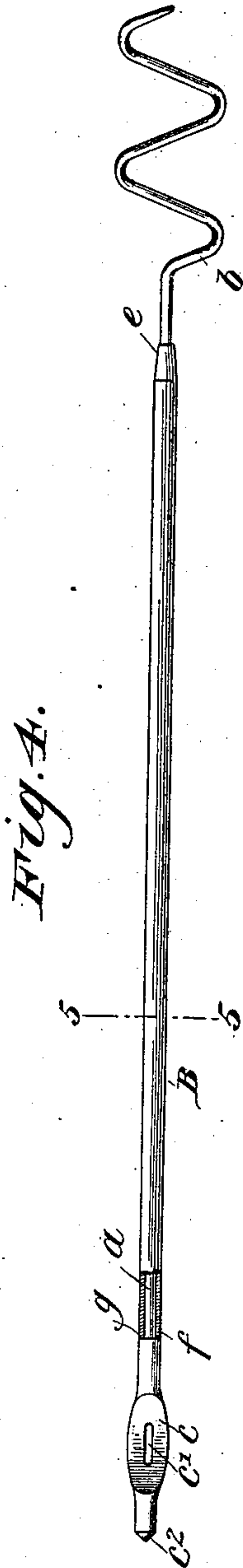
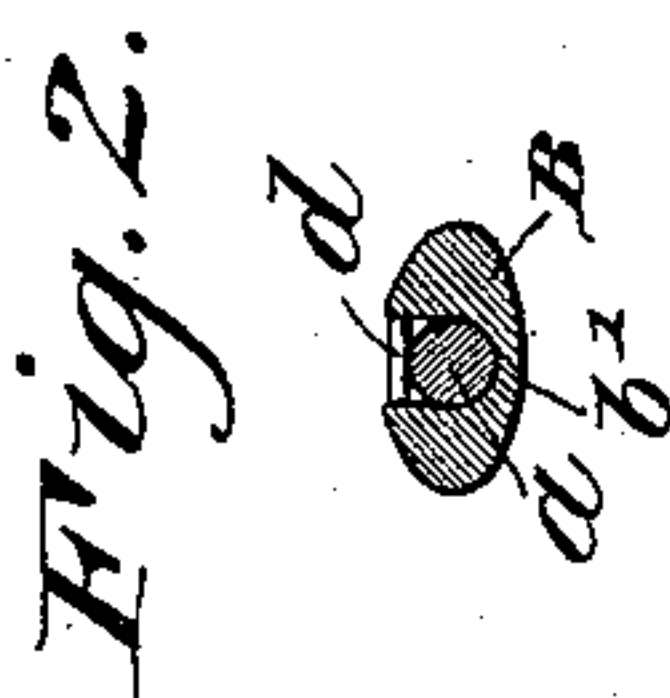
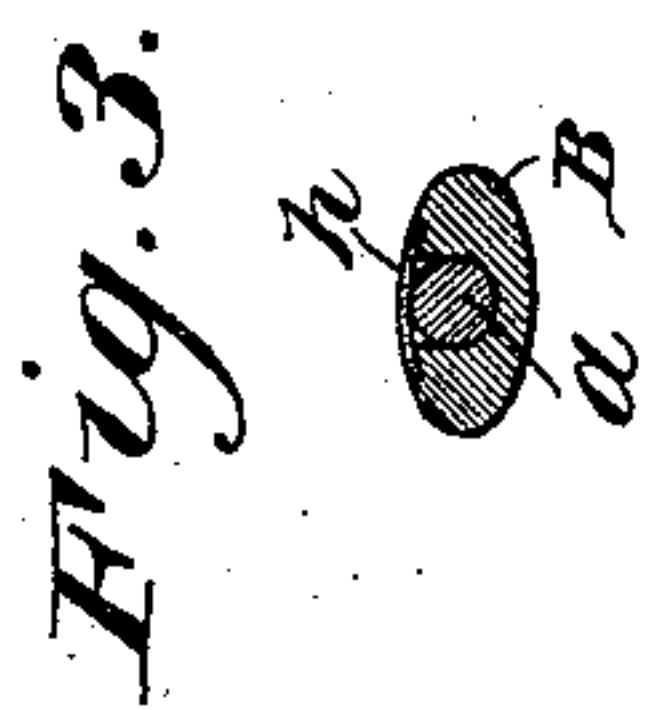
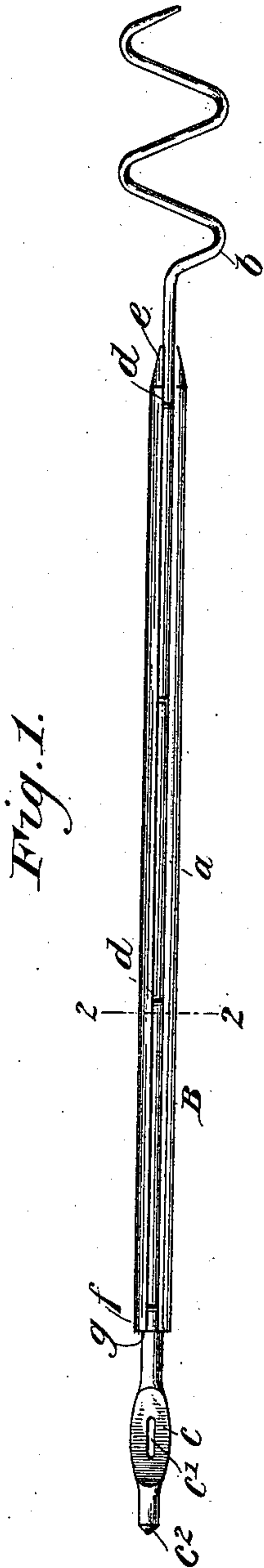


(No Model.)

H. B. MORRIS.
WEAVING NEEDLE.

No. 564,332.

Patented July 21, 1896.



Witnesses

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UNITED STATES PATENT OFFICE.

HENRY B. MORRIS, OF MICHIGAN CITY, INDIANA.

WEAVING-NEEDLE.

SPECIFICATION forming part of Letters Patent No. 564,332, dated July 21, 1896.

Application filed April 27, 1896. Serial No. 589,174. (No model.)

To all whom it may concern:

Be it known that I, HENRY B. MORRIS, 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 Weaving-Needles, of which the following is a specification.

My invention relates to needles for weaving cane-cloth, and particularly to the class of needles shown in Vieman's patent, No. 272,993, dated February 27, 1883. That patent shows a shaft perforated at one end to receive a strand of cane and carrying a spiral tip which guides the shaft through the meshes of the cloth to enable it to insert threads diagonally in the cloth. Such a needle may be inserted either by revolving the shaft as it is fed forward to cause the spiral to enter the meshes of the cloth, or the shaft may be simply pushed forward, and the spiral, as it enters the several meshes of the cloth, will cause the needle to revolve if it is properly held. When operating the needle in this way, however, there is great friction encountered, especially when the fabric is a wide one, and it is not always practicable to rotate the spiral and cause it to guide the shaft through the meshes on account of such friction.

My invention is designed to overcome this objection; and it consists in arranging the straight portion of the shaft, or the greater portion thereof, within a sleeve or casing which does not rotate when inserted in the fabric, but which allows of the free rotation of the shaft with the spiral tip.

My improvements are shown in the accompanying drawings, in which—

Figure 1 shows a plan view of a cane-weaving needle or "crossing-needle" embodying my invention. Fig. 2 shows a transverse section on the line 2 2 of Fig. 1. Fig. 3 shows a transverse section through a modified form of needle. Fig. 4 is a plan view, partly in section, of another form of my improved needle, and Fig. 5 shows a transverse section on the line 5 5 of Fig. 4.

The shaft *a* is provided at one end with a spiral tip *b*, and at its rear end with a perforated heel *c*. Both the tip and the heel may be made in one piece with the shaft, and the tip is suitably shaped to cause it to enter successively the meshes of cane-cloth when

moved diagonally across the cloth. The tip is of substantially the same construction as that shown in the Vieman patent. The heel is preferably flattened and enlarged, as shown, and the eye *c'* is adapted to receive a strand of cane. Of course the exact form of the eye is not important, so long as the construction is such that a cane-strand may be secured to the needle and caused to move with it. The extremity of the heel at *c''* is pointed or made conical in order that it may enter a corresponding socket or recess in a thimble held in the hand of the operator, and in which it can more readily revolve than if otherwise constructed.

The sleeve *B* is shown in Fig. 1 as consisting of a longitudinally-recessed bar having a curved lower end *b'* and open at the top, so that the needle-shaft may be inserted laterally. The shaft is held in the sleeve by cross-pins *d*, any suitable number of which may be employed. At its front end *e* the sleeve *B* is tapered, while at its rear end *f* it rests against a shoulder *g*, formed in the shaft in front of the heel. This latter construction enables the shaft of the needle to push the sleeve forward. It is not necessary that the front end of the shaft should be shouldered, as the needle always moves through the cloth with the spiral tip in advance of the other parts.

Various forms of sleeves or casings may be employed. In Figs. 4 and 5 I have illustrated a modification in which the sleeve is cylindrical instead of flattened or oval, as shown in Figs. 2 and 3. In the manufacture of such a needle the shaft may be passed through the sleeve before the spiral tip is formed, or the shaft may be separable from the heel and secured thereto after the sleeve is inserted over the shaft.

In Fig. 3 another modification is shown in which the trough-shaped sleeve or casing shown in Figs. 1 and 2 is covered by a plate *h*, countersunk and secured by soldering or other suitable means. I have shown several ways of applying my improvements to a cane-weaving needle, but it is obvious that other ways be employed of carrying out my invention.

In operation the spiral is first introduced into the cloth, as in the Vieman patent above

referred to, the operator holding the heel of the needle in her hand with the conical point c^2 arranged in a suitable socket in a thimble or mitten. She pushes the needle forward
 5 through the cloth by pressing directly against the back end of the needle, which revolves as it advances, forcing the sleeve or casing along with it. After the needle has passed across the fabric, the operator threads the eye and
 10 another operator on the opposite side of the cloth pulls the needle through, drawing the thread through the cloth. The spiral having emerged from the cloth before the needle is threaded of course does not revolve while the
 15 needle is being pulled through the cloth with the strand. The second operator grasps the spiral part of the needle when pulling it through with the thread. In the meantime, while the first operator is pushing her needle
 20 through, the second operator pushes another similar needle through the cloth in the opposite direction, so that two needles and two operators are at work all the time. Neither of them waits for the other, nor reaches across
 25 the cloth to operate the needles.

The friction in the operation of my improved needle is very slight. Cane fabric, as is well known, is gritty and rough and applies considerable friction to tools or apparatus with which it comes in contact. If a large

portion of the shaft of the needle were in contact with the cloth while being rotated, the friction would be so great that it would not be practicable to rotate it and cause it to traverse the cloth by simply pushing it forward, but by my improvements the shaft is so relieved of friction that the needle traverses the cloth readily and does not tend to distort or tear the fabric.

I claim as my invention—

1. A weaving-needle, the shaft of which is arranged within a sleeve or casing, and which is provided with a spiral tip, substantially as described.

2. A weaving-needle having a spiral guiding-tip and an eye to receive a thread, and a sleeve or casing within which the shaft of the needle is arranged.

3. A weaving-needle, the shaft of which is free to revolve within a sleeve or casing, and which is formed at its front end with a spiral guiding-tip and at its opposite end with a heel having an eye and a conical extremity.

In testimony whereof I have hereunto subscribed my name.

HENRY B. MORRIS.

Witnesses:

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 ARTHUR N. GITTINGS.