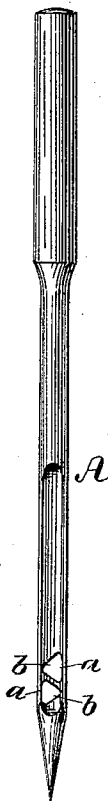


W. C. CROSS.
Sewing-Machine Needle.

No. 228,446.

Patented June 8, 1880.



WITNESSES

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INVENTOR

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UNITED STATES PATENT OFFICE.

WILLIAM C. CROSS, OF BOSTON, MASSACHUSETTS.

SEWING-MACHINE NEEDLE.

SPECIFICATION forming part of Letters Patent No. 228,446, dated June 8, 1880.

Application filed February 27, 1880.

To all whom it may concern:

Be it known that I, WILLIAM C. CROSS, of Boston, Massachusetts, have invented a certain new and useful Improvement in Sewing-Machine Needles, of which the following is a specification.

My invention relates to a sewing-machine needle which is intended to carry more than one thread, and is provided with a separate and distinct eye for each thread.

In needles of this kind as heretofore made the eyes have been arranged, so far as I am informed, in one of the following ways, viz: first, one directly above the other, as in Letters Patent No. 151,558, the disadvantage attending which is, that one thread will ride on the other; secondly, on different sides of the axis of the needle and at different altitudes, as in my Letters Patent No. 202,227, in which two arrangements are shown, the eyes in one being placed parallel with, and in the other at an angle to, one another. The disadvantage attending the latter of these two arrangements is, that the threads, as the needle passes up and down through the material, travel from end to end of the angularly-placed eyes, and this renders it difficult to keep the threads from crossing and to preserve proper tension, while in the former, although each thread is kept on its own side of the needle, yet only one-half of the width or thickness of the needle is available for each eye, and consequently a small thread only can be carried.

It has also been proposed to arrange the two eyes at the same altitude, but upon opposite sides of the longitudinal axis of the needle, as in Letters Patent No. 216,141. This, however, is open to the same objection which attends the arrangement last above referred to.

It is my object in my present improvement to utilize the whole width or thickness of the needle for the formation of each eye, in order to carry as much thread as possible, and also to so form the eyes that they may be close together, and that their threads shall not be liable to cross one another.

To this end I form each eye so that it shall have, approximately, a **D** shape—that is to say, that it shall have one vertical, or nearly vertical, side, and one loop-like or bowed side; and I form these eyes in the needle, one above

the other, with their straight sides outermost and their bowed sides contiguous to one another, the lower end of the upper eye extending down to a point below the upper end of the lower eye.

The shape of the eyes permits of what may be called this "overlapping" arrangement, and it also gives to each eye the largest practicable thread-carrying capacity, while the straight sides of the eyes, which direct the respective threads as the needle passes up and down through the fabric, prevent the threads from crossing one another.

The nature of my improvement will be readily understood by reference to the accompanying drawing, which represents an elevation, on an enlarged scale, of a sewing-machine needle embodying my invention.

The needle A, except as regards the eyes, may be of any ordinary or suitable construction. Each eye, as shown, has one straight or vertical side, *a*, and curved or bowed side *b*. The curvature or swell of this side may be varied to some extent; but the eye, in any event, will preferably have, approximately, a **D** shape.

The two eyes are placed, as shown, so that their curved or swelling sides face one another, the straight side of one eye being on the side of the needle opposite to that on which is the straight side of the other eye. By this means, while rendering practically the whole width or thickness of the needle available for each eye, I am enabled to so place the eyes as to partly overlap one another, thus bringing them as near together as possible.

The threads, owing to the position of the vertical sides *a* of the eyes, will not cross one another in the operation of sewing, and as the greater portion of each eye lies on the opposite side of the longitudinal axis of the needle from the other the threads will extend side by side and will not ride upon each other.

From the foregoing it will be perceived that the gist of my improvement in sewing-machine needles having two or more eyes consists in so constructing and arranging the eyes that while each eye occupies the available space of the whole width of the needle, yet each thread is compelled to keep to its own side of the longitudinal axial line of the needle without crossing or interfering with the other.

I have described what I deem to be, on the whole, the construction and arrangement best calculated to give effect to the invention; yet it is manifest that the form of the eyes, as well as their arrangement, may vary from what I have shown without departure from the principle of my invention. I therefore do not restrict myself to the particular construction herein shown in illustration of my invention; but

What I claim, and desire to secure by Letters Patent, is as follows:

1. A sewing-machine needle provided with eyes, each occupying the available space of the whole width or thickness of the needle, and constructed and arranged substantially as hereinbefore set forth, whereby each thread is caused to keep to its own side of the axial line of the needle.

2. A sewing-machine needle with eyes constructed and arranged substantially as hereinbefore set forth, so that while each eye occupies the available space of the entire width or thickness of the needle, the highest and lowest points of the upper eye shall be on the one side and the highest and lowest points of the lower eye shall be on the other side of the longitudinal axial line of the needle.

3. A sewing-machine needle having D-shaped eyes arranged relatively to one another substantially in the manner and for the purposes hereinbefore shown and set forth.

In testimony whereof I have hereunto set my hand this 25th day of February, 1880.

WM. C. CROSS.

Witnesses:

GILBERT C. HOAG,
SARAH J. KING.