W. S. BARKER.

METHOD OF WATERPROOFING GARMENTS.

APPLICATION FILED NOV. 11, 1918.

1,326,630. Patented Dec. 30, 1919.

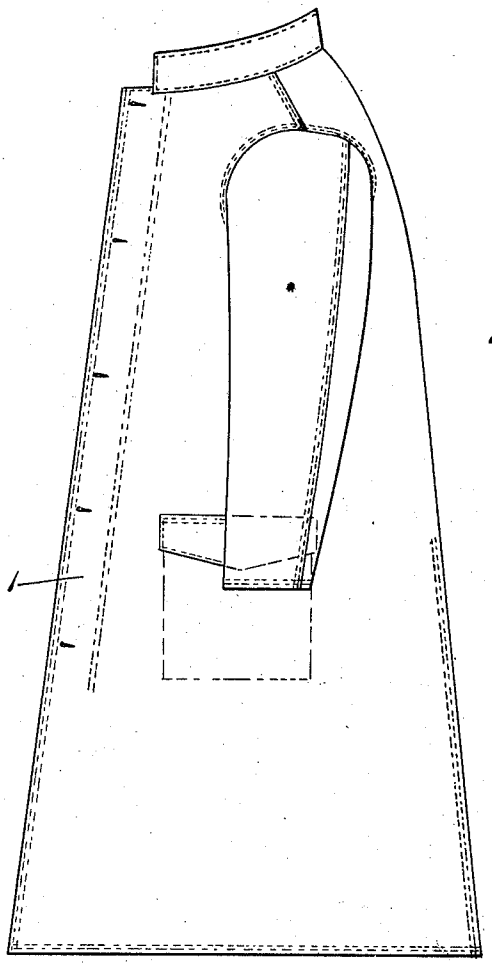


Fig. 1.

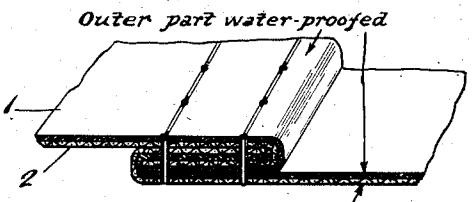


Fig. 2.

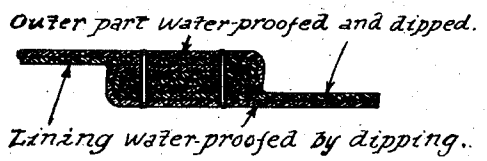


Fig. 3.



Fig. 4.

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UNITED STATES PATENT OFFICE.

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METHOD OF WATERPROOFING GARMENTS.

1,326,630. Specification of Letters Patent. Patented Dec. 30, 1919.

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To all whom it may concern:

Be it known that I, WALTER S. BARKER, a citizen of the United States, and resident of Cambridge, in the county of Middlesex and State of Massachusetts, have invented an Improvement in Methods of Waterproofing Garments, of which the following is a specification.

This invention relates to a method for the manufacture of oiled clothing and particularly for waterproofing the seams and other threaded portions.

The class of garments to which this invention relates are made from cotton cloth or similar fabrics, waterproofed with a mixture having linseed or similar drying oil as its base, to which suitable driers and softeners are added and such suitable coloring matter, if any, as desired.

It is common practice to coat the cotton cloth for the outside of such garments in the piece, by the aid of a coating machine, with a heavy coating of waterproofing material, preferably by applying a number of layers. The cloth absorbs the waterproofing material until it becomes saturated and the last treatment is so applied as to furnish a smooth, waterproof finish. It is also common to coat the lining in a similar manner, the coating for the lining being, as a rule, lighter, as no substantial amount of water should get through the coat to the lining. The garment is then cut and stitched from the waterproofed exterior and lining fabrics. At all the seams every stitch made by the needle furnishes an opening directly through the garment, through which water can flow readily until such stitch holes are closed, and also the spaces between the stitches leave openings. In the manufacture of garments made as above described, it is the practice to brush the lines of stitches by hand with the waterproofing compound, to close these stitch holes and spaces. This is an expensive process and must be carefully performed to accomplish the desired result.

My invention consists in a new method of manufacturing a waterproofed garment, such as a coat, with waterproofed seams and stitch holes which requires less manual work than existing methods and is not so liable to defects from careless or inexperienced workmanship; also, it is cheaper and more effective than the existing methods.

I waterproof the fabric for the exterior of the coat before cutting it, but the interior fabric, that is, the fabric for the lining, is not waterproofed in the piece, but, on the contrary, is stitched to the exterior portion of the coat before being waterproofed. It has heretofore been common to double the material at the seams and this practice I prefer to follow.

It is not practicable to make these overlapped seams as tight as is desirable if both fabrics are waterproofed before the lining and the outer materials of the garments are stitched together because the materials when waterproofed are comparatively stiff and clumsy. I find, however, that if the lining is sewed to the remainder of the coat before the lining material has been waterproofed that the soft, unwaterproofed lining material forms with the waterproofed exterior material a much more pliable and compact seam than is possible where two waterproofed materials are sewed together.

When the lining has been sewed to the coat, I waterproof all the seams and thread openings by dipping the entire garment in a bath of the waterproofing mixture, so as to expose all the stitched portions to the waterproofing mixture. I keep the coat in the waterproofing mixture for such time as is desired, preferably from three to five minutes, according to the requirement of the garment, and then subject the garment to pressure as by passing through the rolls of a wringer, which not only removes the surplus liquid, but forces the liquid more thoroughly into the stitches and seams and closes them even more tightly. The effect of this method of construction is that the lining, being absorbent before immersion in the bath of oil, soaks up the oil at the stitched portions and carries it in through the seams and around and through the stitches from back and front and entirely throughout the fabric and closes the stitches. It also follows from the fact that the lining is sewed in before waterproofing that the seam is compact at the start and thus when

the waterproofing mixture works its way in by absorption, the fabric is swelled and the seams are closed very effectively.

This compactness cannot be secured in stitching together two fabrics, both of which are stiff from the waterproofing process before they are sewed together. This is particularly true because the material is frequently doubled on itself at the seams, thus making a treble or quadruple thickness.

Liquid is caused to pass, by the pressure of the surrounding liquid, between the stitches at such points, and all openings are further closed by the pressure of wringing rolls whereas brushing gives principally a surface effect. The necessity of the long and expensive hand brushing applications is eliminated by my method and in addition, the work done is much more uniform. By the brushing process the seams may be made commercially waterproof, at least superficially and temporarily by a skilled workman, if at every instant sufficient care is used, but by the use of my process the constant care of a skilled worker is not required and the holes and spaces are uniformly and deeply filled and the danger of portions being left untreated by oversight, which in practice leads to defects in hand brushing, is remedied and the work is done cheaper and in practice better.

Dipping a coat which has been made from materials waterproofed in the piece, both for the exterior and the lining, is not the equivalent of this idea for several reasons, among which is the fact not obvious except by experience that a coat so made will not stand a vigorous wringing.

It is possible to make a coat of entirely unwaterproofed material, and then waterproof it by a dipping process; but it will not be the coat of my invention. It will either be too heavy for practical use or it will not be waterproof.

I have not specifically described the proportions of the waterproofing mixture to be used, as my invention can be carried out with any of the well-known waterproofing mixtures for oiled clothing, these being familiar to all persons skilled in the art, and are subject to variation in composition according to the particular requirements of the garment and the use to which it is to be put. These waterproofing mixtures, speaking generally, consist of a base of drying oil, such as linseed oil or china wood oil, to which is added some drier, such as a Japan drier. A suitable coloring material, as lamp black, is frequently added.

As heretofore stated, however, my invention is not limited to the particular waterproofing mixture used, provided it is one which will be absorbed by cotton fabric.

In the drawings Figure 1, illustrates my invention applied to an oiled coat, of a kind well known in the art, but, obviously, it is equally applicable to other oiled garments.

Fig. 2, is an enlarged sectional detail of one of the seams, before the garment is immersed.

Fig. 3 is an enlarged sectional detail of a seam after the garment is immersed.

Fig. 4 is a sectional detail of another form of seam.

Referring to the drawing Fig. 2, 1 represents the waterproofed outer part of the garment, and 2 the lining which is not waterproofed.

After the component parts of the garment have been stitched together it is entirely or bodily immersed in waterproofing mixture and waterproofed as hereinbefore described.

It will be noted that in the arrangement shown in Figs. 2 and 3 the materials are doubled at the seams and the lining fabric and exterior fabric are clenched together and stitched with a double row of stitching. This type of seam is not new but is extremely satisfactory where my process of manufacture is to be used. The seam shown in Fig. 4, and other well known seams are likewise improved by the use of my invention.

I claim:

1. A method of manufacturing waterproof garments of cotton or similar fabrics, which consists in coating cotton cloth for the formation of the exterior of the garment before cutting the same with a coating of waterproofing material, cutting from said waterproofed cloth, material for the exterior of the garment, cutting from cotton cloth not waterproofed and absorbent with relation to the waterproofing mixture, material for a lining and forming the waterproofed material for the exterior and the not waterproofed lining material into a garment and then immersing the garment in a bath of the waterproofing mixture until the material at the seams has absorbed the waterproofing mixture and the stitch holes and seams have been closed by said mixture.

2. A method of manufacturing waterproof garments of cotton or similar fabrics, which consists in coating cotton cloth for the formation of the exterior of the garment before cutting the same with a coating of waterproofing mixture, cutting and forming the exterior of the garment and sewing thereto a lining of cotton not waterproofed and absorbent with relation to the waterproofing mixture, and then immersing the garment in a bath of the waterproofing mixture until the lining has absorbed the waterproofing mixture and the stitch holes and seams have been closed by the said mixture and applying roller pressure to the garment.

3. A method of manufacturing waterproof garments of cotton or similar fabrics,

which consists in waterproofing cotton cloth, forming the exterior of the garment with said waterproofed material and sewing thereto a lining of cotton not waterproofed and absorbent with relation to a waterproofing mixture, and then immersing the garment in a bath of the waterproofing mixture until the material at the seams has absorbed the waterproofing mixture and the stitch holes and seams have been closed by the said mixture and applying pressure to the garment.

In testimony whereof, I have signed my name to this specification.

WALTER S. BARKER.