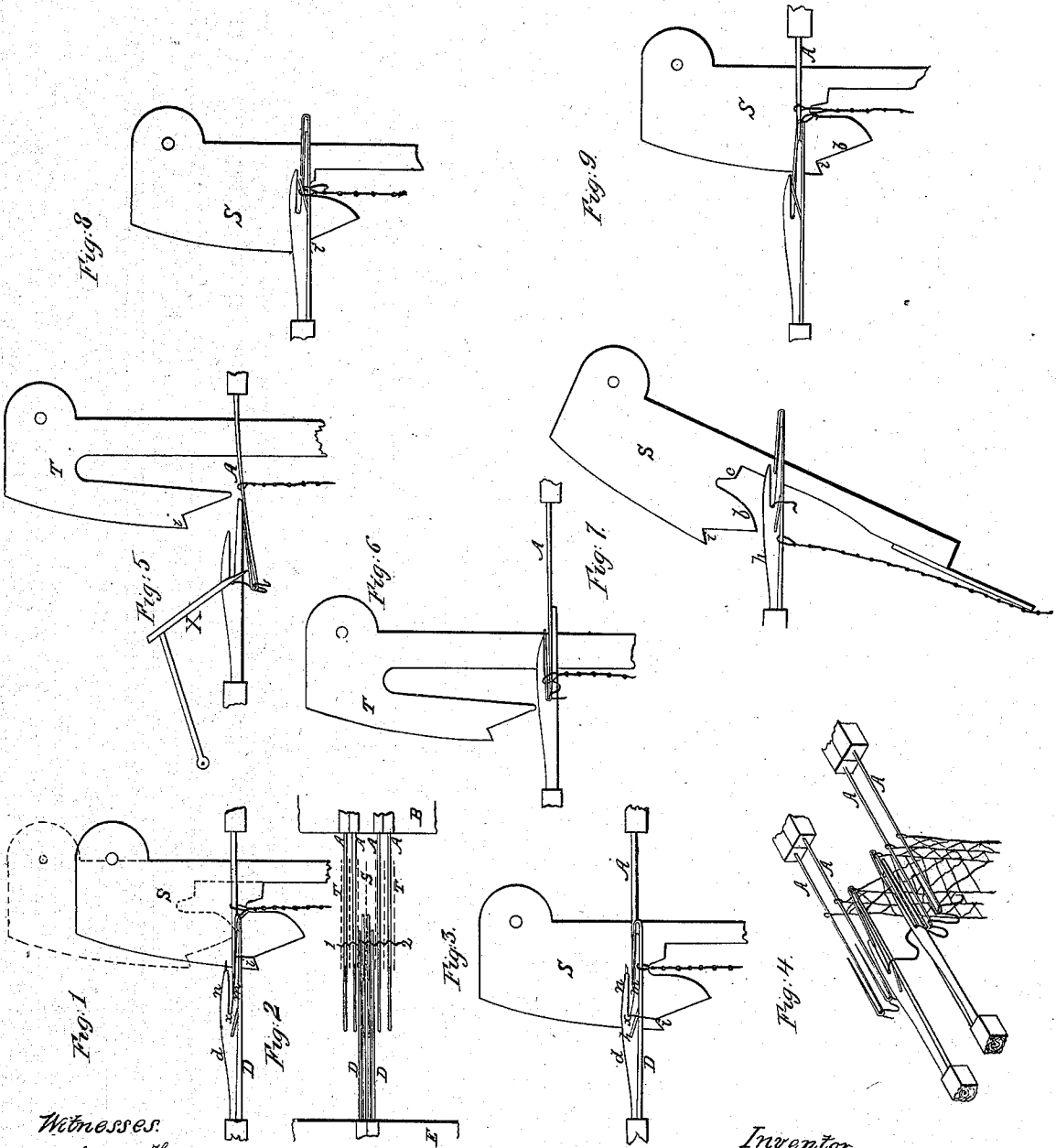


S. Peberdy.
Knitting Machine Needle.

N^o 35,254.

Patented May 13, 1862.



Witnesses:
Charles Howson
Charles C. Foster

Inventor.
S. Peberdy

UNITED STATES PATENT OFFICE.

SAMUEL PEBERDY, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN KNITTING-MACHINE NEEDLES.

Specification forming part of Letters Patent No. 35,254, dated May 13, 1862.

To all whom it may concern:

Be it known that I, SAMUEL PEBERDY, of Philadelphia, Pennsylvania, have invented an Improvement in Needles for Knitting-Machines; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

My invention consists in combining with a barbed needle of a knitting-machine a notched shield or guard formed substantially as described hereinafter, so that the said needle may form what is known as "ribs" on knitted fabrics, the object of my invention being to dispense with the cumbrous and complex mechanism which has been heretofore used on knitting-machines for effecting the same purpose, and which is not only expensive and liable to become disarranged, but renders the process of knitting tedious.

In order to enable others familiar with knitting machinery and with the process of knitting to make and use my invention, I will now proceed to describe its construction and the manner in which it operates.

The accompanying drawings represent, by a series of diagrams, the manner in which my improved needle performs its duty when applied to what is known as a "straight-frame knitting-machine."

Figure 1 is a side view, and Fig. 2 a plan view, of my improved needles, together with such other parts of a straight-frame knitting-machine as will be sufficient to illustrate the action of the said needles, the different parts being in the position they will assume after the first movement toward the formation of a new stitch. Fig. 3 shows the position of the parts at the termination of the second movement; Fig. 4, a perspective view showing the arrangement of the threads upon the needles after the third movement; Figs. 5, 6, 7, 8, and 9, side views showing the successive changes in the working parts.

The devices for operating the parts illustrated are not shown in the drawings, as they are well known to those skilled in this class of machinery.

A A are a series of ordinary needles with elastic barbs, and are placed in a row, as usual in machines of the class to which the

following description relates, the needles being permanently secured to the ledge B of the usual needle-bar, and between these needles operate the usual sinkers, T. (Represented by red lines in Fig. 2.) By an uninterrupted row of these needles and sinkers, together with other appliances appertaining to knitting-machines of this class, the ordinary plain fabric is produced; but when a ribbed fabric is required I bring my improved needles D D into play. These needles are arranged on the ledge E in such a position in respect to each other as the desired width of the rib may demand, as many of needles A being removed as will be necessary for forming a space for the admission of the improved needles, two only of which are shown in the drawings, Figs. 2 and 4.

Between the needles D D operates a "sinker," S, which is of a form differing somewhat from the sinkers T, but has a movement similar to that imparted to the latter. Each of the needles D consists of two parts—the needle proper and the guard or shield *d*—the former having in the present instance the usual elastic barb and pawl, needles of this class being technically termed "self-acting needles." The shield *d* consists of a thin plate of metal secured to the block from which the needle D projects and occupying a position by the side of this needle, the outer end of the shield being divided by a slot or recess, *x*, into two projections, *m* and *n*. (See Fig. 1.) The first movement required prior to the formation of a new row of stitches or loops is the elevation of the whole of the sinkers to the position shown by dotted lines, Fig. 1, the uppermost loops of the previously-knitted fabric hanging loosely from the shanks of the needles A and from the barbs of the needles D. The thread to be formed into loops is thrown, as usual, by the carrier transversely across the needles in the direction 1 2, Fig. 2, and is represented in the drawings by red lines to distinguish it from the fabric previously knitted, the latter being colored blue. After the thread has been thus placed across the needles the sinkers are depressed to the position shown in Fig. 1, the notch *i* of the said sinkers depressing the thread in loops between the needles. The sinkers are now moved forward to the position shown in Fig. 3, carrying the loops of the new thread beneath the barbs of the needles A and

over the ends of the barbs of the needles D into the slot or opening x between the projections m and n of the shields or guards d . After this the sinkers again rise, leaving the threads hanging loosely upon the needles, as best observed on reference to Fig. 4. The next two motions only affect the needles A, the ends of their barbs being forced down onto the shanks by the usual presser, X, Fig. 5, which is so constructed as to escape contact with the needles D. While the barbs of the needles A are thus closed the sinkers T move forward, pushing before them the knitted fabric, (see Fig. 6,) the loops of which slide over the barbs of the needles. The presser is then raised and the old loops slip off the ends of the needles and over the loops of thread hanging therefrom, and thus form a new row of loops on the needles A. The lower ends of the sinkers are then tilted forward, as seen in Fig. 7, so as to strike the fabric hanging on the needles D and push it back, the loops sliding over the pawl h onto the shank of the needle. The sinkers are then brought to a vertical position and depressed, the projection c holding down the loop of the new thread and the curved edge of the projection b coming in front of the fabric and pushing it back, the loops closing the pawls and sliding over them onto the tops of the barbs. The sinkers then move back, drawing the loops of new thread beneath the barbs and carrying the loops of the fabric over the barbs off the ends of the needles and over the loops of new thread, thus forming the upper row of stitches hanging from the needles D. Of the fabric thus produced that formed by the needles D is ribbed and that formed by the needles A plain.

It is apparent that any number of ribs of any desired width may be formed on the fabric by simply substituting the needles D with their shields d for the needles A.

The projections m and n of the shield d serve to guide the new thread and the slot or opening x to maintain the thread in that definite position in respect to the sinkers and needles D, without which it would otherwise lose its place during the movement of the other portions of the work, and thereby spoil the fabric.

Although I have shown by a series of diagrams my improved needle as being used in connection with the sinkers and pressers of a straight-frame knitting-machine, it will be evident to those familiar with knitting machinery that the needles may be used in connection with what is known as a "warp-machine" or a "circular machine" in which no sinkers are used, the shield performing precisely the same duty as that described above.

It will also be understood that the shield d may be used in connection with common barbed needles having no pawls h .

I claim as my invention and desire to secure by Letters Patent—

Combining with a barbed knitting-needle the shield or guard h , constructed in the manner described, or any equivalent to the same, so as to guide and retain the thread in the manner specified.

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

S. PEBERDY.

Witnesses:

HENRY HOWSON,
JOHN WHITE.