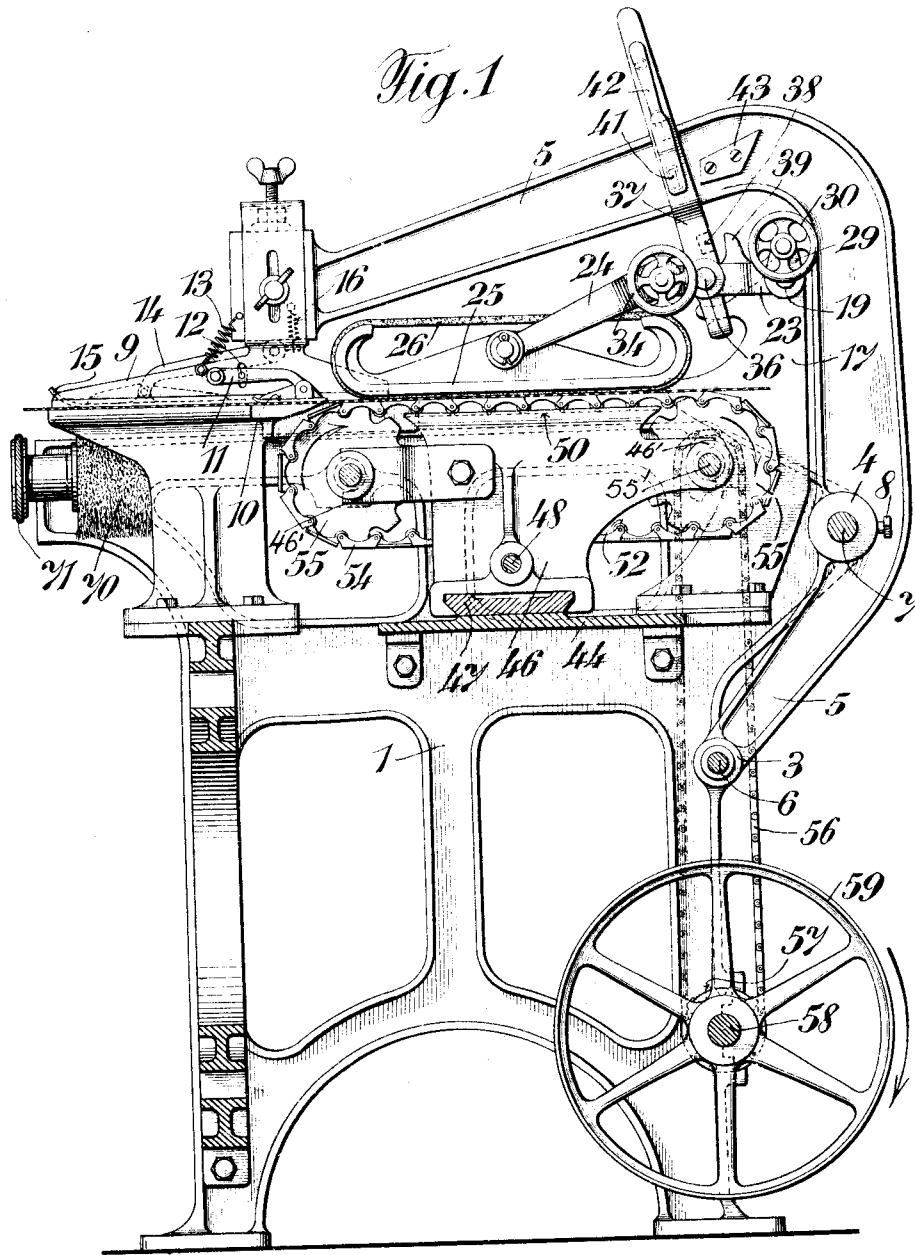


A. TSCHERNE.
MACHINE FOR CUTTING EMBROIDERIES.
APPLICATION FILED SEPT. 12, 1911.

Patented May 7, 1912.

4 SHEETS-SHEET 1.

1,025,491.



Witnesses:

R. Rommers
E. Leckert.

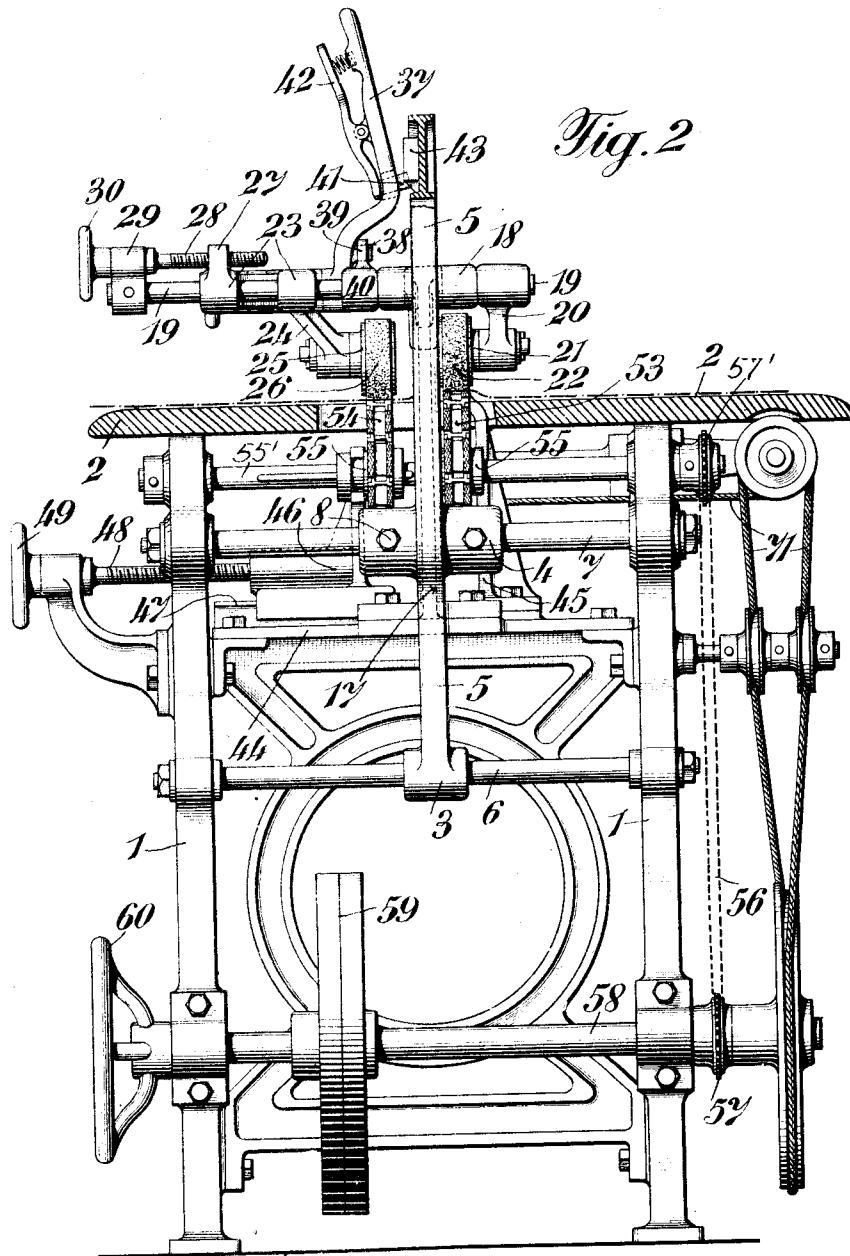
Inventor:

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Witnesses:

B. Rommers
E. Lechert

Inventor:

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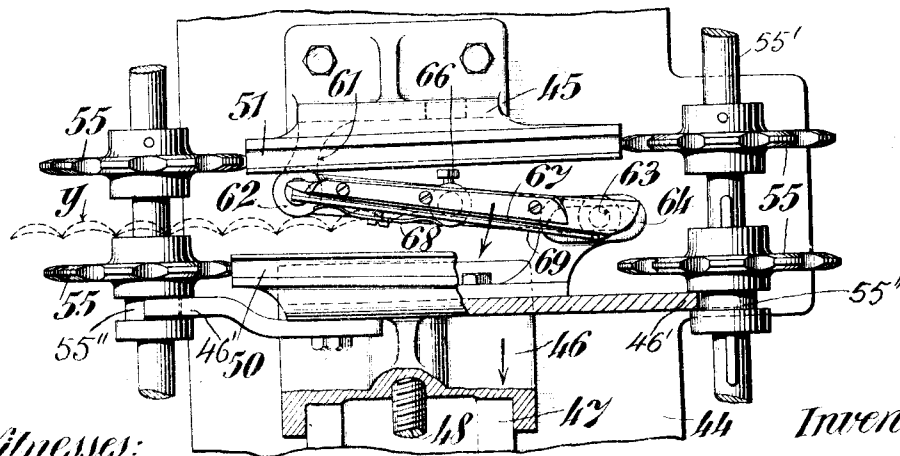
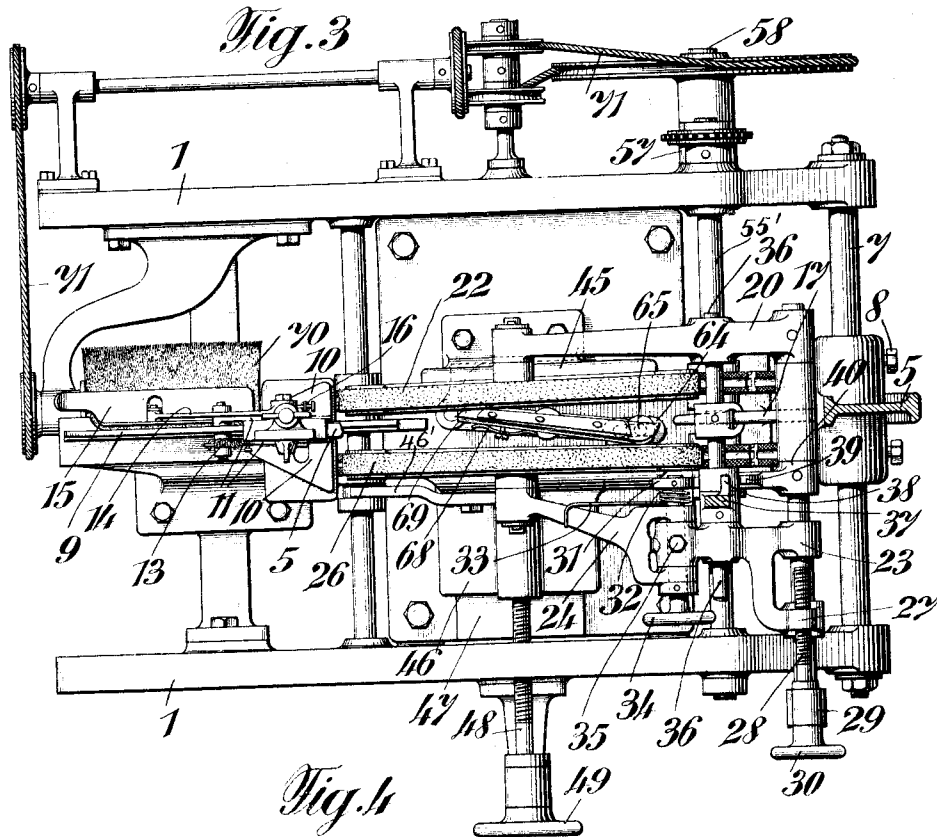
Henry [unclear]

Att'y

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4 SHEETS—SHEET 3.

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Witnesses:
B. Kohners
E. Leckert

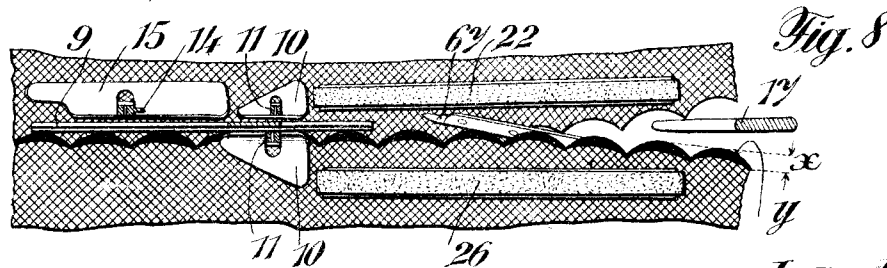
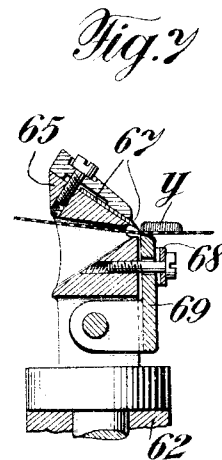
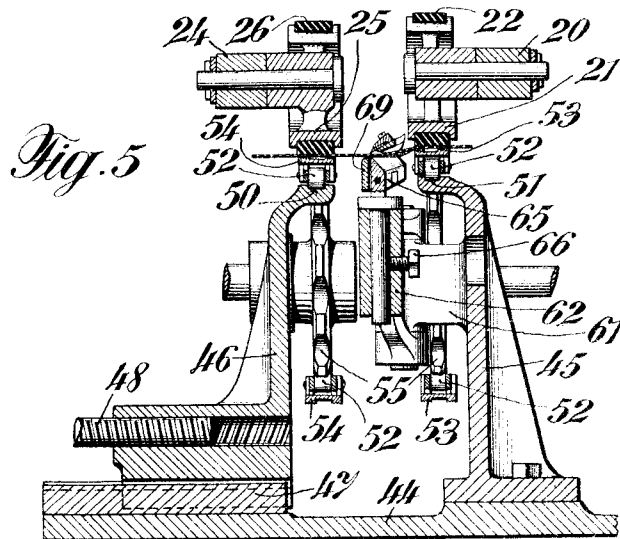
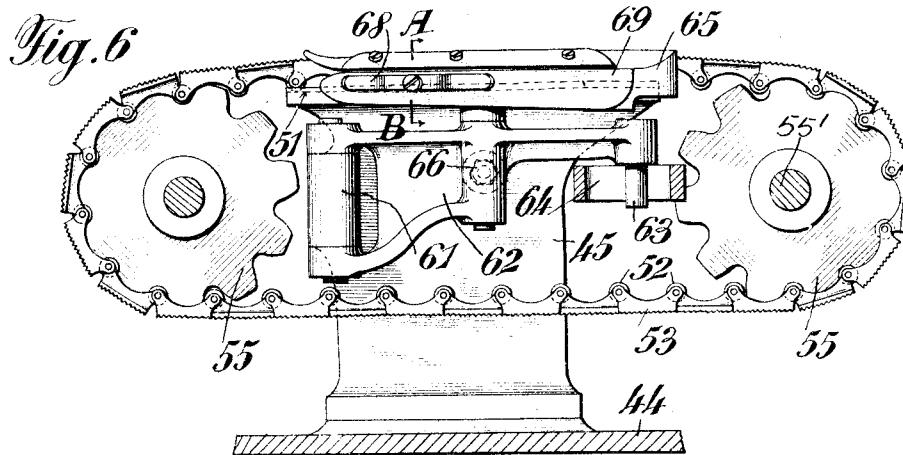
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4 SHEETS—SHEET 4.



Witnesses:
B. Rommels
E. Leckert

Inventor:
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Att'y.

UNITED STATES PATENT OFFICE.

ALOIS TSCHERNE, OF RORSCHACH, SWITZERLAND, ASSIGNOR TO THE FIRM OF HENRI LEVY, OF RORSCHACH, SWITZERLAND.

MACHINE FOR CUTTING EMBROIDERIES.

1,025,491.

Specification of Letters Patent.

Patented May 7, 1912.

Application filed September 12, 1911. Serial No. 648,983.

To all whom it may concern:

Be it known that I, ALOIS TSCHERNE, a subject of the Emperor of Austria-Hungary, residing at Rorschach, Hafenplatz, Switzerland, have invented new and useful Improvements in Machines for Cutting Embroideries; 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 letters or figures of reference marked thereon, which form a part of this specification.

My invention relates to a device for feeding the fabric to the knife of machines for cutting embroidery foundation. Both portions, the embroidered as well as the pneumobrodered portion are seized by the feeding means and moved forward whereby the feeding means can be adjusted so that they act as fabric stretcher in the direction of the width of the material.

According to this invention the distance of the four ends of the stretching means in the direction of the width of the material can be adjusted equally and simultaneously.

A form of execution of the device according to this invention is shown in the accompanying drawings in which—

Figure 1 shows in elevation and partly in section a machine for cutting embroideryeries provided with a device according to this invention, Fig. 2 shows the same in side elevation, partly in section, Fig. 3 in plan partly in section, Fig. 4 is an enlarged plan view of a part of the machine, Fig. 5 is a cross section through parts of the machine in an enlarged scale, Fig. 6 is an elevation of parts of the machine in an enlarged scale, Fig. 7 shows a section on line A—B of Fig. 6 in an enlarged scale, Fig. 8 illustrates the working of the knife.

A horizontal plate or table 2, which is shown only in Fig. 2 is mounted on the frame 1 of the machine. An arm 5 is slidably supported by bearings 3 and 4 on horizontal rods 6 and 7 and fixed to the latter by screws 8. The arm 5 projects over the table 2 and carries a vertically movable and fixable vertical guide plate 9, to which is pivoted on each side a lever 11. Studs of

the levers 11 are free to turn in bearings 55 of two horizontal clamping plates 10. Both the levers 11 are connected to each other by bolts 12 and actuated by a spring 13. A lever 14 is also pivotally supported by the guide plate 9 and carries a horizontal plate 15. A spring 16 acts on this lever. A bracket 17 secured to the frame 1 is provided with a bearing 18, in which an axle 19 is supported and prevented from moving in axial direction. An arm 20 secured to the axle 19 rotatably supports a pressing device consisting of a shoe 21, around which passes an endless apron 22 with roughed surface. A fork shaped support 23, to which is pivotally connected a lever 24 is slidably mounted on the axle 19. The lever 24 carries a second pressing device consisting of a shoe 25 around which passes an endless apron 26 also provided with a roughed surface. A screw spindle 28 engages a projection 27 of the support 23. The spindle is immovable in axial direction and supported by a bearing 29 secured to the axle 19. A hand-wheel 30 is fixed to the spindle. The shoe 25 can be laterally displaced by turning the hand-wheel 30. An axle connects the lever 24 to the support 23 and carries a hand-wheel 34 and an adjustable ring 31 to which is secured one end of a spring 32 the other end of which presses against the lever 24. The connecting axle is prevented by a set-screw 35 from being turned by the spring 32. After the set-screw is loosened the tension of the spring 32 can be adjusted by turning the hand-wheel 34. The arm 20 is connected to the support 23 by an axle 36. To the latter is secured a hand lever 37 provided with a nose 38 which engages a projection 39 of a part 40 connecting the axles 36 and 19 to each other. By reversing the hand lever 37 both the shoes 21 and 25 can be lifted at the same time. A spring lever 42 with a nose 41 is mounted on the hand lever 37. For securing the shoes 21 and 25 in a raised position the nose 41 can be turned and fixed behind a stop 43 mounted on the arm 5.

A guide 47 is provided in a plate 44 mounted on the frame 1. A support 46 is movable in the guide 47 by means of a screw 48 with hand-wheel 49 while another support 45 is secured to the plate 44. Both the supports are provided on the top with

grooves 50, 51 which are engaged by rollers 52 of chains 53, 54 which have roughed surfaces for conveying the fabric to be cut and acting as stretching means. The chains are 5 located below the aprons 22 and 26. The grooves 50 and 51, as well as the aprons 22 and 26, are not parallel to each other but diverge in the direction in which the fabric is to be moved.

10 The conveying chains 53, 54 are mounted on sprocket wheels 55 and engage the fabric in two straight lines. Motion is imparted to said chains by drive chains 56 which connects sprockets 57, 57' mounted respectively 15 on a drive shaft 58, and the shaft 55' on which two of the sprocket wheels 55 are mounted. The shaft 58 may be driven either by a pulley 59 or a hand wheel 60.

In order that the distance between the 20 conveyer chains 53, 54 may be altered the sprocket wheels, on which the chain 54 is mounted, are slidably mounted on their shafts, which are perpendicular to the direction of travel of the fabric, and said wheels 25 are connected with the adjustable support 46 by means of forked extensions 46' on the latter which extensions engage grooves 55' formed on the hubs of the two sprocket wheels which carry the chain 54.

30 On the support 45 is fixed a bearing 61 having a vertical bore in which is pivoted at one end a horizontal oscillatory support 62, the other end of which support is provided with a vertical stud 62 which projects 35 into the slotted end of a guide 61 fixed to the movable support 46.

A knife holder 65 is provided with a vertical spindle which is journaled in the horizontal support 62 and said holder can be 40 clamped in the latter by a set screw 66 engaging the spindle. A knife 67 is rigidly connected to the holder 65 to which latter is pivoted a plate 69 which forms with the cutting edge of the knife a longitudinal slot 45 which allows only the non-embroidered portion of the fabric to pass. The plate 69 is adjustable relatively to the holder 65 by means of a screw 68 (Fig. 7) between the 50 a flat spring which facilitates to hold the plate in its adjusted position.

The horizontal knife 67 is arranged obliquely to the direction of the aprons 22, 26 and the feeding means 53, 54, and is immovable during the cutting. By the means 55 described, the position of the knife relatively to the aprons and feeding means can be adjusted exactly according to the height of the scallops. By turning the hand wheel 60 49 the distance of the two conveying chains 53, 54 as well as the angle formed by the knife and the conveying chains are adjustable at the same time.

The brush 70 to which motion is imparted 65 by a rope drive 71 from the main shaft 58,

moves the edge *y* of the embroidery against the plate 9. The fabric is guided between the table 2 and the plate 9 as well as between the clamping plates 10 and 15 (Fig. 8) and fed between the aprons 22 and 25, between 70 the conveying chains 53 and 54 (Fig. 5) and through the knife carrier 65 (Fig. 7). By this means the fabric is cut along the edge *y* of the embroidery (Fig. 8).

What I claim is:

75 1. In a machine for cutting embroidery background along the edge of the embroidery, the combination with a stationary knife, of means to feed the embroidered material in a straight line along the knife, said means 80 stretching the material in straight lines in the direction of the width of the material.

2. In a machine for cutting embroidery background along the edge of the embroidery, the combination with a stationary 85 knife, of a feeding mechanism for the embroidered fabric comprising two pairs of superposed feed members adapted to engage both sides of the embroidery, and means to adjust bodily one pair of members perpen- 90 dicular to the direction of movement of the fabric.

3. In a machine for cutting embroidery background along the edge of the embroidery, the combination with a stationary knife, 95 of means to feed the embroidery along the edge of the knife comprising endless carriers, supports on which said carriers travel, and means to adjust one of said supports and carriers perpendicular to the direction 100 of travel of the fabric.

4. In a machine for cutting embroidery background along the edge of the embroidery, the combination with a stationary knife 105 of means to feed the embroidery along the edge of the knife comprising endless carriers, supports on which said carriers travel, means to adjust one of said supports and carriers perpendicular to the direction of travel of the fabric, and means to press the 110 fabric onto the carriers.

5. In a machine for cutting embroidery background along the edge of the embroidery, the combination with a stationary knife 115 of means to feed the embroidery along the edge of the knife comprising endless carriers, supports on which said carriers travel, means to adjust one of said supports and carriers perpendicular to the direction of travel of the fabric, means to press the fab- 120 ric onto the carriers, and means to adjust one of the pressing means with the adjustable carrier perpendicular to the direction of movement of the fabric.

6. In a machine for cutting embroidery 125 background along the edge of the embroidery, the combination with a stationary knife, of a support mounted on each side of the knife, an endless carrier traveling in a groove formed in each support, and means 130

to adjust one of said supports and carrier substantially perpendicular to the direction of travel of the carrier.

7. In a machine for cutting embroidery background along the edge of the embroidery, the combination with a stationary knife, of a support mounted on each side of the knife, an endless carrier traveling in a groove formed in each support, means to adjust one of said supports and carrier substantially perpendicular to the direction of travel of the carrier, pressing members mounted above the carriers and adapted to rest thereon, and means to adjust one of said members parallel to the adjustable carrier.

8. In a machine for cutting embroidery background along the edge of the embroidery, the combination with a stationary knife, a fixed support on one side of the knife, a movable support on the other side of the latter, endless chains movable in longitudinal grooves formed in said supports and adapted to feed a fabric along the edge of the knife, pressing members parallel to and adapted to press the fabric onto the carriers, and means to adjust the movable support perpendicular to the direction of travel of the carrier.

9. In a machine for cutting embroidery background along the edge of the embroidery, the combination with a stationary knife, a fixed support on one side of the knife, a movable support on the other side of the latter, endless chains movable in longitudinal grooves formed in said supports and adapted to feed a fabric along the edge of the knife, pressing members parallel to and adapted to press the fabric onto the carriers, means to adjust the movable support perpendicular to the direction of travel of the carrier, and means to adjust one of the pressing members parallel to the adjustable carrier.

10. In a machine for cutting embroidery background along the edge of the embroidery, the combination with a stationary knife, an endless chain having a roughened surface mounted on each side of the knife, a support for each chain having a groove in which the latter travels, shafts mounted transversely of the supports, sprockets fixed on the shafts carrying one of said chains, sprockets slidable on the shaft carrying the other chain, means to adjust one of the supports perpendicular to the direction of travel of the chain, and means to connect the adjustable support to the slidable sprockets.

11. In a machine for cutting embroidery background along the edge of the embroidery, the combination with a stationary knife, an endless chain having a roughened surface mounted on each side of the knife, a support for each chain having a groove in which the latter travels, shafts mounted transversely of the supports, sprockets fixed on the shafts carrying one of said chains, sprockets slidable on the shaft carrying the other chain, means to adjust one of the supports perpendicular to the direction of travel of the chain, means to connect the adjustable support to the slidable sprockets, endless pressing members adapted to rest on the chains, and means to adjust one of the pressing members parallel to the adjustable chain.

12. In a machine for cutting embroidery background, the combination with a fixed support, a support movable to and from the latter and a horizontal knife pivotally connected with said supports, of a shaft at each end of the supports, sprockets fixed on the shafts at each end of the fixed support, sprockets slidably mounted on the shafts at each end of the movable support, and connected with the latter, endless conveyer chains mounted on the sprockets, and means to adjust the movable support perpendicular to the direction of travel of the chain on the slidable sprockets.

13. In a machine for cutting embroidery background, the combination with a fixed support, a support movable to and from the latter and a horizontal knife pivotally connected with said supports, of a shaft at each end of the supports, sprockets fixed on the shafts at each end of the fixed support, sprockets slidably mounted on the shafts at each end of the movable support, and connected with the latter, endless conveyer chains mounted on the sprockets, means to adjust the movable support perpendicular to the direction of the chain on the slidable sprockets, endless pressing members running parallel to and cooperating with the chains, and means to adjust one of the pressing members parallel to its cooperating chain.

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

ALDOIS TSCHERNE.

Witnesses:

EUGENE NABEL,
ALBERT PHILLIPS.