J. A. GROEBLI.

JACQUARD CARD TAKE-UP MECHANISM.

APPLICATION FILED MAR. 2, 1907.

911,236.

Patented Feb. 2, 1909.

2 SHEETS—SHEET 1.

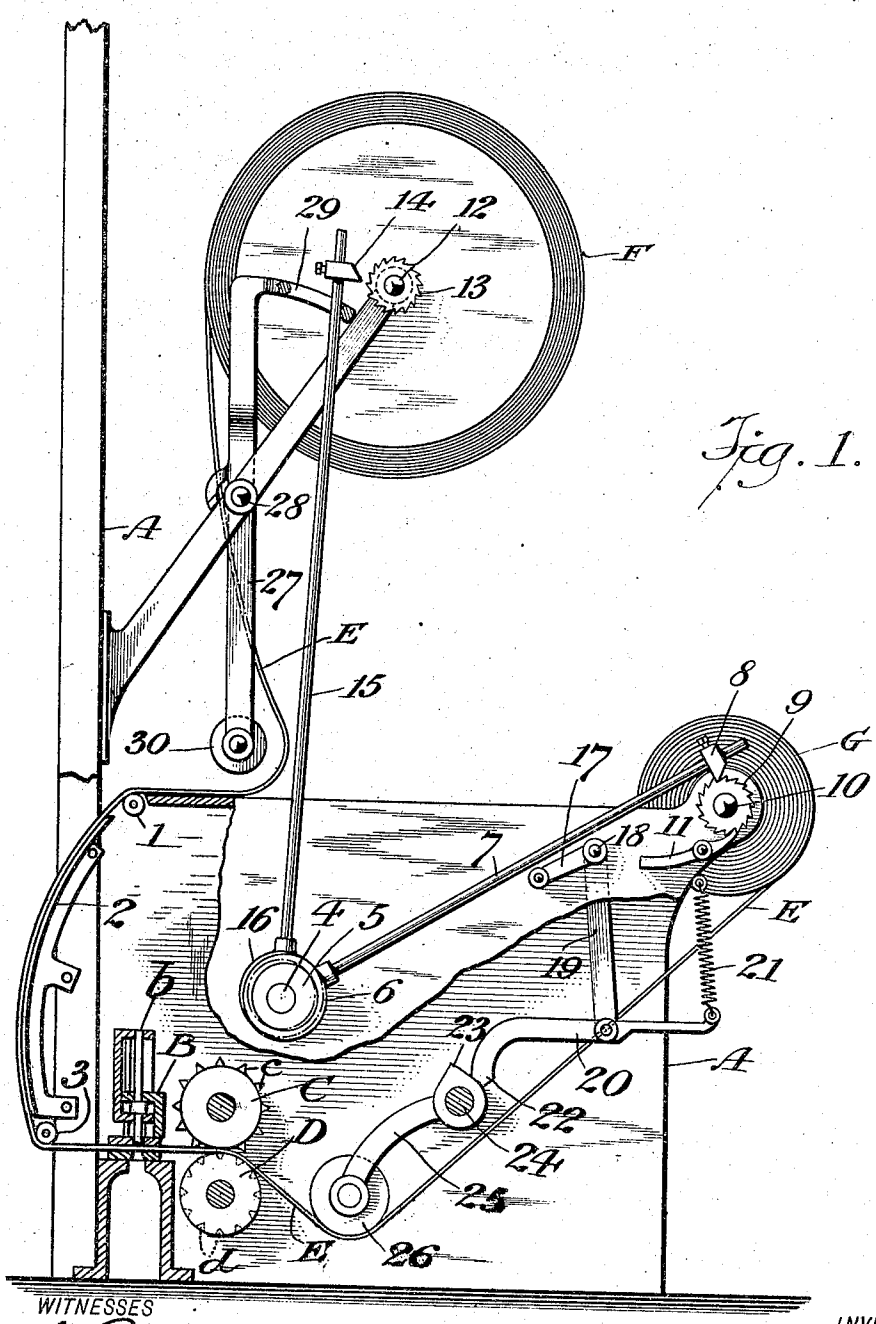


Fig. 1.

WITNESSES

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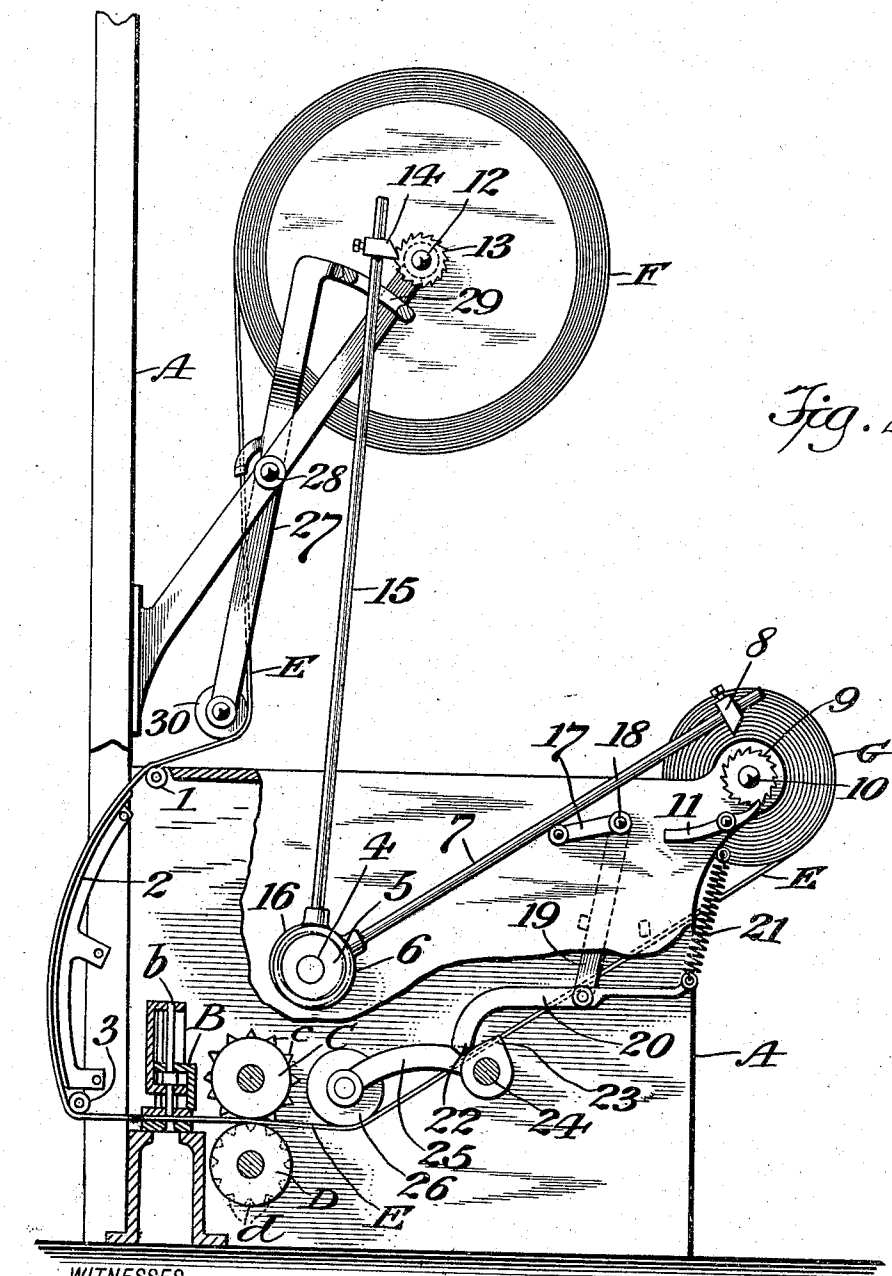


Fig. 2.

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UNITED STATES PATENT OFFICE.

JOSEPH A. GROEBLI, OF NEW YORK, N. Y., ASSIGNOR TO THE KURSHEEDT MANUFACTURING COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

JACQUARD-CARD-TAKE-UP MECHANISM.

No. 911,236. Specification of Letters Patent. Patented Feb. 2, 1909.

Application filed March 2, 1907. Serial No. 360,246.

To all whom it may concern:

Be it known that I, JOSEPH A. GROEBLI, a citizen of the United States, residing at New York, in the county and State of New York, have invented new and useful Improvements in Jacquard-Card-Take-Up Mechanism, of which the following is a specification.

My invention relates to jacquard card take up mechanisms, although it will be understood that my invention is not strictly limited thereto, and that by the terms in my claims I mean to include any other mechanism which in view of the prior art may be considered equivalent devices.

For the purposes of clear illustration and description, and those alone, I have shown embodied in the invention part of the mechanism described illustrated and claimed in U. S. Letters Patent No. 627,256, dated June 20, 1899, for card punching machines, granted to The Kursheedt Manufacturing Company, as my assignee.

The invention will be understood by referring to the accompanying drawing, in which—

Figure I is a broken away side elevation of a machine embodying my invention, and Fig. II is a similar side elevation showing the parts in different positions.

In the drawing the frame of the machine is indicated generally by the letter A, and the punching mechanism is indicated generally by the reference letter B.

C and D are feed rolls or propelling mechanism for the card E which is punched by the punching mechanism, or acted upon or cooperated with in conjunction with the feeding mechanism by other mechanism which may replace the punching mechanism. In this specification, I will include within the term punching mechanism, such mechanism as will coöperate with the feeding mechanism, or feeding device C D to perform some function in connection with the card, which in the present case, expressly includes a strip such as is shown in the drawing.

In the drawing, G indicates generally the take up mechanism, located behind the feeding device, and F indicates generally the feeding roll or let off roll. For the purposes of this specification, the take up roll and the let off roll may be regarded as equivalent in a sense, and the term synonymous in a sense, in that in the present instance they are both actuated by somewhat similar mechanism.

The Jacquard card E passes from the roll F and falls in a loop, passes over the roll 1, the apron 2, the roller 3 and through the punches or punching mechanism B, thence through the feeding devices C D, thence downward through the loop and upward to the take up G. The main shaft 4 is provided with an eccentric 5 operated upon a shaft 6 connected to a rod 7, carrying a pawl 8 adapted to rest by gravity between two of the teeth of a ratchet 9 on a shaft 10 of the take up G. A gravity stop pawl 11 is provided to present a reverse movement of a take up roll G. The let off roll F is provided with a shaft 12 having a ratchet 13, with which coöperates a gravity impelled pawl 14 carried by a rod 15 on an eccentric strap 16, coöperating with an eccentric on a shaft 4. It will be obvious that the normal operation of the two pawl and ratchet mechanisms will be to coöperate with the feeding device C D in propelling the card or strip, the take up roll G serving to take up the card or strip as it comes from the feeding devices, and the let off roll F serving to supply the card or strip to the punching or feeding devices. It some times happens however, that the take up roll G will operate too rapidly for the feeding devices, and tend to cause an undue tightening on the card between the feeding device and the card take up. I therefore provide means for obviating this difficulty.

Located beneath the arm 7 is an arm 17 pivoted to a stud 18, and connected to an arm 19 also pivoted to the same stud. At the lower end of the arm 19 is an arm 20, having at one end a spring connection 21 with the frame A of the machine and at its other end a pointed nose 22 adapted to cooperate with a pointed cam 23, carried on a shaft 24, and connected to an arm 25, carrying a roller 26, which bears upon the web, card, or strip E.

In the Fig. I, I have shown the web as having the proper amount of slack and the pawl 8 engaged with a ratchet 9, so as to effect a step-by-step movement of the take up G. In Fig. II, however, for some reason or other, the web has become taut and has raised the arm 25 thereby permitting the cam 23 to swing to the right as shown in the said figure, and allowing the arm 20 to be sprung to the

left thereby bringing the arm 17 beneath the rod 7, and lifting the pawl 8 clear of its ratchet so as to prevent rotation of the take up G, until the parts resume their normal positions shown in Fig. I.

It sometimes happens owing to various causes, that the let off roll feeds too slowly, in which case, the web between the let off roll and the feeding device will become taut; a condition of affairs illustrated in Fig. 2. To meet this difficulty I have provided means for intermittently feeding this let off roll positively. For the purposes of the present case I provide a lever 27 pivoted at 28 on the frame of the machine, and provided with a yoke 29 which surrounds or embraces the rod 15, carrying the pawl 14 and which lever 27 is provided at its free end with a roller 30, adapted to coöperate with the web E as shown in the drawings. The pawl 14 is normally out of contact with its ratchet 13, that is to say in the present instance, it is so shown.

When the web is running freely and there is no trouble, the roll will have a slight movement to permit the feed or let off. When the web becomes tight, as shown in Fig. II, the lever 27 is swung allowing the pawl 14 to go into engagement with its ratchet 13, and effect the forward feed of the web to supply the necessary slack.

It will also be observed by reference to Fig. II, that both the take up and let off motions may be operated simultaneously or dissimultaneously, but in the particular machine shown, the feeding devices absolutely govern the movement of the web, and indeed in any machine employing a web for a useful purpose, a normal positively regulated feed should be employed. In the present instance, the punches *b* of the punching mechanism punch holes at the edges of the strip or web, into which the spurs *c* enter and pass through into the recesses *d* in the lower roller, so that a positive forward motion is produced, and a card is punched fit for use in jacquard mechanism disclosed in U. S. Letters Patent No. 528,632, dated Nov. 6, 1894, for jacquard mechanism.

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

1. In a machine for conducting a web to and from a feeding device adapted to propel a web, the combination of a feeding device, a take up and means for throwing the take up out of action when the web tightens, and operated by the tightening of the web between the said feeding device and take up.

2. In a web propelling machine, the combination of a feeding device adapted to propel a web, a take up and means for varying the action of the take up, said means being operated by the tightening of the web between the feeding device and take up.

3. In a machine of the character described, the combination of a web feeding device adapted to propel a web, a positively operating take up for the web, and means operated by the tightening of the web between the said feeding device and take up, adapted to temporarily throw the take up out of action.

4. In a machine of the character described, the combination of a web feeding device adapted to propel a web, a positively operating take up for the web and means operated by the tightening of the web between the said feeding device and take up, adapted to throw the take up out of action and adapted when said web slackens, to throw said take up into action.

5. In a machine of the character described, the combination of a positive feeding device adapted to propel a web, a web take up, means for varying the action of the take up and operated by the tightening of the web between the feeding device and take up, and a web let off and means for varying the action of the let off, operated by the tightening of the web between the feeding device and let off.

6. In a web feeding machine, the combination of means for positively propelling the web, a take up device upon which the web is wound in gradually increasing diameter and means for producing harmonious action on the web by the feeding device and take up, said means being operated by the tightening of the web between the propelling device and take up.

7. In a machine of the character described the combination of a web, means for coöperating with the said web to perform a function in the operation of the machine, a positive means for positively propelling the web, and a variable take up, with means operated by the tightening of the web between the propelling means and take up for controlling the action of the variable take up.

8. In a punching machine the combination of punches, a web adapted to be punched thereby, positively acting feeding devices for positively feeding the web, a variable take up, and means operated by the tightening of the web between the said feeding device and take up for controlling the action of the variable take up.

9. In a punching machine, the combination of a web, means for positively feeding the said web, a punching device for operating upon the said web in advance of the feeding device, a variable take up and means controlled by the tightening of the web between the said feeding device and take up for regulating the action of the variable take up.

10. In a punching machine, the combination of a web propelling device adapted to positively propel a web, a punching device located in advance of the said propelling or feed device, and a let off with automatic

means controlled by the tightening of the web between said propelling device and let off for governing its action from the web.

11. In a machine employing a web, the combination of means for positively propelling the web, a take up with means for controlling the take up and operated by the tightening of the web between the said propelling means and take up and means in operative proximity to the positive propelling means or feeder, adapted when properly actuated to pass through the web.

12. In a device of the character described, a feeding device adapted to propel a web, a let off having a ratchet wheel and means for operating the let off, comprising a pawl adapted to engage with and operate said ratchet wheel and means operated by the tightening of the web between the feed device and let off adapted to engage the said pawl with said ratchet wheel to operate the let off and operated by the slackening of said web to disengage said pawl.

13. In a device of the character described, a feeding device adapted to propel a web and a take up for the web, having a ratchet and means for operating the take up comprising a pawl adapted to operate the ratchet and means for operating the pawl and means operated by the tightening of the web between the feed device and take up adapted to disengage the said pawl from the ratchet and operated by the slackening of said web to engage the pawl.

14. In a device of the character described, a feeding device adapted to propel a web, a take up having a ratchet, means operating a pawl for operating the said ratchet and means for engaging and disengaging said pawl with the ratchet comprising a lever adapted to be rocked by the tightening and loosening of the web between the feeding device and take up having a cam projection 23 and a lever engaged by said projection adapted to be rocked thereby, said lever being adapted to move said pawl into and out of engagement with said ratchet.

Signed at New York city, in the county of New York, and State of New York, this 28th day of February, 1907.

JOSEPH A. GROEBLI.

Witnesses:

GEO. E. MORSE,

A. H. KURSHEEDT.