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G. W. MARTIN & J. PALMER.

AUTOMATIC STOP MOTION FOR KNITTING MACHINES.

(Application filed June 26, 1901.)

(No Model.)

fig. 1.

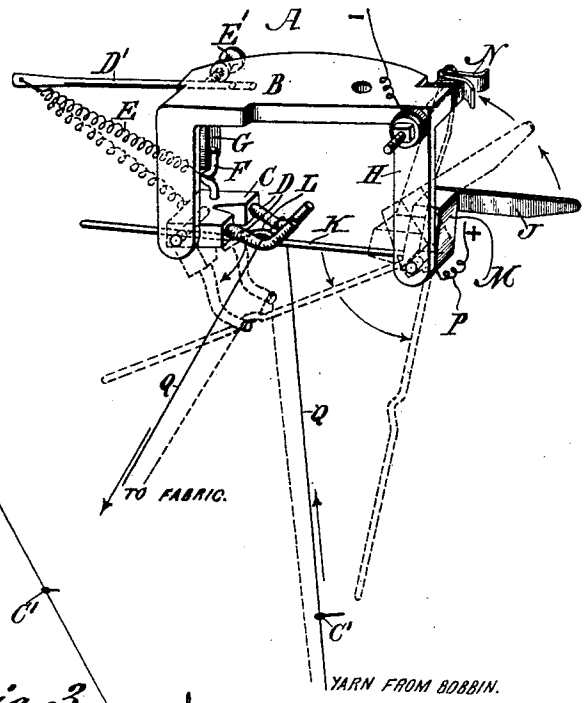


fig. 3.

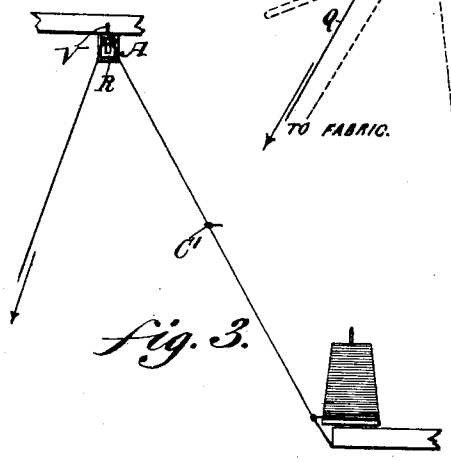


fig. 4.

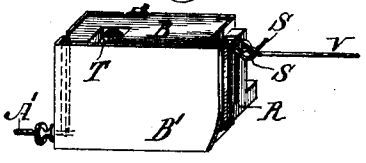
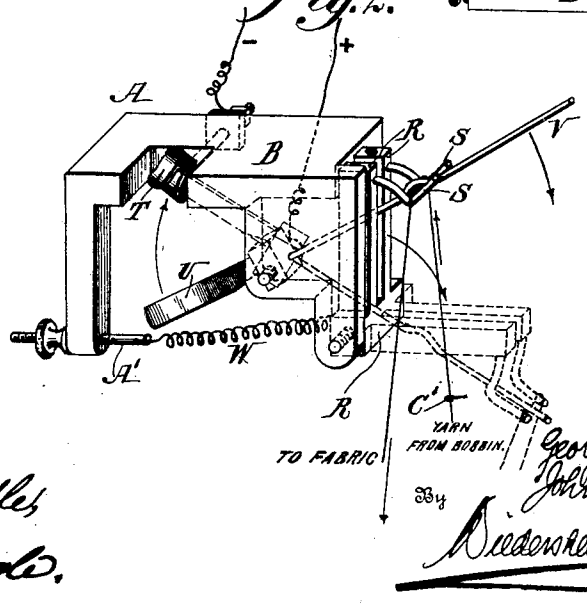


fig. 2.



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AUTOMATIC STOP-MOTION FOR KNITTING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 706,840, dated August 12, 1902.

Application filed June 26, 1901. Serial No. 66,037. (No model.)

To all whom it may concern:

Be it known that we, GEORGE W. MARTIN and JOHN PALMER, citizens of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Automatic Stop-Motions for Knitting-Machines, of which the following is a specification.

Our invention relates to improvements in automatic stop devices for knitting-machines; and it consists of means for supporting the yarn as it comes from the bobbin and for releasing the same therefrom and of means supported by the yarn which is released to close a circuit and automatically stop the knitting-machine.

It further consists of novel details of construction, all as will be hereinafter set forth, and particularly pointed out in the claim.

Figure 1 represents a perspective view of an automatic stop device embodying our invention. Fig. 2 represents a perspective view of a slightly-different form thereof. Fig. 3 represents a diagrammatic view showing the yarn as it leaves the bobbin and in its supported position. Fig. 4 represents a perspective view of a device, showing a box and cover for the same.

Similar letters of reference indicate corresponding parts in the figures.

Referring to the drawings, A designates an automatic stop device for knitting-machines, the same consisting of the body portion B, to which is pivoted the block C, which carries the pins D, which in the present instance are bent slightly downward and then upward and are preferably formed of glass.

E designates a spring which is attached to a suitable place and is connected with the block C, in the present instance by the pin F, which abuts against the plate G when in normal position and forms a stop for the block.

Pivoted to an arm H on the body portion B is the arm J, which is formed of conductive material and to which is attached in any suitable manner the rod K, which has a slightly-bent-up portion L and in the present instance has interposed between the same and the arm J the weight M.

N designates a clip with which the arm J is adapted to contact when released, as will be hereinafter explained, and is in connection with a suitable electrical circuit which is provided with the usual battery or other source of energy, the opposite end of the circuit terminating in the wire or conductor P, which is in contact or electrical connection with the arm J, it being noted that the arm J and rod K are so weighted that when the said rod K is released it will fall into the position seen in dotted lines and the arm J will remain in contact with the spring-clip N.

The operation is as follows: The yarn from the bobbin is passed over the pins D, which support the same, and beneath a rod K, which is supported by the said yarn Q, the parts being as shown in full lines, Fig. 1. When now there is any pull on the yarn by reason of any difficulty of the yarn leaving the bobbin, the tension on the arm between the bobbin and the knitting-machine will draw down the pins D, and with it the block C, overcoming the tension of the spring E, so that the yarn will slip off the pins, and thus release the rod K, which immediately falls, and the arm J will contact with the spring N, thus closing the circuit, which is so connected with the shipping-lever that the same will be operated to stop the machine.

We have omitted for the sake of clearness the means for holding and for actuating the shipping-lever, as the same forms no part of the present invention, and any suitable devices for that purpose may be employed, since it is only necessary to close the circuit in order to cause the lever to stop the machine.

It will be seen that should the end of the yarn leave the bobbin without the operator seeing the same the tension will be withdrawn and the rod K fall, as previously described, thus stopping the machine and giving the operator time to place in position a full bobbin.

In Fig. 2 we have shown a construction which is similar to that already described, excepting we have shown the pins that support the yarn at a slightly-different position with respect to the body portion, the block R, which supports the pins S, being at the opposite end of the body portion and the spring-

clip T being in such position with respect to the arm U that the same will be engaged in the same manner as previously described when the rod V is released or is not supported by the yarn. The spring W is connected with the block R and with a pin A′, whereby the tension of the said spring can be regulated. We have found in practice that it is necessary to cover the contact-pieces, owing to the dust and lint, and in Fig. 4 we have shown a box B′ for this purpose.

It will be of course understood that in every instance we preferably employ a guide or knot-catcher common in the art for detaining the thickened portions of the knitting-yarn, so as to cause a further action of the machine to create a tension on the detector mechanism of the stop-motion device, and in the drawings we have shown a guide C′, through which the yarn passes, which can be varied in size or placed at any suitable point.

In order to adjust the tension of the spring E, (in Fig. 1,) the pin D′ is made adjustable with respect to the body portion B and can be locked in position by the thumb-screw E′.

It will be evident that various changes may be made by those skilled in the art which will come within the scope of our invention, and we do not, therefore, desire to be limited in every instance to the exact construction herein shown and described.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

In an automatic stopping device for knitting-machines, a body portion, a spring-clip carried by said body portion, an arm adapted to contact with said clip and close the circuit, a rod connected with said arm which is adapted to be supported by the yarn in substantially a horizontal position whereby said arm is held out of contact with said clip, pins which are adapted to support the yarn, and means for holding said pins in normal position and for permitting the same to be lowered and for returning said pins to their normal position after said yarn has been released.

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