Sept. 18, 1934. A. B. KENDRICK 1,974,283

SURGICAL BELT

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Fig. 1.

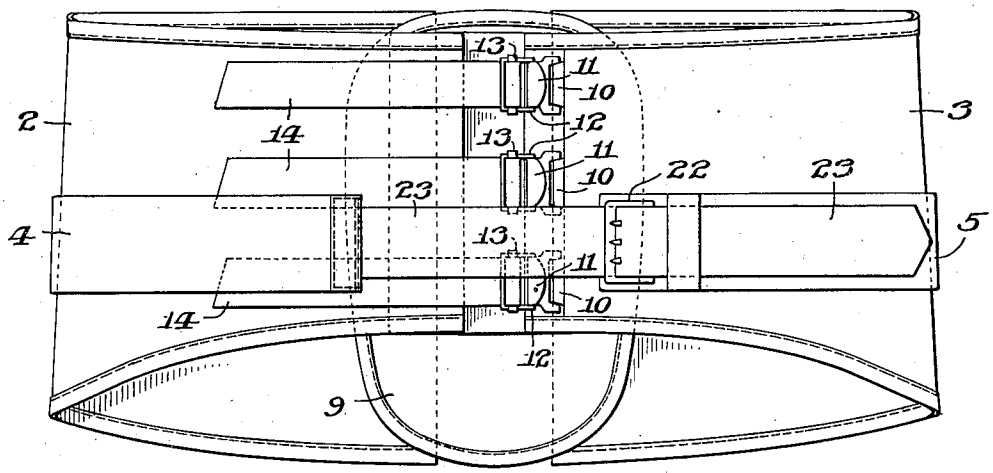


Fig. 2.

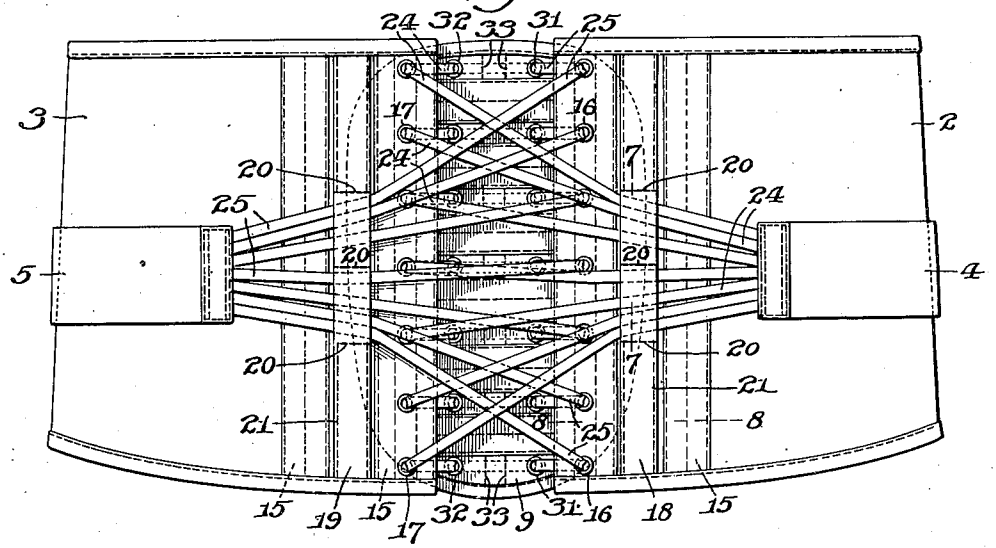
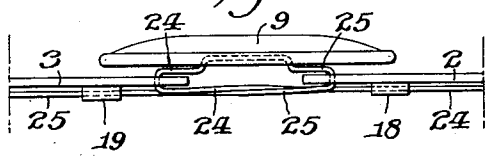


Fig. 3.



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Fig. 4.

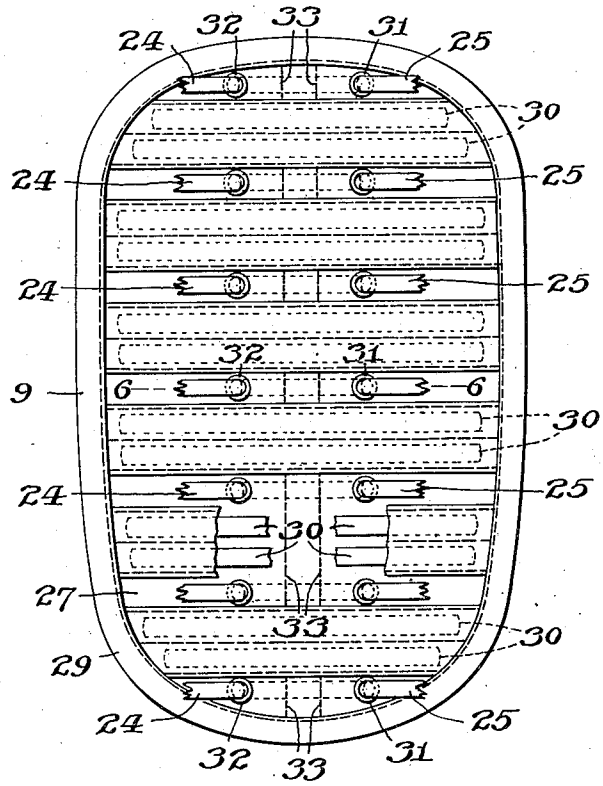


Fig. 5.

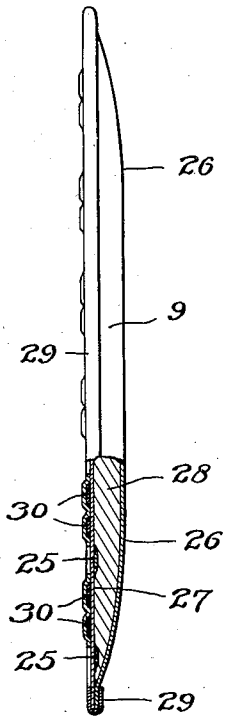


Fig. 6.

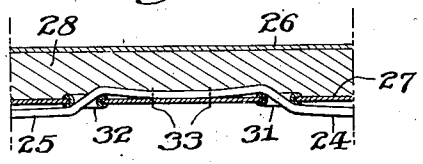


Fig. 7.

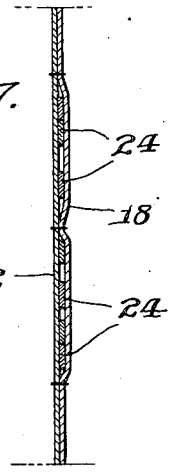
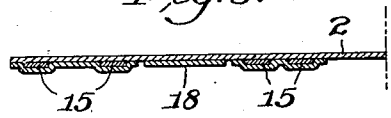


Fig. 8.



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UNITED STATES PATENT OFFICE

1,974,283

SURGICAL BELT

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Application June 13, 1933, Serial No. 675,524

7 Claims. (Cl. 128—78)

This invention relates to improvements in surgical belts or bandages and particularly to such devices which include pressure pads in the construction thereof for localizing or increasing the pressure in the region or regions where it is most desired in the treatment of the patient.

The invention employs two belt or bandage members provided with laces for adjustably connecting adjacent end portions thereof and provided with other suitable means for connecting the ends thereof which are remote from the laces; and the invention also employs a pressure pad which is located inwardly of the said end portions.

An object of the invention is to provide a novel construction and arrangement of parts whereby the pressure pad is carried by the laces which connect the adjacent end portions of the belt members, and whereby the said end portions may be adjusted relatively to each other and to the pad and drawn toward each other by the laces for causing the pad to effect the desired pressure when the device is in use.

Another object is to provide a belt member of novel and advantageous construction having means whereby the laces associated therewith are retained and guided in desired positions.

A further object is to provide a pressure pad of novel construction whereby the same is properly stiffened by resilient stays and whereby the laces which carry the same are advantageously connected thereto.

With the foregoing and related objects in view, the invention resides in the elements and the combinations of them hereinafter described and claimed.

In the accompanying drawings, illustrating the invention,

Figure 1 is a front view of a surgical belt, showing one form of embodiment of the invention.

Figure 2 is a back view thereof.

Figure 3 is a top view of the rearward portion of the belt.

Figure 4 is a back view of the pad, certain parts being partly broken away.

Figure 5 is a side view of the pad, partly in section.

Figure 6 is an enlarged section of the pad, on line 6—6 of Fig. 4.

Figure 7 is a section through the belt and laces, on line 7—7 of Fig. 2.

Figure 8 is a section through one of the rearward end portions of the belt, on line 8—8 of Fig. 2.

In the form illustrated in the drawings, the invention is embodied in a device or appliance of the kind which is known as a sacro-iliac belt or supporter for use in the treatment of sacro-iliac conditions.

Referring now to the drawings 2 and 3 designate two belt members, 4 and 5 two straps, and 9 a pressure pad.

The members 2 and 3 are formed of cloth or other suitable flexible material and they are constructed to embrace the respective sides of the patient and to form, with their connections, a complete belt which is adapted to extend entirely around the patient's body.

The forward end portion of the belt member 3 is provided with short tabs 10 carrying hooks 11 which are adapted to receive the loops 12 of buckles or fastening devices 13 adjustably carried by straps 14 which are connected to and extend from the forward end portion of the belt member 2. The hooks 11 and loops 12 thus provide a suitable means for detachably connecting the forward ends of the belt members.

The rearward end portions of the belt members 2 and 3 are provided with laterally spaced, transversely extending, resilient, stiffening stays 15 which are confined within enclosures formed between the fabric of the main portions of the members and strips of tape or fabric sewed thereon; and the rearward end portions of the members 2 and 3 are provided with transverse rows of eyelets 16 and 17, respectively, each of which is located between two stiffening stays of its member.

The rearward end portions of the belt members 2 and 3 are also provided with transversely extending strips of tape or fabric 18 and 19, respectively, which are sewed thereto by spaced lines of stitches 20 which extend transversely of the strips 18 and by lines of stitches 21 which extend longitudinally of the strips between the upper ends thereof and the upper stitches 20, and between the lower ends thereof and the lower stitches 20. It will now be understood that the strips of tape or fabric 18 and 19 provide the members 2 and 3, respectively, with openings which are formed between the lines of stitches 20 and between the tapes 18 and 19 and the bodices of the members 2 and 3, respectively, for the reception and guidance of laces which will be presently referred to.

The straps 4 and 5 are located outwardly of the belt members 2 and 3, respectively, and they extend longitudinally thereof. The forward end portion of the strap 5 is provided with a suitable buckle 22 which is adapted to engage the forward reduced end portion 23 of the strap 4 as a means

of adjustably connecting the forward ends of the straps.

Attached to and extending from the rearward end portions of the straps 4 and 5 are two sets of laces 24 and 25, respectively. The laces of the set 24 extend from the strap 4 through the guide openings provided by the tape 18 and thence to and through the eyelets 17 of the belt member 3 to the inner side thereof; and the laces of the set 25 extend from the strap 5 through the guide openings provided by the tape 19 and thence to and through the eyelets 16 of the belt member 2 to the inner side thereof.

The pressure pad 9 is located inwardly of the rearward end portions of the belt members 2 and 3, and the end portions of the belt members lap the side portions of the pad, and the sets of laces 24 and 25 are connected to the pad as will be presently described.

The pressure pad 9 may be of any suitable shape and size for its intended purpose. As herein shown, it is elongated transversely of the belt members 2 and 3 and it is shaped in outline as clearly illustrated in Fig. 4.

The pad 9 comprises inner and outer walls 26 and 27, respectively, formed of suitable textile material, relatively soft padding material 28 of suitable thickness interposed between the walls 26 and 27, and a binding tape or strip 29 embracing and sewed to the marginal edge portion of the walls 26 and 27.

The pad is stiffened by suitable stays 30 which are formed of resilient material and arranged in spaced pairs and extend transversely of the pad and across the stays 15 of the rearward end portions of the belt members 2 and 3. These stays 30 are confined within enclosures formed between the fabric of the wall 27 and strips of tape or fabric sewed thereon.

The outer wall 27 of the pad 9 has two spaced, substantially parallel rows of eyelets 31 and 32 therein which are located on the respective sides of the longitudinal center of the pad and between and adjacent to the transversely extending stays 30. The laces of the set 24 extend through the eyelets 32 to the interior of the pad 9, and the laces of the set 25 extend through the eyelets 31 to the interior of the pad, and the laces of the two sets 24 and 25 are secured to the wall 27 within the pad 9 by any suitable means. As herein illustrated, the laces of the set 24 are joined to and form combinations of the laces of the set 25 within the pad 9. The two sets of laces 24 and 25 are secured to the wall 27 in the region of the union of the sets by parallel lines of stitches 33 which extend longitudinally of the pad between the rows of eyelets 31 and 32.

It will now be understood that the laces 24 and 25 carry the pressure pad 9 and connect it to the rearward end portions of the belt members 2 and 3 in a manner to permit said end portions to be independently moved relatively to the pad and toward and from each other by permitting or causing the laces of the two sets 24 and 25 to slide through the eyelets 17 and 16 of the belt members 3 and 2, respectively.

In using the belt or appliance, the forward ends of the belt members 2 and 3 and the forward ends of the straps 4 and 5 are separated or opened, and the appliance is placed around the body of the patient to be treated with the pad 9 over or adjacent to the region of the sacrum where it is desired to apply the pressure. The loops 12 of the fastening devices 13 are then engaged with the hooks 11 to connect the forward ends of the belt members 2 and 3 and the buckles or devices 13 are adjusted on the straps 14 so that the entire belt or appliance fits the patient's body in a relatively loose condition.

The straps 4 and 5 are then grasped in the right hand and left hand, respectively, of the wearer or patient and the hands are then moved outwardly or away from each other to exert an outward pull on each of the straps 4 and 5. This outward pull causes the laces 24 and 25 to draw the rearward end portions of the belt member 2 and 3, respectively, toward each other over the outer wall of the pad and thus tighten the belt or appliance as a whole and cause the pad 9 to exert the desired pressure upon the body of the wearer. The pressure on the body produced by the pad 9 may be nicely regulated by the power which is applied to the straps 4 and 5 in drawing them apart; and, after the desired pressure has been produced, the free ends of the straps are moved toward each other around the front or forward portions of the belt members 2 and 3 and the reduced end portion 23 of the strap 4 is engaged with the buckle 22 and tightened sufficiently to connect the forward ends of the straps and preserve the desired pressure.

After the straps 14 have been properly adjusted with relation to the parts 13 carrying the loops 12 for the initial relatively loose fitting of the belt to the patient, it will not be necessary to adjust such straps each time the belt is applied to the patient; it being then merely necessary to engage the loops 12 with the hooks 11, and, thereafter tightening the belt by drawing the straps 4 and 5 outwardly and then forwardly and connecting them as previously explained.

The relative arrangement of the rearward end portions of the belt members 2 and 3 and the pressure pad 9 and the manner of connecting the sets of laces 24 and 25 thereto permits the adjacent ends of the belt members to move relatively to each other and to the pad 9 over the outer surface of the latter and thereby not only permits a comparable adjustment of the parts while the belt is being applied to the body, but also provides a novel appliance which may be worn with ease and comfort and advantageous results after it has been applied and properly tightened.

The strips of tape or other material 18 and 19 are located outwardly of the rows of eyelets 16 and 17 and between stiffening stays 15 of the belt members 2 and 3, and they not only provide the openings through which the sets of lacings 24 and 25, respectively, extend and are guided, but they also serve to maintain the straps 4 and 5 and the outer end portions of the sets of laces 24 and 25 extending therefrom on the sides of the belt where they belong adjacent to the belt members 2 and 3, respectively.

While I have herein shown and described my invention as embodied in a sacro-iliac belt or supporter, I desire it to be understood that I do not limit the invention to a belt or supporter of this particular character and that it may be embodied in any desired design of a belt or bandage to be applied to any part of the patient to be treated.

I claim:

1. In a surgical belt, the combination of two belt members having two adjacent end portions each provided with a transverse row of eyelets, and a pressure pad inwardly thereof, said end portions lapping the side portions of the pad and being movable relatively thereto toward and from each other, and each of said members having a strap associated therewith outwardly thereof and mov-

able relatively thereto toward and from the strap of the other member and having a set of laces connected thereto and extending therefrom to and through the eyelets of said other member and fixedly secured to said pad.

2. In a surgical belt, the combination of two belt members having two adjacent end portions each provided with a transverse row of eyelets, a pressure pad inwardly thereof and having two laterally adjacent rows of eyelets in the wall thereof which faces said end portions, said end portions lapping the side portions of the pad and being movable relatively thereto toward and from each other, and each of said members having a strap associated therewith outwardly thereof and movable relatively thereto toward and from the strap of the other member and having a set of laces connected thereto and extending therefrom to and through the eyelets of said other member and thence to and through the eyelets of a row thereof of the pad to the interior of the pad, and means for fixedly securing the laces of each set to the pad.

3. In a surgical belt, the combination of two belt members having two adjacent end portions each provided with a transverse row of eyelets, a pressure pad inwardly thereof and having two laterally adjacent rows of eyelets in the wall thereof which faces said end portions, said end portions lapping the side portions of the pad and being movable relatively thereto toward and from each other, and each of said members having a strap associated therewith outwardly thereof and movable relatively thereto toward and from the strap of the other member and having a set of laces connected thereto and extending therefrom to and through the eyelets of said other member and thence to and through the eyelets of a row thereof of the pad and being joined to and forming continuations of the laces of the strap of said other member, and means for fixedly securing the laces of each set to the pad.

4. A surgical belt pad comprising inner and outer flexible walls connected at their marginal edges, yieldable padding material between said walls, substantially parallel, spaced, resilient, stiffening stays located in enclosures formed in said outer wall, said outer wall having eyelets therein between said stays, belt connecting laces extending through said eyelets from the interior to the exterior of the pad, and means securing said laces to said outer wall.

5. A surgical belt pad comprising inner and outer flexible walls connected at their marginal edges, yieldable padding material between said walls, substantially parallel, spaced, resilient, stiffening stays located in enclosures formed in said outer wall, said outer wall having two spaced rows of eyelets therein, said rows extending transversely of the stays, and the eyelets being located between the stays, belt connecting laces having parts located within the pad and extending between said rows of eyelets and having other parts continuing from the first named parts through the eyelets of each row thereof to the exterior of the pad, and means for securing said laces to said outer wall between said rows of eyelets.

6. In a surgical belt, a pad comprising inner and outer flexible walls connected at their marginal edges, yieldable padding material between said walls, and substantially parallel, spaced, resilient, stiffening stays located in enclosures formed in said outer wall, said outer wall having eyelets therein between said stays; in combination with two belt members having two adjacent end portions lapping the side portions of the pad in slidable contact with the outer wall thereof, each of said end portions having a transverse row of eyelets therein and a strap associated therewith outwardly thereof and movable relatively thereto toward and from the strap of the other member and having a set of laces connected thereto and extending therefrom to and through the eyelets of said other member and thence to and through eyelets in the outer wall of the pad, and means for securing the laces of each set to the outer wall of the pad between it and the padding material within the pad.

7. In a surgical belt, a pad comprising inner and outer flexible walls connected at their marginal edges, yieldable padding material between said walls, and substantially parallel, spaced, resilient, stiffening stays located in enclosures formed in said outer wall, said outer wall having two spaced rows of eyelets therein extending transversely of the stays and having the eyelets thereof located between the stays; in combination with two belt members having two adjacent end portions lapping the side portions of the pad in slidable contact with the outer wall thereof, each of said end portions having a transverse row of eyelets therein and a strap associated therewith outwardly thereof and movable relatively thereto toward and from the strap of the other member and having a set of laces connected thereto and extending therefrom to and through the eyelets of said other member and thence to and through the eyelets of a row thereof of said outer wall and between the same and said padding material and forming continuations of the laces of the strap of said other member, and means for securing said laces to the outer wall of the pad.

ARTHUR B. KENDRICK.