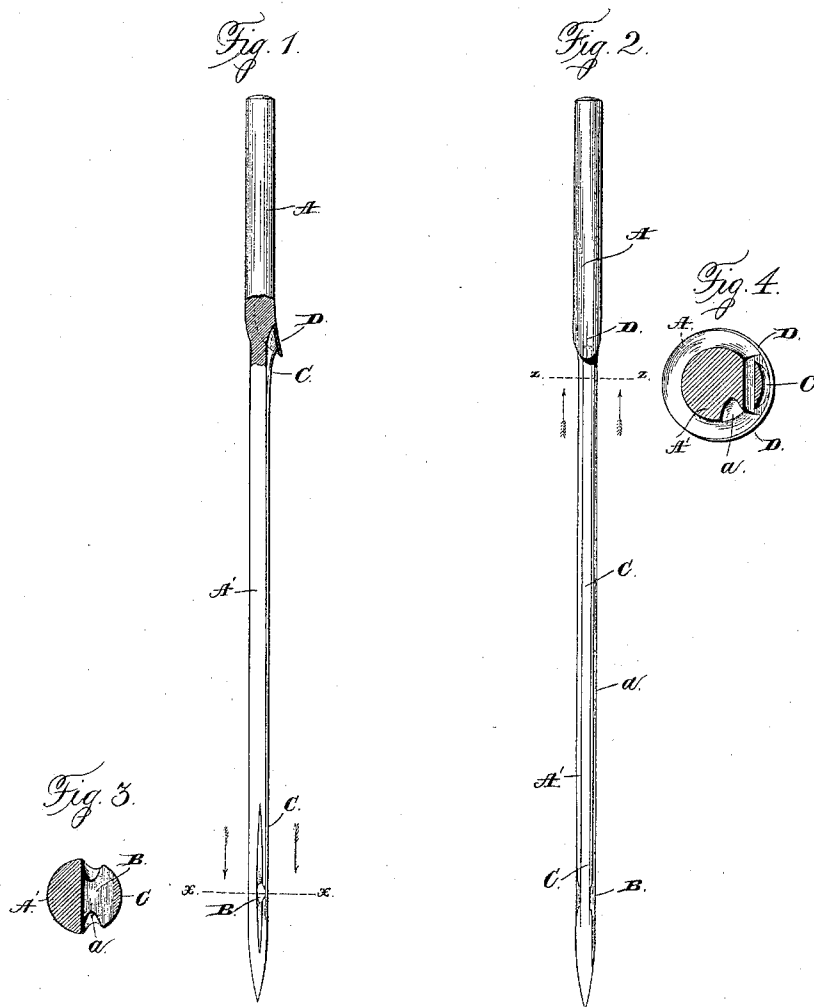


(No Model.)

E. J. HALL.
NEEDLE FOR SEWING MACHINES.

No. 467,408.

Patented Jan. 19, 1892.



Witnesses:
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UNITED STATES PATENT OFFICE.

EVA J. HALL, OF STILLWATER, MINNESOTA, ASSIGNOR TO THE ST. CROIX MANUFACTURING COMPANY, OF HUDSON, WISCONSIN.

NEEDLE FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 467,408, dated January 19, 1892.

Application filed December 29, 1888. Serial No. 294,959. (No model.) Patented in England January 2, 1890, No. 86.

To all whom it may concern:

Be it known that I, EVA J. HALL, of Stillwater, in the county of Washington and State of Minnesota, have invented certain new and useful Improvements in Needles, (for which English Patent No. 86 was granted to me upon the 2d day of January, 1890;) and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which—

Figure 1 shows a view of my needle in elevation, with a part broken away to show the construction of the spring-end-engaging shield; Fig. 2, a view in elevation of the needle turned to present its spring and shield side to the front; Fig. 3, a section of the needle on line *xx* of Fig. 1, and Fig. 4 a section on line *zz* of Fig. 2.

Letters of like name and kind refer to like parts in each of the figures.

The object of my invention is to provide an improved needle for use in sewing-machines; and to this end my invention consists in the needle, and in the construction, arrangement, and combination of the parts thereof, as hereinafter specified.

My invention relates particularly to that class of needles in which there is a spring-closed eye into which the thread can be passed through an opening instead of having to be thrust endwise through the eye.

While the special object of the invention is to provide a sewing-machine needle which can be easily and quickly threaded by any one without the necessity of seeing the needle-eye, I wish it to be understood that I do not intend to limit myself to sewing-machine needles in the application of my invention.

Needles of other kinds or for other purposes can advantageously be constructed in accordance with my invention.

In the drawings, A designates the holding portion of the needle to be gripped or held by the holder on the needle arm or bar, and A' the needle-shank.

The needle-eye B is, as shown, set to one side of a longitudinal line passing down through the needle-point. This construction leaves a solid uncut portion of the needle-shank in line with the thrust of the needle-point, so that there is no danger of the needle

buckling or breaking at the eye. The side of the needle-shank upon which the eye is situated is flattened or cut away, as shown, leaving the side of the eye open.

A spring C, welded or otherwise fastened to or made in one piece with the needle-shank, extends up along the flat side of the needle and closes the side of the needle-eye. The upper end of this spring is bent outward away from the needle-shank, as shown, so as to facilitate the passage of the thread inward and downward behind the spring.

A concave downwardly-extending shield D, welded or otherwise attached to the portion A of the needle, covers the outwardly-bent end of the spring, and also serves to prevent the upper portion of the spring from swinging away from the needle-shank. As shown, this shield extends downward and slightly outward, and has its lower portion reduced in width to form a rounded point or tongue, whose end projects below and outside of the end of the spring C. The concavity of the shield obviously prevents the spring end from moving to one side or the other, so as to get out from behind or within the shield. With the tapering tongue on the shield extending downward and outward beyond the spring end, as set forth above, the thread will, if passed upward close to the outer side of the spring, be most easily and surely guided inward over the spring end into position to be passed directly downward behind the spring to the needle-eye. The point of the tongue will first engage the thread with its inner side, and the inclined tongue edges or sides will then, as the thread is moved upward, guide or force it inward. The spring end is engaged by the portion of thread between the tongue-edges and pressed inward thereby until the thread passes up beyond it. It then snaps outward against the shield, so as to properly guide the thread as it is passed down along the needle. The walls of the needle-eye at its open side are preferably made to extend somewhat beyond the upper and lower sides of the eye, so that the thread, when in the needle-eye, will not tend during use of the needle to work out of the eye and between the needle-shank and the spring.

A longitudinal thread-groove *a* runs along

one side of the needle-shank from the needle-eye to the upper-shank end and downward beyond from the eye a certain distance toward the needle-point. Such groove is in the same
5 plane as the needle-eye—that is, to one side of line passing through the needle-point. From the opposite side of the eye from groove *a*, a second and shorter groove extends up and down a short distance along the needle-
10 shank. The upper and lower sides of the needle-eye are preferably concaved, as shown, so as to form continuations of the grooves around through the eye.

With my needle constructed as shown and
15 described the operation of threading is a most simple and easy one, which can be performed even without looking at or seeing the needle. A portion of the thread held horizontally or at right angles to the needle is pressed upward
20 behind the shield, over the spring end, and then down between the spring and needle-shank until it reaches the open side of the needle-eye, through which it is passed into the eye. The spring closes the side of the
25 eye again after the inward passage of the thread, so that the latter cannot get back out of the eye during use of the needle. With

the sides of the needle-eye overhanging the opening at the side of the eye there is no danger of the thread being so pressed or pulled
30 outward against the spring so as to cause the same to uncloze the eye and let the thread out therefrom.

Having thus described my invention, what I claim is—

In a needle, in combination with the shank
35 having the open-sided eye, the spring for closing such eye, extending upward close to the shank and having its upper end bent outward to stand away from the side of the latter, a
40 fixed hood on the shank having a tongue extending outside of the spring end and engaging the same, so as to limit its outward movement and keep the portion of the spring below the bend close against the needle-shank
45 while the spring end stands away therefrom, substantially as and for the purpose set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 19th day of December, 1888.

EVA J. HALL.

Witnesses:

HUGH HALL,
FRED. W. GAIL.