

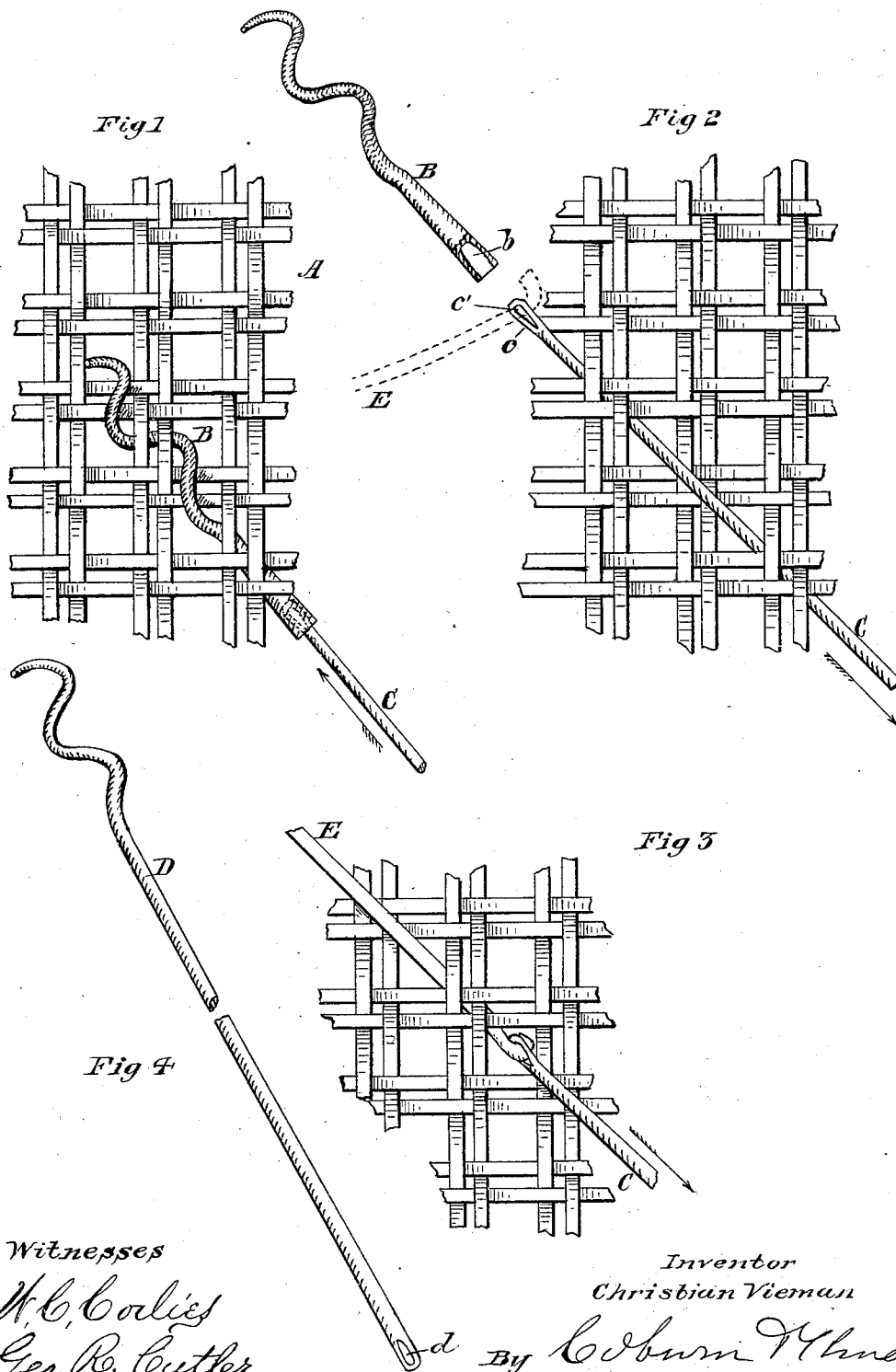
(No Model.)

C. VIEMAN.

CROSSING NEEDLE FOR WEAVING CANES.

No. 272,993.

Patented Feb. 27, 1883.



Witnesses

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UNITED STATES PATENT OFFICE.

CHRISTIAN VIEMAN, OF MICHIGAN CITY, INDIANA, ASSIGNOR OF ONE-
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CROSSING-NEEDLE FOR WEAVING CANE.

SPECIFICATION forming part of Letters Patent No. 272,993, dated February 27, 1883.

Application filed January 12, 1882. (No model.)

To all whom it may concern:

Be it known that I, CHRISTIAN VIEMAN, a citizen of the United States, residing at Michigan City, in the county of La Porte and State of Indiana, have invented certain new and useful Improvements in Crossing-Needles for Weaving Cane, which are set forth in the following specification, reference being had to the accompanying drawings, in which—

10 Figure 1 represents a plan view of a section of woven cane and the crossing-needle passed partially through the fabric; Fig. 2, a similar view of the same after the needle has passed entirely through, with the tip removed and
15 crossing-strip threaded; Fig. 3, a similar view, showing the needle in its backward movement, drawing the crossing-strip after it; and Fig. 4, a modification in the construction of the needle.

20 My invention relates to the crossing-needles used for introducing the diagonal crossing-strands of cane-seats.

The invention consists in a crossing-needle composed of a straight shaft provided with a
25 spiral tip at one end and a suitable eye in the straight shaft for the reception of the crossing-strand.

It also consists in constructing the straight shaft and tip in separate pieces, so that the
30 latter may be detached from the former after the needle is thrust through the fabric, in order to uncover the eye to thread the crossing-strand and permit the needle to be drawn back readily, pulling the strand after it.

35 This needle is adapted to form a part of the crosser shown and described in Letters Patent of the United States No. 243,012, June 14, 1881; or the requisite motion may be imparted to it by any other expedient means. For interweaving the diagonal strand a straight-
40 bladed needle is found preferable to the bent-tipped needle shown in the patent referred to, inasmuch as in the process of drawing the cross-strip through the web it does not interfere with the rectangular strands, whereas the
45 bent tip in being retracted is apt to break or split some of the weaker strips which form the mesh. The straight needle is also withdrawn much more easily. At the same time it is im-

practicable to open the meshes except by a re- 50
volving bent tip.

The object of the present invention is to combine the advantages of the bent and the straight tip.

In the drawings, A represents a cane-seat 55
fabric so far completed as to be ready for the insertion of the diagonal strands. B represents a spiral needle-tip having about two coils, and the rear end of which has a non-circular recess, *b*; C, the needle-shaft, of a length equal 60
to the distance diagonally across the fabric on the line in which the crossing-strand has to be drawn, and the end *c* of which is provided with a slit or eye, *c'*, and is adapted to be closely
65 sheathed in the recess *b*; and D, a needle, in which the needle-shaft and spiral needle-tip are made in one piece, the slit or eye *d* being at the rear end of the whole needle.

E is a strip of cane, which is adapted to form one of the diagonal strands of a cane-seat fabric. 70
The coils of the spiral tip are centered on the extended center-line of the needle proper or needle-shaft, and are uniformly at a distance from each other equal to the distance between the centers of successive meshes in a 75
diagonal series.

The operation of my invention is as follows: A needle is provided with my spiral needle-
tip, and the point of the tip is inserted through the first of a diagonal series of meshes. Rotary 80
and longitudinal motions are then simultaneously imparted to the needle-shaft, which causes the spiral tip to worm its way through the successive meshes, over the warp, and under the woof, (or vice versa,) thus interweaving 85
the needle-shaft.

The advantage of the use of a spiral tip over that of a simple bent tip is, that the coils register with the strands already woven, and hence the proper ratio between the respective 90
speeds of the rotary and longitudinal motions is secured automatically. After the needle-shaft has been interwoven the end of a strip of cane is inserted through the slit or eye and bent over, as shown by dotted lines in Fig. 2. 95
The needle-shaft is then withdrawn from the cane-seat fabric, the eye end leaving last. If the eye end of the needle enters the fabric first,

of course the interweaving of the diagonal strip is accomplished by reversing the longitudinal motion of the needle, this construction and operation being shown in Figs. 2 and 2, where, 5 the eye being sheathed within the end of the tip, of course the tip is removed before attempting to thread the needle; but where the eye end of the needle enters the fabric last, of course the longitudinal motion of the shaft is 10 not reversed to interweave the diagonal strand, but is merely continued. The object of making the tip detachable is to enable the operator to withdraw a needle, the eye end of which enters the fabric first without being obliged to 15 revolve the needle while withdrawing it, as would be the case if the tip had to pass back through the fabric.

Having thus described my invention, what I

claim as new, and desire to secure by Letters Patent, is—

1. A crossing-needle consisting of a straight shaft perforated at one end and a detachable tip, substantially as and for the purpose set forth. 20

2. A crossing-needle consisting of a straight shaft perforated at one end and a detachable bent or spiral tip fitted to the eye end, substantially as and for the purpose set forth. 25

3. A crossing-needle consisting of a straight shaft perforated at one end and a spiral tip, 30 substantially as and for the purposes described.

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Witnesses:

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