No. 647,372. Patented Apr. 10, 1900.

J. W. BRADFORD.

TRUSS.

(Application filed Jan. 5, 1899.)

(No Model.)

Fig. 1.

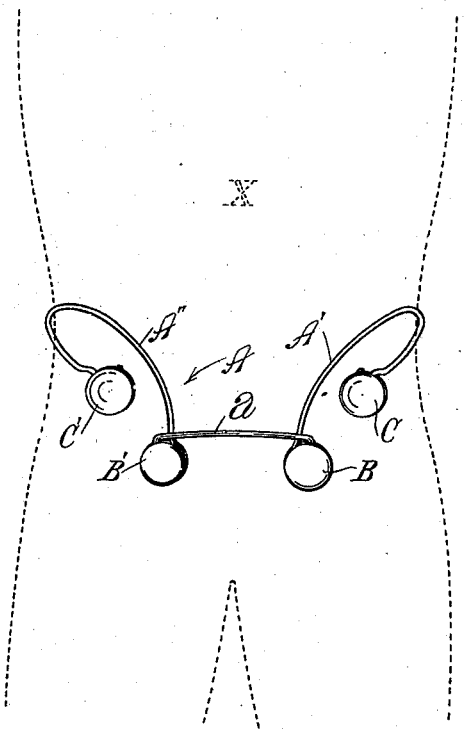


Fig. 3.

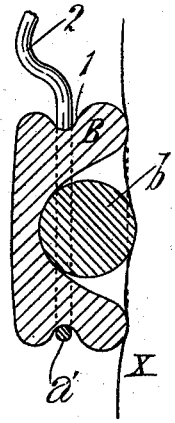


Fig. 4.

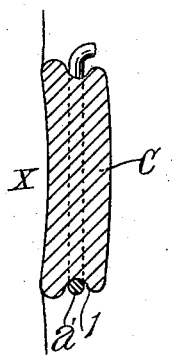
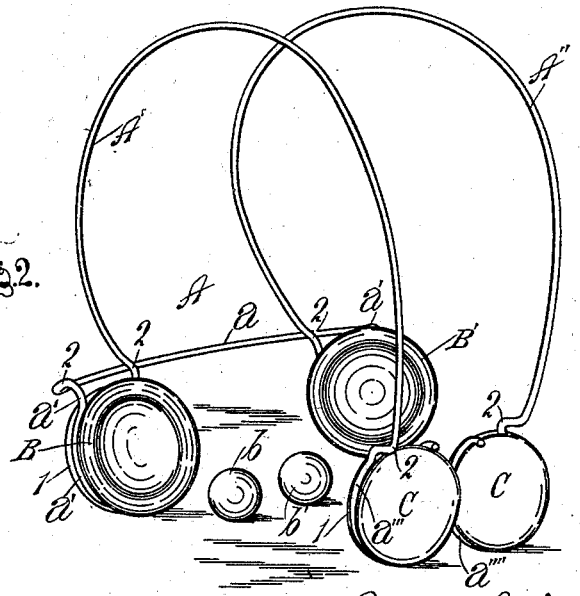


Fig. 2.



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UNITED STATES PATENT OFFICE.

JOSEPH WARREN BRADFORD, OF LOS ANGELES, CALIFORNIA.

TRUSS.

SPECIFICATION forming part of Letters Patent No. 647,372, dated April 10, 1900.

Application filed January 5, 1899. Serial No. 701,274. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH WARREN BRADFORD, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented a new and useful Truss for Hernia, of which the following is a specification.

One object of my invention is to provide a truss for the retention of hernia which will allow the rupture to close and heal. This I accomplish by providing an annular pad to press upon the body around the rupture and a central bearing to engage the body at the point of rupture for retaining the hernia, and I provide a rolling bearing for the centrally-arranged member which retains the hernia.

Another object of my invention is to provide convenient means for holding the hernia-retaining pad in position and to allow of the ready taking off and putting on of the truss by the wearer.

Another object is to provide a superior pad of as slight thickness as possible, so as to avoid unsightly and objectionable protuberances.

My invention comprises a concave pad with a globular body or sphere contained within the concavity of the pad and suitable means for retaining the concave pad in position over the hernia.

My invention also includes the means for retaining the concave pad in position over the hernia.

The accompanying drawings illustrate my invention.

Figure 1 shows the truss as it appears in position upon the human body, the human body being indicated by dotted lines. Fig. 2 shows the truss and spheres when not in use. Fig. 3 is a cross-section of the concave pad and sphere as in position upon a human body for retaining a hernia in place. Fig. 4 is a cross-section of one of the spring end pads.

A indicates the truss-frame, which consists of two looped hip-embracing spring members A′ and A″, united at one end of the loops by a cross-bar *a*.

B and B′ indicate the concave hernia-pads. *b b′* are hernia-retaining balls, each of which is carried in the concavity of its pad and is preferably slightly greater in diameter than the depth of the concavity to gently press into the body to a slightly-greater depth than the rim of the pad. When the truss is in place, the ball is held or substantially chambered in the concavity between the pad and the body.

C and C′ are the spring end supporting-pads.

The frame of my truss is made of non-corrosive spring-wire or spring-wire suitably plated or otherwise protected to prevent the moisture of the body from rusting it and is bent into the form shown in Figs. 1 and 2—that is to say, the hip-embracing spring members A′ and A″ are in the form of open loops, at the ends of which loops are smaller loops *a′*, *a″*, *a‴*, and *a⁗*. The loops *a′* and *a″* are for the hernia-pads and are connected by the cross-bar *a*. The loops *a‴ a⁗* are for the spring supporting-pads C C′. Preferably the whole frame is made of a single piece of wire, with the hip members normally substantially parallel with each other and standing in planes which are substantially at right angles to the cross-bar. This construction makes a very cheap frame, and the said curved hip members when sprung apart for use, as shown in Fig. 1, fit close to the sides of the body and permit of the rear pads being shifted to fit the body with the least inconvenience to the wearer. The spring end supporting-pads C C′ are made slightly concave on the side that comes into contact with the body of the wearer, thus to prevent them from slipping out of place. Each end of the cross-bar *a* is made to extend beyond its respective hip member, so that the outward movement of the member will cause a contraction of the loop joining the bar and the member, thereby causing it to grasp the pad more tightly. If the ends of the cross-bar did not thus extend beyond the hip members when the hip members were drawn outward to put on or remove the truss, the loops between the ends of the cross-bar and the hip members would be opened and the pads be liable to be displaced or dropped out. In case of a single rupture a pad of this character may be used in place of one of the hernia-supporting pads shown in the drawings. In the drawings the truss is shown arranged for a double rupture, but can be used with equal comfort with a single rupture without any change. The pad is

preferably made of any suitable hard non-absorbent material, such as india-rubber, wood, &c.

In practice the concave hernia-pad is placed over the hernia and the spring-frame is sprung to allow the frame to pass over the hips of the wearer, and the spring supporting-pads C C′ are placed in suitable position on the back part of the hips of the wearer. Then the ball or spherical body *b* is placed between the body of the wearer and the concave pad or cup B, which retains the sphere in a central position therein, thus to push the hernia within the walls of the abdomen. The size of the sphere may be greater or less, according to the size of the hernia, care being taken that the diameter of the sphere is not great enough to engage with the walls of the rupture, but is just large enough to sustain a pressure sufficient to keep the hernia within the abdomen. The rim of the concave pad B B′ will rest upon the tissues surrounding the rupture at a distance sufficiently far from the rupture that there will be no strain upon the ruptured portion, and the spherical body gently pressing and retaining the hernia inside of the walls will relieve the irritation and allow the muscles to regain their position and gradually heal. The spherical body being loose in the concave pad is free to roll or move freely, and if the pad should become displaced from over the hernia the ball would freely revolve and move over the edges of the rupture without causing any tearing or straining of the rupture.

In case the pad is accidentally moved a considerable distance the ball will roll toward the edge of the pad and thus have a tendency to lift or force the edge of the pad away from the body, and thus prevent the injury to the skin which the pad would cause by sliding in firm contact with it.

In case a very large rupture occurs the pad B may be made of large diameter, the ball *b* being correspondingly increased to retain the hernia in position about as shown in Fig. 3, and when the healing of the rupture commences and the muscles contract the opening a smaller ball may be placed in the pad and the charges of the different sizes of the ball may be continued until the hernia is retained in its proper place by the healing of the rupture.

The pad being circular and the concavity being greater than the circumference of the ball, the ball is caused to lie centrally of the rim of the pad so long as there is any pressure on the ball.

When the truss is in place, the four pads B B′ C C′ form such a solid support for the truss-frame that it remains immovable under any of the ordinary conditions. The force with which the pads are pressed against the body can be increased or diminished at will by bending the large spring-loops A′ A″ for that purpose.

The pads are readily removed and replaced by springing the small loops for that purpose. 2 indicates bends between the pad-holding loops and other portions of the frame to hold the members of the frame out of contact with the body.

Now, having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A truss comprising a pad having a conical cavity in its inner surface; a detached spherical ball removably mounted to roll freely in, and substantially chambered in the concavity; the curvature of the dish of the cavity being greater than that of the perimeter of the ball; and means for retaining the pad in position.

2. In a hernia-truss, in combination; a wire frame, each end of which is formed into a hip-embracing member provided with a pad-loop, and the intermediate portion is formed into a cross-bar, the union between the ends of the bar and the hip members being formed into a pad-loop, and a pad in each of the four loops, the front ones each being concave and provided with a ball contained therein.

3. In a hernia-truss, in combination; a wire frame, each end of which is formed into a hip-embracing member provided with a pad-loop, and the intermediate portion is formed into a cross-bar, the union between the ends of the bar and the hip members being each formed into a pad-loop, and the bar being bent forward and crossing the ends of the hip members; and a pad in each of the four loops.

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