The treatment of wounds commonly necessitates the use of a fabric made of fibres of vegetable origin, such as cotton gauze. This gauze has the drawback of adhering or sticking to wounds. Many undesirable consequences result from this: considerable pain is inflicted to the patient when the dressing is to be removed; cicatricial pellicles and cicatrization germs are destroyed when the dressing is renewed, which is particularly objectionable in the case of atomic wounds; furthermore, hemorrhage and irritation are likely to occur.

Various means have been used for obviating these drawbacks. The first endeavours consisted in impregnating cotton gauze with substances of various kinds but which always contained a relatively high proportion of fatty matters. Gauzes treated in this way are undeniably an improvement over ordinary cotton gauze, but they are not free from disadvantages. On the one hand, their handling is rather delicate. On the other hand, the presence of the fatty matter in contact with the wound may interfere to a certain degree with the action of antisepsics. Finally, the fatty matters are, at some places, absorbed by the wound, which has for its result to bare the vegetable fibre. Adherence can therefore occur at some places, and the result obtained is not wholly satisfactory.

More recently, experiments have been conducted in a different direction. They tend to the elimination of the vegetable fibre and its replacement by a support of a different material having the inherent property not to adhere to the wound. The first experiments of this kind concerned the utilization of strips of cellulose film woven into bands. Such fabrics are fragile, and the necessity of giving them a sufficient resistance leads to a tight weaving which offers certain disadvantages, especially concerning the possibility of evacuation of secretions from the wound.

The object of the present invention is to provide a material for dressings and bandages which eliminates these drawbacks. According to an essential feature of the present invention, I make use of glass fibre for constituting a fabric which insulates the wound from the usual dressing. This fabric is intended to be used instead of the gauze usually employed in dressings.

The fabric according to the present invention has the following advantages:

It does not adhere or stick to the wound and permits of renewing dressings without inflicting any pain to the patient and without destroying cicatricial pellicles and cicatrization germs. Furthermore, the risks of hemorrhages and even irritation being produced by the renewing of a dressing are reduced to a minimum.

The fact that glass fibre is incombustible permits flame sterilization. This property has the great advantage of a rapid application even with a makeshift installation and elementary material means.

The glass fibre fabric is constituted in such manner as to have a texture analogous to that of cotton gauze, which permits the flow or evacuation of mucus and secretions from the wound under excellent conditions and their absorption by the ordinary dressing.

On the other hand, the glass fibre fabric according to the invention can be used as a support for medicinal or antiseptic products. These products may be incorporated into the fabric through various methods, for instance by immersion of the fabric in the liquid product and subsequent evaporation, by coating the fabric with the product, or by sprinkling said fabric with the product in liquid or powdery form.

It is also possible, according to the present invention, to deposit the medicinal or antiseptic product on the glass fibres before the constitution of the fabric, by an operation analogous to the oiling of wool fibres.

The fibres can thus be treated by means of an emulsion containing, in solution in water, antiseptics of various kinds, such as sodium salts of dibromocxymercurofluorescein, diaminocaridine neutral chloride, orthoxyquinoline neutral sulfate, methylene blue, and so on.

It has been found that when bandages or other dressing elements made of glass fibres according to the invention and treated so as to constitute supports for antiseptics such as above set forth are in contact with the liquids of the wounds, they yield the antiseptic within a very short time, in opposition to what took place with bandages or other dressing elements made of vegetable fibres such as cotton fibres and coated with the same antiseptic products. This has been found to be true also in the case of dressing elements acting as supports for medicinal products in general. This property of glass fibre products acting as supports for antiseptics gives them a great advantage over vegetable fibre fabrics. For the same proportion of antiseptic, the action of these glass fibre fabrics is undeniably much higher than that of vegetable fibre fabrics, because in the
last case the antiseptic is fixed to the fibre and is given off by said fibre only partly and slowly.

For the constitution of fabrics intended to be used as dressings according to the present invention, I may associate with glass fibre, fibres or other weaveable matters of vegetable, animal or mineral origin, the combination of the different materials being effected in such manner as to preserve, either wholly or partly, the advantages resulting from the utilization of glass fibres as above stated.

In particular, I have found that it is possible to make use for this purpose of fibres of asbestos, peat, of cellulose fibres or films, and so on, and, in a general way, of non-porous fibres or matters capable of being woven.

I may also utilize, in association, glass fibres with fibres of asbestos, peat, and so on and other matters capable of being woven, such as strips of cellulose films and so on, and also with fibres which do not possess the original properties of the first mentioned fibres, such as cotton, wool and other fibres.

The combination of these various materials together is effected in such manner that when the dressing is utilized, the wound is in contact with only the elements which inherently have the following properties: impossibility of adhering to the wound, imputrescibility, and, as the case may be, incombustibility. As a matter of fact, the elements to be placed in contact with the wound should essentially be constituted by the glass fibres of the fabric.

These fabrics can also be used as supports for medicinal or antiseptic matters.

According to another characteristic of the present invention, the glass fabric may be partly freed from the matter added to the fibres thereof, for instance prior to the weaving thereof for lubricating said fibres or for other purposes, before the fabric is used for the treatment of wounds. This may be made necessary by the fact that the materials or products thus added to the fibres are of such a nature or quality that they involve some disadvantages concerning their action on the wounds, which may be detrimental or disagreeable. For instance, they might cause itching.

The removal of these matters or products is preferably carried out in such manner that only the portion of said matters or products present at the periphery, that is to say the external layer, is removed, so as to maintain a sufficient flexibility and strength of the fabric, while avoiding the disadvantages that might be involved by this external layer.

This partial removal can be obtained by a suitable treatment of the fabric under conditions depending upon the nature of the matter or product to be eliminated, for instance: successive immersions of the fabric in water at a suitable temperature, for instance 70° C., immersion in lukewarm soapy water, immersion in solvents such as benzine, acetone, etc.

The fabric thus treated and washed can be used for the treatment of wounds after sterilization either by means of the usual methods, or by direct application of a flame, for instance the flame of a gas burner. Or the fabric may be dipped in alcohol or ether, or generally any other inflammable solvent, and subsequently ignited.

The advantage of this removal of certain matters present in the fabric is, among others, that the action of the flame so produced no longer causes a blackening of the fabric.

Instead of obtaining the desired sterilization of the fabric through the action of heat, I may make use of the fabric freed from the oiling or other substances as above referred to as a support for various medicinal or antiseptic products, such for instance, as above indicated.

In a general manner, while I have, in the above description, disclosed what I deem to be practical and efficient embodiments of the present invention, it should be well understood that I do not wish to be limited thereto as there might be changes made therein without departing from the principal of the present invention as comprehended within the scope of the appended claims.

What I claim is:

1. A surgical dressing for wounds and sores consisting of smooth, non-porous, non-absorbent, non-combustible, imputrescible, non-metallic fibres, interengaged with one another to form an open-meshed dressing whereby draining from the wound is permitted and adhesion of the dressing to the wound or sore is avoided, said dressing containing an oiling substance in an inner part of said dressing for imparting flexibility thereto and having a surface of said dressing de-oiled, said de-oiled surface, when placed in contact with the wound or sore, avoiding contact between the oiling substance and the wound or sore.

2. A surgical dressing for wounds and sores as claimed in claim 1 wherein the fibres are glass.

JEAN FRANÇOIS LE LOUS.

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