Jan. 20, 1942. J. D. GREY 2,270,291

TRUSS

Filed June 15, 1940

FIG. 1.

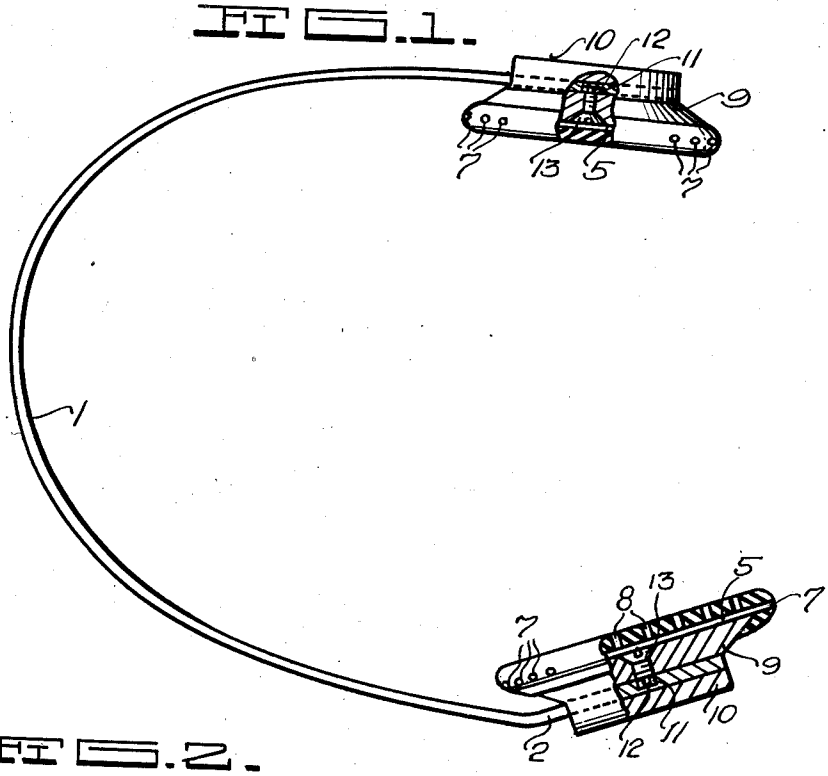


FIG. 2.

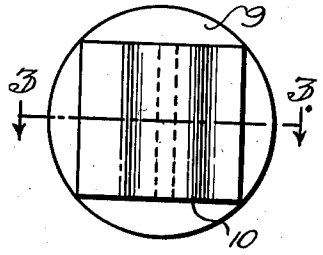


FIG. 5.

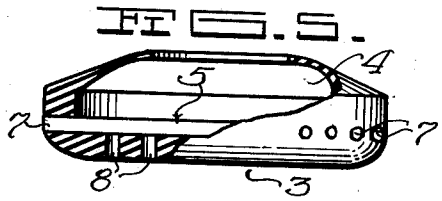


FIG. 3.

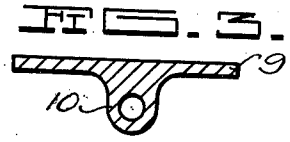


FIG. 6.

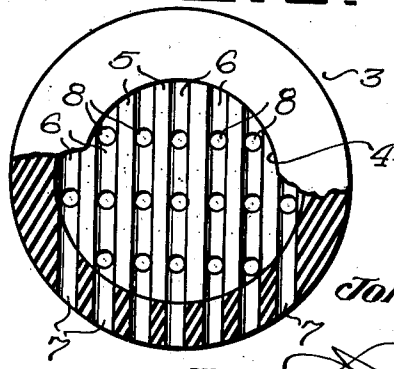
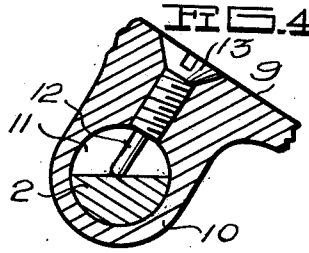


FIG. 4.



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BY

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2,270,291

UNITED STATES PATENT OFFICE

2,270,291

TRUSS

John D. Grey, Dallas, Tex.

Application June 15, 1940, Serial No. 340,731

2 Claims. (Cl. 128—108)

This invention relates to trusses and it has particular reference to a truss for abdominal hernia.

The principal object of the invention is to provide in a truss of the character set forth, a pad so constructed and arranged in off-centered relation to its mounting that when in position over the opening in the abdominal cavity, an added leverage is obtained to create an upward and inward lifting action at times of sudden strain, such as those caused by slipping, lifting, coughing, or other physical reactions resulting in abdominal stresses.

Another object of the invention is to provide a truss whose pads and mounting discs are interchangeable, front and back, right and left, and can, by the application of any type of conventional strap or elastic connecting link, be used as a double truss.

Another and important object of the invention is to provide a hernia pad, which may be of any desired shape, which is ventilated by means of communicating perforations and passageways for air and for expulsion of moisture where the pad rests directly against the body.

With the foregoing objects as paramount, the invention has particular reference to its salient features of construction and arrangement of parts which will become manifest as the description proceeds, taken in connection with the accompanying drawing, wherein:

Figure 1 is a plan view of a truss having hernia pads constructed and mounted according to the present invention.

Figure 2 is a plan view of a mounting disc for the hernia pad.

Figure 3 is a sectional view on line 3—3 on Figure 2 showing the off-set pivotal point of the disc.

Figure 4 is a fragmentary view of one of the mounting discs, partly in section, showing the limited 60° displacement of the disc relative to the body spring supporting the same.

Figure 5 is an elevational view, partly in section, showing the ventilation features of the pad, and

Figure 6 is a plan view of the pad with a portion broken away.

Continuing with a more detailed description of the drawing, the reference numeral 1 designates a body spring which may be of any cross-sectional shape and material best suited for the purpose and so formed as to comfortably embrace one side of the body so that one pad will lie against the back while the companion pad will rest over the opening in the abdominal cavity. It will be observed that that portion of the spring to be disposed at the back is formed with a gradual curve while the portion to be adjacent the abdomen has an abrupt inward bend at 2. Being thus formed, the front pad more nearly conforms to the curve of the abdomen to more effectively bear upon the affected part.

The construction of the front and rear pads is substantially the same, except that the rear pad is preferably thinner.

The pads, which as stated, may be of any desired general shape or composition such as soft or hard rubber or their equivalents, are each comprised of a body 3 having an inner circular cavity 4 and whose edges overhang and converge to define a central opening, into a feather edge. The purpose of this is to eliminate bulkiness and to enable the edge to be readily turned outward and inward to facilitate removal from and mounting upon the discs, to be described presently.

Within and extending across the inner flat surface of the pad or body 3 is a series of relatively parallel ribs or corrugations 5, the spaces or valleys 6 between the ribs continuing on through the walls of the body in the form of passages 7. Communicating with the valleys 6 are apertures 8 which open out through the body engaging surface of the pad. In addition to affording ventilation for the pad to reduce discomfort, these openings aid in expelling excess moisture which would otherwise accumulate in the pad from the body due to perspiration.

The pads are held in position on the body by the discs 9 of metal or plastic, the thinned edges of the body being disposed over the edges of the disc in the manner shown.

It has been stated that the peculiar mounting of the pads produces a leverage in a desirable direction on the abdomen. This is obtained by disposing the longitudinal axis of the boss 10 of the disc in offset relation to the geometrical center of the disc, as shown in Figures 2 and 3. The ends of the spring 1 enter the passages through the longitudinal axes of the bosses and in order that the degree of rotative movement of the disc might be limited to 60° or thereabouts, a recess 11 is made in each of the spring ends to receive a protuberance 12 integral with and extending from the end of each screw 13, designed to hold the discs against slipping off the ends of the spring 1, yet allowing the described movement so that the pads may re-

spond to natural flexing of the abdominal muscles.

The pad is so disposed over the opening in the abdominal wall that the greater part of the disc 9 will lie above the oscillating point thereof. Hence, any undue strain on the abdomen will result in an outward movement of the upper rim of the pad instead of remaining either stationary or rotating in the opposite direction which latter, if permitted, might allow the protrusion to become displaced downwardly, resulting possibly in serious consequences.

It is to be observed that the protuberance 12, bearing on the flattened end portion of the wire support will allow for excursion of the pad carrier 9 over a range of approximately 90° which is sufficient to insure against limiting excursion after the truss is applied, likely to result in extrusion. The fact that the flattened surface against which the protuberance 12 bears is normally parallel with the operative surface of the pad insures a rotative displacement of at least 45° on either side of the axis of the pad. Moreover, it is intended that the pad be so applied that the abdominal opening will be above the rotative axis thereof to prevent extrusion below the pad, as stated previously.

Manifestly, the construction as shown and described is capable of some modification and such modification as may be construed to fall within the scope and meaning of the appended claims is also considered to be within the spirit and intent of the invention.

What is claimed is:

1. An appliance for abdominal hernia including a spring support having transverse recesses adjacent its ends, resilient pads adapted to be connected to the ends of said support, each comprising a hollow body having a flexible, inwardly directed feather edged flange and provided with equi-distantly spaced passages and corrugations therethrough and parallel with its operative surface and apertures effecting communication between said passages and operative surface, a retaining disc receivable in the hollow of said body, a boss integral with and offset relative to the center of said disc for receiving the ends of said spring support and a threaded protuberance entering said boss and receivable by a recess of said support end for constraining said disc to oscillate in an arc to a predetermined degree.

2. A truss comprising a spring support having transverse grooves providing recesses adjacent its ends, pad retaining elements having bosses whose longitudinal axes are offset relative to the center of said elements and bored to receive the ends of said spring support, screws in said bosses having protuberances entering the recesses of said support ends for limiting the rotative movement of said elements relative to said spring support to a predetermined degree, resilient pads having flexible, annular and feather-edged flanges whereby said pads will be removably mountable on said elements, each pad comprising a body having interiorly disposed corrugations on its inner surface parallel with each other and with the operative surface thereof and terminating in apertures in the walls of said body, said corrugations further having connecting perforations extending through the effective surface of said disc.

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