S. D. Fairbanks.

Knitting Mach.

No. 18,792. Patented Dec. 1, 1857.

Fig. 1.

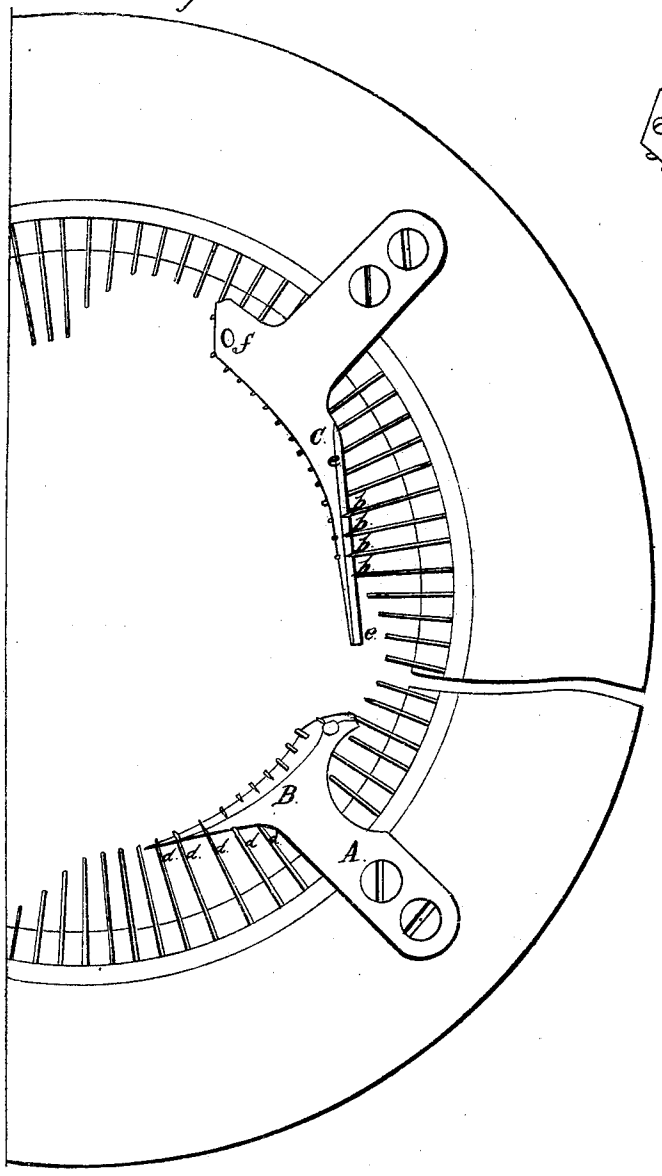


Fig. 3.

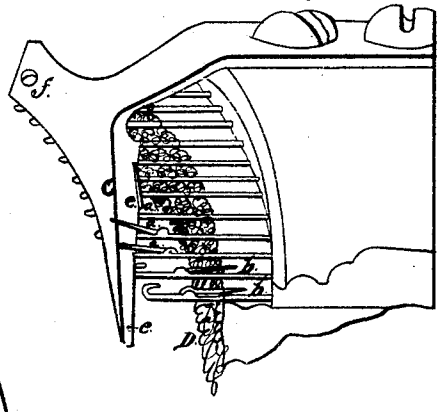
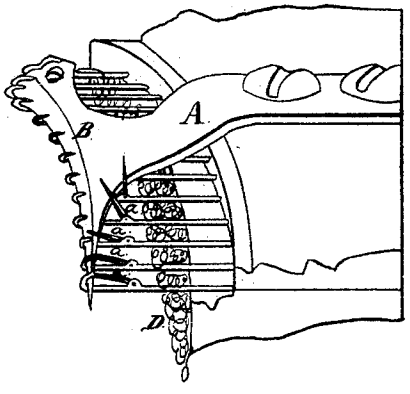


Fig. 2.



Witnesses.

John Ogden Dey

Rob^t Varick DeWitt

Inventor

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N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON D. C.

UNITED STATES PATENT OFFICE.

S. D. FAIRBANK, OF COHOES, NEW YORK, ASSIGNOR TO HIMSELF AND CHARLES H. ADAMS, OF SAME PLACE.

KNITTING-MACHINE.

Specification of Letters Patent No. 18,792, dated December 1, 1857.

To all whom it may concern:

Be it known that I, SHERMAN D. FAIRBANK, of Cohoes, Albany county, State of New York, have invented an Improvement in the Construction of Knitting Machinery; and I declare the following specification, with the drawings hereto attached as part of the same, to be a full and perfect description thereof.

My improvement is intended as a substitute for the "needle latch regulator" described in the Letters Patent issued to Jonas B. Aiken, assignor, &c., on the 22d of May, 1855.

Figure 1 represents in plan a portion of a rotary knitting machine, with two-thirds of the needles removed, with my apparatus attached, also with Mr. Aiken's latch regulator attached, in contrast with mine. Fig. 2 represents Mr. Aiken's latch regulator in perspective and Fig. 3 my improvement also in perspective.

Similar letters in the different figures denote the same parts of the apparatus.

Mr. Aiken's invention is that of an arm A projecting from the frame of the machine just above the needles, terminating in a thin bar or plate B lying at right angles to them, with a sharply pointed end, arranged so as to enter the hooks of the needles and lift up by its wedge shaped continuation the latches *a*, and turn them over, opening the hooks to receive the yarn as the needles are drawn back in the knitting operation.

The practical difficulty in the working of this device is, that because of the delicate structure of the needles, and the necessity of extreme exactness in their movements the unavoidable vibration of the machinery, from its very rapid movements, or irregularity in the thickness of the yarn, by knots or otherwise, causes, at times, the point of the bar to miss the hooks, and pass above or below the needles, forcing them up or down or sidewise against each other, injuring them and spoiling the work itself, frequently causing great loss of time in repairs and readjustments of the apparatus, besides cost in replacing the needles.

Now my invention is intended to obviate the need of, and do away with the use of such a latch opener, by the use of a bar or interceptor, arranged in such a position over the needles, as to intercept the latches after they are opened or thrown back by the stitches of the fabric knit, and hold them open until the yarn is supplied to form new stitches and then allow them to be closed again. The yarn for the new stitch may be supplied through a hole in the interceptor made for that purpose.

The cause of the coming down of the latch is this: After a yarn has passed into the hook, and has been drawn backward by the retrograde movement of the needles, the next forward movement of the needle leaves the loop or stitch stationary, and passes through it, the loop (being part of the cloth which hangs downward), pressing with considerable tension upon the needle. Now the yarn passing over the latch, which lies nearly back upon the body of the needle as shown at *b*, Fig. 3, when the loop reaches the end of the latch it drops down so suddenly from it upon the needle that its elasticity snaps it forward with force enough to carry it over upon the hook.

To enable others skilled in the art to make and use the improvement which I have invented, I will proceed to describe its construction and use, referring to the drawings above mentioned.

C, is a bar or arm fastened to the frame of the machine as represented in the drawing or otherwise; with its edge *e*, *e*, which forms the interceptor, arranged in such a position in relation to the needles *b*, *b*, as to catch the latches *a*, *a*, should they spring over toward the point or hook of the needles after being opened or thrown back by the stitches of the fabric, as the needles are pushed out or the fabric pressed back upon the needles in the process of knitting, so as to hold the latches open until the hooks of the needles are supplied with yarn through the hole *f*, in the opposite end of the bar C, to form a new series of stitches.

The edge *e*, *e*, of the interceptor is curved or inclined toward the shanks, of the needles as shown in the drawing,—to turn back the latches, so as that they may pass under the interceptor, which is so arranged to let the needles pass freely under it, and traverse in and out, as may be required to effect the knitting of the fabric.

In the process of knitting the needles are moved out through the stitches, so as to pass the stitches over the latches, and while so moved out the yarn is supplied into the hooks of the needles when they are drawn

back, the stitches closing the latches and slipping off over the ends of the needles so as to form new stitches, of the yarn in the hooks of the needles which stitches slip back upon the needles in their turn as the needles are moved out and open the latches again for a new supply of yarn to form another set of stitches.

It will be seen from the above description that there is no possible danger of the needles being injured. No matter at what speed the arm C, may move the latches, if they fly up, will be intercepted by it, and kept certainly out of the way of the yarn, a result fully proved by a fair experience in the use of the apparatus. I apply to my invention the name of needle latch interceptor.

I believe I have described and represented the improvement in knitting machines whch I have invented, so as to enable any person skilled in the art to make and use it. I will now state what I desire to secure by Letters Patent to wit: I do not claim a latch regulator with a point to pass under the latches after they are closed such as is described and represented in the patent granted to Jonas B. and Herrick Aiken, May 22d, 1855. Neither do I claim a yarn carrier in combination with a latch regulator as described in said patent. But

What I do claim is—

1. A latch interceptor consisting of a bar or arm arranged in such a position over the needles as to intercept the latches after they are opened or thrown back by the stitches of the fabric knit, and hold them open until the yarn is supplied to form new stitches, and then allow them to be closed again substantially as described.

2. I also claim in combination with the above described interceptor, the yarn carrier *f*, for the purpose of delivering the yarn substantially as set forth in the within specification.

S. D. FAIRBANK.

Witnesses:

JOHN OGDEN DEY,

RUH VARICK DE WITT.