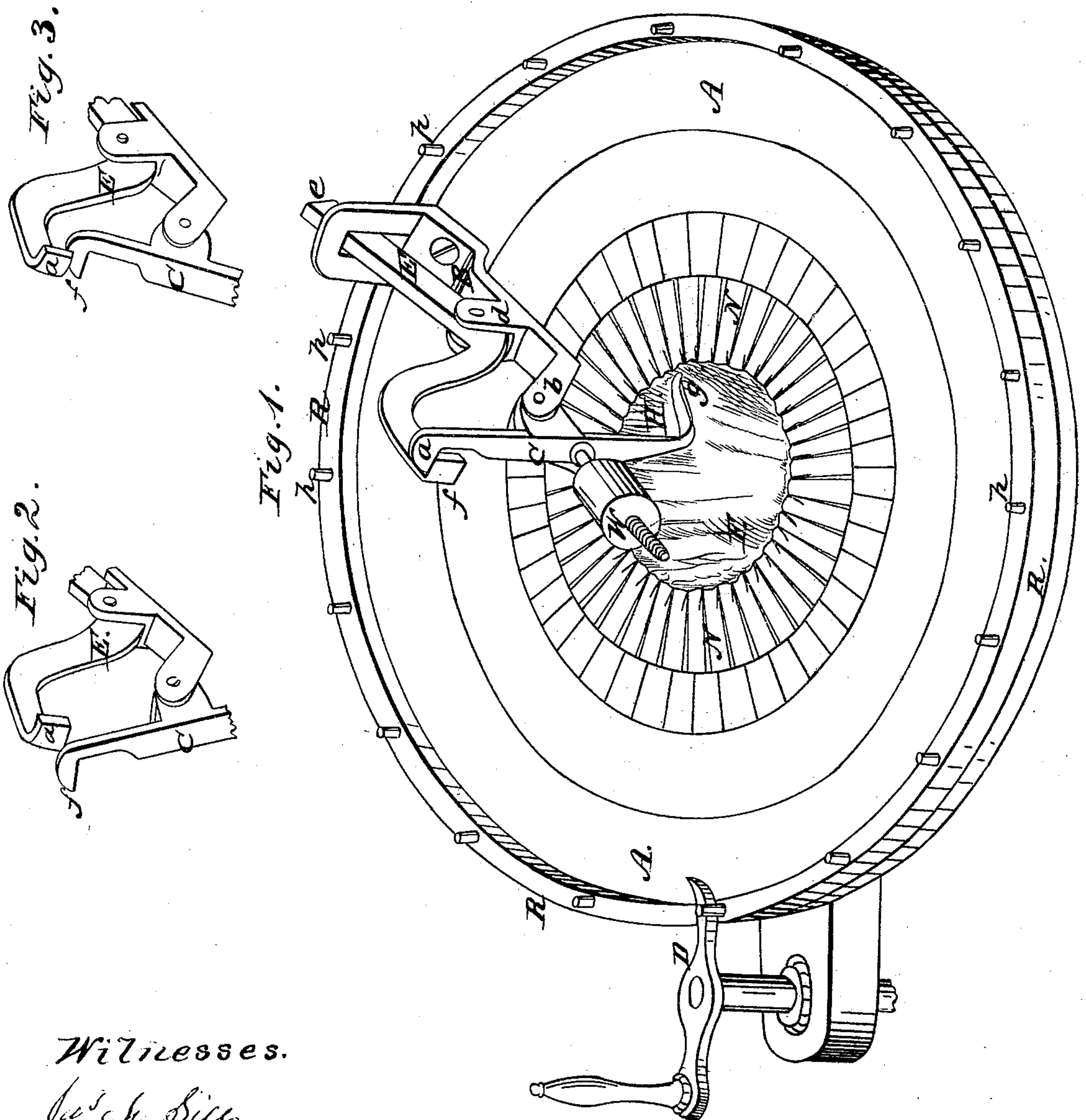


O. Parkhurst. Knitting Machine.

N^o 643.
31,647.

Patented Mar. 5, 1861.



Witnesses.
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KNITTING-MACHINE.

Specification of Letters Patent No. 31,647, dated March 5, 1861.

To all whom it may concern:

Be it known that I, ORSON PARKHURST, of Cohoes, Albany county, State of New York, have invented a new and useful improvement in that part of the apparatus of knitting-machines known as the "stop-motion," whereby, on the failure of the stitch or any other irregularity in the operation of the machinery the integrity of the fabric is broken or deranged, the machine can be stopped from working until the defect is remedied; and I declare the following specification, with the drawings hereto attached as part of the same, to be a full and perfect description of my invention.

Figure 1 represents in perspective a portion of a knitting loom with my invention attached to it, Figs. 2 and 3 separate representations of a portion of my apparatus showing its manner of operation by different causes.

Similar letters in the figures indicate the same parts of the apparatus.

My invention is attached to what is known as Bailey's circular knitting machines.

Fig. 1 shows the upper portion or plates of the machine which carry and operate the knitting apparatus. A is the revolving plate to which the burs and sinkers are attached, and other machinery to operate the needles, but which are not shown in the drawing, as they are entirely independent of and unnecessary to illustrate the stop-motion; and their position and operation are well known to all using Bailey's loom. From the points of the needles N depends the fabric F as it is knit, the integrity of the cloth depending upon each needle's making one perfect stitch in its turn. If a stitch be dropped a gap occurs in the work which unless repaired at once will be repeated at the same point, leaving a breach in the cloth. If on the contrary a stitch be not properly delivered clear of the needle the revolution of the apparatus will double the next stitch upon it loading up, as it is called, making a welt or cord in the cloth and commonly causing the breaking of the needle.

The object of my stop-motion is by a simple apparatus, to arrest the movement of the machine, whenever either a stitch is dropped or a needle loaded.

Upon the face of the revolving plate A is fixed the arm B which projects over the other plates until it terminates over the needles N in a turned up fork *b* serving to support the axis of a vertical librating lever C. Near the middle of B is a standard *d* supporting the axis of a horizontal librating lever E whose outer end *e* projects beyond the arm B over the outer ring R of the machine. The inner end of this lever is curved upward and inward until it projects beyond the points of the needles when a short part of it *a* is bent horizontally at right angles. This part *a* is intended to lie under and rest against the lower edge of a notch in, or the bent upper edge of lever C as shown distinctly in Fig. 1.

Lever C is suspended a short distance inward of the point of the needles N and its lower end *g* is bent inward and pointed and so fitted, as to run along the surface of the cloth just below the point of the needle, and to enter into any breach occasioned by the want of a stitch, or whenever the fabric is enlarged at its edge outward by the duplication of stitches upon the same needle. In order to regulate the pressure necessary to effect this, with reference to the stop machinery, there projects out opposite the axis of C a rod upon which a small weight W is placed, arranged to screw back and forth upon the rod, by which the pressure upon the cloth may be adjusted so as neither to impede the knitting operation nor to endanger the tearing of the fabric.

The outer ring R, (a device used with these machines) moves freely in a groove around the periphery of the machine, as the medium of communication between the stop motion and the detaching apparatus, to disengage the moving power. It has at short intervals pins *p* inserted vertically into it rising just high enough so as to clear the end *e* of lever E while its inner end underlies the edge *f* of lever C.

To the framework of the machine is attached a lever D, connected with the throwing off or detaching apparatus, to disengage the power. This lever has one of its arms, while the machine is in motion, lying between any two of the pins *p p* so that any movement of ring R may turn it off the machine and thus disengage the power ma-

chinery. The detaching apparatus being a common device capable of various modes of arrangement is not shown.

The operation of the machine is thus:
 5 The end *a* of lever E is placed under the end *f* of lever C; the weight of the outer end of E holding it there by pressure, the due effect of that pressure in reference to the pressure of the point *g* of lever C against
 10 the cloth being adjusted by the screwing of the weight W inward or outward upon its rod. When thus adjusted so long as the needles operate duly the point *g* will travel over a smooth surface of cloth, and the outer
 15 end *e* of lever E will circulate above the pins *p*. But if the needles fail to make a stitch and leave an opening as at H, in the surface of the fabric, the point *g* will enter into it and in so doing throw the outer end *f* of C
 20 into the position shown in Fig. 2, disengaging *a* and permitting *e* to drop down between the pins *p*, forcing the ring R to turn

and move lever D till the power is disengaged and the machine stopped. If a needle is loaded up, it will raise the surface of the fabric at its upper edge throwing the end *f* into the position shown in Fig. 3 dropping *e* and producing a like result.

I claim—

The combination of the librating lever E with the lever C, its adjusting weight W and point *g* operating to and with each other in manner and form as described, so as to disengage the operating power through ring R, upon the dropping of a stitch, or loading of the needles or any false operation of the machinery by which the integrity of the fabric knit is affected; substantially as the same is set forth and described in the within specification.

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Witnesses:

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