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R. C. BOGER

METHOD OF SOFTENING, SPINNING, AND TWISTING ARTIFICIAL SILK

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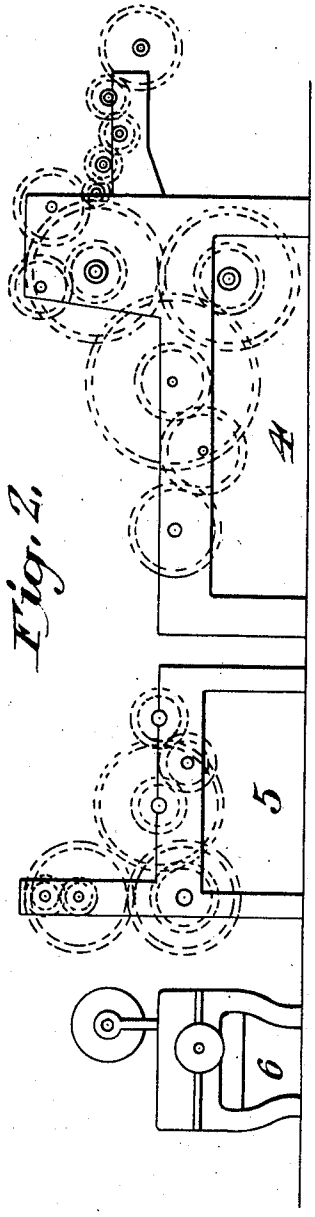


Fig. 2.

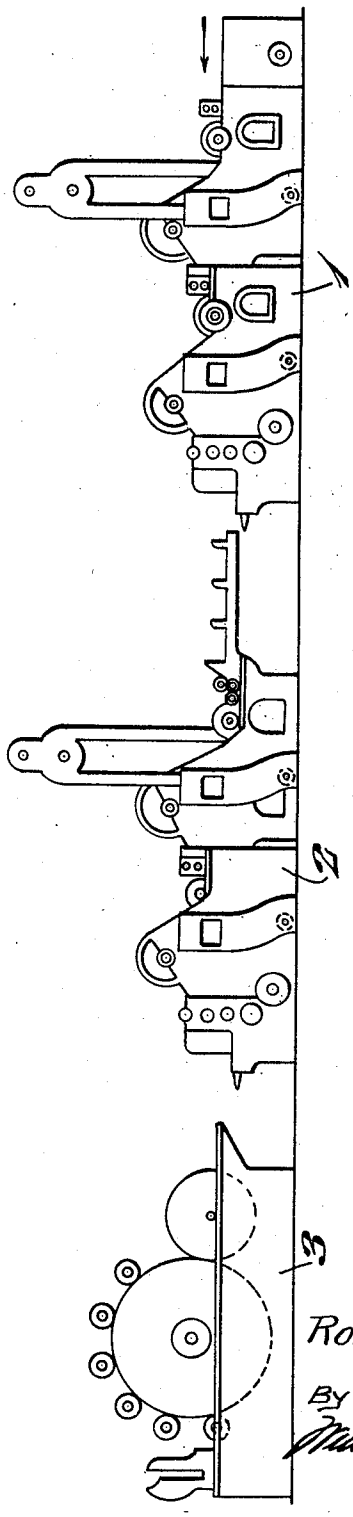


Fig. 1.

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UNITED STATES PATENT OFFICE.

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METHOD OF SOFTENING, SPINNING, AND TWISTING ARTIFICIAL SILK.

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This invention relates to a method of preparing artificial silk for spinning and twisting and relates more especially to preparing artificial silk waste for spinning and twisting. It is a well-known fact that the use of artificial silk waste has been tremendously restricted, especially in the use of the same with respect to yarn, etc., for the reason that, contrary to real silk waste, the fibre of the artificial silk waste in mass or unseparated form could not heretofore be spun out to a very fine thread, due to the smooth and slippery nature of the fiber. I have invented a process whereby yarn may be produced, having as its base artificial silk waste, which yarn may be finer by far than the yarn heretofore produced from artificial silk or artificial silk waste.

The invention consists of the novel method hereinafter described and finally claimed.

In the practice of my novel method, apparatus as shown in the drawings may be used, in which:

Figs. 1 and 2 are diagrammatic views hereafter described in detail.

According to the present invention I take conventional artificial silk, known commercially as Rayon, or I may take artificial silk waste, as the case may be, and cut the fibres to a length to render it practical for spinning purposes upon a ring or mule spinning machine. I now take cotton or waste cotton (such as comber waste) of shorter length than the artificial silk or artificial silk waste and run same through a breaker lapper machine of any type, such as designated by reference number 1 at the right hand side of Fig. 1 of the drawings. The said machine produces a roll or, as it is technically known, a "lap". The sole difficulty in spinning artifical silk fibre lies in the making of the "lap". When the said fibre is in mass or unseparated form it is what is termed in the trade "slippery", and it is practically impossible to form the "lap" in that condition. By mixing cotton with the artificial silk fibre I am enabled, however, to "build up a lap". As soon as the said fibre is separated and run through the "card" I obtain a product practically no harder to spin than cotton. From the breaker lapper the material is fed to a finisher lapper designated by reference numeral 2. The artificial silk and cotton are now transferred to a suitable carding machine designated by reference numeral 3 such machine producing what is termed slivers. These slivers are now passed through a sliver lap machine designated by reference numeral 4 at the right hand side of Fig. 2 for the making of relatively narrow rolls or laps. The next step is that of presenting two or more of the narrow rolls or laps to what is termed a ribbon or double lapper which is designated by reference numeral 5. In this step the two or more laps are presented to the ribbon lapper in superimposed relation. These laps after coming from the ribbon lapper 5 are now transferred to a comber designated 6 in the drawings. During all this time the short cotton fibers which act as temporary binders have been carried along with the artificial silk fibers while the latter have been stretched and softened or at least rendered less harsh and stiff while being prepared for spinning. The function of the comber is to comb out the cotton which is of shorter fibre than the artificial silk fibre and therefore leaves the pure artificial silk fibre for the spinning process. The product derived by the above process is now in condition for the spinning of yarns, something not heretofore possible with artificial silk. After that, the product is spun with conventional cotton machinery in a well understood manner as practiced upon cotton yarn machinery, not shown in the drawings, in either ring or mule spinning and put up in warps, cones, skeins or tubes or whatever way the manufacturer may designate.

What I claim is:

1. The method of preparing yarn for spinning from artificial silk or artificial silk waste which consists in taking such silk in proper lengths for spinning purposes and mixing therewith shorter lengths of cotton material and thereafter successively presenting said silk and cotton material to a lapper machine, a carding machine, a sliver lapper, a ribbon lapper and a combing machine, the latter machine functioning to comb out said cotton material.

2. The method of preparing yarn for spinning from artificial silk or artificial silk waste which consists in taking such silk in proper lengths for spinning purposes and mixing therewith shorter lengths of cotton material and thereafter successively presenting said silk and cotton material to a breaker lapper machine, a finisher lapper, a carding machine, a sliver lapper, a ribbon

lapper, and a combing machine, the latter machine functioning to comb out said cotton material, and finally spinning said prepared yarn upon conventional cotton yarn machinery.

3. In the art of preparing yarn for spinning from artificial silk or artificial silk waste those steps which consist in taking silk in proper lengths for spinning purposes and mixing therewith shorter lengths of cotton material so that a "lap" may be built up and subsequently combing out said cotton.

In testimony whereof, I have hereunto signed my name.

ROBERT C. BOGER.