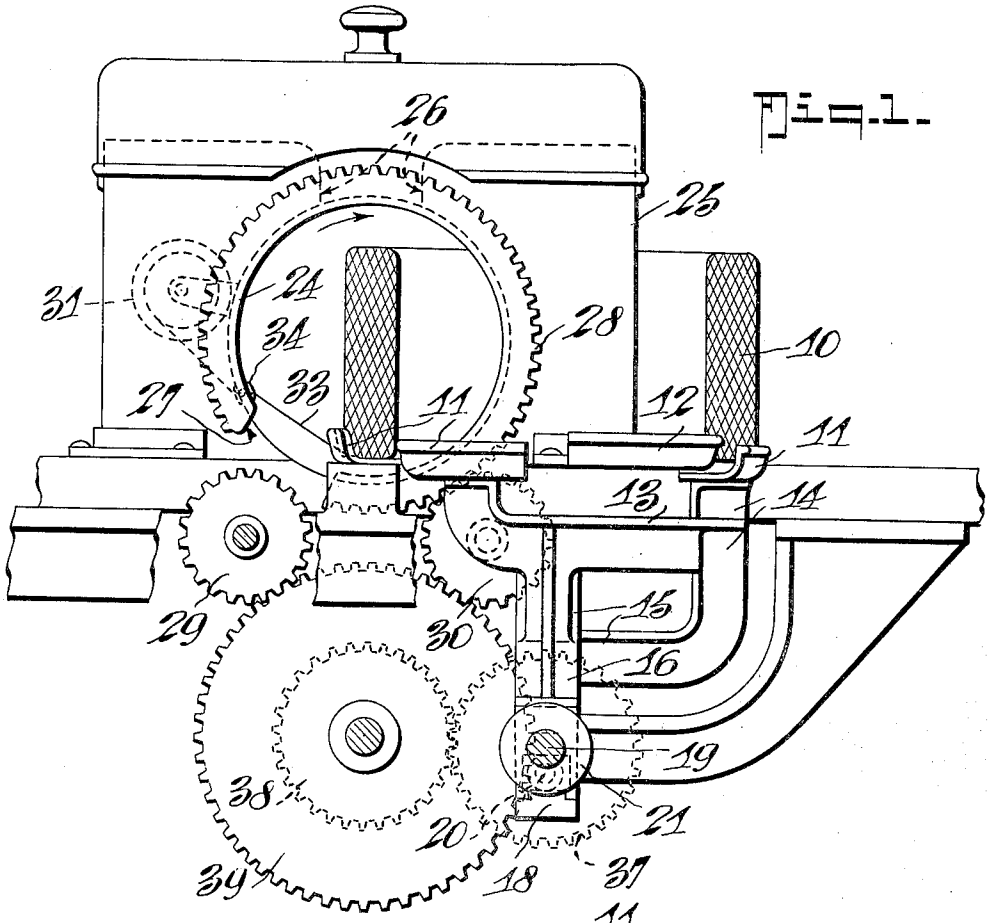
April 3, 1934. A. RÜESCH 1,953,725

DEVICE FOR THE TYING OF ARTIFICIAL SILK CAKES

Filed Jan. 6, 1933 2 Sheets-Sheet 1

Fig. 1.



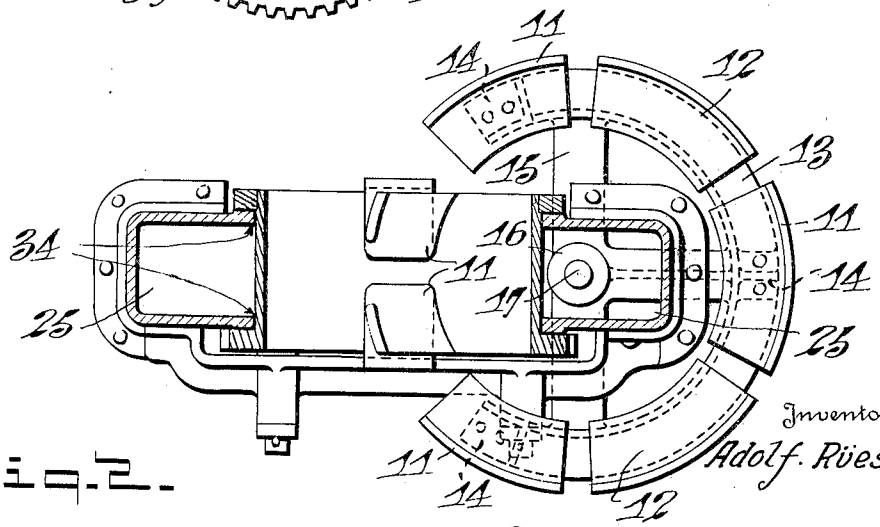


Fig. 2.

Inventor
Adolf. Rüesch.

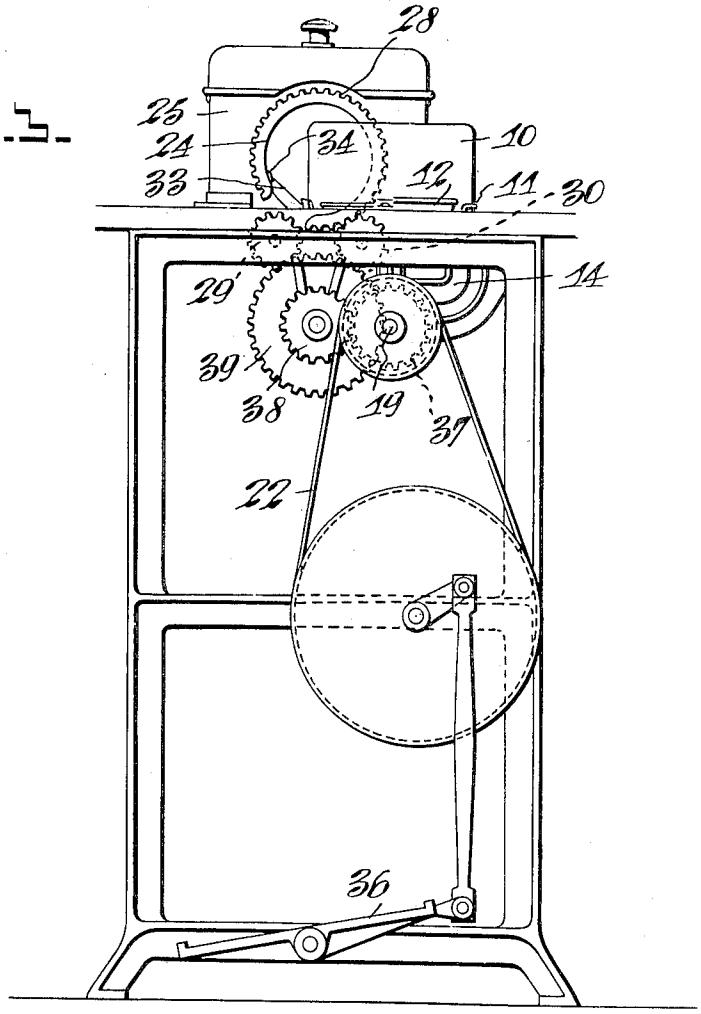
By Thomas H. Byron
Attorney

April 3, 1934. A. RÜESCH 1,953,725

DEVICE FOR THE TYING OF ARTIFICIAL SILK CAKES

Filed Jan. 6, 1933 2 Sheets-Sheet 2

Fig. 3.



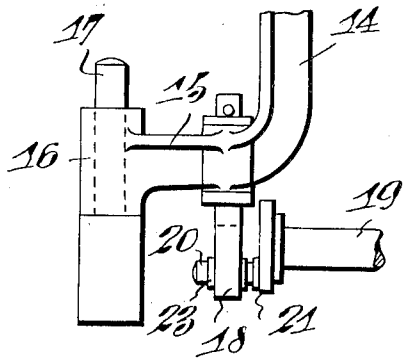


Fig. 4.

Inventor
Adolf Rüesch.

By Thomas & Byron
Attorney

Patented Apr. 3, 1934

1,953,725

UNITED STATES PATENT OFFICE

1,953,725

DEVICE FOR THE TYING OF ARTIFICIAL SILK CAKES

Adolf Rüesch, Sydowsaue, near Stettin, Germany, assignor to American Glanzstoff Corporation, New York, N. Y., a corporation of Delaware

Application January 6, 1933, Serial No. 650,485
In Germany January 8, 1932

3 Claims. (Cl. 18—8)

My present invention relates to improvements in spinning mechanisms, and more particularly to an improved mechanism for tying artificial silk after it has been spun and collected in the form of a spinning "cake".

One object of my present invention is to provide an improved mechanism for tying spinning cakes comprising means upon which the spinning cake is supported and to which intermittent rotary motion is imparted as the thread is being wound around the spinning cake. By such construction the tying thread will be wound on the spinning cake in a substantially helical path.

Another object of my present invention is to provide, in a cake tying mechanism, a rotating thread carrier which ties the cake placed upon a movable support.

Still another object of my present invention is to provide an improved mechanism for intermittently rotating a thread cake so that the tying thread for the cake may be wound thereon in a substantially helical path.

A further object of my present invention is to provide an improved mechanism for alternately tying cakes of spun artificial silk, in which the tying thread carrier has imparted thereto a rotary motion by means of which the thread will be wound on the cake in a substantially helical path.

These and other objects of my present invention will become more apparent from a study of the following specification and by reference to the attached drawings in which:

Figure 1 is a view in side elevation of my improved spinning mechanism, certain parts thereof being shown in section;

Figure 2 is a horizontal cross sectional view of the device;

Figure 3 is a view in side elevation of the cake tying mechanism; and

Figure 4 is a detail view of the means for intermittently rotating the cake to be tied.

Referring now more particularly to the drawings in which like numerals indicate like parts, I have shown a preferred form of my invention. As is clearly shown in Figure 1, the cake 10 of artificial silk or similar material is supported upon a stationary support consisting of a plurality of segment shaped members 11 arranged in a circle. Between each stationary segment are located movable segments 12, which are rigidly connected to one another by means of a substantially ring-like member 13 supported on arms 14. These arms are integral portions of a bracket 15, the lower end of which is rotatably mounted, by means of a bearing 16 formed at the end thereof, on a bolt 17.

Secured in a bearing formed in the bracket 15, is mounted a slide 18 which is operatively connected to the shaft 19 by means of a crank pin 20 mounted on the crank disk 21 and journalled in a bearing formed in the slide 22. As will be noted from an inspection of Figure 4 the crank pin 20 does not directly engage with the bearing formed in the slide 18 but is secured thereto by means of a link block 23 movable on the crank pin. When the shaft 19 is rotated, the segmental supports 12 are moved above the level of the rigid supports 11 by the action of the slide 18. This movement of the slide 18 also causes a short rotary motion of the bracket 15 around the pin or bolt 17 causing a short rotary movement of the cake. Further rotation of the shaft 19 causes the movable segments again to drop below the rigid segments permitting the cake to return to its original position. This cycle of operation is repeated, thereby causing an intermittent uniform rotary movement of the cake.

As is clearly shown in Figure 2, the rigid and movable sections of the cake support form a circle. The tying thread carrying means comprises a cylinder 24 which engages into the circle in a link-like manner. This cylinder is rotatably supported in a housing 25 provided at its upper end with a slot 26 the width of which is at least as wide as the thickness of the cake. The cylinder is also provided with a slot 27 of the same dimensions as the slot 26 so that, when it is desired to place a cake in position upon the support, these two slots may be moved into alignment.

The cylinder is provided with a spur gear 28 with mesh gears 29 and 30. These gears are so spaced that the distance between them is greater than the width of the slot 27 formed in the cylinder. Consequently, one of the gears will always be in operative engagement with the spur gear 28.

A thread roller 31 is secured in any conventional manner to the outside surface of the cylinder. As will be noted from an inspection of Figure 2, the cylinder support 32 is substantially U-shaped in cross section and is of sufficient dimension to permit the thread roller to rotate freely with the cylinder. Rotation of the cylinder in the direction of the arrow will cause the tying thread 33 to pass into the interior of the cylinder through an opening 34 formed in the jacket thereof.

In operation the end of the tying thread is

secured to the cake by any suitable means, as for example, a pin or the like. The combined rotation of the cylinder and the intermittent rotary motion imparted to the cake by the action of the movable segmental sections will cause the thread to be wound around the cake in a substantially helical path. In order to prevent the thread from being wound on the cake support itself, that section of the rigid support which lies within the path of the cylinder is cut away as indicated by the numeral 34. By this construction the cake is securely tied and the filaments thereof are protected against entanglement during the after treating steps.

The shaft 19 is driven by the foot mechanism 36 through a belt drive 37. The cylinder is driven from the shaft through gears 37, 38 and 39.

From the above description it will be appreciated that I have provided a simple and efficient mechanism for tying cakes of spun artificial silk and like products. The mechanism permits of the tying of the cakes in such a manner that there will be no possibility of an entanglement of the threads making up the cake when the said cake is subjected to the necessary after-treatments such as washing, desulphurizing, bleaching, etc. Moreover, it would be obvious to anyone skilled in the art that the mechanism is susceptible of many mechanical changes and substitution of parts without departing in any way from the spirit or scope of my invention.

Having now set forth my invention as required by the patent statutes, what I desire to claim is:

1. A mechanism for tying cakes of thread and the like comprising a plurality of rigid supports and a plurality of movable supports upon which the cake is placed, means to impart an upward and sideward movement to said movable support whereby to rotate said cake, and means for winding a tying thread on said cake as said cake is rotated on said support.

2. A mechanism for tying cakes of thread and the like comprising, a plurality of rigid and movable supports upon which the cake is placed, a crank drive to impart an upward and sideward movement to said movable supports to impart rotary motion to said cake, a thread carrying cylinder having a link-like engagement with said supports, and means to rotate said cylinder whereby to wind the tying thread on said cake as the latter is rotated on said support.

3. A mechanism for tying cakes of thread and the like comprising, a plurality of rigid and movable supports upon which the cake is placed, a crank drive to impart an upward and sideward movement to said movable supports to impart rotary motion to said cake, a thread carrying cylinder having a link-like engagement with said supports, and means to rotate said cylinder whereby to wind the tying thread on said cake as the latter is rotated on said support, said cylinder being provided with an opening whereby said cake may be positioned for tying on said support.

ADOLF RÜESCH.