

No. 867,944.

PATENTED OCT. 15, 1907.

A. BOSSHARD.
CLOTH CUTTING MACHINE.
APPLICATION FILED MAY 11, 1906.

3 SHEETS—SHEET 1.

FIG. 1

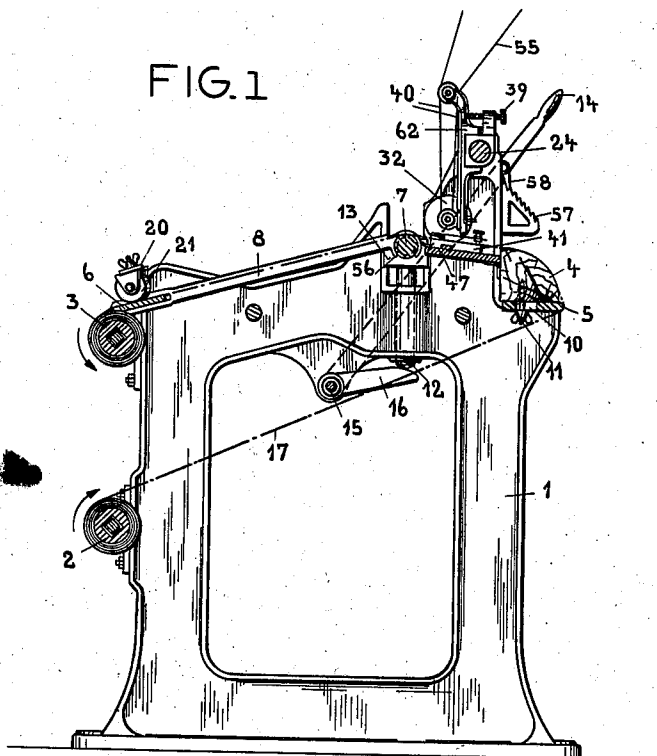


FIG. 6

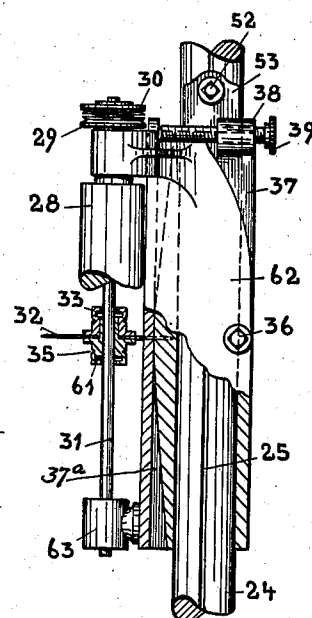


FIG. 5

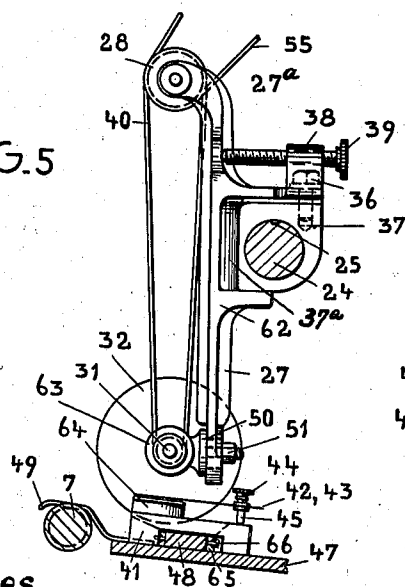
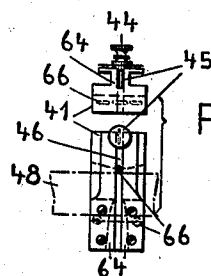


FIG. 4



Witnesses
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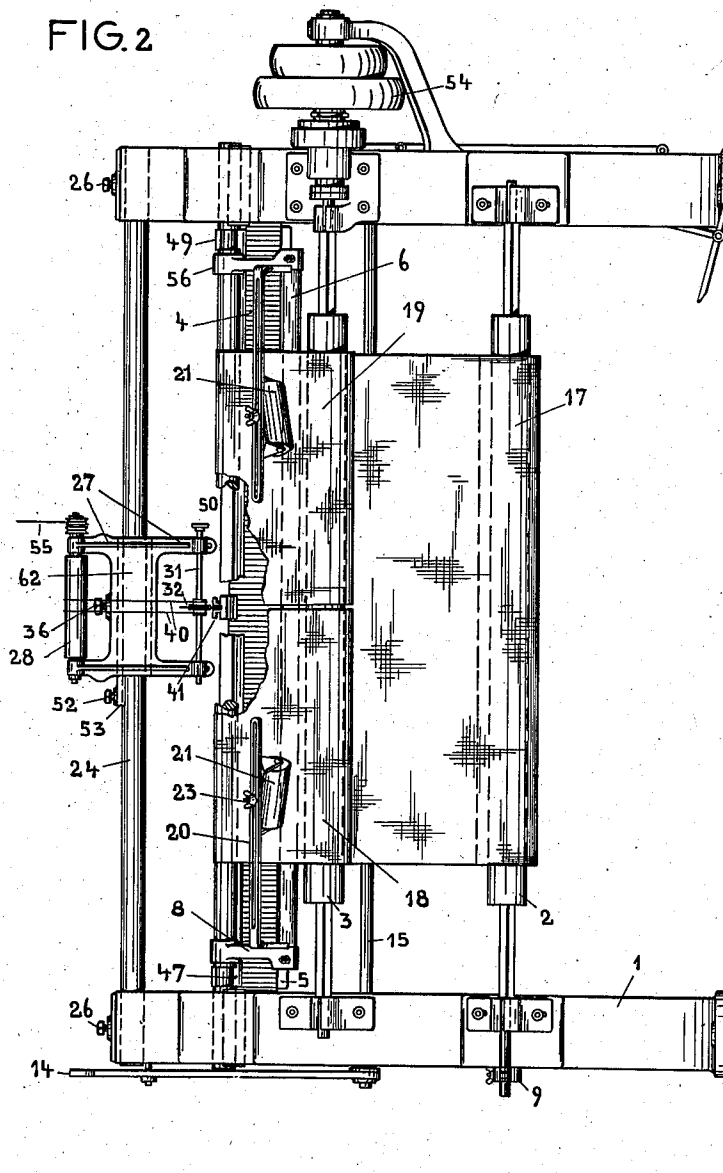
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3 SHEETS—SHEET 2.

FIG. 2



Witnesses

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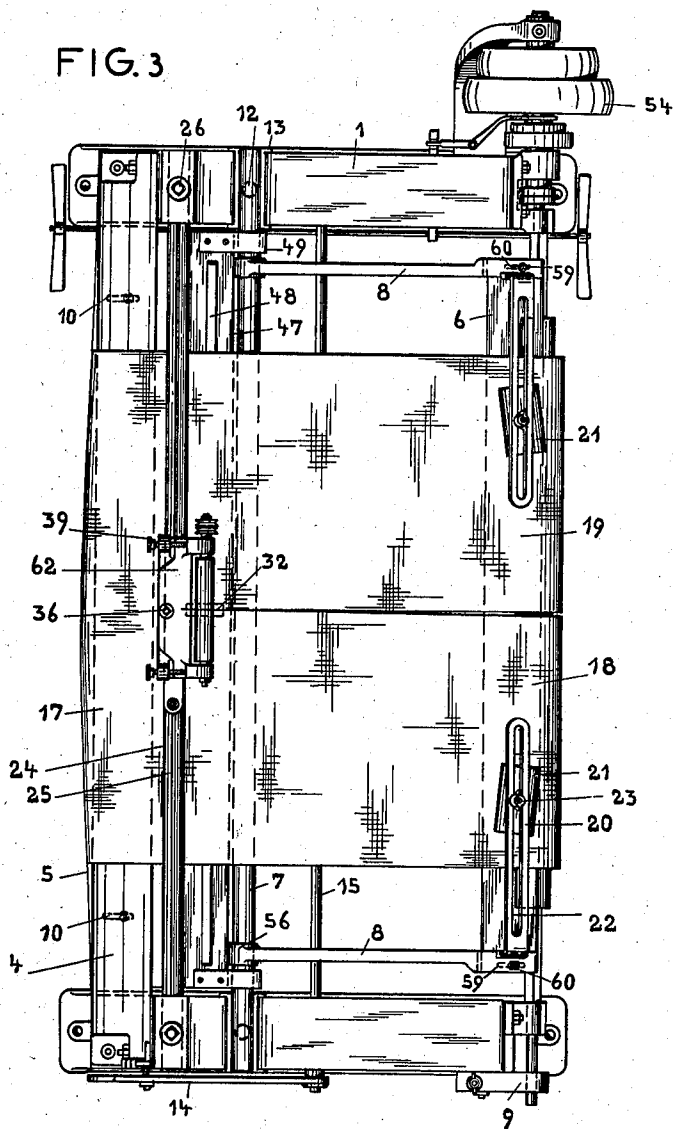
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CLOTH CUTTING MACHINE.
APPLICATION FILED MAY 11, 1906.

3 SHEETS—SHEET 3.



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UNITED STATES PATENT OFFICE.

ALBERT BOSSHARD, OF ZURICH, SWITZERLAND.

CLOTH-CUTTING MACHINE.

No. 867,944.

Specification of Letters Patent.

Patented Oct. 15, 1907.

Application filed May 11, 1906. Serial No. 316,325.

To all whom it may concern:

Be it known that I, ALBERT BOSSHARD, a citizen of the Swiss Republic, residing at Zurich, in Switzerland, have invented certain new and useful Improvements in

5 Cloth-Cutting Machines, of which the following is a specification.

This invention relates to an improved machine for cutting cloth by means of an adjustable, revolving knife-disk.

10 The invention is illustrated in the annexed drawing, in which

Figure 1 is a vertical section of the machine, Fig. 2 a front-view, and Fig. 3 a plan-view. Figs. 4 to 6 illustrate details.

15 The carriage or slide 62 carrying the knife 32 is mounted on a bracket 37 slidable on a guide 24 in such a manner that it can be horizontally moved about a screw 36. For supporting the knife axle 31 the said carriage 62 is provided with two downwardly extending arms 27; and two other upwardly extending

20 arms 27^a of the said carriage support a driving-roller 28. The bracket 37 is so cut away towards the rear as at 37^a that the carriage can be laterally rotated through a certain distance. To permit of regulating

25 this distance the support is provided with two lugs 38 through each of which passes an adjusting screw 39 which can be operated by hand in such a manner as to act on or abut against the arms 27^a. The position of the carriage can thus be adjusted by screwing one screw 39

30 inwards and the other outwards.

The knife-axle 31 is fixed and preferably arranged in bearings 63 adapted to be adjusted in slots 50 in the arms 27 by means of screws 51. The circular knife 32 is rotatable on said axle 31, and is held between two screw-

35 threaded sleeves 33 which form a hub. Each of the sleeves 33 is preferably provided with an oil-chamber the outer edges of which are slightly wider than the bore, so that the oil is not lost through friction or centrifugal force. Each of the said sleeves is, moreover, provided

40 with an external groove 35, so that it is adapted to serve as a pulley, the knife being operated by means of two cords 40 driven from the pulley 28. On the axle of the latter are arranged a fast pulley 29 and a loose pulley 30 adapted to be driven by means of a cord or the like 55.

45 As aforesaid the bracket 37 is slidable on a guide-rod 24 and adjustable by means of a set-screw 52 traversing a lug 53 and adapted to engage a groove 25 with which the guide-rod is provided. The ends of the guide-rod are slidably supported by the frame 1 in such

50 a manner that the bracket 37 with the carriage, can be easily removed, and that additional brackets and carriages can be placed on the guide if desired. The guide-rod 24 can also be adjusted and held by means of set-screws 26 adapted to engage the groove 25.

55 The cloth to be cut passes from a roller 2 in front of the machine frame over a smoothing plate 5 and a ver-

tically adjustable tensioning bar 7 to a roller 3 adapted to be driven by means of a pulley 54. The axle of the roller 2 is preferably provided with a brake 9, so that the cloth remains in a suitable state of tension, 60 without creases or folds. A smoothing plate 6 arranged between the cloth and the roller 3 bears on the latter in order to insure that the cloth is smoothly wound on the said roller, the plate 6 being connected with the tensioning bar 7 by means of arms 8 and bands or sleeves 65 56. Between the tensioning bar 7 and a fixed tensioning bar 4 a table 47 is located said table being connected to the fixed bar 4 by means of hinges and resting on the movable bar 7 by means of bands 49. The bar 7 is supported by slides 13 guided in the frame 1 by 70 means of rods 12. Into the path of the latter extend arms 16 mounted on a shaft 15. The latter can be operated by means of a lever 14 for the purpose of adjusting the slides 13 and bar 7 in order to regulate the tension of the cloth. The lever 14 is provided with a pawl 75 58 adapted to engage a toothed segment 57 fixed to the frame 1 for the purpose of retaining the said lever in the desired position. The table 47 and plate 6 are always parallel with the cloth, since they rest upon the bar 7.

80 Directly below the knife 32 a movable knife-guide 41 is arranged on the table 47. The said knife-guide comprises a narrow block with a longitudinal slot 46, at the sides of which springs 42 and 43 are supported by means of ribs 64. The free ends of the springs 42 and 85 43 engage a screw 44 terminating in a conical pin 45 which is pressed by the said springs against the guide 41. The table 47 is preferably so arranged that the surface of the guide 41 on which the pin 45 abuts is situated in the plane of the cloth in front of the knife. To 90 prevent the forward and rearward movement of the knife-guide a cross-bar 48 is arranged on the table 47, and the guide is provided with a recess 65 engaging the said cross-bar, the length of the recess being preferably slightly greater than the width of the cross-bar, so that 95 the knife-guide, which is provided with rollers 66 can be easily moved along the bar.

The cloth 17, comprising several webs of fabric, is moved over the knife-guide and under the point of the pin 45, in such a manner that the said pin engages be- 100 tween the so-called loop-selva threads between two webs, this thread being somewhat thicker than the ordinary threads with which the web is interwoven. During the travel of the cloth in the direction indicated in Fig. 1 by the arrow the knife 32 is revolved by means 105 of the driving-cord 55, and the pin 45 engaging the selva threads is displaced in a manner corresponding to the sinuous course of the latter. By this means the knife-guide is also displaced and causes the knife 32, which it engages, to be laterally displaced on the axle 110 31. Owing to the arrangement of the knife-guide in front of the knife the displacement of the latter always

takes place at the moment when a curved portion of the selvage-threads is about to be fed to the knife, so that the latter always acts between the selvage-threads and does not sever the latter or cut into the body of the web on either side.

For adjusting the knife according to the more or less inclined direction of travel of the cloth, the regulating-screws 39 are operated. If, for instance, the cloth is traveling in a direction somewhat inclined towards the right the screw 39 on the right-hand side is screwed towards the rear, and the left-hand screw 39 is screwed forwards, so that the carriage is rotated about the screw 36.

The aforesaid smoothing plate 5 is preferably convex, so that the cloth is slightly more tensioned directly between the webs 18 and 19 than at the outer edges. To allow of adjusting the plate 5 the latter is provided with slots 10 engaged by screws 11 by which the plate is fixed to the bar 4. The plate 6 is adjustably connected with the arms 8 by means of slots 59 and screws 60.

To prevent the crossing of the webs 18 and 19 on the roller 3, adjustable guide-rollers 21 are arranged at the ends of the plate 6, in contact with the upper surface of the cloth. The rollers 21 are mounted in adjustable bearings and secured by means of screws 23 to hinged, slotted arms 22. The said rollers are preferably covered with cloth, india-rubber or the like and so adjusted that while bearing by gravity on the webs they impart to the latter a tendency to diverge.

By means of the apparatus described more than two webs woven together can be simultaneously cut with perfect reliability.

What I claim as my invention and desire to secure by Letters Patent of the United States is:—

1. In a cloth cutting machine the combination with a laterally slidable rotatable knife and table located below same of a knife guide comprising a block mounted to be slidable laterally on said table and having a longitudinal slot, springs supported adjacent said slot, a pin in connection with said springs adapted to bear on said block and means for preventing forward and rearward movement of said block on the table aforesaid, substantially as described.

2. In a cloth cutting machine the combination with a table and a cloth web passing thereover of a vertically adjustable tensioning bar adapted to bear from below on said cloth, slides carrying said bar, rods connected to said slides and lever mechanism adapted to act on said rods to adjust the bar, substantially as described.

3. In a cloth cutting machine the combination with a

table and cloth web passing thereover a fixed tensioning bar in front of said table in the direction of travel of the web, an adjustable smoothing plate secured to said tensioning bar, an adjustable tensioning bar to the rear of said table and an adjustable second smoothing plate to the rear of said adjustable tensioning bar, substantially as described.

4. In a cloth cutting machine, the combination of a laterally slidable rotatable knife, means for feeding the cloth thereto, a fixed axle carrying said knife, a laterally adjustable carriage carrying said axle, a guide on which said carriage is adapted to slide, and means whereby the carriage can be adjusted to permit the knife to cut in definite directions, substantially as described.

5. In a cloth cutting machine, the combination of a laterally slidable rotatable knife, means for feeding the cloth thereto, a laterally slidable knife guide coacting therewith, a pin in connection with said guide adapted to bear on the cloth, fixed and adjustable tensioning bars over which the cloth travels, a table located between said bars and supporting the aforesaid knife guide, a smoothing plate in front of the fixed tensioning bar, a winding roller for the cut cloth, and a second smoothing plate in front of said winding roller, substantially as described.

6. In a cloth cutting machine, the combination of a laterally slidable rotatable knife means for feeding the cloth thereto, fixed and adjustable tensioning bars over which the cloth travels, a table located between said bars, means for keeping the surface of said table always parallel to the cloth, a fixed axle carrying the knife aforesaid, a laterally adjustable carriage carrying said axle, a guide on which said carriage is adapted to slide, a smoothing plate in front of the fixed tensioning bar, a winding roller for the cut cloth, a second smoothing plate in front of said winding roller, and means for keeping said plate always parallel with the cloth, substantially as described.

7. In a cloth cutting machine, the combination of a laterally slidable rotatable knife, means for feeding the cloth thereto, a laterally slidable knife guide coacting therewith, a pin in connection with said guide adapted to bear on the cloth, fixed and adjustable tensioning bars over which the cloth travels, a table located between said bars and supporting the aforesaid knife guide, means for keeping the surface of said table parallel to the cloth, a fixed axle carrying the knife aforesaid, a laterally adjustable carriage carrying said axle, a guide on which said carriage is adapted to slide, a smoothing plate in front of the fixed tensioning bar, a winding roller for the cut cloth, a second smoothing plate in front of said winding roller, means for keeping said plate parallel with the cloth, and adjustable and removable guide rollers for the cloth, substantially as described.

In witness whereof I have signed this specification in the presence of two witnesses.

ALBERT BOSSHARD.

Witnesses:

WALTH. BRÄNDLI,
A. LIEBERKNECHT.