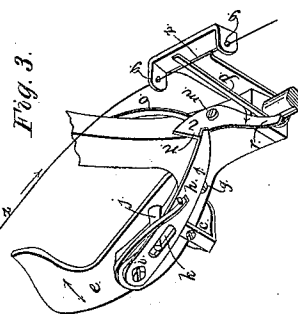
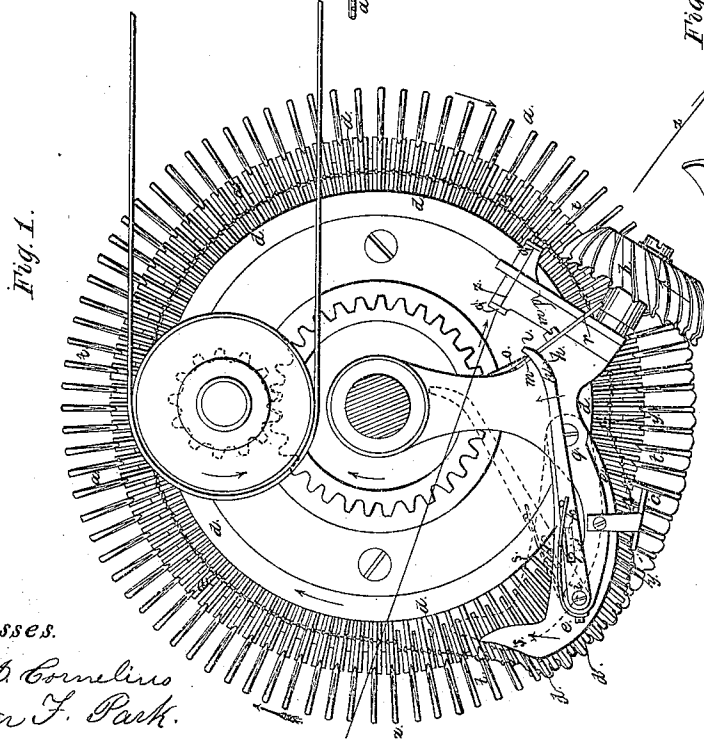
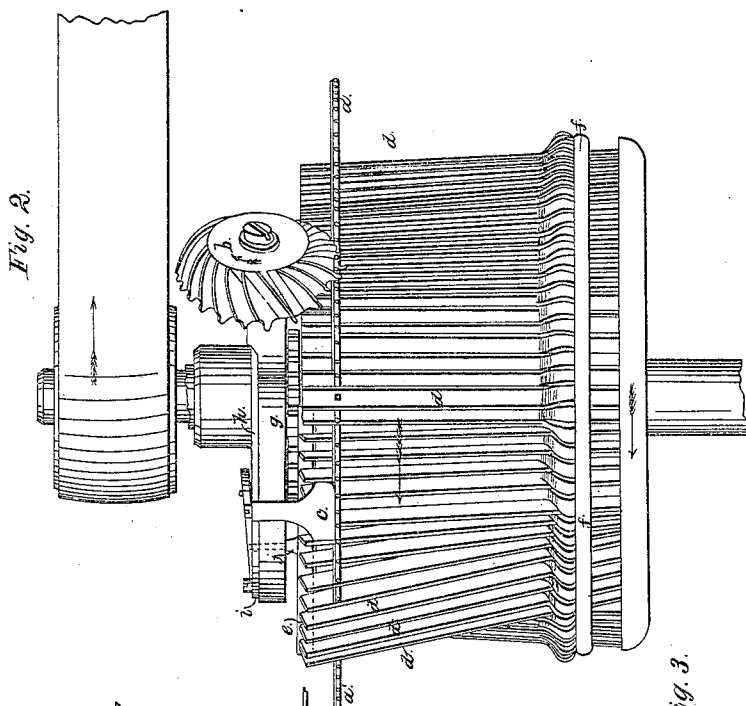


E. S. Ells.
Knitting Machine.

N^o 25,185.

Patented Aug. 23, 1859.



Witnesses.
Thos. J. Cornelius
Austin F. Park.

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EDGAR S. ELLS, OF TROY, NEW YORK, ASSIGNOR TO C. G. KEENEY, OF MANCHESTER, CONNECTICUT.

KNITTING-MACHINE.

Specification of Letters Patent No. 25,185, dated August 23, 1859.

To all whom it may concern:

Be it known that I, EDGAR S. ELLS, of the city of Troy, in the county of Rensselaer and State of New York, have invented a new and useful Improvement in Rotary Knitting-Machines for the purpose of preventing the "jacks" or their equivalent from casting off the loops of yarn from the needles, so as to run off the cloth, and thus produce waste and delay when the yarn breaks or runs out; and I do hereby declare that the following is a full and exact description thereof, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a plan, and Fig. 2 an elevation of the parts; and Fig. 3 a perspective view of some of them.

The same letters refer to like parts in all the figures; and the arrows indicate the directions in which the parts move.

In the application of my improvement, the needles,—which may be of either the "spring-hook" kind or of the "latch" variety, and arranged in the form of a cylinder, disk, or truncated cone,—the sinker, or device for feeding the yarn into the needles, and all the other knitting appliances, except the devices for casting the loops of yarn off from the needles, remain as in any of the well known machines; and so does the position of the casting-off device when in action.

In the annexed drawings, *a, a*, are the needles.

b is the sinker.

c is the presser.

d, d, are the jacks.

e is the cam which forces the jacks outward so as to first make them "land" the loops, *y, y*, onto the spring-hooks of the needles when the points of the hooks are sunk by the presser, and then, afterward, cast the loops off from the needles.

f is an annular spring which holds the jacks in place, and returns them inward when they have passed the cam *e*.

g is a pivot on which the cam *e* is hung.

h is an arm, hung at *i*, and connected with the cam *e* by a pin *j* and slot *k*.

l, Fig. 3, is a lever which is hung at *m*, and which has a detent *n*, which holds the arm *h*, and thereby the cam *e*, and jacks, in working position, as shown in full lines.

o, is a spring to hold up that end of the lever *l* which has the detent.

p is a spring which bears up against the feed-yarn, *z*, as long as the latter runs through and between the guides, *q q*, to the needles. But whenever the yarn, *z*, runs out, or breaks, the spring *p* then flies up against the end *r* of the lever *l*, and so moves the latter as to free the arm *h*, from the detent *n*, and thus allow the cam *e* to spring inward to its position shown in dotted lines, at *s*; and thereby so displace or change the position of the jacks in respect to the presser, *c*, that the jacks cannot then slide the loops over the points of the hooks, *t*, when the latter are depressed, and consequently cannot cast the loops off from the needles. It is obvious that instead of swinging the cam *e* inward, it can be made to slide inward on ways.

Having described my improvement in knitting machines, what I claim therein and desire to secure by Letters Patent, is—

The combination and arrangement of the lever *e*, arm *h*, pin *j*, and slot *k*, with the lever *l*, detent *n*, and springs *o*, and *p*, substantially as and for the purposes described.

EDGAR S. ELLS.

Witnesses:

THOS. J. CORNELIUS,
AUSTIN F. PARK.