

S. S. & G. M. STILES.
 FEED FOR FINISHING CARDS.
 APPLICATION FILED FEB. 20, 1914.

1,167,950.

Patented Jan. 11, 1916.

2 SHEETS—SHEET 1.

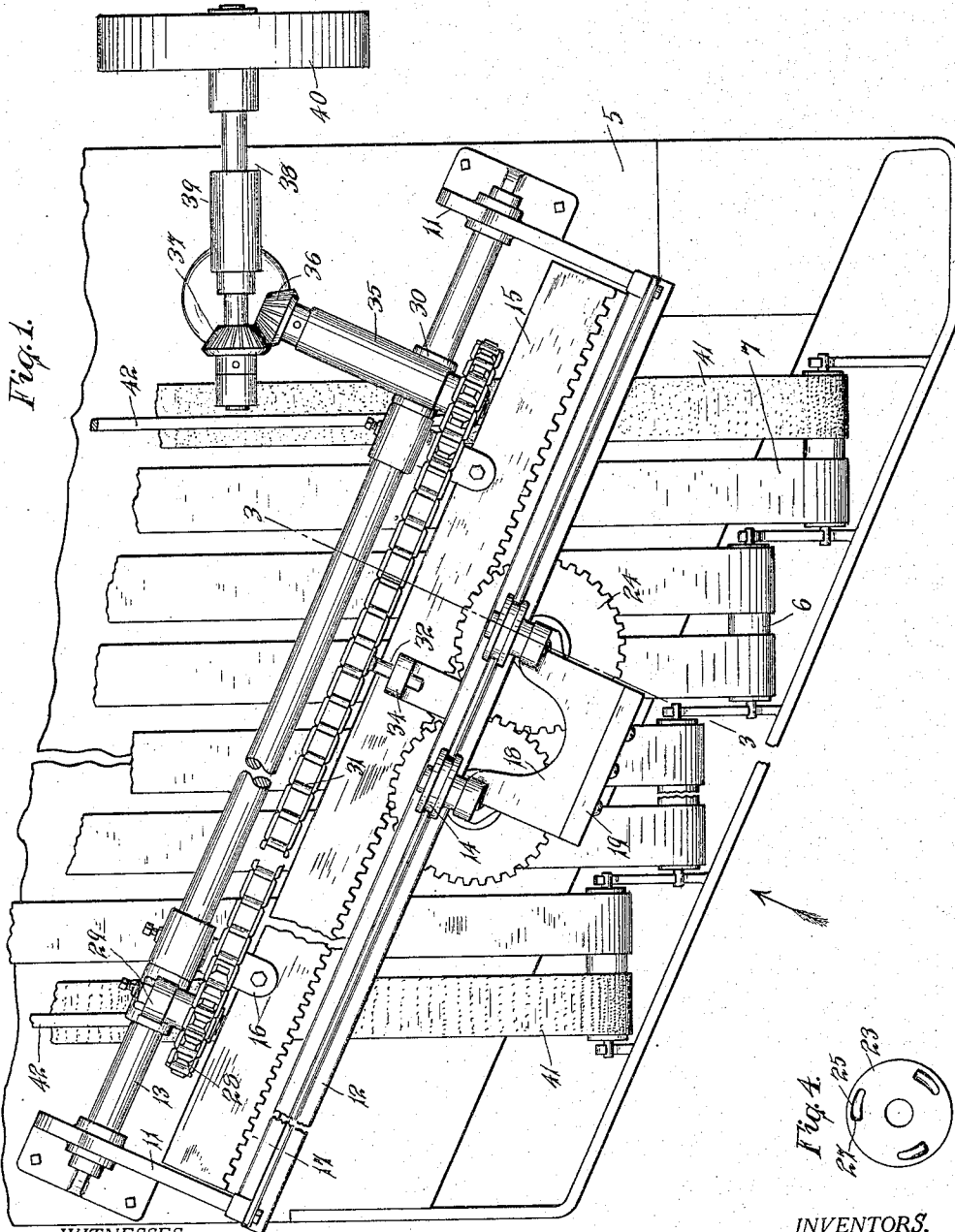


Fig. 1.



Fig. 4.

WITNESSES:

Louis Lucia.
 C. F. Eaton.

INVENTORS.

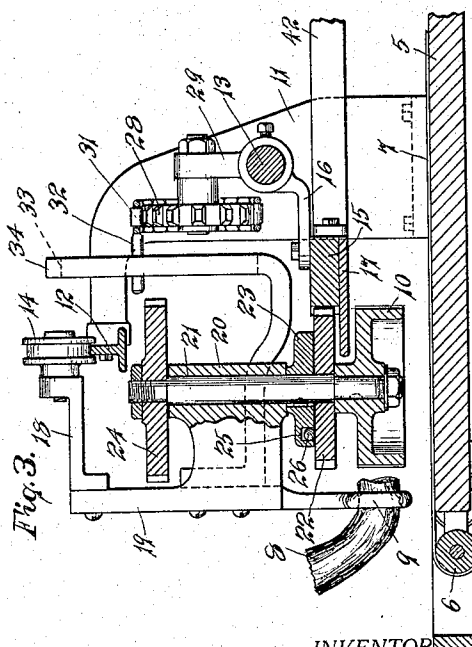
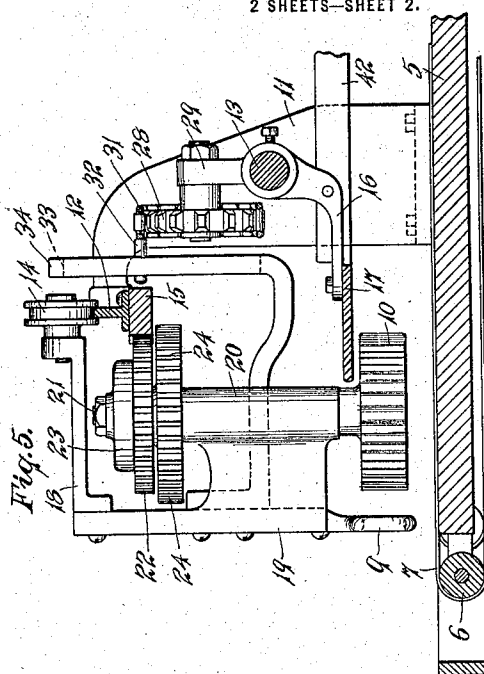
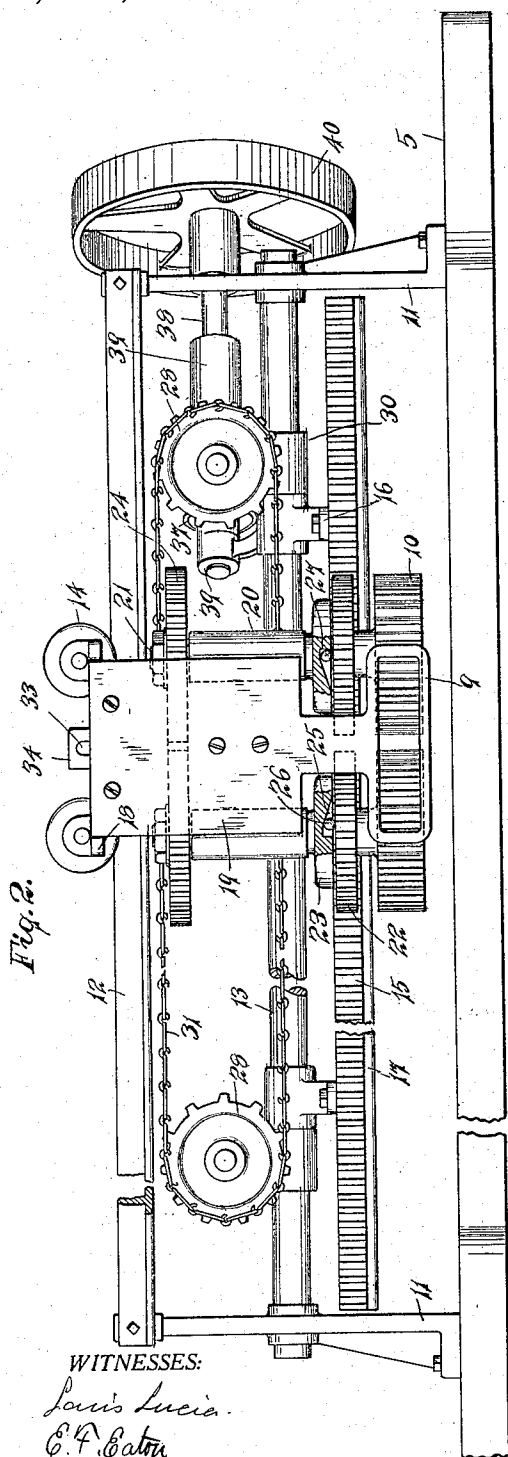
Solon S. Stiles.
 BY George M. Stiles.
 Arthur B. Jenkins,
 ATTORNEY.

S. S. & G. M. STILES.
FEED FOR FINISHING CARDS.
APPLICATION FILED FEB. 20, 1914.

Patented Jan. 11, 1916.

2 SHEETS—SHEET 2.

1,167,950.



INVENTOR
Solon J. Stiles.
BY George M. Stiles.
Arthur B. Jenkins.
ATTORNEY.

UNITED STATES PATENT OFFICE.

OLON S. STILES AND GEORGE M. STILES, OF MIDDLETOWN, CONNECTICUT.

FEED FOR FINISHING-CARDS.

1,167,950.

Specification of Letters Patent.

Patented Jan. 11, 1916.

Application filed February 20, 1914. Serial No. 820,063.

To all whom it may concern:

Be it known that we, SOLON S. STILES and GEORGE M. STILES, each a citizen of the United States, and a resident of Middletown, in the county of Middlesex and State of Connecticut, have invented a new and Improved Feed for Finishing-Cards, of which the following is a specification.

Our invention relates to the class of devices for supplying material to carding machines, and an object of our invention, among others, is to produce a device of this class that shall be extremely simple in its construction and durable and efficient in operation.

One form of apparatus embodying our invention and in the construction and use of which the objects herein set out, as well as others, may be attained, is illustrated in the accompanying drawings, in which—

Figure 1 is a plan view of our improved feed. Fig. 2 is a rear view looking in the direction of the arrow shown in Fig. 1, and with parts broken away to show construction. Fig. 3 is a view in vertical section through the feed on plane denoted by dotted line 3—3 of Fig. 1. Fig. 4 is a detail view illustrating the construction of a clutch disk. Fig. 5 is a detail view illustrating the feed gears, the clutch disk and rack located in a different position.

In the accompanying drawings the numeral 5 denotes a table, 6 supporting rollers and 7 webs or belts passing over and under the table and comprising a carrier for the purpose of moving the material up to the point at which it is delivered to the finishing card. This carrier is a feature in feeds of well known and common construction, and further and detailed description will therefore be omitted herein, it being understood that it may be driven in any suitable manner.

A sliver 8 is delivered to our improved apparatus in any well known manner, passing through a guide 9 and between feed rolls 10 from which it is laid upon the carrier webs 7. In this operation it is necessary that the sliver be extended back and forth from side to side of the series of webs or belts for moving the material forward, and it is the apparatus for thus depositing the sliver that embodies our invention. This apparatus consists of supporting posts 11 rising from opposite edges of the table 5 and diagonally arranged with respect to such edges in order to support the apparatus to

lay the sliver in a diagonal direction across the carrier composed of the webs 7. A track 12 and a rack supporting bar 13 are secured to these posts, the track being of proper shape to receive sheaves 14, and a rack 15 being secured to brackets 16 clamped to and extending from the bar 13. A guard 17 may be secured to the underside of the rack.

The sheaves 14 are mounted on a sheave supporting plate 18 forming part of a traveler frame and extending from the upper edge of the base 19 thereof, the sheaves being grooved as an aid in supporting the traveler. Feed shafts 21 are mounted in bearings 20 on the base 19, the lower end of each shaft having a feed roll 10 secured thereto, a feed gear 22 mounted to rotate loosely thereon, and a clutch disk 23 secured thereto. Each shaft has a gear 24 secured to its upper end, said gears meshing one with the other. Each clutch disk 23 has clutch recesses 25 in its face to receive a ball clutch member 26, each recess being the deepest at the shoulder 27 and gradually lessening in depth toward the opposite end. This forms a means for connecting the shafts 21 with the feed gears 22 so that each gear, as it is rotated in one direction, will be clutched to drive its shaft but will rotate freely in the opposite direction, the clutch disks on the two shafts being so arranged that when one shaft is being rotated by its gear 22 the feed gear on the opposite shaft will be rotating freely thereon. It will be understood that any other means for connecting and disconnecting the feed gears and shafts may be employed to effect the same results.

Sprocket wheels 28 are rotatably supported on brackets 29—30 secured to the bar 13, and these sprocket wheels bear a chain 31 having a pin 32 extending into a slot 33 in an arm 34 projecting from the base 19 of the traveler. The slot 33 is of such length that said pin will engage therein whether it be upon the upper or lower "reach" of the chain. The shaft of one of the sprocket wheels is mounted in a bearing 35 on the bracket 30 and this shaft has a bevel pinion 36 secured to one end and meshing with a bevel gear 37 secured to a driving shaft 38 mounted in a bearing 39 at the outer end of the bracket 30, the shaft 38 having a pulley 40, or like means for driving it, secured thereto.

In that arrangement of the mechanism

shown in Fig. 5, the rack 15 is secured to the under side of the track 12, and the feed gears 22 and clutch disks 23 are located above the gears 24. This arrangement is, in some adaptations of the device, the preferred form, although it will be understood that extremely satisfactory results are obtained with either construction. It will be noted that the sprocket wheel being continuously rotated, movement is imparted to the sprocket chain 31 and to the traveler frame, the latter being moved in one direction when the pin 32 is on the upper reach of the chain and in the opposite direction when said pin is on the lower reach of the chain. Engagement of the feed gears 22 with the rack 15 causes each gear to be moved in opposite directions as the traveler moves back and forth, and the arrangement of the clutch disks causes said gears to alternately operate to drive the feed shafts 21, and the latter are continuously rotated in one direction by reason of the intermeshing gears 24. That is, as the traveler moves to the left, as seen in Fig. 2, the feed gear 22 on the right forces the ball clutch into the shallow part of the recess 25, clutching this gear to its companion disk 23 and thus to the feed shaft 21 on the right, which, through the gears 24, imparts its movement to the feed shaft on the left; the feed gear and clutch disk on the left will operate to force the ball into the deep part of the recesses, causing this feed gear to rotate freely. As the traveler is moved in the opposite direction, the feed gear and clutch disk on the left are clutched together while the feed gear on the right rotates freely, and the two feed shafts thus continue to rotate in the same direction. The webs or belts 41 at each edge of the carrier may be provided with prongs or like devices to hold the sliver after it has been laid upon the carrier, and holders 42 may also be employed to prevent the sliver from rising from the carrier.

While we have shown and described herein a satisfactory form of mechanism for accomplishing our purpose, this may be changed to a greater or lesser degree without departing from the spirit and intent of the invention. It will be noted that the rack 15 constitutes the driving member for the feed shafts, and our invention contemplates any structure in which the member for driving the shafts is in continuous engagement therewith.

We claim—

1. A supporting track, sheaves rotatably mounted and movable along said track, a traveler supported by said sheaves and upon which the latter are mounted, means for reciprocating the traveler, a rack located

below said track, feed shafts mounted on the traveler, gears connecting said feed shafts to rotate them in opposite directions, feed rolls secured to the shafts, feed gears loosely mounted on the shafts and constantly engaging said rack, clutch members secured to the shafts adjacent to said feed gears, and means between said members and gears for alternately connecting and disconnecting said gears with and from said shafts.

2. A supporting track, grooved sheaves rotatably mounted and movable along said track, a traveler supported by said sheaves and upon which the latter are mounted, means for reciprocating the traveler, a rack located below said track, feed shafts mounted on the traveler, gears connecting said feed shafts to rotate them in opposite directions, feed rolls secured to the shafts, feed gears loosely mounted on the shafts and constantly engaging said rack, clutch members secured to the shafts adjacent to said feed gears, and means between said members and gears for alternately connecting and disconnecting said gears with and from said shafts.

3. A supporting track, sheaves rotatably mounted and movable along said track, a traveler supported by said sheaves, the latter being mounted at one edge of the traveler, means for reciprocating the traveler, a rack located below said track, feed shafts mounted on the traveler, gears connecting said feed shafts to rotate them in opposite directions, feed rolls secured to the shafts, feed gears loosely mounted on the shafts and constantly engaging said rack, clutch members secured to the shafts adjacent to said feed gears, and means between said members and gears for alternately connecting and disconnecting said gears with and from said shafts.

4. A supporting track, sheaves rotatably mounted and movable along said track, a traveler supported by said sheaves and upon which said sheaves are mounted, means for reciprocating the traveler, a rack secured to the under side of said track, feed shafts mounted on the traveler, gears connecting said feed shafts to rotate them in opposite directions, feed rolls secured to the shafts, feed gears loosely mounted on the shafts and constantly engaging said rack, clutch members secured to the shafts adjacent to said feed gears, and means between said members and gears for alternately connecting and disconnecting said gears with and from said shafts.

SOLON S. STILES,
GEORGE M. STILES.

Witnesses:

S. M. BACON,
A. K. HUGHES.