S. PEBERDY.

Knitting-Machine Needle.

No. 162,412. Patented April 20, 1875.

FIG. 1.

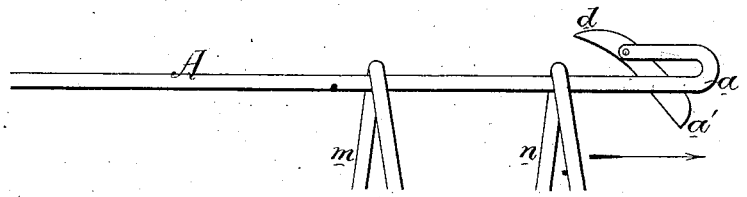


FIG. 3.

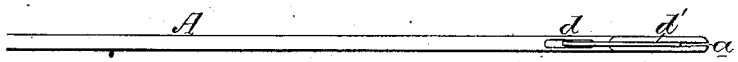


FIG. 2.

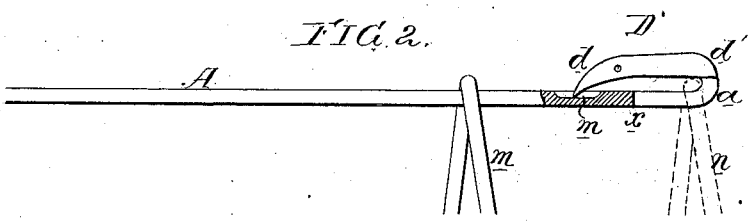
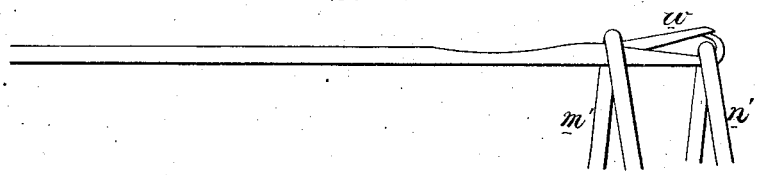


FIG. 4.



Witnesses, Harry Smith
Thomas McIlvaine

Samuel Peberdy
by his Attorneys
Howson and Sons

UNITED STATES PATENT OFFICE.

SAMUEL PEBERDY, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN KNITTING-MACHINE NEEDLES.

Specification forming part of Letters Patent No. **162,412**, dated April 20, 1875; application filed April 7, 1875.

To all whom it may concern:

Be it known that I, SAMUEL PEBERDY, of Philadelphia, Pennsylvania, have invented a certain Improvement in Knitting-Machine Needles, of which the following is a specification:

The object of my invention is to so construct knitting-machine needles that the stitches of the knitted fabric will not fall from the same in case the thread breaks, or in the accidental absence of a new loop; and this object I attain in the manner which I will now proceed to describe, reference being had to the accompanying drawing, in which—

Figures 1 and 2 represent my improved needle, with its lever in different positions; Fig. 3 a plan view, and Fig. 4 a side view, of an ordinary latch-needle.

A is the stem of the needle, the butt of which may be made in the same manner as that of an ordinary knitting-needle, for attachment to a machine. The stem terminates in a hook, *a*, to the outer end of which is loosely pivoted the lever D, having two arms, *d* and *d'*, the lever being so pivoted that, while it has a tendency to retain the position shown in Fig. 1, it can be made to assume that shown in Fig. 2.

In the present instance the hooked end of the needle is slotted as far as the point *x*, and the lever is situated within the slot; but it should be understood in the outset that the lever may be hung to the side of the hooked end of the stem, provided that there be a recess or groove in the stem for the reception of the pointed end of the arm *d*.

In Fig. 1 the lever D is in its normal position, the arm *d* being raised and the arm *d'* depressed, so as to cross the hook. The new loop or thread *n*, which has just been placed over the stem of the needle, is moved in the direction of the arrow until it is lodged in the bend of the hook, as shown in Fig. 2. In doing this, however, the loop must bear against the under edge of the arm *d'* of the lever, and must consequently lower the arm *d* until its point is in the groove; and as long as the loop *n* remains within the hook it will retain the lever in this position, so that the stitch *m* of knitted fabric can be passed, in the direction of the arrow, over the inclined or rounded upper edge of the arm *d* of the lever, and off the end of the latter, when the loop *n* becomes one of the stitches of the fabric, and remains suspended on the needle until pushed therefrom in a direction contrary to that pointed out by the arrow, in doing which it will elevate the arm *d* preparatory to the passage of a new loop of thread into the hook.

The main advantage of my improved needle will be best understood by comparing its operation with that of an ordinary latch-needle. (Shown in Fig. 4.) Supposing the new loop *n'* in this figure to be broken, or supposing that by some accident no new loop has been formed and lodged in the end of the hook, the stitch *m'* of knitted fabric will pass over the latch *w* and drop entirely from the needle, when it becomes necessary to stop the machine for the readjustment of the stitch.

The same evil, which is a source of delay and expense in all knitting-machines, will occur when bearded needles are used. In an ordinary rotary machine, for instance, the breaking of the thread, or the failure of one of the new loops to occupy its proper position on the hook, will generally result in the falling of the entire tube of fabric from the whole of the needles before the machine can be stopped, and delay must be incurred in readjusting the fabric to the needles. More than this, the continued movement of the machine in the absence of the fabric is apt to break or bend the latches of ordinary needles.

It will be observed that with my improved needle no such accidents can occur, for, in the absence of the new loop, the old stitch can be moved to and fro on the stem of the needle, beneath the lever, without leaving the said needle. The breakage of the new loop in the end of the hook, or the absence of such a loop, will induce the lever to occupy the position shown in Fig. 1, and hence there is an uninterrupted course for the old stitch along the stem of the needle and into and from the hook, and no tendency of this stitch to leave the needle.

It will be understood that the lever should be so arranged, or so weighted or hung, that it has a tendency to assume the position shown in Fig. 1 whenever it is not controlled by the new loop underneath. In the present instance the arm *d'* of the lever is longer, and conse-

quently heavier, than the arm *d*, and therefore has a tendency to raise the latter arm.

It will also be understood that, although I have shown the needle as arranged horizontally, it may be in a vertical or inclined position; and that, although the loops and stitches have been described as being moved on the needle, the latter may be moved, as in many machines.

I claim as my invention—

A knitting-machine needle having at the end a hook, *a*, and a lever, D, hung, near its inner end, loosely to the said hook, all substantially as and for the purpose set forth.

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

SAMUEL PEBERDY.

Witnesses:

HARRY SMITH,

HUBERT HOWSON.