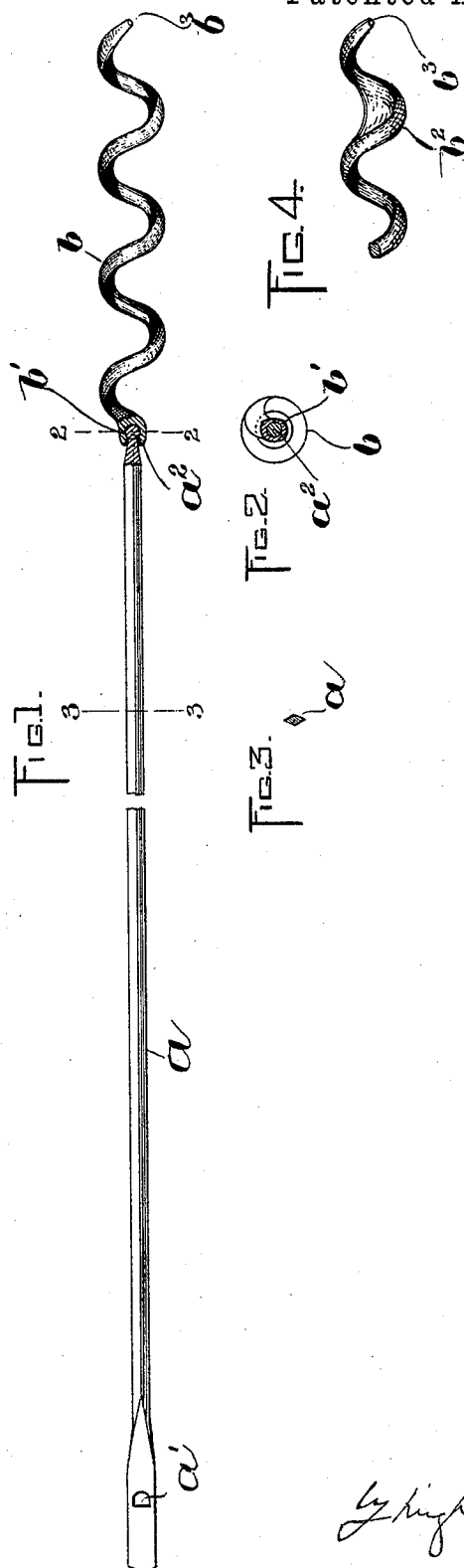


(No Model.)

E. G. WATKINS.
NEEDLE FOR WEAVING CANE FABRICS.

No. 588,515.

Patented Aug. 17, 1897.



WITNESSES:

A. D. Harrison
A. N. Brown

INVENTOR:

Edmund G. Watkins
by *Robert Brown & Quincy*
Atty.

UNITED STATES PATENT OFFICE.

EDWARD G. WATKINS, OF GARDNER, MASSACHUSETTS, ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE HEYWOOD BROTHERS & WAKEFIELD COMPANY, OF SAME PLACE.

NEEDLE FOR WEAVING CANE FABRICS.

SPECIFICATION forming part of Letters Patent No. 588,515, dated August 17, 1897.

Application filed October 7, 1896. Serial No. 608,135. (No model.)

To all whom it may concern:

Be it known that I, EDWARD G. WATKINS, of Gardner, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Needles for Weaving Cane Fabrics, of which the following is a specification.

This invention has for its object the production of a novel form of needle employed in weaving cane fabrics and cloth; and it consists in the novel features of construction and relative arrangement of parts hereinafter fully described in the specification, clearly illustrated in the drawings, and particularly pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this application, in which like characters indicate like parts wherever they occur.

Of the drawings, Figure 1 is a side elevation, partly sectional, of a needle constructed in accordance with my invention. Fig. 2 is a cross-sectional view on the line 2 2 of Fig. 1, showing the socket-joint. Fig. 3 is a cross-sectional view on line 3 3 of Fig. 1, showing the form of the shaft. Fig. 4 is a detail view of a different form of tip from that shown in Fig. 1.

Referring to the drawings, in the embodiment of my invention therein shown and selected by me for the purpose of illustration *a* represents a shaft formed at its butt with an eye or aperture *a'*, in which the end of the cane strand is inserted and drawn through the cane fabric. (Not shown.) The shaft is shown in this embodiment of the invention as flattened or diamond-shaped in cross-section, but it may be of any other desired shape.

b represents a tip, comprising a spirally-arranged corkscrew-shaped member formed at its front end with a point *b²* and at its rear end with a socket *b'*, constructed to engage the enlargement or ball *a²* on the front end of the shaft *a*. By this construction the tip and shaft are tied together at their meeting ends and made non-detachable, while at the same time the tip is free to rotate in relation to the shaft. The form of tip shown in Fig. 4 differs from that shown in Fig. 1 in that it is

formed near its point with an enlargement *b²*, that assists the corkscrew-tip in worming its way through the web. Either form of tip may be employed, and the construction heretofore described may be variously modified without departing from the spirit and scope of my invention, which includes a device of the character described, wherein a rotatable non-detachable tip is combined with a shaft.

The operation of my improved device is as follows: The cane web (not shown) is stretched upon a suitable frame, (not shown, as they form no part of my invention and are well known in the art, as is also the use of a needle in connection therewith.) Preferably, although not necessarily, an operator stands on either side of the web. Each operator, when there are two, takes a needle, arranges the front spiral about the bar of fabric surrounding one of the outside holes in the usual way, and pushes the needle across the web, its tip revolving and passing in a spiral path about the bars of the web, as is common, alternating above and below said bars and causing its shank, when in the cane web, to occupy a like position. Each operator then inserts the end of a strip of cane in the eye *a'* of the needle he has inserted, and then pulls the other needle, with its strip of cane, through the web into the place just occupied by the shaft, thus weaving the strip into the web. The strip is then cut on the supply side of the web, and the operation just described is repeated. When only one operator is employed, he must necessarily, to perform the operations heretofore described, pass from one side to the other of the fabric. This waste of time is saved by the employment of two operators.

My improved device or needle is simple in construction. The tip, being non-detachable, is always in place, and the single shaft, having no sleeve or other enlargement, occupies a very small space and does not distort the strands of the web when being pushed or drawn through the latter.

Having thus explained the nature of my invention and described a way of constructing and using the same, although without attempting to set forth all the forms in which

it may be made or all the modes of its use, what I claim, and desire to secure by Letters Patent, is—

1. A device of the character described, comprising a single shaft and a non-detachable tip rotatively connected only at their meeting ends.

2. A device of the character described comprising a solid flattened shaft, and a tip, rotatively and non-detachably connected to the end of said shaft.

3. A device of the character described, comprising a shaft, a non-detachable tip, and a ball-and-socket connection between said tip and one end of said shaft whereby said tip is free to rotate on the end of said shaft.

4. A device of the character described, comprising a shaft, a tip, the end of one of said parts being formed with an enlargement, and one end of the other of said parts being formed with an inclosing complementary socket, whereby the shaft and tip are made non-detachable and the tip is free to rotate on the end of the shaft.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 5th day of October, A. D. 1896.

EDWARD G. WATKINS.

Witnesses:

FRED L. BUTLER,
EDWARD J. LAWTON.