

E. Strain, Sewing Machine.

No. 112,980.

Patented Mar. 21, 1871

Fig. 1.

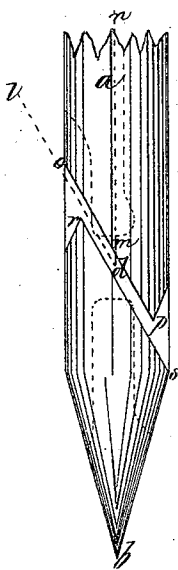


Fig. 2.

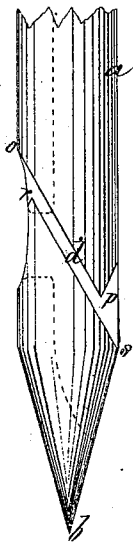


Fig. 3.

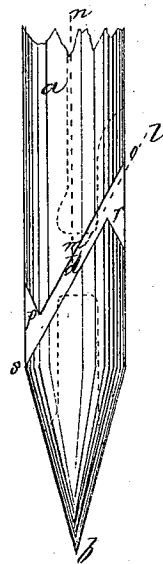


Fig. 4.

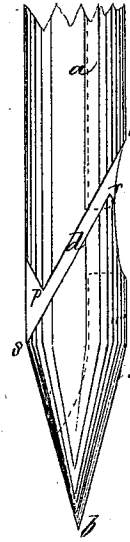


Fig. 5.

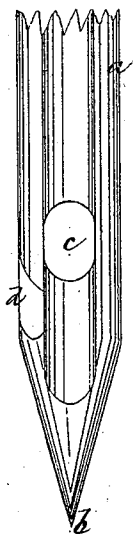


Fig. 6.

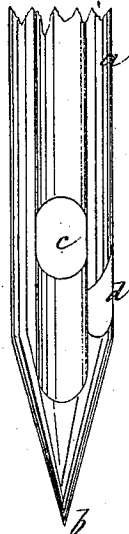
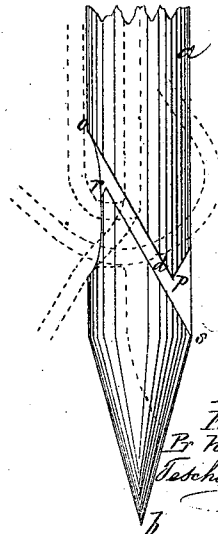


Fig. 7.



Witnesses,
W. J. Cambridge
D. C. Bates

Inventor,
Edwin Strain
By his Attorneys
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UNITED STATES PATENT OFFICE.

EDWIN STRAIN, OF NEWTON, MASSACHUSETTS.

IMPROVEMENT IN NEEDLES FOR SEWING-MACHINES.

Specification forming part of Letters Patent No. **112,980**, dated March 21, 1871.

To all whom it may concern:

Be it known that I, EDWIN STRAIN, of Newton, in the county of Middlesex and State of Massachusetts, have invented certain Improvements in Sewing-Machine Needles, of which the following is a full, clear, and exact description, reference being had to the accompanying drawing, making part of this specification, in which—

Figures 1, 2, 3, and 4 are side elevations of sewing-machine needles constructed in accordance with my present invention. Figs. 5 and 6 are front elevations of the same. Fig. 7 is a side elevation of one of my improved needles, representing the relative positions of the thread to the slit or opening in the eye during the various stages in the operation of sewing.

To facilitate the operation of threading a sewing-machine needle, and to prevent the escape of the thread therefrom, is the object of my invention, which consists in a sewing-machine needle provided with a straight slit or opening communicating with the eye and inclined to the axis or center of the needle, the upper corner of the lower side or wall of the slit and the lower corner of the upper side or wall thereof being beveled or cut away, so that the needle, in entering or leaving the cloth or other material to be sewed, will be prevented from catching into and injuring the material, the needle being threaded with greater ease, and the possibility of the thread escaping therefrom being entirely avoided.

To enable others skilled in the art to understand and use my invention, I will proceed to describe the manner in which I have carried it out.

In the said drawing, *a* represents the shank of a sewing-machine needle; *b*, its point, and *c* its eye. Through the side of the needle, and communicating with the eye *c*, is formed a straight opening or slit, *d*, the direction of which is inclined to the center or axis of the needle, as indicated by the acute angle *l m n*, Figs. 1 and 3. The upper side or wall, *o p*, of the slit *d* is beveled off or cut away at its lower corner, *p*, so as to be situated rather nearer the center of the needle than the lower end, *s*, of the lower side or wall, *r s*, of the

slit, whereby the needle is prevented from catching and injuring the material as it passes into it. The lower side or wall, *r s*, is also beveled off or cut away at its upper corner, *r*, which is situated slightly nearer the axis of the needle than the upper end, *o*, of the upper side or wall, *o p*, to prevent the needle from catching as it leaves the material. The upper corner, *r*, of the wall *r s* terminates at a point on a line with or a trifle above the line of the upper side or top of the eye *c*, and the lower corner, *p*, of the wall *o p* terminates at a point on a line with or a trifle below the line of the bottom or lower side of the eye *c*, thus making the opening in a vertical direction to equal or exceed that of the height of the eye *c*, the ends of the slit or opening *d* extending to or beyond its top and bottom, by which construction the needle may not only be readily threaded, but the thread, after having passed through the slit into the eye, cannot escape therefrom when the needle is performing its office.

In addition to the above-mentioned advantages resulting from the use of my improved needle, the operator may employ thread of various sizes—say from Nos. 30 to 120—in one and the same-sized needle without the possibility of the thread escaping.

The straight slit or opening *d* may lead into the eye *c* from the right side of the front of the long groove, as shown, the direction of the slit being such that the thread will occupy the same relative position thereto as that shown in Fig. 7—that is to say, the direction of the slit or opening *d*, if made on the right of the front of the groove, Fig. 3, must be parallel to that made in a needle on the left of the front of the groove, Fig. 1; otherwise the thread would be liable to escape from the eye *c*. I prefer, however, to have the slit enter the eye on the left of the front of the long groove, as the corners *p* and *r* can be more conveniently beveled or cut away, as required.

It is evident that my improvement may be adopted in the construction of most or all of the different sewing-machine needles now in use—for instance, those having a long deep groove on one side and with a short shallow groove on the other, or those having a groove

on one side only, with the eye countersunk on the side opposite to that having the groove.

Claim.

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

A needle having a diagonal straight slit or opening, *d*, communicating with the eye *c*, and inclined to the axis of the needle, the corners *p* and *r* of the slit being beveled off and ex-

tending to or beyond the top and bottom of the eye, substantially in the manner and for the purposes set forth.

Witness my hand this 25th day of January, 1871.

EDWIN STRAIN.

Witnesses:

W. J. CAMBRIDGE,
P. E. TESCHEMACHER.