

(No Model.)

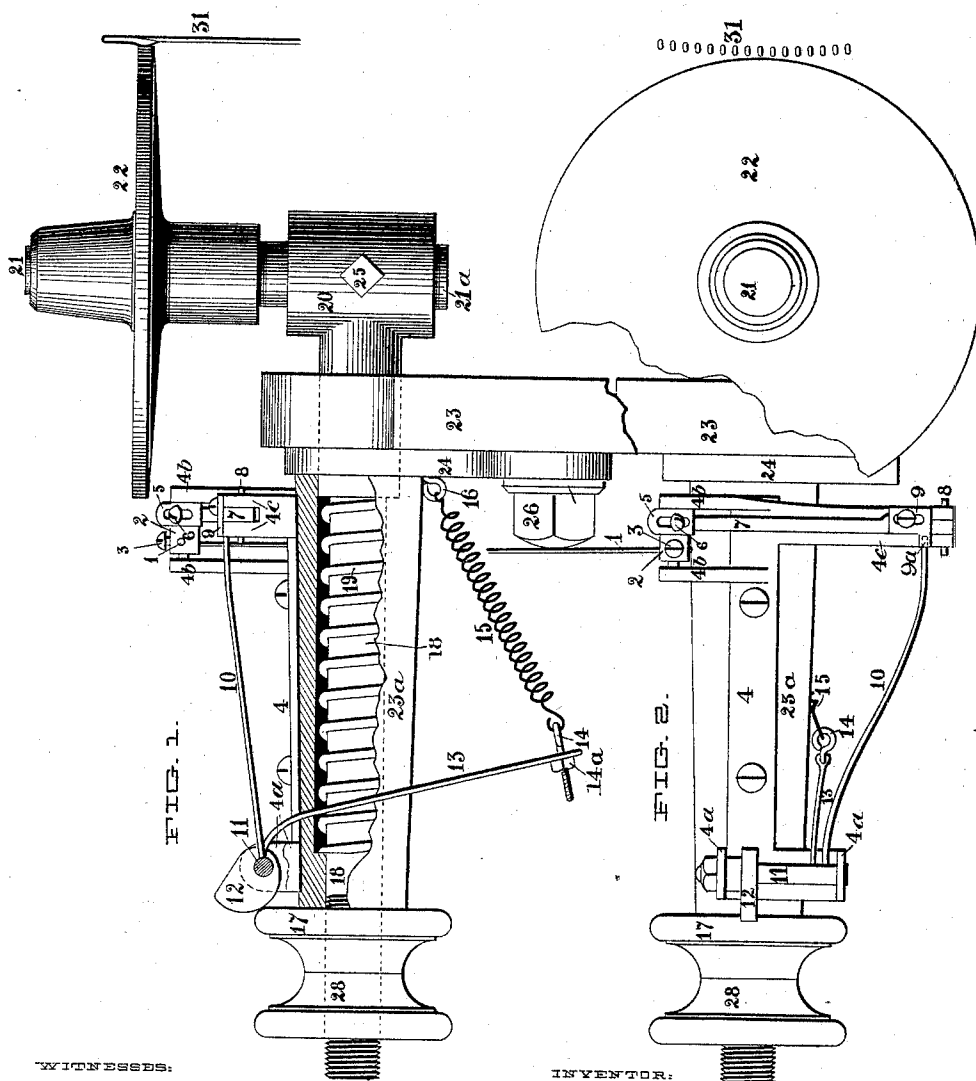
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QUARTER SAVER FOR CIRCULAR KNITTING MACHINES.

No. 584,859.

Patented June 22, 1897.



WITNESSES:

William Wilcox.
C. C. Canfield

INVENTOR:

RICHARD ADDISON DIXON

BY *Franklin Scott* ATTORNEY.

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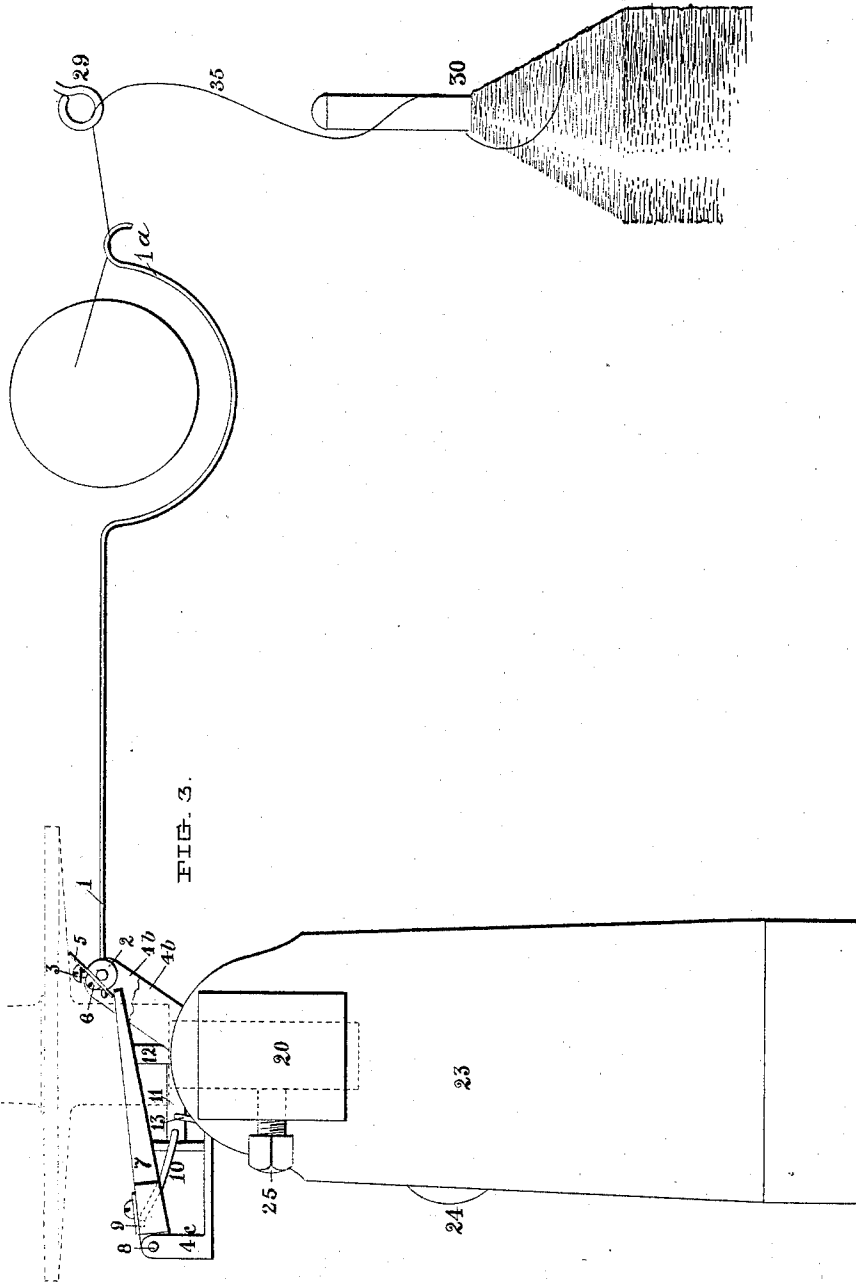
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UNITED STATES PATENT OFFICE.

RICHARD ADDISON DIXON, OF BENNINGTON, VERMONT.

QUARTER-SAVER FOR CIRCULAR-KNITTING MACHINES.

SPECIFICATION forming part of Letters Patent No. 584,859, dated June 22, 1897.

Application filed January 14, 1895. Serial No. 534,761. (No model.)

To all whom it may concern:

Be it known that I, RICHARD ADDISON DIXON, of the village of Bennington, in the county of Bennington and State of Vermont, have invented certain Improvements in Quarter-Savers for Circular-Knitting Machines, of which invention the subjoined description, in connection with the accompanying drawings, constitutes a specification.

The invention is embodied in special devices for throwing out of action the presser-wheel of a circular-knitting machine in which spring-needles are used whenever the feed-thread breaks or runs out, and in connection therewith means for regulating the length of the broken end of yarn left adhering to the fabric, or, in other words, means for so timing the stoppage of the machine with reference to the break that the broken end shall not all be knit into the body of the fabric before the presser-wheel is withdrawn from action on the barbs of the needles when there is no thread running in to preserve the integrity of the fabric.

The invention is fully shown in the drawings, in which—

Figure 1 is a side view of a presser-stand presser-wheel with my invention attached. Fig. 2 is a plan of the same. Fig. 3 is an inside end elevation of the same parts.

In the illustrations I have not shown the stand which carries the bur-wheel, as this part of the mechanism does not differ materially from those in common use. The presser-wheel 22, which in use bears against the barbs of the needles 31, is mounted in the usual way on stud 21^a, which is carried in the socket 20 of the slide 18. This slide is carried in the tubular shell 23^a of the stand 23 and is threaded at its outer end to receive the adjusting-nut 17 and the check-nut 28. By means of these two nuts the contact between the presser-wheel and the barbs of the needles is adjusted. Such contact is maintained by means of the spring 19, which surrounds slide 18, the expansive force of which is normally exerted to crowd the presser-wheel against the needles. A rotatable cam 12, which is carried on the rock-shaft 11, which is journaled in bearings 4^a 4^a of stand 4, is adjusted to force backwardly the slide 18 by impinging against the nut 17. An arm 13

projects from this rock-shaft, to the end of which the retractile spring 15 is attached, the other end being attached to some fixed part of the apparatus, as at 16. The function of this spring is to throw over the eccentric cam 12, and thus force the presser back out of contact with the needles. A setting-lever 10 is also attached to the rock-shaft 11, the free end of which is adapted to be locked down by the latch 7, which carries the adjustable catch-plate 9. Latch 7 is pivoted in bearings 4^b of the stand 4, and its free end is adapted to be locked or secured by the catch-plate 5, which is an adjunct of the rock-shaft 2, which is journaled in the bearings 4^b. The catch-plate 5 has an elongated slot through which the adjusting-screw 6 passes and takes into the rock-shaft. By means of this slot and screw the lower end of the catch-plate 5 may be set any desired distance over or back from the end of the latch 7. This feature of adjustability, located at this coöperative point, is relied on to predetermine how much drop the drop-wire 1 must have before the engaging end of catch-plate 5 will be thrown up high enough to allow the end of latch 7 to escape and release the spring 15, so that it can act to throw off the presser.

The drop-wire 1, connected with rock-shaft 2, terminates in a hook 1^a, which is adapted to ride on the feed-thread when the knitting is progressing properly. This drop-wire is located outside of the main stand 23, whereas heretofore it has been located between the inside of the stand and the feed-bur. By placing it in the position shown the distance from its bearing on the yarn and the point where it is caught by the bur-wheel and fed to the needles is materially augmented, so that in machines running at high speed there is vastly less opportunity for the end to be knit into the fabric and the next under course of stitches being cast off the needles. If the feed-thread breaks or runs out, it releases the drop-wire, which falls and by rotating rock-shaft 2 releases catch-plate 5 from its engagement with latch 7, and thus permits spring 15 to throw off the presser from the needles.

It is obvious that to promptly stop the machine before the broken end of the feed-thread has been knit into the fabric the amount of overlap of the catch-plate 5 over the end of

latch 7 should be the smallest possible, for the farther the end of the drop-wire has to fall to release the stopping devices the nearer the end of the feed-thread will be to being knit into the fabric and the greater will be the liability of the presser to press off the work from the needles.

I therefore claim as my invention and desire to secure by Letters Patent—

10 1. The combination with the needles and presser-wheel of the described drop-wire, rock-shaft to which it is attached, catch-plate, latch, rocking cam-shaft, the presser-wheel slide equipped with the presser-wheel, re-
15 tracting cam and means connected with said cam-shaft for engaging with the latch and for actuating the cam, all constructed and arranged to operate substantially in the manner described and for the purpose set forth.

20 2. The described means for timing the action of the mechanism provided for throwing the presser-wheel back out of action, with reference to the failure of the feed-thread, which consists of the catch-plate provided with the
25 elongated slot and set-screw connected with the drop-wire, the latch, and the devices for throwing out of action the presser-wheel, com-

bined and arranged to operate substantially as specified.

3. The combination with the presser-wheel of a circular-knitting machine and means connected with it for holding it to its work, against the barbs of the needles while the knitting is proceeding properly, of a cam-lever attached to the presser-stand for forcing the presser-wheel out of contact with the needles, a spring for actuating said cam-lever, devices between the cam-lever and the drop-wire to control the former, and a drop-wire under which the feed-thread runs and which is supported in an elevated but inoperative position by said thread and is adapted to release said devices by its act of falling in response to a break in the feed-thread, constructed and arranged to operate substantially in the manner described and for the purposes set forth.

In testimony whereof I have hereto subscribed my name, at Bennington, in the State of Vermont, this 20th day of September, A. D. 1893.

RICHARD ADDISON DIXON.

In presence of—

HERBERT A. DIXON,
FRANKLIN SCOTT.