

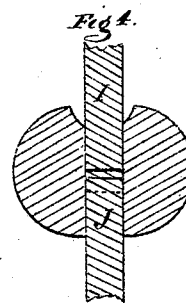
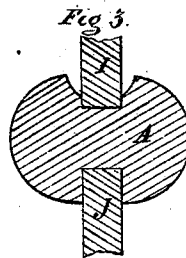
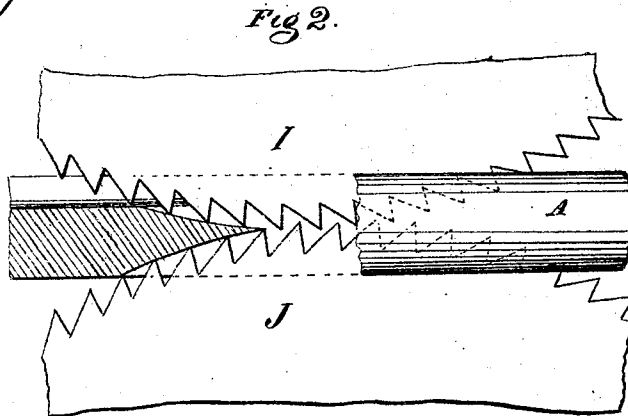
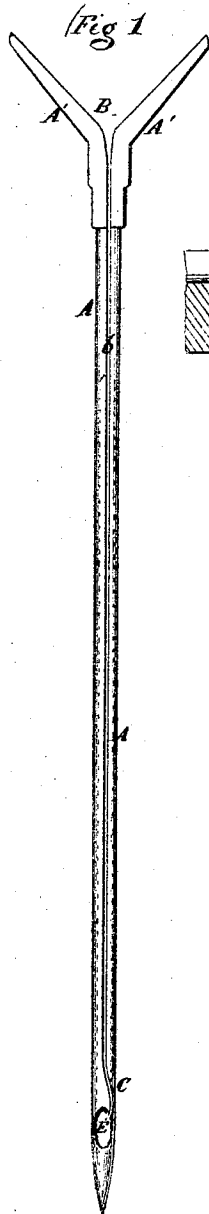
Charles H. Palmer

No. 119,876.

MB Split Needles.

Case C.

Patented Oct. 10, 1871.



Chas. H. Palmer
C. H. Livings } Witnesses.

Inventor's Name.

C H Palmer
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UNITED STATES PATENT OFFICE.

CHARLES H. PALMER, OF NEW YORK, N. Y.

IMPROVEMENT IN THE MANUFACTURE OF SPLIT NEEDLES.

Specification forming part of Letters Patent No. 119,876, dated October 10, 1871.

To all whom it may concern:

Be it known that I, CHARLES H. PALMER, of New York city, in the State of New York, have invented certain new and useful Improvements in the Process or Method of Manufacture of Split Needles.

What I term split needles, which give promise of being very important in sewing-machine work, allow the thread to be conveniently introduced through a spacious opening above, and to be drawn down the length of the needle, springing open the slender steel as it descends, until it rests easily in an eye of about the ordinary size in the proper position near the point. The metal is hooked over a little above the eye, so that the thread, on being drawn upward by the tension, is not likely to be drawn up again into the split.

I saw the split by sawing in from each side of the blank. It results in a split which is smooth on each outer surface and smooth throughout. The burr which results from the dragging of saw-teeth quite through the body of the needle and drawing out the metal on the side where the teeth emerge, is entirely avoided.

The accompanying drawing represents what I consider the best means of carrying out the invention. Figure 1 is a view of the finished needle, enlarged. Fig. 2 is a section of a portion of the blank in the act of being split. It is a longitudinal section very greatly enlarged. Fig. 3 is a cross-section through the needle, and a portion of the saw in the plane opposite thereto, on Fig. 2; and Fig. 4 is a cross-section corresponding in the plane opposite to this latter figure. It shows the needle-blank fully divided.

Similar letters of reference indicate like parts in all the figures where they occur.

A' A' is the branching or bifurcated stout portion which forms the root of the needle, and by which it is firmly secured in the needle-bar by ordinary or any suitable means. The space B between these bifurcations serves to receive freely the thread in threading the needle, and allows it to be drawn down in the split *b*, which extends the whole length of the shaft or shank A, which forms the body of the needle. The split *b*, bending to one side near the point C, leads into the eye E on one side, as represented. I crook the needle-blank before producing the split, as is minutely set forth in another application for Let-

ters Patent of even date herewith. This allows the split to be made mathematically straight in the first instance, and to be afterward reduced to the proper bent form by the act of straightening the needle. To produce the kerf I subject the needle to treatment from two circular saws working on opposite sides, as represented by I J. The saw I cuts a score extending inward from one face a very little past the center or axial line of the needle. The saw J cuts in correspondingly on the opposite face and strikes into the kerf produced by the saw I. In the figures the kerfs *i j* are thus made by the corresponding saws. In order to allow the saws to meet and properly serve without interfering with each other, the teeth are carefully spaced and the saws are mounted on their axes geared together. There is no difficulty, in practice, in providing for this condition. I can make the shafts long and slightly divergent, with stout gears at the widely-separated ends, if it shall be desired in any case to employ heavier gear-wheels for these purposes than can be used on parallel shafts. It is essential that the saws, when mounted in this manner, come together so that the tooth of one shall match into a space in the other without touching. This condition may be very readily maintained by light gearing.

The saws remove the surface-metal always by an inward and never by an outward movement, leaving no burr on either surface. I mount them as exactly in the same plane as possible, so that they shall strike into each other's paths with accuracy at or near the central line of the needle. If there is any very slight discrepancy in their positions, they smooth each other's track and make the junction reasonably perfect.

It should be remembered, in this connection, that a slight roughness along the central line is not very serious, because the threads are only drawn through this split at rare intervals. There is no constant wear up and down, as is the case on the exterior surface of the needle. My invention, however imperfectly carried out, completely avoids any burrs on the exterior.

I can make the shank of the needle flattened, and prefer to do so, as set forth in detail in another application for patent of even date herewith. I can also mill the blank before the sawing is effected, the same as in preparing for any other means of splitting.

I claim as my improvement—

In the method of forming a split by means of two saws arranged to cut from opposite surfaces toward each other, the arrangement of the saws upon their arbors relatively to each other, so that the teeth of one saw shall interlock with those of the other, in the manner described, in virtue

of which arrangement I am enabled to make a clear and continuous cut entirely through the material.

CHARLES H. PALMER.

Witnesses:

THOMAS D. STETSON,
C. C. LIVINGS.

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