

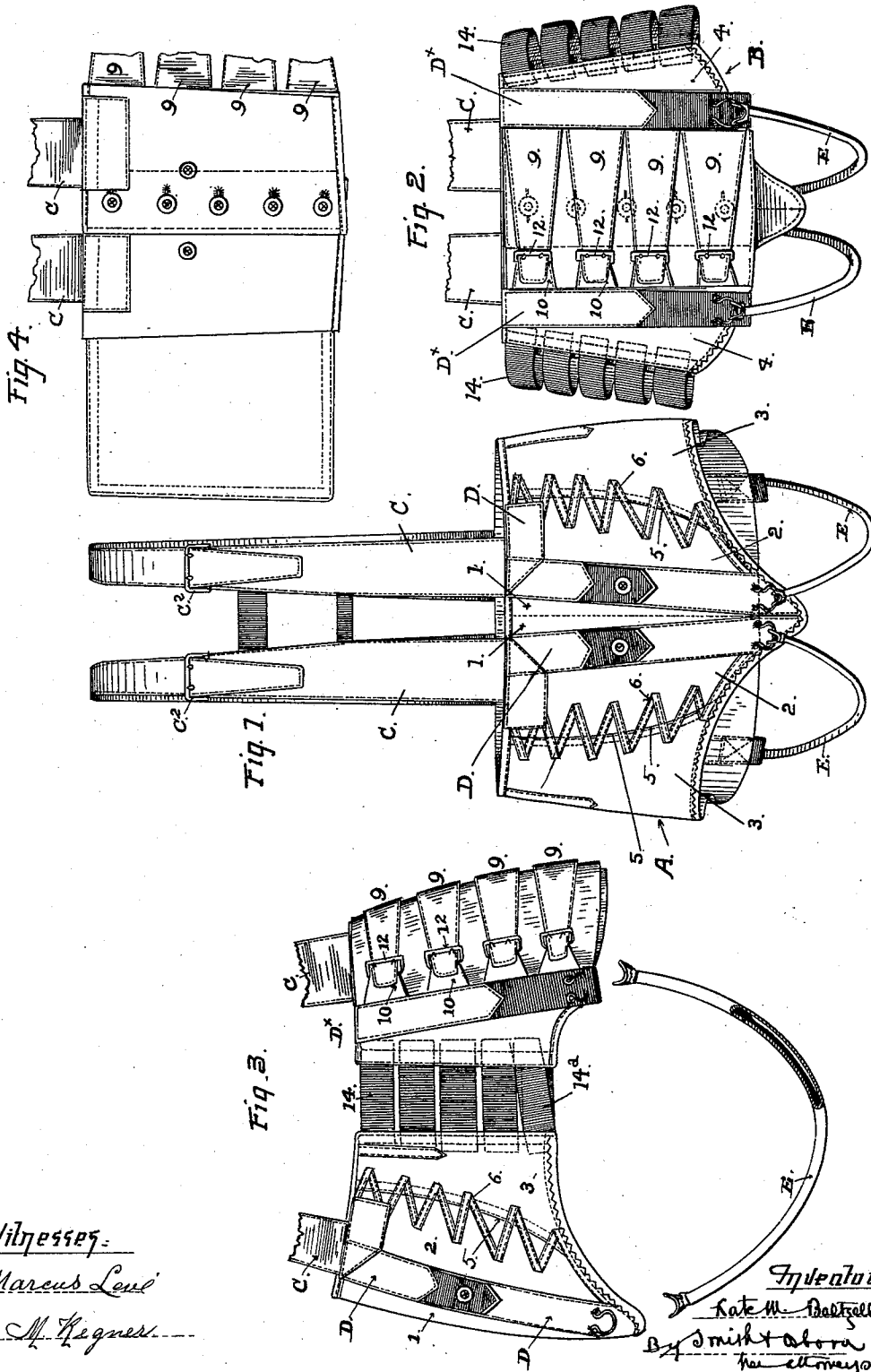
(No Model.)

2 Sheets—Sheet 1.

K. M. BALTZELL.
ABDOMINAL SUPPORTER.

No. 540,710.

Patented June 11, 1895.



Witnesses:

Marcus Lenz

M. Hegner

Inventor:

Kate M. Baltzell

By Smith & Aborn
her attorneys

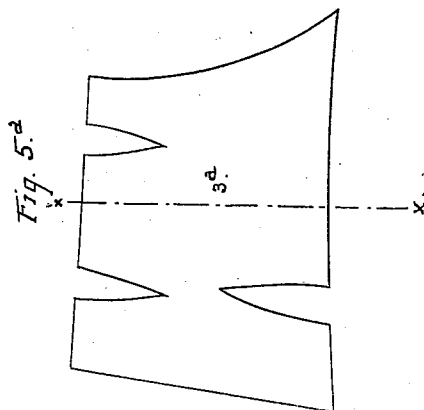
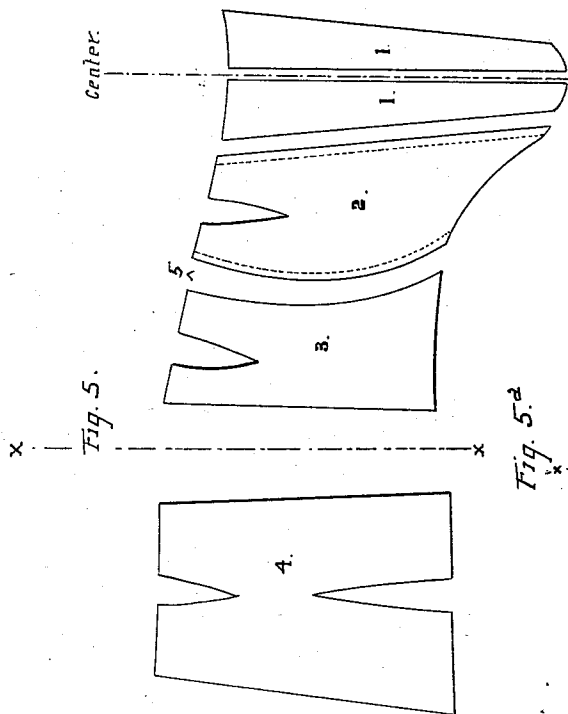
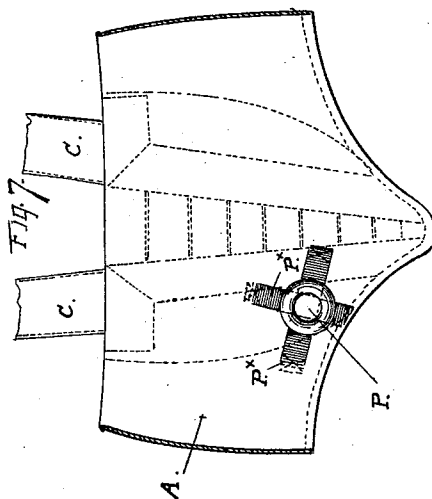
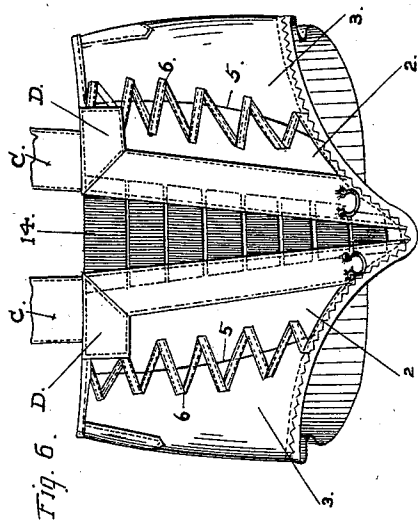
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K. M. BALTZELL.
ABDOMINAL SUPPORTER.

2 Sheets—Sheet 2.

No. 540,710.

Patented June 11, 1895.



Witnesses.

Marcus Lewis.

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UNITED STATES PATENT OFFICE.

KATE M. BALTZELL, OF OAKLAND, CALIFORNIA.

ABDOMINAL SUPPORTER.

SPECIFICATION forming part of Letters Patent No. 540,710, dated June 11, 1895.

Application filed August 7, 1894. Serial No. 519,641. (No model.)

To all whom it may concern:

Be it known that I, KATE M. BALTZELL, a citizen of the United States, residing in the city of Oakland, county of Alameda, and State of California, have invented certain new and useful Improvements in Abdominal Bandages and Supporters, of which the following is a specification.

My invention relates to improvements made in surgical bandages, and more especially to the kind or description of bandage known as abdominal bandages and abdominal supporters.

The object sought to be attained in and by these improvements is, mainly, the production of a surgical bandage for special use in laparotomy; and in other operations during or subsequent to childbirth; but also especially useful in the treatment of female complaints and weaknesses.

The invention includes also the production of an improved bandage or support for the treatment of relaxed or weakened muscles of the abdomen and back; and for use in connection with pads for the cure of hernia, and for other purposes.

To such ends and objects my said invention consists in certain novel construction, combination and arrangement of parts, as herein fully described and pointed out in the claims, producing a surgical bandage and supporter of the class or description named, having several points and features of advantage that render it especially effective in attaining results not heretofore reached by other appliances of the kind.

The following description explains the nature of my said improvements, and the manner in which I construct and produce surgical bandages of various kinds and for special purposes in accordance with the same, reference being had to the drawings that accompany and form part of this specification.

Figure 1 of the said drawings represents, in front elevation, an abdominal bandage embodying my improvements. Fig. 2 is a back view. Fig. 3 is a side view. Fig. 4 is a back view, partly open. Figs. 5 and 5^a represent diagrams of the patterns from which I cut and form the principal parts of the bandage. Fig. 6 is a view of the front of a bandage con-

structed on a modified form. Fig. 7 is a back or reversed view of the front shown in Fig. 6.

A— indicates the front of the bandage, and —B— the back.

C—C^x are inelastic shoulder-straps united to the front and the back at points on opposite sides of and at equal distances from the vertical center-line at the front and back and joined together on the shoulders by buckles —C².

E E are elastic crotch- or thigh-straps attached to the front and the back of the bandage by hooks and eyes, or other detachable fastenings, and passing under the body of the wearer from front to back between the thighs. The points of attachment of these last mentioned straps are placed at or near the bottom edge of the bandage directly below and in line with the points in the top edges of the bandage where the shoulder straps are fastened as will be noticed in Figs. 1 and 2.

The front —A— of the bandage is formed of the separate pieces —1—1—2—2— and 3—3— cut substantially to the patterns indicated by the corresponding numerals in Fig. 5 and joined together by seams that are finished flat and smooth on the inside or on that surface of the bandage which comes next the body. The front sections —1—1— taper from top to bottom, and are usually united by a straight seam; but in some cases this middle seam is dispensed with by cutting the two parts —1—1— in one piece, so that there is no seam down the center of the front. The sections —2—2— are joined to sections —1—, and overlapping this seam, a stay-strap of inelastic material —D— is secured on each side of the center of the front —A— by rows of stitching from the bottom to the front. On these two inelastic strips are secured the shoulder-straps —C— at the top and the crotch-straps —E— at the bottom. The sections —2— are united to the sections —3— by a curved seam —5— extending from the point at the bottom with a greater or less degree of curvature up to the top of the front as required to produce a smooth fit of the front to the abdomen. Across this curved seam is set a peculiar stay formed of a narrow strip —6— laid in zig-zag manner lapping over the sections and extending the full

length of the seam. These stays —4— and —6— are laid transversely across the seams and fastened down in the best manner to resist the principal tension and strains which the seams are required to bear.

The back —B— being open in the center, is secured around the body by fastenings on its two flaps, such as buttons and button-holes, and also by several back straps —9—10— and buckles —12— fastened at intervals apart along the back edges of the sections —4. Stay strips D* are fastened on sections of the back along the edges from top to bottom and to these strips are attached the shoulder-straps —C— and the crotch-straps —E— the same as at the front. Some suitably strong and flexible but practically inelastic material, such as butcher's linen or silesia or corset-fabric is recommended for the sections of these two parts; and silk and linen belting for the stays 4—6—. The front body-portion —A— and the back body portion —B— thus constructed are joined together on the sides of the bandage by elastic gores formed of separate strips —14— of rubber-elastic, or webbing, set in detached bands in close order above the parts —A—B— and secured to the edges of the sections —3— and —4 at the top and the bottom, and at intervals apart between those points, but otherwise detached from one another. This construction of gore is an important feature in my invention. The separate bands —14— acting independently on separate lines can be adjusted in length and set to draw in the direction of the greatest strains or stress that take place in the front and the back under the movements of the body of the wearer, and also under the distensions or changes in the shape of the abdomen; so that a close fit of the bandage to the whole surface can be obtained and a steady and continuous support by the bandage of particular organs or on particular lines or parts of the abdomen and the back, can be secured by setting these elastic bands and regulating their length, accordingly, between the body-portions —A—B. In some cases I double the bands in this gore, particularly on those lines or between those points in the front body portion and the back body portion where excessive strains are brought. For example, I frequently place double bands at the bottom of the gore as shown at —14^a— Fig. 3, and in some cases I apply double bands at other points in the gore where I desire to increase the drawing or holding power of the bandage upon the surface and parts surrounded by the bandage. In such cases of doubling the bands I sometimes set the additional band at a different angle or position between the two parts —A—B, as I have shown in Fig. 3, for the purpose of applying the elastic strength and

action of the band in the direction of the strain or stress to be resisted.

In adapting and fitting a bandage for special use, as after the operation of laparotomy, and in the treatment of displaced organs, and also in the case of bandages for supporting weak or relaxed muscles of the abdomen, I find the best and most effective results are obtained by following that construction and arrangement of parts which I have shown in Figs. 1 to 3 inclusive, and have described above with reference to those figures; but in some cases I have found it of advantage to change the elastic bands —14— from the sides to the front of the bandage as shown in Fig. 6, and then joining the front —A— to the back —B— at the sides of a close seam. In this construction the two parts —3— and —4— can be replaced by a single piece or section —3^a— (Fig. 5^a) so that no seam will be produced on the sides or the hip portions of the bandage. The same construction of gore is combined with the parts —A— and —B— in this case as in the first construction mentioned and the elastic bands —14^b— are inserted between the sections —1—1— at the front. The stay strips are then set along the front edges of sections —1—1— from top to bottom.

It should be noticed that both the stay-strips D on the front and the back set in direct line with the shoulder-straps above, and the crotch-straps below, the bandage; so that the weight of the body or the parts upon which the front and back are fitted, and also the strain of the crotch-straps, comes in line with and fall upon the strips and the straps before mentioned.

The modification which I have described with reference to Figs. 6 and 7 of the drawings is useful in the treatment of difficult cases of hernia, and particularly on female patients, and for that purpose a pad —P— of proper shape and style to suit the special case under treatment is combined with the bandage. This pad is not fastened directly to the bandage however, but is attached to its inner surface at the point of operation by means of strips —P^x— or rubber elastic fixed to the back of the pad and fastened at the ends to the fabric of the bandage; so that the pad is held in position and confined by the bandage and by the elastic strips without being affected by the movements of the body of the patient.

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

An abdominal bandage consisting of a front formed of sections suitably connected, with the interposed non-elastic stay-strips D, on either side of the center, the shoulder and crotch straps secured to the stay-strips, the

support being opened in the back and the flaps provided with means for attaching a series of back straps and buckles to reinforce the same, elastic gores connecting the front and rear sections of the body at the side, and arranged in varying lengths, said gores being duplicated and set at an angle with relation to each other to vary the strength thereof in

the direction of the strain as and for the purpose specified.

In testimony that I claim the foregoing I have hereunto set my hand and seal.

KATE M. BALTZELL. [L. S.]

Witnesses:

CHAS. D. WHEAT,

EDWARD E. OSBORN.