April 21, 1942. J. E. HANSEN 2,280,395

TRUSS

Filed Oct. 18, 1940 2 Sheets-Sheet 1

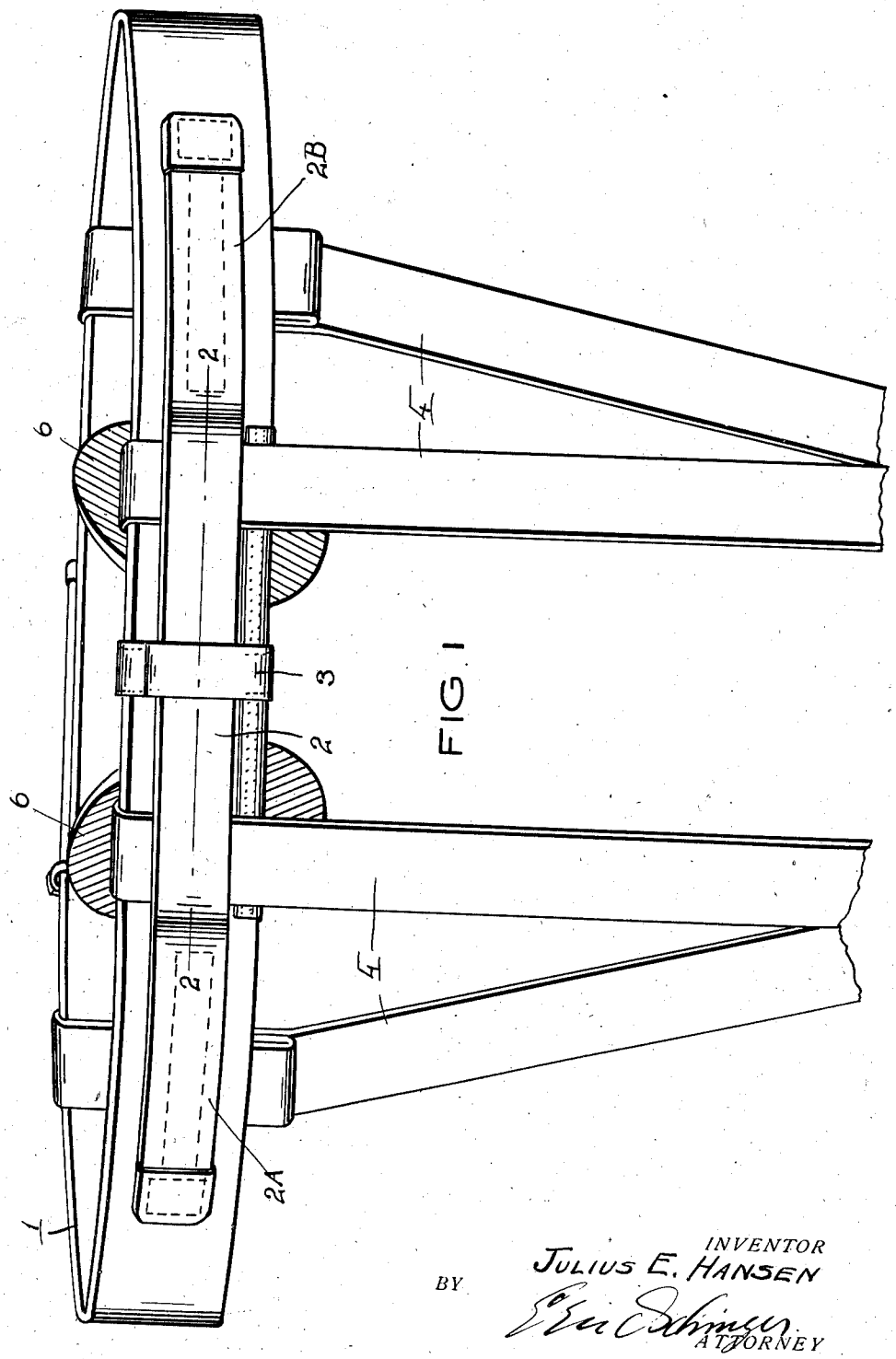


FIG. 1

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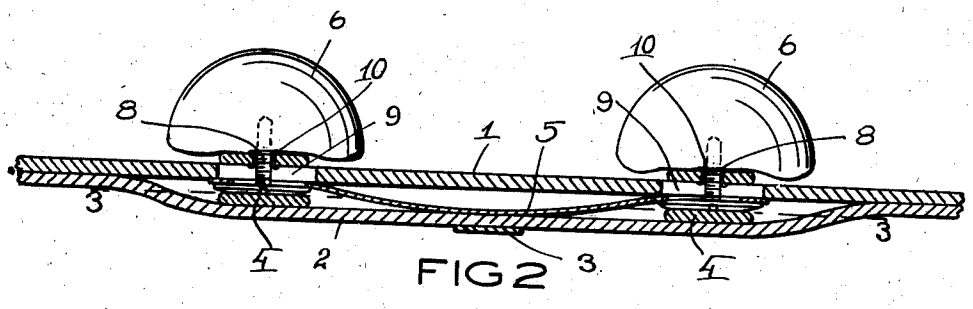


FIG 2

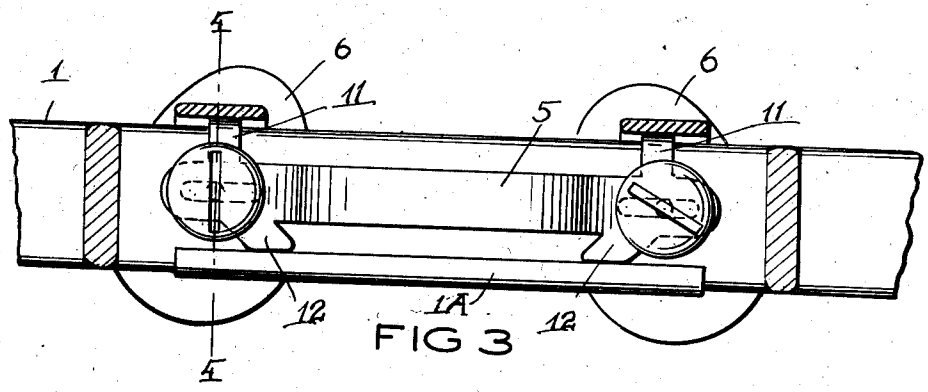


FIG 3

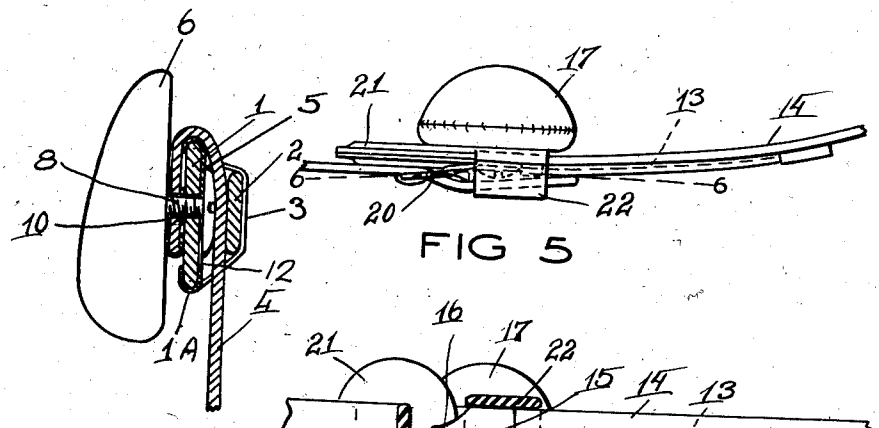


FIG 4

FIG 5

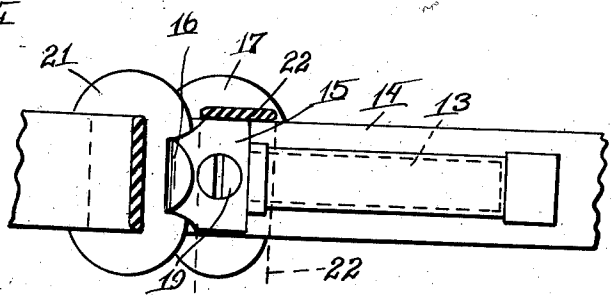


FIG 6

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TRUSS

Julius E. Hansen, Rochester, N. Y.

Application October 18, 1940, Serial No. 361,767

4 Claims. (Cl. 128—100)

This invention relates to hernia trusses and more especially to partially elastic trusses and the invention has for its principal object to provide a truss construction which in its attachment follows the natural lines of the body and thus provides a true form fit thereon.

A further object of this invention is to provide the novel truss construction with a metallic connecting member which adjustably holds and spaces the truss pads in their proper position.

Another object of this invention is to provide the truss with a substantially non-elastic strap in order to confine the stretching of the truss to the sides and back of the wearer and thus produce efficient maximum pressure on the pads at the front of the truss.

A still further object of this invention is to provide the truss construction with leg straps which are attached so that any tension on the straps automatically pulls the lower edge of the waist band inwardly toward the abdomen and causes a rotative movement of the pads inward and upward to provide a substantially natural support with a supporting effect in direct proportion to any strain produced in the movement of the body and transmitted by the leg straps to the pads.

All these and other objects and attendant advantages of the invention will become more readily apparent from the detailed description thereof which follows, reference being had to the accompanying drawings in which

Figure 1 is a front elevation of the improved truss structure.

Figure 2 is a horizontal sectional view taken on the line 2—2 of Figure 1.

Figure 3 is a section taken on the line 3—3 in Figure 2.

Figure 4 is a vertical sectional view taken on the line 4—4 in Figure 3.

Figure 5 is a top plan view of the front portion of a single pad truss embodying my invention.

Figure 6 is a vertical sectional view of the single pad truss with the section taken on the line 6—6 in Figure 5.

The elastic truss forming the subject matter of my present invention provides a holding power for the hernia which has heretofore been attainable only in the rigid types of trusses. To make this possible the elastic waist band 1 has a strap 2 of substantially non-elastic fabric attached to the front or middle thereof. For this purpose the end sections 2A and 2B of the strap are tightly sewed against the elastic waist band leaving the intermediate section 2C unattached except for the loose attachment of its middle by the loop 3. The strap thus provides guide means for the upper ends of the leg straps 4, 4 and covers the metallic connecting member 5 of the pads 6, 6. The loop 3 carried by the waist band permits free endwise movement and limited stretching of the straps in form-fitting the truss to the body.

The metallic connecting member 5 may be made up of spring metal or semi hard metal so as to permit a shaping of it for the purpose of holding the pads in the required positions. As illustrated in Figures 2 and 3, each end of the bar is slotted to have the anchoring studs 8, 8 pass therethru for adjustable spacing and anchorage of the pads 6, 6 on the inside of the waist band 1. The waist band is correspondingly slotted at 9, 9 for the studs to project therethru. Hooked to the studs 8, 8 before being threaded to the pads 6, 6 are the perforated ends 10, 10 of the leg straps 4, 4.

The metallic connecting member 5 is provided near its ends with a pair of vertical extensions 11, 11 which hook over the top edge of the waist band to reinforce and thereby stiffen the upper portion of the waist band at the point of attachment of the pads. A short angular extension 12 near each end of the connecting member 5 projects from the lower edge thereof and these serve to reinforce and stiffen the lower portion of the waist band at the point of attachment of the pads.

The leg straps 4 extend up and over the reinforced portions of the waist band so that tension on the straps causes the upper edge of the waist band to be pulled out at the top and pulled in at the bottom toward the abdomen. This action rocks the pads inward and upward of the waist band to give precisely the same support that would be given by the hand. The stronger the tension on the leg straps, the firmer becomes this support.

The angular extensions of the metallic connecting member point toward each other and thus exert their pressure off center of the pads and outwardly from the middle of the waist band when tension is applied by the leg straps.

The lower edge of the waist band below the connecting member is covered with a binding 1A in order to provide firmness and stability to this portion of the waist band and eliminate any tendency to become distorted in this portion of the waist band.

From the foregoing it will be apparent that

all the stretch in the truss takes place in the sides of the waist band thereof where no support is needed. The stretching of the sides of the waist band causes its pull to be exerted on the front of the truss thereby providing for the concentration of the pressure of the truss on the pads carried by the non-elastic portion of the truss.

The upper edge of the middle section of the waist band being left elastic will give and accommodate itself to the abdomen, while the lower edge being made absolutely non-elastic by its binding ties in tightly against the pads to provide for them, in combination with the metallic connecting member, a firm, non-rocking base which efficiently transmits the tension of the elastic waist band to the pads to have them exert the proper pressure against the hernia. The fact that the truss is closely fitted to the body and is elastically held in place in the novel manner above described causes the truss to adapt itself automatically to any movement of the body.

In the single pad truss construction illustrated in Figures 5 and 6 a narrow metal strap **13** is attached to the outside of the forward end portion of the elastic waist band **14**. This metal strap is enlarged at its outer end as indicated at **15** to substantially the same width as that of the waistband **14**, and a hook **16** is provided on this enlarged end of the metal strap. The pad **17** is attached to the metal strap and waistband by means of the anchoring bolt **19** in such a manner that the hook **16** is located forwardly of the bolt **19**. The metal strap is bendable so that it may be bent to hold the truss pad in the proper angular position in which it will exert the pressure of the waistband in the most efficient manner relative to the hernia.

The free end of the waistband is provided with the buckle member **20** and is adjustable thereon to provide the proper tension for the waistband when the buckle member **20** is connected with the hook **16**. A protective pad **21** is provided on the waistband **14** in back of the buckle member **20** to prevent movement of the buckle member from chafing or otherwise irritating the skin of the wearer of the truss.

The leg strap **22** extends over the top of the widended portion of the metal strap **13** to perform its function as set forth in connection with the description of the truss illustrated in Figures 1 to 4.

From the foregong it will be apparent that I have devised a new truss construction which embodies the features and advantages above enumerated, and while I have, in the present instance, shown and described a preferred embodiment of my invention, it is to be understood that this embodiment is susceptible of modifications in various particulars without departing from the spirit of the invention or sacrificing any of its advantages.

I claim:

1. In a truss the combination of an elastic waist band, a pair of pads supported by said waist band, an adjustable, relatively narrow and substantially rigid and outwardly bowed connecting member connecting said pads on said waist band, a substantially non-elastic strap attached to said waist band to longitudinally extend over said connecting member and held faced from said waist band by said connecting member, a pair of leg straps attached to said connecting member at the point of attachment of said pads and extending between said connecting member and said non-elastic strap.

2. In a truss the combination of an elastic waist band, a pair of pads supported by said waist band, an adjustable, relatively narrow and substantially rigid and outwardly bowed connecting member connecting said pads on said waist band and forming a rigid backing for said waist band at the point of attachment of said pads to said waist band, a substantially non-elastic strap attached to said waist band so as to loosely extend over said connecting member and make a section of said elastic waist band at each end of said connecting member non-elastic.

3. In a truss the combination as set forth in claim 2 including a leg strap attached to the inside of said waist band at the point of attachment of each of said pads, said leg strap extending over the top edge of said waist band down in front of the reinforcing portions of said connecting member between them and said substantially non-elastic strap and said waist band.

4. In a truss the combination of an elastic waist band, a pair of pads spacedly arranged on said waist band, an adjustable, relatively narrow and substantially rigid connecting member connecting said pads on said waist band, an extension projecting upwardly from said connecting member from the point of attachment of each of said pads, and other extensions extending angularly toward each other downwardly from said connecting member from the point of attachment of each of said pads and a leg strap attached to the inside of said waist band at the point of attachment of each of said pads, said leg strap extending over the top edge of said waist band in front of said connecting member and the upward extensions thereof.

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