UNITED STATES PATENT OFFICE.

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STOCKING.

SPECIFICATION forming part of Letters Patent No. 667,141, dated January 29, 1901.

Original application filed March 13, 1900, Serial No. 8,489. Divided and this application filed September 1, 1900. Serial No. 28,728. (No specimens.)

To all whom it may concern:

Be it known that I, MAX SARFERT, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Tubular-Knitted Fabrics, which improvement in fully set forth in the following specification and accompanying drawings.

My invention consists of a tubular-knitted fabric, such as a stocking, provided on its interior surface with fibers forming nap or lint, while substantially every portion of the fibers forming the nap or lint on its outer surface has been removed for the purpose of imparting to such exterior surface of a tubular-knitted fabric a fine luster and finish that are termed and resemble a "silk" or "lisle" finish, this application being a division of an application for patent for a process for giving a silk or lisle finish to hosiery or knit goods, filed March 13, 1900, Serial No. 8,489; and I do not therefore claim in this application the process described and claimed therein.

For convenience and directness I will in the following description use the term "stocking" when referring to a tubular-knitted fabric, the same being an apt example.

I have found that if the fine nap or lint present upon the exterior surface of a stocking—for instance a cotton stocking—is removed—that is to say, substantially every portion thereof—the finish or surface of the same is such that it resembles a silk or lisle finish, which obviously improves the appearance and enhances the value of the stocking. This nap or lint which detracts from the appearance or finish of the stocking consists of the fine ends or fibers that project from the thread and which alone are almost imperceptible; but the knitted fabric brings these fine ends or fibers together and forms a nap or lint, and the effect of their close congregation becomes apparent on the exterior surface of a stocking by reason of the fact that they prevent the threads from standing out clear, as in a lisle-thread or silk stocking; or, in other words, these fibers on the thread, which by themselves are practically imperceptible, deaden the appearance of the stocking and obscure the fine lines of said thread in the knitted fabric. As it is only to improve the appearance of a stocking that the nap or lint is removed from its exterior surface, it is obvious that it is unobjectionable on the interior surface, and it is not only unobjectionable on its interior surface, but it is not desired to remove this nap or lint from the interior surface, as it makes the interior surface of the stocking smooth and soft and enhances rather than detracts from its wearing qualities. In producing my improved article of manufacture, therefore, I singe only the exterior face or surface thereof to remove substantially every portion of this nap or lint projecting outwardly from the thread composing the stocking. This leaves the exposed sides of the thread clean and smooth, without affecting other portions thereof, and consequently gives to the stocking a smooth finish and fine surface and luster resembling a silk or lisle finish, for, as before set forth, the fine lines of the thread are not obscured.

In my said application for a process for treating hosiery I have set forth the manner in which the singeing process can be most effectually accomplished, and which consists in treating the hosiery before singeing so that the nap or lint can be more effectually removed when the stocking is singed—for instance, by first saturating the stockings when white or in their natural condition in a solution consisting of the following ingredients, namely: chlorid of soda or chlorid of potash, one pound; blue-stone, one-half pound, and anilin salt or anilin oil, four or five pounds, said solution being known as an "anilin-black" solution and being the first step in a process of dyeing goods fast black. After complete saturation the stockings are dried in the atmosphere and are passed through a singeing-machine while stretched on a board or form. During the passage of the stocking through the singeing-machine substantially every portion of the nap or lint is removed from the exterior surface, as before referred to. After singeing, the goods are finished, the finisher or finishing agent being, for instance, chrome of soda or chrome of potash, this being the concluding step in a process of dyeing goods fast black.

It is manifest that by a mechanical treatment—namely, by attrition—it is possible

to remove some portions of the nap or lint from the exterior surface; but such treatment not only also removes the nap or lint from the interior surface of the stockings, but weakens the threads, with the consequence that the strength of the stocking is materially affected, so that the article produced in this manner does not possess the desired strength and wearing qualities. Also in a combined chemical and mechanical treatment it is found that the length of time necessary to subject the goods to the mechanical treatment is such that the threads are weakened by the chemicals and the strength and wearing qualities of the stockings further impaired. The strength of a stocking that has been singed, however, is not affected. It retains its original and desired wearing qualities, but does not have the objectionable nap or lint on its exterior face. The threads of the singed stocking possess the same strength, but have none of the nap or lint on their exposed sides. The stocking is consequently of the usual strength, but the appearance of the threads is not deadened, and they stand out clearly and distinctly, presenting a clean and smooth appearance, and thus impart to the stocking the fine surface and luster known as a "silk" or "lisle" finish.

Another and important advantage possessed by a stocking having a singed exterior surface is that it improves the dye. For instance, upon a comparison of two stockings, one of which has been singed and both of which have been dyed fast black by the same process and with precisely the same solutions, the singed stocking is a deeper and clearer black and of finer appearance. Thus it is seen that a singed stocking not only has the silk or lisle finish, which is due to the absence of lint or nap on its exterior surface, but it presents a deeper black and the appearance of a better dye, both of which manifestly increase the value of the stocking.

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

1. As an improved article of manufacture, a stocking, the outer surface of which has been singed, whereby substantially every portion of the nap or lint is removed.

2. A tubular knitted fabric, such as a stocking, provided with fibers on its interior surface forming nap or lint, and having its exterior surface singed, whereby substantially every portion of the fibers forming the nap or lint is removed therefrom.

3. A tubular knitted fabric, such as a stocking, having a singed exterior surface, whereby a silk or lisle finish is imparted thereto.

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Witnesses:
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