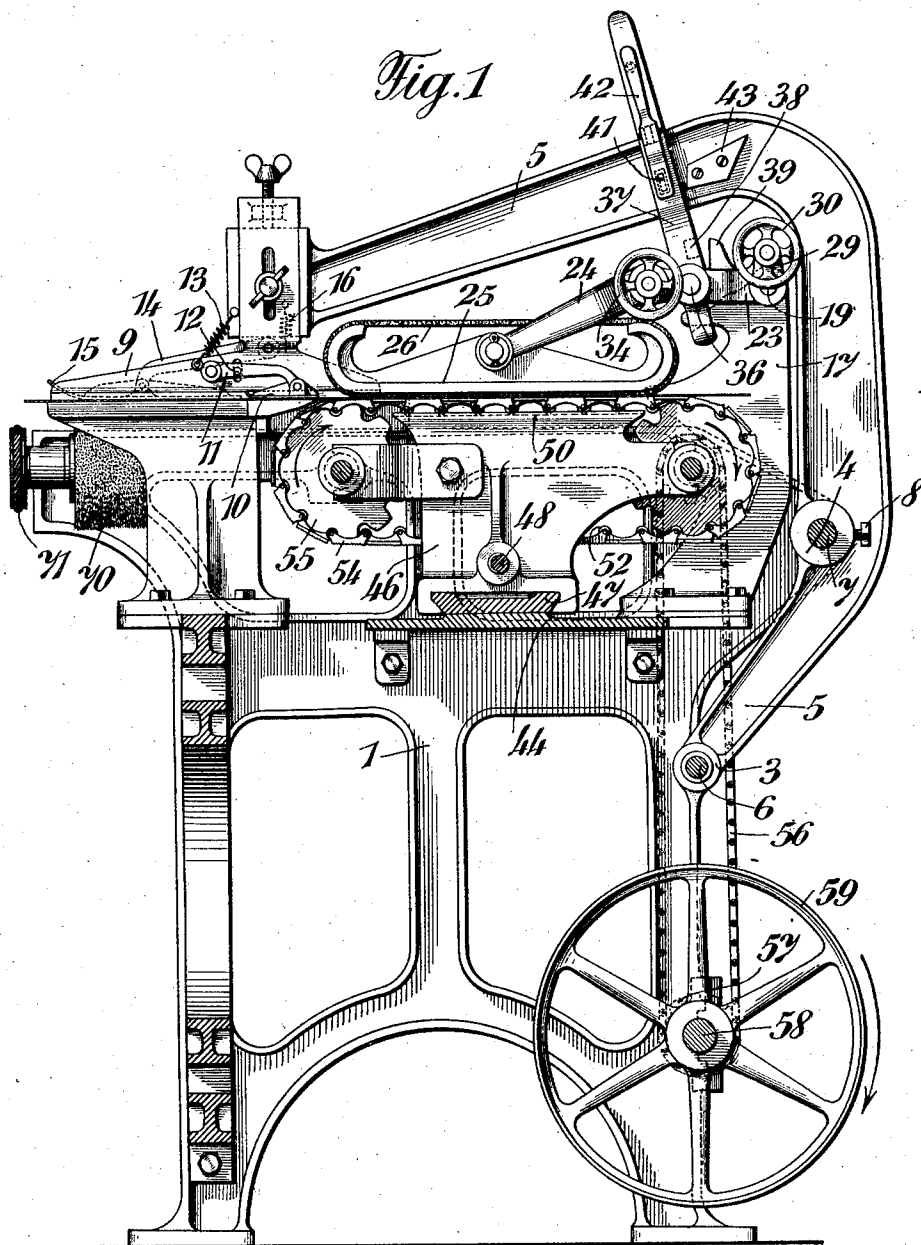


A. TSCHERNE.
MACHINE FOR CUTTING EMBROIDERIES.
APPLICATION FILED AUG. 1, 1911.

1,025,490.

Patented May 7, 1912.

4 SHEETS—SHEET 1.



Witnesses:

W. Mommers
E. Leckert.

Inventor:

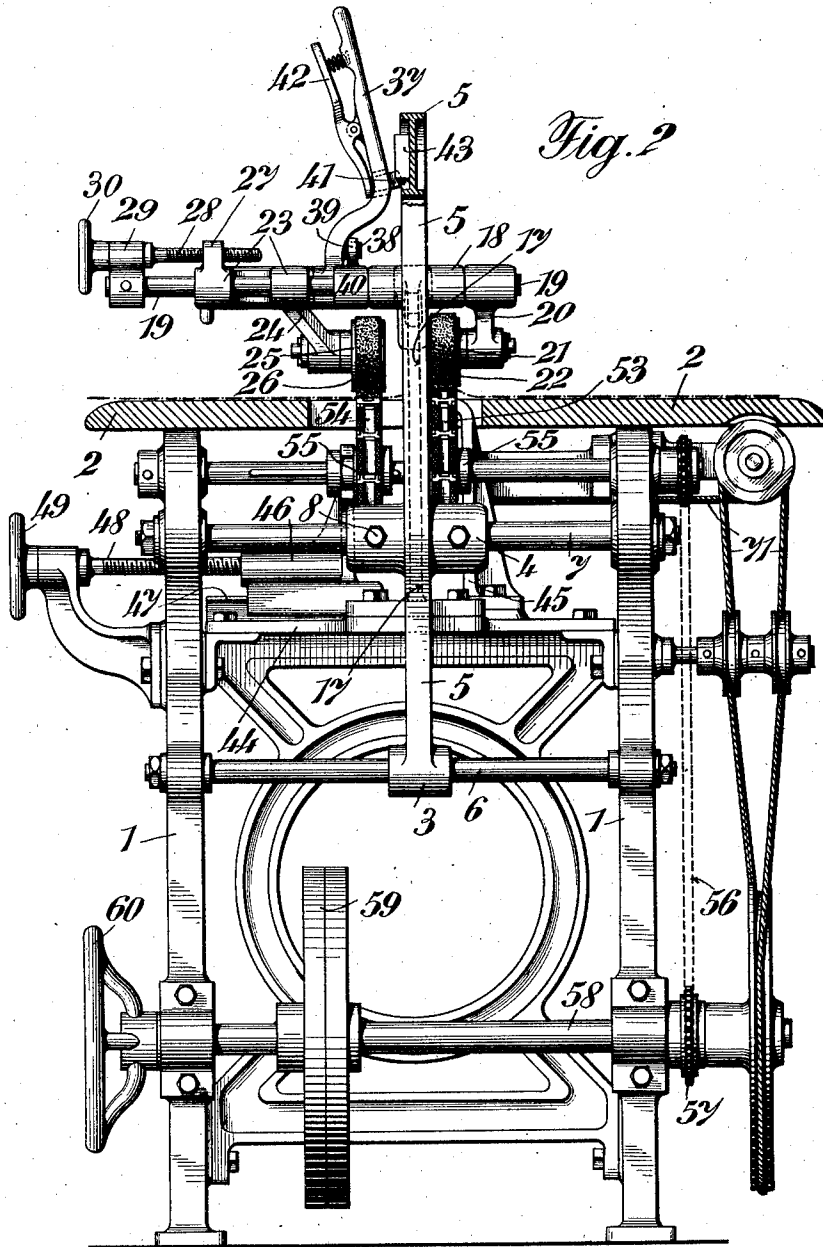
Alois Tscherne,
By *Henry Orth* atty.

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Witnesses:

B. Kommers
E. Leckert

Inventor:

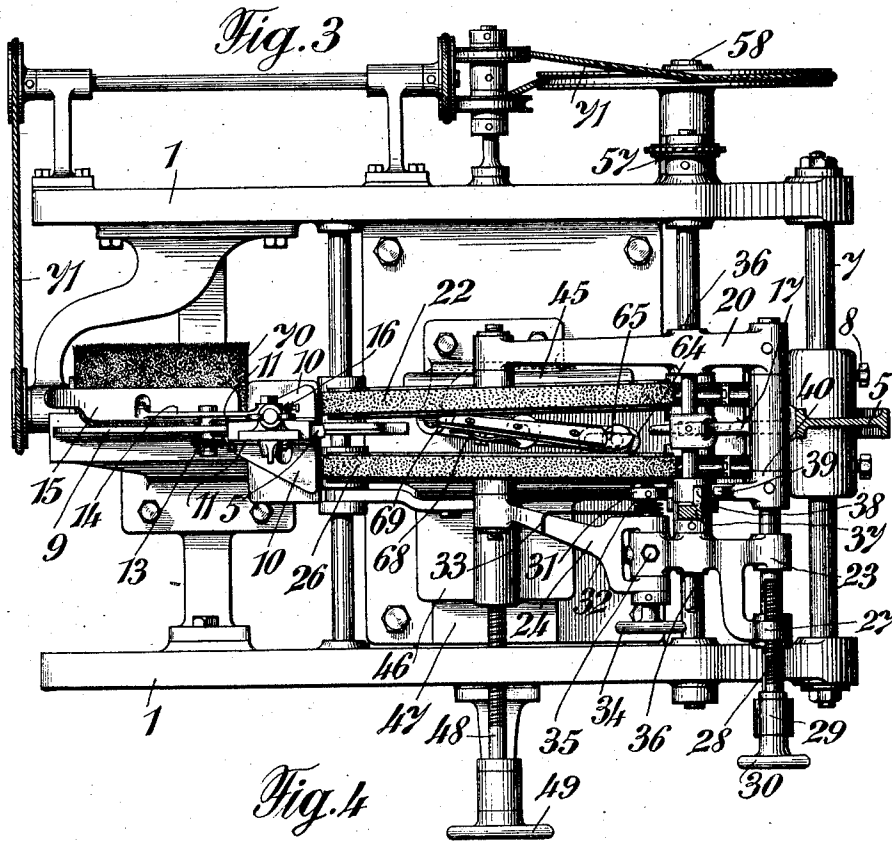
Alois Tscherne,
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4 SHEETS—SHEET 3.



Witnesses:

B. Kommers
C. Leckert.

Inventor:

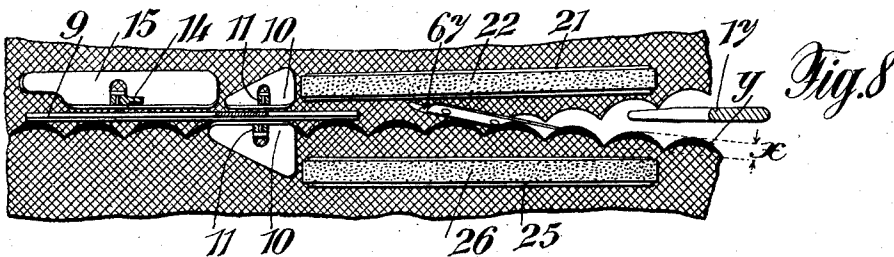
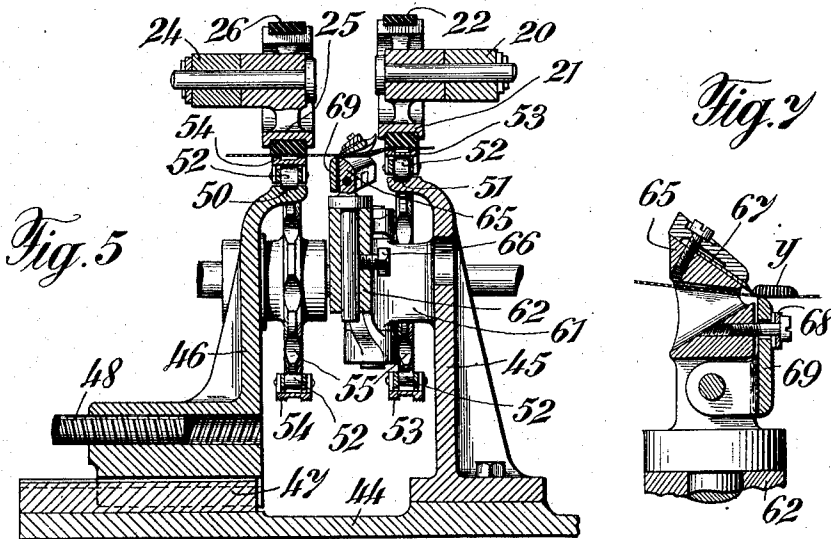
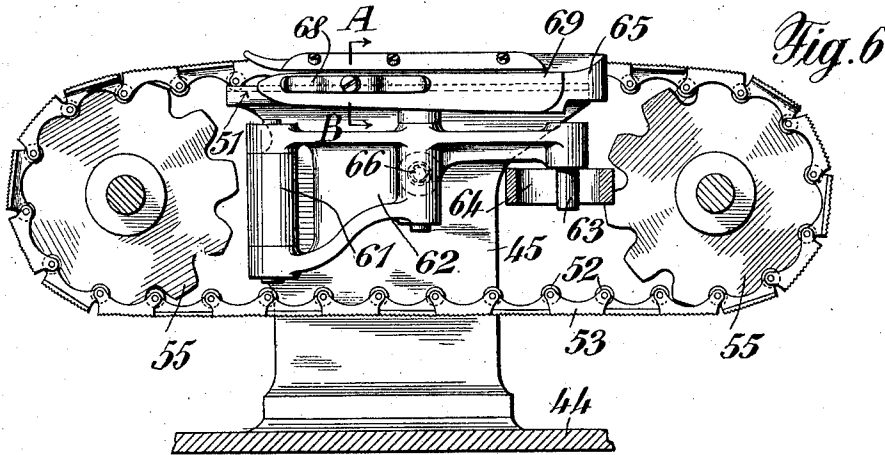
Alois Tscherne
By *[Signature]* atty.

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4 SHEETS—SHEET 4.



Witnesses:

B. Kommers
E. Leckert.

Inventor:

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UNITED STATES PATENT OFFICE.

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

MACHINE FOR CUTTING EMBROIDERIES.

1,025,490.

Specification of Letters Patent.

Patented May 7, 1912.

Application filed August 1, 1911. Serial No. 641,847.

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 machine for cutting the embroidery foundation close along the embroidery-edge.

With some of the machines of this kind hitherto in use the embroidery foundation was cut by a knife bounding a slot at one side in such a manner, that the cut automatically follows the edge of the embroidery, the knife being moved to and fro when cutting. It is necessary therefore to alter the angle of the knife in a horizontal plane formed by the edge of the knife and by the longitudinal direction of the embroidery the angle being dependent upon the height of the arcs forming the edge of the embroidery.

Experiments have proved, that movably arranged knives can not be exactly adjusted and displaced. To facilitate the adjustment of the angle of the knife according to the height of the arc the knife of the machine according to this invention is arranged so, that it does not move during the cutting neither relatively to the fabric nor to the means carrying the knife.

A construction according to this invention is illustrated by way of example in the accompanying drawings in which—

Figure 1 shows the machine in front elevation, partly in section, Fig. 2 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.

The 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 is 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 lever 11 are free to turn in bearings of two horizontal clamping plates 10. Both the levers 11 are connected to each other by bolts 12 and are acted on by a spring 13. A lever 14 is also rotatably 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, by 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 latter 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 secur-

ing 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. The chains are 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. The conveying chains are mounted on chain wheels 55 and impelled from the main shaft 58 by a chain 56 and a chain wheel 57, to which motion may be imparted either by a pulley 59 or by a hand wheel 60.

On the support 45, (Figs. 5 and 6) 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 63 which projects into the slotted end of a guide 64 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 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 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 head of which and the plate, is interposed a flat spring which serves 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 described, the position of the knife relatively to the aprons and feeding means can be adjusted exactly, according to the height of the scallops.

With the form of execution shown on the drawings the angle formed by the knife and the conveying chains is adjustable by turning the hand-wheel 49, so that the machine can be used for cutting embroideries of different heights, the height in the example shown being indicated by dotted lines (Fig. 8). This advantage is obtained by the arrangement of the knife. According to this invention no motion of the knife takes place at all during the cutting, that means the knife moves neither without the knife-carrier, to and fro, or continually for example, nor with the knife-carrier. The knife-

carrier and the knife can easily and positively be displaced by immovably arranged adjusting means.

The brush 70 to which motion is imparted by a rope drive 71 from the main shaft 58, moves the edge γ 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 the conveying chains 53 and 54 (Fig. 5) and through the knife-carrier 65 (Fig. 7). The fabric is cut along the edge γ of the embroidery (Fig. 8).

What I claim is:

1. In a machine for cutting embroidery background, a stationary knife holder, a knife fixed thereon and forming therewith a slot through which the background is passed, means for feeding the embroidery along the edge of the knife, and means to adjust the holder and knife at an angle to the direction of travel of the embroidery.

2. In a machine for cutting embroidery background, a stationary knife holder, a knife fixed thereon and forming therewith a slot through which the background is passed, means for feeding embroidery along the edge of the knife, and two supports to which the knife holder is pivotally connected at each end, whereby the knife is adjustable at an angle to the direction of travel of the embroidery.

3. In a machine for cutting embroidery background, the combination with means for feeding embroidery in the direction of its length, of a support mounted on each side of the feeding means, a knife holder pivotally connected with said supports, a knife fixed on the holder and forming therewith a slot through which the background is passed, said holder and knife being so positioned relatively to the direction of travel of the embroidery that the latter is fed along the edge of the knife, and means to adjust one of said supports to vary the angle of the holder and knife relatively to the direction of travel of the embroidery.

4. In a machine for cutting embroidery background, the combination with means for feeding embroidery in the direction of its length, of a support mounted on each side of the feeding means, a knife holder pivotally connected with said supports, a knife fixed on the holder and forming therewith a slot through which the background is passed, said holder and knife being so positioned relatively to the direction of travel of the embroidery that the latter is fed along the edge of the knife, and means to move one of said supports toward and from the feeding means whereby the angle of the holder and knife is varied relatively to the direction of travel of the embroidery.

5. In a machine for cutting embroidery

background, the combination with means for feeding embroidery in the direction of its length, a fixed support on one side of the feeding means, a support on the other side of the latter movable toward and from said feeding means, a horizontal support pivoted at one end in the fixed support and slidably connected at its other end to the movable support, a knife holder mounted on the horizontal support, and a knife on the holder and forming therewith a slot through which the background is passed.

6. In a machine for cutting embroidery background, the combination with means for feeding embroidery in the direction of its length, a fixed support on one side of the

feeding means, a support on the other side of the latter movable toward and from said feeding means, a horizontal support pivoted at one end in the fixed support and slidably connected at its other end to the movable support, a knife holder adjustably mounted on the horizontal support, and a knife fixed on the holder and forming therewith a slot through which the background is passed.

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

ALOIS TSCHERNE.

Witnesses:

RANDALL ATKINSON,
ALBERT PHILLIPS.

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