

J. L. & S. L. OTIS.
KNITTING MACHINE NEEDLE.

No. 47,852.

Patented May 23, 1865.

Fig. 2.

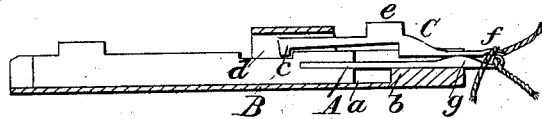
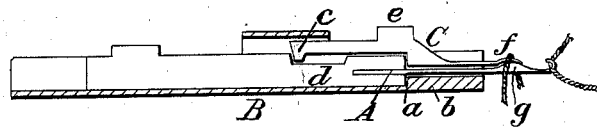


Fig. 1.



Witnesses.

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UNITED STATES PATENT OFFICE.

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IMPROVEMENT IN KNITTING-MACHINE NEEDLES.

Specification forming part of Letters Patent No. 47,852, dated May 23, 1865.

To all whom it may concern:

Be it known that we, JOHN L. OTIS, of Florence, in the county of Hampshire and State of Massachusetts, and SAMUEL L. OTIS, of Manchester, in the county of Hartford and State of Connecticut, have invented a new and useful Improvement in Needles for Knitting-Machines; and we do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 represents a sectional elevation with the latch drawn back. Fig. 2 shows a similar elevation with the latch forward over the point of the hooked needle.

Similar letters of reference indicate like parts.

This invention relates to certain improvements in that class of needles which are provided with sliding latches or casting-off needles.

The invention consists in the application to the needle of a curved projection so shaped that when the needle is drawn back, after having received the yarn, it is made to raise the point of the sliding latch and to carry it over the point of the hook, thereby allowing the old stitch to drop over the new stitch without the liability of catching. It consists also in a stop applied to the latch and operating in combination with a space in the edge of the needle in such a manner that said latch is held in a proper position while the needle is being thrust forward to receive the yarn for a new stitch, and to allow the old stitch to slip back over the point of the latch, which in this position is buried in a vertically-cut slot or groove in the needle; further, in making the needle and body of the latch of one thickness, so that they may be operated in the same slot of the needle-bed; finally, in the application to the latch of a stop and of a curved point, in combination with the elevation on the needle, in such a manner that when the needle recedes the point of the latch is compelled to drop over the hook of the needle, and the operation of casting off the old stitch is rendered certain.

A represents the needle, which is fitted into

a slot in the needle-bed B, and a shoulder, *a*, of the needle-shank, by coming in contact with a projection, *b*, on the inside of said slot, prevents the needle being thrust out any farther than desirable. The latch C is made of the same thickness with the needle, and it is fitted in the same slot of the needle-bed. It is provided with a stop, *c*, at its rear end, which works in a recess, *d*, in the upper edge of the needle-shank, and another stop, *e*, projecting from the upper edge of the latch, prevents the latch and needle being pushed back any farther than desirable. The point *f* of the latch is curved, as shown, and when said latch is drawn back, as shown in Fig. 1, the point *f*, being made thinner than the body of the latch, rests in a groove in the top edge of the projection or cam *g*, which rises from the needle, and the object of which will be presently explained. When the latch is thus drawn back, the old stitch can slip back over its point, and the hook of the needle is open to receive the yarn for a new stitch. At this point the latch is held to its position by the stop *c*, which works in the recess *d* in the needle-shank. When the needle is drawn back, the projection *g* acts on the inner termination of the curved point of the latch, which rides on said projection, raises said point, and carries it over the hook, as represented in Fig. 2, permitting the old stitch to pass off over the hooked end of the needle, thereby forming a new stitch. When the latch is in proper position to cover the hook of the needle, the stop *c* comes in contact with the upper end of the recess *d*, and the latch is held from slipping too far forward while the needle is being drawn back to cast off the stitch. The stop *e*, projecting from the upper edge of the latch, prevents the same and the needle from sliding back any farther than desirable. By this construction the needle and latch may be made of one thickness, thereby rendering them more durable than any other form of latch-needle. They may also be made of any desirable width, except at the points, where the stitch is formed, thereby giving greater strength and steadiness to the needles. Furthermore, by constructing the main needle and latch entirely separate, the sawing or drilling of the main needle, which weakens it very much, is avoided; neither

does the breaking or wearing out of one part involve the loss of the other, as in the ordinary latch-needle. The action of the latch does not depend upon the action of either the yarn or cloth, as in other latch-needles, but continues to operate with the same precision and safety to the needles whether there is cloth or yarn in the machine or not, thereby rendering them much less liable to get broken and reducing the strain on the yarn. Finally, by the use of the projection or cam on the needle to raise the point of the latch, we are enabled to use a larger hook than in other needles where the latch or casting-off needle works parallel to the main needle.

Having thus described our invention, we claim as new and desire to secure by Letters Patent—

1. The recess *d* in the needle-shank, to oper-

ate in combination with the stop *e* on the latch, substantially as and for the purpose set forth.

2. Making the needle and latch of one thickness, and operating them in the same slot of the needle-bed, as specified.

3. The stop *e* and curved point of the latch, in combination with the cam *g*, constructed and operating substantially as and for the purpose described.

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