C. J. APPLETON.

KNITTING-MACHINE.

No. 169,331. Patented Nov. 2, 1875.

Fig. 1.

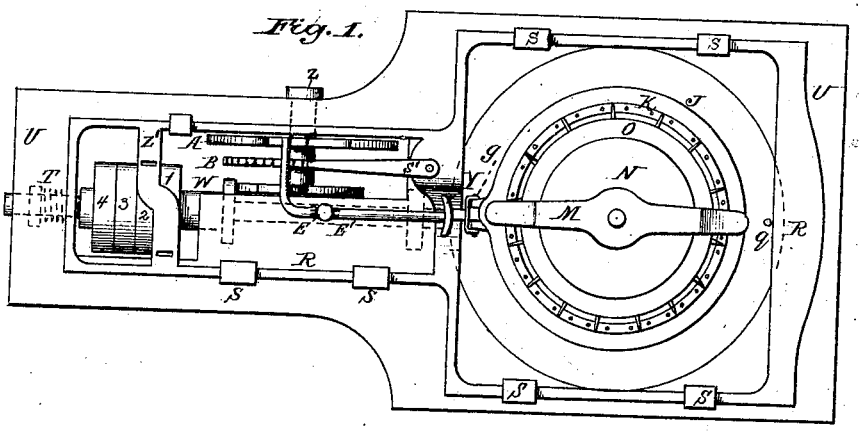
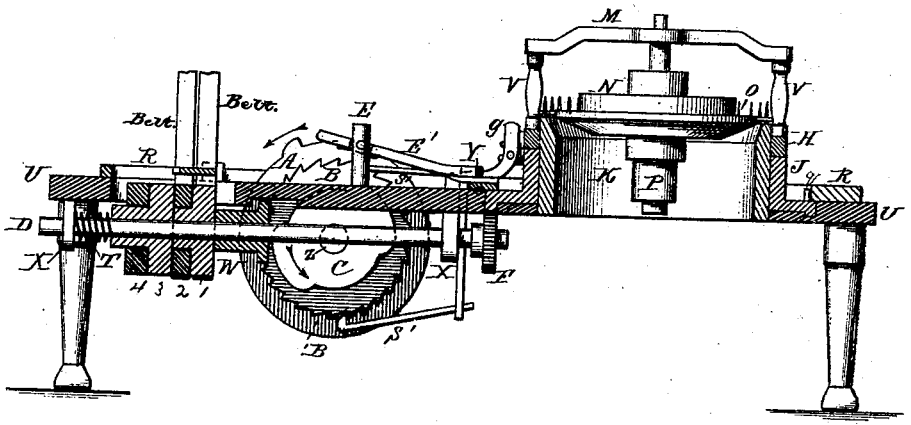


Fig. 2.



WITNESSES

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CHARLES J. APPLETON, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN KNITTING-MACHINES.

Specification forming part of Letters Patent No. **169,331**, dated November 2, 1875; application filed June 15, 1875.

To all whom it may concern:

Be it known that I, CHARLES J. APPLETON, of Philadelphia, State of Pennsylvania, have invented a new and Improved Knitting-Machine; and I hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, and the letters of reference marked thereon, in which the same letter represents the same thing in each figure.

This invention relates to certain improvements in knitting-machines; and consists of a novel construction and arrangement of parts, which will be fully hereinafter described, and specifically pointed out in the claims.

In the accompanying drawings, Figure 1 represents a top or plan view of a machine constructed according to my invention; and Fig. 2, a longitudinal section thereof, taken through the center of Fig. 1.

Referring to the drawings, A represents the welt-cam; B, the ratchet; C, the pattern-cam; D, the shaft for pulleys 1 2 3 4; E, the welt-lever post; E′, the spring-welt lever; F, the driving-gear; *g*, the catch and dog; H, the dial-ring; J, the cam-ring; K, the needle-cylinder; M, the brace to hold cap and dial; N, the cap; O, the dial; P, the collar on shaft; *q*, pin to move slide R; S S, the slide-boxes; S′, the ratchet-pawl to work ratchet B; T, the spring on shaft D; U, the bed-plate; V V, the pillars holding brace M; W, the collar working against cam C; X X, the shaft-lugs; Z, the ratchet and cam-shaft; Z′, the belt-shifter.

One object of my invention is to produce, at the same time, two striped knit fabrics with selvage sides, of any desired pattern, on a circular knitting-machine, with a single feed for each fabric, the fabrics being similar to hand-loom work. Another object is to produce welts on each fabric, automatically, at pleasure.

I accomplish these objects by giving the cam-ring an oscillating as well as at times a circular motion.

On a section of the needles in the cylinder and dial yarn of one color is placed, and on another section yarn of a different color, and the yarn changes sections at determined revolutions of the cam-ring, so that each section of needles knits first one color and then the other.

The operation of the machine is as follows: The work being on the needles, shaft D turns gear F, which revolves cam-ring J until pin *q* strikes slide R, which moves belt-shifter Z′, so that the open belt on tight pulley 1 is moved upon loose pulley 2, and the cross-belt on loose pulley 2 is moved upon tight pulley 3, and cam-ring J is thereby reversed, and revolves in the opposite direction until pin *q* strikes slide R. The cam ring J continues to revolve back and forth, as described, until slide R, by pawl S′, moves ratchet B on shaft Z, so as to cause pattern-cam C to push against collar W and move the pulleys on shaft D at the same time that slide R moves the belts in the same direction. The belts are consequently not shifted, and cam-ring J makes an entire revolution before it is reversed, moving the yarn of one color upon the section of needles previously occupied by the other color.

The welt-producing mechanism acts thus: The welt-cam A on shaft Z, moved by ratchet B, depresses the inner end of lever E′ by lifting the other end, so that the inner end strikes the dog and catch *g*, detaching dial-ring H from the cam-ring J, so that the dial-needles cease to work, and plain knitting is done by the needles operated by cam-ring J until dog *g* again enters its catch on dial-ring H, when the dial-needles will be again thrown into action, and both sets of needles will knit, the plain knitting having formed the welt.

The action of the needles is the same as in the Pepper and other ribbed knitting-machines.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination, with the needle-cylinder K and dial O, of the cam-ring J and dial-ring H, constructed substantially as described, so that ribbed or plain work may be produced automatically, at pleasure, as set forth.

2. The combination of a cam-ring, J, slide R, pulleys 1 2 3 4, and pattern-cam C, adapted to operate together, substantially as described.

3. Four sliding pulleys, alternately tight and loose, applied to a shaft, D, and combined with shifting mechanism, as described, whereby circular and semicircular movements may be imparted to the cam-ring J, at pleasure, substantially as specified.

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Witnesses:
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