S. HUFF.

Knitting-Machine.

No. 210,329. Patented Nov. 26, 1878.

Fig. 1.

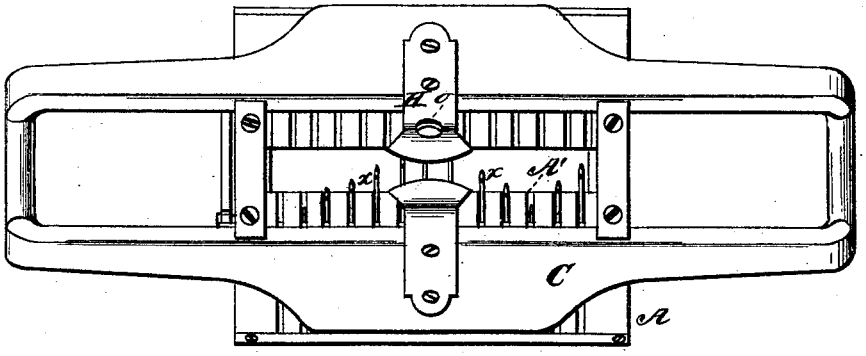


Fig. 2.

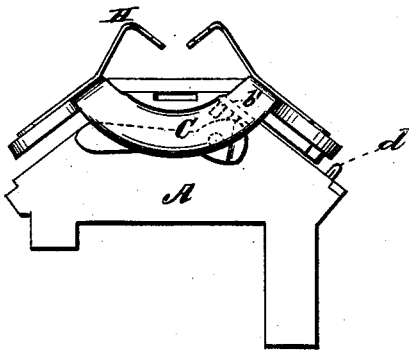


Fig. 3.

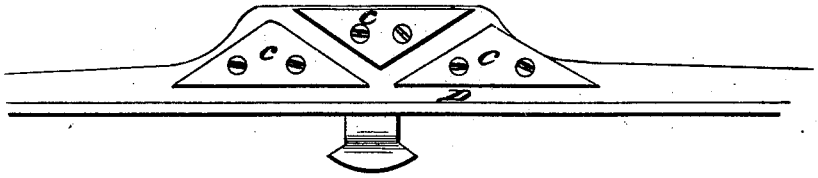
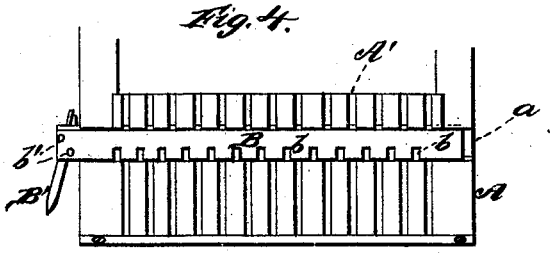


Fig. 4.



WITNESSES

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UNITED STATES PATENT OFFICE.

SAMUEL HUFF, OF MOHICAN, OHIO.

IMPROVEMENT IN KNITTING-MACHINES.

Specification forming part of Letters Patent No. **210,329**, dated November 26, 1878; application filed October 5, 1878.

To all whom it may concern:

Be it known that I, SAMUEL HUFF, of Mohican, in the county of Ashland and State of Ohio, have invented a new and valuable Improvement in Knitting-Machines; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a top plan of my knitting-machine. Fig. 2 is an end view of the same. Fig. 3 is a bottom-plan view of one of the cam-bars of the carriage; and Fig. 4 is a top-plan view of one of the bed-plates.

My invention relates to a stocking-knitting machine; and the novelty consists in the construction, arrangement, and adaptation of parts, as will be more fully hereinafter set forth, and pointed out in the claims.

My invention is designed as an improvement on what is known as the "Lamb knitting-machine," and it is adapted to knit the heels of stockings in such a manner as to finish them complete on the machine.

To form the heel of a stocking, I knit back and forth on one side of the machine, and each time I knit across I raise one needle up above the needle-operating cams, on alternate ends of the side used, by a hand-hook passed through a perforated latch on the carriage, until two-thirds of the needles are up out of operation from the cams, and I then replace them in operation by using the same hook to push them back, so that they will be again operated by the cams, the object being to narrow or widen the heel at pleasure.

In carrying out my invention I employ an ordinary bed-plate and carriage, the bed-plate having needle-slots and needles and carriage-way. The carriage has the cams, which operate the needles, and a latch-lifter, perforated to admit a hand needle-hook.

The gist of my invention lies in a movable needle-bar having lateral recesses to receive and hold the needles when thrown out of operation. This bar slides longitudinally in guides, is operated by a cam-lever, and may be thrown in and out of operation with the needle-grooves in the bed at will; and in connection with this bar a recess in the carriage, above the cams, receives the operating tails or shanks of the needles when pulled out of operation by a hand-hook passed through a perforated latch to catch the needles, either to draw them up out of operation with the cams or to push them back into operation therewith.

Referring to the drawings, A represents the bed-plate, having needle guides or grooves A′ and a guideway, *a*, which receives a needle-bar, B, having transverse notches or slots *b* of corresponding number and position with the needle guides or grooves. This bar B is provided with lugs *b*′, upon which operates a pivoted cam-lever, B′, which serves to move the bar B in either direction and to throw the needle-slots *b* in or out of connection with the needle guides or grooves A′ in the bed. C represents the carriage, having cams *c c c* and a recess, D, above said cams, which receives the tails or shanks *d* of the needles *x* when pulled out of operation by a hand-hook through a perforation, *o*, in a latch, H, on the carriage.

When the machine is employed in knitting the leg of the stocking, and where it is not necessary to narrow or widen, the notches *b* in the bar B do not register with the grooves A′; but in knitting the heel of the stocking it is necessary to drop stitches in order to narrow, and to pick them up again to widen. The narrowing is performed by causing the notches *b* in the needle-bar B to register with the grooves A′, and a hand-hook, adapted to enter the eye of the needle, (and such a hook should be made of wire or other suitable material, of a size that will permit it to pass through the perforations *o* in the latch H,) is passed through said perforation *o*, entered into the eye of the needle *x*, and the needle drawn up until its tail rests in the groove D, at which time the needle thus drawn up will be out of operation, because the cams pass beneath the tail of the same. It may be necessary, in order to hold the needle in the notch *b*, to press slightly on the cam-lever B′ at the time that said needle is directly opposite the junction of the groove D with the grooves between the cams *c c*. The perforated latch H is located directly opposite the junction just mentioned,

for the purpose of operating as a rest for the hand and a marker to show the only point at which a needle can be drawn up into the groove D or pushed back into operation. The needles are drawn up and pushed back while the machine is run slowly; and as they have to be drawn alternately and at opposite sides of the set of needles, the latch H is of great utility.

What I claim as new, and desire to secure by Letters Patent, is—

1. The combination of the needle-bar B, having needle-slots *b*, with the cam-lever B′ and bed-plate A A′ *a*, as specified.

2. The carriage C, having cams *c c c* and recess D, combined with the needles *x d*, bed-plate A A′ *a*, and needle-bar B *b*, as herein specified.

3. The combination of the bed-plate A A′ *a* with the needle-bar B *b b′*, cam-lever B′, needles *x d*, latch H *o*, and carriage C *c*, having recess D, as and for the purpose set forth.

In testimony that I claim the above I have hereunto subscribed by name in the presence of two witnesses.

SAMUEL HUFF.

Witnesses:
WILLIAM GLASENER,
MATTHIAS BENDER.