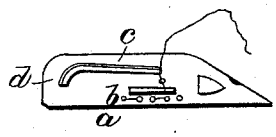
N. B. EVELAND.

Sewing-Machine Shuttle.

No. 78,944. Patented June 16, 1868.



Witnesses;

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NELSON B. EVELAND, OF HARTFORD, CONNECTICUT.

Letters Patent No. 78,944, *dated June* 16, 1868.

IMPROVEMENT IN SHUTTLE FOR SEWING-MACHINES.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, NELSON B. EVELAND, of Hartford, in the State of Connecticut, have invented an Improvement in Sewing-Machine; and I do hereby declare that the following, taken in connection with the drawings which accompany and form part of this specification, is a description of my invention sufficient to enable those skilled in the art to practise it.

In sewing-machine shuttles, as ordinarily constructed, there is a series of small holes, through which the thread is laced for the purpose of giving the requisite degree of tension, and from which it is then brought out through one of the forward holes nearest the shuttle-point, whence it passes, in sewing, direct to the point of its connection or interlacing with the needle-thread.

In consequence of this plan of conveying the thread from the shuttle, imperfect stitching frequently occurs, which mars the uniformity and beauty of the work; this imperfection arising from what are called "cross" or "twist"-stitches.

Such "cross" or "twist"-stitches are made whenever the shuttle-thread, from any cause, is not properly brought to its true line or position relatively to the needle, so that the needle, in its next descent, shall pass on the proper side of it, the effect of such action being that the shuttle-thread passes partially around the needle-thread, as well as through its loop, the latter only being all that it is desired or required to do to make the well-known and deservedly popular lock-stitch.

The reason of this liability to "cross" is due to the fact that the amount of thread let out, that is, the amount reaching from the cloth to the hole, whence it leaves the shuttle, is so great, when the shuttle is in its extreme forward position in the race, that unless the thread be unusually stiff, it has no tendency, when the shuttle commences to return, to move back to the rear side of the slot in the shuttle-race before the needle descends, the consequence being that the point of the needle enters the cloth on the back instead of the front side of the shuttle-thread, and hence the "cross."

To avoid this difficulty a light spring has sometimes been placed on the top of the shuttle, underneath which the thread is passed; but the objections to this remedy are that the spring is very liable to get bent and be troublesome, and also is apt to get broken, whilst its action is also uncertain.

By my improvement I dispense with any spring or other device usually added to the shuttle, and accomplish with certainty the end desired, by a simple slot, curved at its end which is nearest the heel of the shuttle.

In the drawing, *a* represents the shuttle, *b* the usual tension-holes, and *c* the long slot, with its curved end, *d*, and which slot constitutes my improvement. The shuttle, in other respects, may be constructed in any of the well-known ways.

In the act of sewing, the operation is as follows: When the needle is at its highest elevation, and the shuttle in its farthest forward position, the shuttle-thread is held in the extreme end of the curved part of the slot, and this curve is so formed and located as with unerring certainty to carry the thread back as the shuttle starts to return, and so compel it to move back in the slot and from the race, and the thread remains there until carried back far enough to avoid the point of the needle.

Inasmuch as the strain is on the thread, the latter would, if it emerged from a hole, as is customary, be drawn from the bobbin in the further retreat of the shuttle, and make more slack than is wanted, but with my peculiarly-shaped slot, after the curved part has performed its important duty of carrying the thread away from the needle, and out of the way of making a cross-stitch, the straight portion comes into action at the appointed time, and allows the thread to run easily and freely back to the front end of the slot, and thus avoids the drawing of thread from the bobbin until it returns and tightens the stitch.

It will readily be seen that a hole for the thread, placed at or near the heel of the shuttle, could not accomplish the purpose, for the reason that it would draw thread from the bobbin at the wrong time, namely, when the needle is down, instead of when the needle is up and the stitch is being tightened.

It will also be seen that the form of slot frequently used in shuttles for the purpose of equalizing the tension and delivery of the thread as it leaves the bobbin, and which is made in the arc of a circle for this purpose, cannot effect the result attained by my peculiarly-formed slot.

I claim the slot in the shuttle, formed as described, with a long portion, *c*, and an abruptly-curved end, *d*, and for the purpose set forth.

NELSON B. EVELAND.

Witnesses:

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