Patented Feb. 15, 1927. 1,617,544

UNITED STATES PATENT OFFICE.

FRANK ROSENTHAL, OF NEW YORK, N. Y.

MANUFACTURE AND TREATMENT OF THREADS.

No Drawing. Original application filed August 27, 1925, Serial No. 52,958. Divided and this application filed March 1, 1926. Serial No. 91,619.

My invention relates generally to the manufacture and treatment of threads to be made up into or forming part of a fabric, and has particular reference to a method of producing or treating such threads to provide irregularities therein so as to have the fabric formed therefrom ornamented by such irregularities and is a division of my copending application Ser. No. 52,958, filed Aug. 27, 1925.

In accordance with one disclosure of my invention, material like viscose is deposited in accordance with a predetermined plan, upon a fabric or its constituent threads or associated with the threads during or after the formation of the thread.

For the attainment of the foregoing objects and such other objects as may hereinafter appear or be pointed out, I shall now describe several processes which are illustrative of possible modes of carrying out my invention.

It is a well known fact that silk thread which is obtained from imperfect or freak cocoons, or from the cocoons of wild or uncultivated silkworms, will be irregular in contour and thickness and will carry nubs or slubs, or thickened portions, at frequent irregular intervals. These very imperfections, however, have been utilized to effect an irregular, yet pleasing, ornamentation upon fabric, by manufacturing the fabric of these imperfect threads. Such silk threads are extremely limited in quantity, and difficult to select and obtain, and therefore expensive.

One of the objects of my invention is the production of a thread which simulates these imperfections and more particularly the production of a thread predeterminedly simulating these imperfections so as to permit of the production of a fabric predeterminedly ornamented.

One method of carrying out my invention lies in directly depositing upon or causing to be associated with an already formed base thread, preferably though not necessarily of silk or artificial silk or upon an artificial thread simultaneously with its formation, masses of viscose of pasty consistency, at regular or irregular intervals, and in accordance with a predetermined plan to simulate the imperfect threads hereinbefore referred to. Where the imitated nubs are associated with an already formed thread, the viscose is preferably prepared in the form of a pasty mass, and made available as required. Predetermined quantities or gobs of the mass may be deposited upon the base thread at suitable irregular intervals, and the inherent characteristics of the viscose will cause it to harden and to become part and parcel of the thread in such a manner that the resulting thread will be hardly distinguishable from the genuine product obtained from the uncultivated cocoons. The fabric is then woven in a well known manner, and ornamentations will result which will be artistically irregular in accordance with the predetermined plan.

It will be obvious that a modification of this process will permit of the deposit of viscose masses at regular intervals, if desired, in accordance with any predetermined or desired artistic scheme, and the resulting fabric will have an unusual ornamental effect, in that it will appear to have been made from imperfect genuine silk threads, yet bearing at the same time designs having certain features of regularity.

It will be understood that my invention further includes the formation in accordance with my process of nubs, irregularities or deposits which may be given or made to simulate any desired geometrical or other design, as for instance, round, square, or triangle dots and that the formation of deposits, nubs or irregularities having these predetermined shapes or configurations may, due to the predetermined shapes and configurations form a very important feature of the ultimate design to be given the fabric. The nubs, irregularities or deposits can likewise be given their predetermined shape or configuration as aforementioned during their formation or association with the threads or even after such association and regardless of whether it is the thread before weaving which is operated upon and whether during or after formation, or the fabric after the threads are woven into a fabric.

Another method of carrying out my invention is the result of carrying the basic idea a step further. Instead of depositing the viscose at regular intervals upon a base

thread and thereupon weaving the fabric, it is possible and often preferable to deposit the viscose in accordance with a predetermined plan of treatment upon the threads of a finished base fabric, that is, upon a fabric already woven. In accordance with this method, the base fabric, such as cotton, may be rendered ornamental by directly depositing viscose upon the threads thereof in predetermined quantities and masses and along predetermined threads and at predetermined intervals, and by virtue of the fact that the deposits will become part and parcel of the base fabric, the result will be one of a fabric bearing not only silk ornamentation but these in the form of nubs or thickened portions. In accordance with this method, the material which has been selected as a base, either silk or non-silk, as desired, is suitably laid out and may if desired be stenciled or similarly imprinted in a temporary manner with the particular design in contemplation, although this preliminary outlining of the design is not an essential step. The viscose is deposited directly upon the base fabric threads at points dependent upon the particular ornamentation which has been decided upon. Thereupon the deposited material is allowed to dry, whereby it will become closely associated with the fabric in a manner to become part and parcel thereof. A deposition process similar to printing may also be employed.

In cases where the deposits have been made along lines simulating embroidery, the resulting ornamentation will not only resemble genuine embroidery, but will consist of actual artificial silk integrally associated with the fabric as though genuinely produced by embroidery processes. Accordingly, the advantages of silk embroidery work are obtained without any of its disadvantages having been encountered.

Although not essential, it will be obvious that the viscose may be suitably colored before application, or that suitable coloring matter in the form of a deposited powder or the like may be added to it after it has been applied or associated with the fabric or to the thread.

It is a well known fact that in the manufacture of artificial silk, imperfections frequently arise primarily because of the breakage or unevenness in one or more of the filaments that go to make up a thread and these imperfect threads are classified according to the degree of imperfection. Some of the threads are so imperfect as to have relatively small value. My invention contemplates taking threads of this character, and of little value for ordinary commercial use, and converting them into threads with nubs or protuberances thereon or associated therewith and which threads as stated, are of greater value than even the perfect threads.

It will be obvious that various changes in the details as herein described for the purpose of explaining the nature of my invention may be made by those skilled in the art without departing from the spirit and scope of the invention, and it is therefore intended that these details be interpreted as illustrative and not in a limiting sense. For instance, the irregularities might be produced by the manner in which the thread is formed or by treating the already formed thread itself and without depositing any additional material or substance thereon.

Having thus described my invention and illustrated its use, what I claim as new and desire to secure by Letters Patent is:

1. The herein described process of making threads to be employed in the manufacture of fabrics to simulate fabrics made from silk threads obtained from uncultivated silk worm, cocoons with irregularities thereon, said process consisting of associating such irregularities with the thread after the threads are formed.

2. The herein described process of making threads to be employed in the manufacture of fabrics to simulate fabrics made from silk threads obtained from uncultivated silk worm, cocoons with irregularities thereon, said process consisting of associating such irregularities with the thread at predetermined intervals after the threads are formed.

3. The herein described process of making threads to be employed in the manufacture of fabrics to simulate fabrics made from silk threads obtained from uncultivated silk worm, cocoons with irregularities thereon, said process consisting of associating viscose nubs with the thread after the threads are formed.

4. The herein described process of making a thread to be employed in the production of a fabric to simulate that made from silk threads obtained from the irregularly formed thread of the uncultivated silk worm cocoon, said process including the formation of a thread from viscose and the association therewith of irregularities by predeterminedly varying the shape or thickness of the thread.

5. The herein described process of making ornamental fabrics, which consist in depositing viscose at predetermined intervals upon a base thread to simulate the irregularities of silk thread obtained from uncultivated silk worm cocoons, and thereupon weaving a fabric of said thread.

6. The herein described process of making ornamental fabric, which consists in depositing predetermined masses of viscose in a pasty condition upon a base thread of silk at predetermined irregular intervals, and thereupon weaving a fabric of said thread.

7. The herein described process of making ornamental fabric, which consists in deposit-

ing predetermined masses of viscose in a pasty condition upon a base thread of silk at predetermined regular intervals, and thereupon weaving a fabric of said thread.

8. A fabric formed in simulation of one made from irregularly formed threads obtained from uncultivated silk worm cocoons, said fabric having irregularities in the threads formed artificially after the formation of the thread.

In witness whereof, I have hereunto signed my name this 26 day of February, 1926.

FRANK ROSENTHAL