K. EGGART.

JACQUARD CARD PERFORATING MACHINE.

APPLICATION FILED AUG. 28, 1913.

1,108,492.

Patented Aug. 25, 1914.

2 SHEETS—SHEET 1.

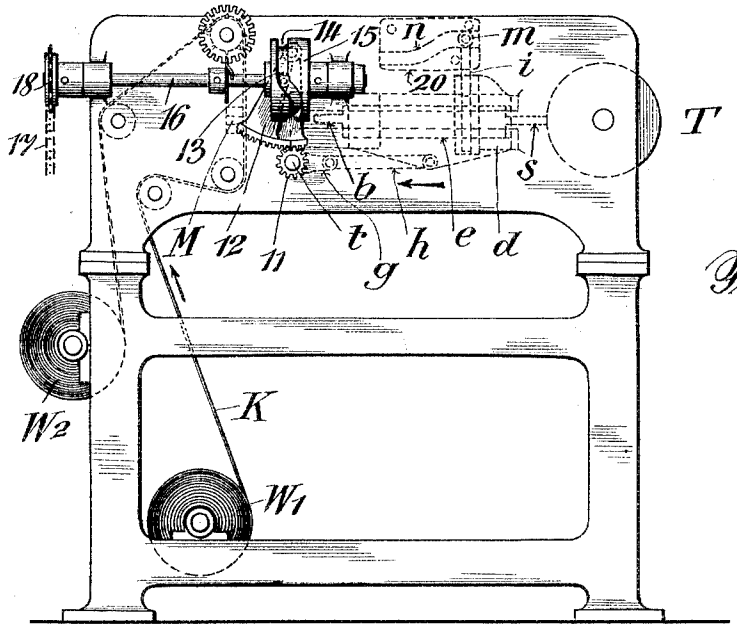


Fig. 1

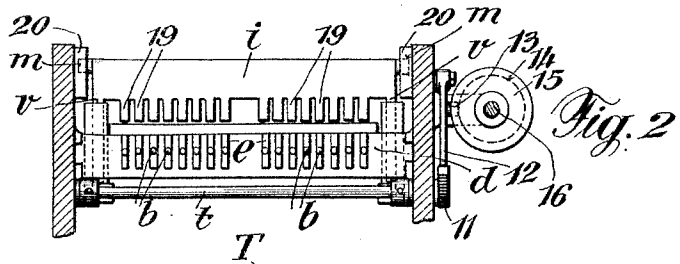


Fig. 2

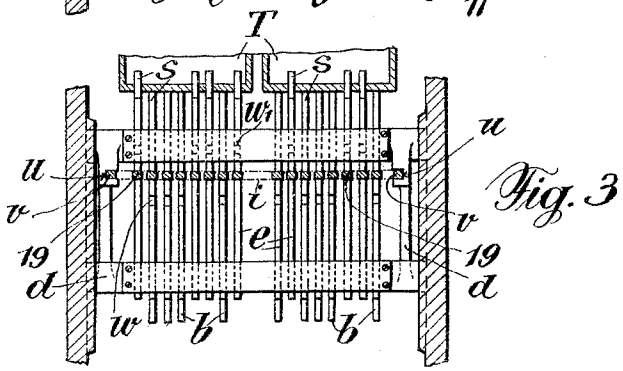


Fig. 3

Witnesses:

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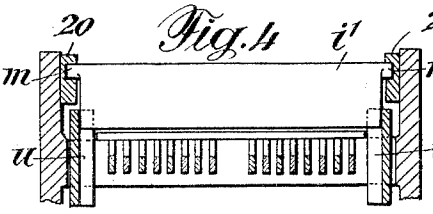


Fig. 4

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THE NORRIS PETERS CO. PHOTO-LITHO., WASHINGTON, D. C.

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2 SHEETS—SHEET 2.

Fig. 5

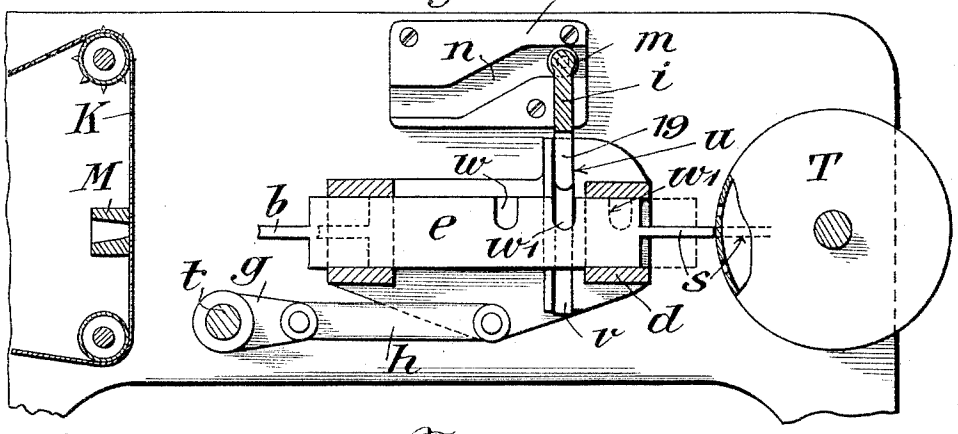


Fig. 6

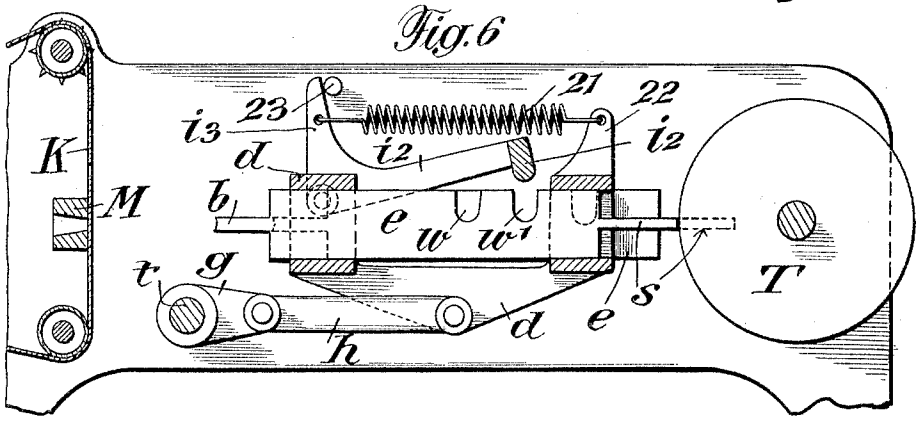
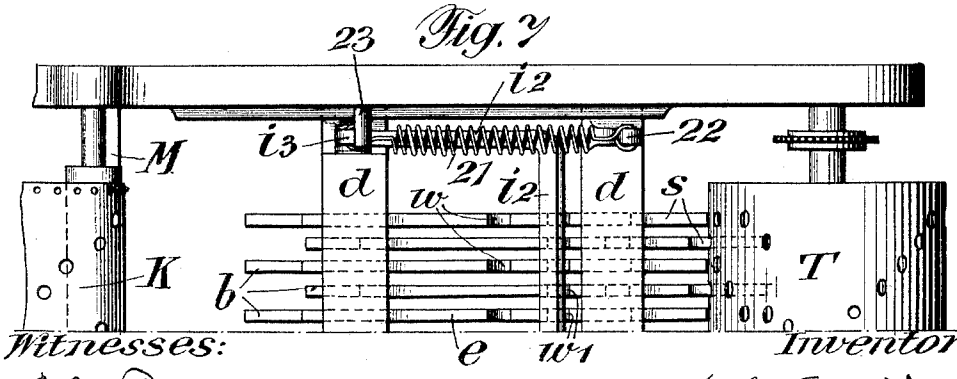


Fig. 7



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UNITED STATES PATENT OFFICE.

KARL EGGART, OF ARBON, SWITZERLAND, ASSIGNOR TO THE FIRM OF ADOLPH SAURER, OF ARBON, SWITZERLAND.

JACQUARD-CARD-PERFORATING MACHINE.

1,108,492. Specification of Letters Patent. **Patented Aug. 25, 1914.**

Application filed August 28, 1913. Serial No. 787,064.

To all whom it may concern:

Be it known that I, KARL EGGART, a subject of the Emperor of Germany, residing at Arbon, Switzerland, have invented new and useful Improvements in Jacquard-Card-Perforating 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, reference being had to the accompanying drawings, and to the letters or figures of reference marked thereon, which form a part of this specification.

In a former application Serial No. 754,195, filed March 14, 1913, there is described an improvement in machines for punching jacquard cards for embroidery machines which has for its object to render the construction of such machines as simple as possible.

The present invention relates to machines of similar character and has for its object to simplify still further the construction of such machines.

In the accompanying drawings in which, for purposes of explanation of the nature of the invention, are illustrated several embodiments of the invention, Figure 1 is a view in side elevation of a machine which embodies one form of the invention. Fig 2 is a detail view in transverse section showing particularly the punching devices and the means for controlling them. Fig. 3 is a detail top view of the parts shown in Fig. 2, partly in horizontal section, the selecting drums being also indicated. Fig. 4 is a detail view similar to Fig. 2 but showing a different form of one of the parts. Fig. 5 is a detail view in longitudinal section of the construction shown in Figs. 1, 2 and 3 but on a larger scale. Fig. 6 is a view similar to Fig. 5 but showing a different embodiment of the invention. Fig. 7 is a partial top view of the mechanism shown in Fig. 6.

The machine shown in the drawings is provided as usual with one or more perforated selecting or controlling drums T, a supply roller W^1 for the jacquard strip to be perforated and a winding roller W^2 therefor, and a matrix or bed die M behind the card. Each of the needles e is provided at one end with a punch b and at the other end with a pin or feeler s for coöperation with the perforated drum T. The needles e are mounted for selective movement in a support or carrier d which is reciprocated for the selecting and punching operations by rods h and cranks g on a shaft t. On the shaft t is secured a toothed wheel 11 which is engaged by a toothed segment 12 provided with a pin 13 to travel in a groove 14 of a cam disk 15. The latter is fixed on a shaft 16 which is driven by means of a chain 17 and a chain wheel 18 from the driving mechanism of the machine. The support or carrier d is provided with vertical guides u for the guide pins v of a vertically movable locking plate or comb i. As shown in Figs. 2, 3 and 5 the locking plate may have separate teeth 19 for coöperation with the separate needles e, or as shown in Fig. 4 it may have a continuous edge without separate teeth. The locking plate is provided at its end with rolls m which enter cam grooves n formed in blocks 20 which are secured to the side frames of the machine. The needles e are provided each with two recesses w and w' for coöperation with the locking plate i.

In the operation of the machine it will be seen that the support or carrier d is reciprocated by the described means and that when it is moved to its right hand position shown in Fig. 5, the locking plate i, which travels with it, is raised from the notches or recesses w' of the needles e so that the latter are free for selective movement by the drum T, as usual. As the carrier moves toward its right hand position all of the needles travel with it but before the punches b make contact with the card K the locking plate i, through the action of the cam grooves n, is lowered so that it engages the notches w and w' of the needles which are then in line and thereby locks the needles against relative movement in the carrier so that the punches of the needles which have been selected for operation will not recede but will be forced through the card.

The construction shown in Figs. 6 and 7 is generally similar to that shown in Figs. 1–5, but the locking plate i^2 is carried by lever arms 13 which are pivotally mounted on the support or carrier d and are provided each with an arm i^3 which is acted upon by a tension spring 21 secured to the support or carrier as at 22. Fixed pins 23, carried by the frame of the machine, stand in the path of the lever arms i^3, so that as the support or carrier moves to its right hand position the locking plate i^2 is raised from the needles to

release them and as the support or carrier moves to the left the locking plate i^2 is lowered by the action of the spring 21 into engagement with the needles to hold them in their operative position.

I claim as my invention:—

1. In a jacquard card perforating machine, a selective device, a support for the card to be punched, a carrier, means to reciprocate the carrier between the selective device and the support, needles mounted on the carrier and adapted at one end to cooperate with the selective device and having each a punch at the other end and locking means to coöperate with the needles to lock them to the carrier during the punching movement and acting to release the needles during the movement of selection.

2. In a jacquard card perforating machine, a selective device, a support for the card to be punched, a carrier, means to reciprocate the carrier between the selective device and the support, needles mounted on the carrier and adapted at one end to cooperate with the selective device and having each a punch at the other end, the needles having each two locking notches, and locking means to coöperate with the needles to lock them to the carrier during the punching movement and acting to release the needles during the movement of selection.

3. In a jacquard card perforating machine, a selective device, a support for the card to be punched, a carrier, means to reciprocate the carrier between the selective device and the support, needles mounted on the carrier and adapted at one end to cooperate with the selective device and having each a punch at the other end, a locking plate to coöperate with the needles and movable with the carrier and devices coöperating in the movement of the carrier to actuate the plate to lock the needles during the punching movement of the carrier and to release the needles during the movement of selection.

4. In a jacquard card perforating machine, a selective device, a support for the card to be punched, a carrier, means to reciprocate the carrier between the selective device and the support, needles mounted on the carrier and adapted at one end to cooperate with the selective device and having each a punch at the other end, a locking plate moving with the carrier and cams fixed on the frame of the machine and coöperating with the plate to cause the same to lock the needles during the punching movement and to release the needles during the movement of selection.

In testimony that I claim the foregoing as my invention, I have signed my name in presence of two subscribing witnesses.

KARL EGGART.

Witnesses:
EUGENE NABEL,
RANDALL ATKINSON.

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