliminating the necessity of fitting each person individually.

Still another object of the invention is to provide an improved brace which is so constructed that when applied to the body, the brace is more or less flexible in that it will permit movements of the body, in the corrected position, but which will prevent movement or posture in an incorrect position.

A construction designed to carry out the invention will be hereinafter described, together with other features of the invention.

The invention will be more readily understood from a reading of the following specification and by reference to the accompanying drawing, in which an example of the invention is shown, and wherein:

Figure 1 is a perspective view of the rear of a brace, constructed in accordance with the invention,

Figure 2 is a perspective view of the front thereof,

Figure 3 is a view, similar to Figure 1, show-

ing the metallic members of the brace which contact the body, suitably covered,

Figure 4 is a rear elevation of the brace, showing the outline of the human body to which the brace is applied, in dotted lines, and

Figure 5 is a perspective view of the outline of a human body showing the three points of contact of the brace.

In the drawing, the numeral 10 designates an upper bracing bar which is slightly curved throughout its length so as to fit the contour of the patient's back. The ends 11 of the bar are turned inwardly so as to lie adjacent the ribs. A pair of vertical side standards 12 have their upper ends pivotally secured to the bent ends 11 of the bar 10. These standards are offset slightly at 13 so as to lie close to the sides of the body. It is noted that the lower ends of said standards are free.

A lower bracing member 14 is spaced from the upper bar by inclined metal straps 15. The straps have their upper ends pivoted to the standards 12 near the upper end thereof, while the lower ends of the straps are pivotally secured to the lower bracing member near its outer ends. The member is curved inwardly and upwardly from its central portion, as is clearly shown in Figures 1, 3 and 4, whereby said member will fit the contour of the body. The bar 10, standards 12, and member 14 may be covered by leather A, as shown in Figure 3, or by other material found suitable for the purpose.

The lower ends of each standard 12 are connected with the adjacent end of the lower bracing member 14 by leather or other flexible straps 16. Each strap has one end secured in a slot 17 and has its other end extending rearwardly and passed through a loop 18 fastened on the outer side of the member 14. The strap then extends forwardly from the bracing member and passes between the standard 12 and the body of the person to which the brace is applied (Figure 5). Similar straps 19 have one end fastened to the upper end of the standards 12 and extending forwardly and downwardly.

The forward end of the straps 16 and 19 are arranged to be engaged in buckles 20 and 21 respectively which are secured to the front side of a substantially rectangular retaining pad 22. As is clearly shown in Figure 2, the buckles are secured at the corners of said pad.

In applying the brace to a patient, the flexible straps 16 and 19 are unbuckled from the pad 22, and the upper brace bar 10 is positioned so as to engage the back of the patient approximately two

inches below the scapula. The standards 12 will, of course, be adjacent the sides of the body with the lower brace member 14 overlying the lumbo-sacral region of the spine. The flexible straps are then drawn tight and their forward ends buckled to the pad 22. It is noted that due to the pivoted connection between the bar 10 and standards 12, and between said standards, metallic straps 15 and lower bracing member 14, the tightening of the straps will cause the brace to exert a pressure at three points on the body of the patient. The upper bar will press against the back at a point approximately two inches below the scapula, while the lower member 14 will press against the third or fourth sacral segment. At the same time, the pad 22 will press against the front abdomen below the umbilicus.

The application of this three point pressure swings the pelvis forwardly, which shifts the weight of the trunk from the posterior margins of the inter-vertebral disks of the lumbar and lumbo-sacral regions to the center of the disks, thereby reducing the subluxation of the facets and restoring the diameter of the foramina through which the segmental nerves traverse. It is the forward shifting of the pelvis which restores the lumbar spine to its normal position, and thus it will be seen that the brace will correct lordosis or the anterior curvature of the spine.

The pivoted connections between the parts not only makes for the application of pressure at the proper points but further gives the brace a limited amount of flexibility, whereby said brace may be applied to a number of persons within a limited range of size. The construction of the brace is such that the person may bend forwardly or move correctly. However, the brace prevents the vertebrae from movement into an incorrect position. Further, the flexibility also adds to the comfort of the wearer.

In some cases, where the brace is worn by a person having a large abdomen, the pad 22 may not be wide enough to prevent the abdomen from protruding when the straps 16 and 19 are tightened and pressure applied. In such cases, a wide band 23, made of rubber, or other elastic material, may be secured to the standards 12, and extend forwardly therefrom. The band is split being provided with snaps 24, or other fasteners along its split edges, whereby the band may be fastened across the abdomen. The band has a plurality of openings 25 in its surface to permit air to pass therethrough and if desired, lacing 26 may be provided in said band to make the same readily adjustable.

What I claim and desire to secure by Letters Patent, is:

1. A brace adapted to be applied to the body of a patient including, a bracing bar extending transversely across the back for engaging the lower dorsal spine, a bracing member for en-

gaging the sacrum, means pivoted to the bar and extending downwardly therefrom so as to lie adjacent to the sides of the body, means connecting said means and the bracing member and being pivoted to each, means for exerting a pressure against the lower abdomen, and a flexible connection between the lower ends of the first named means, bracing member and last named means, whereby tightening of said connection will tighten all the parts simultaneously.

2. A brace adapted to be applied to the body of a patient including, a bracing bar for engaging the lower dorsal spine, a pair of standards at each end of said bar and having their upper ends pivoted to the bar, a lower bracing member for engaging the sacrum, metallic straps connecting said standards and member and pivoted to each, means for engaging the lower abdomen connected to the lower ends of the standards and bracing member, and an elastic band carried by the standards for engaging the abdomen of the patient, said band having a width greater than the means engaging the lower abdomen.

3. A brace adapted to be applied to the body of a patient including, a bracing bar extending transversely across the back for engaging the lower dorsal spine, a pair of standards at each end of said bar and having their upper ends pivoted to the bar, a lower bracing member for engaging the sacrum, metallic straps connecting said standards and member and pivoted to each, a flexible pad for engaging the lower abdomen connected to the ends of the standards and bracing member, and flexible connections between said pad and the ends of the standards and member.

4. A brace including, a bracing bar extending transversely across the back of a patient for exerting a pressure on the lower dorsal spine, a transverse bracing member spaced below the bar for exerting a pressure on the sacrum, a pair of standards depending from the ends of the bracing bar, metallic straps extending from the standards to the bracing member and being fastened to said member at a point from its ends, and a pad for exerting pressure on the abdomen connected to the lower ends of the standards and to the ends of the member and also connected to the standards adjacent their point of connection with the bracing bar.

5. A brace adapted to be applied to the body of a patient including, a single rigid member extending across the back of the patient for exerting a pressure on the lower dorsal spine, a second rigid member connected to the first member for exerting a pressure on the sacrum, a flexible element engaging the abdomen, and means for tightening the members and element to apply a pressure at such predetermined points.

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