

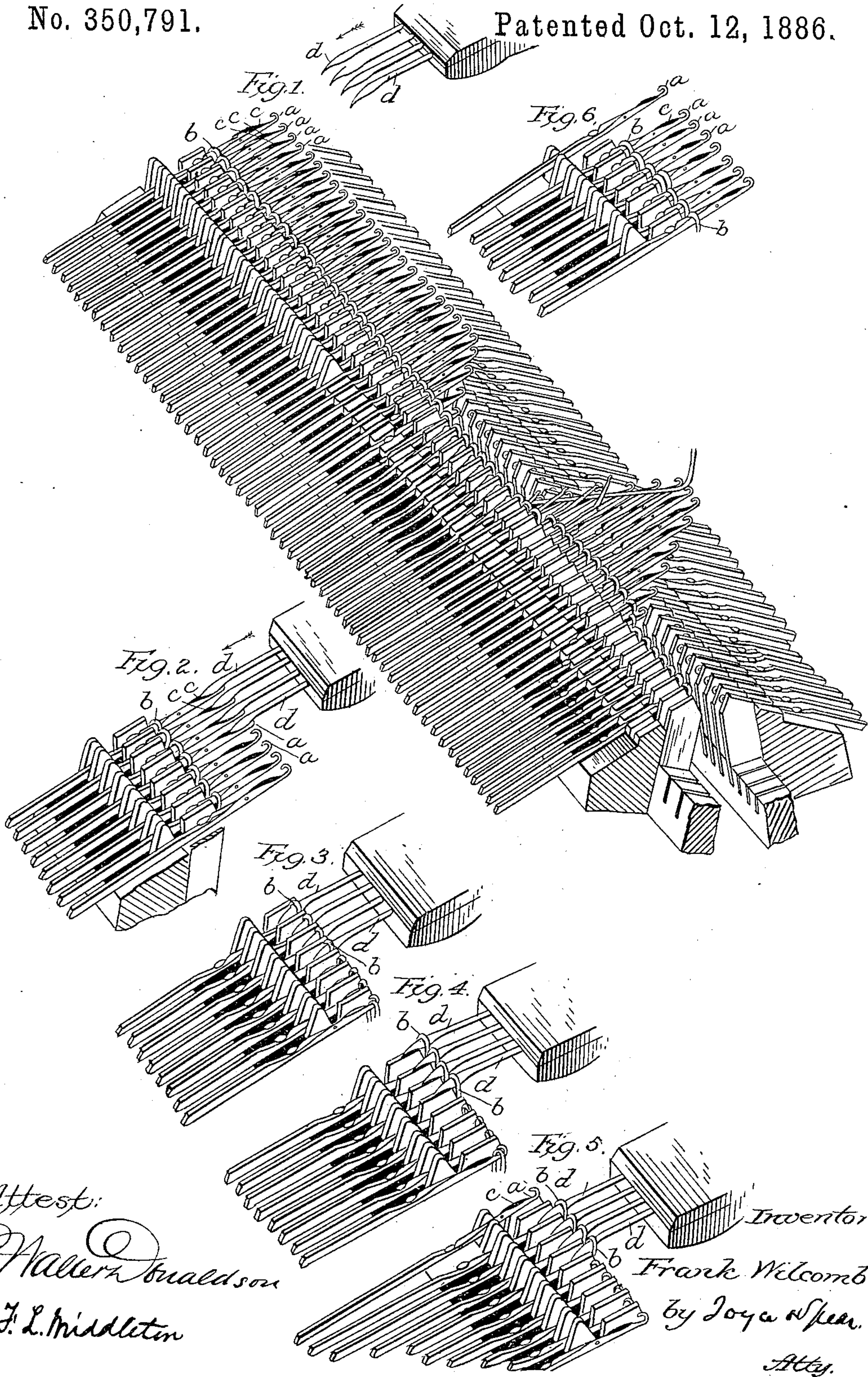
(No Model.)

F. WILCOMB.

METHOD OF OPERATING THE NEEDLES AND TRANSFER POINTS IN
LATCH NEEDLE KNITTING MACHINES FOR SHAPING FABRICS.

No. 350,791.

Patented Oct. 12, 1886.



Attest:

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METHOD OF OPERATING THE NEEDLES AND TRANSFER-POINTS IN LATCH-NEEDLE KNITTING-MACHINES FOR SHAPING FABRICS.

SPECIFICATION forming part of Letters Patent No. 350,791, dated October 12, 1886.

Application filed May 5, 1885. Serial No. 164,455. (No model.)

To all whom it may concern:

Be it known that I, FRANK WILCOMB, a citizen of the United States, residing at San Francisco, in the county of San Francisco and State of California, have invented certain new and useful Improvements in Methods of Operating the Needles and Points in Latch-Needle Knitting-Machines for Shaping Fabrics; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

My invention is a new mode of operating the needles and transfer-points of latch-needle knitting-machines, for the purpose of rendering the operation of transferring the loops and stitches more rapid and certain in shaping the fabric, the method being especially adapted for shaping tubular fabrics on a straight latch-needle knitting-machine; but it is also applicable for shaping flat or ribbed fabrics on such machine.

In carrying out my invention I make use of any of the well-known latch-needles and transfer-points.

The gist of my invention lies in the specified method, hereinafter described, of moving the latch-needles and transfer-points forward or backward through stationary loops or stitches. This movement, being independent of the ordinary movement of the needles in knitting, may thus be caused by the hand applied directly, or by any suitable mechanism, such as shown in an application filed by me in the United States Patent Office on the 3d day of July, 1886, No. 207,099.

In the drawings I have represented an arrangement of needles adapted to knit tubular fabrics on the well-known "Lamb" principle. It will be understood, however, that this illustration is intended simply to show how my improved method is carried out, and I do not limit myself to its use in connection with the manufacture of tubular fabrics, it being materially advantageous in knitting flat or ribbed

fabrics, nor its use in connection with any particular machine, as above explained.

In the drawings, Figure 1 is a perspective view of the needles and sinkers, portions of the needle-beds, and a point block and transfer-points, the needles of one row being represented as moved forward in position to be engaged by the transfer-points. Fig. 2 represents the points moved into engagement with the needles. Fig. 3 represents the points as taking the loops from the needles. Fig. 4 shows the points in the act of transferring the loops to other needles. Fig. 5 represents the needles and points after the loops have been transferred, showing also the end needle thrown out of action. Fig. 6 represents the needles as moved forward to their first position.

In carrying out my improved method on the described arrangement of needles, I first advance a portion of the series of needles (indicated at *a*) forward through the stationary loops *b* until the eyes *c* of the needles are exposed. The stitches or loops are then in a position about half-way between the rivets and the ends of the latches of the needles, as shown in Fig. 1. I then operate the transfer-points *d* forward over the hooks of the needles, as shown in Fig. 2, and depress them so that the extreme sloping ends of the points are inserted in the slots or eyes of the needles, the hooks of the needles being thus covered by the points. I then operate the needles backward, and the points in unison therewith, through the stationary loops until the points receive the loops, as clearly shown in Fig. 3. I next raise the points enough to clear the hooks of the needles, as in Fig. 4, and then shift the points and loops held thereby to other needles in the row, as in Fig. 5, the relation of the needles and points in this figure being the same as in Fig. 3. Next the needles are operated forward, with the points moving in unison, until the needles receive the loops, as in Fig. 6, and the points return to their normal position, as in Fig. 1, and this completes the stitch-transferring movements.

I am aware that stitches have been transferred by moving the loops back and forth on

stationary needles and points; also, that stitches have been transferred by moving the needles to bring the loops back of the latches and then transferring the stitches by a transfer-comb or wire loops; but never heretofore, so far as I am aware, have loops been transferred on latch-needle knitting-machines in precisely the manner described by me—that is, by first moving the needles forward until the loops rest upon the latches, then advancing the points, causing them to engage with the needles, and subsequently drawing back the needles and the points simultaneously, and, while they are still in connection until the loops rest upon the points, then shifting the transfer-points into engagement with other needles, and advancing these needles while still in engagement with the points far enough to leave the loops on the needles.

Stationary stitches have been transferred in spring-needle knitting-machines by moving the needles and transfer-points; but the movement of the needles and points in this machine differs from mine materially in this respect, that it has, and can have, no relation to

the latches, and, as is very well known, the spring-needle machines differ radically in construction and operation from the latch-needle knitting-machines.

Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

An improved method of operating the needles and transfer-points in latch-needle knitting machines, consisting in first advancing the needle from which the loop is to be taken until the loop is on the latch; second, in advancing the point to engage with the needle; third, in drawing back the needle with the point until the loop is on the point; fourth, in shifting the transfer-point into mesh with another needle, and then advancing said needle with the point far enough to leave the loop on the needle, all substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

FRANK WILCOMB.

Witnesses:

E. H. THARP,

H. M. MCKENNEY.