

(Model.)

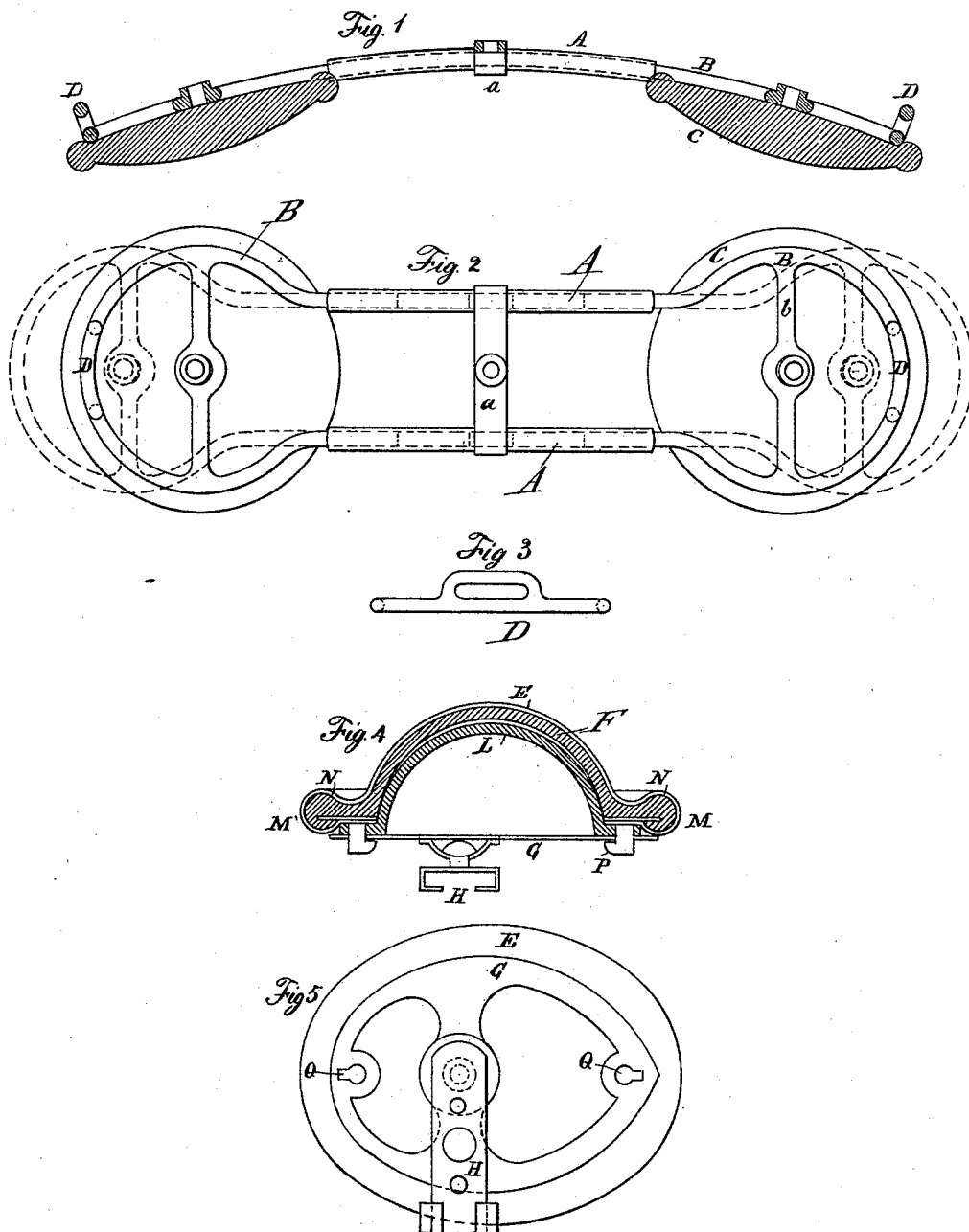
2 Sheets—Sheet 1.

W. MARSH.

TRUSS.

No. 391,480.

Patented Oct. 23, 1888.



Witnesses.
John P. Wright.
Agnes L. Wales.

Inventor.
William Marsh.
By
Edward P. Thompson,
attorney.

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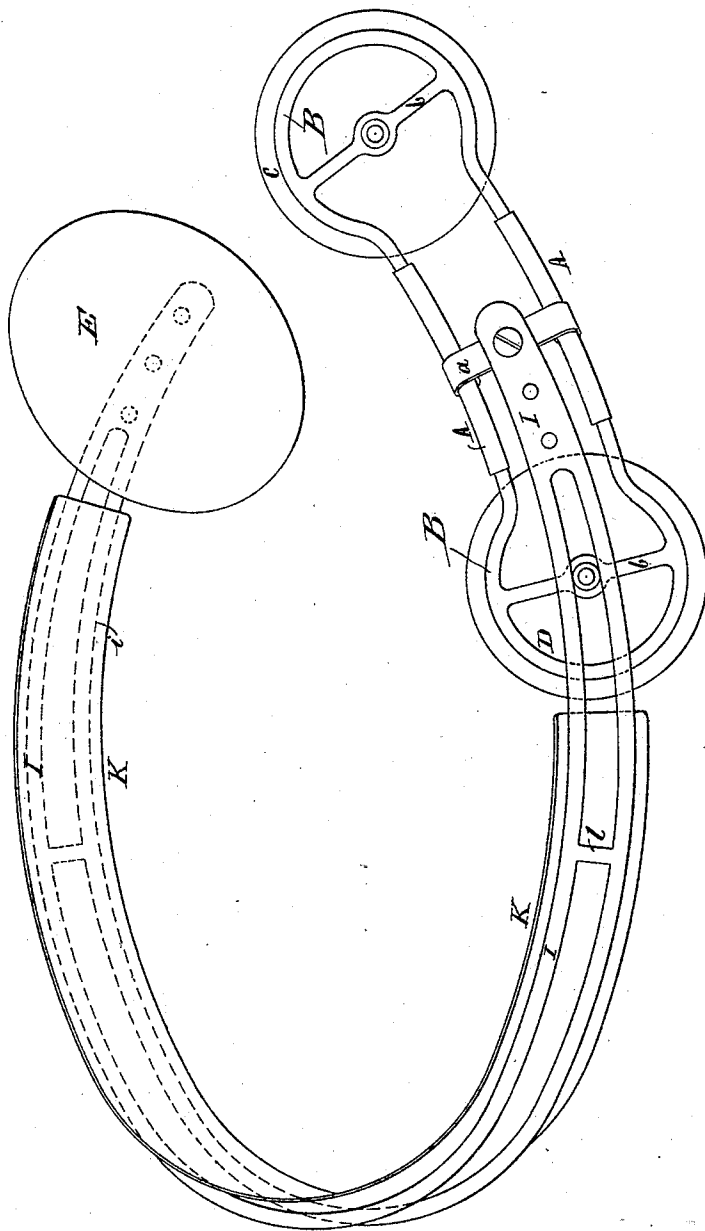
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Fig. 6.



Witnesses:
John P. Wright,
Agnes L. Pals.

Inventor.
William Marsh.
By
Edward Thompson,
Attorney.

UNITED STATES PATENT OFFICE.

WILLIAM MARSH, OF BROOKLYN, NEW YORK.

TRUSS.

SPECIFICATION forming part of Letters Patent No. 391,480, dated October 23, 1888.

Application filed September 3, 1887. Serial No. 245,761. (Model.)

To all whom it may concern:

Be it known that I, WILLIAM MARSH, a citizen of the United States, and a resident of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Trusses, of which the following is a specification.

My invention relates to an impervious adjustable skeleton truss with detachable compressed cushion-pads, intended to be employed for the cure or relief of hernia.

The purpose of the invention is to provide a truss which can be quickly changed from a soft padded one (by detachable pads) into a truss suitable for water or bathing purposes, the skeleton being coated with an impervious material.

Further, the object of the invention is to provide a truss lighter in weight than those at present in use, and at the same time retain the important feature of durability. The frame or skeleton of the truss being open allows better ventilation to the body.

The practical manner of carrying out my invention is illustrated in the accompanying drawings.

Figure 1 is a side view, shown partially in cross-section, of the adjustable skeleton and back-pads, showing the same in their normal condition. Fig. 2 is a back view of the back-pads, in which the dotted lines represent the position of the two pad-frames when in their extended position. Fig. 3 shows the guard through which passes the pressure-spring of the truss. Fig. 4 is a view in cross-section of the compressed soft pad secured to the impervious hard pad, both of which, considered together, form what may be termed the "rupture-pad." Means for fastening the pad to the spring are also shown. Fig. 5 is a back view of the truss-pad when secured to the spring. Fig. 6 is a perspective view, partially in outline, of the truss, some of the less important parts of the device being omitted.

The back of the truss consists of the combination of two parallel tubes, A, connected rigidly at their central points by a yoke, a, to which is attached a spring, I, of the truss, a frame-support, B, for each of the back-pads C, and consisting of a rod having one end inserted in one of the tubes A, the other end in-

serted in the other tube, and having its middle portion bent into the form of an arc of a circle greater than a semicircle; a connecting-piece, b, connecting diametrically-opposite points in said rod and secured to a back-pad; a guard, D, mounted upon said rod for the spring to pass through, and the usual strap, which is not shown, secured to the connecting-piece a.

The pressure-spring of the truss consists of two parallel strips, I and i, connected at their ends and at intervals between their ends by connecting-pieces l, the said spring being stamped from a single piece of metal. In order to preserve the spring from the injurious action of water, I cover the same with a waterproof coating, such as hard rubber. The ends of the spring are provided each with three holes, so that by means of a suitable screw-fastening the length of the spring between the back-pads and the truss-pads may be regulated.

The truss-pad consists of the combination of a soft pad, F, having the shape approximately of a hollow sphere or ellipsoid, and produced by subjecting felt, wool, or similar soft fibrous material, to pressure in a mold until it retains the shape named; a second pad, L, having approximately the same shape, but a little smaller, fitting inside of the soft pad and made of a substance impervious to water, such as celluloid, hard rubber, or ivory; an annular disk, M, secured to an annular projection, N, of the soft pad F; a disk, G, secured to the spring of the truss, and fastening-pins P, passing through holes Q in the disk G, through holes in an annular projection to the pad L, and adapted by any well-known construction to secure in a removable manner the soft pad to the hard pad, and a suitable leather covering, E, applied to the convex surface of the soft pad.

The *modus operandi* of the invention is as follows: When the truss is supported by the body so that the rupture-pad presses upon the point of rupture, the patient can extend the back-pads to that position which is the most comfortable without in any way being obliged to employ a screw-driver or any other tool. The pads remain as placed because the ends of the frame B are elastic, and when removed

spread apart farther than the distance between the tubes A. The truss need not be first removed from the body in order to adjust the pads. Those portions of the tubes A on each side of the yoke *a* may spread out from each other, if desired; but I prefer to have them approximately parallel, as shown.

Heretofore springs for trusses have been formed of a single flat strip or band of steel. I gain greater strength, greater stiffness for the amount of steel employed, and a more ornamental spring by constructing it as hereinbefore described. By doing away with all unnecessary steel an agreeable ventilation is obtained in the place of a band of steel lying against the body. However, if desired, a strip of leather, K, may be secured to the under side of the spring. As this truss is intended especially for bathing purposes, I prefer to omit the leather K, and cover each strip I and *i* with hard rubber or similar substance, which may be rapidly dried.

The soft elastic pad F may be detached before bathing and only the pad, L, impervious to water employed.

I lay no claim to the means of fastening the said parts F, L, and G together, as such means are well known in the art of mechanics.

The connection between the pads C and tubes A may be, for the sake of convenience and distinction, termed a "frictional" connection and also a "movable frictional" connection.

The back-pads C, if removed from the frames B, leave the frames B to press against the body during bathing. The said pads may be fastened to the frame in any convenient manner—as, for instance, by a screw. The frames B, constructed as hereinbefore described, press against approximately the same amount of the surface of the body as do the cushion-pads, and therefore the feeling is comfortable to the patient. As the frames B serve not only as frames, but as pads, they may also be called "pads." If the patient does not care to take the time to unscrew the cushion-pads C from the frames B, he can pull the pads away from each other and employ the tubes A as the part to rest upon the back.

As shown in the drawings in Fig. 4, a space

of about one-sixteenth of an inch is left between the impervious pad L and the cushion-pad F, so as to obtain a superior softness and elasticity. The strap K is removed during bathing.

The impervious pad L may be replaced by a filling or stuffing of fibrous material, such as wool or hair.

The annular disk M, heretofore mentioned, consists of a piece of pasteboard or similar stiff and light material and fastened to the rim or projection N of the soft pad, for the purpose of stiffening the said pad and assisting it to retain its form, especially when not in use.

I claim as my invention—

1. The combination, with the pressure-spring of a hernia-truss, of an adjustable frictional connection between the back-pads of the truss and said spring, consisting of tubes carried by the said spring and rods fitting into the tubes and carried by the pads.

2. In a hernia-truss, the combination of two approximately parallel tubes connected rigidly by a yoke which is secured to the pressure-spring of the truss, and back-pads provided with elastic projecting rods and fitting into said tube.

3. A hernia-truss provided with a truss-pad impervious to water and with a cushion-pad detachably applied to said impervious pad.

4. In a hernia-truss, a pressure-spring consisting of two strips of steel secured at their ends to each other, and also at intervals between their ends, and stamped from a single piece of material.

5. As an article of manufacture, the combination of a compressed approximately hemispherical hollow pad of soft and elastic material, a filling of fibrous material located in the said hemisphere, and an annular disk applied to a projection of the said hemisphere, the said projection forming an integral part of the hemisphere.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 29th day of August, 1887.

WM. MARSH.

Witnesses:

H. BAUSHE,
R. C. RADCLIFFE.