Jan. 10, 1956 I. M. PEASE 2,730,096

BACK BRACE

Filed Nov. 29, 1952 2 Sheets-Sheet 1

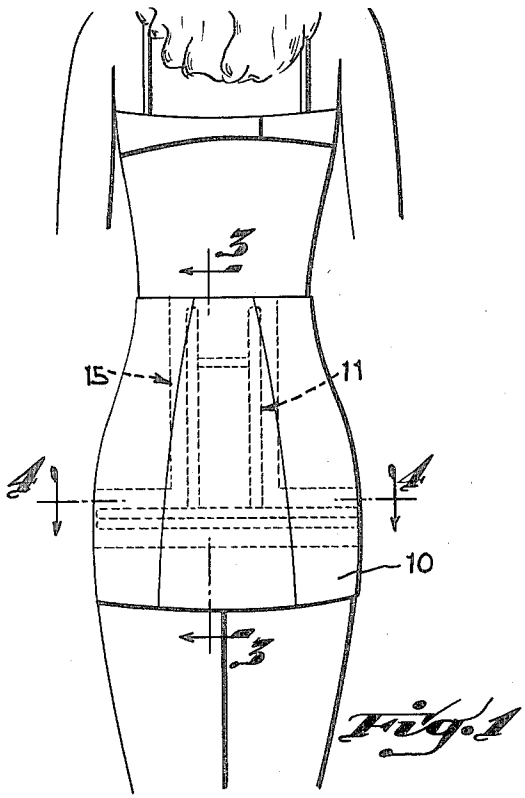


Fig. 1

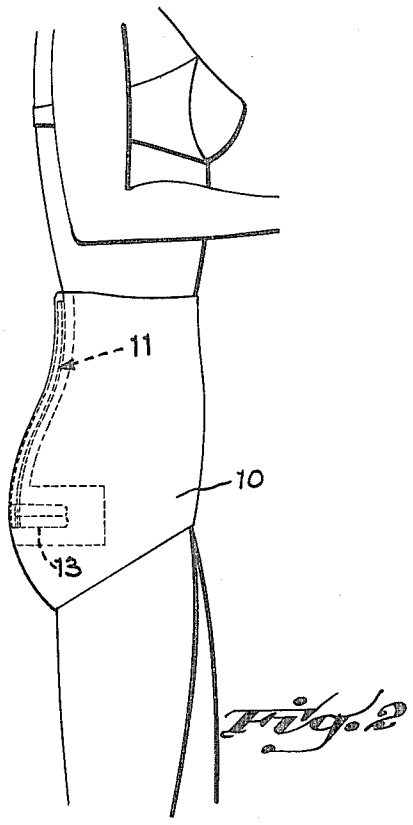


Fig. 2

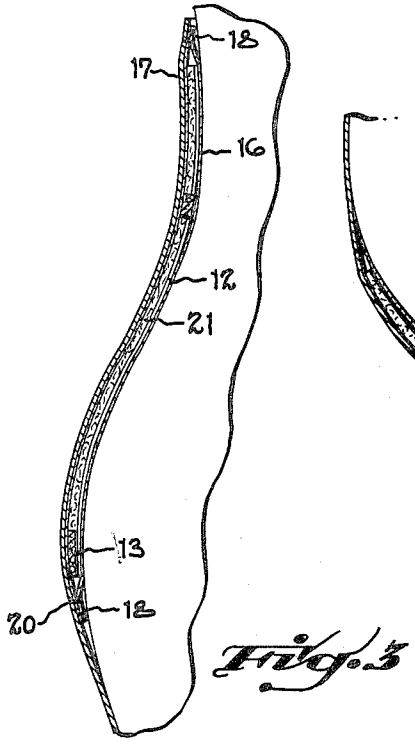


Fig. 3

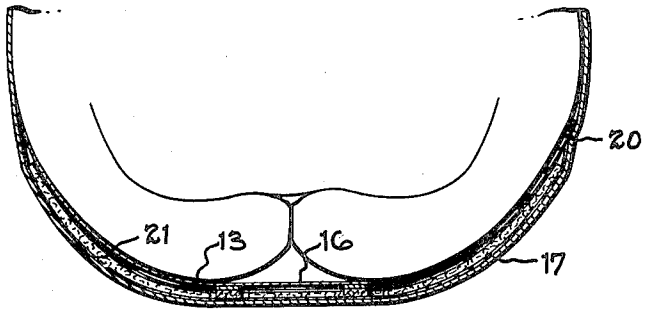


Fig. 4

INVENTOR.
Issac M. Pease.
BY
Wood, Herron & Evans.
ATTORNEYS.

Jan. 10, 1956 I. M. PEASE 2,730,096

BACK BRACE

Filed Nov. 29, 1952 2 Sheets-Sheet 2

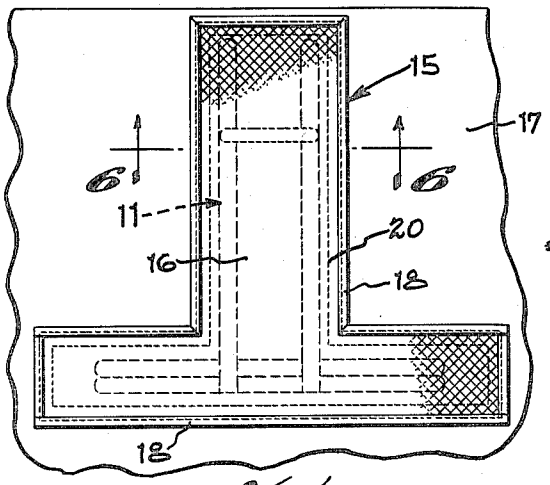


Fig. 5

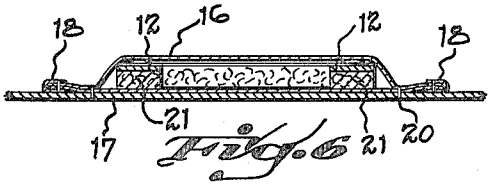


Fig. 6

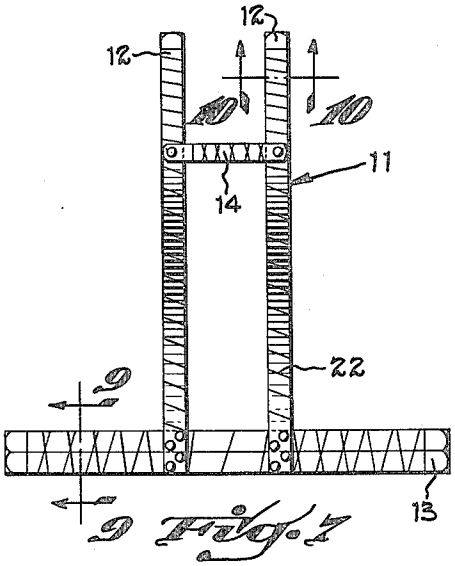


Fig. 7

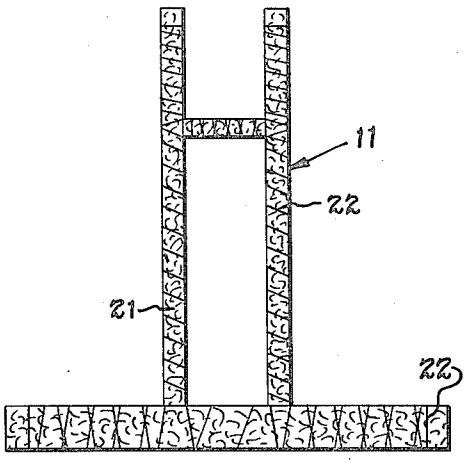


Fig. 8

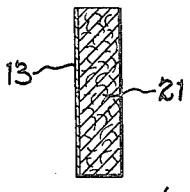


Fig. 9

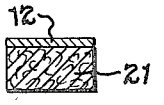


Fig. 10

INVENTOR.
Issac M. Pease.
BY
Wood, Herron & Evans.
ATTORNEYS.

United States Patent Office

2,730,096

Patented Jan. 10, 1956

2,730,096

BACK BRACE

Isaac M. Pease, Cincinnati, Ohio, assignor to Surgical Appliance Industries, Inc., Cincinnati, Ohio, a corporation of Ohio

Application November 29, 1952, Serial No. 323,289

2 Claims. (Cl. 128—78)

This invention is directed to a light weight back brace unit which is designed for use in connection with surgical garments such as abdominal supports, obesity and maternity supports, or in fact, any supportive or corrective garment which embraces the sacro-lumbar region of the back.

As contrasted with the popular Taylor back brace, which is a heavy brace, complete in and of itself, and worn to immobilize the spinal column, the present brace is light in weight, less rigid and designed to be incorporated in a surgical garment to provide localized back support to supplement the general support offered by the garment itself.

By way of specific example, a physician may prescribe, in a maternity case, a garment which offers support for the sacro-lumbar region in addition to the abdominal support provided by the ordinary maternity support. This calls for a rather specialized type of garment which is not only expensive from an initial cost standpoint, but expensive to have fitted inasmuch as such garments must be individually tailored.

The objective of the present invention is to provide a back brace unit which is inexpensive in and of itself and which can be incorporated in other general types of supports which are also inexpensive when compared with specially designed and individually tailored garments.

It is a further object of the invention to provide a back brace of the type described which is unobtrusive in that no unsightly bulges or ridges can be seen through outer garments.

Thus, there are really two aspects to the invention: one, to provide a brace unit which, in a sense, is universal in that it can be incorporated in a number of different types of anatomical support garments; and, two, one which can not be seen when worn. In addition to these advantages, and of utmost importance, the brace of this invention is designed to provide the maximum therapeutic effect without sacrificing comfort.

Other objectives and features of the invention will be apparent from the following detailed description of the drawings in which:

Figure 1 is a view showing the back of a person wearing a support garment in which is installed a brace incorporating the principles of the present invention.

Figure 2 is a side view, but otherwise similar to Figure 1.

Figure 3 is a vertical cross sectional view taken on the line 3—3 of Figure 1.

Figure 4 is a cross sectional view taken on the line 4—4 of Figure 1.

Figure 5 is a layout view showing the brace unit installed in a support garment.

Figure 6 is a cross sectional view taken on the line 6—6 in Figure 5.

Figure 7 is an elevational view showing the inner face of the brace portion of the unit.

Figure 8 is an elevational view showing the outer face of the brace shown in Figure 7.

Figure 9 is a cross sectional view taken on the line 9—9 in Figure 7.

Figure 10 is a cross sectional view taken on the line 10—10 in Figure 7.

In general, the brace unit is designed to be secured to the inner face of a support garment at the back thereof. The support garment indicated at 10 in Figures 1 and 2 is intended to be representative only of a number of different types of support or surgical garments. Such garments may be made of knitted elastic cloth, non-elastic cloth, such as surgical weight duck, or combinations of these materials and others, with or without straps and stays. The specific type of garment is unimportant as far as the general principles of the invention are concerned. It is believed that the specific type garment in which the brace unit of this invention is installed, in a particular instance, is properly left to the discretion of the prescribing physician and others skilled in the art.

The brace member itself is preferably in the shape of an inverted T and is shown generally at 11. This member includes a pair of uprights 12—12, a trochanter band 13 and a metal cross strap 14. In the instance shown, the uprights and trochanter band are riveted to one another as shown in Figure 7. Rivets are also used for fastening the ends of cross straps 14 to the uprights. It will be appreciated, however, that other fastening means may be employed. It is preferred that the two uprights 12—12 be made of aluminum for the sake of lightness. The trochanter band in the instance shown is fabricated from two thin, flexible metal strips similar to the stays sometimes employed in surgical corsets. The uprights should be parallel with one another and spaced apart, but close enough to offer adequate support to the spinal column. A spacing of approximately three inches is found to be satisfactory.

The brace is enclosed within a cloth envelope indicated generally at 15. This envelope is also in the shape of an inverted T and it may be made from two cloth panels, an inner one 16 and an outer one 17, which are joined at their edges by binding tape 18. Referring to Figure 5, it is preferred that the lower edge of the envelope remain unbound until the time that the brace unit is installed in the garment. As will be seen from this figure, the envelope is simply sewn to the garment by a line of stitching 20 which extends entirely around the sides of the inverted T shaped envelope inwardly of binding 18. The stitching thus forms a pocket inside the envelope for the brace and restrains it against movement. Since the inner panel 16 of the envelope may rest directly against the wearer's body, it is preferred that it be made of material such as velveteen or other soft material.

If desired, both the inner and outer faces of the brace may be padded. In the drawings, padding is shown only on the outer face. This padding is indicated at 21 in Figure 8 and may comprise strips of cotton batting which are held in place by thread wrapping indicated at 22. The purpose of such padding is to hide the contour of the brace so that when it is worn under light clothing, its outlines will not show. In addition, the padding reduces the likelihood of the brace wearing through the support garment. In place of cotton batting, sponge rubber may be utilized and may be affixed to the brace by adhesive. Obviously, the inner face of the brace may be padded for the wearer's comfort where this is found to be desirable.

It is suggested that the two uprights be pre-formed at the time of manufacture to conform generally to the contours of the sacro-lumbar region. They then can be bent at a later time to conform to the particular contours of the individual who is to wear the brace. The fact that aluminum is readily formable and non-elastic makes it an ideal material for the uprights.

The trochanter band serves merely as an anchor or base

for the uprights, thus it should be made of a material which is sufficiently stiff to prevent warping in a direction which would permit the uprights to shift from side to side. However, it should flex easily enough to be held in the curve shown in Figure 4 by the garment without showing bulges at its ends. That is, it should readily follow the body contours in the trochanter area.

It is intended that the brace of this invention be manufactured and sold as a unit separate from the surgical garments and be installed only in instances where the prescribing physician believes it desirable to provide localized, additional support for the sacro-lumbar region. It will be obvious, however, that the brace unit, including means complementing the envelope, may be built into a garment initially without departing from the spirit of the invention.

Having described my invention I claim:

1. As an article of manufacture, an anatomical support unit adapted to be secured to a support garment to give localized support to the sacro-lumbar region of the back, said unit comprising a brace member which is generally in the shape of an inverted T, said brace member having a pair of stiff uprights disposed in spaced parallel relation and configurated to conform generally to the contours of a person's back in the sacro-lumbar region, a flexible trochanter band secured horizontally to the lower ends of said uprights, a cloth envelope which is generally in the shape of an inverted T, said brace member disposed within said envelope, and said envelope being substantially wider in both the upright portion thereof and the horizontal portion thereof than the corresponding

portions of the brace member, whereby marginal areas of the envelope are available at the edges of the brace member to receive lines of stitching for securing the unit to a support garment and for restraining movement of the brace member within the envelope.

2. As an article of manufacture, an anatomical support unit adapted to be secured to a support garment to give localized support to the sacro-lumbar region of the back, said unit comprising a brace member which is generally in the shape of an inverted T, said brace member having a pair of stiff uprights disposed in spaced parallel relation, said uprights being configurated to conform generally to the contours of a person's back, in the sacro-lumbar region, a flexible trochanter band secured to the lower ends of said uprights, a cloth envelope which is generally in the shape of an inverted T and which is substantially larger than said brace, said brace enclosed within said envelope so as to provide substantially wide marginal areas of the envelope adapted to receive lines of stitching for securing the unit to the inside of a support garment in the area adapted to embrace the sacro-lumbar region, and said envelope being open at the lower edge thereof to permit removal of the brace member for adjustment purposes prior to being stitched to said support garment.

References Cited in the file of this patent

UNITED STATES PATENTS

2,913	Crain	Jan. 16, 1843
2,104,699	O'Dell	Jan. 4, 1938