

(No Model.)

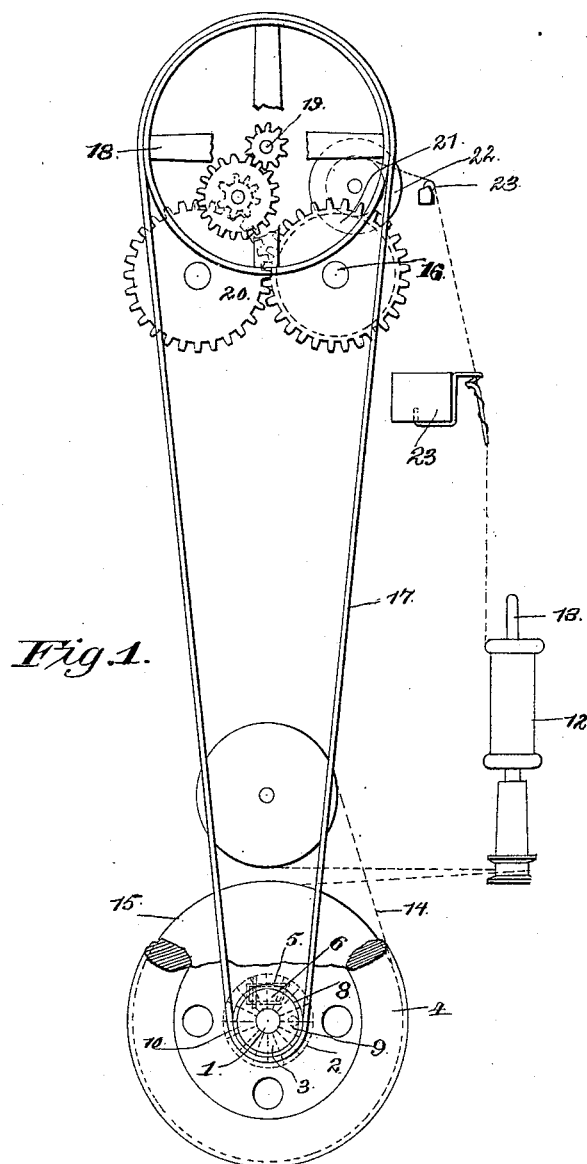
2 Sheets—Sheet 1.

O. O. SULLIVAN.

MACHINE FOR TWISTING OR SPINNING SILK OR OTHER FIBER.

No. 419,569.

Patented Jan. 14, 1890.



Witnesses

M. Fowler

Wm. Bagger

By His Attorneys,

C. A. Snow & Co.

Inventor

Otho O. Sullivan

(No Model.)

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Fig. 2.

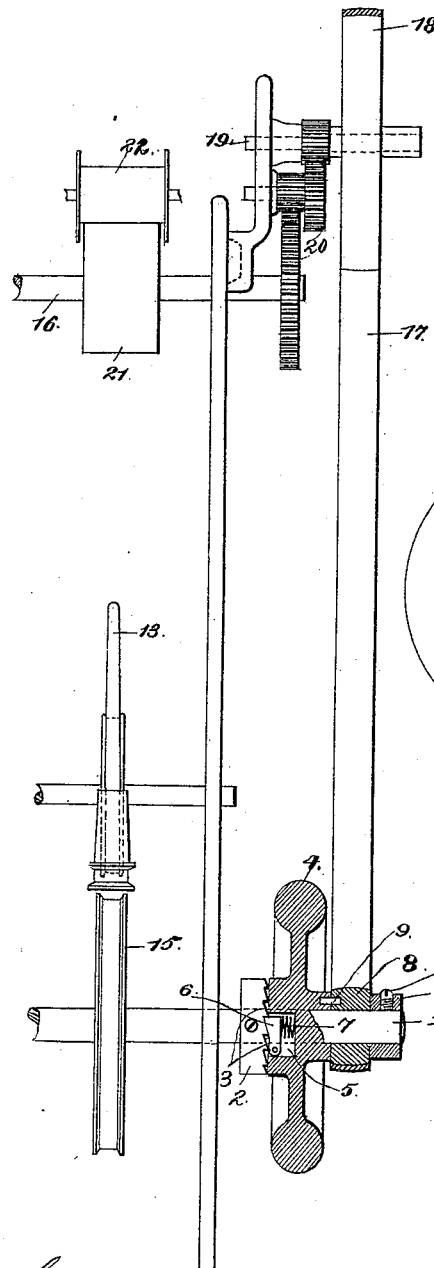
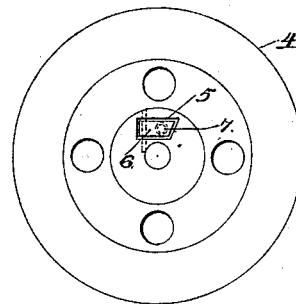


Fig. 3.



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UNITED STATES PATENT OFFICE.

OTHO O. SULLIVAN, OF STONINGTON, CONNECTICUT.

MACHINE FOR TWISTING OR SPINNING SILK OR OTHER FIBER.

SPECIFICATION forming part of Letters Patent No. 419,569, dated January 14, 1890.

Application filed August 24, 1889. Serial No. 321,816. (No model.)

To all whom it may concern:

Be it known that I, OTHO O. SULLIVAN, a citizen of the United States, residing at Stonington, in the county of New London and State of Connecticut, have invented an Improvement in Machines for Twisting or Spinning Silk and other Fiber, of which the following is a specification.

This invention relates to machinery for twisting or spinning silk and other fiber; and it has for its object to prevent the silk or fiber, while being spun or twisted, from kinking when the machines or frames are stopped from any cause.

With this end in view the invention consists in the improved construction, arrangement, and combination of parts which will be hereinafter fully described, and particularly pointed out in the claims.

In the drawings hereto annexed, Figure 1 is a side view, partly in section, of the machinery embodying my invention. Fig. 2 is a front view, partly in section, of the same. Fig. 3 is a side view of the fly-wheel detached from the driving-shaft.

Like numerals of reference indicate like parts in all the figures.

Upon the driving-shaft 1 is securely mounted the collar 2, the side or face of which is provided with teeth or ratchets 3.

4 designates the fly or balance wheel, which is mounted loosely upon the driving-shaft, and the hub of which is provided with a recess 5, in which is mounted a pawl 6, forced in an outward direction by means of a spring 7 and engaging the teeth or ratchets 3 of the collar 2.

8 designates a feed-pulley mounted loosely upon the driving-shaft and connected with the hub of the balance-wheel by means of a pin 9.

10 is a collar secured upon the driving-shaft by means of a set-screw 11 and serving to hold the pulley 8 in contact with the hub of the balance-wheel and the latter in engagement with the ratchet-collar 2.

12 designates the bobbin, which is mounted upon the spindle 13, which is driven by a band 14, running over a band-wheel or pulley 15 upon the driving-shaft.

16 designates the take-up shaft, motion to which is transmitted from the driving-shaft

by means of the belt or band 17, running from the pulley 8 over the large feed-pulley 18, from the shaft 19 of which motion is transmitted to the take-up shaft 16 by means of the customary train of gearing 20.

21 designates the take-up pulley, and 22 the take-up bobbin, to which the fiber is conveyed from the bobbin 12 over suitable guides 23.

It will be seen that while the machinery is in motion the fiber is twisted by being unwound from the bobbin 12 in its passage from said bobbin to the take-up bobbin. When the machinery is suddenly stopped from any cause, a portion of the fiber between the bobbin 12 and the take-up bobbin is already twisted, and it is this portion of the fiber which, unless immediately disposed of by winding it upon the take-up bobbin, is apt to kink. When this occurs, considerable time is required to straighten the fiber before the machinery can be started again, and it is frequently necessary to cut the fiber and join the ends by knotting, thereby causing defects in the spooling or in the future manufacture. By my present improvement, when the driving-shaft is stopped, the balance wheel 4 will have acquired momentum enough to make several revolutions independently of the driving-shaft, thus transmitting motion through the pulley 8, belt 17, take-up pulley 18, gearing 20, and take-up pulley 21 to the take-up bobbin, which latter will thus be rotated for a sufficient length of time to take up all the silk or fiber which has already been twisted, or at least a sufficient quantity thereof to prevent kink. This having been done, the machinery is ready to be started again at any time without loss of time or injury to the material.

Having thus described my invention, what I claim as new is—

1. In machinery for twisting or spinning silk or fiber, the combination of the driving-shaft, a ratchet-collar mounted securely on the same, a balance-wheel mounted loosely on the said driving-shaft and having a spring-actuated pawl engaging the said ratchet-collar, and mechanism for transmitting motion from the said balance-wheel to the take-up bobbin, substantially as set forth.

2. In machinery for twisting or spinning

10 silk or fiber, the combination of the driving-
shaft, the spindle carrying the delivery-bob-
bin, mechanism for transmitting motion to
said spindle direct from the driving-shaft, a
5 ratchet-collar mounted securely upon the lat-
ter, a balance-wheel mounted loosely upon
the driving-shaft and having a spring-actu-
ated pawl engaging the said ratchet-collar, and
mechanism for transmitting motion from the
10 said balance-wheel to the take-up bobbin, sub-
stantially as set forth.

15 3. In machinery for twisting or spinning
silk or fiber, the combination of the driving-
shaft, a ratchet-collar mounted securely in
the same, a balance-wheel mounted loosely
adjacent to said ratchet-collar and having a

recess in one side of its hub, a spring-actuated
pawl seated in the said recess, a feed-pulley
mounted loosely upon the driving-shaft, a
transverse pin connecting said feed-pulley 20
with the hub of the balance-wheel, a clamp-
ing-collar, and mechanism for transmitting
motion from the feed-pulley to the take-up
bobbin, substantially as and for the purpose
herein set forth.

25 In testimony that I claim the foregoing as
my own I have hereto affixed my signature in
presence of two witnesses.

OTHO O. SULLIVAN.

Witnesses:

H. J. KELSEY,
F. J. GILMORE.