Sept. 13, 1927. 1,642,290

H. P. BASSETT ET AL

METHOD OF SPINNING THREADS

Filed Dec. 12, 1925

Fig. 1.

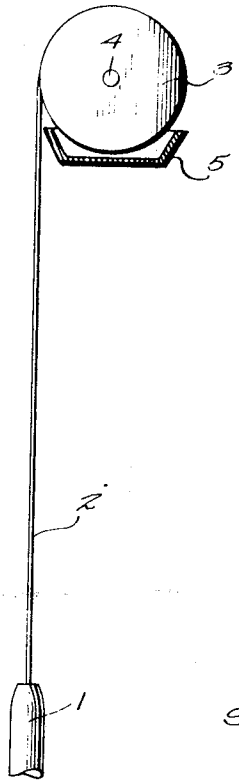
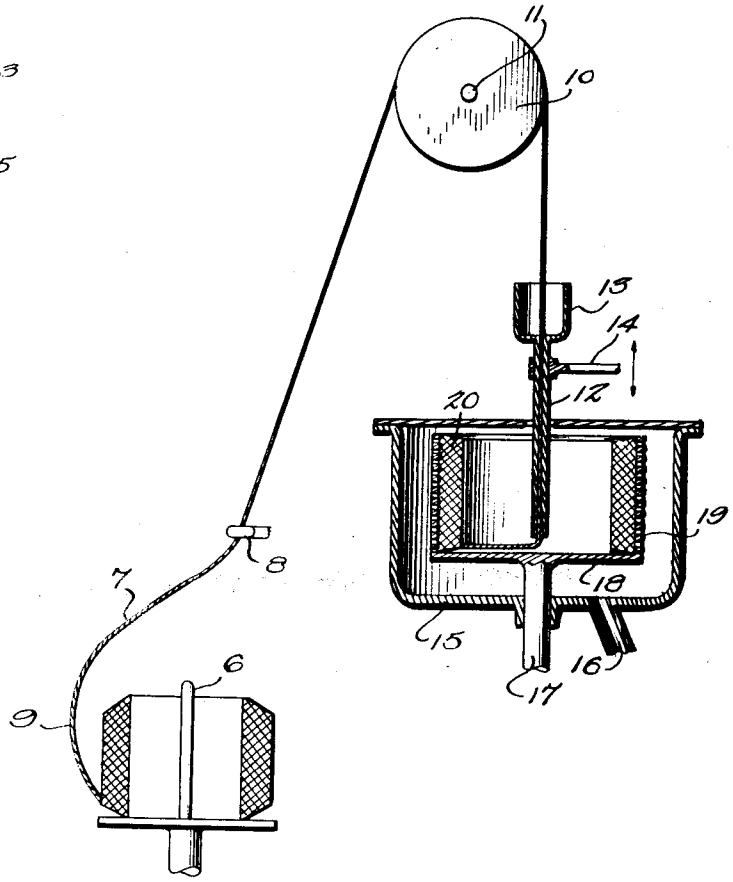


Fig. 2.



Inventor

HARRY P. BASSETT

THOMAS F. BANIGAN

By

Attorney

Patented Sept. 13, 1927. 1,642,290

UNITED STATES PATENT OFFICE.

HARRY P. BASSETT, OF CYNTHIANA, KENTUCKY, AND THOMAS F. BANIGAN, OF CLIFTON HEIGHTS, PENNSYLVANIA, ASSIGNORS, BY MESNE ASSIGNMENTS, TO SAID BASSETT.

METHOD OF SPINNING THREADS.

Application filed December 12, 1925. Serial No. 75,142.

This invention relates to methods of spinning threads and more particularly to methods of twisting artificial silk.

Heretofore, it has been customary to take the strands from a spinnarette, roll them on a reel, and then mount the reel on a vertically disposed spindle for twisting the strands into the final thread.

This method is open to several objections. The high speed necessary in twisting the thread causes breakage of the thread and the ballooning caused by centrifugal force at the speed employed throws an objectionable mist from the still wet strands of silk which is disagreeable.

Another method of twisting threads of artificial silk is by means of a centrifuge basket but this method is also open to several objections.

The method of twisting threads forming the subject matter of the present invention consists of a combination of the two methods referred to by means of which the disadvantages of each method are eliminated and the advantages retained. In practicing the process forming the subject matter of the present invention, the strands as they come from the spinnarette are rolled on a reel in the usual manner and this reel is then mounted on a vertical spindle. Instead of rotating the reel at a sufficiently high rate of speed to give the final twist to the thread, the reel is rotated at a slower speed, ordinarily from 10 to 50 per cent. of the usual speed, for the purpose of partially twisting the thread. The thread is then run into a centrifuge basket rotating at sufficient speed to give the additional twist needed. The advantages of the centrifuge twisting are retained in that the final washing solution may be run through the basket in the usual manner and the silk then run off into skeins.

In the accompanying drawings, we have diagrammatically illustrated apparatus particularly useful in practicing the process. In this showing:

Figure 1 is a diagrammatic side elevation of the formed strands passing from a spinnarette to a reel, and,

Figure 2 is a similar view showing the twisting of the thread partially on the reel and partially in a centrifuge basket, the centrifuge being shown in vertical section.

Referring to the drawings, the reference numeral 1 designates a spinnarette of the usual type by means of which a suitable cellulose solution is projected into a precipitating bath (not shown) to form a plurality of strands 2. These strands are carried upwardly and collected on a reel 3 which is mounted to revolve on a shaft 4. The reel may be arranged over a pan 5 containing a suitable washing solution. After the strands have been collected or rolled on the reel, it is removed from the shaft 4 and mounted on a vertical spindle 6 for twisting. The spindle is revolved by any suitable means (not shown) but instead of revolving the spindle at a very high rate of speed, which would tend to throw the thread 7 a considerable distance outwardly, as it passes to the guide 8, the spindle is revolved at a relatively slow rate of speed so that the ballooning of the thread is materially reduced, as indicated at 9. As stated, the spindle may be run at from 10 to 50 per cent. of its ordinary speed and preferably at about one-third the speed usually employed to impart the full twist to the thread. The partially twisted thread is then passed upwardly over a reel 10 mounted on a suitable shaft 11 and then downwardly through a guide 12 of a centrifuge. As shown, the guide 12 is provided with a funnel at its upper end by means of which the final washing solution may be passed over the thread and it is further provided with an arm 14 extending outwardly therefrom by means of which the guide may be reciprocated in the usual manner. The centrifuge is of the ordinary construction and consists of an outer casing 15 having a drain or outlet 16. A shaft 17 extends through the casing and carries a basket 18. This basket is provided with suitable openings 19 in its vertical wall which permit the washing solution to pass to the outer casing and cause the thread to form in a cake 20 in the usual manner.

As stated, the thread is partially twisted by the revolution of the reel 3 on the spindle 6 at a low rate of speed and is then delivered to the centrifuge operating at a sufficient speed to give the thread the additional twist needed.

It is to be understood that the form of our invention herewith shown and described is to be taken as a preferred example of the same, and that various changes in the shape,

size, and arrangement of parts may be resorted to without departing from the spirit of the invention or the scope of the subjoined claims.

We claim:

1. The method of twisting artificial silk which comprises placing a reel containing strands of such silk on a spindle, rotating the reel at a relatively low rate of speed to partially twist the withdrawn strands and form a thread, and then passing the partially twisted thread into a centrifuge to complete the twisting.

2. The method of twisting artificial silk which comprises placing a reel containing strands of such silk on a spindle, rotating the reel at from 10 per cent. to 50 per cent. of the speed necessary to fully twist said strands, withdrawing the strands from said rotating reel to partially twist them and form a thread, and passing the partially twisted thread through a centrifuge to complete the twisting operation.

3. The method of twisting artificial silk which comprises placing a reel containing strands of such silk on a spindle, rotating the reel at substantially one-third of the speed necessary to fully twist said strands, withdrawing the strands from the rotating reel to partially twist them and form a thread, and passing the partially twisted thread into a centrifuge to complete the twisting operation.

In testimony whereof, we affix our signatures.

HARRY P. BASSETT.
THOMAS F. BANIGAN.