Dec. 17, 1957 C. JOBST 2,816,361

METHOD AND PHYSICAL MEANS FOR FORMING INDIVIDUALLY PROPORTIONED SURGICAL GARMENTS

Filed Feb. 13, 1956 2 Sheets-Sheet 1

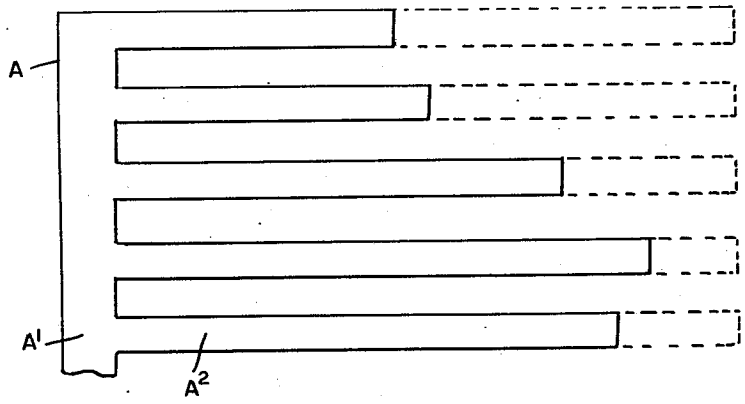


FIG.1.

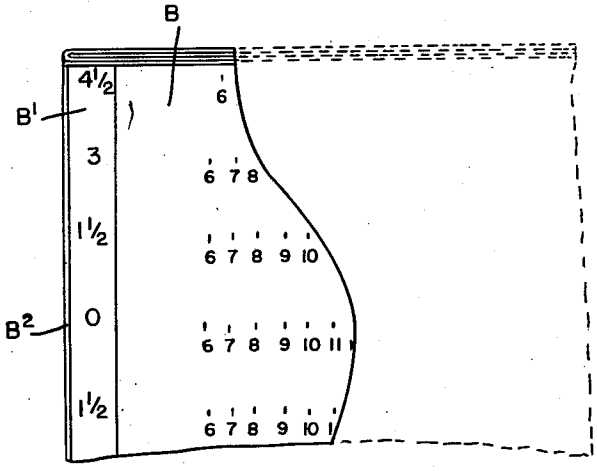


FIG.3.

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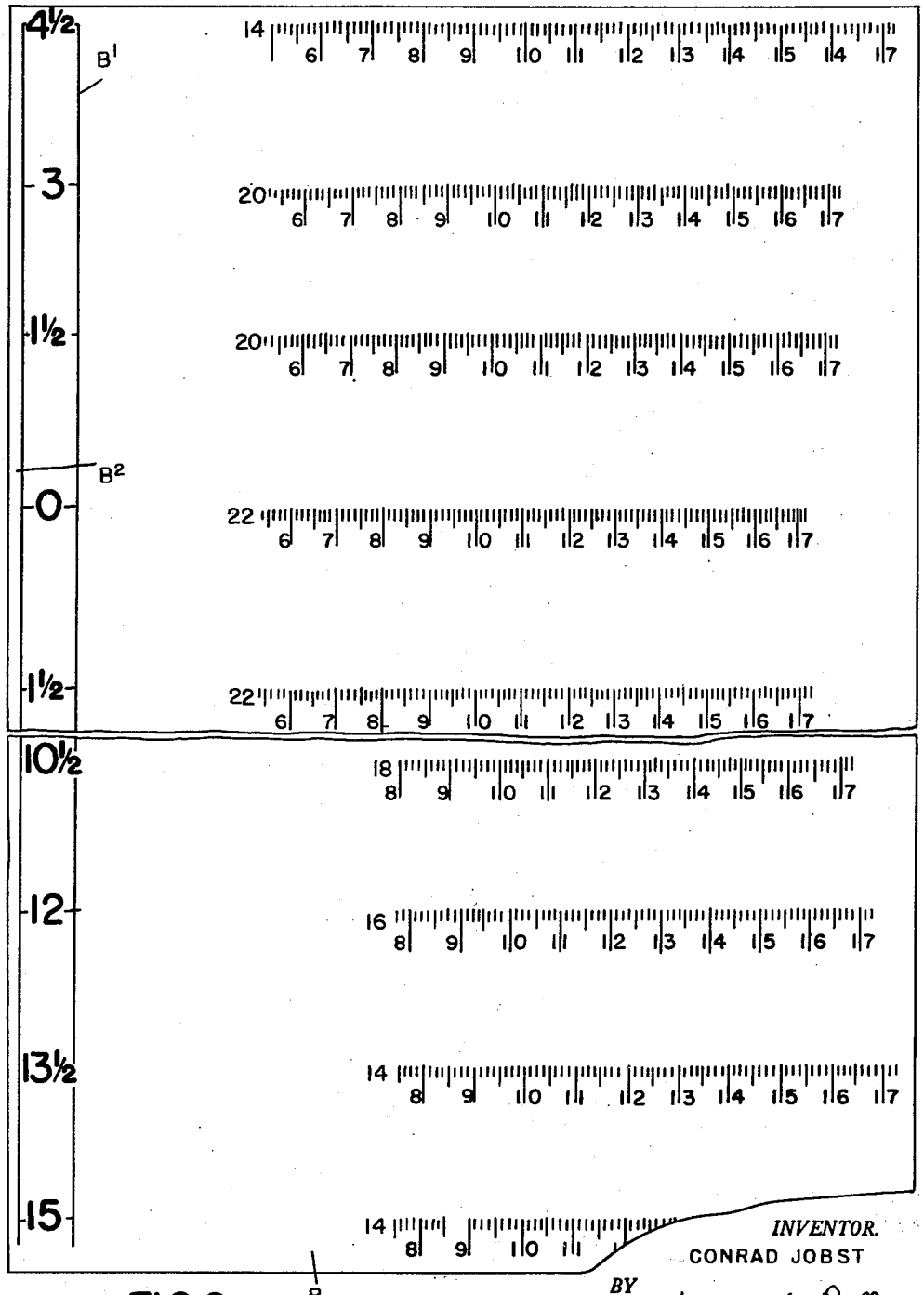


FIG.2.

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METHOD AND PHYSICAL MEANS FOR FORMING INDIVIDUALLY PROPORTIONED SURGICAL GARMENTS

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Application February 13, 1956, Serial No. 565,139

6 Claims. (Cl. 33—5)

The invention relates to surgical garments of the type forming the subject matter of my Patent No. 2,574,873, dated November 13, 1951. This comprises essentially an elastic envelope fitting about some portion of the body and so proportioned as to exert inward pressure varying in degree from one end to the other. The highest pressure is in the portion farthest removed from the heart region and from this point the pressure progressively diminishes. Obviously the same garment will not fit or operate the same with different persons wearing it so another essential is that it should be designed and proportioned for the individual using it. This necessitates accurate measurement of the individual for which purpose I have used a so-called template described in my Patent No. 2,574,873, dated November 13, 1951. This consists of a non-elastic flexible member preferably formed of paper or like material and including a longitudinally extending strip which may be extended along the leg or arm of the individual and a series of uniformly spaced strips extending transversely from the longitudinal strip to be wrapped circumferentially around the leg, arm or other portion of the body to form exactly fitting bands. After attaching to each other the overlapping portions of said transversely extending strips the bands may be severed adjacent to the longitudinal strip for removal from the body. The lengths of these transverse bands will be the correct circumferential transverse ments of the corresponding portions of the body but not the dimensions for the stocking or elastic envelop. It is necessary that the fabric should be stretched when placed on the body and the object is to obtain exactly predetermined pressure at every point. The stretching will be longitudinally of the garment as well as transversely thereof so that the spacing between transverse strips is also altered. Considerable skill is, therefore, required in transferring the dimensions of the template to the elastic fabric used for forming the garment.

It is the object of this invention to provide means including a method for transferring dimensions of the template to the garment without requiring any mental work or calculation on the part of the workmen. To this end the invention consists in the method and the transfer blank through which such purpose is accomplished as hereinafter set forth.

In the accompanying drawings:

Fig. 1 is a plan of the template corresponding to the exact measurements of the individual for which the garment is formed.

Fig. 2 is a plan view of the transfer blank for translating the full measurements of the template to diminish measurements of the unstretched garment.

Fig. 3 is a similar view showing the transfer blank in registration with a folded sheet of the elastic fabric and with a contour line marked thereon to which said folded fabric is to be cut.

The fabric from which the garment is formed is elastic and stretchable in transverse directions. A band of this material of unit width, such for instance as one inch,

can be stretched to exert a predetermined tension measurable by a weight suspended from its free end. This will determine the amount of stretching of each circumferential portion of the garment required to produce the desired tension and inward pressure against the body. In other words, the circumferential length of each portion of the garment is diminished over that of the template to a predetermined degree. If the workmen were required to calculate the proper dimension in the garment corresponding to each part of the template, this would be difficult and subject to error. I have avoided the difficulty by forming blanks having measurements longitudinally and transversely thereof which are formed by diminished scales. Longitudinally of the blank the scale is diminished by an amount corresponding to the longitudinal stretching of the garment when drawn over the body. Transversely the scales are spaced from each other at points in the longitudinal scale and each transverse scale is diminished to correspond to the amount of stretching required at that point to give the desired circumferential tension and radial pressure. With such blank the operator may transfer the measurements of the template without any change therein other than that automatically produced by the diminution of the scales.

As shown in Fig. 1, the template A is formed with a longitudinal strip A′ and a series of strips A^2 extending transversely from said longitudinal transversely from said longitudinal strip at spaced intervals in the latter. Both the longitudinal and transverse strips may have scale markings thereon corresponding to actual units of measurement, such for instance as inches or they may be measured by an ordinary scale. After measurements of an individual have been taken by wrapping the transverse strips around the body to form bands and then severing these bands, said transverse strips will be of different lengths corresponding to the circumferential lengths of the bands, and as above stated these lengths may be either measured by a scale or indicated by the scales thereon. B is the transfer blank which, as specifically shown, is for the leg including the foot of the individual. This blank is a sheet having marked thereon a longitudinal scale B′ corresponding to the scale of the longitudinal strip A′ of the template but diminished in a predetermined ratio. The sheet also has transversely extending diminished scales at the spaced points in said longitudinal diminished scale. Thus, while the numerals of these scales are the same as in the template the lengths between points are diminished in predetermined ratios, which vary from each other in the successive transverse scales. In forming this transfer blank B the successive scales have been diminished to an extent corresponding to the stretching of the fabric when the garment is placed on the body of the individual. Also, this stretching is varied corresponding to selective pressures which are to be applied to the body in corresponding positions. Furthermore, as the transverse measurements are to be applied in a two ply folded fabric, the scales have been diminished to one-half of that for a single ply.

In preparing the blank B to form the required contour in the cut fabric each of the transverse scales is marked at points to correspond numerically to the lengths of the corresponding transverse strips A^2 of the template. A contour line is then drawn through these points after which the blank is placed on a folded sheet of fabric with the fold adjacent to the zero points of the scales. There is, however, a spacing from said zero points which allows for the overlapping of the fabric in the forming of a seam, as indicated by the line B^2. This line is for the zero points of the scales and is spaced from the adjacent edge of the blank. The fabric is then cut through both plies to the contour line of the blank, after which

it is only necessary to seam together the contoured edges which completes the garment.

What I claim as my invention is:

1. The method of forming from elastic fabric elastic individual surgical garments comprising measuring the individual to obtain a series of longitudinally spaced circumferential dimensions of the portion of the body on which the garment is to be placed, transferring said measurements to a sheet blank having thereon transversely extending longitudinally spaced scales with their zero points in alignment longitudinally of the blank, each scale being formed with units diminished from the units of the measuring scale to correspond to the amount of stretching of said elastic fabric required to produce a predetermined circumferential tension, cutting the fabric to the contour determined by said transverse diminished measurements and seaming together the opposite edges thereof.

2. The method as in claim 1 in which the fabric is folded transversely to form two plies, the folded edge being placed adjacent to the aligned zero points of the scales of said blank, and the contour of both plies being cut to the transferred diminished measurements, said scales being further diminished by one-half to compensate for the two plies.

3. A pattern blank for forming from elastic fabric an encircling elastic garment corresponding to the measured dimensions of a body on which the garment is to be

placed with a predetermined degree of stretching comprising a sheet having thereon a series of longitudinally spaced transversely extending scales with their zero points in alignment longitudinally of the blank, each scale being formed of units which are diminished from the units of the measuring scale to correspond to the amount of stretching of said elastic fabric required to produce a predetermined circumferential tension.

4. The construction as in claim 3 in which the aligned zero points are spaced from one edge of the blank corresponding to the overlap for forming a seam.

5. The construction as in claim 3 in which each scale is further diminished by one-half for application of the markings thereon to folded two ply fabric.

6. The method of forming from elastic fabric individual surgical garments comprising measuring the individual to obtain a series of longitudinally spaced circumferential dimensions of the portion of the body on which the garment is to be placed, transferring said measurements to diminished scale markings on a sheet blank, and cutting the fabric to the contour determined by said transferred measurements on said blank.

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