

(No Model.)

A. DALLAS.
TRUSS.

No. 401,877.

Patented Apr. 23, 1889.

Fig. 1.

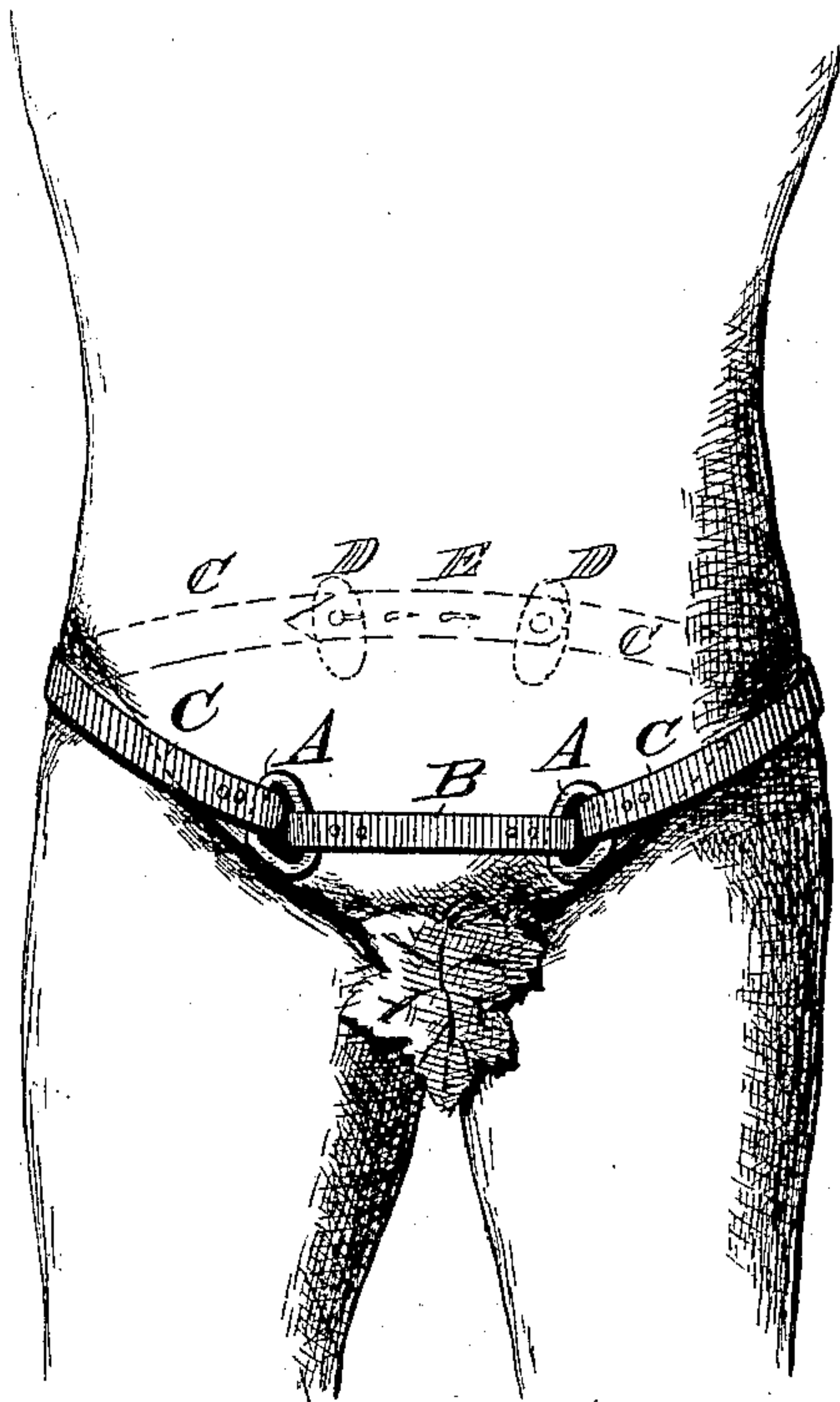


Fig. 2.

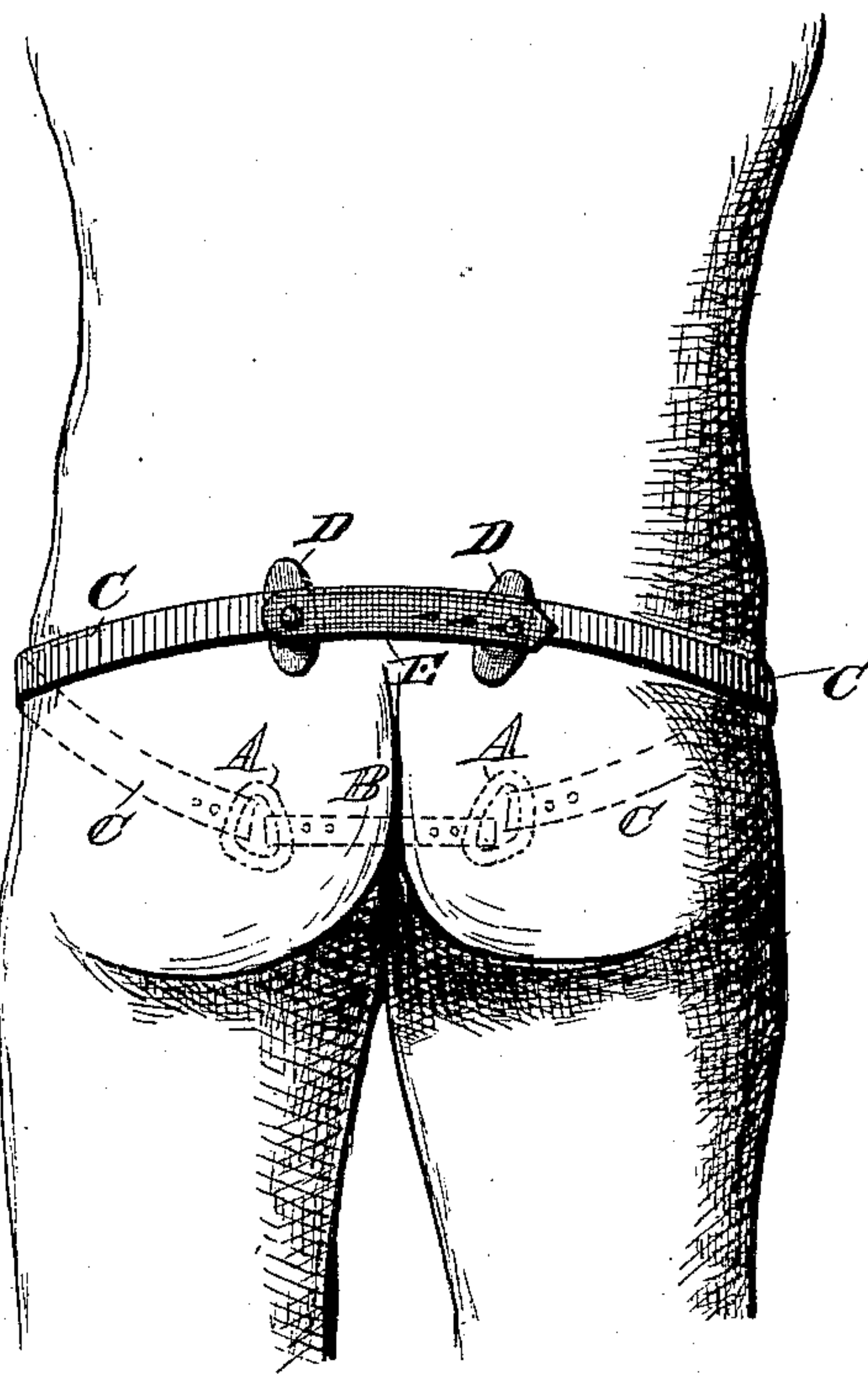


Fig. 3.

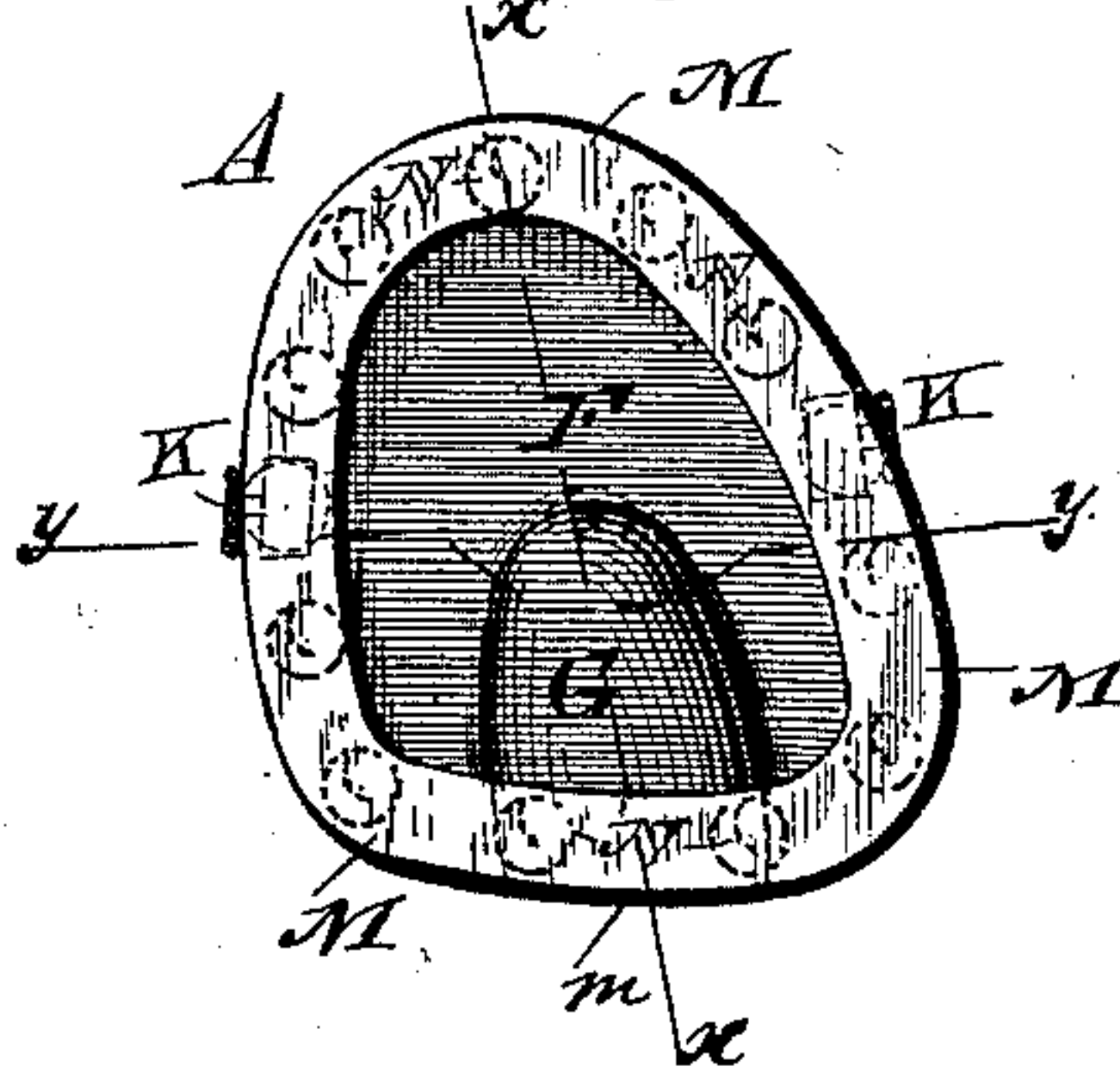


Fig. 4.

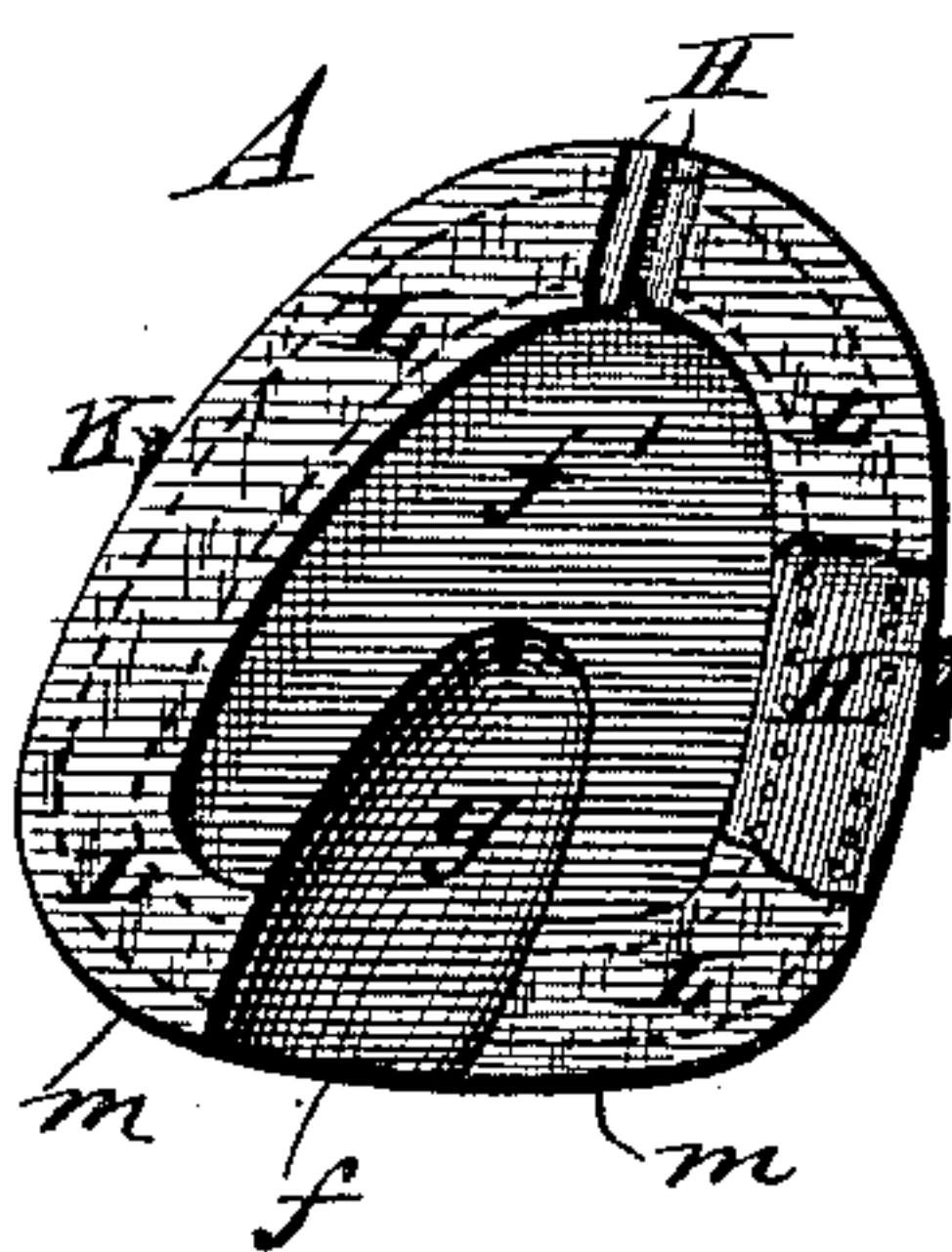


Fig. 5.

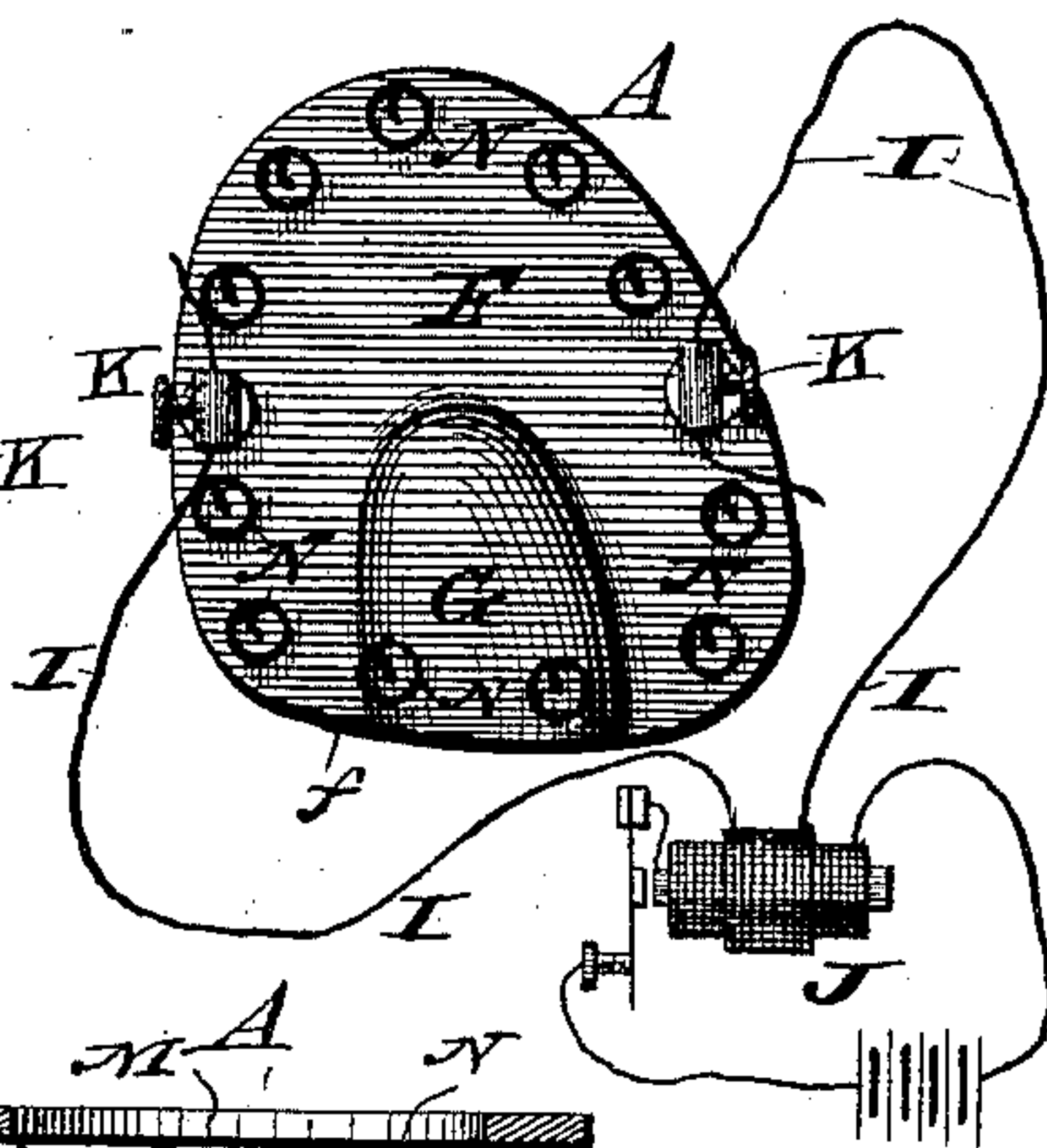


Fig. 6.

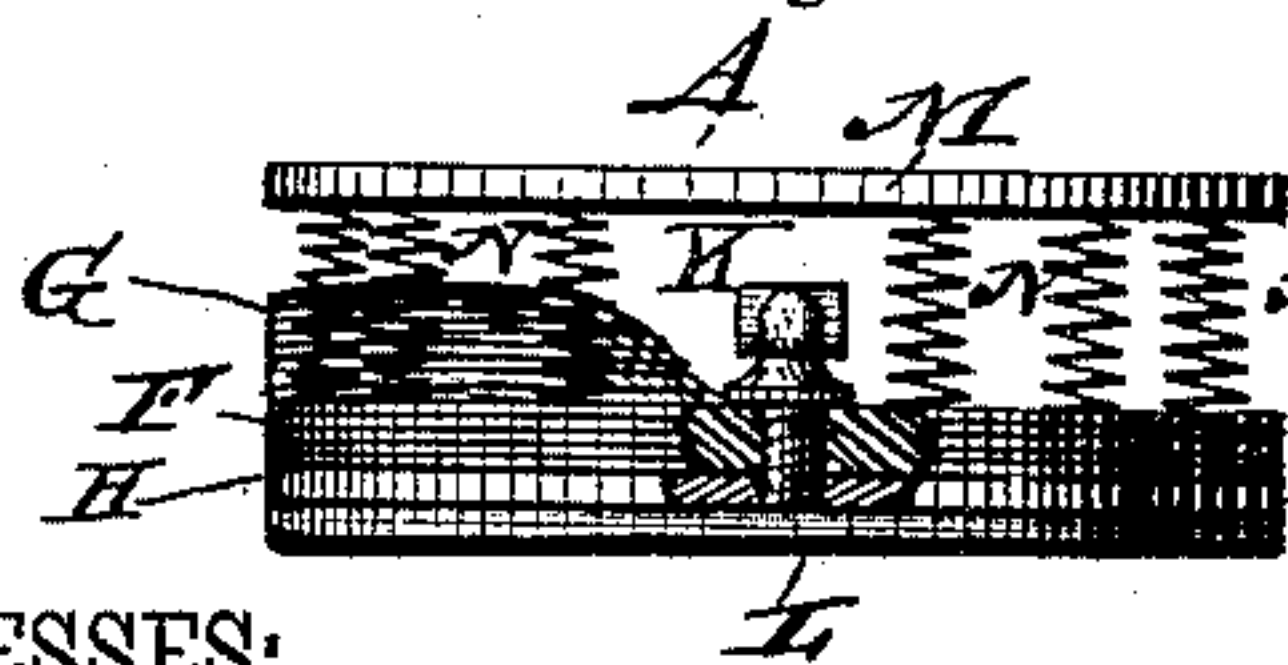
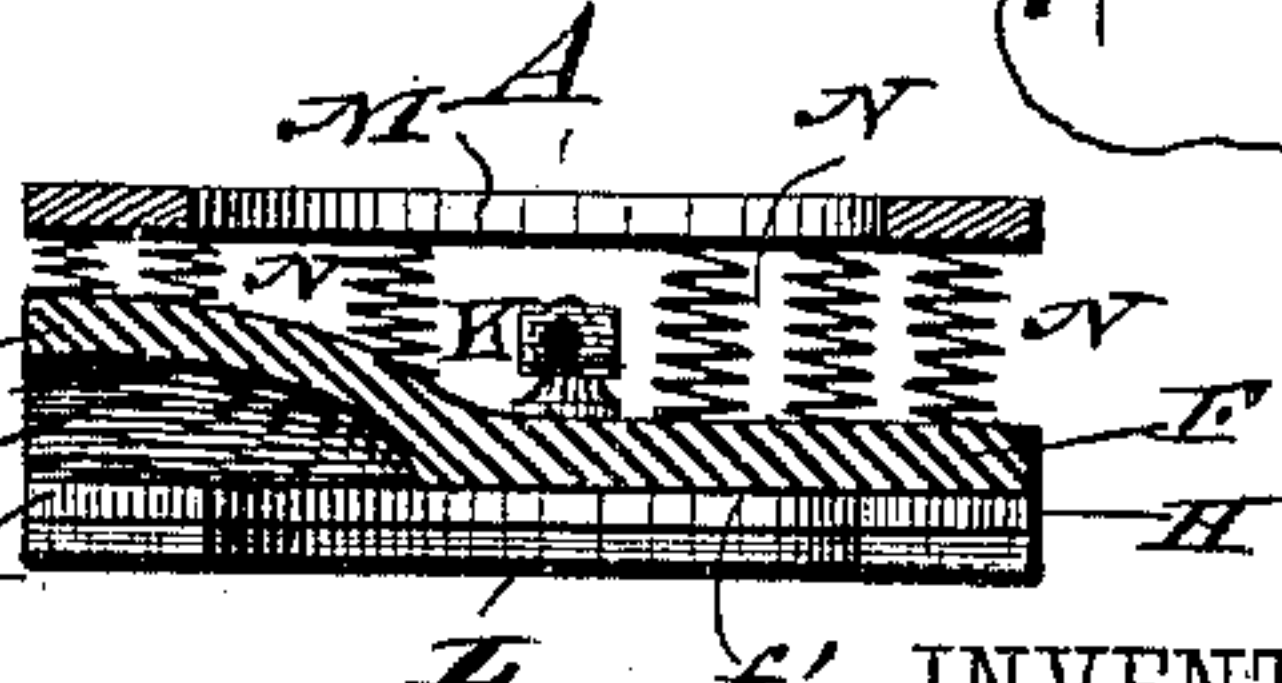


Fig. 7.



WITNESSES:

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Co. Sedgwick

Fig. 8.



INVENTOR:

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UNITED STATES PATENT OFFICE.

ALEXANDER DALLAS, OF BAYONNE, NEW JERSEY.

TRUSS.

SPECIFICATION forming part of Letters Patent No. 401,877, dated April 23, 1889.

Application filed November 28, 1887. Serial No. 256,337. (No model.)

To all whom it may concern:

Be it known that I, ALEXANDER DALLAS, M. D., of Bayonne, in the county of Hudson and State of New Jersey, have invented a new and Improved Rupture-Truss, of which the following is a full, clear, and exact description.

My invention relates to trusses for retaining and curing abdominal ruptures, and has for its object to provide a simple, inexpensive, and efficient truss of this character, which will keep its place when adjusted, and will maintain a uniform constant pressure on the rupture, while relieving the spermatic cords and vessels of constricting and injurious strains, and which will allow connection of battery-wires for establishing an electric current to the parts subjected to pressure by the pads, to prevent atrophy of said parts.

The invention consists in certain novel features of construction and combinations of parts of the truss, all as hereinafter described and claimed.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a front view of a portion of a human form with my improved rupture-truss applied. Fig. 2 is a rear view thereof. Fig. 3 is a back or outer face view of one of the truss-pads. Fig. 4 is an inside face view of one of the pads with the felt cover of the electrode partly broken away. Fig. 5 is a back view of the pad with the rear skeleton plate removed. Fig. 6 is an edge view at one side of the pad. Fig. 7 is a longitudinal section of the pad, taken on the line $x x$, Fig. 3; and Fig. 8 is a transverse section of the pad, taken on the line $y y$, Fig. 3.

The truss is made with two pads, A A, which embody the principal novel features of the device, and are connected by a front strap or plate, B, and are each also attached to one end of two straps or plates, C C, the outer or free ends of which are provided with any ordinary or approved spring-pressed pads or pressure-plates D D, and are connected by an elastic strap, E, which allows freedom of movement of the patient, and may be released at one end from a button or buckle-fastening to allow the truss to be readily adjusted to or re-

moved from the body, and as will be understood from Figs. 1 and 2 of the drawings.

The truss-pads A A are made in pairs, or for the right and left sides, respectively, of the groin; but as both pads embody the same novel principles of construction a detailed description of one pad will suffice for a clear understanding of these important parts of my invention, and as follows:

The pad A is made with a non-irritating main plate, F, which may be glass, hard rubber, or polished wood, and is in general triangular facial form, and with one edge, f , made straight, or nearly so, and preferably slightly rounded to fit the fold of the flesh at the point of junction of the leg and abdomen. This feature of construction of the pad, with a marginal portion, f , fitting the flesh fold between the abdomen and leg, is important, and as said fold takes lengthwise practically the same course or direction in all persons, whether they are stout or thin and not having h'p diseases, the pad will by this part f fit the flesh fold of most persons lengthwise, so that when the person wearing the truss sits down or otherwise bends the leg there will be little if any more strain on the outer or lower edge of the pad than on its opposite edge, and undue pressure of the pad on or around the rupture is thereby obviated, which makes the pad practically painless to wear, and facilitates retaining it in proper place over the rupture.

The pad-presser plate F is provided at its back with a transversely-rounded or dome-shaped portion, G, forming a recess or cavity, g , at the under or pressing face of the plate, said recess opening at the edge f of the plate and being preferably made deeper and wider from its inner end to the margin of the plate. The recess g ranges directly in the line of the inguinal canal when the truss is applied; hence as the pad is held in place largely by contact of its marginal portion f with or at the flesh fold between the abdomen and leg, as above described, and while that part f' of the plate above the end of the recess g bears directly on the rupture to hold it back, the spermatic cords and vessels as they more nearly approach the surface of the body prior to passing over the pubic bone are given free room in the pad-recess g , and thus are not

crowded or constricted, and important functions of the body depending for their best development on the healthful action of these spermatic cords and vessels will not be interfered with by the continued uniform pressure of the truss over or upon the rupture. I am aware that a truss-pad has heretofore been made with a rib which projects above the normal bearing-face of the pad and transversely, and with a concavity below said rib which extends clear across the pad; but this construction, because of the liability of the transverse rib to bear directly across and upon the spermatic vessels, has a tendency rather to constrict said vessels than to relieve them of disturbing pressure.

It will be noticed that in my pad the spermatic-vessel-receiving recess or cavity *g* ranges about lengthwise of the pad and in the direct line of the inguinal canal, and that the bearing-face of the pad is horseshoe-shaped around or next said recess; hence the entire tissues at and around the rupture are effectually supported, while the recess accommodates the spermatic vessels and relieves them of constricting pressure. Furthermore, it will be seen that the outer wall or dome-shaped top of the plate over the recess *g* will not allow too great protuberance of the spermatic vessels, and thus guards them from injury which otherwise would occur by the pinching of them at or by the pressure of the contiguous pubic bone.

Fig. 8 of the drawings clearly shows how the bearing-face of the pad is concaved in a direction transversely to the range or line of the pad-recess *g*, and this feature allows the pad to fit more closely to the transversely-rounded walls of the abdomen, and in connection with the marginal portion *f*, which fits the flesh fold between the abdomen and leg, materially assists in retaining the pad in proper position over the rupture.

The face of the main plate *F* of the pad is provided with two plates, *H H*, preferably of metal, and forming electrodes, which are separated at one end by the plate-recess *g*, and do not meet at the other end, as shown, by the space *h* between them. An electric current more or less potent may be brought to act on the muscular tissues at and around the rupture through wires *I*, leading from a suitable induction-coil and battery *J* to binding-posts *K K*, fitted into the plate *F* and touching the plates *H*, and to which posts it is proposed to connect the battery-wires for a short time two or more times a day—at morning and night, for instance—to establish the electric current for stimulating or preventing atrophy of parts subjected to the pressure of the truss-pad. These binding-posts do not interfere with the proper action or pressure of the pad, and the wires may be readily connected to the posts by any person of ordinary intelligence and without disturbing the position of the truss over the rupture. A felt covering, *L*, is or may be ap-

plied to the outer face of the metal electrode-plates *H*, and will be moistened to properly conduct the electricity from the electrode to the flesh, and more equably distribute the current than would the plates *H* if left uncovered.

The belt-straps *B C C* are connected to the truss-pads *A* by looping or riveting their ends around or to a metal plate, *M*, preferably having the same marginal outline as the main pad-plate *F*, and having a squared or slightly-rounded edge, *m*, in line with the edge *f* of the main plate, said plate *M* being preferably made with a large central opening to secure lightness, or in the skeleton triangular form clearly shown in Fig. 3 of the drawings. This plate *M* is fastened to the one end of a series of springs, *N*, preferably spiral springs, and the other ends of these springs are held in any suitable manner to the main plate *F* of the pad. It is obvious that these springs interposed between the point of connection of the truss-belt and the pressure-plate *F* of the pad allow said plate *F* to advance or recede with the movements of the abdominal walls incident to respiration or exercise, while the springs will by their expansion or reaction always hold the pad over the rupture with a uniform pressure, promoting a quick healing of it without discomfort to the patient wearing the truss. These springs *N* will be made lighter or heavier or with less or greater expansive force or tension, as circumstances attending the use of the truss may require, and their use in connection with the plate *F*, formed with the peculiar marginal portion *f*, fitting the flesh fold between the abdomen and leg, and also with the spermatic-vessel-receiving recess *g*, renders the entire pad more easy and comfortable to wear; but the springs are not essential to the successful use of the pad-plate *F*, to which retaining-straps may be connected, in any approved way, to hold the plate or pad to the body.

The truss-straps *C C* do not press to any great extent upon the sides of the patient, but they exert a direct clamping action on the main truss-pads *A A* and rear pads, *D D*, which latter pads lie directly on or over the pelvis, which will bear the pressure without discomfort or injury to the patient.

It is obvious that either one or both of the pads *A* may be used with straps, forming a belt, holding the truss substantially as above described.

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

1. A truss-pad having a pressing-face provided with a recess or cavity opening to the lower edge or margin of the pad and extending upward along the line of the inguinal canal when the pad is applied to avoid pressure on the spermatic vessels, while the face of the pad at both sides of and above said recess bears on the ruptured parts, substantially as described, for the purposes set forth.

2. A truss-pad having a pressing-face provided with a recess or cavity opening to the lower edge or margin of the pad and extending upward along the line of the inguinal canal when the pad is applied to avoid pressure on the spermatic vessels, while the face of the pad at both sides of and above said recess bears on the ruptured parts and the lower edge of the pad inclined to fit the flesh fold between the abdomen and leg, substantially as described, for the purposes set forth.

3. A truss-pad having a pressing-face provided with a recess or cavity opening to the lower edge or margin of the pad and extending upward along the line of the inguinal canal when the pad is applied to avoid pressure on the spermatic vessels, while the face of the pad at both sides of and above said recess bears on the ruptured parts, and the general pressing-face of the pad concaved transversely of said recess or cavity, and the lower

edge of the pad inclined to fit the flesh fold between the abdomen and leg, substantially as described, for the purposes set forth.

4. A truss-pad having a pressing-face provided with a recess or cavity opening to the lower edge or margin of the pad and extending upward along the line of the inguinal canal when the pad is applied to avoid pressure on the spermatic vessels, while the face of the pad at both sides of and above said recess bears on the ruptured parts, in combination with a back plate adapted for attachment of fastening straps or belts, and springs interposed between said strap-plate and presser-plate, substantially as described, for the purposes set forth.

ALEXANDER DALLAS.

Witnesses:

HENRY L. GOODWIN,
EDGAR TATE.