(No Model.)

J. A. PARR.

PATTERN WHEEL FOR KNITTING MACHINES.

No. 262,466. Patented Aug. 8, 1882.

Fig. 1.

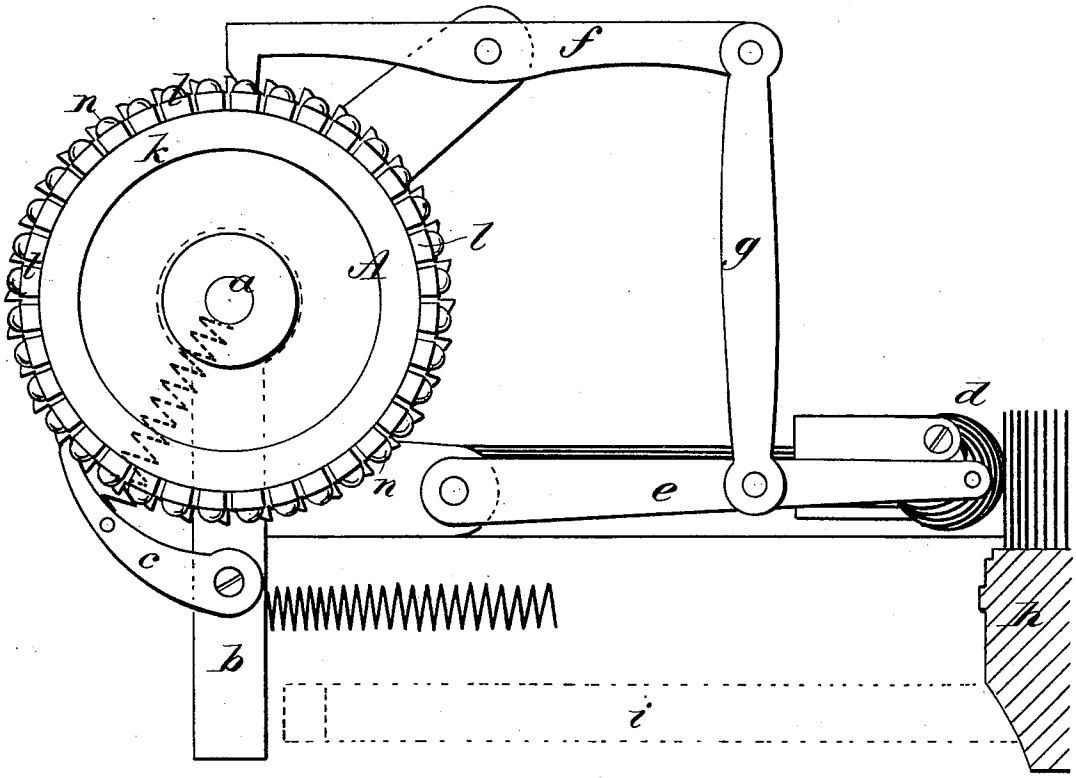


Fig. 2.

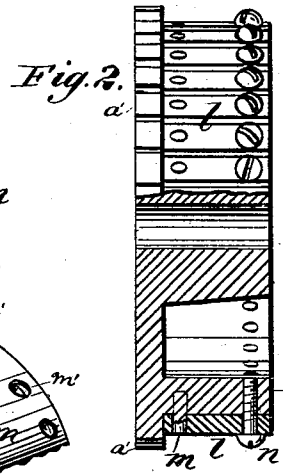


Fig. 3.

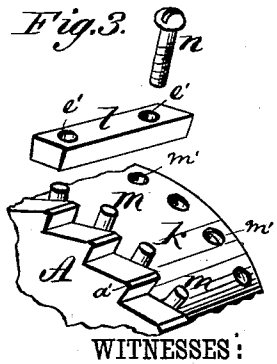


Fig. 4.

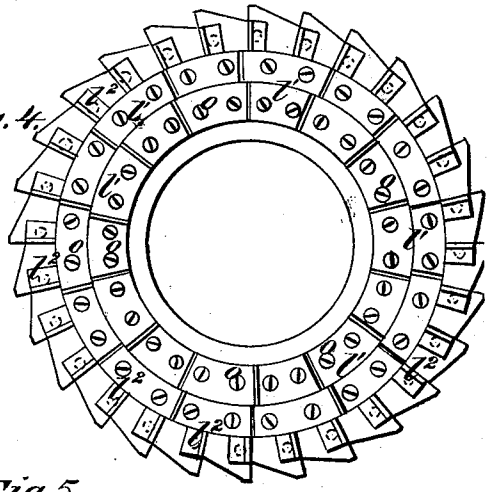
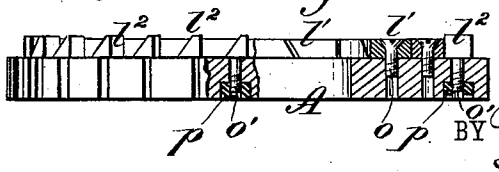


Fig. 5.



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UNITED STATES PATENT OFFICE.

JAMES A. PARR, OF LOWELL, MASSACHUSETTS.

PATTERN-WHEEL FOR KNITTING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 262,466, dated August 8, 1882.

Application filed August 25, 1881. (No model.)

To all whom it may concern:

Be it known that I, JAMES A. PARR, of Lowell, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Pattern-Wheels for Knitting-Machines, of which the following is a specification.

My improvements relate to spring-needle circular-knitting machines, particularly to the mechanism used in such machines for automatically controlling the introduction and severance of the different-colored yarns for the purpose of forming horizontal stripes or patterns on the goods.

In Letters Patent No. 213,299, granted to me March 18, 1879, I have shown a pattern-wheel having movable cams attached thereto, which wheel is adapted to receive an intermittent rotary movement by means of a rigid arm connected to the needle-cylinder, and adapted to move a pendulum-lever carrying a pawl in engagement with a ratchet secured to the pattern-wheel. A tappet-lever connected to a pivoted yarn-guide is supported in contact with the pattern-surface of the wheel, and by means of the cams is made to communicate an oscillatory movement to the yarn-guide for the purpose of feeding in or withholding from the sinker-wheel the colored thread with which the yarn-guide is supplied. The variability of the pattern knit into the fabric will thus depend upon the arrangement of the cams for changing the position of the yarn-guide. Pattern-wheels for such work have heretofore been constructed with cam-plates adapted to form a broken instead of a continuous pattern-surface when all the plates are in position, and as a continuous pattern-surface capable of being broken at any point will admit of more changes in its surface than one having plates adapted to form only a broken surface it is evident that a greater variety of patterns can be knit with the former than with the latter.

My present invention consists in constructing a pattern-wheel with a plain portion, upon which is removably secured a sufficient number of small blocks or strips to form a continuous, or nearly continuous, plain surface of either a circular or cylindrical form, whereby this plain surface may be broken at any point or desirable number of points by the removal of one or more blocks at said points, the object being to give to the tappet-lever which is placed in contact with the blocks or plain portion of the wheel a greater variability of movement for introducing or severing the different-colored yarns in knitting horizontal stripes.

Figure 1 is a side elevation of my improved pattern-wheel and the mechanism by which it is operated. Fig. 2 is a face view of the wheel partially broken open. Fig. 3 is a perspective of a segment of the wheel with the blocks removed. Fig. 4 is a side view, and Fig. 5 is a sectional face view, of the wheel in a modified form.

In the drawings, A is the pattern-wheel on an axis, *a*, from which hangs a pendulum-lever, *b*, carrying a spring-pawl, *c*, that engages ratchet-teeth *a'* on the wheel. *d* is the sinker-wheel; *e*, the vibratory yarn-guides; *f*, is a lever connected by a rod, *g*, with the guides *e*, and extending upon the cam-surface of the ratchet-wheel. *h* is the rotating cylinder of the machine, and *i* is an arm by which the pendulum-lever is operated. These parts, with the exception of the ratchet-wheel, are the same as shown in my aforesaid Letters Patent, and operate as there described.

The wheel A is formed with a plain portion, *k*, at one side of the ratchet-teeth, on which blocks *l* are attached. As shown, the attachment is by pins *m*, fixed in the face of the wheel, and screws *n*, passed through the apertures *e'* in the blocks into the aperture *m'* of the wheel. The blocks *l* are for moving the lever *f*, which extends contiguous to the face of the wheel. The wheel A is moved by the pawl the distance of one tooth at every revolution of the cylinder, and, there being as many blocks as there are teeth, each block represents a revolution of the cylinder. With all the blocks *l* in place on the wheel the lever *f* rests on them without being moved. By removing one block the lever will move to the face of the wheel at the space left, and the yarn-guide will thereby be held up to the position for knitting, during one revolution of the cylinder producing one course of colored yarn. At the same revolution the lever is raised and the thread cut off. By removing two adjacent blocks two courses will be produced; or by removing blocks at different points the order of the courses is varied.

It will be seen that a great variety in the pattern can be obtained without disarranging the machine by the use of the removable blocks.

I do not limit myself to the number of blocks on the wheels. Neither do I limit myself to the pawl as the means for moving the pattern-wheel, as worm-gear, friction-gearing, or any suitable mechanism can be used for the purpose.

The pattern-wheel A (shown in Fig. 5) is for use in machines requiring such wheels to be placed horizontally. The blocks l' l^2 are placed on the side of the wheel in concentric rows. The inner two rows, l', are for operation of the yarn-guide, and the blocks are secured by screws o. The outer row, l^2, is for operation of the shears, and the blocks are formed with threaded pins o', entering apertures of the wheel, in which are nuts p, that take the ends of the pins. The blocks l' l^2 are beveled on one edge. There may be any suitable number of these blocks, and in the operation of the machine one or more may be readily removed to vary the pattern as desired.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

An improved pattern-wheel constructed, substantially as herein shown and described, with the ratchet-teeth a' and the plain portion k at one side of the said ratchet-teeth, having pins m and holes m', and the removable blocks l, provided with holes e' near their ends, one set of holes fitting over pins m and the other set receiving screws n, passing through said holes, and thence into the holes m', as set forth.

JAMES ALBERT PARR.

Witnesses:

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