

(No Model.)

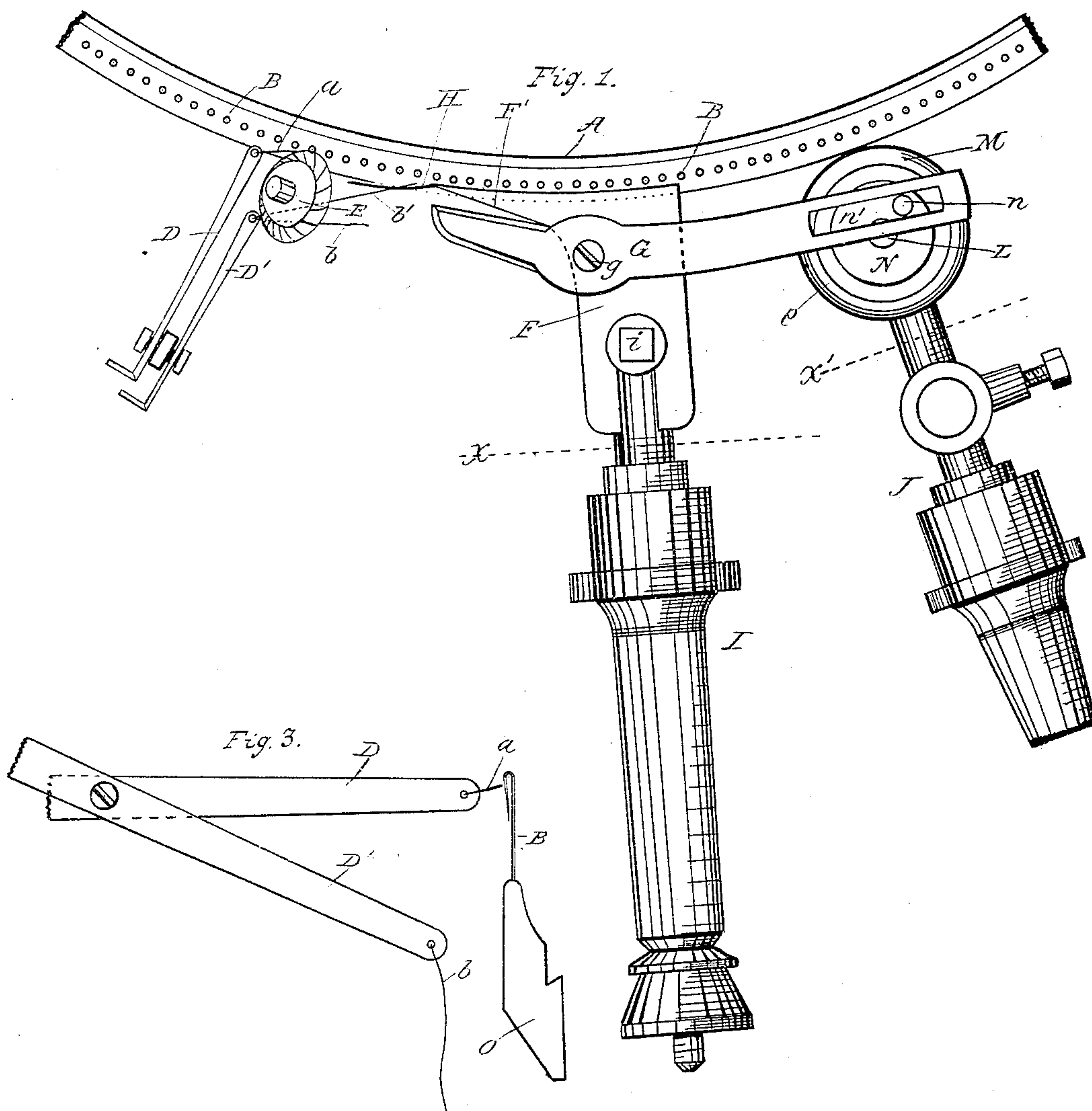
2 Sheets—Sheet 1.

J. H. SHERWOOD.

KNITTING MACHINE.

No. 318,515.

Patented May 26, 1885.



WITNESSES:

Peter J. Lewis  
A. J. Van Hensen

INVENTOR

James H. Sherwood  
BY W. Davidson Jones

ATTORNEY

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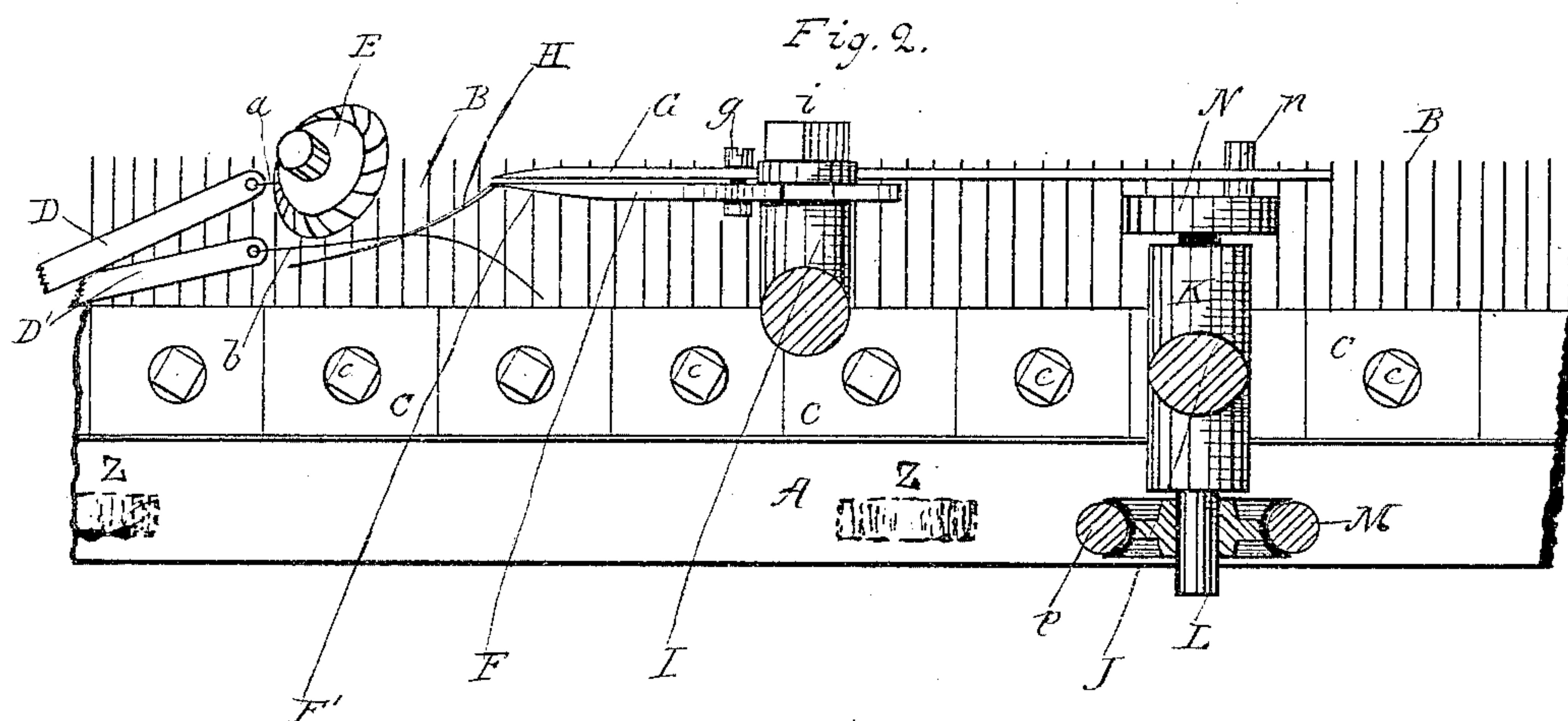
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# UNITED STATES PATENT OFFICE.

JAMES H. SHERWOOD, OF AMSTERDAM, NEW YORK, ASSIGNOR TO EDWARD McDONNELL, CHAS. D. DEAN, JAMES R. SNELL, AND HENRY O. BRYAN, ALL OF SAME PLACE.

## KNITTING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 318,515, dated May 26, 1885.

Application filed May 5, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES H. SHERWOOD, a citizen of the United States, residing at Amsterdam, in the county of Montgomery and State of New York, have invented certain new and useful Improvements in Knitting-Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention has relation to circular-knitting machines of that class which are employed for the manufacture of tubular goods of varied colors circumferentially, or it may be in vertical stripes by entering and dropping or withdrawing threads of desired color as the work progresses; and the object of my invention is to provide means for cutting off the threads of the product of knitting-machines as they are alternately dropped out and to accomplish this with the least possible waste and with the shortest possible ends of said threads projecting or hanging from the product; and my invention consists in certain features of construction, herein-after described, and specifically set forth in the claims.

Referring to the drawings making part of this specification, Figure 1 is a plan showing a portion of a circular-knitting machine needle-cylinder having my improvements applied thereto. Fig. 2 is an elevation of Fig. 1, showing the stands I and J broken away at the points indicated by the broken lines  $x x'$  in Fig. 1; and Fig. 3 is a detached view of a portion of the pair of thread-guides and a needle, showing the arrangements or relationship of each to the others.

To enable others skilled in the art to which these improvements relate to construct and use my invention, I will describe their construction and operation.

A in Figs. 1 and 2 represents a portion of the needle-cylinder of a circular-knitting machine of the ordinary and common kind in use, provided with vertical barbed needles B, which are clamped and held in place by the followers C and set-screws  $c$ . (See Fig. 2.)

E (see Figs. 1 and 2) is a looper-wheel, and D D' are movable thread-guides that are operated by suitable mechanism, usually consisting of cams, and so constructed and oper-

ated as to throw the thread-guides D D' up and down alternately, thereby presenting threads or yarns of different colors or qualities to be fed by the action of the looper wheel under the barbs of the needles.

Any proper and suitable mechanism consisting of cams upon a cam-wheel may be employed to operate the thread-guides D and D'—as, for instance, those shown and described in United States Letters Patent No. 267,097, granted November 7th, 1882, to Edward McDonnell, James R. Snell, Charles D. Dean and Henry O. Bryan, assignees of McDonnell and Sherwood, all of Amsterdam, New York, for improvements in circular-knitting frames. I refer to this patent for the reason that I employ substantially the same mechanism and parts for operating the thread-guides D and D' as those shown in said patent to operate the standard or connection J. The cams on the ratchet-wheel in said patent referred to may be changed to any length or position upon said ratchet-wheel, as may be desired. The mode of operating these thread-guides D and D' with cams is also substantially illustrated, and reference may also be had, if necessary, to United States Letters Patent No. 227,213, dated May 4, 1880, and No. 244,735, dated July 26, 1881, granted John Bradley for improvements in knitting-machines.

The manner and the mechanism employed to operate the thread-guides D and D' are so well understood by those skilled in the art that any description in addition to these Letters Patent referred to is unnecessary.

The stationary presser F and shear-blade F' and thread-guide H may be constructed of steel or other suitable material in one piece, or the presser and shear-blade constructed in one piece, and the thread-guide H brazed or soldered to the point of the shear-blade and secured to the presser-stand, substantially as shown in Figs. 1 and 2. The inner portion of this presser and shear-blade bears against the barbs of the needles B and presses them down in the usual manner, thereby allowing the loops to pass over them, so as to form the new loops or stitches. The pointed extension F' of this presser constitutes the stationary blade of the pair of shears or cutters, substantially as shown in the several drawings. The ex-



treme point H of this stationary shear-blade F', I extend outward and downward a short distance from the needles, substantially as shown at H in Figs. 1 and 2. This extension H forms a thread-guide to guide the uncut thread or yarn when thrown down by the action of the thread-guides D and D' from the looper-wheel E with certainty to the action of the shears or cutters.

I construct a movable shear-blade, G, substantially of the form shown in the several drawings, and provide it with a slot, *n'*, near the end of the shank to receive the wrist-pin *n*. This movable blade G, I pivot upon the stationary presser shear-blade with the screw or bolt *g*. (See Figs. 1 and 2.)

The sleeve-bearing K may be constructed of the form shown, or of any other proper form, and be firmly secured to the stand J, all substantially as shown. This sleeve-bearing I bore or drill out lengthwise to receive the shaft L. Upon the upper end of shaft L, I secure the disk N, provided with a wrist-pin, *n*. Upon the lower end of shaft L, I secure the friction-wheel M, all substantially as shown in Figs. 1 and 2. This friction-wheel M is provided with a circumferential groove, into which I place the rubber ring *p*. This elastic ring *p* causes the friction-wheel to run smooth as it engages the heel or lower portion of the needle-cylinder A. The wrist-pin *n* enters the slot *n'* in the shank of the vibrating shear or cutter-blade G. However, this vibrating cutter may be vibrated at intervals by a series of cams, for example, as Z, (see dotted lines, Fig. 2,) attached to the heel or outer lower portion of the needle-cylinder. The several parts or elements being complete, and motion being communicated to the machine, the friction-wheel M receives rapid motion by being pressed against the outer lower portion of the cylinder A, thereby communicating rapid vibratory motion to the movable cutter-blade G through the medium of the shaft L, disk N, and wrist-pin *n*, engaging the shank of the vibratory blade G in slot *n'*. Thread or yarn of different colors or qualities is supplied to each of the thread-guides D and D'. To illustrate I will suppose that it is desired to knit a web of alternate circumferential stripes of scarlet and white, and that the scarlet yarn is fed to the looper-wheel E through the yarn-guide D, and white yarn through the yarn-guide D'. The yarn-guide D is at its highest position—that is, so as to convey the scarlet yarn to the looper-wheel E—the yarn-guide D' being at its lowest position, as shown in Figs. 1, 2, and 3. After the cylinder has run the desired time the thread-guide D', holding the white yarn in the position as shown at Fig. 3, is quickly thrown up by a cam, heretofore referred to, thereby causing the loose end of the white yarn *b* to come in contact with and by the looper-wheel E be fed under the barbs of the needles B, while almost instantaneously thread-guide D, carrying the scarlet yarn *a*, is thrown

down by the action of a cam, heretofore referred to, to the position indicated by the thread-guide D', thereby causing the scarlet thread, which was being fed in under the barbs of the needles B by the looper-wheel E, to fall below the looper-wheel in the position shown at *b'* in Fig. 1 over the guide H, which, by the motion of the cylinder, carries the yarn or thread directly into the shears, which clip or sever it instantly, when it falls down in the position as shown at *b* in Fig. 2, and finally assumes the position shown at *b* in Figs. 1 and 3. The operation just described is repeated by the thread or yarn guides D and D' alternately, thereby producing a web of alternate circumferential stripes.

The advantages of my improvements consist in the perfect and sure manner in which the alternate threads are cut off as they are withdrawn from the action of the looper-wheel.

I do not confine myself to the employing or use of one of my attachments to a circular-knitting frame, as a plurality of them may be used in a single cylinder without changing the nature of my invention.

Having described my invention, what I claim as new is—

1. The presser F, provided with a shear-edge, F', substantially as specified.

2. The presser F, provided with a shear-edge and a thread-guide, substantially as specified.

3. The presser F, provided with a shear-edge, in combination with a vibratory shear-blade, substantially as specified.

4. The presser F, provided with a shear-edge and a vibratory shear-blade, in combination with power-conveying devices mounted independently of and receiving motion from the needle-cylinder, substantially as specified.

5. The presser F, having a shear-edge and a thread-guide at that side thereof which is arranged toward the looper-wheel, in combination with a vibratory blade arranged and operating with said shear-edge, substantially as specified.

6. The combination of the presser F, constructed as described, the vibratory shear-blade G, pivoted thereon, and the shaft L, carrying devices constructed, arranged, and operating substantially as described, whereby motion received from the cylinder is conveyed to the shear-blade.

7. The presser F, having a shear-edge, F', and a thread-guide, H, in combination with a vibratory blade, G, pivoted to said presser and having a shank, the shaft L, carrying a disk, N, having a pin, *n*, the wheel M, and the cylinder A, substantially as shown and described.

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

Witnesses: JAMES H. SHERWOOD,  
W. DAVIDSON JONES,  
P. J. LEWIS.