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UNITED STATES PATENT OFFICE.

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METHOD OF SPOTTING YARN.

No Drawing. Original application filed April 3, 1923, Serial No. 629,633. Divided and this application filed December 30, 1925. Serial No. 78,322.

This invention relates to a method of spotting yarn, and more particularly to a method of dyeing long spots on a yarn while the yarn is in the form of a wound mass.

While a yarn having short spots or dyed portions may, by means of certain types of knitting machines, be formed into a fabric having an attractive mixed appearance, I have found that when other types of knitting machines are used it is necessary in order to produce an attractive fabric that the spots on the yarn be long, that is to say, several inches in length. My invention provides a method by which such long spots may be obtained quickly and economically while the yarn is wound on a core.

A method for accomplishing this result is described in my co-pending application filed April 3, 1923, Serial No. 629,633, now Patent Number 1,577,884, March 23, 1926, of which the present application is a division. My aforesaid application describes also apparatus by means of which the method may be carried out, but as the method to which the present application is directed is independent of the particular means used in carrying it out, a description of such apparatus is not incorporated herein.

In order that my invention may clearly be understood, I will describe the specific method embodying it.

After the yarn has been formed into a wound mass, such, for example, as a frusto-conical mass wound on the conical core and commonly termed a cone of yarn, dye is injected into the wound mass at a series of points lying along the surface of the mass and separated by such distances that the portion of the mass dyed by the injection at one point contacts with but does not materially overlap the portion of the mass dyed by the injection at the next point. The points are so located that a line connecting them extends in the same general direction as that in which the yarn extends in the mass. The points may be located along the lay of the yarn. In applying this method to cross-wound cones of yarn it may be desirable to make injections at each point of several different series of points, and to locate the points of one series along one lay of the yarn of the cone and the points of another series along another lay of the yarn of the cone.

A limited quantity of dye is injected at each point and this dye is caused to penetrate from the surface of the mass from which it is injected, which is usually the outer surface of the cone, to the opposite surface of the mass, usually the inner surface of the cone. Such penetration of the dye through the mass may be obtained by injecting limited quantities by means of the apparatus shown in my Patent No. 1,456,344, issued May 22, 1923.

My invention is not limited to the specific method which has been described.

What I claim is:

1. A method of spotting a mass of yarn wound in a regular manner, which consists in injecting a limited quantity of dye into the mass from each of a series of points located along a surface of the mass at such distance from each other that the portions of the mass dyed by the injections at adjacent points join each other.

2. A method of spotting a mass of yarn wound in a regular manner, which consists in injecting a limited quantity of dye into the mass from each of a series of points located along a surface of the mass at such distance from each other that the portions of the mass dyed by the injections at adjacent points join but do not materially overlap each other.

3. A method of spotting a mass of yarn wound in a regular manner, which consists in injecting a limited quantity of dye into the mass from each of a series of points of its surface located along a lay of the yarn and at such distance from each other that the portions of the mass dyed by the injections at adjacent points join each other.

4. A method of spotting a cross-wound cone of yarn, which consists in injecting a limited quantity of dye into the cone at each of a series of points regularly spaced along one lay of the yarn at such distance from each other that the portions of the cone dyed by the injections at adjacent points of the series join each other, and injecting a limited quantity of dye at each of

a second series of points regularly spaced along the other lay of the yarn at such distance from each other that the portions of the cone dyed by the injections at adjacent points join each other.

5. A method of spotting yarn, which comprises causing dye to penetrate through a wound mass of the yarn from a plurality of points on the outer surface of the mass so located that the portions of the mass colored by the dye penetrating from them join each other to form a dyed band reaching from the outer to the inner surface of the mass.

In testimony whereof I have hereunto set my hand.

HENRY E. VAN NESS.