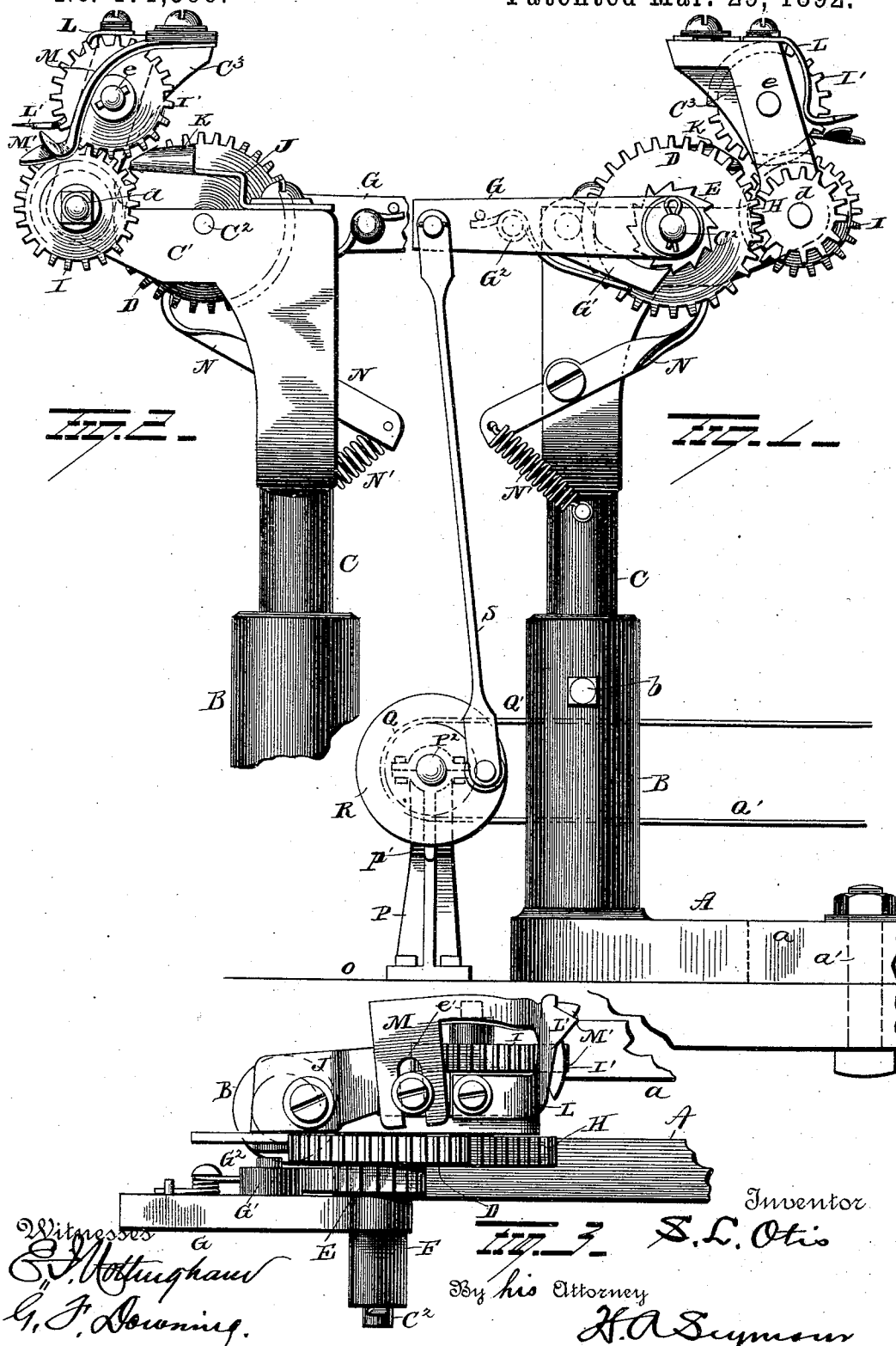


(No Model.)

S. L. OTIS.
FEEDING MECHANISM FOR KNITTING MACHINES.

No. 471,566.

Patented Mar. 29, 1892.



UNITED STATES PATENT OFFICE.

SAMUEL L. OTIS, OF AMSTERDAM, NEW YORK.

FEEDING MECHANISM FOR KNITTING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 471,568, dated March 29, 1892.

Application filed October 17, 1890. Serial No. 368,406. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL L. OTIS, a citizen of Amsterdam, in the county of Montgomery and State of New York, have invented certain new and useful Improvements in Feeding Mechanism for Knitting-Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to an improvement in knitting-machines, and more particularly to intermittent feed mechanism therefor, its object being to produce an intermittent feed mechanism whereby the material may be so fed to the knitting mechanism that fancy articles constituting "dashes" of various colors may be quickly and accurately produced.

A further object is to so construct an intermittent feed mechanism that it may be placed in close proximity to the feed-wheel of the knitting-machine and which shall have an intermittent rotary motion always in the same direction.

A further object is to construct a rotary intermittent feeding mechanism for knitting-machines in such manner that the feeding-wheels shall always move in the same direction and be prevented from retrograde movement when they are not feeding.

A further object is to construct a feeding mechanism which shall be intermittent in its action and which shall be simple in construction, comprise a comparatively small number of operating parts, and which shall be effective and accurate in the performance of its functions.

With these objects in view the invention consists in certain novel features of construction and combinations and arrangements of parts, as hereinafter set forth, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a side elevation of my improved feeding mechanism. Fig. 2 is a similar view from the opposite side of the apparatus. Fig. 3 is a plan view.

The feeding device, which, it may be here stated, supplies the supplemental thread only, is adapted to be secured to the bed of the machine and set as close as possible to the feed-

wheel of the knitting-machine and in such position that the yarn fed through the device will enter the feed-wheel of the knitting-machine to be taken under the barbs of the needles and knit into the web.

A represents an arm having an elongated slot *a*, by means of which the arm may be adjustably secured to the bed of the machine by a bolt *a'*. Projecting upwardly from one end of the arm A is a socketed post B, in which an upright or standard C is located and adapted to be adjusted vertically by means of a set-screw *b*, passing through the wall of the post B and engaging the upright or standard C. The upper end of the upright or standard C terminates in an arm C', projecting at right angles therefrom, and projecting laterally from said arm is a shaft or arbor C².

On the shaft or arbor C² and in proximity to the standard C a pinion D is loosely mounted. Also mounted on the shaft or arbor C² in close proximity to the pinion D and adapted to rotate therewith is a ratchet-wheel E, and on said shaft beyond the ratchet-wheel E a sleeve F is loosely mounted, from which an arm G projects, said arm G having a dog G' pivoted thereto, adapted to be maintained normally in contact with the ratchet-wheel E by a spring G².

Projecting upwardly from the inner end of the arm C' is an integral arm C³, and at the junction of the arms C' C³ a perforation is made for the accommodation of a shaft *d*, having a pinion H, secured to one end thereof, said pinion being preferably considerably smaller than the pinion D and adapted to mesh therewith. On the opposite end of the shaft *d* a pinion I, preferably somewhat larger than the pinion H, is keyed or otherwise secured. Above or in proximity to the pinion I a pintle *e* projects laterally from the arm C³ and has loosely mounted thereon a pinion I' of a size equal to that of the pinion I and adapted to mesh therewith, and it is between these pinions that the yarn is adapted to pass, as presently more fully explained.

Secured at its outer end to the upright or standard C is a plate J, which is bent upwardly and inwardly and at its inner end is bent to form a loop or guide K, through which

the yarn is adapted to pass before entering between the pinions I I'.

Secured to the arm C³ is a plate L, which projects downwardly and at its free end is bent laterally and terminates in a finger or guide L' in front of the pinion I'. A plate M is provided at one end with an elongated slot e' and adjustably secured to the arm C², said plate extending first laterally from the arm C³ and then downwardly, terminating in a finger or guide M' in front of the pinions I I'. These guides or fingers L' M' serve to guide the yarn from the pinions I I' to the feed-wheel of the knitting mechanism, and they also serve as guards to prevent the yarn from being caught in the pinions I I' and be thereby carried around said pinions and diverted from their proper course.

Pivoted to the standard C is a dog N, adapted to engage the pinion D and prevent retrograde movement thereof during the backward stroke of the arm G, said dog being maintained normally in contact with the pinion D by a spring N'.

Secured to a suitable base O in proximity to the feed mechanism is an upright P, having arms P', in which a shaft P² is journaled. Secured to this shaft is a band-wheel Q, over which a band Q' passes, through the medium of which said shaft is rotated. Also secured to the shaft P is a crank-disk R, to which one end of a pitman S is connected, the other end of said pitman being connected to the arm G, and in this manner an oscillatory motion is imparted to said arm G. Yarn being fed to the pinions I I', as previously explained, a downward movement of the arm G will cause the gearing to operate and the pinions I I' to feed the yarn to the feeding-wheel. When the yarn G has reached the downward extremity of its throw and begins its upward movement, the yarn will be broken off, and during such upward movement the pinions I I' will be at rest, retrograde movement of the gearing being prevented by the dog N. In this manner the yarn may be fed intermittently and dashes of different colors may be passed through the device to the knitting mechanism.

It is evident that slight changes might be made in the details of construction of my invention without departing from the spirit thereof or limiting its scope. Hence I do not

wish to limit myself to the precise details of construction herein described; but,

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

1. An intermittent feeding mechanism for knitting-machines, consisting of intermeshed feed-pinions, a drive-pinion located to one side of the latter, a gear-wheel intermeshed with the drive-pinion and adapted to transmit motion from the drive-pinion to said feed-pinions, means for preventing a retrograde movement of the drive-pinion, a vibrating arm pivoted in proximity to the drive-pinion, and means connected with the arm for imparting motion to the drive-wheel during the alternate strokes of the arm, substantially as set forth.

2. The combination, with intermeshed feed-pinions, of guides located forward and also in rear of said pinions, a gear-wheel on the shaft which carries one of the feed-pinions, an arbor, a drive-pinion loosely mounted thereon, the teeth of said drive-pinion being intermeshed with the teeth of the gear-wheel, a swinging arm, means for locking the drive-pinion against reverse movement, and means connected with the arm for actuating the drive-pinion in one direction, substantially as set forth.

3. In a feeding mechanism for knitting-machines, the combination, with an upright, of an arbor or shaft projecting therefrom, a pinion and a ratchet-wheel mounted on said arbor or shaft, an arm also mounted on said arbor or shaft and carrying a dog to mesh with said ratchet-wheel, a shaft mounted in the upright, a pinion on one end of said shaft and adapted to mesh with the first-mentioned pinion, a feeding-pinion on the other end of said shaft, another feeding-pinion mounted to mesh with the first-mentioned feeding-pinion, and mechanism connected with the pivoted arm for actuating the feeding-pinions, substantially as set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

SAMUEL L. OTIS.

Witnesses:

JAMES E. VALENTINE,
BYRON J. SNYDER.