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UNITED STATES PATENT OFFICE.

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PARAFFIN FABRIC.

SPECIFICATION forming part of Letters Patent No. 728,234, dated May 19, 1903.

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To all whom it may concern:

Be it known that I, CHARLES C. HOYT, a citizen of the United States, residing at Brookline, in the county of Norfolk and State of Massachusetts, have invented an Improvement in Paraffin Fabric, of which the following is a specification.

My invention relates to fabrics that are coated with paraffin or an equivalent, such as wax.

Fabrics are coated or impregnated with paraffin and the like not only to render them water-resisting, but also to give them a smooth or slip surface and at the same time by coating the fibers or threads thereof to enable them better to resist wear one upon another due to the flexing or bending of the fabric; but paraffin, especially when chilled, is likely to crumble and loosen from the fabric, particularly when the fabric is required to bend or flex frequently, and in such cases the fibers and threads soon lose the paraffin protection.

The lower grades or tests of paraffin, which contain the larger percentages of mineral oil, would ordinarily be the best for uses such as herein referred to were it not for their darker color and the objectionable kerosene odor accompanying the same. The further refinement, however, required to whiten the paraffin and eliminate the odor is accomplished only by removal of the mineral oil, which of course leaves the paraffin harder, less pliable, and more likely to crumble. It is nevertheless desirable to use the higher-test paraffins for their superior qualities above stated, and the aim of my present invention is to provide a fabric coated or impregnated with a high-test paraffin which will not readily crumble and disappear and which in other respects will be superior to such fabrics as at present produced. To this end my invention comprehends substituting for the mineral oil that is removed during the refinement of the paraffin a suitable essential oil, such as oil of wintergreen and the like, which gives to the paraffin the desired pliability, durability, &c., so essential for use in the coating or impregnating of fabrics.

In carrying out my invention the paraffin of the required test or degree of refinement may be softened or reduced to a liquid or semiliquid state. I then mix or incorporate therewith the desired quantity—say one and one-half to four per cent.—of an essential oil, which replaces to a degree at least the mineral oil lost during refinement of the paraffin. This essential oil may conveniently be oil of birch, oil of wintergreen, and the like and is thoroughly mixed with the paraffin, giving to the latter a capacity for penetration into and throughout the fabric which is quite absent in high-test paraffin without such oil. This higher degree of penetration of course insures a more uniform coating or impregnating of the fabric than would be possible with the high-test paraffin alone. The fabric may be coated or impregnated with this paraffin mixture in any desired manner, I having found it a convenient method to pass the fabric through a vat or tank containing the liquid or semiliquid paraffin mixture to thoroughly fill or impregnate the fabric with such mixture and then as the fabric issues from the mixture pass it between rolls, preferably heated slightly, which remove all surplus mixture and at the same time roll or iron the mixture into and throughout the meshes or interstices of the fabric.

The presence of the essential oil in the paraffin of high test lowers the boiling-point of the paraffin, rendering the latter softer and more pliable at low temperature. Consequently the paraffin endures without crumbling for a longer period of time during frequent flexure of the fabric, thus furnishing a more permanent coating for the fibers and threads of the fabric and correspondingly reducing the wear thereof one upon another. This adds to the life of the fabric. The fabric also is more pliable notwithstanding its coating, thus rendering it more suitable for various uses—such, for instance, as the linings of boots and shoes, wherein the smooth-coated or slip surface rendered more smooth and slippery by the introduction of the essential oil is advantageous in that it permits of easier passage of the foot into and out of the shoe. It is known that heavily-sized and paraffined fabrics are quite likely to mold when in stock. This is largely and often entirely eliminated by the introduction of the oil as herein provided for. The essential oil in-

creases the natural resistance of the paraffin to dampness, thus rendering it more suitable for awnings, trunk-coverings, and the like. The paraffin has a strong affinity for the essential oils and retains the same for a long period of time. When used for trunk-coverings and the like, the well-known quality of the essential oils to repel insects is of advantage, this being due probably to the odor which accompanies their use and which is agreeable, whatever the use to which the fabric is put.

Having described my invention, what I claim, and desire to secure by Letters Patent, is—

1. A fabric coated or impregnated with a paraffin mixed with an essential oil.

2. A fabric coated or impregnated with paraffin in which the natural mineral oil is replaced in whole or in part with an essential oil.

3. A fabric coated or impregnated with a high-test paraffin mixed with an essential oil.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHARLES C. HOYT.

Witnesses:
EVERETT S. EMERY,
S. ETHEL HAYNES.