J. BRADLEY.

Loop-Wheel for Knitting-Machine.

No. 211,831. Patented Feb. 4, 1879.

Fig. 1.

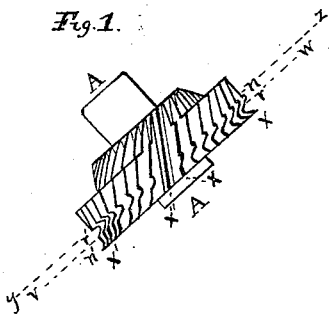

Fig. 2.

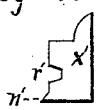

Fig. 3.

Witnesses.

Irving S. Porter.

John S. Searle.

Inventor.

John Bradley,

By Albert M. Moore,

His Attorney.

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

JOHN BRADLEY, OF LOWELL, MASSACHUSETTS, ASSIGNOR OF ONE-HALF HIS RIGHT TO WILLIAM H. PEARSON, OF SAME PLACE.

IMPROVEMENT IN LOOP-WHEELS FOR KNITTING-MACHINES.

Specification forming part of Letters Patent No. **211,831**, dated February 4, 1879; application filed April 17, 1878.

To all whom it may concern:

Be it known that I, JOHN BRADLEY, of Lowell, in the county of Middlesex and Commonwealth of Massachusetts, have invented a new and useful Improvement in Loop-Wheels for Spring-Needle Circular-Knitting Machines, which improvement is fully set forth in the following specification, reference being had to the accompanying drawings.

The object of this invention is to knit stripes or checks by means of one loop-wheel without alteration of the same.

My improvement consists in a loop-wheel so recessed and provided with nibs as, by making alternate series of long and short loops in each of two different-colored threads, to vary the color of the surface of the fabric, as herein described.

Figure 1 represents a loop-wheel embodying my invention. Figs. 2 and 3 represent the different kinds of teeth in said loop-wheel.

A is a loop-wheel, having teeth of sheet metal, *x x x' x'*, set in the hub of the wheel in the usual manner, but of different shapes from those commonly employed, the series of teeth *x x* being each recessed at the bottom, and also having a nib, *n*, immediately above the recess *r*, while the series *x' x'* are each nibbed (*n'*) at the bottom, in the usual manner, and are recessed (*r'*) at the same distance from the bottom as the upper nibs, *n*, are set on the teeth *x x*, the lower side of the recess in all the teeth forming additional nibs.

The two series of teeth are represented in Fig. 1 as each occupying one-half of the wheel. The wheel is substantially double, the lower part (below the line *v w*) carrying one thread, and the part next above (between the lines *v w* and *y z*) carrying another thread of a different color. The full part of the tooth in each case makes long loops, and the recessed part makes short loops, all the teeth carrying the yarn under the beards of the needles, and the long loops burying the short ones, so that each full part of the wheel brings its thread to the surface on both sides of the fabric; because, whenever one thread is being looped by the full part of any tooth, the other thread is being looped by the recessed part of the same tooth. Hence, if the number of needles in the head be divisible by the number of teeth in the wheel A without a remainder, the machine will knit vertical stripes; and if then umber of teeth in each series be equal, these stripes will be of equal width; and if, after knitting stripes for a while, the two threads change places with each other on the loop-wheel, the stripes will change places on the fabric—that is, for example, if one thread be red and the other blue, and consequently the stripes be red and blue alternately, and the threads change places on the loop-wheel, the continuation of the red stripe will be blue, and vice versa. It follows from this that by changing the threads (as above) as often as the stripes become as long as they are wide, square checks will be formed. The number of teeth in each series may be varied, to produce stripes of different absolute or relative widths. The shape of the tooth above the line *y z* is not material, and may be as shown, or curved back to the hub, in the usual manner.

I claim as my invention—

The loop-wheel A, provided with a series of teeth, *x x*, recessed below and full above, and another series of teeth, *x' x'*, full below and recessed above, as herein described, for the purpose specified.

JOHN BRADLEY.

Witnesses:

ALBERT M. MOORE,

IRVING S. PORTER.