June 15, 1937. W. I. TAYLOR ET AL. 2,083,758

CAP SPINNING MACHINE

Filed Sept. 18, 1935

FIG. 1

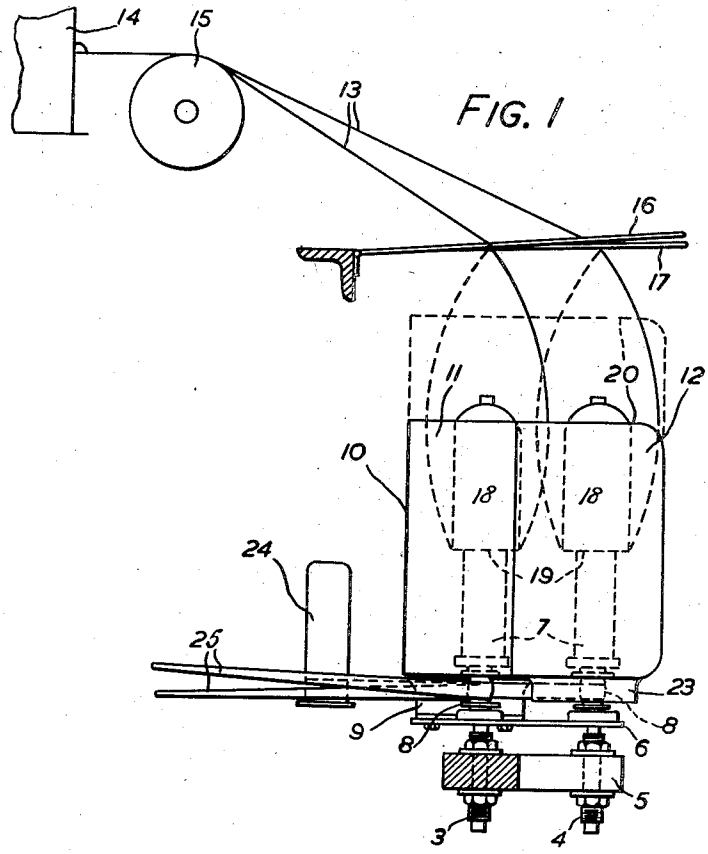
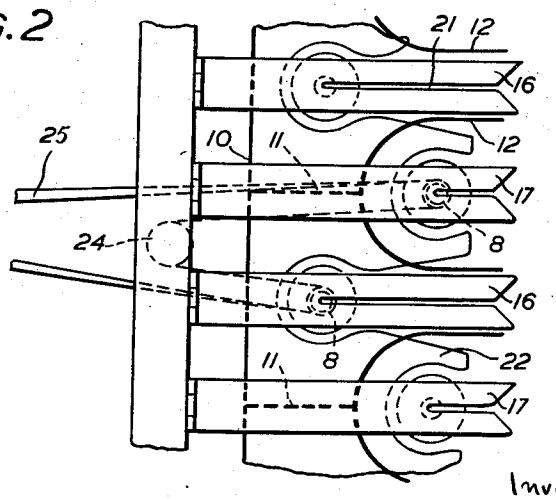


FIG. 2



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Patented June 15, 1937 2,083,758

UNITED STATES PATENT OFFICE

2,083,758

CAP-SPINNING MACHINE

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Application September 18, 1935, Serial No. 41,060
In Great Britain September 24, 1934

7 Claims. (Cl. 118—11)

This invention relates to cap-spinning apparatus for use in connection with machines for producing artificial silk.

British patent specification No. 343,965 describes a dry-spinning apparatus comprising cap-spinning devices disposed in closely adjacent rows at substantially the same level, and guard means arranged to prevent interference between the threads which are proceeding to adjacent cap-spinning devices. Such an arrangement permits of considerable increase of output to be obtained from dry-spinning machines, the cabinets of which can readily be adapted to produce the larger number of threads capable of being wound by the two rows of cap-spinning devices. The guards are in the form of substantially semi-circular cowls partially surrounding the caps of the front row of spinning devices, there being a space between adjacent cowls to permit access to the rear row of spinning devices, which are staggered with respect to the front row. These cowls serve to limit the diameter to which the thread balloons round each cap during winding of the thread on to the bobbin. It has been found, however, that during the throwing of a thread on to its bobbin, there is the danger that the end of the thread projecting from the bobbin may engage the ballooning thread of an adjacent device and cause that thread to be broken.

According to the present invention, this difficulty is avoided by arranging that the cowls partake of the up and down traversing motion by which the threads guided by the edges of the caps are caused to be wound in layers on the bobbins. In this way while the cowls at all times separate the ballooning threads, they perform the additional function of interposing a guard between the exposed portions of adjacent bobbins as the bobbins descend below the level of the cap edge. Thus, when thread is thrown on to the exposed portion of one bobbin, any end left projecting cannot approach another bobbin.

A form of apparatus according to the invention is shown in detail in the accompanying drawing, in which

Fig. 1 is a part sectional elevation, and

Fig. 2 is a plan view, with the spindle rail omitted.

Two rows 3, 4 of cap spindles are carried by a fixed spindle rail 5 and pass through the usual traversing rail 6 above which are carried bobbins 7 driven by wharls 8.

Carried by a suitable number of brackets 9 from the rail 6 are cowls formed by a back plate 10, plates 11 between the spindles of the back row 3, and substantially semi-cylindrical plates 12 extending from the plates 11 round the spindles of the front row 4.

As the threads 13 (proceeding, for example, from a spinning cabinet 14 via a feed roller 15 and balloon guides 16, 17) balloon round the caps 18 carried on the spindles 3, 4, the cowls 11, 12 prevent the balloon round one cap colliding with the balloon round an adjacent cap.

As is shown in Fig. 1 the cowls 11, 12 extend over the length of the bobbins 7 exposed below the edges 19 of the caps 18 when the bobbins are at the lower end of the traverse, this being when throwing-on takes place. At the same time the upper edge 20 of the cowls reaches to a height sufficient to ensure that the upper portions of the cowls still separate the widest parts of the balloons when the cowls are depressed. The upper edge reaches a height clear of the balloon guides 16, 17 when the cowls are fully raised, as shown by the dotted lines.

At throwing-on, a thread for a back-row spindle is passed between the side walls of the cowls 12 serving adjacent front-row spindles. Even if the space between these sides walls is narrower than is shown in Fig. 2, the forward extension of the back-row balloon guides 16 as far as the front-row guides 17 provides guide slots 21 to lead the threads easily into the spaces surrounding the back-row bobbins.

The cowls 11, 12 extend downwardly so as just to clear the belts 25 by which the wharls 8 are driven. A bottom plate 22 serves as a belt guard and, if desired, downwardly depending guards 23 may surround the front-row wharls, as shown in Fig. 1.

The belts 25, driven from the usual tin drum (not shown) serve for a plurality of spindles, a guide pulley 24 ensuring adequate and substantially equal contact between the belt and the several wharls 8. The pulley 24 is of sufficient height to allow for the upward movement of the belt 25 during traversing of the bobbins 7.

What we claim and desire to secure by Letters Patent is:—

1. Cap spinning apparatus which comprises cap spinning devices disposed in closely adjacent rows, means for traversing the bobbins of said devices up and down, cowls arranged to provide a guard between the exposed portions of adjacent bobbins and between the threads proceeding to adjacent bobbins, and means for traversing said cowls up and down in time with the bobbins.

2. Cap spinning apparatus which comprises cap spinning devices disposed in closely adjacent

rows at substantially the same level, a traverse rail provided for the up and down movement of bobbins carried by the cap spinning devices, and cowls mounted on said traverse rail and arranged to provide a guard between the exposed portions of adjacent bobbins and between the threads proceeding to adjacent bobbins.

3. Cap spinning apparatus which comprises cap spinning devices disposed in two closely adjacent rows at substantially the same level, means for traversing the bobbins of said devices up and down, cowls arranged to provide a guard between the exposed portions of adjacent bobbins and between the threads proceeding to adjacent bobbins, means for traversing said cowls up and down in time with the bobbins, and balloon guides for the cap spinning devices, the guides for the rear row extending forwardly as far as the guides for the front row and provided with slots to assist in guiding threads to the rear row of cap spinning devices.

4. Cap spinning apparatus which comprises cap spinning devices disposed in two closely adjacent rows at substantially the same level, a traverse rail provided for the up and down movement of bobbins carried by the cap spinning devices, cowls mounted on said traverse rail and arranged to provide a guard between the exposed portions of adjacent bobbins and between the threads proceeding to adjacent bobbins, and balloon guides for the cap spinning devices, the guides for the rear row extending forwardly as far as the guides for the front row and provided with slots to assist in guiding the threads to the rear row of cap spinning devices.

5. Dry spinning apparatus for the production of threads of artificial filaments, which comprises cap spinning devices disposed in closely adjacent rows, means for traversing the bobbins of said devices up and down, cowls arranged to provide a guard between the exposed portions of adjacent bobbins and between the threads proceeding to adjacent bobbins, and means for traversing said cowls up and down in time with the bobbins.

6. Dry spinning apparatus for the production of threads of artificial filaments, which comprises cap spinning devices disposed in closely adjacent rows at substantially the same level, a traverse rail provided for the up and down movement of bobbins carried by the cap spinning devices, and cowls mounted on said traverse rail and arranged to provide a guard between the exposed portions of adjacent bobbins and between the threads proceeding to adjacent bobbins.

7. Dry spinning apparatus for the production of threads of artificial filaments, which comprises cap spinning devices disposed in two closely adjacent rows at substantially the same level, a traverse rail provided for the up and down movement of bobbins carried by the cap spinning devices, cowls mounted on said traverse rail and arranged to provide a guard between the exposed portions of adjacent bobbins and between the threads proceeding to adjacent bobbins, and balloon guides for the cap spinning devices, the guides for the rear row extending forwardly as far as the guides for the front row and provided with slots to assist in guiding the threads to the rear row of cap spinning devices.

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