(No Model.)

A. WHITE & D. F. SULLIVAN.

AUTOMATIC DROP WIRE SUPPORT FOR KNITTING MACHINE STOP MOTIONS.

No. 588,762. Patented Aug. 24, 1897.

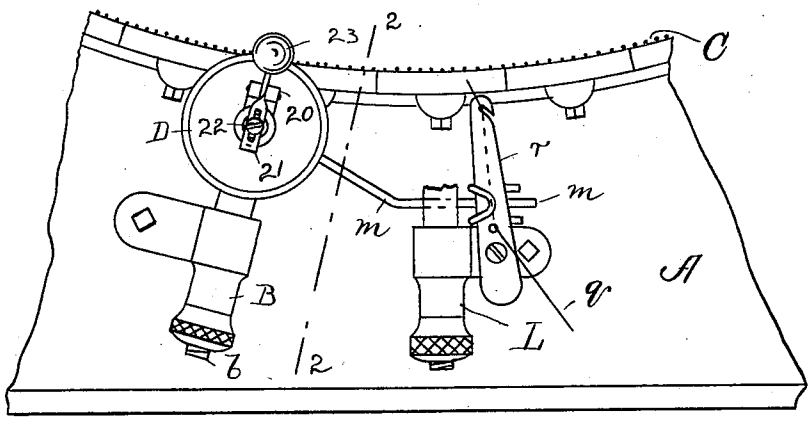


Fig. 1.

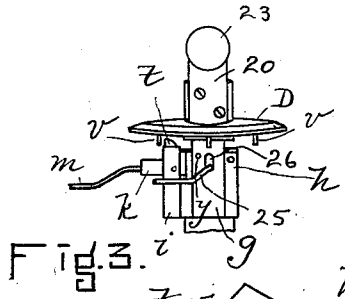


Fig. 3.

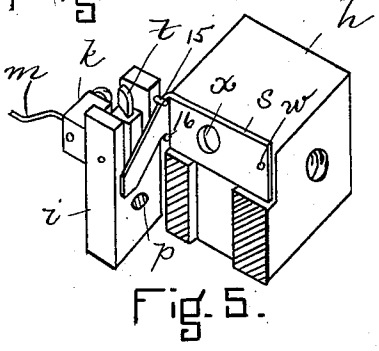


Fig. 5.

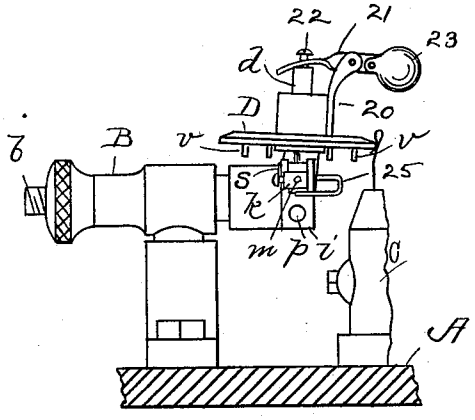


Fig. 2.

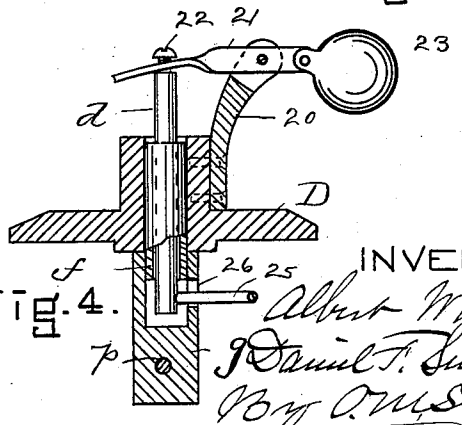


Fig. 4.

WITNESSES

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ALBERT WHITE AND DANIEL F. SULLIVAN, OF LOWELL, MASSACHUSETTS; SAID SULLIVAN ASSIGNOR TO MARY SULLIVAN, OF SAME PLACE.

AUTOMATIC DROP-WIRE SUPPORT FOR KNITTING-MACHINE STOP-MOTIONS.

SPECIFICATION forming part of Letters Patent No. 588,762, dated August 24, 1897.

Application filed December 11, 1896. Serial No. 615,295. (No model.)

To all whom it may concern:

Be it known that we, ALBERT WHITE and DANIEL F. SULLIVAN, of Lowell, county of Middlesex, and State of Massachusetts, have made certain new and useful Improvements in Automatic Drop-Wire Supports for Knitting-Machine Stop-Motions, of which the following is a description sufficiently full, clear, and exact to enable any person skilled in the art or science to which said invention appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a top plan view of a portion of the bed and cylinder of a circular-knitting machine provided with our improvement; Fig. 2, a side elevation looking from the right on line 2 2, Fig. 1; Fig. 3, a front elevation of the presser-wheel and its support; Fig. 4, a vertical transverse section, enlarged, of the presser-wheel and support; and Fig. 5, a perspective view of the presser-wheel-locking mechanism.

Our invention relates especially to an automatic presser-wheel-actuated device for supporting the drop-wire of that class of stop-motions which are released by the breaking of a thread, when the machine is stopped by hand or other classes of stop-motion, whereby said drop-wire is prevented from falling as the thread slackens and releasing its conjunctive mechanism.

The operation of the improvement will be understood from the following explanation:

In the drawings, A represents the bed of the machine, and C the needle-cylinder. The presser-wheel D is of a well-known rotary form and is mounted to rotate on a spindle *d*, surrounded by a bushing *f*, (see Fig. 4,) fixed in a tilting support *g*. This spindle *d* is fitted to slide vertically. The support *g* is pivoted at *p* to rock in a block *h* on a horizontal spindle *b*, suitably supported from the bed A, and adjustable longitudinally by means of the star-box B, in the usual manner. On the same pivot *p* a support *i* for the drop-wire is mounted to rock, and pivoted to swing vertically in said support *i* there is a block *k*, its motion being at right angles to said support *i*. This block carries the drop-wire *m*, which extends under the looper-support L and under the thread-guide *r*, its free end being normally held up by the thread *q*. On the block *k* there is a blade *t* in position to be thrown into the path of projection *v* on the rotary presser-wheel D when the wire *m* falls as the thread breaks and, engaged by said projection, causes the support *i* to rock outward. Pivoted on the block *h* at *w* there is a right-angled lever *s*, provided with an opening *x*, which may be registered with a pin *y* on the back of the presser-support *g* and allow said presser to swing out of contact with the needle. On the support *i* are two pins 15 and 16, engaging, respectively, opposite edges of the right-angled lever *s*, and actuating said lever vertically as said support *i* is rocked outward, releasing the presser-support above described, it being understood that as said support rocks it throws lever *s* up until its opening *x* registers with pin *y* on the presser-support *g*. The spring of the needles against the presser will throw it back, it being freed, as aforesaid, from opposition of pin *y* against the face of lever *s*. This mechanism is the same thread-released stop mechanism shown in our application for Letters Patent filed September 17, 1896, Serial No. 606,121.

Fast on the hub of the presser-wheel there is a bracket 20, and in the top of this bracket a horizontal lever 21 is pivoted to swing vertically. One arm of this lever is slotted and is astride of a stud 22 on the upper end of the spindle *d*. On the outer end of this lever 21 is pivoted a counterbalance-ball 23. On the lower end of the spindle *d* there is a **U**-shaped wire 25, fast by one end to said spindle and projecting through a slot 26 in the support *g*. The outer end of this wire is bent to extend under the drop-wire block *k*.

In the use of our improvement, the presser-wheel being tilted against the needles and locked by the drop-wire mechanism, as above described, it is rapidly rotated in the usual manner. Centrifugal action on the ball 23, tending to force it outward, causes it to throw the lever 21 into horizontal position. This forces spindle *d* downward until the **U**-wire 25 engages the bottom of the slot 26, the free end of said wire thus being held out of contact with the drop-wire block *k* and per-

mitting said wire to rest on the thread, so that should said thread break the wire will fall and release the presser. Meanwhile, should the machine be stopped by any other means as the rotation of the presser decreases the weight 23 will drop, elevating the outer arm of lever 21, drawing the spindle *d* upward, and disposing the wire 25 in contact with the drop-wire block, thus preventing the falling of said drop-wire and the consequent unlocking of the presser-locking mechanism.

In Figs. 2 and 4 the lever 21 is shown in the position assumed when the presser is at full speed and the wire 25 out of contact with the drop-wire.

We do not wish to be confined to the particular arrangement of the parts shown for controlling the support for the drop-wire, a salient feature of our invention being a centrifugally-actuated mechanism carried or operated by the presser-wheel for effecting this result.

Having thus explained our invention, what we claim is—

1. A drop-wire-supporting mechanism for circular-knitting machine stop-motions comprising a centrifugally-actuated mechanism operated from a rotary wheel on said knitting-machine.

2. In a stop-motion for knitting-machines embodying a drop-wire, a support for said wire and mechanism actuated by the rotation of the machine presser-wheel to release said support from said wire.

3. In a stop-motion for circular-knitting machines, a rotary presser-wheel; locking mechanism therefor; and releasing devices comprising a drop-wire, and mechanism supporting said wire when the machine is at rest and released by the rotation of said presser when the machine is in action.

4. The combination with the drop-wire and rotary presser-wheel, of a counterbalance-lever carried on said presser, and a projection actuated thereby for supporting and releasing said drop-wire, substantially as specified.

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