

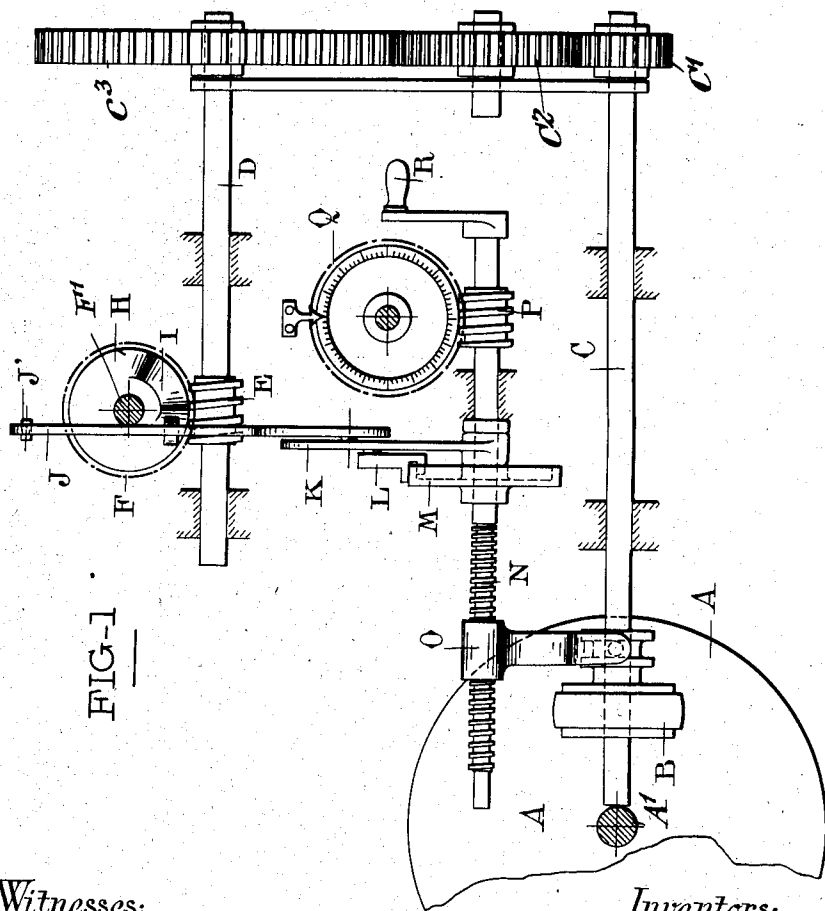
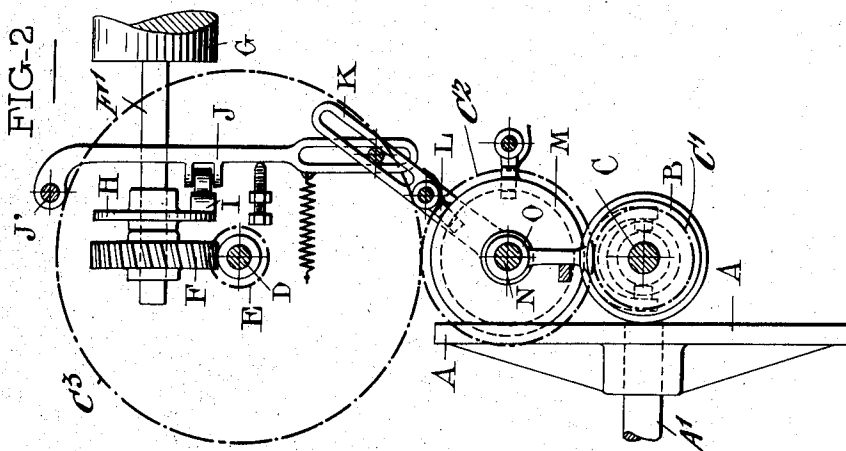
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PATENTED DEC. 25, 1906.

F. BÉRAUD & H. JANTON.

AUTOMATIC REGULATOR FOR USE IN WINDING FABRICS, THREADS, OR YARNS

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UNITED STATES PATENT OFFICE.

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AUTOMATIC REGULATOR FOR USE IN WINDING FABRICS, THREADS, OR YARNS.

No. 839,261.

Specification of Letters Patent.

Patented Dec. 25, 1906.

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To all whom it may concern:

Be it known that we, FRANÇOIS BÉRAUD, residing at Lyon, and HENRI JANTON, residing at Villeurbanne, France, citizens of the French Republic, have invented certain new and useful Improvements in Automatic Regulators for Use in Winding Fabrics, Threads, or Yarns, of which the following is a specification.

This invention relates to a new or improved automatic regulator for use in winding threads or yarns and fabrics and which permits of progressively reducing the speed of the winding-roller proportionally to the increase in the diameter of the material wound in order to obtain a constant tension from beginning to end of the operation.

The invention is represented in the annexed drawings, in which—

Figure 1 is a side view, and Fig. 2 an end view, of the regulator.

On a shaft A', suitably mounted in a frame (not shown) is mounted a disk A, which transmits its movement to a friction-roller B, having longitudinal movement along a spindle C, but rotating therewith, said spindle communicating its movement at a reduced speed to another shaft D by a train of toothed wheel-gear C' C² C³. Said shaft D carries near its end opposite the toothed wheel-gear a worm E, meshing with a worm-wheel F, mounted on the axle F' of the winding-roller G, and upon said axle is also mounted a cam H, having a projecting surface I, which at each rotation of the axle F' acts on and oscillates a lever J, pivoted at J', the movement of which lever is transmitted to a second lever K, loosely mounted on a screw-threaded shaft N and carrying a dog L or the like, which drives a wheel M, keyed on said screw-threaded shaft N. The rotation of said shaft N causes a nut or slide O, in connection with the aforesaid friction-roller B by means of a bifurcated end, to be displaced, and consequently shift said roller. The shaft N also carries a worm P, which drives a worm-wheel Q, having a series of graduations serving as indications for the degree of reduction to be obtained.

A handle R, mounted on the shaft N, allows of regulating at the start the speed necessary for the reduction.

The operation of the regulator is as follows: The friction-disk A, rotating at a constant speed, drives the friction-roller B, which

transmits its movement to the shaft N by means of the reducing wheel-gear C' C² C³, the worm E and worm-wheel F, the cam H, the coacting levers J and K, dog L, and the driving-wheel M, mounted on said shaft N. The nut or slide O is thus displaced and moves the friction-roller B, the speed of which is thus reduced according as it approaches the center of the disk A. This reduction of speed is communicated by the same parts to the winding-roller G, the angular speed of which is reduced, the peripheral speed, however, remaining constant whatever the diameter of the winding.

This controller is particularly adapted for meshed fabrics, such as tulle or bobbin-net and permits of always having the same number of meshes in every direction from one end of the piece to the other. It is also applicable to all kinds of fabrics and for winding threads or yarns, for example, in weft-winding machines.

What we claim as our invention, and desire to secure by Letters Patent of the United States, is—

1. Regulating mechanism for use in winding comprising in combination a disk, a roller having frictional contact therewith, a winding-roller, means for transmitting movement from the friction-roller to the winding-roller at a reduced speed, a screw-threaded shaft, means for imparting intermittent rotation to same according to the speed of the winding-roller and means operated by said screw-threaded shaft for causing the friction-roller to move over the surface of the aforesaid disk for the purpose set forth.

2. Regulating mechanism for use in winding comprising in combination a disk, a roller having frictional contact therewith, a shaft carrying said roller, a worm-shaft, speed-reducing gear between the latter and the roller-shaft, a winding-roller driven by said worm-shaft, a screw-threaded shaft means for imparting intermittent rotation to same according to the speed of the winding-roller and means operated by said screw-threaded shaft for causing the friction-roller to move over the surface of the aforesaid disk for the purpose set forth.

3. Regulating mechanism for use in winding comprising in combination a disk a roller having frictional contact therewith, a shaft carrying said roller, a worm-shaft, speed-re-

5 ducing gear between the latter and the roller-
 shaft, a winding-roller driven by said worm-
 shaft, a screw-threaded shaft, a cam rotating
 with said winding-roller, oscillatory levers
 10 acted on by said cam, a driving-wheel on the
 screw-threaded shaft actuated by said oscil-
 latory levers, and means operated by said
 screw-threaded shaft for causing the friction-
 roller to move over the surface of the afore-
 15 said disk for the purpose set forth.

4. Regulating mechanism for use in wind-
 ing comprising in combination a disk, a roller
 having frictional contact therewith, a shaft
 carrying said roller, a worm-shaft, speed-re-
 15 ducing gear between the latter and the roller-
 shaft, a winding-roller driven by said worm-
 shaft, a screw-threaded shaft, a cam rotating
 with said winding-roller, oscillatory levers
 acted on by said cam, a driving-wheel on the
 20 screw-threaded shaft actuated by said oscil-
 latory levers and a nut mounted on the screw-
 threaded shaft in connection with the afore-
 said friction-roller substantially as described.

5. Regulating mechanism for use in wind-
 25 ing comprising in combination a disk, a roller
 having frictional contact therewith, a wind-
 ing-roller, means for transmitting movement
 from the friction-roller to the winding-roller
 at a reduced speed, a screw-threaded shaft,
 30 means for imparting intermittent rotation to

same according to the speed of the winding-
 roller and means operated by said screw-
 threaded shaft for causing the friction-roller
 to move over the surface of the aforesaid
 disk and means for indicating and adjusting 35
 the extent of reduction of speed of the wind-
 ing-roller substantially as described.

6. Regulating mechanism for use in wind-
 ing comprising in combination a disk, a roller
 having frictional contact therewith, a shaft 40
 carrying said roller, a worm-shaft, speed-re-
 ducing gear between the latter and the roller-
 shaft a winding-roller driven by said worm-
 shaft, a screw-threaded shaft, a cam rotating
 with said winding-roller, oscillatory levers 45
 acted on by said cam, a driving-wheel on the
 screw-threaded shaft actuated by said oscil-
 latory levers, a nut mounted on the screw-
 threaded shaft in connection with the afore-
 said friction-roller, a graduated disk driven 50
 from said screw-threaded shaft and a regu-
 lating-handle on the latter substantially as
 described.

In witness whereof we have signed this
 specification in the presence of two witnesses. 55

FRANÇOIS BÉRAUD.
 HENRI JANTON.

Witnesses:

JEAN GERMAIN,
 GUILLAUME PROCHE.