

V. ROYLE.
JACQUARD CARD REPEATER.
APPLICATION FILED OCT. 6, 1910.

1,032,707.

Patented July 16, 1912.

3 SHEETS—SHEET 1.

Fig. 6.

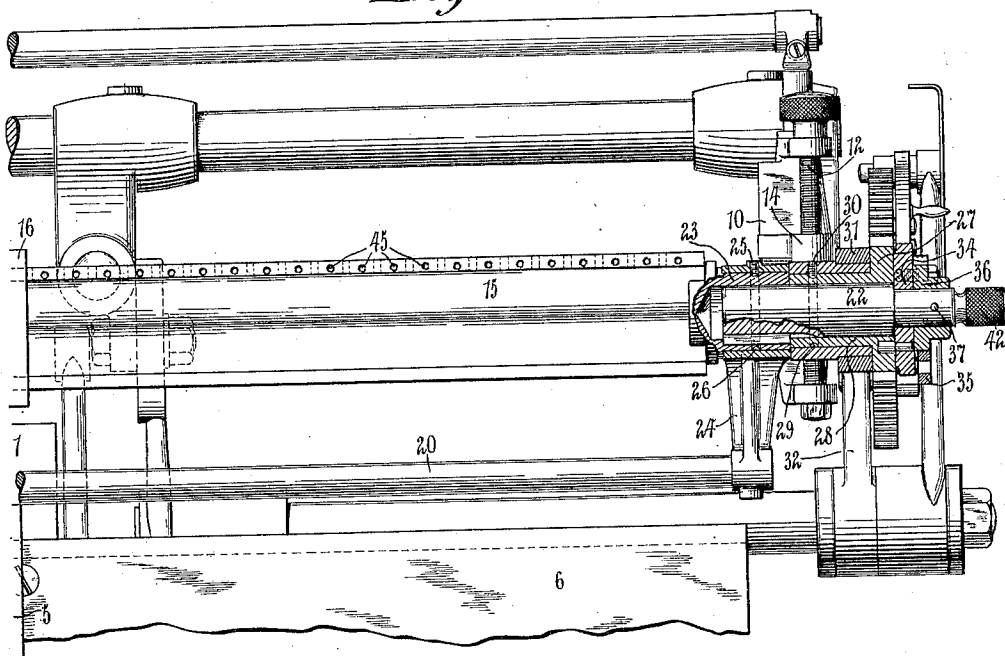


Fig. 7.

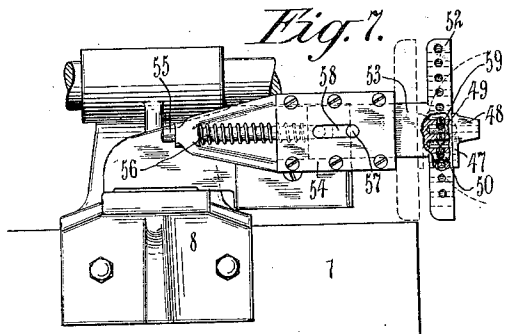


Fig. 8.

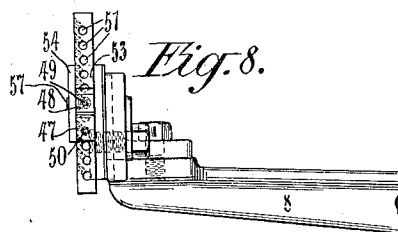
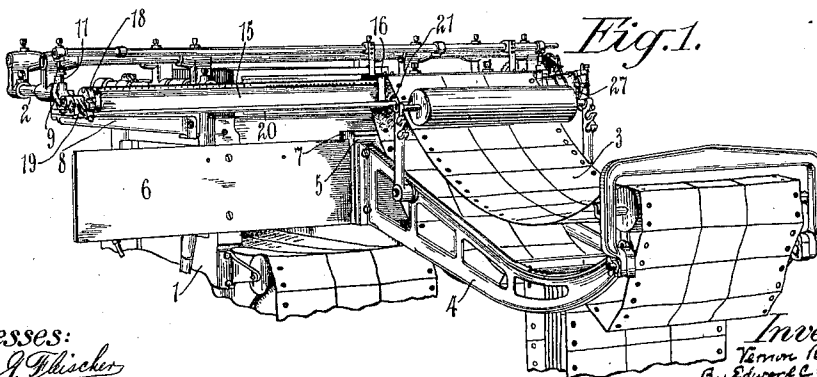


Fig. 1.



Witnesses:
Harry A. Fischer
F. George Barry.

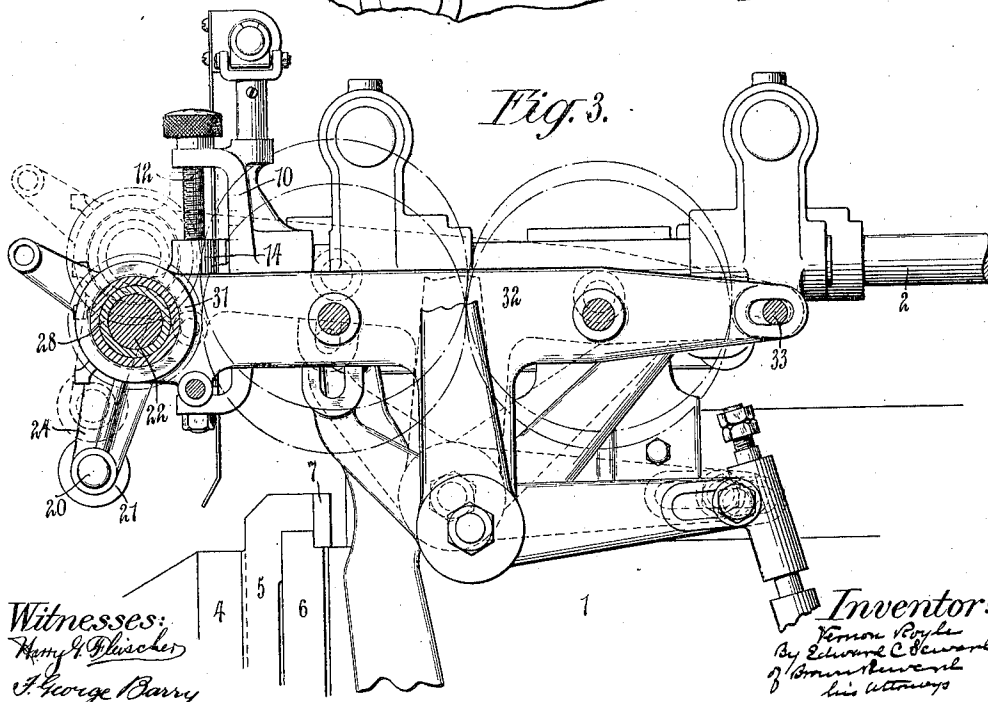
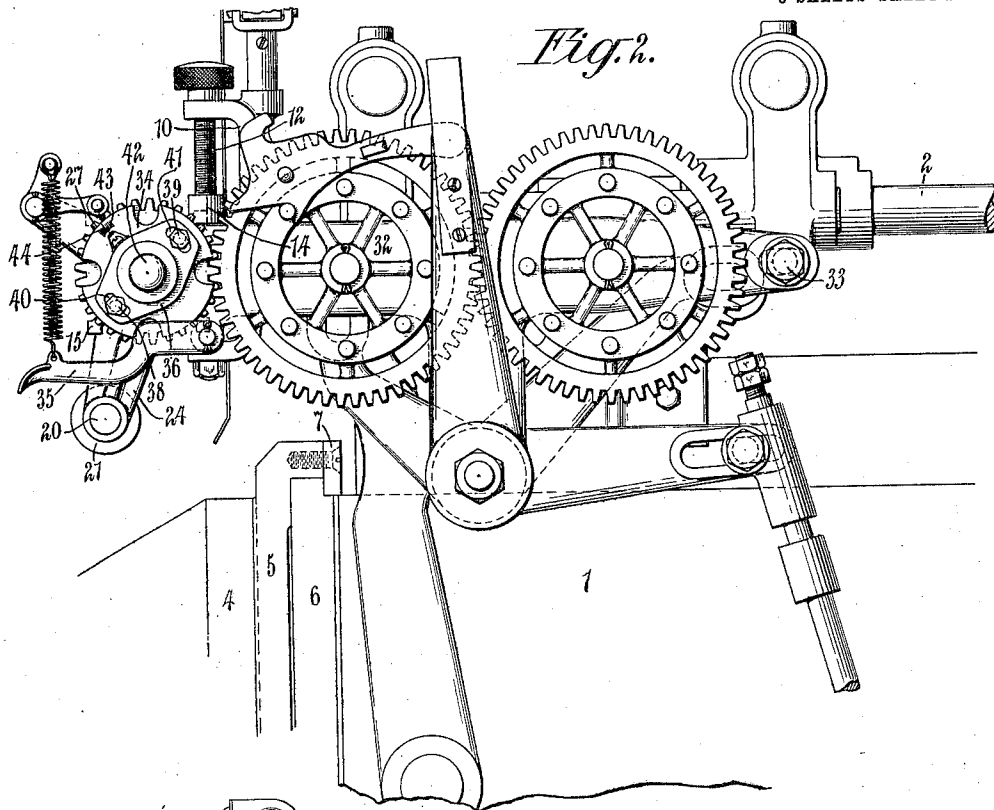
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his attorney

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3 SHEETS—SHEET 2.



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3 SHEETS-SHEET 3.

Fig. 5.

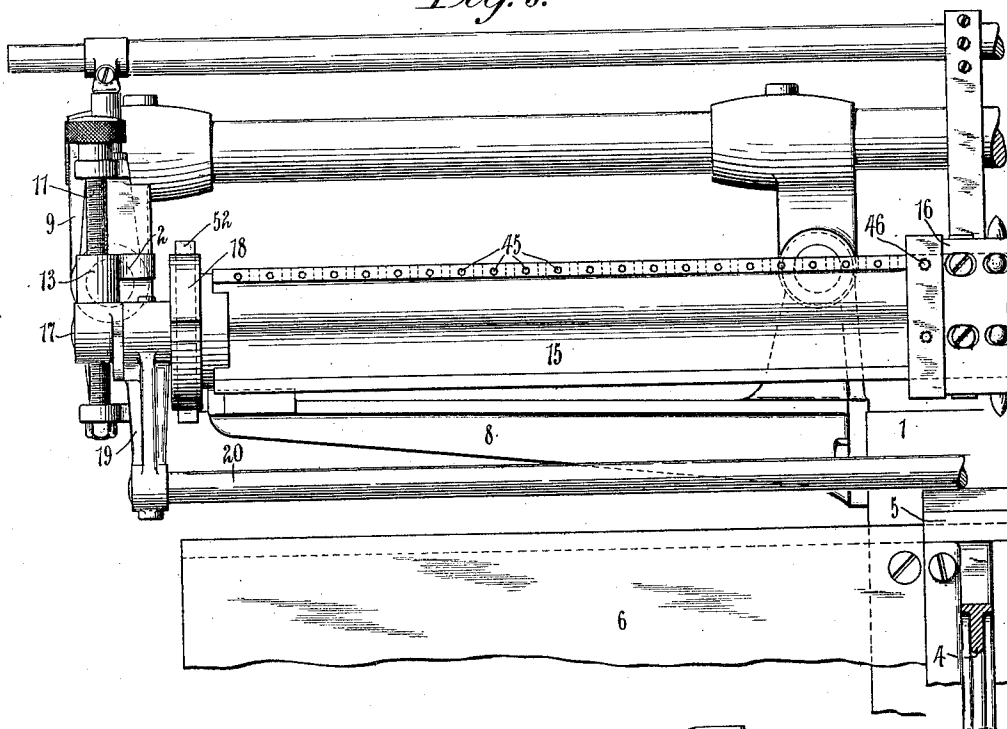
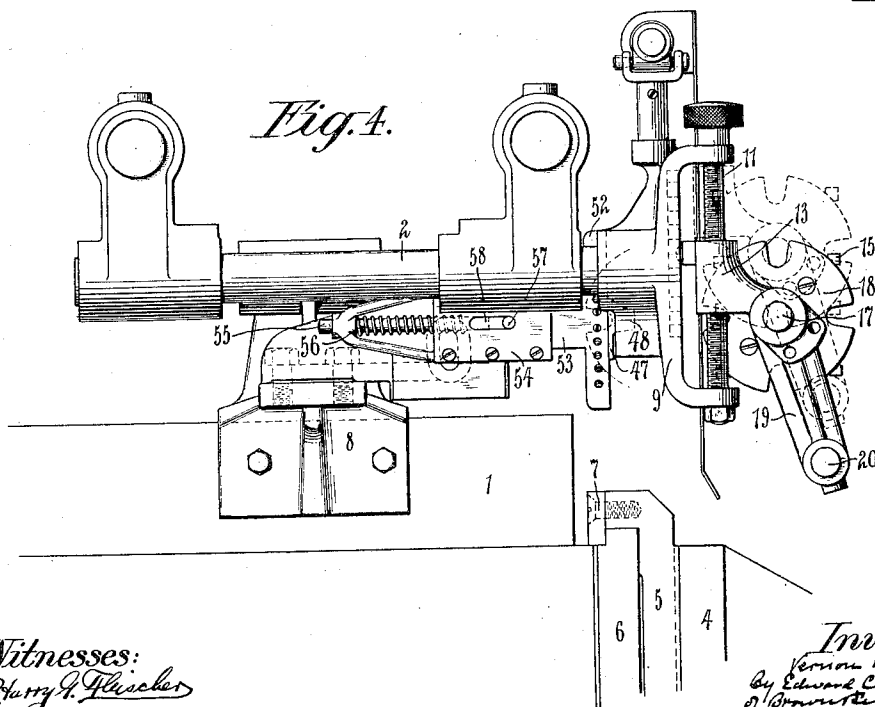


Fig. 4.



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UNITED STATES PATENT OFFICE.

VERNON ROYLE, OF PATERSON, NEW JERSEY.

JACQUARD-CARD REPEATER.

Patented July 16, 1912.

Specification of Letters Patent.

Application filed October 8, 1910. Serial No. 585,647.

1,032,707.

To all whom it may concern:

Be it known that I, VERNON ROYLE, a citizen of the United States, and resident of Paterson, in the county of Passaic and State of New Jersey, have invented a new and useful Improvement in Jacquard-Card Repeaters, of which the following is a specification.

My invention relates to jacquard card repeaters, the object being to provide for repeating the whole or any transverse section or any longitudinal section of the pattern card at pleasure.

A practical embodiment of the invention is represented in the accompanying drawings in which,

Figure 1 represents in perspective so much of a jacquard card repeating machine as is deemed requisite to illustrate the present invention in its relation to the parts of the machine which immediately co-act therewith. Fig. 2 is an enlarged view in side elevation of the mechanism for imparting an interrupted rotary movement of the pattern cylinder, and also for adjusting the pattern cylinder radially and in different vertical positions. Fig. 3 is a similar view with the gears removed to show more clearly certain of the parts behind the gears. Fig. 4 is an enlarged view in side elevation looking from the opposite side from that represented in Fig. 2. Fig. 5 is a partial front view from one end toward the center. Fig. 6 is a similar view from the opposite end toward the center, partially broken away and the pattern chain support removed. Fig. 7 is a detail view of a device for registering the pattern cylinder, and Fig. 8 is a front view of the same.

My invention contemplates a pattern cylinder movable endwise of the core to bring the whole or any lateral section of the cylinder in coactive relation to the selecting needles, a pattern card support arranged to be slid laterally of the machine to correspond with the position which the pattern card cylinder may be made to occupy and a reciprocating carriage for supporting the core on which the cylinder slides, the said carriage being provided with vertically adjustable pattern card supports for raising and lowering the core and hence the pattern card cylinder thereon, to bring the whole or

any horizontal or longitudinal section of the face of the cylinder into coactive relation to the bank of selecting needles.

The means for reciprocating the carriage toward and away from the selecting needles and for rotating the pattern cylinder step by step are quite similar to those shown and described in Letters Patent No. 556,775 granted to me March 24, 1896, and a detailed description of them is omitted in the present case.

The main frame of the machine is denoted as a whole by 1, and the reciprocating carriage on which the pattern cylinder is carried, by 2.

The chain of pattern cards to be repeated is denoted by 3, and is carried on a bracket 4 fixed to a slide 5 arranged to travel along the front face of a plate 6 which forms a way for the slide, the slide being held against displacement on the plate or way 6 by a lip 7, see Fig. 3, which overlaps the upper edge of the plate or way 6. The slide 5 is arranged transversely across the main frame 1, and is of such length as to permit the chain of pattern cards to be slid laterally a distance, in the present instance, corresponding to nearly or quite three lengths of a pattern card.

The main frame 1 is provided with a laterally extending bracket arm 8 for extending the width of the main frame to assist in supporting the wide reciprocating carriage 2. At its opposite ends, the front of the reciprocating carriage 2 is provided with yokes denoted by 9 and 10, the branches of which project forwardly, and in each pair of these branches, a screw is swiveled. The screw swiveled in the branches of the yoke 9 is denoted by 11 and the screw swiveled in the branches of the yoke 10 is denoted by 12. These screws 11 and 12 are provided with traveling nuts 13, 14, which nuts are developed into bearings for the opposite ends of the core 15 of the pattern cylinder 16. At one end the journal 17 of the core 15 has mounted thereon and fixed to rotate with the core, a notched disk 18, the notches in the face of the disk corresponding in number to the faces of the pattern cylinder 16, in the present instance, four notches arranged at a quadrant's distance apart. The journal 17 also has sup-

ported thereon, a hanger 19 for supporting one end of a guide rod 20 which carries a pattern supporting roller 21 for guiding the chain of pattern cards 3 to the pattern card cylinder 16. The journal 22 at the opposite end of the core 15, is separate from the core 15 and keyed to a hollow hub 23 on the end of the core. A hanger 24 is mounted on the hub 23 and supports the opposite end of the guide rod 20. The hanger 24 may be locked on the hub 23 by means of a set screw 25, the latter entering an annular groove 26 on the hub so that when the set screw is loosened, the hub 23, together with the core and journal 22, may be rotated relatively to the hanger 24. In like manner the hanger 19 may be locked to and released from the journal 17.

A gear wheel 27 for operating the core 15 and the pattern cylinder thereon, is provided with a hub 28 which receives the journal 22 within it, the hub being mounted in an extension of the traveling nut 14 and the exterior of the hub 28 being provided with an annular groove 29 within which the end of a set screw 30 extends to lock the hub 28 and hence the gear wheel 27 against longitudinal displacement on the journal 22. The set screw 30 is screwed into a threaded hole in the wall of the journal box formed by the traveling nut 14. The hub 28 also receives the forward end 31 of the gear supporting arm 32 pivoted at 33, to the carriage 2. To the outer face of the gear 27, there is pinned a notched disk 34 corresponding to the notched disk 18 at the opposite end of the core, and adapted to be engaged by a spring-actuated retaining pawl 35 to hold the cylinder at one end against unintentional displacement, in a manner quite similar to that shown in my United States Letters Patent hereinbefore referred to. This notched disk 34 is mounted on a reduced outer portion of the journal 22 and has adjustably secured to its face, a plate 36, which plate 36 is mounted on and fixed to rotate with the journal 22, by means of a pin or set screw 37. The plate 36 is adjustably held to the face of the disk 34 by means of screws 38, 39, which extend through elongated slots 40, 41, formed in the plate 36, into the face of the notched disk 34.

It will be noted that the driving gear 27 is made fast to the journal 28 for driving the core 15 and hence the pattern cylinder, through the intervening parts, to wit: the notched disk 34 and the plate 36, so that when the plate 36 is released from the notched disk 34 by loosening the screws 38, 39, the journal 28 and hence the core and pattern cylinder thereon, may be rotated to an extent limited by the length of the elongated slots 40, 41, independently of the relation to the gear 27. To perform

this rotary movement, I find it convenient to provide the journal 22 with a knurled handle 42.

As the core 15 and pattern cylinder thereon are supported in the traveling nuts 13, 14, on the screws 11, 12, the pattern cylinder may be raised and lowered at pleasure by turning the screws 11, 12, in the one direction or the other, the arm 32 carrying certain of the driving gears maintaining its relative position to the gear 27 by rocking on the pivot 33. As, however, the raising and lowering of the pattern cylinder will cause the face of the cylinder toward the selecting needles to assume a position more or less oblique thereto, provided said face was squarely presented to the needles before the adjustment took place, the cylinder may be squared with respect to the selecting needles after its adjustment up or down by loosening the screws 38, 39, and then turning the cylinder by means of the handle 42 the slight extent required to properly adjust it. To aid in this adjustment I provide a scale 43 on the face of the notched disk 34 and locate a pointer 44 on the plate 36 in position to travel along the subdivisions on the scale 43.

The core 15 is preferably made of sufficient length to permit the pattern cylinder 16 which has a longitudinally sliding engagement with the core, to be moved nearly or quite its length to the right or left of a central position of the core. In the drawings, Fig. 1, the pattern cylinder is located nearly or quite at its extreme position at one end of the core 15. To locate the cylinder in the desired position along the core, I provide one of the core webs with a series of holes 45 to receive a screw 46 passing through the wall of the cylinder near its end, as shown in Fig. 5. To accurately register and hold the opposite end of the core and hence the pattern cylinder, and cause it to squarely present the face of the pattern card to the selecting needles, whatever be the vertical adjustment of the core, I arrange to coact with the notched disk 18, a registering dog 47 provided with a tapered nose 48 and with pins 49, 50, projecting from its back. The pins 49, 50, fit in two of a vertical series of holes 51 formed in the face of the head 52 of a plunger 53, the plunger 53 having a horizontally sliding movement in a bracket 54 supported on the main frame, in the present instance, by means of the laterally extending bracket 8, the said plunger 53 having a tail piece 55 which passes through an opening in the bracket and supports a coil spring 56 interposed between the wall of the bracket through which the tail piece 55 extends and the inner end of the plunger 53, tending to hold the plunger in its advanced position, as shown in full lines in Fig. 7. The plun-

ger 53 is also provided with a pin 57 which extends through a slot 58 in the wall of the socket in which the plunger reciprocates to limit the forward throw of the plunger and hence of the dog 47. The dog 47 is secured in the desired vertical adjustment to enter one of the notches in the disk 18 by means of a set screw 59 extending through some one of the threaded holes tapped through the side wall of the head 52 and communicating with the holes 51 which receive the pins 49, 50. As the carriage moves in a direction to force the pattern card against the ends of the selecting needles, the nose 48 of the dog 47 enters one of the notches in the disk 18 and during the latter part of the movement of the carriage, the dog is forced backward against spring tension, tending to seat it tightly in one of the notches in the disk 18, thereby holding the pattern card in exact register at the moment it presents itself to the ends of the needles. The bank of selecting needles is not shown herein, but it may be assumed to be arranged in the manner shown and described in my Letters Patent hereinbefore referred to.

In operation, assuming the pattern cylinder to be located midway of its core 15; it may be adjusted longitudinally along the core either to the right or left, to present any portion of it in lateral section to the selecting needles, or it may be located in position to present its entire face to the chain of needles, and the support for the chain of pattern cards may in like manner be adjusted laterally of the machine to correspond to the position which the pattern cylinder occupies, so that it is feasible to run the chain of pattern cards through with one section only operating upon the selecting needles, as for example, to make a stripe at one end of the goods, and then the chain may be shifted to run another section through, then changed on the opposite side to again introduce the stripe and so on, at pleasure. In whatever position the pattern card cylinder be advanced, either horizontally or vertically, the parts which coact therewith may be adjusted so that the pattern card cylinder may be held in exact register and present its face squarely to the selecting needles.

What I claim is:

1. In a jacquard card repeater, a pattern cylinder, means for adjusting the pattern cylinder horizontally endwise and means for feeding the chain of pattern cards to the pattern cylinder in its different horizontally endwise adjusted positions.

2. In a jacquard card repeater, a pattern cylinder, means for adjusting the pattern cylinder vertically, and means for feeding a chain of pattern cards to the cylinder in its different vertical adjustments.

3. In a jacquard card repeater, a pattern

cylinder, means for adjusting the pattern cylinder both horizontally endwise and vertically and means for feeding a chain of pattern cards to the cylinder in its adjusted positions.

4. In a jacquard card repeater, a pattern cylinder, a core on which the pattern cylinder is mounted in sliding adjustment, and a sliding support for a chain of pattern cards for feeding them to the cylinder in its different adjusted positions.

5. In a jacquard card repeater, a pattern cylinder, a core on which the pattern cylinder may slide, means for raising and lowering the core and hence the pattern cylinder and means for feeding a chain of pattern cards to the cylinder whereby the said pattern cylinder may be made to present either a transverse or a longitudinal section of its face to the selecting needles at pleasure.

6. In a jacquard card repeater, a reciprocating carriage, a core mounted in the carriage, a pattern cylinder slidable along the core, a fixed way, and a pattern chain support slidable along the way, the said way being located in the plane of the longitudinal axis of the core, whereby the chain of pattern cards may be maintained in the same relative position to the pattern cylinder whatever be the adjustment of the pattern cylinder along the core.

7. In a jacquard card repeater, a reciprocating carriage, a core carried by the carriage, a pattern cylinder mounted on the core and means for registering the rotary position of the core as the carriage is reciprocated.

8. In a jacquard card repeater, a reciprocating carriage, a rocking core carried by the carriage, a pattern cylinder on the core, a notched disk fixed to rock with the core and a registering dog in position to engage the notches in the disk as the carriage approaches the limit of its stroke to register the pattern cylinder.

9. In a jacquard card repeater, a reciprocating carriage, a rocking core carried by the carriage, a pattern cylinder on the core, means for vertically adjusting the core and hence the pattern cylinder, and vertically adjustable means arranged to coact with the core to register it whatever be its vertical position.

10. In a jacquard card repeater, a reciprocating carriage, a rocking core carried by the carriage, a pattern cylinder on the core, means for vertically adjusting the core and hence the pattern cylinder, a notched disk carried by the core and a vertically adjustable registering dog arranged to engage a notch in the disk to register the pattern cylinder whatever be the vertical adjustment of the core.

11. In a jacquard card repeater, a reciprocating carriage, a core mounted in rocking

adjustment in the carriage, means for vertically adjusting the core, a pattern cylinder carried on the core, and means for securing the core and hence the pattern cylinder in different rocking adjustments to square it with respect to its work whatever be its vertical adjustment.

12. In a jacquard card repeater, a reciprocating carriage, a core mounted in the carriage in rocking adjustment, means for vertically adjusting the core, a pattern cylinder carried by the core, an adjusting plate provided with a pointer and a disk fixed with respect to the core and provided with a scale over which the pointer passes for indicating the rocking movement of the core.

13. In a jacquard card repeater, a reciprocating carriage, adjusting screws swiveled in the carriage, traveling bearings engaged

with the screws, a core mounted in the traveling bearings, and a pattern cylinder on the core.

14. In a jacquard card repeater, a core provided with a series of perforations extending longitudinally along it, a pattern cylinder slidable along the core, a set screw for locking the pattern cylinder to the core in the desired adjustment along the core, and means for presenting a chain of pattern cards to the pattern cylinder.

In testimony, that I claim the foregoing as my invention, I have signed my name in presence of two witnesses, this fourth day of October 1910.

VERNON ROYLE.

Witnesses:

BEULAH LOCKWOOD,
FRED T. KENNEDY.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."