

Aug. 12, 1952

G. W. PIPER

2,606,551

TRUSS

Filed Sept. 4, 1948

2 SHEETS--SHEET 1

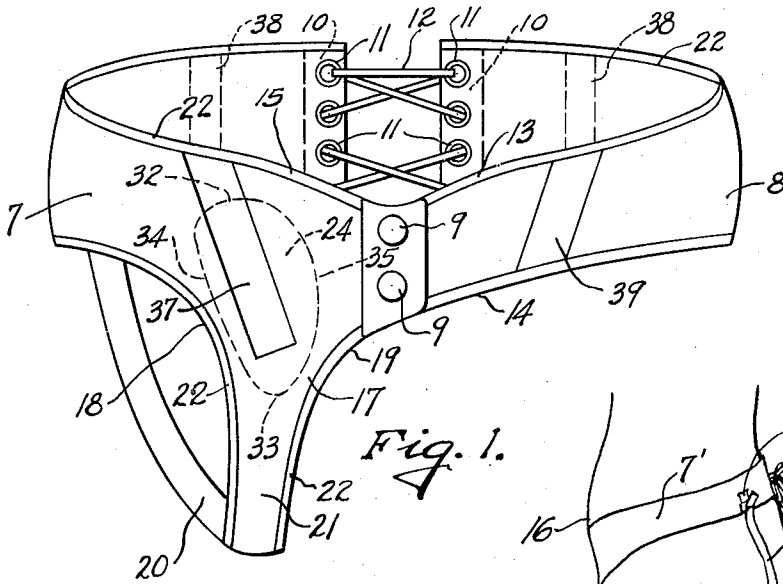


Fig. 1.

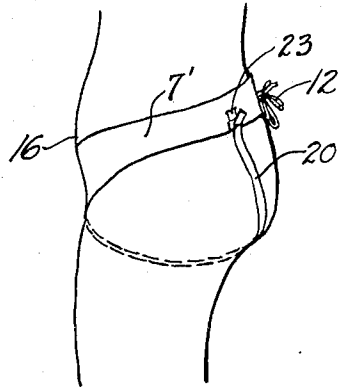


Fig. 2.

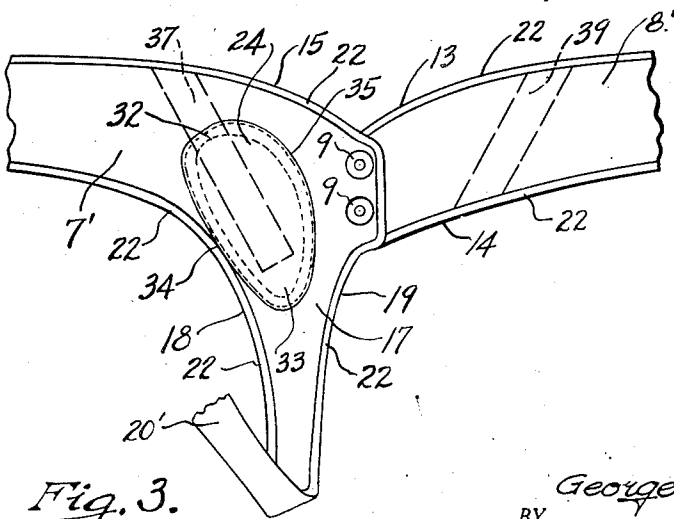


Fig. 3.

INVENTOR:  
George W. Piper  
BY  
Alfred R. Fuchs  
ATTORNEY.

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2 SHEETS—SHEET 2

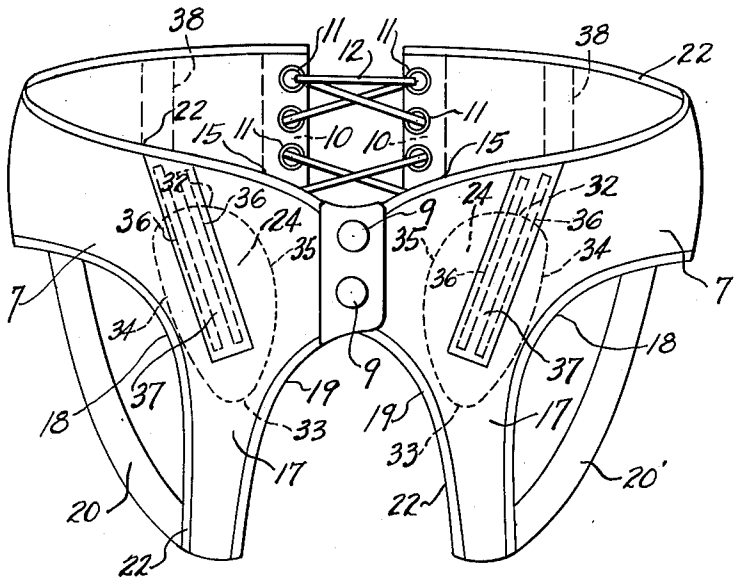


Fig. 4.

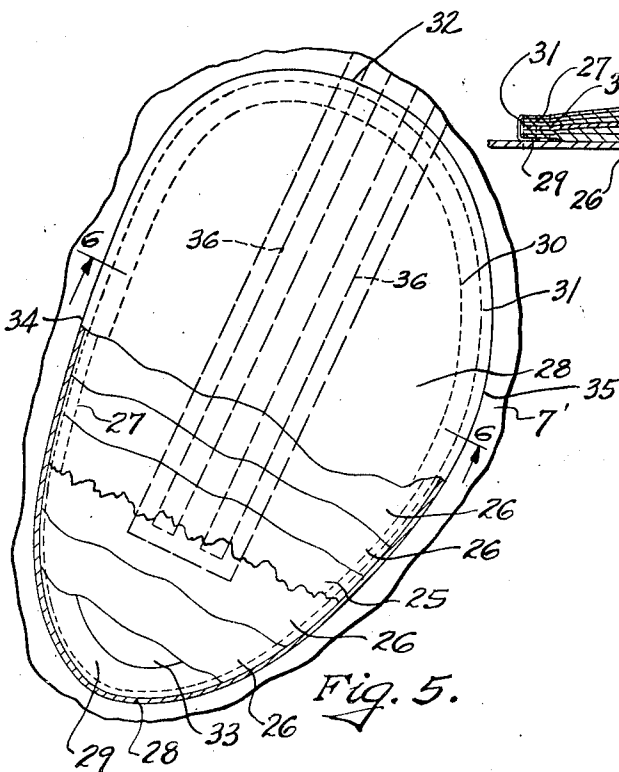


Fig. 5.

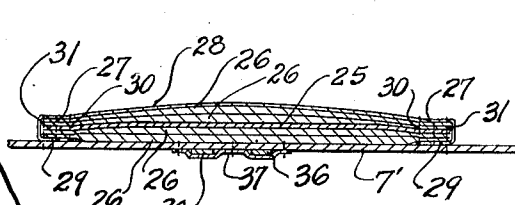


Fig. 6.

INVENTOR:  
George W. Piper  
BY Alfred R. Fuchs  
ATTORNEY.

# UNITED STATES PATENT OFFICE

2,606,551

TRUSS

George W. Piper, Kansas City, Mo., assignor, by  
mesne assignments, to Piper Brace Co., a co-  
partnership

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4 Claims. (Cl. 128—96)

1

My invention relates to trusses, and more particularly to a truss that is made principally of cloth.

It is a purpose of my invention to provide a truss or rupture support that is provided with a pad that is permanently secured thereto and which is made principally of cloth and which contains no materials that can not be washed and is therefore washable by ordinary methods.

It is a specific purpose of my invention to provide a truss that has a pad that is constructed of several layers of blanket-like or felt-like material, that is compressible and which is provided with a flexible fibrous stiffening member therein, preferably, made of heavy paper or cardboard and which is covered on the surface next to the body with soft cloth material to thus provide a soft, flexible and comfortable pad. I have found that hard, rigid pads, that are ordinarily provided on trusses, are only necessary for a very small percentage of the cases in which trusses are required and that the hardness of the pads and the pressure exerted thereby is extremely uncomfortable to the wearer of the truss and that in cases where it is not necessary to have such a pad it is highly undesirable to have a pad that is hard and stiff. My truss is designed for use by the majority of the rupture sufferers who do not require such a hard, rigid pad, but who are relieved and made comfortable by means of a pad that is soft and flexible.

It is a further purpose of my invention to provide a truss which is made up of two body forming members which together form a belt-like body of the device and which are detachably secured together centrally at the front of the truss and by means of lacing at the back thereof, which lacing can be adjusted to provide the proper pressure on the rupture by means of the pad.

It is a further purpose of my invention to provide a truss that is so shaped along the forward portion thereof that it will allow for form fitting under the bulge of the abdomen and thus apply the pressure to the groin pad at the point where the rupture most often protrudes, this being accomplished by providing a top edge portion on the belt-like member that curves downwardly toward the forward central portion thereof to thus fit under the abdominal bulge.

It is still a further purpose of my invention to provide a truss of the above mentioned character, which is provided with a leg strap to aid in holding the pad in the proper position, said leg strap passing between the legs and upwardly in the

2

back and fastens adjustably at the back of the belt-like member. It is a particular purpose of my invention to provide, in a truss of the above mentioned character, a downwardly tapering extension adjacent the forward end of one of the body forming members thereof from which the leg strap extends and to mount the pad in such a manner that it extends into this tapering extension, this arrangement holding the pad in its proper position so as to overlie the rupture properly and exert the proper pressure thereon.

It is a further purpose of my invention to provide a device of the above mentioned character that is provided with a leg strap either on the left side thereof for left side hernia, on the right side thereof for right side hernia, or with two such leg straps and two such downward extensions adjacent the forward ends of the two members that make up the belt-like body portion of the device for a double hernia.

It is a further purpose of my invention to provide stays in said fabric belt-like member for preventing the belt-like member from curling up or rolling over at its edges. Preferably, one of the stays extends at an oblique angle from the top edge portion of the belt-like member downwardly over the pad into the tapering extension so that the lower end of the stay is nearer the forward central portion of the device than the upper end thereof.

Other objects and advantages of my invention will appear as the description of the drawings proceeds. I desire to have it understood, however, that I do not intend to limit myself to the particular details shown or described, except as defined in the claims.

In the drawings:

Fig. 1 is a perspective view of one form of my improved truss.

Fig. 2 is a fragmentary side elevational view, showing the manner in which the truss shown in Fig. 3 is applied to the body of a wearer.

Fig. 3 is a fragmentary elevational view of the forward portion of my truss, showing a slightly different form thereof than in Fig. 1.

Fig. 4 is a view similar to Fig. 1 of another form of my invention.

Fig. 5 is an enlarged face view, partly broken away, of the pad used in my improved truss and a fragmentary portion of the body portion of the truss, and

Fig. 6 is a section taken on the line 6—6 of Fig. 5, the thickness of the plies being exaggerated to more clearly show the same.

Referring in detail to the drawings, my im-

proved truss comprises a belt-like member made up of a pair of body portions, and in the form shown in Fig. 1 said belt-like member comprises a body portion 7 and a body portion 8, which are made of strong fabric and which are provided with suitable snap fastening elements or separable fasteners 9 of a standard character for securing the forward end portions of the members 7 and 8 together. The rear ends of the members 7 and 8 are provided with stiffening means or stays 10 at said rear edges and with eyelets 11, through which lacing 12 extends for adjustably securing the members 7 and 8 in close fitting position on the body of the wearer. The members 7 and 8 together form a belt-like device encircling the body of the wearer and the forward end portion of the member 8 has a downwardly inclined top edge portion 13 and a downwardly curved bottom edge portion 14, while the member 7 has a downwardly curved top edge portion 15 so that the forward portion of the belt-like member will fit around the body so as to fit the form of the body, or more specifically, under the curve of the abdominal bulge 16, as shown in Fig. 2. In Figs. 2 and 3 the member 7' of the truss is shown, which corresponds to the member 7 shown in Fig. 1, except that it is for a left side hernia instead of a right side hernia. The downwardly curving edge portions 13 and 15 extend throughout the forward half of each of the members 7, 7', 8 and 8', the downward curvature thereof gradually increasing toward the forward ends of said members.

The member 7 of the belt-like body portion has a downwardly tapering extension 17 thereon that has curved edge portions 18 and 19 extending from the main body portion of the member 7 and from the forward edge portion of said member 7 into said tapering extension. Said tapering extension forms the connecting portion of a leg strap 20 with the body portion 7 and said leg strap has a gradually tapering portion 21 that continues from the tapering extension 17 of the body portion 7. The body portion 7' is provided with a similar tapering extension and a leg strap 20' that is the same as the leg strap 20 except for the fact that it is on the opposite side of the truss for a rupture on the opposite side of the body. The leg straps are detachably adjustably secured to the rear portion of the member 7 by suitable means, such as the buckle shown at 23 in Fig. 2.

The longitudinal edges of the two members 7 and 8 and of the tapering extension 17 are provided with a tape binding 22. The truss shown in Fig. 3 is the same as that shown in Fig. 1, except that it is for a hernia on the opposite side, that is, on the left hand side, whereas the truss shown in Fig. 1 is for a hernia on the right hand side. The body portion 7' is the same in construction as the body portion 7, except that it is reversed and it is provided with the curved edges 18 and 19, as previously described, as well as the downwardly curved top edge portion 15. The body portion 8' of the truss shown in Fig. 3 is the same as the body portion 8 of the truss shown in Fig. 1, except that it is for the right hand side of the body instead of the left hand side, and it also has the downwardly curved top edge 13 and the downwardly curved bottom edge 14 just as in the member 8 previously described.

A pad is provided which overlies the rupture and it is mounted on the downwardly extending portion of the member 7 or 7', as the case may be, and extends into the tapering extension 17.

It is of an oval or oblong form having a somewhat wider upper end portion and a narrower tapering lower end portion, as will be obvious from Figs. 1, 3 and 5, the pad being designated generally by the numeral 24 in Figs. 1 and 3. The detailed construction of the pad is shown more clearly in Figs. 5 and 6, the pad comprising a central ply or layer 25 of cardboard or similar paper-like fibrous material that is provided merely to give body and shape and a slight amount of stiffness to the pad.

Mounted on each side of the paper stiffening ply 25 are two plies of felt-like or blanket-like fabric cushioning material 26. The plies 25 and 26 are secured together by a row of stitching 27 and an outer covering ply 28 of soft cloth is provided, which extends around the marginal edges of the plies 25 and 26 and has a turned-under portion 29, which is secured by means of stitching 30 to the plies 25 and 26, said stitching extending through the plies 25, 26 and 28 and the turned-under portion 29. The pad unit thus formed is secured to the fabric ply of the body portion 7 by means of stitching 31, which runs around the marginal edge of the pad. The various plies have generally the same curved outline so as to provide a wider curved upper end portion 32 and an elongated narrower tapered curved lower end portion 33. It will be noted that the one side edge of the pad 34 is almost straight, whereas the other side edge 35 thereof is formed on a more sweeping curve. The substantially straight side edge 34 lies near the curved edge portion 18 of the body member 7 or 7', as the case may be, and the more sweeping curved portion 35 lies toward the mid-portion of the front of the truss. It will also be noted that the lower tapering end portion 33 extends a considerable distance into the tapering downward extension 17.

Stay means are, preferably, provided in cooperation with the pad 24, the stay means comprising a pair of stay members 36, which may be metal or plastic, and which are secured in position by means of a strip of fabric 37, which is stitched to the forward face of the member 7 or 7', as the case may be, so as to firmly hold the stay members 36 in position. Additional stays may be provided at 38 and 39 or any other suitable location on the body members 7 and 8, or 7' and 8', to provide vertical stiffness for the belt-like members made up of the members 7 and 8 or 7' and 8' and prevent curling over or rolling of the edges of the body portions. It will be noted that the stay or stiffening member above described, shown in Figs. 1, 3, 5 and 6, extends at an oblique angle from the top edge of the member 7 or 7' downwardly substantially centrally across the pad toward the tapered downward extension 17 and thus inclines inwardly and downwardly from the top edge of the truss toward the forward mid-portion or central portion thereof.

It will be noted that the pad, due to the fact that the plies 26 are compressible, is compressed along its marginal edges, as will be clear from Fig. 6, and bulges outwardly somewhat toward its central portion. The pads 24 on the two body members 7 and 7' of the truss are exactly the same in construction, except that the same are rights and lefts. However, this does not involve any complexity in the manufacture thereof because the only difference between the two pads is that the plies of material are inverted to form the left pad from the position in which the same

5

6

are to form the right pad. This will be obvious by comparison of Figs. 1, 3 and 5.

In providing the double hernia truss shown in Fig. 4 all that is necessary is to assemble one of the body members 7 and one of the body members 7', as shown in Fig. 4, to provide the belt-like portion. The same reference numerals are applied to the parts in Fig. 4 that correspond to the parts shown in Figs. 1 and 3. Thus the member 7 in Fig. 4 is the same as the member 7 in Fig. 1, and the member 7' in Fig. 4 is the same as the member 7' in Fig. 3. The downwardly curving mid-portion at the front or forward end of the belt-like body portion is, in the case of the truss shown in Fig. 4, formed by means of the downwardly curved top edges 15 of the two body members 7 and 7' and the double hernia truss shown in Fig. 4 operates in precisely the same way as the single hernia truss shown in Fig. 3, as far as each half is concerned, there being tapering downward extensions 17 and a leg strap 20 and 20', as well as a pad 24 and stay means overlying the pad in each half of the device shown in Fig. 4. It will be obvious from the above that only four different parts or body members are required to assemble either a right or a left or a double hernia truss, as may be desired, that is, with a member 7, a member 7', a member 8 and a member 8', either a right or left or a double hernia truss can be assembled, dependent on what may be required or necessary.

What I claim is:

1. A truss comprising a pair of body portions of equal length, each of said body portions comprising a strong flexible fabric member coextensive in length and width with said body portion, means for adjustably securing the rear adjacent ends of said body portions together with lacing to provide a body encircling truss of fixed length, and means for detachably securing the forward ends of said body portions together in fixed overlapping relation centrally of the front of the body to form a soft flexible fabric belt extending entirely around the body except for a gap between said adjacent rear ends, each of said fabric members being so shaped that the forward portion thereof inclines downwardly toward the forward end thereof to position the front portion of said truss lower than the rear portion thereof when said truss is in body encircling position, one of said fabric members having an elongated gradually tapering downward extension thereon near the forward end thereof having a leg strap extending therefrom, means more widely spaced from the rear end thereof than said tapering extension is spaced from the forward end thereof for detachably adjustably connecting said leg strap with the rear portion of said fabric member, and a soft flexible oval pad mounted in fixed position on the inner face of the lower forward portion of said body portion adjacent the forward end thereof and extending a substantial distance into said extension, said pad being spaced below the top edge of said forward portion to locate the same entirely on the under side of the abdominal bulge with the narrower tapered rounded end thereof located in said tapered extension.

2. A truss comprising a pair of body portions of equal length, each of said body portions comprising a strong flexible fabric member coextensive in length and width with said body portion, a tape binding on the longitudinal edges of said fabric members, means for adjustably securing the rear adjacent ends of said body portions together with lacing to provide a body encircling

truss of fixed length, and means for detachably securing the forward ends of said body portions together in fixed overlapping relation centrally of the front of the body to form a soft flexible fabric belt extending entirely around the body except for a gap between said adjacent rear ends, each of said fabric members being so shaped that the forward portion thereof inclines downwardly toward the forward end thereof to position the front portion of said truss lower than the rear portion thereof when said truss is in body encircling position, one of said fabric members having an elongated gradually tapering downward extension thereon near the forward end thereof having a leg strap extending therefrom, means more widely spaced from the rear end thereof than said tapering extension is spaced from the forward end thereof for detachably adjustably connecting said leg strap with the rear portion of said fabric member, and a soft flexible oval pad mounted in fixed position on the inner face of the lower forward portion of said body portion adjacent the forward end thereof and extending a substantial distance into said extension, said pad being spaced below the top edge of said forward portion to locate the same entirely on the under side of the abdominal bulge with the narrower tapered rounded end thereof located in said tapered extension.

3. A truss comprising a pair of body portions of equal length, each of said body portions comprising a strong flexible fabric member coextensive in length and width with said body portion, means for adjustably securing the rear adjacent ends of said body portions together with lacing to provide a body encircling truss of fixed length, and means for detachably securing the forward ends of said body portions together in fixed overlapping relation centrally of the front of the body to form a soft flexible fabric belt extending entirely around the body except for a gap between said adjacent rear ends, the top and bottom edges of each of said fabric members curving downwardly toward the forward end thereof to curve the forward half of said truss downwardly toward the center of said forward half and locate the top and bottom edges of the forward half of said truss below the top and bottom edges respectively of the rear half thereof when said truss is in body encircling position, one of said fabric members having an elongated gradually tapering downward extension thereon near the forward end thereof having a leg strap extending therefrom, means more widely spaced from the rear end thereof than said tapering extension is spaced from the forward end thereof for detachably adjustably connecting said leg strap with the rear portion of said fabric member, and a soft flexible oval pad mounted in fixed position on the inner face of the lower forward portion of said body portion adjacent the forward end thereof and extending a substantial distance into said extension, said pad being spaced below the top edge of said forward portion to locate the same entirely on the under side of the abdominal bulge with the narrower tapered rounded end thereof located in said tapered extension.

4. A truss comprising a pair of body portions of equal length, each of said body portions comprising a strong flexible fabric member coextensive in length and width with said body portion, means for adjustably securing the rear adjacent ends of said body portions together with lacing to provide a body encircling truss of fixed length,

7

and means for detachably securing the forward ends of said body portions together in fixed overlapping relation centrally of the front of the body to form a soft flexible fabric belt extending entirely around the body except for a gap between said adjacent rear ends, each of said fabric members being so shaped that the forward portion thereof inclines downwardly toward the forward end thereof to position the front portion of said truss lower than the rear portion thereof when said truss is in body encircling position, one of said fabric members having an elongated gradually tapering downward extension thereon near the forward end thereof having a leg strap extending therefrom, means more widely spaced from the rear end thereof than said tapering extension is spaced from the forward end thereof for detachably adjustably connecting said leg strap with the rear portion of said fabric member, a soft flexible oval pad mounted in fixed position on the inner face of the lower forward portion of said body portion adjacent the forward end thereof and extending a substantial distance into said extension, said pad being spaced below the top edge of said forward portion to locate the same entirely on the under side of the abdominal bulge with the narrower tapered round-

8

ed end thereof located in said tapered extension, and a stay extending from adjacent the top edge of said body portion above the upper end of said pad downwardly over said pad lengthwise thereof with its lower end spaced from the narrower tapered end of said pad.

GEORGE W. PIPER.

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