W. R. GREEN.

BANDAGE.

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907,784.

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FIG. 1.

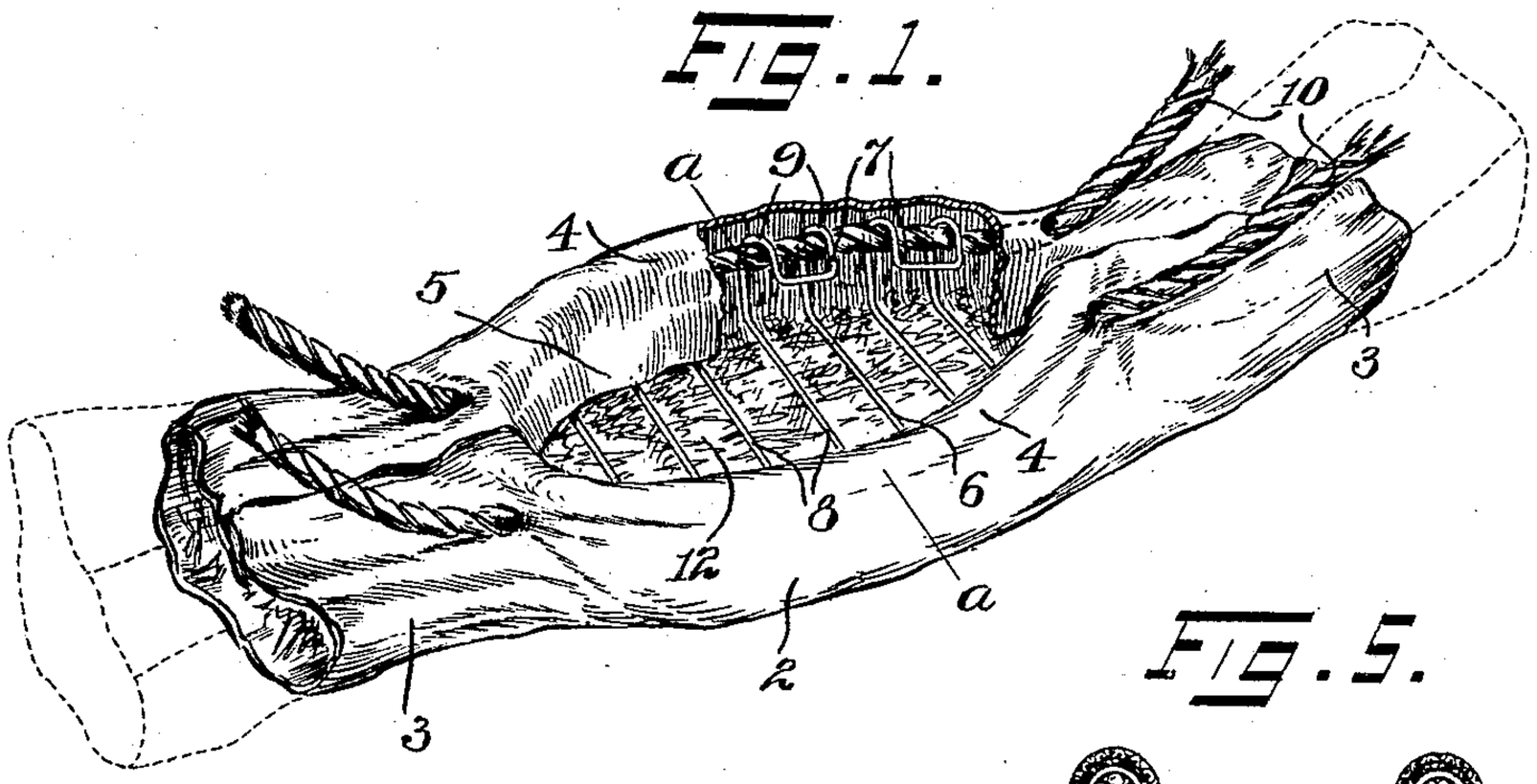


FIG. 5.

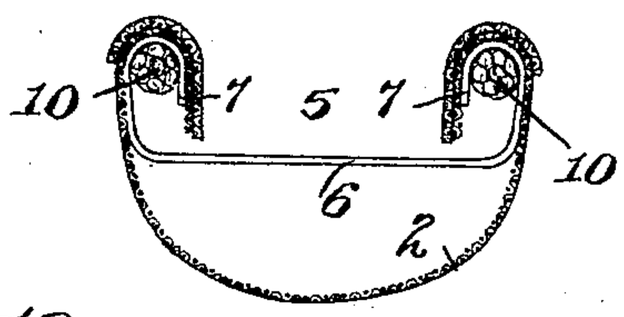


FIG. 2.

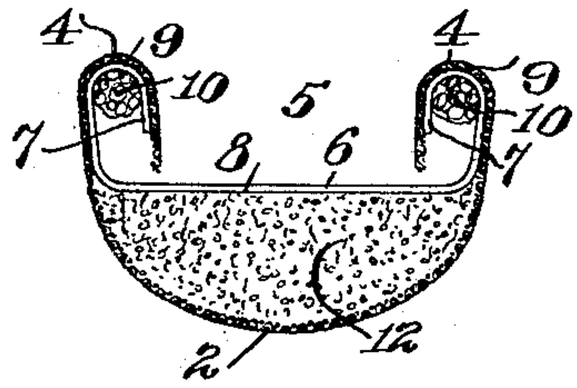


FIG. 6.

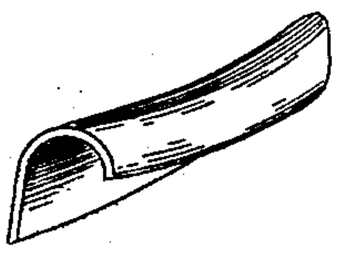


FIG. 4.

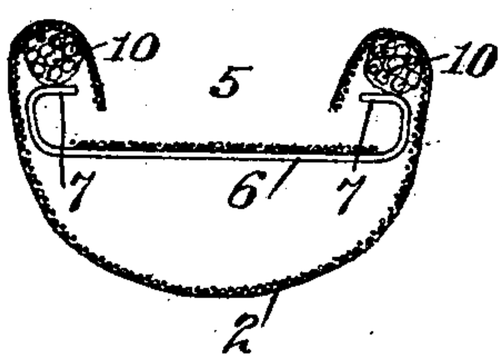
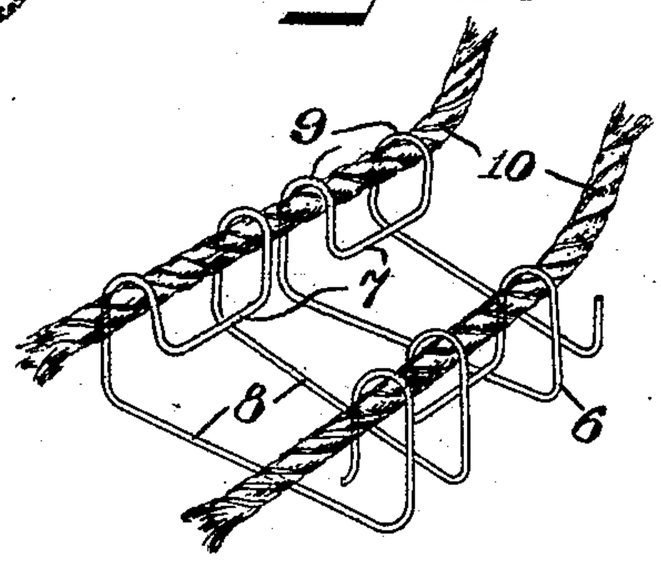


FIG. 3.



Witnesses.

S. Newman

H. D. Penny

Inventor.

W. R. Green.

By his Attorney.

F. H. Richards.

THE NORRIS PETERS CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

WILLARD R. GREEN, OF KANSAS CITY, MISSOURI.

BANDAGE.

No. 907,784. Specification of Letters Patent. Patented Dec. 29, 1908.

Application filed November 30, 1907. Serial No. 404,592.

To all whom it may concern:

Be it known that I, WILLARD R. GREEN, a citizen of the United States, residing in Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Bandages, of which the following is a specification.

The present improvement relates to bandages adapted for various purposes, the object of the invention being to provide an improved bandage simple in construction, inexpensive to manufacture, readily applied, and of such form and construction that it will have reinforced or side bearing surfaces adapted to fit around the source of discharge and form a receiving chamber spanning such source of discharge, and which bandage will maintain its shape and deliver the discharges within the chamber and not become slimed over on the outer surface, and will enable the same to be worn without causing those pains and discomfort which invariably attend the wearing of all ordinary forms of bandage.

The ordinary bandage is composed of more or less soft, yielding and compressible material, without much or any attempt to give it a characteristic form or shape of its own to be maintained in use. Because of this lack of form the bandage, when in use, almost at once takes a form resembling that of a peaked or gable ended roof; in other words, shaping itself into a ridge along the central longitudinal portion and sloping toward the sides of the bandage throughout its length. Because of this shape the discharges which are applied along the peaked edge of the bandage have a tendency to pass down the two sides of the bandage more quickly than they can be absorbed by the bandage itself, which is furthermore quickly rendered unfit for use by reason of the fact that the surface at once slimes and becomes matted, and thus becomes more or less impervious to further penetration or absorption. The creation of this moist condition of the bandage along the sides thereof and against the limbs is frequently the cause of some of the pains and discomfort which attend the wearing of all ordinary forms of bandage.

The object of the present invention, therefore, is to avoid the creation of the conditions which are themselves the cause of some of the troubles attending the use of the ordinary bandage, and to overcome and prevent their existence; and, by keeping the parts of the body adjacent to which the bandage is used in a dry condition, render the body non-sensitive to the presence of the bandage and enable it to be worn with comfort. To accomplish these objects, the present bandage is made of such form that it will take its bearings under any desired pressure upon the two sides longitudinally of the bandage and against the limbs at points provided by nature to give place to and support the bandage, and thus enable the bandage to properly span the source of discharge. This natural formation of the body tends to retain positively and comfortably in place the side bearing portions of the bandage and to give a sense of comfort and security to the wearer. When so placed and supported the side bearing portions are out of all contact with the source of discharge, which is spanned by a chamber always maintained open, and the connecting parts of the bandage come together sufficiently below the center of discharge to avoid all contact with it. Furthermore, the fact that pressure is at the sides of the source of discharge tends to keep free and open the passage of the discharge, and prevents the formation of blood clots or other obstructions frequently the cause of great pain. It is therefore a fact that the mere form of this bandage has in itself sanitary and medicinal advantages very acceptable to the wearer and also imparts a sense of safety and certainty of being in position.

In the formation of such a bandage it is essential that it be so made that the bandage will have the function of maintaining a chamber or open condition at the source of discharge and against side pressure from the limbs when sitting or in a recumbent position. This resistance to side compression may be obtained in various ways, and special forms of devices may be provided which contain provision for not only acting as a lateral spreader to the bandage, but also providing a cavity through the center of the bandage throughout its longitudinal extent, offering a free receiving space or chamber for receiving all discharges and also insuring positive avoidance of any contact with the wearer except around the source of discharge, and which means may also act as a depressor for the absorptive or fibrous material which may be used in the receiving space, as, below the transverse portion or portions of the spreader. This form of bandage affords ready means for arriving at a comfortable form of bandage, as

well as an efficient one, through a proper disposition of the absorbent and the other elements of which the bandage is made. In making such a bandage a bearing member of longitudinal extent is necessary upon each side of the source of discharge or part to which the bandage is to be applied. If this be a wound, the bearing portion of the bandage must be of sufficient size and of rounded form to constitute a comfortable engaging surface of some preferable diameter. The means for maintaining the bandage against lateral compression must have certain rigidity as well as pliability and sufficient extension downward to form the receiving chamber. These two elements, therefore, form the means around which to associate the absorbent material, which may be used to fill the sides and bottom portions of the chamber and also to extend into the side portions of the bandage to give them fullness and yieldability, while keeping the bandage within moderate size or dimensions as may be required.

The several elements of the bandage may be inclosed in a cover, which may be impervious to fluids or not, and which usually extends up along the sides and folds over the supporting members. This cover may be of ordinary material, or may have some special form. A great variety of ordinary materials of which to form the cover is practicable in use, for the reason that through the functions possessed by this bandage the limbs and other portions of the body likely to come in contact with the bandage cover are free from discharge or irritating acids, and for that reason are able to bear contact with the material of the bandage cover without discomfort, this latter fact resulting from the dry state in which they are kept.

In the drawings accompanying and forming part of this specification, Figure 1 is a perspective view of a bandage embodying my present improvements, with a part of the interior thereof broken away to show its construction; Fig. 2 is a cross-sectional view taken in line *a*—*a* Fig. 1; Fig. 3 is a detail view of the form of means shown in Figs. 1 and 2 for forming the side bearing portions and keeping the bandage properly distended at the source of discharge so as to span the same, the supporting means being carried by such distending means; Fig. 4 is a cross sectional view of another form of means for forming the side bearing portions and keeping the bandage distended; Fig. 5 is a similar cross sectional view of a bandage, showing another form of means for providing side bearing portions; and Fig. 6 is a detail view of one of the side bearing members shown in Fig. 5.

Similar characters of reference indicate corresponding parts throughout the different figures of the drawings.

The bandage 2, in the preferred form thereof, is made of any suitable material adapted for the purpose and is preferably folded longitudinally at its ends 3 for a short distance, intermediate which folded or overlapped portions the bandage is so formed as to provide side bearing portions 4, between which the bandage is suitably distended to form a receiving chamber 5 adapted to span the wound or other source of discharge.

In practice the covering member of the bandage may be composed of a suitable material so folded at its ends as to overlap for a short distance and thus cover in such volume of the absorbent material as may be located in the bandage beyond the points of support. The outer ends may be suitably stapled or otherwise fastened if desired. At the side edges of the bandage the material is folded or shaped to form the side bearing portions 4, forming therebetween the receiving chamber 5 of sufficient size and capacity to span the wound or other source of discharge, such chamber being preferably maintained by the provision of some suitable distending or expanding means, preferably pliable in character, so that while yielding to a certain amount of pressure it will nevertheless resist the compression of the bandage to a sufficient extent to prevent closing up of the chamber. In that form of the bandage which is shown in the drawing, this distending means is illustrated as consisting of a frame-work 6 so formed that it will not only keep the chamber of the bandage open, but that it will give shape to and provide a bearing surface for the bandage along the longitudinal edges of such chamber, and also serve as a depressor for the absorbent material in the space below, as already referred to, whereby such material is thus kept out of actual contact with the person of the wearer, this being deemed an important object to be attained. This frame-work 6, in the present instance, consists of a wire frame made up of edge forming members 7 and chamber forming members 8, the former being obtained in the present instance by bending over the edges of the wire frame-work so as to form curved bearing surfaces 9 around which the material and cover of the bandage may be turned. These curved edge bearing members are united by the chamber forming members 8, which, in the present instance, comprise cross running wires. The length of the edge forming and chamber expanding means will, of course, conform to the desired length of the chamber. In forming the bandage, the material of which it is composed is carried or folded around this frame-work in such manner that a chamber adapted to span the wound or other source of discharge is formed, while at each side thereof a suitable bearing surface to rest against the body at the

sides of the wound or other source of discharge is obtained.

In order to properly suspend the bandage by suitable suspension means, which in itself may also assist in maintaining the chamber open, suspending devices 10, two in number, shown in the form of cords, are run through the middle portion of the length of the bandage and project from the surface thereof near to or just beyond the ends of the chamber, one passing at each side of such chamber, and in the form shown in Figs. 1 to 3 and 5, these cords are run through the turned over ends of the frame-work, which is thus in this instance shown supported on the cords, while these latter in turn act to maintain the frame-work in its proper position. In the form shown in Fig. 4 the edge forming portion of the frame-work is below the supporting cords and tends to keep them in proper position within the folded edges of the bandage, and so maintains the proper form of side bearing edges. Since in practice the cords extending from one end of the bandage will usually be spread apart and connect with a belt, it is evident that such spreading of the cords will tend to maintain the frame-work and thereby the chamber open.

The material of which the bandage is made may be made in long length and suitably cut off, as shown in dotted lines in Fig. 1 of the drawings, the frame-work inserted and the edge of the material folded around it, which material may be in the form of a cover, or around which material a suitable cover may be disposed to form a chamber, the cords or other supporting means being run through suitable openings provided in the bandage on the face thereof at or near to the ends of the chamber, such cords running under the turned over ends of the frame-work and assisting in forming, as stated, a supporting or bearing edge at both sides of the chamber for the bandage.

By reason of the formation of this bandage in the manner illustrated and described, the various advantages hereinbefore set forth are obtained and a bandage furnished having bearings upon which the weight of the body can be placed when the bandage is properly attached, and this without causing discomfort or pain, which is not practicable with the ordinary bandages now placed on the market.

Another of the advantages obtained by the use of this improved bandage is that the bandage, at the two ends of the chamber, and especially that end which will constitute the lower end should it be applied in a more or less perpendicular position, also forms reception reservoirs materially assisting the main chamber in absorbing the fluid, and these are preferably located beyond the points of support.

The bandage may be provided with a suitable absorbent material 12, preferably some one of the many forms shown and described in my patents, which absorbent material is located below the frame-work, which latter thus acts to keep it in place, while assisting the absorbent qualities of such material by keeping the bandage open and permitting the fluid to readily run thereinto and be absorbed by the absorbent material.

In Figs. 5 and 6 is shown a means for assisting in preserving the side bearing members, but which means is more particularly adapted for use when it is desired to make up the bandage with a cheap or inferior quality of cover, which form of cover would otherwise be irritating to the wearer. In order to avoid this a suitable protecting shield is provided, which may be formed of some suitable light water or moisture proof material, such for instance as paper suitably treated and of sufficient stiffness or rigidity to retain its shape and to form the bearing portion in contact with the body of the wearer. This shield extends over and conforms to the shape of the side edges of the bandage and may project inwardly sufficiently far, if desired, to assist in conveying the fluids to the receiving chamber.

The supporting cords 9 and 10 are shown of less cross-sectional area or diameter than the diameter of the side bearing portions of the wire frame which is supported by said cords. In consequence it follows that a movement of one side of the bandage will not necessarily cause the other side to move, a material advantage in devices of this kind.

I claim as my invention:

1. An absorbent bandage comprising a cover formed to provide side bearing portions and a chamber, a frame extending across the body of the chamber for keeping said chamber distended, and means for attaching the bandage in position and carrying said frame.

2. An absorbent bandage made up of a frame having a bottom and side bearing portions, and a cover folded over said side bearing portions, and bandage attaching means carrying said frame.

3. An absorbent bandage made up of a frame having side bearing portions and chamber forming means, a cover folded over said side bearing portions and under said chamber forming means, and bandage attaching means carrying said side bearing portions.

4. An absorbent bandage folded from its ends inwardly to form a chamber having side bearings portions, and means for maintaining said side bearing portions and the chamber expanded and around which the sides of said chamber are folded

5. An absorbent bandage folded from its ends inwardly to form a chamber having side bearing portions, means for maintaining said side bearings portions and the chamber

expanded and around which the sides of said chamber are folded, and an absorbent mate rial below said expanding means

6. An absorbent bandage folded from its ends inwardly to form a chamber having side bearing portions, means for maintaining said side bearing portions and the chamber expanded and around which the sides of said chamber are folded, an absorbent material below said expanding means, and attaching means projecting from the bandage at or near the ends of the chamber and carrying said expanding means.

7. An absorbent bandage having a main receiving chamber provided with side bearing portions, means for forming said side bearing portions and spanning the chamber adjacent to the bottom thereof and adapted to maintain said main chamber open, said bandage also having end receiving reservoirs at the ends of said main chamber, and attaching means so located as not to compress the end chambers when the bandage is in use

8. An absorbent bandage comprising a cover, means forming side bearing portions therefor and a receiving chamber intermediate thereof, and body attaching means extending along and under said side bearing portions.

9. An absorbent bandage having attaching means adapted to support said bandage along its sides to form side bearing portions with a receiving chamber intermediate thereof, and with end chambers communicating with said receiving chamber and extending beyond the points of engagement of the attaching means with the bandage.

10. An absorbent bandage comprising a cover having side bearing portions, and shields covering the top edges of said side bearing portions.

11. An absorbent bandage having side bearing portions and a receiving chamber intermediate thereof, means for forming said side bearing portions and maintaining said chamber open, and relatively rigid shields for covering the top edges of said side bearing portions.

12. A relatively rigid shield for covering the top edges of the side bearing portions of a bandage.

13. A frame work for a bandage having side bearing forming portions and a bottom below said side bearing portions forming a chamber-spanning means.

14. A one-piece wire frame work having side bearing forming portions, and a bottom below said side bearing portions forming chamber-spanning means.

15. An absorbent bandage having supporting means for attaching it in position and formed to bear against the body at the sides of and to span the source of discharge, with the absorbent out of contact with such source of discharge, said bandage having a reservoir or reservoirs beyond its points of support.

16. An absorbent bandage having supporting means for attaching it in position and provided with a reservoir or reservoirs at its end or ends beyond its points of support.

17. A bandage comprising a chamber having side bearing portions, and supporting means extending under said side bearing portions, the said supporting means being of less cross sectional area than the diameter of said side bearing portions whereby a movement of one side bearing portion will not necessarily effect movement of the other side bearing portion.

18. A bandage having a chamber, and means running crosswise of said chamber at and between the points of compression of said chamber for keeping the chamber open.

19. A bandage having a chamber, and means located only at and between the points of compression for maintaining said chamber against closure.

20. A bandage having a chamber, means located only at and between the points of compression for maintaining said chamber against closure, and independent supporting means supporting said chamber from end to end along the sides thereof only.

Signed at 9 to 15 Murray st., New York, N. Y.

WILLARD R. GREEN.

Witnesses:
C. A. WEED,
F. E. BOYCE.