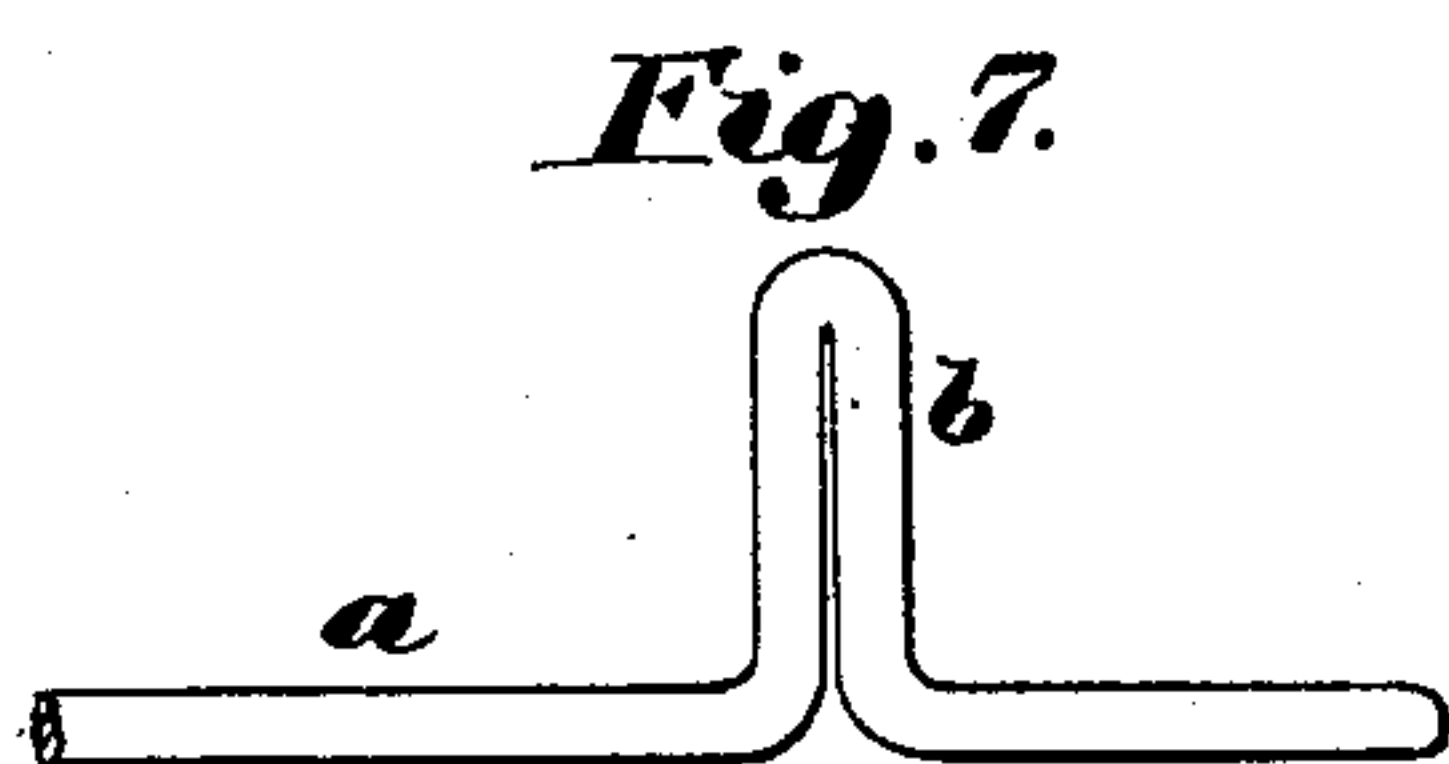
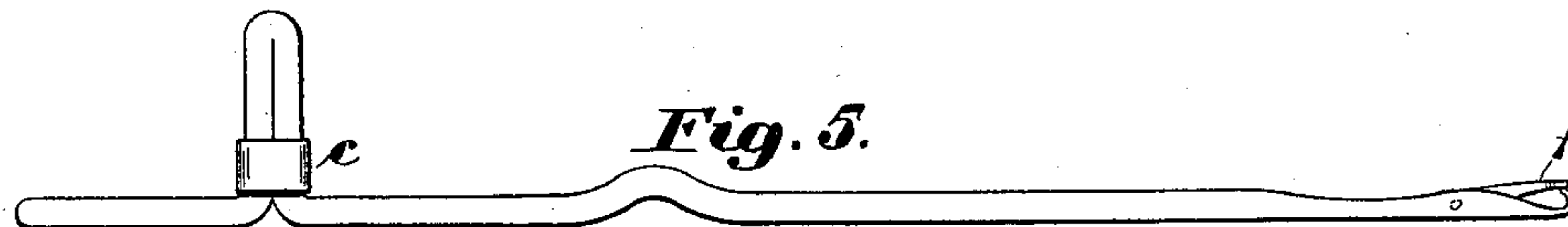
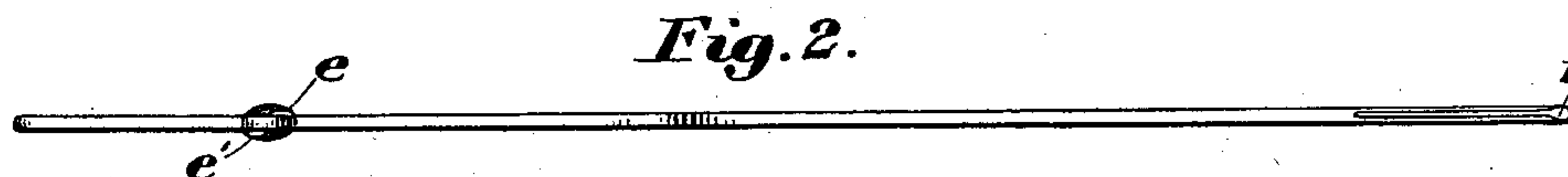
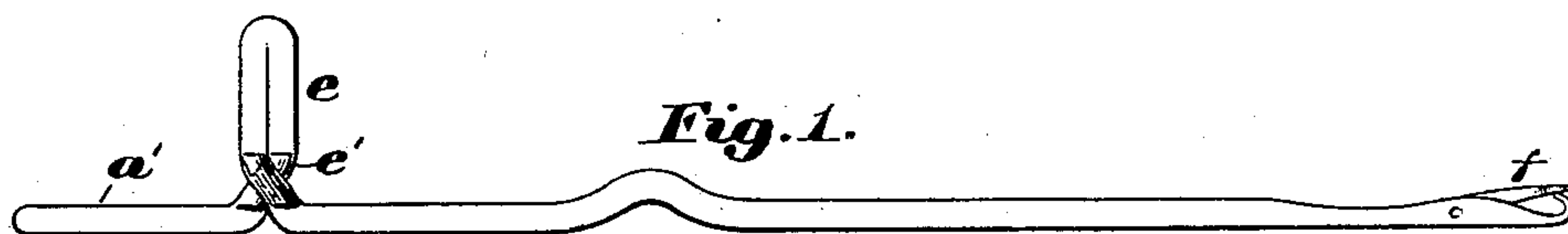


(No Model.)

G. E. PHILBRICK.
KNITTING MACHINE NEEDLE.

No. 589,024.

Patented Aug. 31, 1897.



Witnesses:

Walter E. Lombard.
Thomas Drummond.

Inventor:
George E. Philbrick,
by Crosby Gregory.
Attys.

UNITED STATES PATENT OFFICE.

GEORGE E. PHILBRICK, OF MANCHESTER, NEW HAMPSHIRE.

KNITTING-MACHINE NEEDLE.

SPECIFICATION forming part of Letters Patent No. 589,024, dated August 31, 1897.

Application filed March 11, 1897. Serial No. 626,947. (No model.)

To all whom it may concern:

Be it known that I, GEORGE E. PHILBRICK, of Manchester, county of Hillsborough, State of New Hampshire, have invented an Improvement in Knitting-Machine Needles, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

The nibs of knitting-machine needles are now commonly made by bending a portion of the wire of which the body of the needle is composed at right angles to the body, thus leaving a loop in the needle to constitute the nib. In use these needles are subjected to very considerable strain, and they frequently break at the nib or the nib separates to the detriment of the needle. Many plans have been devised to strengthen the needle at the nib, among which may be named soldering and brazing the two parallel parts of the nib together. I have devised a novel method of producing a strong nib. In accordance with my invention I form the nib in usual manner, and I then give to the nib a half-turn, and thereafter I flatten the nib, which sets the half-turn so that it cannot thereafter be separated in use.

Figures 1 and 2 show two views of a needle embodying my invention; Figs. 3 and 4, two other views of a slight modification. Figs. 5 and 6 show two views of a common form of needle, and Fig. 7 shows part of a nib as now commonly made.

In the manufacture of knitting-machine needles at the proper stage of the operation a part of the wire composing the body of the needle *a* is bent into loop form, as at *b*, Fig. 7, and in use the needle frequently breaks in the sharp bend of the nib. To prevent this loss of needles by breaking, the two arms of the nib have been brazed or soldered, and so also a band, as *c*, has been put about the nib.

In accordance with my invention I proceed as in the manufacture of the ordinary needle, but after the nib is bent and formed as in

Fig. 7 I take hold of the nib with a suitable tool, and while the body of the needle and its tailpiece *a'* are suitably held I turn the nib half-way around, thus crossing the arms and making my improved nib *e* as in Figs. 1 and 3. After this the body of the needle and the nib are flattened, and in doing so one arm of the nib enters the other arm, thus interlocking one with the other, thereby preventing any possibility of the nib separating under any strain to which the needle may be subjected in knitting.

A needle with a cross-nib will not break at the nib.

In Figs. 1 and 2 I have shown but part of the nib as flattened during the operation of flattening the body of the needle, thereby leaving a shoulder *e'*, such shoulder taking the place of the band *c* in Fig. 5 and enabling the needle so made to be used in what is known as the "Mayo" machine, wherein the said band, besides its function of strengthening the nib, also acts as a guide for the needle to keep it in proper working position. This nib may, however, and in most instances will be flattened throughout, as in Figs. 3 and 4. The latch *f* may be of any usual form.

Having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A knitting-machine needle having a crossed nib, substantially as described.

2. A knitting-machine needle having a crossed and flattened nib, substantially as described.

3. A knitting-machine needle having a crossed and flattened nib and provided with a shoulder *e'*, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

GEORGE E. PHILBRICK.

Witnesses:

EDWARD S. GRAYE,
WILLIAM G. BURTAN.