

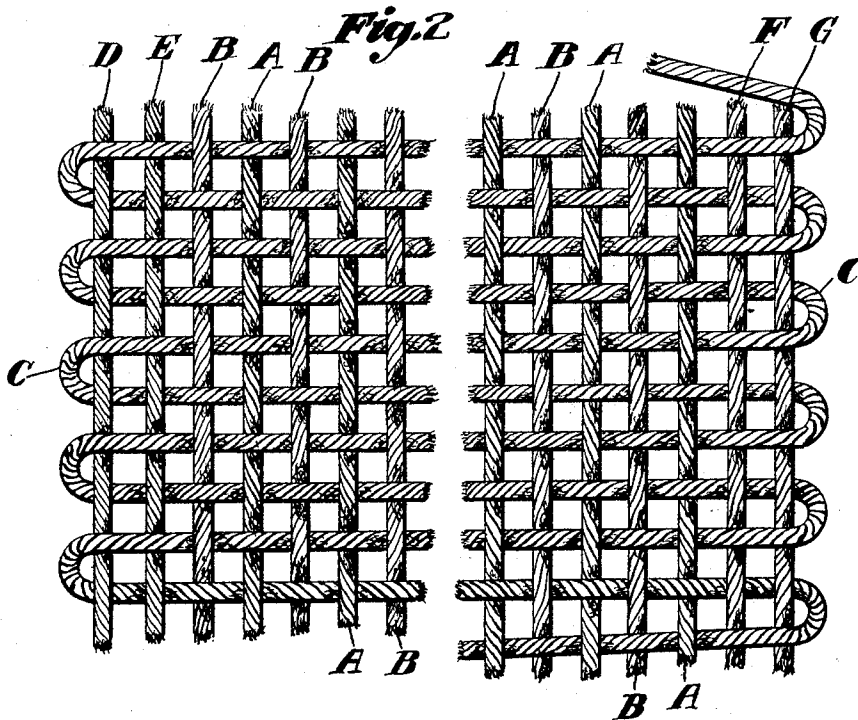
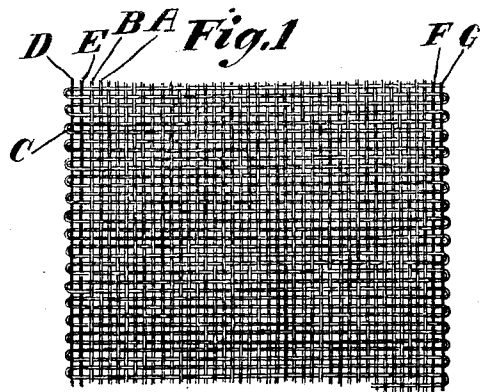
Sept. 6, 1932.

E. KLEIN

1,875,740

ELASTIC WOVEN BANDAGE

Filed Aug. 7, 1931



Inventor
Emil Klein

Attorney
By

UNITED STATES PATENT OFFICE

EMIL KLEIN, OF STUTTGART, GERMANY, ASSIGNOR TO MACGREGOR INSTRUMENT COMPANY, OF NEEDHAM, MASSACHUSETTS, A CORPORATION OF MASSACHUSETTS

ELASTIC WOVEN BANDAGE

Application filed August 7, 1931, Serial No. 555,664, and in Germany January 26, 1931.

This invention relates to elastic woven bandages such as are used for surgical purposes and particularly to that type which has a protective selvage or edge. In applying such bandages to a limb or other contoured member it is important that the application be symmetrical and applied under uniform tension.

The great problem has been to provide an edge or selvage such as Teuffel taught in his United States Letters Patent No. 889,827, granted in 1908. Such bandages have been wonderfully successful but there has been a marginal tensioning along the selvage by reason of which even the most skillful were unable to get smoothly laid and uniformly tensioned bandaging.

The present invention provides a dressing bandage with a strongly woven but elastic edge or selvage. By the use of warp threads which are over-twisted alternately to the left side and to the right side, such bandages are centrally elastic.

These dressing bandages during the application of the bandage have to adjust to the form of the limb or part to be dressed to avoid a non-uniform stretching or tensioning of the warp threads over the width of the bandage.

In the bandaging of limbs or contoured parts of the body, therefore, the tension of the warp threads will increase or decrease respectively from one edge of the bandage to the other. This is especially true in the case of dressings applied under considerable tension or dependence upon the elasticity of the dressing bandage, as the more strongly stressed or tensioned edge side influences the uniform elasticity of the total dressing and may have an undesired effect on the wound or part to which the bandage member is applied.

The purpose of this invention is to eliminate these disadvantages and this is effected by making a dressing bandage which is woven elastically by the use of warp threads which are over-twisted alternately to the right and left side with a firm edge but one which is kept more elastic at its edges.

As illustrative of my improvement I have shown in the accompanying drawing a bandage in accordance with my invention. In the drawing:

Fig. 1 is a general view of a fragment of such a bandage, and

Fig. 2 is a schematic analysis of a simple warp and woof analysis.

According to previous practices as established by Dr. Wilhelm Julius Teuffel, the bandage is woven in suitable widths for bandaging and these are preferably woven on the well known ribbon loom. The alternate warp threads A as indicated in Fig. 2, are all twisted in one direction, while the intermediate warp threads B are all twisted in the opposite direction.

The weft thread C was led back and forth in the ordinary manner, and carried around the outermost warp threads, said weft thread being preferably loosely twisted. While such bandages have many points of excellence and advantage there was in many cases difficulty in getting a perfectly smooth application as above stated.

According to my invention I provide in the edge of the bandage two or more marginal pairs of warp threads D, E and F, G, side by side and twisted in the same direction to provide for a balance of elasticity.

Thus, in the edge strips or selvage there are embodied side by side, two warp threads over-twisted in the same direction simultaneously by the weft threads.

Preferably, the plural similarly twisted warp threads of the selvage receive a lesser tension during the weaving as compared with the warp threads of the remaining band. In such a bandage, the edges are thus given an increased elasticity and a soft yielding effect so that the bandage or dressing makes a good support and a uniform application at uniform tension.

Furthermore, the edges or selvage of the bandage being defined in the woven pattern, a uniformly defined winding of the bandage is made possible.

As shown in the drawing, the warp threads A and B are alternately overtwisted to the right and left and are bound by the weft

thread C. At the edges of the bandage there are bound as a selvage two or more warp threads D and E, which are overtwisted to the right and two or more warp threads F and G overtwisted toward the left and bound by the weft thread C. I prefer to impart to the warp threads D, E and F, G, as compared with the warp threads A and B of the remaining bandage, a lesser pre-stretching when weaving in so that they are more softly elastic. This provides a definite and non-raveling selvage but yet proportionately elastic. This selvage may be and is characteristically defined by colored warp threads thus making a distinguishing feature for the bandage.

What I therefore claim and desire to secure by Letters Patent is:—

1. An elastic dressing bandage comprising central warp threads alternately overtwisted right and left, and two or more warp threads adjacent each edge over-twisted in the same direction but of opposite twist at the opposite edges of the bandage and included together in the weft forming selvage edges of the bandage of greater elasticity than the center warp.

2. An elastic dressing bandage comprising central warp threads alternately overtwisted right and left, and two or more warp threads over-twisted in the same direction forming selvage edges of the bandage of greater elasticity than the center warp, and bound in the selvage alongside of each other simultaneously by the weft threads said overtwisted warp threads in the opposite selvages being reversely twisted.

3. An elastic dressing bandage in accordance with claim 1 having the distinctive feature that the similarly wound warp threads of the selvages have a lesser tension than the other warp threads of the bandage.

4. An elastic dressing bandage in accordance with claim 2 having the distinctive feature that the similarly wound warp threads of the selvages have a lesser tension than the other warp threads of the bandage.

EMIL KLEIN.