

May 17, 1927.

W. T. BUCKNER

1,629,067

ABDOMINAL SUPPORTER

Filed March 6, 1926

2 Sheets-Sheet 1

Fig. 1.

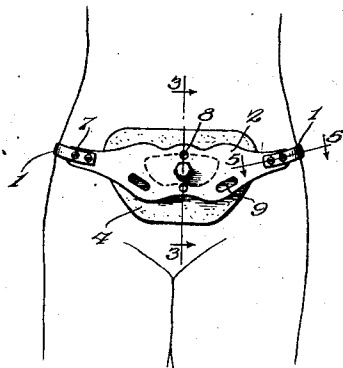


Fig. 2.

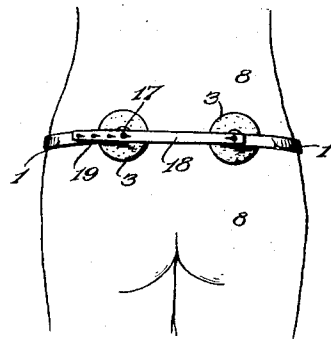


Fig. 3.

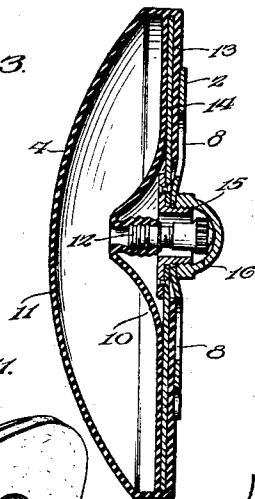


Fig. 4.

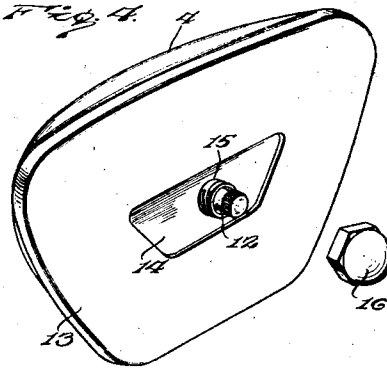


Fig. 5.

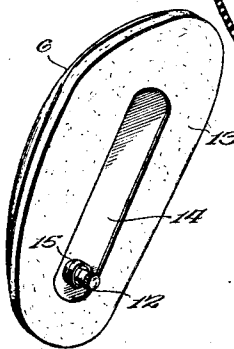
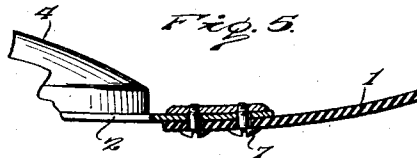


Fig. 6.



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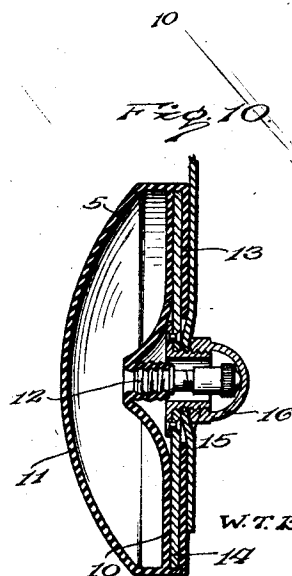
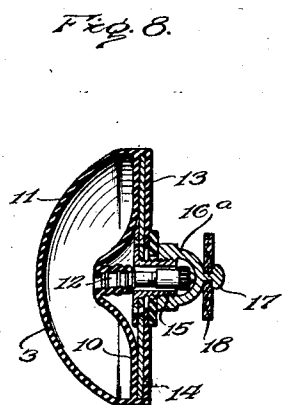
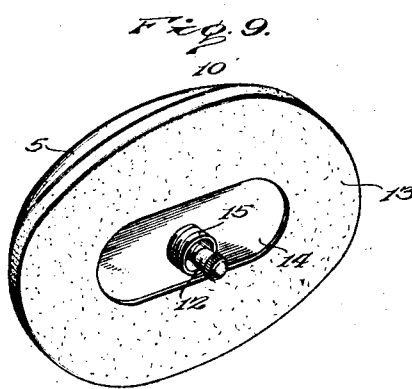
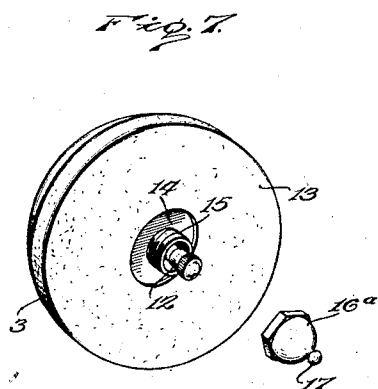
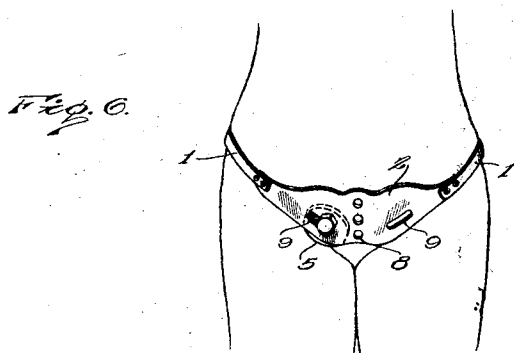
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2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE.

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ABDOMINAL SUPPORTER.

Application filed March 6, 1926. Serial No. 92,767.

This invention relates to surgical appliances including a body belt and pads adjustably and interchangeably applied to the belt and designed for the treatment of viscerop-
5 tosis, gastroptosis, nephroptosis, or in any and all conditions which give rise to an abdominal circulatory interference, as in orthostatic albuminuria, splanchnic dyspepsia, and intestinal stasis. Also to be
10 used when there is a weakening of the abdominal walls following various operations, or an atonic condition of the walls resulting from frequent overdistension, as occurs in frequent pregnancies, ascites, etc. And
15 also to be applied in all cases of hernia, umbilical, inguinal or direct.

While the drawings illustrate a preferred embodiment of the invention it is to be understood that in adapting the means to meet
20 specific needs and requirements, the design may be varied and such other changes in the minor details of construction may be resorted to within the scope of the invention as claimed, without departing from the
25 spirit thereof.

For a full understanding of the invention and the merits thereof, reference is to be had to the following description and the drawings hereto attached, in which,—

30 Figure 1 is a front view of a surgical appliance embodying the invention, showing the same applied,

Figure 2 is a similar view as seen from the rear,

35 Figure 3 is an enlarged sectional view of the appliance, on the line 3—3 of Figure 1,

Figure 4 is a detail perspective view of the umbilical pad, as seen from the rear, the cap of the air valve being detached,

40 Figure 5 is an enlarged fragmentary sectional view on the line 5—5 of Figure 1,

Figure 6 is a view similar to Figure 1, showing the umbilical pad replaced by a hernia pad,

45 Figure 7 is a detail perspective view of a back pad as seen from the rear, the cap of the air valve being detached,

Figure 8 is an enlarged sectional view on the line 8—8 of Figure 2,

Figure 9 is a detail perspective view of a 50 hernia pad, as seen from the rear,

Figure 10 is an enlarged sectional view of the hernia pad on the line 10—10 of Figure 9, and

Figure 11 is a detail perspective view of a 55 laparotomy pad, as seen from the rear.

Corresponding and like parts are referred to in the following description and designated in the several views of the drawings by like reference characters. 60

The body belt for receiving and supporting the various pads according to the special adjustment and adaptation of the appliance, comprises similar side springs 1 and front connection 2 which is of peculiar formation to admit of adjustment and application thereto of a variety of pads, so that the appliance may be readily adapted to any particular case to admit of a gentle, but positive pressure being applied at the proper point. The side springs 1 may be of any preferred construction and are of usual U-
65 form to fit about the hip of the torso. A pad 3 is fitted to the rear or back end of each of the side springs 1. The back pad 75 may be of any outline, and is usually of circular formation, as indicated most clearly in Figures 2 and 7. The umbilical pad 4 is elongated and tapers from top to bottom, as indicated most clearly in Figures 1 and 80 4, so as to conform to the abdominal region of the torso. The hernia pad 5 is elongated and may be of any usual outline. The laparotomy pad 6 illustrated in Figure 11 is oblong and may be of any outline, according to the specific use for which the same is designed. 85

The front connection 2 consists of a plate of elongated form having opposite end portions tapered to make a neat connection with the front ends of the side springs 1 to which the plate is attached by any suitable fastening means, such as screws 7. At a medial point, the connection 2 is provided with a plurality of openings 8 disposed in vertical relation to allow of the umbilical pad 4 being adjusted vertically to the required position to admit of the pressure be- 90 95

ing applied at the proper point. Slots 9 are formed in the lower portion of the plate 2 upon opposite sides of a medial line and these slots are oppositely inclined, as shown most clearly in Figures 1 and 6.

The several pads, irrespective of their contour, are of similar or like formation, each consisting of a back 10, and a front 11. These parts may be united at their outer edges in any preferred way and may consist of soft rubber or other suitable material generally employed in the manufacture of pneumatic articles. An air valve 12 is fitted to the back 10 and may be of any construction generally provided for pneumatic articles. The contour and size of the pads will depend upon the particular use for which the pads are designed. Each of the pads includes a retaining lip 13 which may be of any width and which preferably consists of soft rubber united at its outer edge to the marginal edge of the pad, and adapted to engage over a base-plate 14 which conforms to the outline and size of the pad so as to reinforce and maintain the predetermined shape of the pad. The base-plate 14 preferably consists of metal and is confined between the back 10 of the pad and the retaining lip 13. In forming the retaining lip 13 a piece of sheet rubber of the size and shape of the pad is united at its outer or marginal edge thereto and the intermediate portion is cut away, as shown most clearly in Figures 4, 7, 9 and 11 to form an opening of sufficient size to admit of the part 13 being stretched over the base plate 14, thereby confining said plate between the back 10 and the retainer 13. A collar 15 projects outwardly from the base plate 14 in line with an opening formed therein to receive the air valve 12. This collar 15 is externally threaded to receive a cap 16 which protects the projecting end of the air valve 12. The collar 15 may form a part of the base plate or may be separate therefrom and secured thereto in any determinate way.

The cap 16 may be plain, as shown in Figures 3, 4 and 10, or the cap 16^a depicted in Figures 7 and 8 may be provided with a headed stud 17 which is utilized as fastening means for a rear connection 18 for coupling or joining the rear ends of the side springs 1. The rear connection 18 consists of a thong or short strap which is connected at one end to one of the side springs 1 and which has its opposite end portion provided with a plurality of openings 19 to adjustably engage the rear end of the other side spring 1, thereby adjustably connecting the rear ends of the side springs.

When the appliance is adapted for use as an abdominal supporter the umbilical pad 4 is attached to the front connection 2 by passing the collar 15 through one of the

openings 8 and applying the cap 16 to the projecting end so that the plate 2 is confined between the base-plate 14 of the pad and the cap 16. It is observed that the cap 16 serves as protective means for the air valve 12 and as a nut to secure the pad to the part 2. The vertical row of openings 8 admits of the umbilical pad being adjusted vertically, as required.

When the appliance is adapted for hernia or laparotomy, the umbilical pad 4 is omitted and the desired pad 5 or 6, is attached to the front connection 2 of the body belt in the required adjusted position, the collar 15 being passed through one or the other of the slots 9 and the projecting end receiving the cap 16, whereby the pad is made fast to the front connection of the body belt in the required adjusted position. It is noted that the slots 9 admit of ready adjustment of the selected pad, according to the nature of the trouble to receive treatment. The back pads 3 are secured to the rear ends of the side springs 1 by means of the collar 15 and cap 16^a, as indicated most clearly in Figure 8, and the rear connection 18 is applied to the headed stud 17, thereby securing the appliance when in position.

The pneumatic pad insures a gentle but positive pressure and conforms readily to the surface so as to equalize and distribute the pressure which is advantageous. It is further observed that after the appliance has been placed in position and made secure by the rear connection it is possible to vary the pressure by supplying more air to the pad or letting air escape therefrom. In the case of the umbilical pad the pressure may be increased or diminished as found most advantageous by supplying air to or withdrawing air from the pad. This may be readily effected by removing the cap 16 and the usual cap of the air valve in a manner readily understood by one accustomed to the handling of pneumatic articles.

Having thus described the invention, I claim:

1. A pneumatic pad for a surgical appliance, the same comprising a front and back, united at their outer marginal edges, an air valve applied to the back, a base-plate coextensive with the pad and secured at its outer edge thereto and provided with an opening to accommodate the said air valve, a collar projecting from the base plate in line with the opening therein, and a cap threaded to said collar and serving as protective means for the air valve and as fastening means for securing the pad to the appliance.

2. A pneumatic pad for a surgical appliance, the same comprising a front and back, united at their outer marginal edges,

an air valve applied to the back, a base plate coextensive with the pad and secured at its outer edge thereto and provided with an opening to accommodate the said air valve, a collar projecting from the base plate in line with the opening therein and a cap threaded to said collar and serving as protective means for the air valve and as fastening means for securing the pad to the appliance and said cap being provided with a headed stud. 10

In testimony whereof I affix my signature.

WILLIAM T. BUCKNER. [L. S.]