

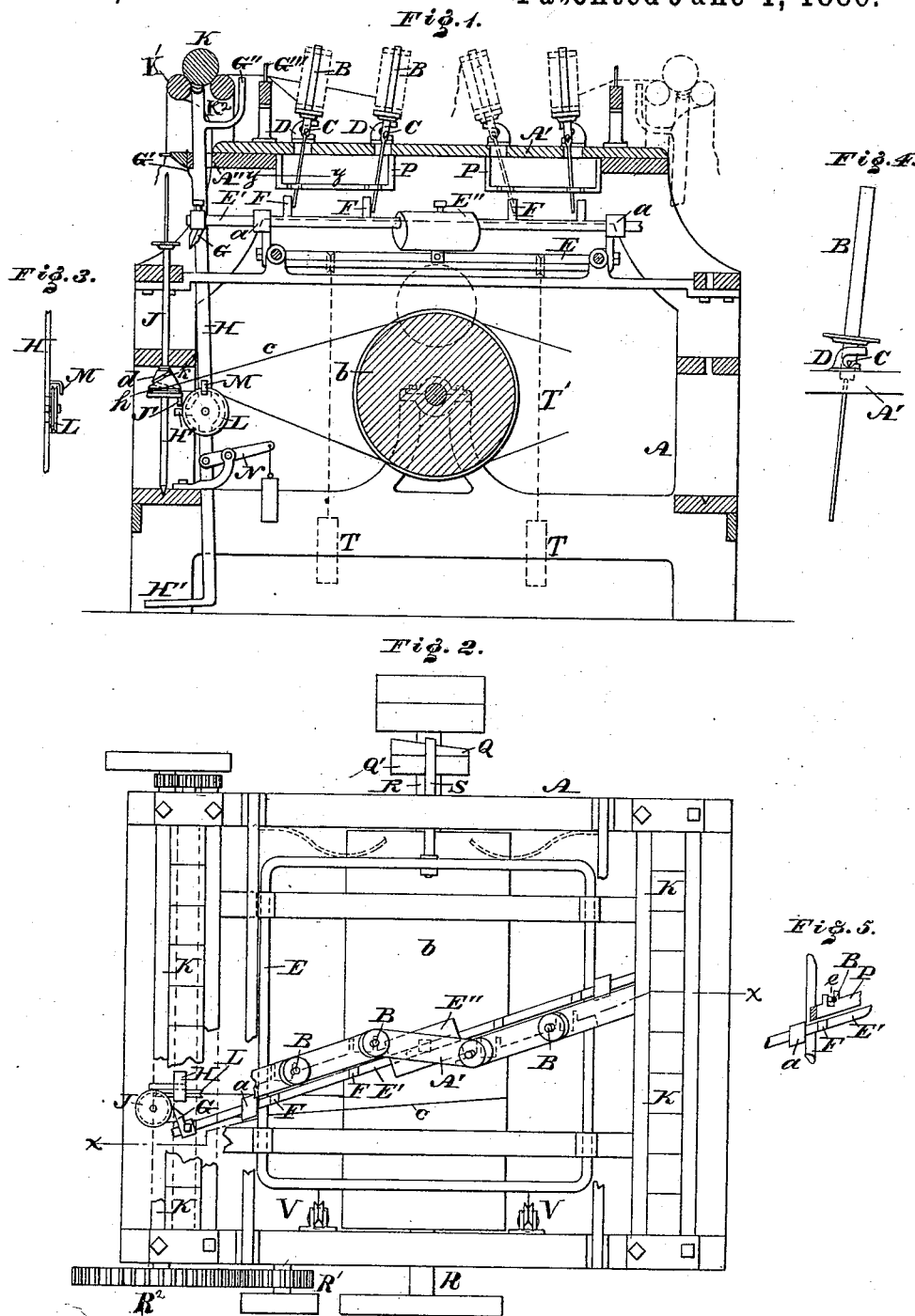
(No Model.)

C. F. ALEXANDER.

STOP MOTION FOR TWISTERS, &c.

No. 342,990.

Patented June 1, 1886.



WITNESSES:

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CHARLES F. ALEXANDER, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR
OF THREE-FOURTHS TO S. B. FLEISHER, B. W. FLEISHER, AND M.
FLEISHER, ALL OF SAME PLACE.

STOP-MOTION FOR TWISTERS, &c.

SPECIFICATION forming part of Letters Patent No. 342,990, dated June 1, 1886.

Application filed September 6, 1884. Serial No. 142,368. (No model.)

To all whom it may concern:

Be it known that I, CHARLES F. ALEXANDER, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Stop-Motions for Twist-
5 ers, Spoolers, Thread-Winders, &c., which improvement is fully set forth in the following specification and accompanying drawings, in which—

Figure 1 represents a vertical section in line *x x*, Fig. 2, of a twisting-machine having applied thereto a stop-motion embodying my invention. Fig. 2 represents a top or plan view of the machine shown in Fig. 1, partly broken
15 away. Fig. 3 represents a view of a portion detached from the left side of Fig. 1. Fig. 4 represents a detached view of a holder for a bobbin-spool, &c., as embodied in my invention. Fig. 5 represents a horizontal section of a portion in line *y y*, Fig. 1.

Similar letters of reference indicate corresponding parts in the several figures.

My invention consists of a stop-motion for
25 a twister, spooler, thread-winder, &c., the same embodying a balanced holder for a bobbin, spool, quill, &c., and mechanism operated thereby for operating the shipper or stopping device of the machine, and other details
30 of construction, as will be hereinafter fully set forth.

Referring to the drawings, A represents the frame of the twisting-machine, and A' represents a beam or cross-bar at the top thereof,
35 on which is mounted the balanced holder B for a bobbin, spool, quill, &c., the same consisting of a suitable spindle or pin, which is provided with knife-edges or journals C, which project from the spindle below the bobbin,
40 &c., and rest upon bearings D, which are secured to the beam A' of the machine.

Supported on a proper part of the frame A below the holder is a sliding frame, E, which has at top a rotary bar, E', from which rise
45 arms F, so located in proximity to the lower ends of the spindles of the holders that when the latter are in their normal positions during the operation of the machine the arms F of the frame E pass said spindles without con-

tact therewith, as shown by the full lines, 50 Fig. 1.

The rod E', which is horizontally arranged, has its bearings in bosses or eyes *a* in the upper part of the frame E, and one end of said rod has connected with it a toe, G, which projects toward a vertically-moving stopping-bar,
55 H, the same being guided in a proper part, A'', of the frame A of the machine, and having a shoulder, G', which is adapted to engage with said part, said toe being so disposed in relation to the bar H that when the rod E' is rotated by coming in contact with the holder B the toe is advanced against the bar H, and, owing to its partial rotary motion, releases
60 said bar, so that the latter is permitted to rise, as will be hereinafter explained.

J represents a spindle, which is mounted on the frame A and receives motion from a drum or pulley, *b*, and a belt or band, *c*, the latter passing around a cone or whirl, *d*, on said
70 spindle. The upper end of the bar H is beneath the top roller, K, of a set of rollers, K' K² K, between which the thread or yarn passes in this case from the holder B to the spindle J, the lower rollers, K' K², being properly mounted on the frame of the machine and receiving motion from the driving-shaft by means of the gear-wheels R' and R².

Connected with the upper end of the bar H is an upwardly-projecting arm, G'', which,
80 with the bar, forms a fork, said arm being arranged between the back roller of the set of rollers K and the guide G''', adjacent to the holder B.

On the base of the cone or whirl *d* of the
85 spindle J is a lug, J', and on the bar H is a finger, H', the latter being adjacent to said lug, so that when the bar is raised the finger strikes the lug and interlocks therewith.

On the bar H is a pulley, L, having a horizontal axis, the same being grooved and serving to guide the belt, band, or cord *c*. In order to prevent displacement of said belt there is connected with the bar H a guard, M, somewhat of the form of a hook, the same over-
90 hanging the periphery of the pulley.

In order to raise the bar H when its shoulder G' is released from the part A'' of the

frame A, there is pivoted to the same and a suitable bearing on the frame A a weighted lever, N, the normal position of the bar and connected parts being shown in Fig. 1.

5 Depending from the beam A' are hangers P, which have slots *e* in the lower portions, through which the lower ends of the spindles or pins of the holders B project, said spindles or pins being provided with the journals or
10 knife-edges C, which are hung freely on the bearings D, secured to the beam A', as has been stated, and readily seen in Fig. 1.

The rod E' carries a weight, E'', the tendency of which is to prevent improper rotation of
15 said rod, and when the rod is rotated to return it to its normal position, holding the toe G from the bar H.

In order to cause the belt or band *c* to enter its groove *h* in the cone or whirl *d* when said
20 belt is being lowered by the bar H, the said cone or whirl is formed with a spiral groove, *h*, which extends from the upper part of the cone to said groove *h*, so that as the bar H is lowered the belt or band engages with said
25 spiral and is thus directed to the groove *h*. The frame E receives reciprocating motion in one direction by means of a cam, Q, which is connected with a pulley, Q', the latter being mounted on a shaft, R, and re-
30 ceiving power from any proper part of the machine, the said cam engaging with an arm, S, which projects laterally from the frame E, and receives motion in one direction from said cam, the motion being communicated to the
35 frame. The opposite motion is accomplished by means of weights T, attached to cords T', which pass around pulleys V on the frame A, said cords being connected with the frame E. In lieu of the cords T' and weights T springs
40 may be used, as shown in the dotted lines in Fig. 2.

The operation is as follows: The holder B is held against one of the walls of the slot *e*, and thus clear of the path of motion of the
45 arm or lug F of the rod E', by the tension of the yarn or thread. Should the latter break the holder is free to vibrate, which it does by the action of gravity, and it swings against the opposite wall of the slot *e*, and is in the
50 path of the arm or lug F, whereby the latter strikes the holder and causes the rod E to partially rotate, and as the toe G releases the shoulder G' of the bar H from the part A' of the frame, the bar is raised by the weighted
55 lever N lifting the top roller, K, of the set of rollers K K' K², and also the yarn from the back roller, K², of the lower roller, thereby preventing the passage or feeding of the yarn or thread. Simultaneously therewith the pul-
60 ley L, which rises with the bar H, forces the band or belt *c* upward from the base of the cone or whirl *d* to the narrow part thereof, whereby the band or belt is slackened, the finger H' strikes the lug J', and the two parts
65 are clutched, so that the spindle J is immediately and effectually stopped. When the

yarn or thread is tied or united, the created tension of the same again draws the holder B to its normal position, clearing it of the path
70 of the lug F, and the rod E' by the action of its weight E'' is also restored to its normal condition, disengaging the toe G from the bar H. The bar H is drawn down by its foot or handle
75 H'', with which said bar is provided, so that the shoulder G' engages with the frame A, and the band *c* is restored to its groove *h* in the cone or whirl *d*, and the lug J' and finger H' are disconnected, the spindle J then again rotating and the yarn receiving its tension. The upper
80 roller, K, of the set of rollers K K' K² is also lowered, and thus permitted to rotate by contact with the lower rollers, so as to feed the yarn or thread to the spindle.

The rod E' is shown diagonal in order to have a toe at each end for operation on op-
85 posite sides of the machine for purposes of duplication of work, in which case the beam A' also extends diagonally, and the holders B are disposed in like order on said beam.

Subject-matter described in this specifica-
90 tion and shown in the accompanying drawings relating to the construction of the balanced holder is not claimed herein, such being described, illustrated, and claimed in an appli-
95 cation for an improvement in bobbin-holders filed September 6, 1884, and bearing Serial No. 142,367.

Having thus described my invention, what I claim as new, and desire to secure by Letters
100 Patent, is—

1. A balanced holder for a bobbin, in combination with a frame carrying a weighted rotary bar provided with arms adapted to be brought in contact with said bobbin, means, substantially as described, for reciprocating
105 said frame, a toe secured to said bar and engaging a sliding bar, a sliding bar carrying a roller and a thread-guide, and a weight adapted to operate said sliding bar, all substantially as and for the purpose set forth. 110

2. The frame A and bar A', in combination with the balanced holder B, the frame E, the weighted rotary bar E', having arms F, and means, substantially as described, for imparting reciprocating motion to said frame E, all
115 substantially as and for the purpose set forth.

3. The frame A and bar A', in combination with the holder B, frame E, bar E', having arms F and toe G, bar H, having shoulder G' and upwardly-projecting arm G'', rollers K K' K², the
120 weighted lever N, and mechanism, substantially as described, for imparting a reciprocating motion to said frame E, all substantially as and for the purpose set forth.

4. The frame A and bar A', in combination
125 with the balanced holder B, having a depending spindle, a bar adapted to be rotated by contact with said holder, a sliding bar with a shoulder adapted to be disengaged by a toe secured to said rotary bar and provided with a
130 weighted lever, and means, substantially as described, for reciprocating said first-described

bar, all substantially as and for the purpose set forth.

5 5. A balanced bobbin-holder having a depending spindle, in combination with the frame, hangers P, having slots *e*, frame E, having rotary weighted bar E', the latter having arms F and toe G, bar H, with shoulder G' and arm G'', the rollers K K' K'', the weighted lever N, adapted to raise said bar H, and means, 10 substantially as described, for reciprocating said frame E, all substantially as and for the purpose set forth.

15 6. The frame A and bar A', in combination with a balanced holder having a depending spindle, a rotary bar having arms and a toe and means for imparting reciprocating motion to the same, the bar H, having a forked upper end and a shoulder, G', the rollers K K' K'',

the weighted lever N, guard M, pulley L, spindle J, journaled in the frame A and provided with the whirl *d*, having a circular groove, *h*, and spiral groove *k*, band *c*, and drum *b*, substantially as described.

7. The frame A, with a balanced holder, in combination with a frame carrying a weighted rotary bar and having the laterally-projecting arm S, the shaft R, having the pulley Q', and cam Q, mounted thereon, said arm S engaging with said cam, cords T', with weights T, and pulleys V, all substantially as and for the 30 purpose set forth.

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Witnesses:

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