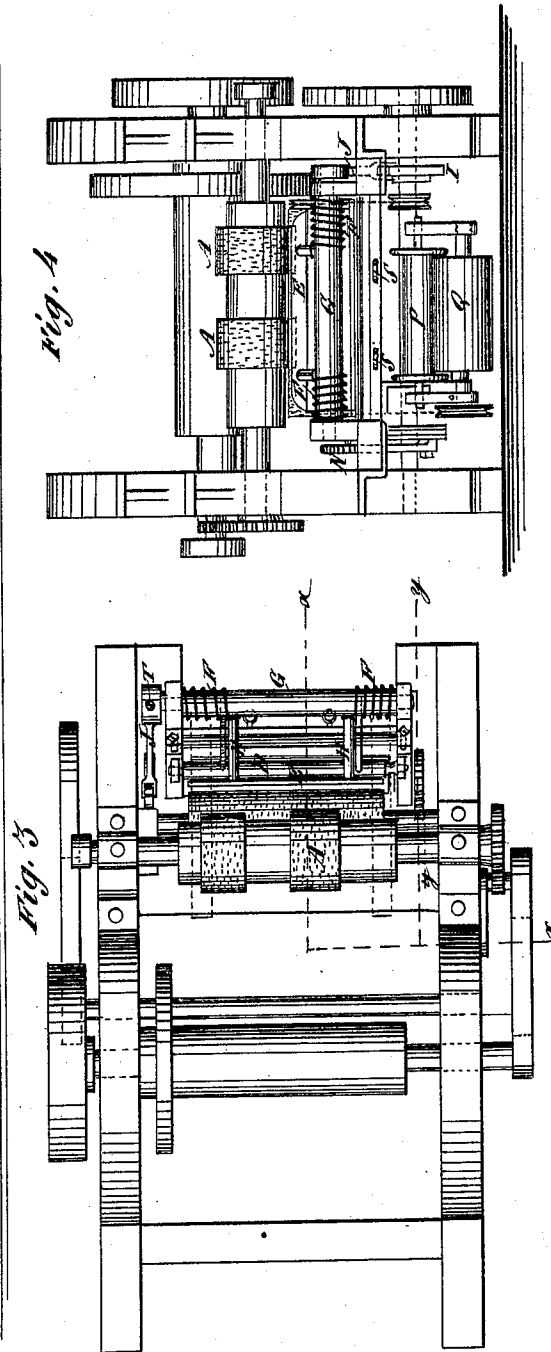
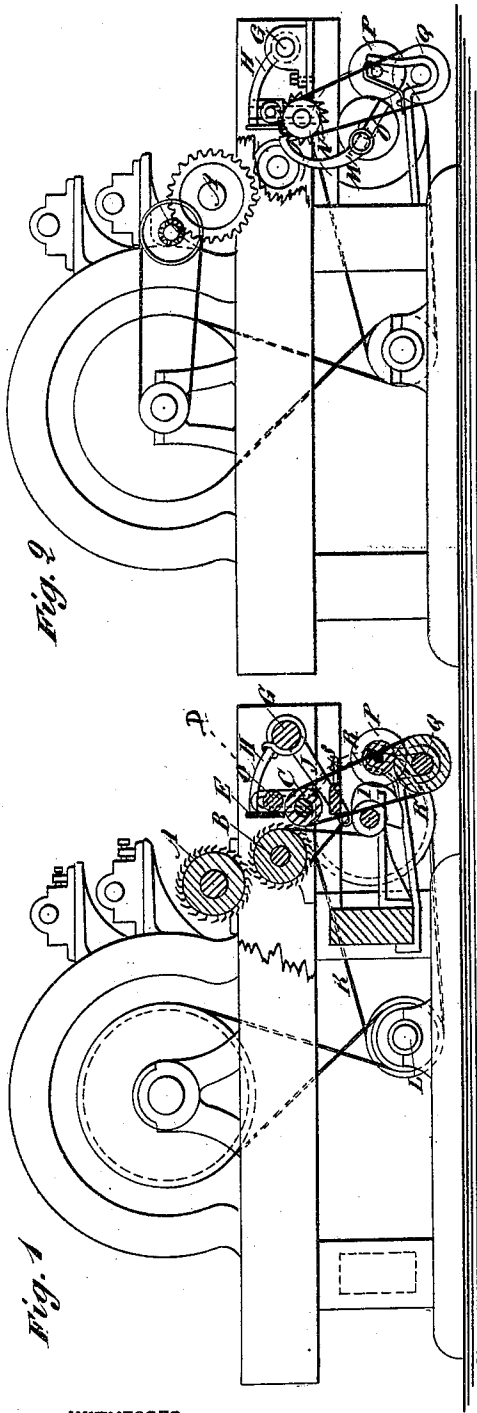


J. C. RYAN.
CARDING-MACHINE.

No. 179,962.

Patented July 12, 1876.



WITNESSES:
C. Neveu
John Goethals

INVENTOR:
James C. Ryan
BY *Munn & Co.*
ATTORNEYS.

UNITED STATES PATENT OFFICE.

JAMES C. RYAN, OF AMESBURY, MASSACHUSETTS.

IMPROVEMENT IN CARDING-MACHINES.

Specification forming part of Letters Patent No. **179,962**, dated July 18, 1876; application filed April 18, 1876.

To all whom it may concern:

Be it known that I, JAMES C. RYAN, of Amesbury, in the county of Essex and State of Massachusetts, have invented a new and Improved Carding-Machine, of which the following is a specification:

My invention consists of an attachment to carding-machines for making nubbed and clouded or imitation printed yarn, the same being intermittent feed-rollers, a knife for holding back the yarn or sliver, and a wipe-roll, by which the yarn is supplied to the doffer of the carding-machine, and there combined with the stock, forming the groundwork of the yarn.

Figure 1 is a sectional elevation of a carding-machine with my improved attachment, the section being taken on the line *x x* of Fig. 3. Fig. 2 is a section on line *y y* of Fig. 3. Fig. 3 is a top view, and Fig. 4 is a front elevation.

Similar letters of reference indicate corresponding parts.

A is the ordinary doffer of the carding-machine; B, a wipe-roll, which I arrange below it in connection with a pair of feed-rolls, C and D, and a knife, E, the knife being arranged to close on the large feed-roll between it and the wipe-roll by the spring F on the rock-shaft G, from the arms H of which the knife is suspended. The cam I lifts the knife off the feed-roll by raising the arm J of shaft G, the cam being turned by the belt K from the driving-shaft L.

The feed-roll C is turned intermittingly by the pawl M and the ratchet-wheel N. This pawl is worked by the slotted disk O on the cam-shaft, which is adjustable to turn the feed-roll more or less, according to the amount

it is desired to feed. The slivers to be supplied are drawn from the spool P, resting on and being turned by the drum Q, which is turned by a belt, R, from the feeding-roll C.

By this contrivance the machine will make nubbed yarn with the webs any distance apart, provided the cam-shaft be geared so that the speed may be varied, the sliver being fed in full size when the knife is raised, and checked back and stretched when the knife is closed on the feed-roller. It will also make clouded or imitation printed yarn of different colors, as many different colors as may be desired being employed, and being separated from each other by passing through different guide-eyes S.

For making clouded yarn, the knife will be taken out when the attachment is not wanted. The set-screw T fastening the arm J to the rock-shaft may be loosened, and the pawl M shifted out of the ratchet, which will allow the carding-machine to work the same as without the attachment.

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

1. The combination of the knife E, automatically-rotating feed-rolls C D, and the wipe-roll B with the doffer of a carding-machine, substantially as specified.

2. The cam I, slotted disk O, rock-shaft G, arm J, pawl M, ratchet N, knife E, and feed-roller C, combined and arranged substantially as specified.

JAMES C. RYAN.

Witnesses:

P. H. YOST,
H. G. GUILD.