

No. 862,837.

PATENTED AUG. 6, 1907.

T. E. MARTIN.  
TRUSS.

APPLICATION FILED OCT. 21, 1906.

Fig. 1.

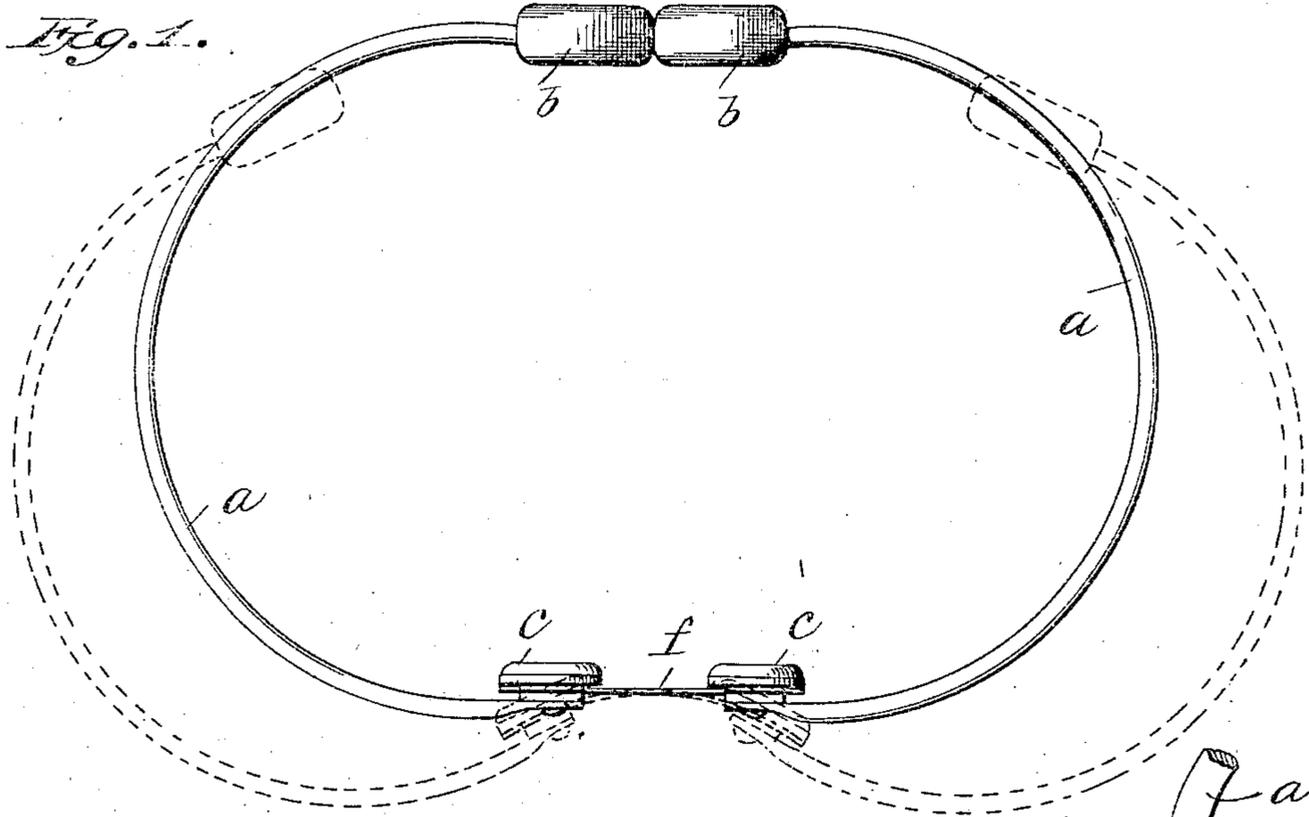


Fig. 2.

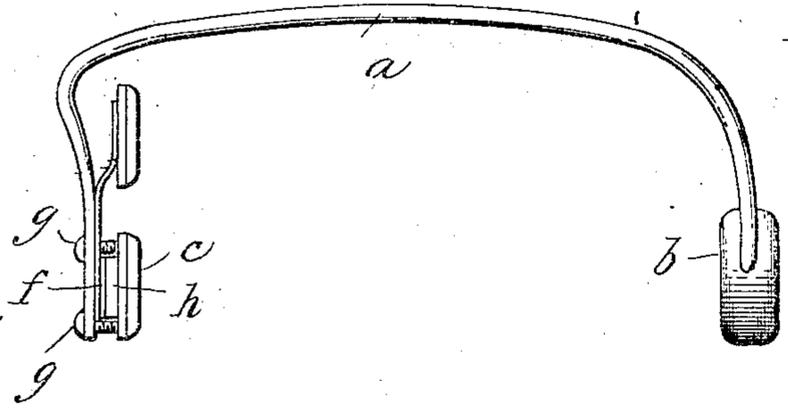


Fig. 5.

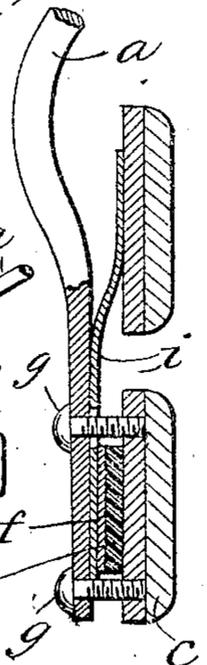


Fig. 4.

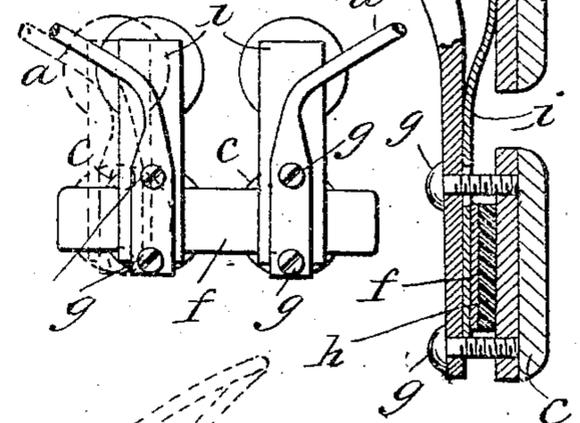


Fig. 3.

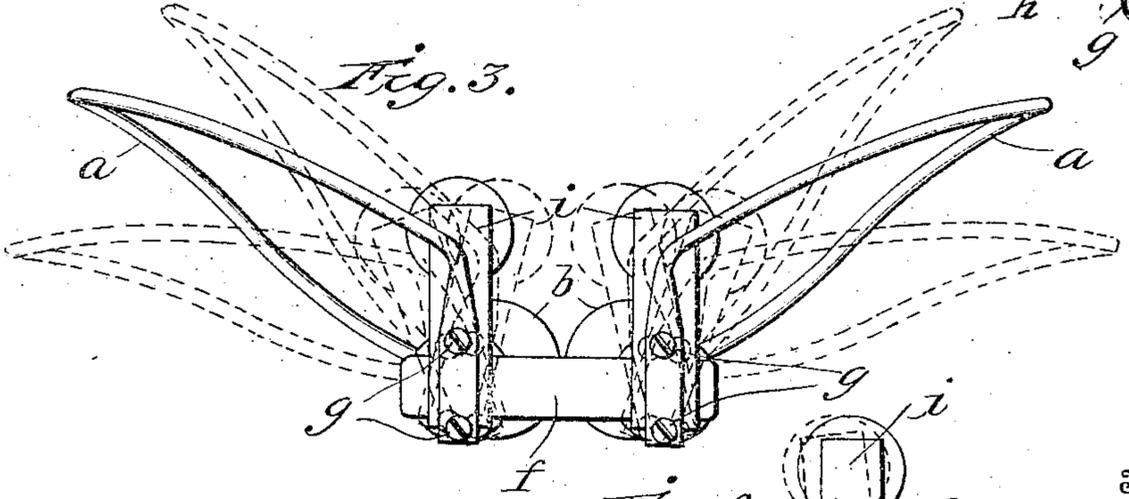
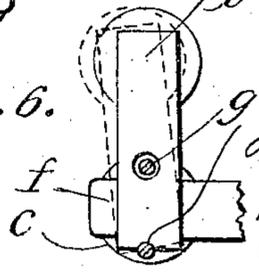


Fig. 6.



Witnesses  
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# UNITED STATES PATENT OFFICE.

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## TRUSS.

No. 862,837.

Specification of Letters Patent.

Patented Aug. 6, 1907.

Application filed October 21, 1905. Serial No. 283,815.

*To all whom it may concern:*

Be it known that I, THOMAS E. MARTIN, a citizen of the United States of America, and a resident of Buffalo, county of Erie, State of New York, have invented certain new and useful Improvements in Trusses, of which the following is a full and clear specification, reference being had to the accompanying drawing, in which—

Figure 1 is a plan view; Fig. 2 a side elevation; Fig. 3 a rear view; and Figs. 4, 5, and 6, detail views herein after set forth.

The object of this invention is to produce a simple and inexpensive truss which will have a wide range of adjustability and uses and may be worn with a minimum of discomfort, and which when once adjusted to the wearer's body will permit the utmost exertion as well as freedom of movement of the body without disarranging or dislodging the apparatus, as more fully hereinafter set forth.

A further object is to so construct the truss that it will not require belts, connecting straps or leg straps to hold it in position or to aid in producing pressure.

To the accomplishment of this object and such others as may hereinafter appear, the invention consists of the parts, and combination of parts hereinafter fully described, and particularly pointed out in the appended claims, reference being had to the accompanying drawings forming a part of this specification, in which the same reference characters designate like parts throughout the several views.

Referring to the drawings by reference-characters, *a* designates the two arms which carry at their respective front ends the two abdominal pads *b* and at their rear ends the two back-pads *c*. The arms are curved upwardly approximately to a half circle and they slant upward and outward away from each other, as shown in Fig. 3, so as to embrace the hips of the wearer, and the front pads are approximately in the same horizontal plane with the respective back-pads.

Connecting the rear downwardly-turned ends of the arms is a thin flat spring *f*, which is clamped face-wise to the arms so that it will lie in a horizontal position when the truss is on the wearer. A pair of screws *g* clamp each end of this spring to the arm in such manner that the arm will not only have a longitudinal adjustability on the spring but will also have a pivotal movement, the axis of this pivotal movement being substantially coincident with the front pads. The screws also serve to secure the pads to the arms; and to give an easy frictional adjustment; an elastic cushion or washer *h* is interposed between the spring and the pads.

The arms are as usual slightly elastic and are also permanently bendable as usual to permit of their adaptation to the patient's figure.

A feature of great importance lies in so curving the arms and locating the back-pads with reference to the front pads that when the truss is used for inguinal or femoral hernia with the front pads bearing at the proper points on the abdomen, the rear pads will always be brought low enough to bear upon the pelvic bone (below the lowest vertebra) and the arms will curve upwardly and forwardly and rest in the slight depressions always found in the side edges of the hip-bones, the forward downwardly-extending parts of the arms lying snugly in the respective depressions between the thighs and the abdomen. This arrangement of the appliance not only renders it exceedingly comfortable even in the hottest weather but also makes it absolutely impossible to disturb the truss by any possible exertion or movement of the body. This desirable result is obtained by locating the rear pads low down with respect to the front pads, that is, about on a horizontal plane with them, so that when the front pads are properly positioned and the arms are in position the back-pads will be compelled to bear upon the back at a point below the hinge connection of the spinal column with the pelvic bone, thus leaving the vertebræ free to articulate without in the least affecting the truss. It will be understood, however, that my invention is not confined to thus approximately alining the back pads with the front pads since in trusses for umbilical rupture and floating kidneys the pads will not be in alinement.

My truss is adapted for single hernia as well as double hernia, but in single hernia and also for floating kidney, one of the front pads will of course simply serve to assist in holding the truss in place on the body.

The use of a spring connecting plate or other flexible connection at the rear permits the arms to be sprung sufficiently wide apart to enable the wearer to place the truss around his body without bending or flexing the arms, as shown in dotted lines in Fig. 1. This spring also serves to normally throw the front pads toward each other, whereby the arms will be clasped against the body with an even, gentle pressure which will be sufficient to support the truss in position but will not be sufficient to cause discomfort.

It will be obvious that should the spring connection weaken or permanently flex from long or careless usage, this may be readily corrected by simply slightly permanently bowing the spring backward midway its length, whereby the tendency of the spring to throw the arms close to the body will be restored. This bowing of the spring may be easily done with the hands, as the spring in all cases will be made of comparatively thin, light material. I prefer thin, flat metal for the connecting member but I am not restricted in this respect, as any other flexible material such as hard rubber, celluloid, stiff leather, etc., may be employed.

By pivotally connecting the arms to the rear connection, the axes of these pivots being approximately in line with the front pads, the upward inclination of the arms with respect to each other may be varied to suit different sized persons, as shown in dotted lines in Fig. 3, and when so adjusted the arms are clamped tightly in position by simply tightening the screws. Stripping of the threads of the screws is prevented and a resilient frictional clamping action is secured by the interposed elastic washers. This frictional clamping action is desirable in that it assists in making an easy and accurate adjustment of the arms. The screws and elastic washers enable sufficient friction to be brought to bear upon the spring-plate to hold the arms in their adjusted position against loosening under all ordinary usage, but should there be any slipping action at the clamps the user may readily reset the arms by the use of a screw-driver. It will be observed that this adjustment of the inclination of the arms is secured without disturbing the position of the front pads with respect to the rear pads, the pads being always kept approximately in the same horizontal plane.

The provisions of means for adjusting the arms bodily toward and from each other is another feature of great importance since it gives the truss a still wider range of adjustment in adapting it to different sized persons without throwing the abdominal pads out of their proper relation to the back-pads. This lateral adjustment is desirably secured, as shown, by the same clamps that secure the pivotal adjustment of the arms on the spring connecting-plate. This bodily and pivotal adjustment of the arms in addition to the capability of permanently flexing the spring as well as the arms, gives the truss a practically universal adjustability, thus enabling it to be comfortably and readily fitted to all persons within the range of its possible adjustment. It will be observed also that my truss is reversible and is thus adapted to be used for umbilical hernia, and as an abdominal supporter, and as a support after surgical operations upon any part of the abdomen.

Rising from each of the main back-pads is a flat spring *i* carrying a supplemental pad, this spring being clamped between the arms and the spring-connection by the screws *g* that clamp the same together. These springs *i* have a limited lateral adjustment by reason of the enlargement of the screw-holes, so that the supplemental pads may be adjusted to bear on the back at a comfortable point. The object of these upstanding supplemental pads is to prevent the truss from being tilted forward by the action of the abdomen and thereby exerting a downward pressure upon the pelvis, thus contributing greatly to the comfort of the truss especially to corpulent wearers. These supplemental pads will not be raised sufficiently to bear upon the vertebræ as the large surface at the back of the

pelvic bone is ample to receive both the main and the supplemental pads, but even if they should extend up and bear upon the lower vertebra no discomfort or inconvenience will result as the main pressure is of course taken up by the main pads. Another advantage of these supplemental pads is that they exert a sufficient holding-up action to permit the truss to be used for female complaints by attaching to one or both of the abdominal pads a suitable uterine supporter.

It will be apparent to those skilled in the art that various mechanical embodiments of the invention are possible and I, therefore, do not wish to be limited to the exact arrangement and construction shown.

What I claim and desire to secure by Letters Patent is:—

1. A truss consisting of a pair of comparatively rigid arms with abdominal pads attached thereto and connected at their rear ends by a bendable connection more easily flexed than the side-arms but of sufficient stiffness to prevent the arms of the truss from tipping outwardly or inwardly from their adjusted positions required to fit the body of the wearer, said connection being also sufficiently flexible to permit the front ends of the arms to be spread apart without bending the arms and without permanently bending the connection.

2. A truss consisting of a pair of comparatively rigid bowed arms provided with abdominal pads at their front ends, a transversely-flexible connection connecting their rear ends, a back-pad appliance at their rear ends, the connections between the arms and the connecting part being pivotal and the axes of the pivots running forwardly and backwardly so that the bowed arms may be adjusted upwardly and downwardly to fit different sized figures.

3. A truss consisting of a pair of bowed arms provided with pads at one end and a pad appliance at their other ends, and a part connecting these latter ends, the connections between the arms and the connecting part being pivotal, the axes of the pivots running forwardly and backwardly, so that the bowed arms may be adjusted upwardly and downwardly to fit different sized bodies.

4. In combination, a pair of body-embracing arms carrying abdominal pads at their forward ends and means connecting their rear ends, a back pad attached to their rear ends, and a supplemental laterally adjustable pad supported at a point above said back pad.

5. A truss comprising a pair of body-embracing arms whose rear ends are connected together, a pair of main back pads carried by the arms, and a pair of supplemental back pads supported above the main back pads, for the purpose set forth.

6. A truss comprising a pair of body-embracing arms and means connecting their rear ends, a pair of main back-pads, a pair of upstanding springs rising above the main pads and carrying supplemental back pads.

7. A truss comprising a pair of body-embracing arms and means connecting their rear ends, a pair of main back pads, a pair of supplemental back pads carried by upstanding springs, and means whereby the springs may be laterally adjusted, for the purpose set forth.

In testimony whereof I hereunto affix my signature in the presence of two witnesses this 18th day of October 1905.

THOMAS E. MARTIN.

Witnesses:

C. D. DAVIS,

L. BURNAM BRIDGES.