

(No Model.)

E. J. HALL.
SEWING MACHINE NEEDLE.

No. 471,857.

Patented Mar. 29, 1892.

Fig. 1.

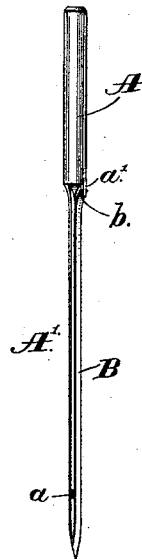


Fig. 2.

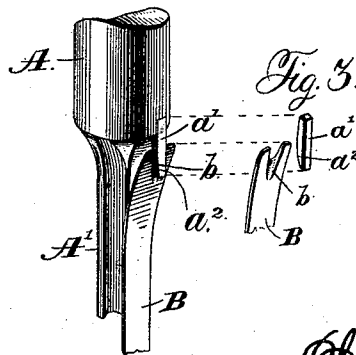
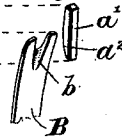


Fig. 3.



Witnesses:

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UNITED STATES PATENT OFFICE.

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

SEWING-MACHINE NEEDLE.

SPECIFICATION forming part of Letters Patent No. 471,857, dated March 29, 1892.

Application filed December 2, 1890. Serial No. 373,323. (No model.)

To all whom it may concern:

Be it known that I, EVA JENNIE HALL, of Stillwater, in the county of Washington, and in the State of Minnesota, have invented certain new and useful Improvements in Sewing-Machine Needles; 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 the needle in elevation; Fig. 2, a detail perspective view, on an enlarged scale, of the upper end of the spring and the retaining device engaging such end; and Fig. 3, a similar view showing the notched spring end and the pin or projection separated from each other.

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 quick-threading needle for use in sewing-machines and elsewhere; and to this end my invention consists in the needle and in the construction, arrangement, and combination of the parts thereof, as hereinafter specified.

While quick-threading sewing-machines needles have been made heretofore with an open-sided eye and a spring to close the latter adapted to allow the thread to be passed down between the needle-body and spring until it enters the open side of the eye, they have been found to be either difficult and costly to make or liable to get out of order during use. It has been found that it will not do to leave the upper end of the spring (which is bent out away from the needle-body in order to allow the thread to be readily passed down behind it during a threading operation) free and unrestricted in its outward movement by a retaining device, for the spring end would be liable then to be caught by the material being sewed or by some other thing during use and forced farther outward, so that the spring itself will be bent out from the needle shank or body, so as to be broken, or at least caused to uncloze the side of the needle-eye. It is therefore necessary to provide some retaining device on the needle body or shank which, while allowing the upper end of the spring to stand out from such body a distance sufficient to allow the passage

of the thread, will engage it and limit its outward movement so as to hold the portion of the spring below such end pressed closely in place against the needle-body. The retaining device, of whatsoever description it may be, is preferably to be arranged so that the spring end will not project out beyond its outer side into position to be easily caught by anything passing down along the needle shank or body.

In my pending application, Serial No. 294,959, for United States patent I show and describe a quick-threading needle of the class referred to hereinbefore, in which the spring end is covered by a downwardly-projecting hood attached to the thick upper portion of the body or shank of the needle, such hood being adapted to allow a thread to be passed up behind it and over the spring, so that it could be afterward moved down behind the latter to and into the needle-eye. My present needle is intended as an improvement upon my said former one.

The special object which I have had in view in inventing this improved needle has been the production of an article which could be more cheaply and easily made and in which the upper outwardly-turned end of the spring would be securely held not only from being bent too far directly out from the needle-body, but also from such sidewise movement as would get it and the main part of the spring out of proper position with relation to such body.

In the drawings of the present case is shown a needle, which, as usual in sewing-machine needles, has the thick upper portion A, to be engaged by the holding device on the needle-arm of the machine, and the slender part A', pointed at its lower end and above such end provided with the eye *a*. The latter is, as fully set forth in my other pending application hereinbefore referred to, situated to one side of the needle-body and has its outer side made open enough to admit the passage of a thread sidewise into the eye.

Attached to the needle-body at a point just below the eye by welding or otherwise, as desired, is the lower end of the spring B, which, extending up along the flattened side of the needle, closes the opening into the eye. At

its upper end, which is situated just below the thick part A of the needle, the spring is bent slightly out from the needle-body, so that a thread can be readily passed down between it and said body, and is provided with the notch or short open-ended slot *b*, forming a fork on the spring end, which engages a downwardly-extending pin or stud *a'*, with its lower end beveled, as shown in Fig. 2, to give it an upwardly and inwardly inclined face *a*². This pin, which is preferably made separate from the needle-body, can be attached thereto by being inserted in a small notch or retaining-recess in the upper thicker portion A of the needle or in any other suitable way without departure from my invention. If desired, it can be formed on or made in one piece with said portion. However constructed or fastened in place, it is, as shown, to extend downward into position to engage the notch or slot *b* in the spring end and the outer side of that part of the spring just at the lower end of the said slot. With this arrangement and construction the pin or stud will act effectually to limit the outward and prevent the sidewise movement of the spring end. The result is that such end cannot spring out so as to be liable to be caught and broken during use, and the main part of the spring will be held against the needle-body and kept properly in line therewith. With the pin or stud *a'* made thick enough with reference to the notch in the spring end to bring its outer face in a plane outside of or beyond the extremity of the spring-fork the spring end will be thoroughly protected against being engaged by anything passing down the needle over the stud or pin.

The manner of threading my needle and the action of the parts of the latter during a threading operation will be easily understood.

The thread held between the fingers is passed sidewise upward along the upper portion of the spring. Striking the upward and inward incline *a*² on the lower end of pin or stud *a'*, it is guided upward and inward until, having forced the spring end in toward the needle-shank and away from the pin, it passes above the spring end. The latter then flies out again to bring its fork into engagement with the retaining-pin, and the thread is free to be passed down behind the spring along the needle body or shank and into the needle-eye. With the spring end bent out away from the needle-body and the pin engaging not only the fork in such end, but also the outer side of a portion of the spring, as set

forth hereinbefore, the main portion of the spring will be held in place normally against the side of the needle-body and parallel with the latter.

With the retaining stud or pin made thick enough, as shown in the drawings and described hereinbefore, to have its outer face in a plane outside of or beyond the tips of the fork-arms on the spring end such tips will be protected against engagement by anything passing along the needle on the outer side of the pin.

It has been found that my needle, constructed and arranged as shown and described, is, while most efficient and convenient for use, simple and cheap to manufacture and not liable to break or get out of order.

I do not claim herein, broadly, a needle with an open-sided eye, having the eye-closing spring with notched end, and a stop projecting in between the sides of the notch, so as to limit the sidewise movement of the spring, as such subject-matter is covered in my other pending application, Serial No. 377,353.

Having thus described my invention, what I claim is—

1. In a needle, in combination with the body having the open-sided eye and the spring attached to the needle-body below the eye and extending up along the side of said body, so as to close the opening into the eye and having its upper end bent outward from the needle-body and provided with a notch, and a pin on the needle-body above the spring, projecting down through the notch at an angle to the notched portion of the spring and at its lower end extending outside of and overlapping the outer side of the spring, substantially as and for the purpose specified.

2. In a needle, in combination with the needle-body having the open-sided eye and the spring for closing the opening into the latter, having its free end notched or forked, the retaining pin or stud engaging the outer side of the spring and the spring-notch and having its lower end projecting down over the spring at the lower end of the notch provided with an upwardly and inwardly inclined face, substantially as and for the purpose described.

In testimony that I claim the foregoing I have hereunto set my hand this 10th day of November, 1890.

EVA JENNIE HALL.

Witnesses:

NEWEL H. CLAPP,
A. E. MACARTNEY.