

No. 809,234.

PATENTED JAN. 2, 1906.

E. TOMPKINS.
STOP MOTION FOR KNITTING MACHINES.
APPLICATION FILED JUNE 6, 1904.

Fig. 1.

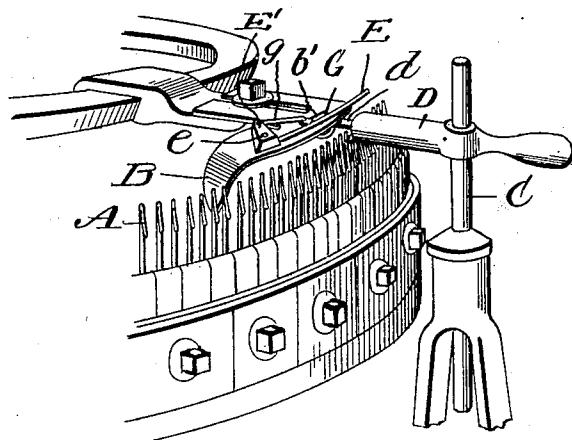


Fig. 2.

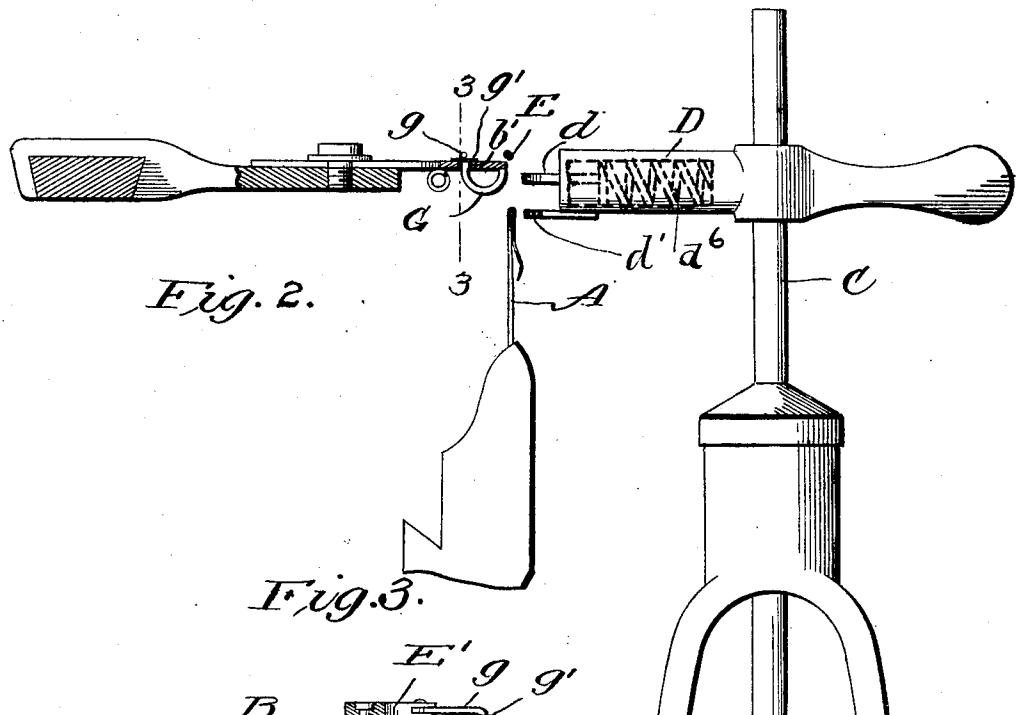
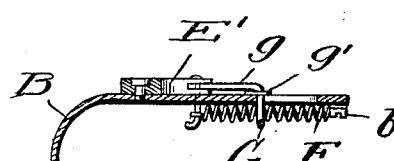


Fig. 3.



WITNESSES:

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UNITED STATES PATENT OFFICE.

ERNEST TOMPKINS, OF TROY, NEW YORK, ASSIGNOR TO TOMPKINS BROTHERS COMPANY, OF TROY, NEW YORK.

STOP-MOTION FOR KNITTING-MACHINES.

No. 809,284.

Specification of Letters Patent.

Patented Jan. 2, 1906.

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To all whom it may concern:

Be it known that I, ERNEST TOMPKINS, of Troy, in the county of Rensselaer and State of New York, have invented certain new and useful Improvements in Stop-Motions for Knitting-Machines; and I hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, which form part of this specification.

This invention is an improvement in knitting-machines; and it relates to the automatic stop-motions of such machines, its object being to provide what may be termed an "auxiliary" stop-motion device adapted to actuate the stop-motion when the cloth leaves the needles, thus preventing the collection of waste yarn on the needles and the frequent damage resulting therefrom before the machine is stopped.

The stop-motion ordinarily in use—as, for instance, that shown in the patent to Brown *et al.*, No. 354,387, of December 14, 1886—consists, essentially, of an arm supported by a vertical shaft, which is connected with the mechanisms for stopping the machine, so that by slightly rotating said shaft the machine will be stopped. Said arm stands normally adjacent to the needles and is provided with a spring-controlled stop-finger, which is normally pressed against the cloth just above the needles by a suitable spring.

Within the circle of needles and just above them and opposite the spring-pressed finger is a pusher or presser arm, which holds the cloth outward against the pressure of the stop-finger. If a hole occurs in the cloth, the stop-finger will be projected thereinto by the spring and the cloth will pull the stop-finger ahead, thereby turning the arm and shaft and stopping the machine automatically. The arm in turning revolves on its axis and withdraws the finger from the cloth. As usually made these stop-motions have a claw or claws attached to the arm adjacent to the stop-finger and projecting sufficiently close to the needles to be engaged by accumulations of waste or yarn thereon, so that the machine will be eventually automatically stopped if the cloth leaves the needles. Such stop-motions will operate satisfactorily to stop the machine if a hole or drop-stitch comes to the finger, but will not operate promptly when the cloth leaves the needles,

as there is nothing to actuate the stop-finger or arm at the time, and the machine will run until sufficient yarn accumulates on the needles to catch the claws and move the arm, and it frequently happens in such cases that a number of needles are broken or bent before the machine is stopped and delay is caused in replacing and readjusting the broken or bent needles and getting the machine in condition for operation once more.

My invention consists in a simple auxiliary device which will come into operation when the cloth leaves the needles and engage the stop-finger or arm, thereby causing the instant stoppage of the machine, and the novel features and combinations of parts thereof are set forth in the claims, and I will describe my invention in detail with reference to the accompanying drawings, in which—

Figure 1 is a perspective view of part of a knitting-machine stop-motion with my auxiliary stop devices. Fig. 2 is an enlarged vertical section thereof. Fig. 3 is a transverse section on line 3 3, Fig. 2.

A designates the needles, B the cloth-cam, C the stop-motion shaft, D the arm on said shaft, d the spring-controlled stop-finger, and d' the claws on said arm, all arranged and constructed substantially as in the usual stop-motions of knitting-machines above referred to and which do not need more detailed explanation or illustration.

E is a pusher or presser pivoted at e on the cam B and projecting against the inside of the cloth, so as to press it outward against the action of the stop-finger d, as usual. This presser is yieldingly thrown outward by means of a spring which is attached to the short arm E' of the presser, said arm extending at right angles to its long arm. Any suitable spring may be used. A helical spring F is shown having one end connected to a pin depending from arm E' and the other end fast to a pin or screw b, attached to cam B.

Beneath the cam B and opposite the finger d is a laterally-movable trip G, which is guided in a slot b' in cam-plate B, so as to move close to the needles. Said trip is connected by a link or arm g to the arm E' of the presser E, so that the trip will be moved by and with the presser, and is actuated by spring F. As shown, the trip and link may be made in one piece of suitably-bent wire,

and a washer g' is strung thereon above slot b' to uphold the trip in position. When the cloth is in the machine, as indicated in Fig. 2, the presser E is held back almost in line with the needles, spring F being under tension in this position of the presser E, the trip G is drawn back toward the end of slot b' away from the stop-finger d and remains out of the way and inert so long as the cloth is in the machine, and the presser E is held about in line with the needles. The instant the cloth leaves the needles, however, the stop-finger d is projected thereover by the usual spring d^o (indicated in dotted lines) or by other suitable means, just as it would be if it found a hole in the cloth, and as immediately afterward the cloth frees presser E the spring F rocks arm E', throwing the free end of the presser outward over the needles and moving trip G laterally against the stop-finger d and forcing the latter to one side, thereby actuating the stop-motion proper and stopping the machine, just as would happen if the stop-finger had been pulled to one side by engaging a hole in the cloth. This stoppage occurs instantly without any accumulation of waste yarn on the needles, and thus my attachment serves as an auxiliary stop-motion, acting when the cloth leaves the needles to stop the machine instantly. It prevents the accumulation of waste yarn on the needles and consequent danger of breakage or bending of the needles and loss of time in putting the machine again into useful operation. When the cloth is put in the machine, the trip G is automatically moved out of the way and reset and held in such position by the position of presser E behind or within the cloth.

Having thus described my invention, what I therefore claim as new, and desire to secure 40 by Letters Patent thereon, is—

1. In combination with a knitting-machine stop-motion having a stop-finger located outside the cloth and needles and having a cloth-presser located within the cloth; with a 45 spring-controlled trip located within the cloth and needles adapted to engage the stop-finger and actuate the stop-motion when the cloth leaves the needles, said trip being controlled by the said presser, substantially as 50 described.

2. In combination, a knitting-machine, and a stop-motion having a stop-finger located exterior to the needles and cloth, and a presser located within the needles and cloth; with a 55 movable trip located adjacent to the presser and adapted to actuate the stop-finger when the cloth leaves the machine, substantially as described.

3. The combination of a knitting-machine, 60 and a stop-motion having a spring-pressed stop-finger located exterior to the needles and cloth, and a spring-actuated presser located within the needles and cloth; with a laterally-movable trip located adjacent to the 65 presser-arm, and connected therewith so as to be controlled thereby, said trip actuating the stop-finger when the cloth leaves the machine, substantially as described.

In testimony that I claim the foregoing as 70 my own I affix my signature in presence of two witnesses.

ERNEST TOMPKINS.

Witnesses:

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H. C. WILCOX.