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 JACQUARD MECHANISM FOR WEAVING CUT PILE CARPETS.  
 APPLICATION FILED JAN. 30, 1908.

919,414.

Patented Apr. 27, 1909.

2 SHEETS—SHEET 1.

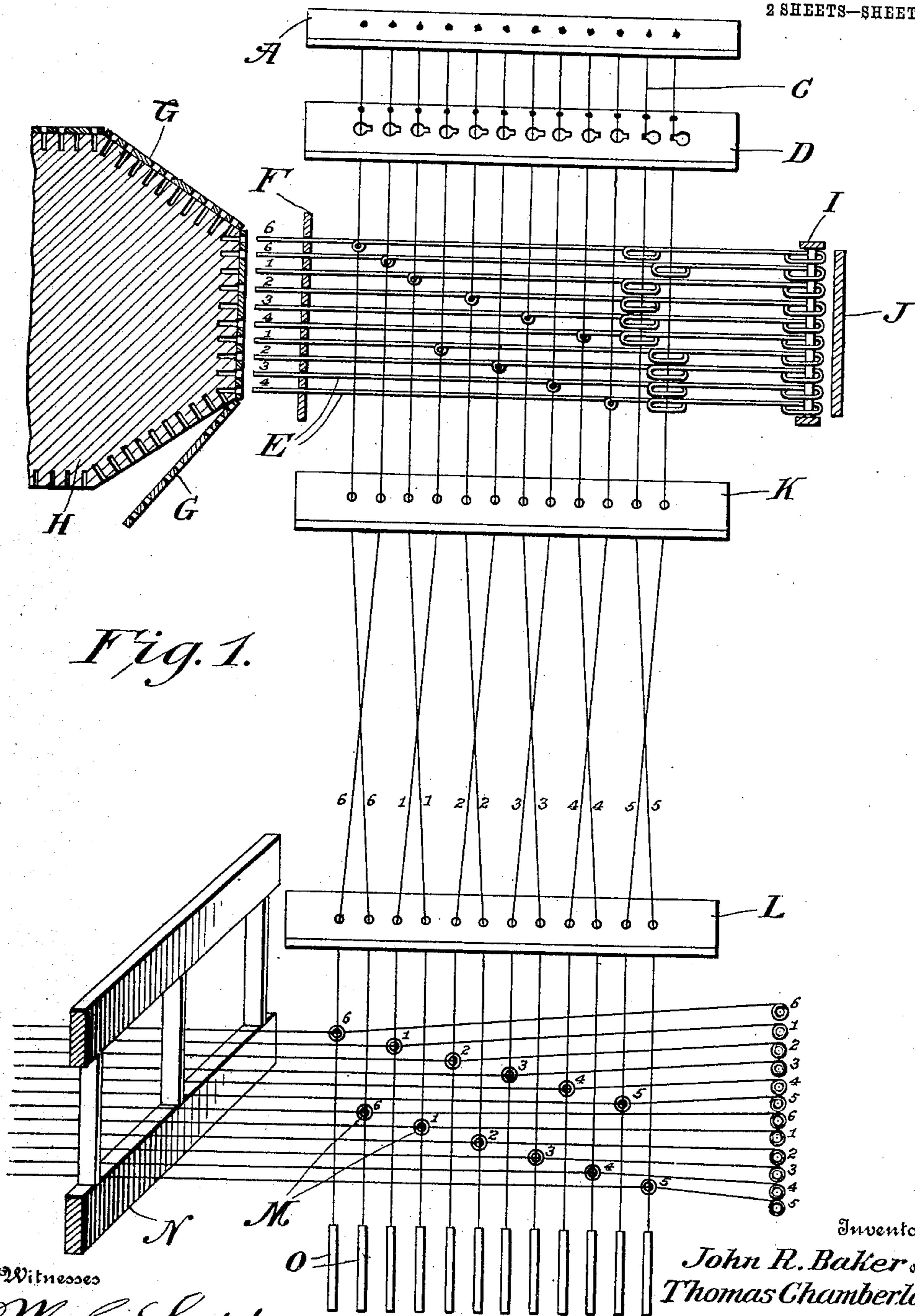


Fig. 1.

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Fig. 2.

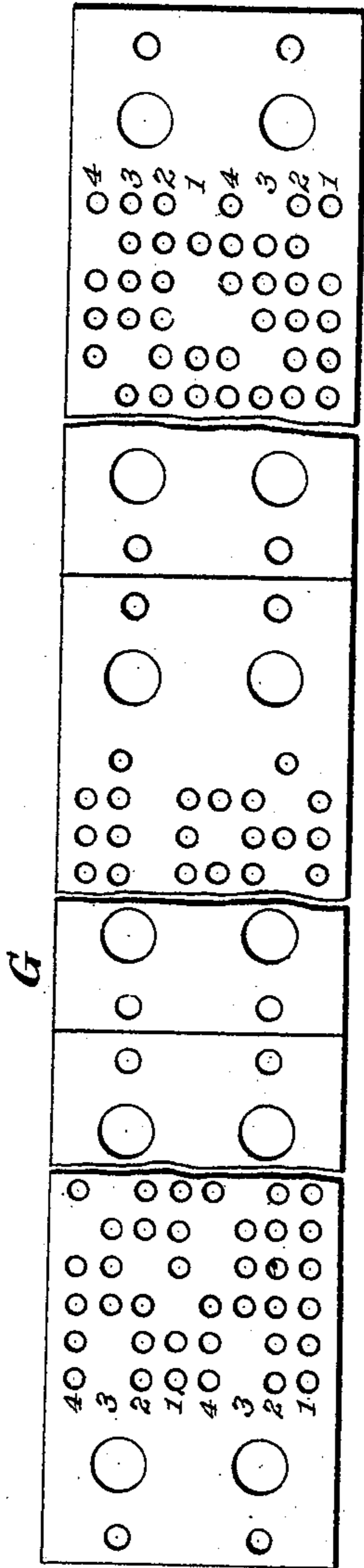
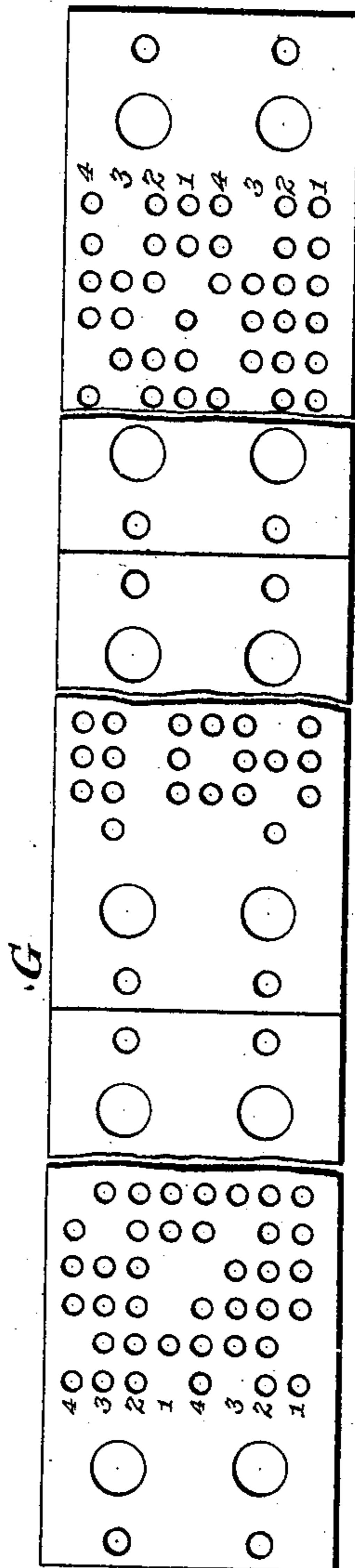


Fig. 3.



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# UNITED STATES PATENT OFFICE.

JOHN R. BAKER AND THOMAS CHAMBERLAIN, OF PHILADELPHIA, PENNSYLVANIA.

## JACQUARD MECHANISM FOR WEAVING CUT-PILE CARPETS.

No. 919,414.

Specification of Letters Patent.

Patented April 27, 1909.

Application filed January 30, 1908. Serial No. 413,425.

*To all whom it may concern:*

Be it known that we, JOHN R. BAKER and THOMAS CHAMBERLAIN, citizens of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Jacquard Mechanism for Weaving Cut-Pile Carpet, of which the following is a specification.

This invention relates to improvements in jacquard mechanism for weaving cut-pile carpet, such as velvet or Wilton for making rugs, the object being to provide means by which carpets of this character can be woven with one-half the number of pattern cards usually used, and yet whereby when the breadths of the carpet are put together the pile will lie in the same direction on all the breadths so that the shade of each breadth will be the same.

The invention consists in the detailed operation of preparing these pattern cards as will be now described and specifically set forth in the claims appended.

In the drawings Figure 1, presents diagrammatically a vertical section of a jacquard machine taken through the machine where the tail-cords are crossed. Fig. 2, is a face view of one row of a set of pattern cards in the position which they assume on the cylinder when the first half of the carpet or rug is being woven, and Fig. 3, is a like view of the same cards reversed on the cylinder as used for weaving the other half of the carpet or rug.

In weaving Brussels or other uncut-pile carpets, the right border and the right center can be woven twice and the two lengths can be turned around and thus become the left border and the left center. In the weaving of velvet or Wilton carpets or cut-pile carpets as they are known, four lengths cannot be woven and then two lengths turned around as in Brussels because the pile would show the light shade on two lengths and a dark shade on two lengths. It has therefore been necessary to use four sets of cards for weaving cut-pile carpets.

Our invention consists in so cutting the cards used for a Jacquard loom that only two sets of cards need be used instead of four, the cards cut according to our method being adapted to be turned end for end so that the set of cards used for the left hand border may be reversed and used for the right hand

border, and the set of cards used for the left center of the carpet be used for the right center.

To illustrate our invention we have shown the same as applied to a Jacquard loom which is shown in Fig. 1. This figure represents a six frame jacquard machine, A indicating a suspending board carrying the tail-cords C which pass through the opening of the trap board D and are provided with the usual knots by means of which they are passed through the needle board F and are adapted to engage the pattern cards G as they pass over the cylinder H, which is provided with the usual perforations whereby the needles can pass through the cards in the perforations of the cylinder. The blank portion left upon the cards causes the needles to work backwardly and operates the tail-cords so as to lift the desired frame or color of yarn. This is the ordinary operation of the jacquard machine and requires no further special description, as our invention does not relate to the jacquard mechanism, but to the manner of cutting the cards or translating the pattern of the carpet into card perforations. The other ends of the needles are provided with guide loops through which extend the vertical pins of the needle rack I, which is operated by the back-board J in the usual manner. A tension-board K is arranged under the row of needles provided with the usual series of openings through which the tail-cords pass. Ordinarily these tail-cords are straight, that is the first cord passes through the first hole of the tension-board and through the first hole of the comber-board L, but because of the peculiar manner in which our cards are cut, these tail-cords are required to be crossed between the tension-board and the comber-board as shown in Fig. 1, so that the second cord will pass through the first hole, and the first cord will pass through the second hole of the comber-board, and so on along the whole length thereof, or along that portion of the loom wherein our peculiar cut cards are used. An eye M is carried by the lower portion of each of the tail-cords through which pass the different color yarns or frames on their way to the reed N. The ends of the tail-cords are provided with the usual lingos O and the cylinder is driven in any desired manner. All these devices are those commonly employed in jacquard machines and are no part

of our invention, except in so far as the crossing of the tail-cords is necessary to the use of cards prepared by our method.

In Fig. 2, we show a row of cards G cut according to our method, that is they are cut like ordinary cards from the left end to the middle of the section, but on the left of the middle of the section the cards are cut from the right hand end to the center. In other words, the pattern is cut directly upon the cards beginning at the left hand end of the card section to the middle of the section, and then the pattern is cut from the right hand end to the center so that what was last of the pattern card becomes the first when reversed.

In Figs. 2 and 3, we show one row of a set composed of three sections or cards laced together in the usual manner, and in this case the middle of the pattern will come at the middle of the middle section, but it will be understood that where a set is composed of say four sections, two of the sections will be cut directly and the other two or right hand sections will be cut reversely after the manner described above. From this it will be seen that our method is equally applicable to sets composed of either an equal number of sections, or an unequal number, and that when we refer to reading the pattern card or producing the pattern from the left end of the set to the middle, and then from the right end of the set back to the middle, we do not wish to be limited to any definite number of cards or sections in the set.

In Fig. 3, we show the same row of cards as shown in Fig. 2, the cards however are reversed upon the cylinder, end for end and face downward, thus bringing what was the left hand end of the row over to the right hand end, and vice-versa. The upper or forward edge of the row however remains the upper edge. While this would raise the frame of the proper color it would not raise the frame in the right section of the reed and hence it is necessary where cards made by our method are used to cross the tail-cords over that half of the loom whose tail-cords are being actuated through the intermediation of the reversely cut cards or portions of

cards, thus the left hand side of the loom from the end to the middle will have straight tail-cords, while the other half of the loom will have crossed tail-cords. This will act to raise the proper frame of yarn in the proper section of the reed.

By the use of cards cut according to our method, cut-pile carpet can be woven with two sets of cards instead of four, it being only necessary to weave the left hand border and left hand center of these rugs or carpets with two separate sets of cards, and then, turning the cards end for end and reversing the face thereof, weaves the right hand center and right hand border.

Having thus described our invention what we claim as new and desire to secure by Letters Patent is:

1. A jacquard machine comprising a chain or set of cards for weaving cut-pile fabrics, said cards having a pattern punched therein from one end to the middle of said chain or set of cards and reversely punched from the other end backward to the middle of said row or set of cards.

2. A jacquard machine comprising a chain or set of cards for weaving cut-pile fabrics, said cards having a pattern punched therein from the left hand end to the middle of said chain or set of cards and reversely punched from the right hand end backward to the middle of said row or set of cards.

3. A jacquard machine comprising cards perforated to make up a row of a set from one end to the middle of the row, and reversely perforated as regards the pattern from the other end of the row, in combination with a tension board, a comber board, and tail-cords passing between the tension board and the comber board, one-half of said tail-cords being crossed.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

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Witnesses:

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