Oct. 15, 1929. F. PETIG 1,731,503

CARD FEEDING ATTACHMENT FOR JACQUARD WEAVING MACHINES

Filed June 9, 1928

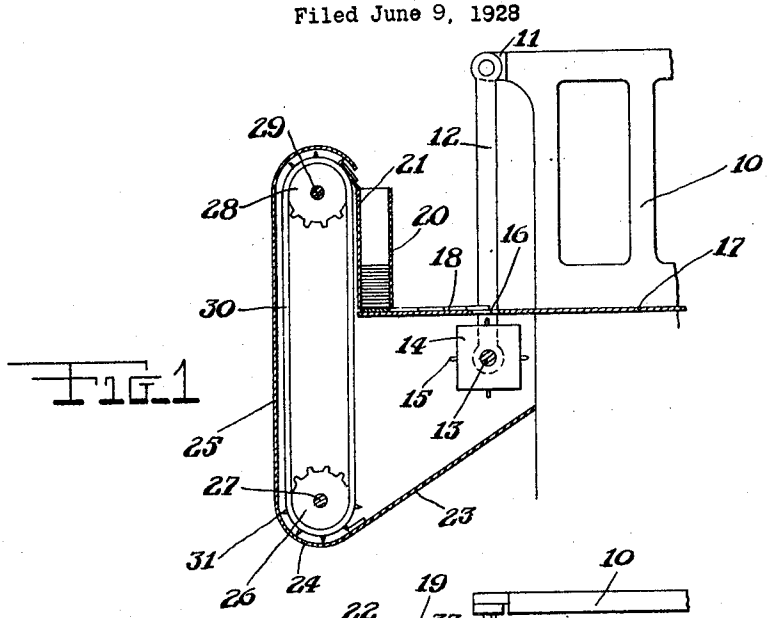


FIG. 1

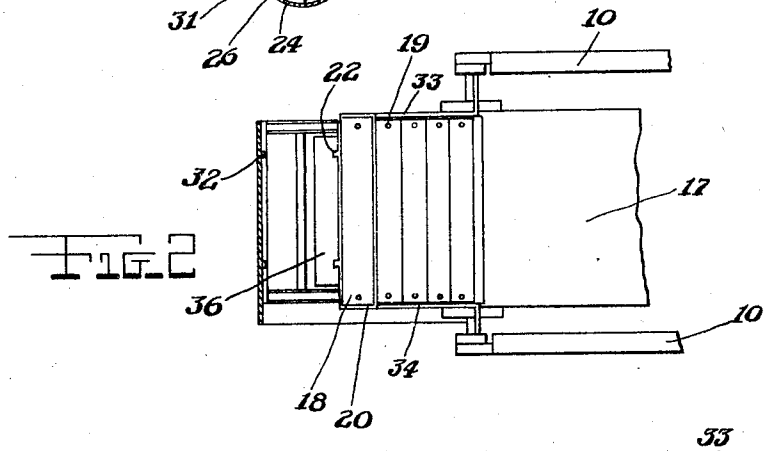


FIG. 2

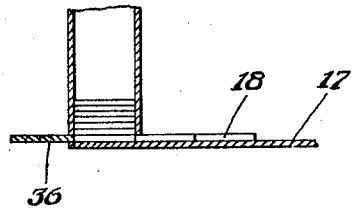


FIG. 3

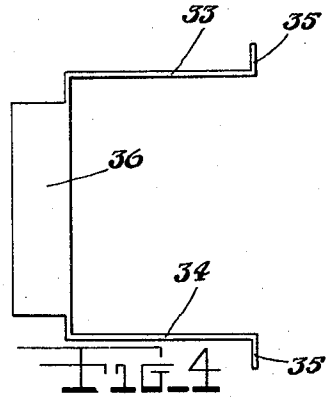


FIG. 4

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CARD-FEEDING ATTACHMENT FOR JACQUARD WEAVING MACHINES

Application filed June 9, 1928. Serial No. 284,255.

The main object of this invention is to provide a mechanism which feeds the cards used in weaving machines one after another to a beam or card cylinder on which the cards are momentarily seated for the purpose of controlling the stitch of the article being woven.

Another object of this invention is to provide a card feeding mechanism for jacquard weaving machines which delivers a card to the beam of the weaving machine and, after the card has been utilized, is again delivered to a chute from which the process is successively repeated.

The above and other objects will become apparent in the description below, in which characters of reference refer to like-named parts in the drawing.

Refering briefly to the drawing, Figure 1 is a sectional, side elevational view of the mechanism as applied to a jacquard weaving machine.

Figure 2 is a top plan view of Figure 1.

Figure 3 is a sectional, elevational view of the card chute showing the means of feeding these cards to the beam one at a time.

Figure 4 is a top plan view of the card feeding knife.

Referring in detail to the drawing, the numeral 10 indicates the frame of a jacquard weaving machine. This frame is of skeleton construction and has lugs 11 mounted on its corners which extend horizontally outward and have pivotally suspended therefrom the upper ends of bars 12. These bars hang downwardly from their point of anchorage and support between their lower ends a shaft 13 on which a card cylinder 14, square in cross section, is rigidly mounted. Said card holding beam is rotated ninety degrees at a time by a mechanism contained within the weaving machine and not shown on the drawing. The card cylinder 14, being square in cross section, has four flat faces upon each of which a pair of spaced-apart pegs 15 are mounted. The pegs upon the upper face are located directly below a rectangular opening 16 which is formed in a platform 17. The platform is rigidly mounted above the beam and is adapted to serve as a table for perforated cards 18 which are fed along said platform. Said cards have openings 19 near each end which are adapted to register upon the spaced-apart pegs 15 on the cylinder after these cards have been shunted through the opening 16 in the platform. The cards are stacked one upon the other in a chute 20 which is of rectangular shape about the size of the area of said cards and is built upon the outer end of the platform 17 in lifted position. At the upper end of one of the walls 21 of the chute inclined tapering projections 22 are formed. The purpose of these projections will be more fully hereafter described. An inclined sheet of material 23 is mounted between the frames 10 of the weaving machine and extends angularly downward. This member 23 forms a runway for the cards which drop from the card beam after the use of these particular cards has been accomplished. The lower end of this runway 23 is formed into a curved cradle 24 and then extends vertically upward to serve as a guide apron 25. Within the cradle a pair of sprocket wheels 26 project and are rotatably mounted on a shaft 27 which latter may be journaled in any desirable manner, preferably in brackets which extend from the frames 10 of the machine or to suit the particular construction of the weaving machine to which the device is applied. Above the sprocket wheels 26 an additional pair of sprocket wheels 28 are mounted on a single shaft 29. These two sets of sprocket wheels have sprocket chains 30 trained about them and the chains are connected by card carrying ridges 31 which are arranged at spaced-apart positions along the entire length of the chains and have notches 32 therein at spaced-apart positions, in which is received the knives 22, the latter unseating the cards from the ridges at the upper end of the machine so that said cards are shunted into the chute 20. These ridges are adapted to engage cards as they slide down the runway and transfer these cards from the cradle 24 to a position above the chute where, as stated, they are shunted directly into the chute. The bars 12, which suspend the cylinder 14, have pivotally coupled thereto arms

33 and 34. These arms have provided at their extreme ends studs 35 which insert into the bars 12. The arms 33 and 34 extend and lie flat upon the platform 17 and are joined to a feeding plate 36 which is movable in a space existing between the lifted chute 20 and the platform 17 and, being of a dimension equal to the thickness of one of said cards 18.

The device is adapted to shunt cards used in the weaving machine from the chute 20 to the card holding cylinder 14. Said card holding cylinder swings at the lower end of a pair of spaced-apart bars or levers 12. The swinging of the card cylinder is actuated by a mechanism provided on the weaving machine and is not shown on the drawings as it is of a construction usual to the jacquard weaving machine. The card feeding mechanism is directly connected to the bars 12 through the medium of members 33 and 34 connected to these bars pivotally and carried with them. These members 33 and 34 move the feeding plate 36 toward the machine. The feeding plate in being moved forward fills the space which the lowermost card previously occupied and prevents the cards in the chute from dropping out of the space to the surface of the platform and, at the same time, this feeding plate 36 presents a shoulder to the lowermost card, which shoulder urges said card toward the opening 16 in the platform. The movement of this feed plate is equal to the width of one of these cards and the foremost card on the platform passes through the opening 16. The farthest advanced card, during this movement, is super-imposed over the opening 16 in the platform 17 and falls upon the upper flat surface of the card feeding cylinder 14 in which position the cards become impaled upon the pegs 15 upon this uppermost surface. The card on the cylinder remains in this position until the cylinder is rotated ninety degrees by the mechanism provided in the usual jacquard weaving machine and must again be rotated a second time ninety degrees or a part thereof before the card falls from the cylinder 14. These cards 18 drop from the cylinder 14 one by one, slide down the runway and abut with the card carrying ridge 31 which interferes with the passage of the card. The next following card feeding ridge engages the other edge of this card which abuts the proceding ridge and carries the card upwardly on the chains 30. These cards are, at the upper end of the conveyor, stripped from the ridges by the tapering projections 22 and the cards then fall into the chute 20. It will be noted that in Figure 4 member 36 is recessed at both ends. This recess is provided for the reason that this feeding plate 36 passes between the chains 30, and the distance between the chains 30 is no less than the distance required for the feeding plate 36: hence, as the chains 30 cannot be of a distance separated from each other equal to the length of the feeding plate 36, the feeding plate itself must be reduced in size so that the feeding plate 36 will not interfere with the sprocket wheels 28 and vice versa.

The sprocket wheels 28 are actuated from the suspension bar 12 by a mechanism not shown. This mechanism may be of any desired construction, but preferably a ratchet and pawl movement, in which a ratchet is mounted on the shaft 29 and a swinging pawl engages this ratchet and is connected to member 12 by a lever. This movement, or any other desirable movement, may be used.

It is to be noted that certain changes in form and construction may be made without departing from the spirit and scope of the invention.

I claim:

1. In a weaving machine, means for feeding cards comprising a card chute, a platform supporting said chute, said weaving machine having a swinging card carrying cylinder, said platform having an opening therein above said cylinder, and means movably mounted on said platform engaging the lowermost card in the chute for super-imposing the foremost card on said platform over said opening to cause said foremost card to fall upon said cylinder.

2. In a weaving machine, means for feeding cards comprising a card chute, a platform supporting said chute, said weaving machine having a swinging card carrying cylinder, said platform having an opening therein above said cylinder, and a pair of bars suspending said cylinder, a feeding plate slidably mounted on said platform, said feeding plate being connected to said bars, and means on said feeding plate engaging the lowermost card in the chute to shift the same the distance equal to the width of one card.

3. In a weaving machine, means for feeding cards comprising a card chute, a platform supporting said chute, said weaving machine having a swinging card carrying cylinder, said platform having an opening therein above said cylinder, a pair of bars suspending said cylinder, a feeding plate slidably mounted under said platform, said feeding plate being connected to said bars, said feeding plate being adapted to be shifted from the position adjacent said chute to a position within said chute by the swinging of said cylinder bars, and means for transferring the cards from the cylinder to the chute.

4. In a weaving machine, means for feeding cards comprising a card chute, a platform supporting said chute, said weaving machine having a swinging card carrying cylinder, said platform having an opening therein above said cylinder, a pair of bars suspending said cylinder, a feeding plate slidably mounted under said platform, said feeding plate being connected to said bars, a pawl pivotally mounted on said feeding plate, said

feeding plate having the thickness of a card, said feeding plate presenting a shoulder on one side adapted to engage the lowermost card in the chute and shift said card the distance equal to the width of one card, said cylinder being rotatable, a runway receiving said cards falling from said cylinder, and a conveyor for raising said cards to a position above said chute.

In testimony whereof I affix my signature.

FRED PETIG.