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NOVELTY YARN

Filed May 17, 1938

Fig. 1.

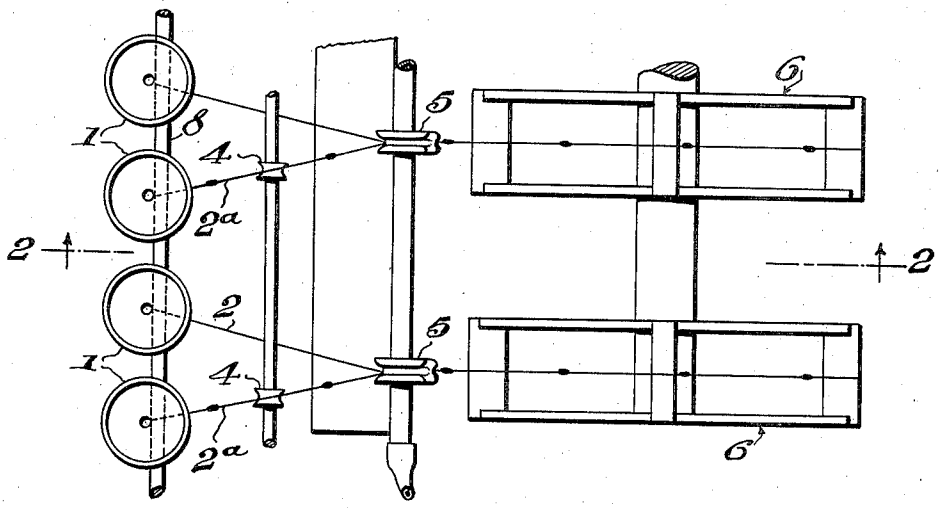
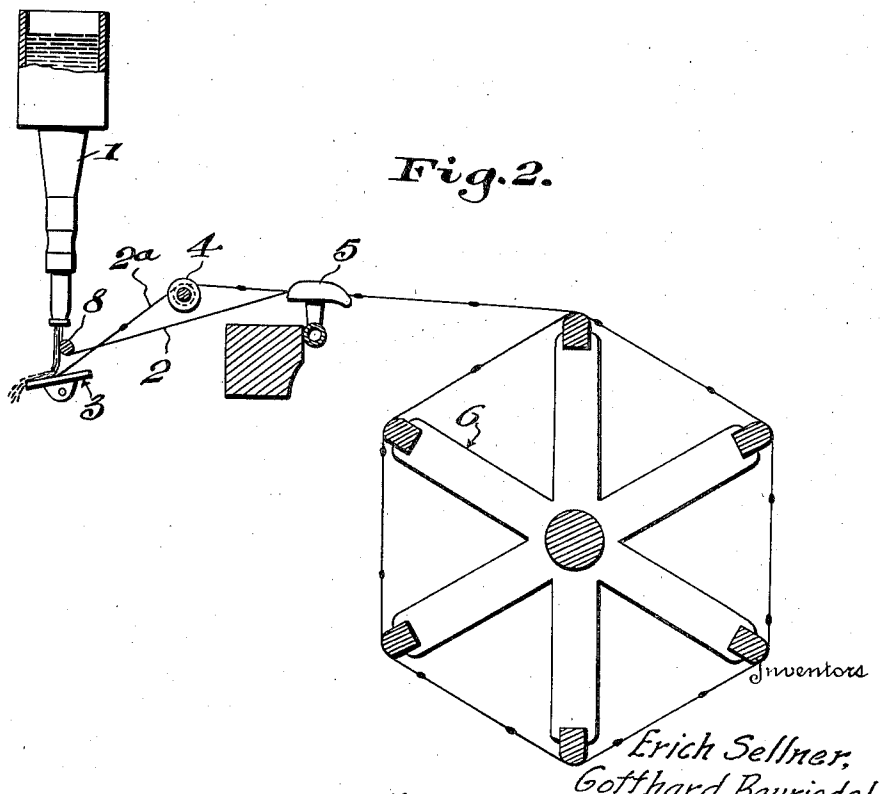


Fig. 2.



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NOVELTY YARN

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3 Claims. (Cl. 18—54)

The present invention relates to the manufacture of filaments of artificial origin but primarily has for its object the creation of a novelty yarn whereby a variety of different effects may be achieved in a fabric woven from such yarn.

It is a well known fact that silk thread which is obtained from imperfect or freak cocoons, or from cocoons of wild or uncultivated silk worms, will be irregular in texture and will carry nubs or thickened portions at frequent irregular intervals. These very imperfections, however, have been utilized to effect an irregular, yet pleasing ornamentation upon fabrics by manufacturing the fabric of these imperfect threads.

One of the objects of the present invention is the production of a thread which simulates this imperfection and more particularly the production of a thread which predeterminedly simulates these imperfections.

Such a thread does achieve the results desired. However, a greater variety and more successful patterns can be made by spinning, simultaneously and collecting together a nubbed thread and one which is spun in the normal fashion.

It is readily apparent that many pleasing effects may be obtained by combining in a single thread one or more nubbed threads and one or more normally spun threads. For example the nubbed threads may be made with a different lustre as compared to the normally spun artificial threads or vice versa. The normally spun threads may be of the spun dyed type and the nubbed threads of the undyed type or not as desired. It is obvious, however, that an infinite variety of thread may be formed with many different effects which may be used to advantage in the finished fabric.

It is therefore an object of the present invention to produce a novelty yarn which when made up into fabric will impart novel effects thereto.

Another object of the present invention is to produce a thread whose component threads comprise at least one nubbed thread and one or more normally spun threads.

Still another object of the present invention is to manufacture a composite thread having at least one nubbed thread and at least one normally spun thread of a different lustre from that of the nubbed thread.

A still further object of the present invention is to produce a novel composite thread comprising at least one nubbed thread and at least one normally spun thread, the colors of the two different types of thread differing one from the other.

These and other objects will in part be pointed out and will in part become obvious from a study of the following specification and appended claims when taken in conjunction with the attached drawing, in which,

Fig. 1 is a plan view of an apparatus including a series of spinning funnels and their respective guides together with the collecting reel.

Fig. 2 is a side elevation taken on the line 2—2 of Fig. 1 illustrating one type of apparatus which may be used to spin the nubbed yarn.

In the drawing in which like numerals of reference indicate like parts 1 indicates the spinning funnels through which the threads are extruded. The normally spun yarn is indicated at 2 whereas the nubbed yarn is indicated at 2^a. It will be seen from an inspection of Fig. 1 that the normally spun threads 2 and the nubbed threads 2^a pass together through an acid guide 5 common to both threads. The said guide 5 is reciprocated in order to impart the desired cross-wind to the filaments on the reel 6.

It will be seen from a study of Fig. 1 how the normally spun yarn 2 and the nubbed yarn 2^a are drawn together through an acid guide 5 and then collected together on the collecting reel 6.

One method of spinning the nubbed yarn 2^a is clearly shown in Fig. 2 of the drawing from which it will be seen that the yarn 2^a and precipitating liquid pass downwardly and out the bottom of the funnel 1. Instead of passing around the guide rod 8, as do the normally spun filaments, the precipitating liquid and the yarn together, impinge upon a spinning table 3 which may be, and in this case is tilted.

As the nubbed filaments 2^a drop on a spinning table 3 they are only partially coagulated due to the reduced temperature of the precipitating liquid which is below the normal range ordinarily used. Further due to the greater quantity and velocity of the precipitating liquid used to draw the filaments therethrough, the filaments are drawn at a considerably faster rate than those of the normally spun filaments thereby aiding in keeping the coagulation of the said filaments at a minimum. The precipitation of the nubbed filaments through the spinning funnel is, of course, faster but the take-up for the nubbed filaments is the same as that for the normally spun yarn which is being drawn in through the acid guide and collected simultaneously therewith.

Due to the fact that the filaments 2^a drop to the spinning table in a partially coagulated state, a loop is formed which causes tangles or snarls

to occur in the yarn, and which further results in a thickening of the said filaments. It may be said that the yarn momentarily piles up at this point until it is coagulated or strengthened sufficiently to be pulled up over a guide **4**.

The piling up of the yarn is primarily due to the greater quantity of rate of flow of the precipitating liquid which draws the filaments down to the spinning table **3** at a faster rate than the rate at which the said filaments are drawn off by the collecting reel, which is indicated at **6**. The position and the size of the guide rod **4** over which the nubbed thread 2^a passes is one of the controlling factors in the formation of the nubs or thickened portions in the yarn. Should the guide rod **4** be increased in diameter it is readily seen that more friction is applied as the nubbed thread 2^a passes thereover due to the increased surface contact or if the position of the guide rod is changed the angle of contact becomes either greater or less thereby either increasing the friction or diminishing the same.

The angle at which the spinning table **3** is tilted is another factor controlling the size and type of slubs which may be created. If the angle of tilt is greater the yarn will obviously loop more because of its weight and then form larger slubs. It is thus to be seen that at least two factors are to be considered and control the type and size of the slubs desired.

It is, of course, to be understood that the method of forming the slubs in the apparatus described is only one form of a device and method which may be used. Any other suitable method of forming the slubby yarn 2^a may, of course, be used. For example, the irregular nubs or thickened portions may be formed by varying the quantity of spinning solution thereby causing a surging action to take place in the pump forcing the spinning solution through the spinning nozzles, whereby the spinning solution is more or less rapidly forced through the said nozzles at the irregular impulse strokes of the pump.

Another method whereby these nubs may be formed in the thread is through the use of an auxiliary pump associated with the main spinning pump, the auxiliary pump operating only intermittently to impose at predetermined intervals a greater pressure to the spinning nozzle and a greater quantity of spinning solution. Any suitable method or apparatus for producing a nubbed yarn could obviously be used in this invention.

The gist of the present invention lies in manufacturing a composite thread which is composed of at least one normally spun thread and one nubbed thread, spinning them simultaneously, and collecting them together to form the said composite thread on the collecting device whereby an infinite variety of effects may be achieved.

The device illustrated in the drawing accompanying this application is one normally used in cuprammonium spinning but it is obvious that other apparatus and other methods may be used in producing the novel threads of this invention. For example, such a thread could be made by the viscose process or the cellulose acetate process or any other process for manufacturing yarns of artificial origin.

It is obvious that many variations may be made in the method and apparatus described herein while utilizing the invention of the present application and it is not intended to restrict the invention to the particular descriptions or examples given herein. The terms used in describing the invention have been used in a descriptive sense and not as terms of limitation and it is intended that all equivalents thereof be included within the scope of the appended claims.

We claim:

1. A method of producing novelty threads comprising the steps of extruding two separate filaments from a coagulable cellulosic spinning solution into separate coagulating baths of similar composition, one of said filaments being extruded at a faster rate than the other of said filaments whereby the slower extruded filament is coagulated to a greater degree than the faster extruded filament, impinging the faster extruded filament upon a plate set at an angle to the horizontal, thereafter bringing the two filaments together while passing them through an acid regenerating bath and collecting the joined filaments at the speed of the slower extruded filament whereby loops are formed on said faster extruded filament when it impinges on said plate and prior to the bringing of the two filaments together.

2. A method as set forth in claim 1 wherein the cellulosic spinning solution is viscose.

3. A method as set forth in claim 1 wherein the cellulosic spinning solution is cuprammonium.

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