J. W. SUTTON.

TRUSSES.

No. 187,428. Patented Feb. 13, 1877.

Fig. 1.

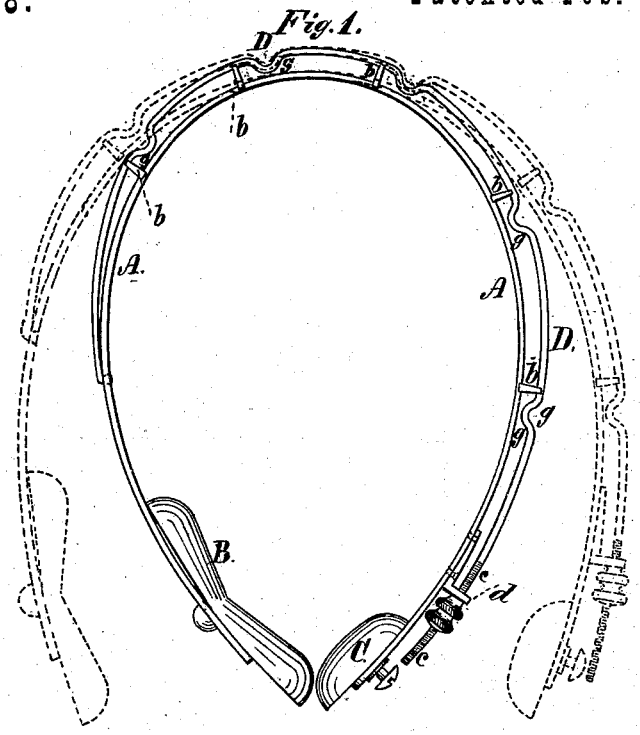


Fig. 3.

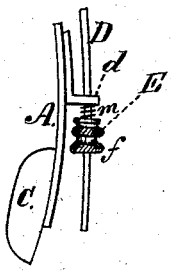


Fig. 2.

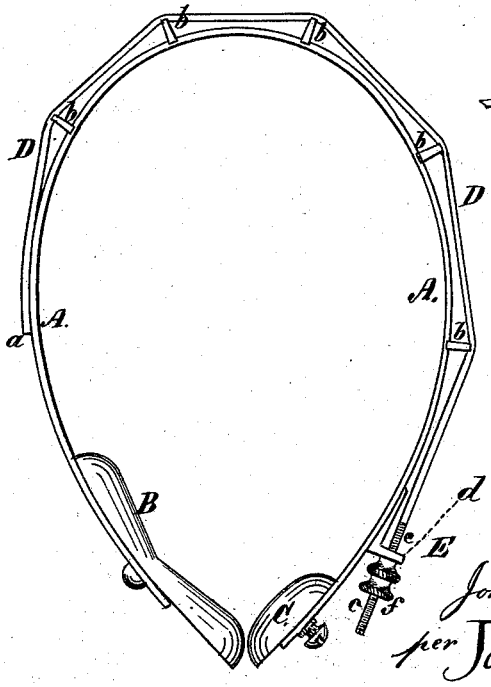
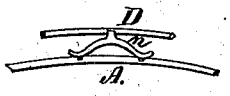


Fig. 4.



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UNITED STATES PATENT OFFICE.

JOHN W. SUTTON, OF NEW YORK, N. Y.

IMPROVEMENT IN TRUSSES.

Specification forming part of Letters Patent No. **187,428**, dated February 13, 1877; application filed November 23, 1876.

To all whom it may concern:

Be it known that I, JOHN W. SUTTON, of the city, county, and State of New York, have invented certain Improvements in Hernial Trusses, of which the following is a specification:

This invention comprises a hernial truss constructed with a longitudinal spring-brace extending around a greater or less portion of the circumference of the truss, and capable of being elongated or shortened by a screw or other suitable device, to limit the inward elastic movement or contraction of the truss when applied to the person, whereby the normal pressure of the truss upon the hernia may be adjusted to any desired degree by the person wearing the same, and without removal of the truss from the body, thereby permitting the truss to be readily and conveniently adapted to the special requirements of any particular case, and also enabling it to be used with a suitable pressure at such times as such may be necessary, and with a less or diminished pressure as the cure progresses. The truss as thus constructed, moreover, has a firm and reliable adjustment, and is little liable to breakage and injury.

The invention further consists in the combination of a spring with the hereinbeforementioned brace, whereby the truss is better adapted to those cases of hernia where a yielding of the truss after a certain limit of pressure is reached is desired.

Figure 1 is an edge view of a truss constructed according to my invention. Fig. 2 is a like view of a modification thereof. Fig. 3 is an edge view, showing a modification in one of the details thereof; and Fig. 4 is a like view, indicating another modification in such detail.

A is the usual flat spring of a hernial truss, having upon one end the usual bearing or other pad, B, and at the other the usual hernial pad C. So far as concerns the flat spring A and the pads B C, the truss may be of any ordinary or suitable construction. D is a metallic brace curved around the exterior of the spring A, substantially as represented in Figs. 1 and 2, one end of said brace being firmly attached to the outer surface of the spring A, at the back thereof, as represented at *a*. This brace D is kept at a suitable distance from the spring A by studs, lugs, or spurs *b*. The opposite end *c* of the brace D has formed upon it a screw-thread, and is passed through a bearing-piece, *d*, affixed at or near the adjacent end of the spring A. Upon this threaded end *c* of the brace D is placed a nut, E, preferably milled upon its periphery, to facilitate the turning thereof by the thumb and finger. Also, placed upon this threaded portion *c* of the brace D is a jam-nut, *f*, provided to prevent the backward turning of the nut E.

In the use of the truss it is applied to the person in the usual manner, with the pads C bearing upon the ring or annular muscles surrounding its spermatic cord, and at which, in males, the rupture ordinarily occurs. This done, the thumb or finger of one hand is placed under the pad C, and the latter is pressed outward to the position at which it will exert the pressure, be the same more or less, which it is desired to have exerted by the pad C upon the rupture. The nut E is then turned upon the end *c* of the brace until it is brought snug against the bearing-piece *d*, after which the jam-nut *f* is brought up against the nut E, to prevent the accidental reverse movement or turning of the said nut E. The parts being in this position, the tendency to contraction on the part of the spring A is met and counteracted by the tensile strain brought upon the brace D, and the pressure exerted by the spring A is thereby limited to the point or degree at which it was placed or held when the nut E was turned against the bearing-piece *d*, as just hereinbefore explained. It will be observed that should the spring A be expanded—as, for example, by a convulsive or expanding movement of the lower part of the body, as in coughing—the brace D, relative to the adjacent part of the spring A, will be, as it were, elongated; that is to say, the nut E will be brought away from the bearing-piece *d*, whereupon the entire force of the spring, unlimited and unrestrained by the brace D, will be exerted to press the pad C against the rupture, and thereby support the same with an unusual pressure against the unusual strain convulsively exerted thereon—as, for example, in coughing, &c.

In some cases, however, it is not desirable

that this full strength of the spring A should be thus instantaneously brought to bear upon the rupture. I provide for the proper action of the truss in such instances by making the brace D itself longitudinally elastic, or practically capable, within certain limits, of elongation. This I accomplish either by bending the brace D at intervals, as shown at *g* in Fig. 1, forming several short springs therein, which accomplishes the result above indicated, or by placing a small spring between the nut E and the bearing-piece *d*, as represented at *m* in Fig. 3; or, in lieu of either of these means, by inserting small springs between the brace D and the spring A, in lieu of the studs, lugs, or spurs *a*, as represented at *n* in Fig. 4. From this last-indicated construction and arrangement of the brace D it follows that in the normal use of the pad said brace D is itself longitudinal, strained, or elongated; and when the spring A is expanded it is only gradually released from the restraining action of the brace D, instead of being almost instantaneously released therefrom, as in the first instance hereinbefore explained.

It will be observed that this last-described construction is especially illustrated in Figs. 1, 3, and 4, whereas in Fig. 2 the construction first fully explained—that of the combination of the brace D, the spring A and its pads, and the adjusting-nut E—is represented in Fig. 2.

It is manifest that the utility of my herein-described invention is not dependent upon any particular construction of the spring A, or of the pads attached to said spring, but may be used to advantage in any truss in which the spring A is used, whether the same be what is known as a single or a double truss.

It is to be observed that inasmuch as the inward strain of the truss, when the contraction of the latter is limited, as hereinbefore explained, is simply a tensile strain upon the brace, and there is therefore little liability of breakage or derangement of the truss, which might occur if the adjustment was by means of any arrangement of levers or the like.

What I claim as my invention is—

1. The longitudinal or circumferential spring-brace D, surrounding a greater or less portion of the external circumference of the hingeless truss-spring A, and adjustable in length with reference thereto by a nut or equivalent device, substantially as and for the purpose herein set forth.

2. In the adjustable brace D of the truss, a spring arranged to permit the greater or less elongations of said brace, substantially as and for the purpose herein set forth.

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