

Aug. 13, 1957

H. BARON

2,802,464

DRESSING MATERIAL FOR WOUNDS

Filed July 29, 1954

Fig. 1

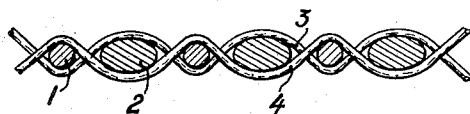
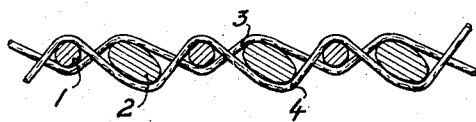


Fig. 2



Inventor
Dr. Heinz Baron

1

2,802,464

DRESSING MATERIAL FOR WOUNDS

Heinz Baron, Dusseldorf, Germany

Application July 29, 1954, Serial No. 446,473

Claims priority, application Germany August 3, 1953

4 Claims. (Cl. 128—156)

The invention relates to dressing materials for wounds and aims at preventing the materials from sticking together, to the wound-surface or to the skin, when moisture, such as secretion, matter, blood, and the like emanating from the wounds are wetting the dressing material, or at decreasing it at least to a certain extent, if this sticking together cannot be prevented completely.

To attain this purpose, many attempts have already been made, however without any satisfactory result.

The starting point of the invention is the recognition that the sticking together can be prevented to a very great extent, if one succeeds in disturbing and interrupting permanently the sticking process by a movement of the individual thread parts to each other and to the skin and in creating, by this movement of the fibres, new capillary vessels which will suck up the moisture and maintain its movement.

For this purpose, the dressing material consists, according to the invention, of threads and parts of threads which will react in different ways upon the moisture of the wounds, i. e. extend, shrink, or swell in different degrees and, thereby, will execute movements to each other and to the skin, respectively.

One preferred form of execution of the dressing material (bandaging material) in accordance with the invention consists in that the wefts are alternately of the shrinking and of the non-shrinking type, whereas the warp threads are of a roundish, in particular of an oval section and, in consequence of the lateral contraction and warping, respectively, caused thereby of the surrounding meshes formed by the weft threads, are taking a position oblique to the fabric face. Care is taken that the shrinking thread-parts are as little as possible coming into contact with the wound surfaces or with the skin, so as to avoid producing an irritation or tension thereon.

Hereafter one execution of the invention is described in detail as an example. In the appertaining drawing:

Fig. 1 shows a section of the bandaging material in the direction of the weft threads and in an unused state,

Fig. 2 shows a corresponding view of the bandaging material after moisture of the wound has been sucked up.

The dressing material consists of the warp threads 1 and 2, the weft threads 3 and 4 lying side by side being lead alternately under and over the warp threads. The weft threads are of such a kind that they are reacting in a different manner to the moisture emanating from the wounds. One part of them is indifferent towards the moisture of the wounds or extends, whereas the other part is shrinking, when it comes into contact with any such a moisture. A weft thread of a non-shrinking type 4 is followed up by a weft thread 3 of a shrinking kind, so that each warp thread is surrounded by a weft-thread-mesh having a shrinking thread-part on the one side and a non-shrinking thread-part on the other side. As soon as moisture of the wound appears, the shrinking weft thread-part will try to tighten, whereas the thread parts opposite of the non-shrinking weft threads will warp, either in consequence of their extending or in consequence of the

2

warp thread lifted by the tightening shrinking thread-parts. This opposite movement of the threads caused by the shrinking process interrupts the sticking process, so that bandaging materials of this type can be loosened from each other and from the skin much easier than the usual dressing materials.

The disturbing process is considerably improved by the warp threads or at least by a part of them being given an oblong, in particular an oval section. The bandaging material being unused, these oval warp threads 2, with their longer axis of their sections, are lying parallel with the web face and, in this position, they are tightly surrounded by the weft threads. On sucking up moisture from the wounds, the shrinking weft thread-parts, as described above, will tighten, thereby causing the longer axis of the oval warp thread section taking a position oblique to the web face, as it can only give way in the direction towards the warping and non-shrinking thread part, as shown on Fig. 2. In this way, the oval warp threads are getting clear from their support on one side, thereby forming new capillary spaces, which, on their part, suck up the moisture of the wound and thus keep the moisture moving. Consequently, it is due to the longish formation of the warp thread section that the sticking process is further disturbed. In order to prevent the shrinking thread part from irritating the skin or from causing any tension thereon, the shrinking thread-part is led in such a way that it comes as little as possible into contact with the skin. As will be seen from the drawing, the fabric, for the main part, is contacting the skin with the non-shrinking weft-thread parts 4, whereas the shrinking thread-parts 3 are mainly kept away from it.

Under certain circumstances, the oval warp threads may be spun from out a jet as a half or fully synthetic fibre; even their production according to the cord principle is possible without any difficulty.

In order to strengthen the fabric, thin warp threads 1 having circular sections are alternately weaved in with the warp threads 2 of oval sections.

There are various well-known procedures to provide the weft threads used with the necessary ability to shrink or extend, when in contact with the moisture from the wounds, e. g. a thread is given a shrinking capacity when stretched.

The textile fabrics described may advantageously also be used for purposes other than the bandaging of wounds, i. e. wherever, in consequence of the appearance of moisture, a subsequent sticking is playing a certain part, for instance, for the sucking up perspiration.

What I claim is:

1. Dressing material for wounds and the like consisting of threads having different reactions with respect to the alterations of their lengths upon contact with moisture emanating from a wound or the skin, said threads consisting of two sets each having a plurality of threads extending in generally parallel directions, adjacent threads of one of said two sets having said different reactions with respect to the alteration of the lengths thereof and being positioned in supporting relationship to the threads of the other of said two sets of threads, the threads of the other of said two sets of threads being essentially uniformly non-reactive with respect to the alteration of their lengths upon contact with moisture emanating from a wound or the skin, the said different reactions of said adjacent threads of said one set of threads to moisture absorbed from the wound causing a lifting movement of said other set of threads, and said movement causing a warping of some of the threads of said one set of threads.

2. Dressing material for wounds and the like consisting of threads having different reactions with respect to the alteration of their lengths upon contact with moisture emanating from a wound or the skin, said threads consist-

3

ing of weft threads and warp threads, said weft threads including adjacent threads having said different reactions with respect to the alteration of the lengths thereof, said warp threads having mutually different cross sections and being essentially uniformly non-reactive with respect to the alteration of their lengths upon contact with moisture emanating from a wound or the skin, said adjacent weft threads being positioned in supporting relationship to said warp threads, the said different reactions of said adjacent threads to moisture absorbed from the wound causing a lifting movement of the warp threads, and said movement causing a warping of some of said adjacent threads.

3. Dressing material for wounds and the like consisting of threads having different reacting properties with respect to the alteration of their lengths upon contacting with moisture emanating from wounds or the skin, said differently reacting threads being arranged in the dressing material in such a way that upon said different alteration of their lengths movements of the threads to one another and between the dressing material and the wound or skin are effected, whereby the adhering and sticking process of the threads to each other and to the wounds or skin will be interrupted, said threads consisting of weft threads and warp threads, said weft threads being alternately of a shrinking and a non-shrinking type, said warp threads having an oblong section, whereby in consequence of the contraction and the warping, respectively, of the two weft threads surrounding a warp thread at the same point the said warp thread takes a position oblique to the face of the dressing material creating at the same time capillary

4

spaces sucking up the moisture emanating from the wounds.

4. Dressing material for wounds and the like consisting of threads having different reacting properties with respect to the alteration of their lengths upon contacting with moisture emanating from wounds or the skin, said differently reacting threads being arranged in the dressing material in such a way that upon said different alteration of their lengths movements of the threads to one another and between the dressing material and the wound or skin are effected, whereby the adhering and sticking process of the threads to each other and to the wounds or skin will be interrupted, said threads consisting of weft threads and warp threads, said weft threads being alternately of a shrinking and a non-shrinking type, said warp threads having alternately an oblong section and a circular section whereby in consequence of the contraction and the warping, respectively, of the two weft threads surrounding a warp thread of oblong section at the same point the said warp thread takes a position oblique to the face of the dressing material, the said warp threads of circular section being effective to strengthen the dressing material.

References Cited in the file of this patent

UNITED STATES PATENTS

2,312,089	Gobeille	Feb. 23, 1943
2,481,316	Le Lous	Sept. 6, 1949
2,518,110	Ahlers	Aug. 8, 1950