D. DEVERON & H. LACKMANN.

Truss.

No. 204,955. Patented June 18, 1878.

Fig. I.

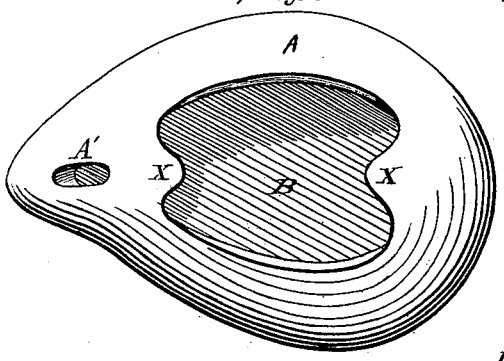


Fig. II.

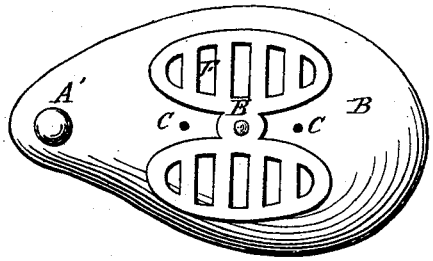


Fig. III.

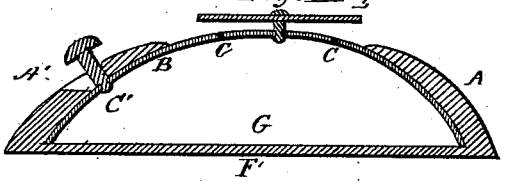


Fig. IV

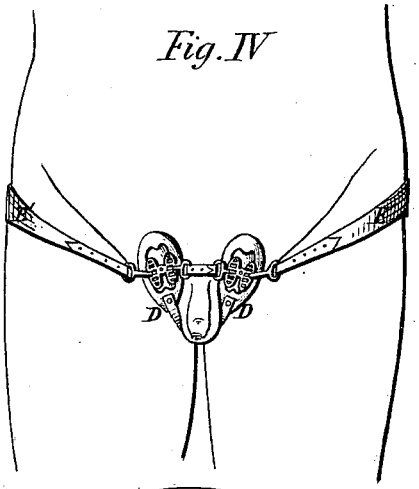


Fig. V

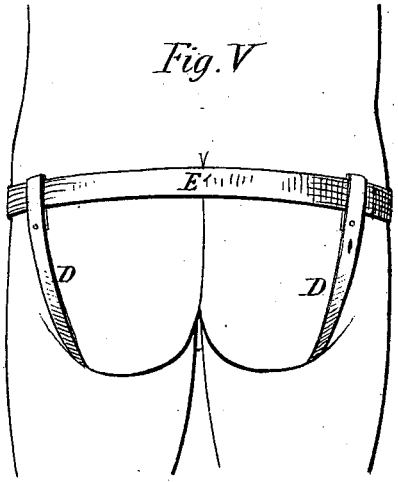


Fig. VI

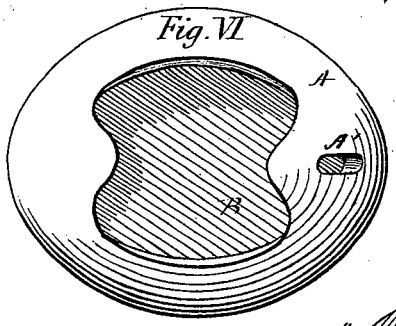


Fig. VII

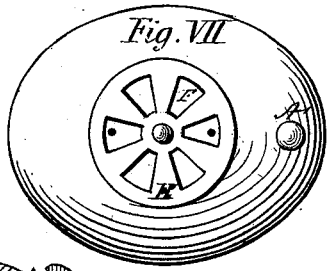
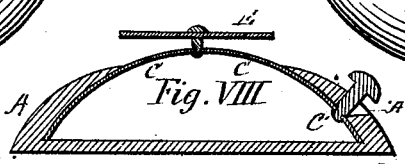


Fig. VIII



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UNITED STATES PATENT OFFICE.

DUNCAN DEVERON AND HERMAN LACKMANN, OF SAN FRANCISCO, CAL.

IMPROVEMENT IN TRUSSES.

Specification forming part of Letters Patent No. **204,955**, dated June 18, 1878; application filed June 21, 1877.

To all whom it may concern:

Be it known that we, DUNCAN DEVERON and HERMAN LACKMANN, of the city and county of San Francisco, and State of California, have invented an Improved Truss; and we do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings.

Our invention relates to a truss such as is used for the cure of hernia; and our improvements consist in forming the pad which presses against the rupture with a flat face, and with the sides raised and curved, so as to inclose and hold in place a dished metallic plate which forms the back. On the back of this plate is pivoted a peculiar fastening, so arranged that the waist or body belt to support the truss may be attached to it at several different places. Either may form the center, and as the fastening is itself pivoted the pad may accommodate itself to any angle or position that suits the wearer. The dished plate forming the back of the truss has holes in its crown, so that when the rupture presses on the flat surface of the pad and presses it inward the air between the inner surface of the pad and plate may be expelled through these holes. As soon as pressure is withdrawn the elasticity of the pad brings it back to place, thus pressing the rupture back. The air then enters the cavity of the truss through the holes in the plate, and the pad acts as a cushion on the rupture. At one end of the side of the pad is an opening through which projects the stud over which the buttock-belt is fastened, and as this buttock-belt holds that end of the truss in position, and the waist-belt holds it up, the truss is held securely in place, while at the same time it will accommodate itself to any pressure that may be brought upon it, as hereinafter described.

Referring to the accompanying drawings, let A represent a hollow pad of vulcanized rubber, which we have shown in this instance as being in a pear-shaped form. This pad is made flat on its face, and its sides are made somewhat thicker than the face, and curve inward, as shown, so as to inclose the metallic back B. This back B is a dished metal plate having two small air-holes C C in its crown and a stud, C, riveted on its lower extremity for the fastening of the strap which passes under the buttock in the usual way. When this plate B is fitted into the pad A, the sides of the pad inclose the plate and retain it in position without the necessity of other fastening. This is accomplished by the peculiar shape of the sides, which incline at a sharp angle toward the center, and when the plate is once slipped in place the rubber sides retain it in position.

When the plate is fitted into the rubber pad the whole forms a hollow pad, into which air is slowly admitted or expelled by the expansion or contraction of the rubber, by means of the holes C C, thus avoiding violence in pushing back the rupture.

At the lower extremity of the back or side of the pad A is formed the slot or hole A′, through which the stud C′ in the metallic plate B projects. This stud C′ projects sufficiently through the opening A′ to admit of the usual strap being buttoned over it in the usual manner. The hole or slot A′ is made somewhat larger than the neck of the stud, so as to allow some play to the rubber pad and admit of its moving in any direction slightly on the plate B as the pad accommodates itself to the pressure upon it.

In the center or crown of the metallic plate B is loosely riveted the accommodating or universal fastening E, which is made in a peculiar shape, as shown. In the center of this fastening E is a pin or rivet, around which the plate can revolve. The sides of this fastening E are rounded and extended, as shown, and have slots F cut in them, into any of which the hooks or studs of the waist-belt may be inserted and secured. This fastening E being cut in the shape of two ellipses, formed together through their short diameters by the small piece through which the rivet passes, the belt may be hooked to the pad at any part of its length by placing the hooks and studs of the belt in any of the slots or holes F which are found most necessary by the wearer. By this means the wearer may shift the draft of the belt to the most desirable point, and cause the strain to come on the whole breadth of the belt instead of on the upper side, which would be the case if the fastening were fixed.

As the fastening E may revolve around its

pivot, the pad can be adjusted to any desired position, and by attaching the hooks or studs of the waist-belt to the proper slot in the sides of said fastening the pad may be arranged to suit the convenience of the wearer, according to varying circumstances.

In applying our improved truss to a rupture the flat face of the hollow pad or cushion is placed against the center of the rupture, with the point carrying the stud C′ downward, so that the usual strap passing under the buttocks may be attached. The flat surface of the pad then rests against the groin, being kept in place by the buttock-belt and waist-belt, attached as herein described.

When any strain comes in the rupture, as in lifting a weight or holding in the breath, the flat surface yields somewhat to the strain, being pushed by the rupture into the concavity. In thus yielding the circumscribing edges of the rubber are curved or pulled toward the center, thereby preventing the rupture from escaping at either side. This pressure brought on the pad slowly expels the air from the hollow pad through the little air-holes C C in the crown of the plate or back B. As the strain is removed the air again enters the holes C C, and the elasticity of the rubber sends the flat surface of the pad back to its normal position, pushing the rupture with it.

The back or buttock straps are hooked over the body or waist belt, drawn outside of and under the buttock. Then, if the rupture is on the right side, the strap will be brought under the left buttock, and vice versa, and buttoned on the stud C′ on the point of the pear-shaped pad. This point acts as a forefinger of the hand would if the hand were used in holding up the rupture. This shape is not necessary, except in severe cases, where the rupture has a tendency to fall into the scrotum; but in all ordinary cases the pad ought to be made in an elliptical shape.

It will thus be seen that we provide an appliance which will be at once comfortable and convenient to the wearer, and which is adjustable to a part of the body where it cannot interfere with complete freedom of motion. The edges of the rubber are free to contract inward toward the center of the pad when pressure is brought on the face of the pad, while immediately on the removal of the pressure the face of the pad regains its plane, the rupture being pushed back by the elasticity of the rubber and the edges returning to their original position.

There is in this truss nothing but the elasticity of the rubber to push back the rupture, and there are no springs or compressed air contained in the hollow of the pad. The little holes in the plate allow the air free entrance or exit, as the case may be, and instead of any hard substance pressing against the pad there is nothing really but an elastic cushion.

The peculiar form of the pivoted fastening with its slots to engage with the hook or stud of the waist-belt, as herein described, is such as to allow of the truss being at any desired angle to suit the wearer, so that it can be accommodated to fit closely over the rupture and not inconvenience the wearer in the slightest degree.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. The flat-faced elastic pad A, with its thickened edges, and the sides extending up so as to form a socket for the reception of the concavo-convex back B, substantially as shown, and for the purpose herein described.

2. The elastic pad A, constructed as shown, in combination with the concavo-convex back B, fitted as shown, and having the minute perforations C C for the ingress and egress of air, substantially as herein described.

3. The elastic pad A, fitted to the perforated concavo-convex back B, in combination with the plate E, adjustably mounted upon the back plate B, as shown, and provided with the series of perforations F, whereby a universal adjustment of the pad may be had, substantially as herein described.

4. The hollow elastic pad A, fitted to the rigid concavo-convex back plate B, and having the thickened edges and point, said point being perforated by the elongated hole A′ to receive and adjust itself to the stud C′ and allow the pad to fit itself to the rupture, substantially as shown and herein described.

In witness whereof we hereunto set our hands and seals.

DUNCAN DEVERON. [L. S.]
HERMAN LACKMANN. [L. S.]

Witnesses:
GEO. H. STONG,
FRANK A. BROOKS.