

(No Model.)

G. H. GILBERT.
CAM FOR KNITTING MACHINES.

No. 521,367.

Patented June 12, 1894.

FIG 1

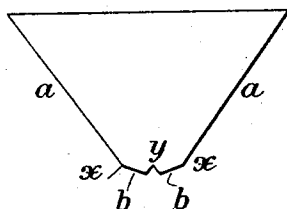


FIG 2



WITNESSES

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GEORGE H. GILBERT, OF PHILADELPHIA, PENNSYLVANIA.

CAM FOR KNITTING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 521,367, dated June 12, 1894.

Application filed February 26, 1894. Serial No. 501,485. (No model.)

To all whom it may concern:

Be it known that I, GEORGE H. GILBERT, a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented certain
5 Improvements in Cams for Knitting-Machines, of which the following is a specification.

The object of my invention is to so construct a drawing cam for knitting machines as to
10 prevent the needle which is drawing the last stitch from robbing or drawing thread from the stitch or stitches in advance, and thus unduly increasing the tension of the fabric, and this object I attain in the manner hereinafter
15 set forth, reference being had to the accompanying drawings, in which—

Figure 1 is a face view of a drawing cam constructed in accordance with my invention; and Fig. 2 is a sectional diagram showing the
20 relation of the needle to the hooked web holder at a certain stage of the knitting operation.

In that class of knitting machines in which the upper edge of the needle bar or cylinder
25 is provided with hooked sinkers for retaining the web on the rise of the needles, much difficulty has been experienced in endeavoring to produce stitches of the proper length, for, owing to the fact that the incoming thread is
30 drawn across the inner faces of a series of hooked upper ends of the sinkers, the tension upon said thread is so great that the needle which is drawing the stitch will rob or draw
35 yarn from the preceding stitch or stitches, which are free from tension owing to the fact that the bits of their needles have passed the drawing point of the cam and are free from the control of the same.

In carrying out my invention, therefore, I
40 so form the lower edge of the drawing cam that the needles, after drawing their stitches, will not be freed from the control of the cam, but will be held at the drawing point or only
45 allowed to rise very slowly, so that their stitches will not suddenly be relieved from tension and the needle which is drawing its stitch will be compelled to draw fresh yarn across the faces of the sinkers rather than
50 from the preceding stitch or stitches.

In Fig. 1 of the drawings I have shown my improved cam as constructed for use in a re-

ciprocating machine in which the cam acts upon the bits of the needles when traveling in either direction, the cam being therefore
55 in duplex form and having the oppositely inclined sides *a* as usual. Instead of these sides being continued to and meeting in a point at the bottom of the cam, however, the inner end of the cam has inclined portions *b* which are,
60 in respect to the vertical line of reciprocation of the needles, at a much more obtuse angle than the inclined sides *a* of the cam, these inclined portions *b* of the cam being preferably separated by the notch *y*.

Each of the inclined portions *b* of the cam
65 is of a length greater than the distance between two succeeding needles of the set and of a depth equal to the desired length of stitch to be drawn. When the bit of the needle after traversing the inclined side *a* of the
70 cam reaches the point *x* at the junction of the portions *a* and *b*, the hook of the needle is at the bottom of the throat *d* of the hooked sinker *f*, as shown in Fig. 2, and hence has just cast its stitch, therefore, while the bit of
75 needle is traversing the incline *b* from the point *x* to the notch *y*, the hook of the needle is drawing its stitch and the bits of the needle or needles in advance of that upon which
80 the stitch is being formed are still under control of the inclined portion *b* of the cam beyond the notch, and hence are prevented from rising so freely as to relieve their stitches from tension and permit the drawing needle
85 to rob them of their yarn.

It has been found that the presence of the notch *y* improves the operation of the cam, the sudden release of tension upon the stitch
90 after it has been fully drawn tending to prevent cutting of the yarn, while the stitch is immediately drawn tight again in order to prevent any robbing of the same by the succeeding needle when the latter is drawing its
95 stitch.

The gentle draft upon the yarn while the
95 bits of the needles are traversing the comparatively flat inclines *b* of the cam also enables the stitch to be drawn more easily and with less strain upon the yarn than where the steep angle of the cam is continued down to
100 the drawing point as usual.

Having thus described my invention, I

claim and desire to secure by Letters Patent—

1. A drawing cam for knitting machines, having on its forward side a sharp incline for depressing the needles to the casting point, a more gentle incline for depressing the needles from the casting point to the drawing point, a notch behind said gentle incline for permitting a sudden rise and descent of the needles, and a retaining portion behind said notch for preventing sudden rise of the needles after their bits have left the notch, substantially as specified.

2. A drawing cam for knitting machines having on its forward side a sharp incline for depressing the needles to the casting point, and a more gentle incline for depressing the needles from the casting point to the drawing point, and, beyond the latter, a retaining portion for preventing sudden rise of the needles after they have drawn the stitches.

3. A drawing cam for knitting machines having opposite inclined sides and, adjacent to the lower or inner end, inclined portions which are, in respect to the line of reciprocating movement of the needles, at a much more

obtuse angle than the inclined sides of the cam.

4. A drawing cam for knitting machines having opposite inclined sides, and on each side of the lower or inner end an inclined portion which, in width, is equal to or somewhat greater than the distance between adjoining needles, and in depth is equal to the distance between the casting point and the drawing point in the longitudinal movement of the needle.

5. A drawing cam for knitting machines having opposite inclined sides, and at the lower or inner end opposite inclined portions which are, in respect to the line of reciprocating movement of the needles, at a much more obtuse angle than said inclined sides of the cam, and having a notch between them, substantially as specified.

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

GEORGE H. GILBERT.

Witnesses:

EDWIN C. FREEMAN,
WILLIAM A. BARR.