

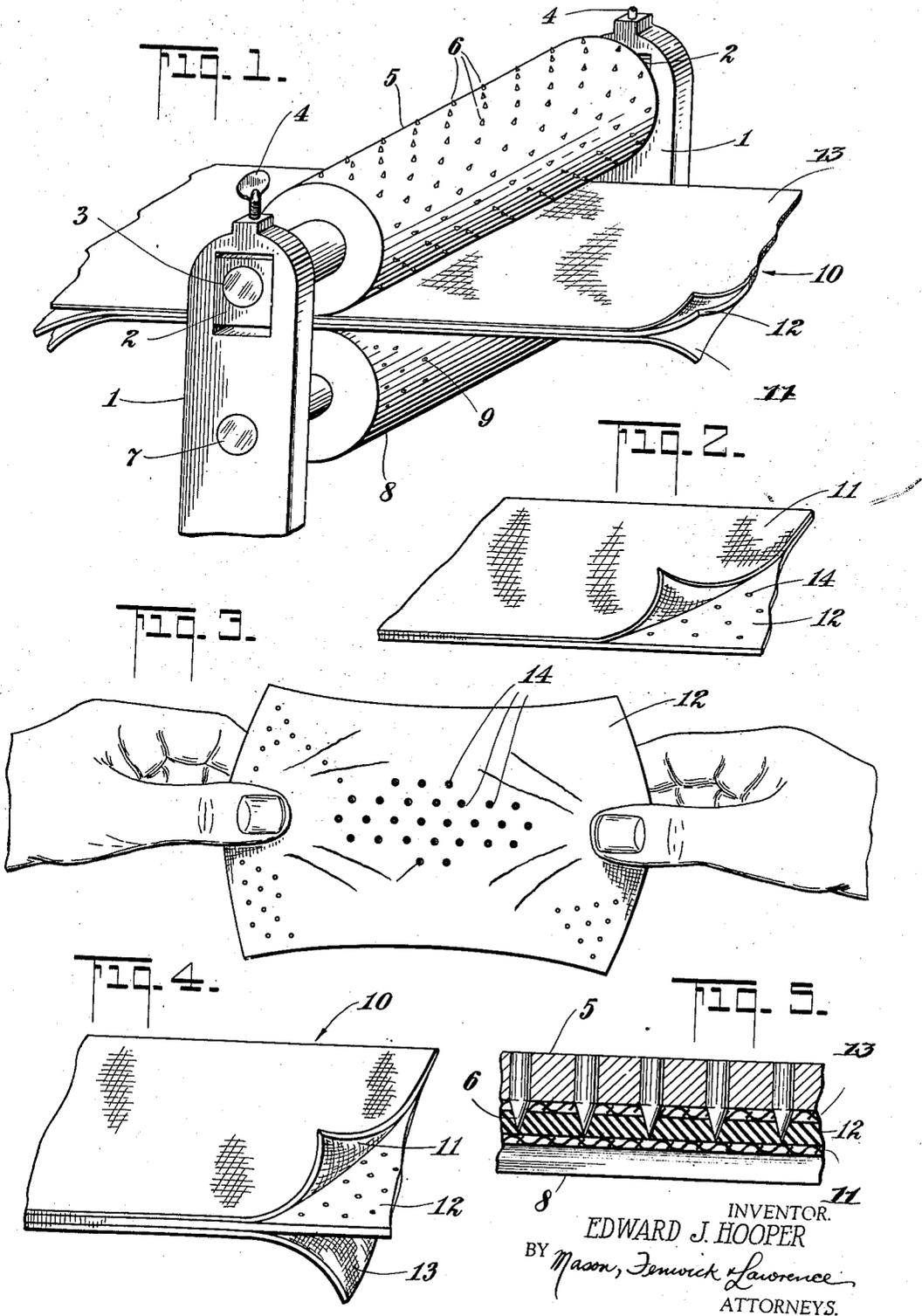
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ELASTIC VENTILATED FABRIC

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ELASTIC VENTILATED FABRIC

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3 Claims. (Cl. 154—2)

This invention relates to improvements in elastic ventilated fabrics and has more particular relation to fabrics employed for women's girdles or elastic bandages.

5 The principal object of the invention is to provide a structure of an elastic nature which is ventilated and at the same time provided with absorbent material.

10 Another object of the invention is to provide an improved process for combining elastic and fabric materials and forming the elastic part of the material with ventilating apertures without injuring or destroying any of the threads of the fabric proper which is combined therein.

15 A further object of the invention is to provide a rubber structure for so-called reducing girdles or belts which is ventilated and at the same time provided with perspiration absorbing material.

20 In the accompanying drawing forming part of this specification,

Fig. 1 represents a detail perspective view of the pressing rollers and fabric in the process of fabrication.

25 Fig. 2 represents a detail perspective view of a section of my improved material with fabric on one side only.

30 Fig. 3 represents a small section of the rubber from which my improved material is composed in its stretched condition illustrating the expansion of the holes therein.

Fig. 4 represents a detail perspective view of my improved material with fabric on both sides of the same, and

35 Fig. 5 represents a vertical section through a portion of the puncturing roller and the material being passed through the same.

40 It has heretofore been the practice to pass sheets of rubber lined with fabric through puncturing rollers for forming ventilating apertures therein when the material is to be used next to the human skin. These apertures permit the escape of perspiration through the rubber portion of the material and also absorb more or less of this perspiration in the fabric portion of the material.

45 In the manufacture, however, of such combined rubber and fabric material, the punches which pass through the rubber to form holes therein also pass through the fabric and as this fabric is usually of a fine texture, these punches sever or break a number of the fabric threads at the point of each puncture. When the whole structure is subsequently stretched when being worn in a girdle or the like, these punctured portions of the fabric are pulled apart and soon ravel

and the raveled portions work up into uncomfortable and destructive knots or snarls.

5 This result has rendered the use of cutting punches for the rubber and fabric very detrimental and results in the early destruction of the girdle.

10 With my improved structure, however, the fabric to which the rubber is cemented is never cut or torn during the punching or embossing operation and therefore does not start the disintegrating process the minute it is stretched as all such fabrics have a natural stretching function without any detrimental effect.

15 I have found by experience that in a structure that is to be expanded or stretched when in use, it is not necessary to cut through the entire rubber in order to provide ventilating apertures therein. In fact, by reference to Fig. 5 it will be seen that the adjustments are such that the tapered embossing points 6 pass barely through the rubber 12 when in its normal static condition. If the rubber were not subsequently stretched, the very fine apertures that result from this operation would not be sufficient to provide the required ventilation or escape of perspiration.

25 However, when this rubber structure is in use and is under tension, the embossed apertures 14 are expanded as shown in Fig. 3. The result of this action is that the desired size of apertures through the rubber are present when the rubber is stretched but not when the rubber is in its static condition.

30 By reference to Fig. 2 it will be seen that the apertures 14 are present in the rubber 12, the material having been run through the rollers 5 and 8 with the rubber side uppermost. In this instance none of the threads of the fabric 11 is in any wise disturbed or cut, as this fabric is resting upon a paper covered roller 8 and the fabric is simply pressed into depressions 9 formed in this soft paper cover. The rubber material 12 and the fabric 11 are secured together by cement which is placed between the two before they are run through the rollers 5 and 8. The rubber material 12 is still in its plastic condition and is not fully vulcanized.

35 The pins 6 for this reason simply emboss the upper surface of the plastic rubber 12 which embossed wells remain in the material as at this period it is not sufficiently elastic to return to its normal condition. This process is carried on with sufficient pressure from the rollers 5 and 8 by means of pressure adjustments 4 upon the journal blocks 2. The lower roller 8 is journaled as at 7 and these journals, together with the

vertical movable blocks 2, are mounted in the vertical standards 1 of the pressing machine.

In utilizing such material as is shown in Fig. 2, the fabric side of the material is placed next to the skin of the wearer and not only absorbs perspiration, but permits any excess to pass out of the rubber structure through the holes 14. If this were not true, the accumulation of perspiration within the girdle would not only cause it to be very uncomfortable, but would completely stop any circulation of air from reaching the pores of the skin, which, as is well known, is very injurious.

As the structure shown in Fig. 2 provides for fabric on one side of the rubber only, I have found it necessary, in order to produce the desired ornamental effect on the outside of the girdle, to also cover the opposite side with a fabric cemented in position in the same manner as the under fabric. This outer fabric 13 is of a more or less "net" structure loosely woven. As the embossing pins 6 have rather sharp points, they pass through the meshes of this outer fabric 13 and do not cut or sever the threads of the same. This is especially true as these meshes may be easily pushed to one side or the other because of their loosely knit structure.

In the process of manufacture, the embossing pins 6 pass through the rubber 12 so slightly that they merely push the threads of the inner fabric 11 down into the soft paper roller 8 without in any wise injuring these threads. This slight penetration, however, is sufficient to cause the desired aperture when the rubber 12 is stretched.

It will be understood, of course, that I do not wish to limit this improved material to women's girdles, as it may be equally employed on any material that is intended for use on the human body, such as surgical bandages or the like.

Having thus described my invention, what I claim is:

1. Laminated elastic ventilated fabric comprising a rubber layer and an elastic textile fabric layer, adhesively united, the rubber layer being formed with a series of tapering wells terminating in small perforations in the plane of adhesive between said layers.

2. Laminated elastic ventilated fabric comprising an intermediate rubber layer and outer layers of elastic textile fabric, one on each side of the rubber layer and adhesively united therewith, one of said layers having an open, net-like mesh, the rubber layer being formed with a series of tapering wells having their larger ends adjacent the net-like outer layer and terminating in small perforations in the plane of adhesion between said rubber layer and the other textile fabric layer.

3. Process for making an elastic laminated fabric comprising adhesively uniting an incompletely vulcanized rubber sheet and a sheet of elastic textile fabric, forming a plurality of tapered apertures into said sheet, terminating in the plane of adhesion between said rubber sheet and said textile fabric sheet, and completing the vulcanization of said rubber sheet.

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