

R. LOEB.
MEANS FOR CUTTING FABRICS.
APPLICATION FILED SEPT. 1, 1920.

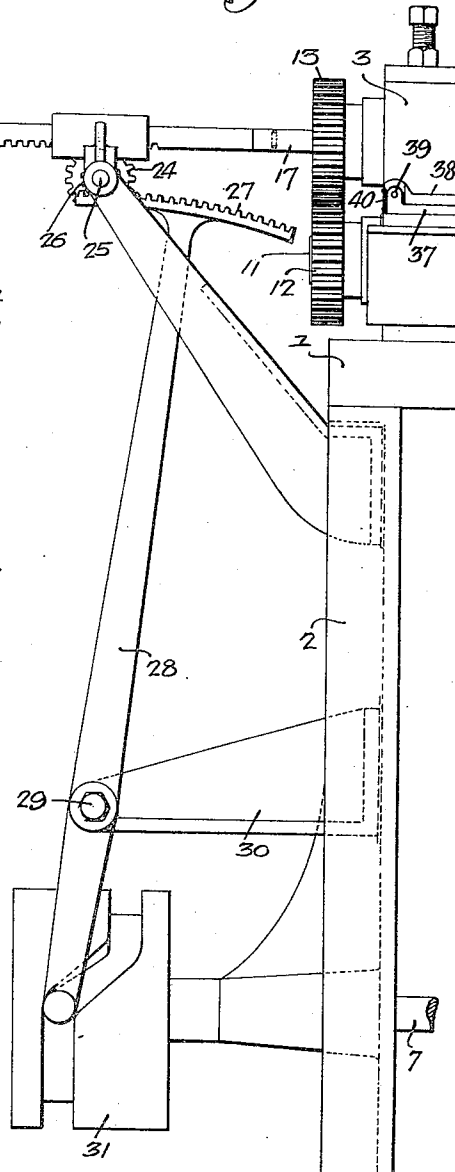
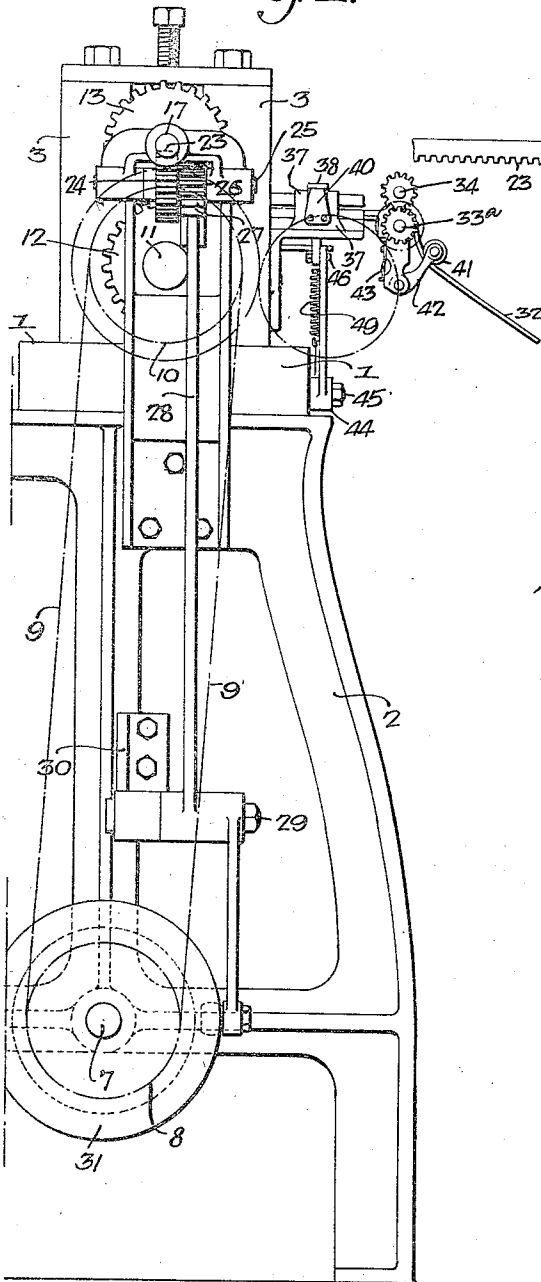
1,421,969.

Patented July 4, 1922.

5 SHEETS—SHEET 1.

Fig. 1.

Fig. 3.



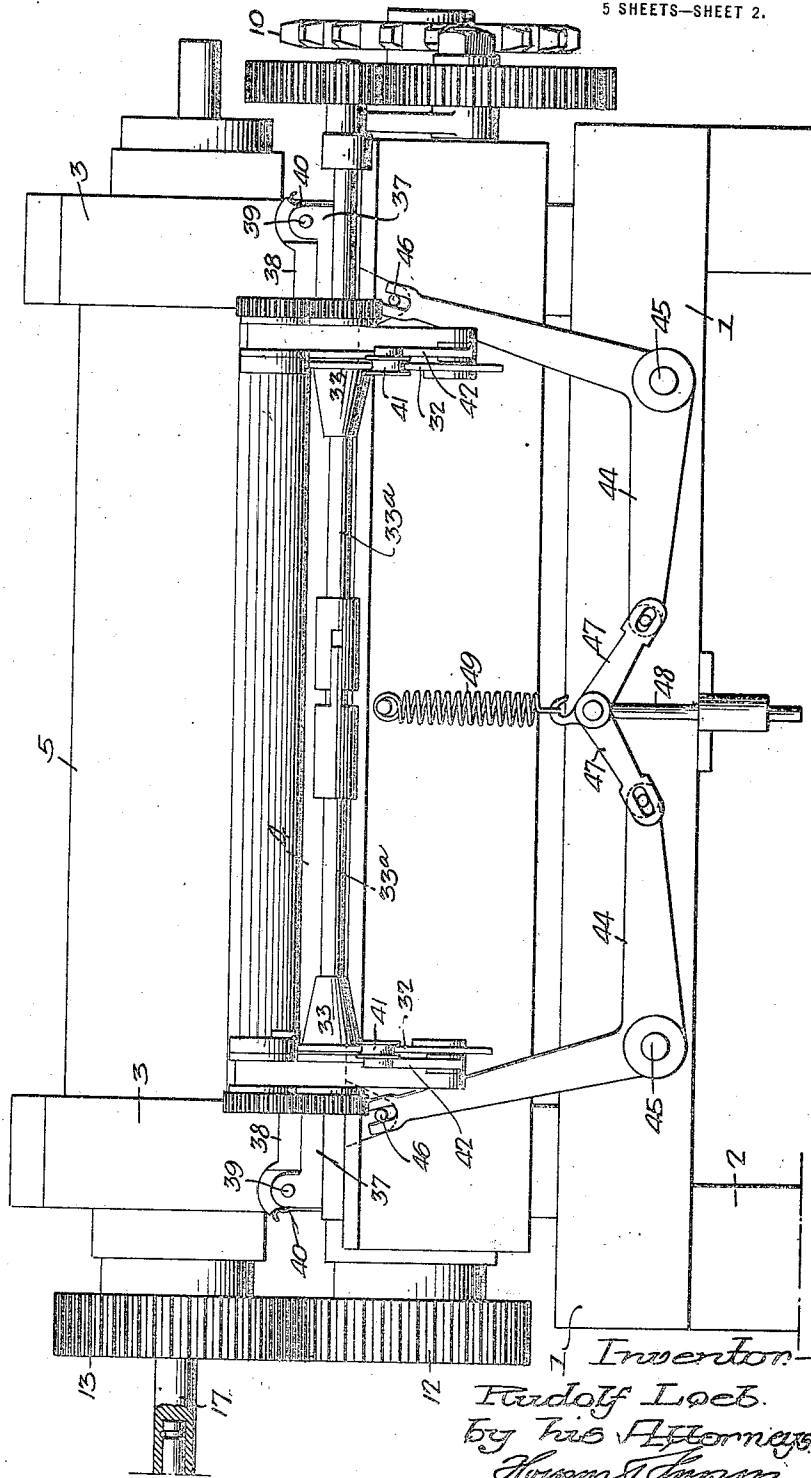
Inventor—
Rudolf Loeb.
by His Attorneys
Horn & Schram

1,421,969.

R. LOEB.
MEANS FOR CUTTING FABRICS.
APPLICATION FILED SEPT. 1, 1920.

Patented July 4, 1922.
5 SHEETS—SHEET 2.

Fig. 2.



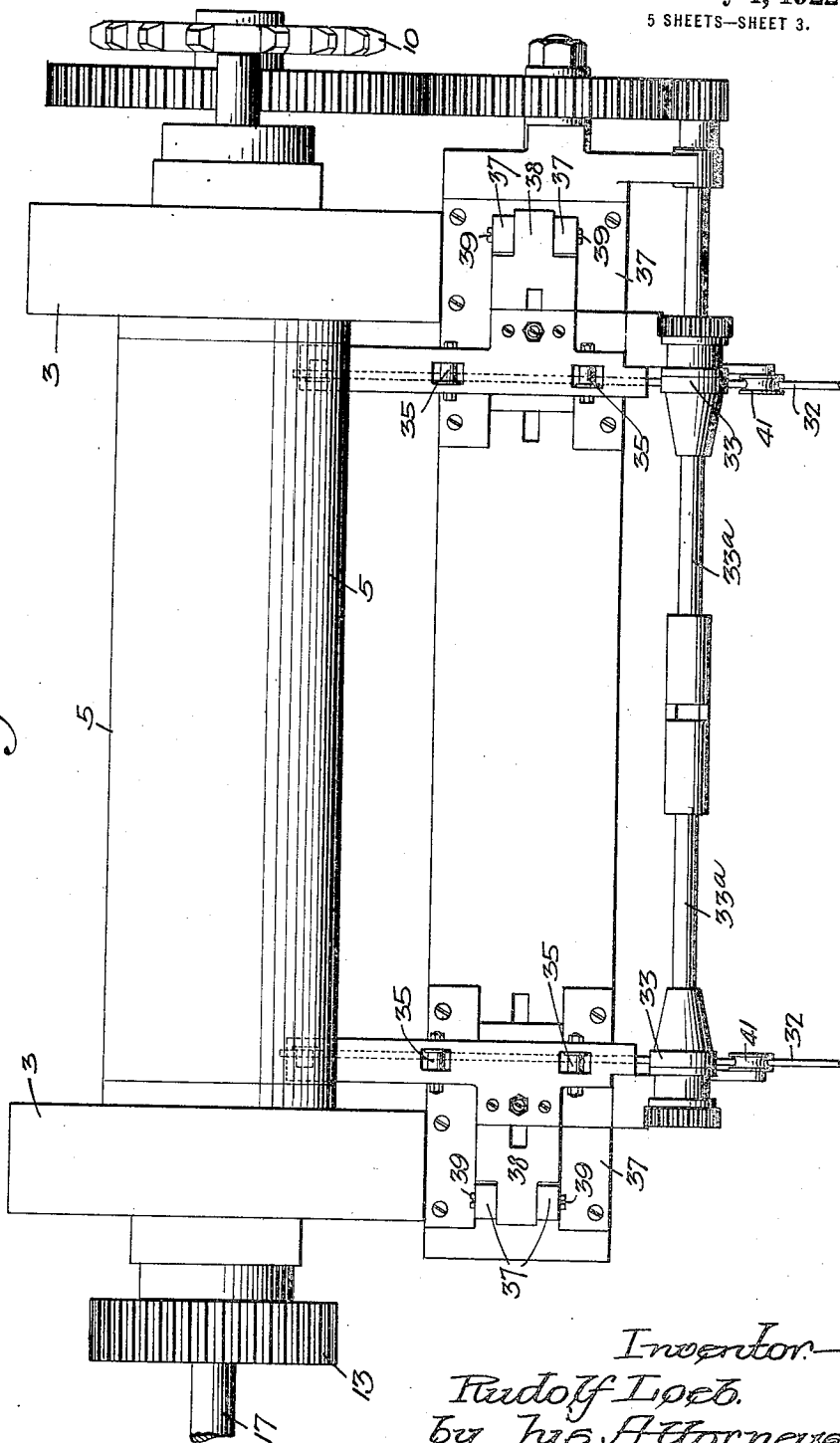
R. LOEB.
MEANS FOR CUTTING FABRICS.
APPLICATION FILED SEPT. 1, 1920.

1,421,969.

Patented July 4, 1922.

5 SHEETS—SHEET 3.

Fig. 4.



Inventor—
Rudolf Loeb.
by his Attorneys
Hornum & Hornum

1,421,969.

R. LOEB.
MEANS FOR CUTTING FABRICS.
APPLICATION FILED SEPT. 1, 1920.

Patented July 4, 1922.
5 SHEETS—SHEET 4.

Fig. 6.

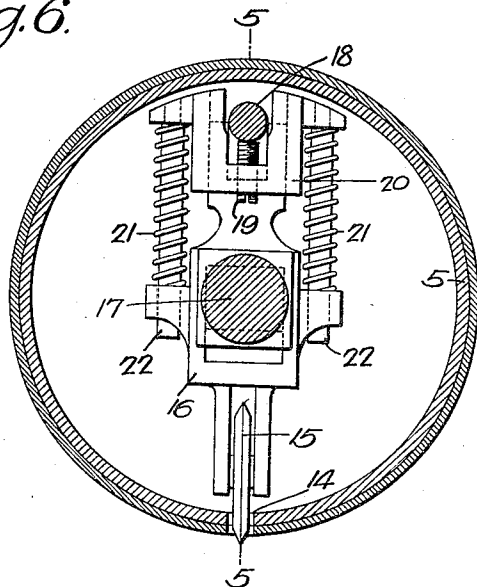
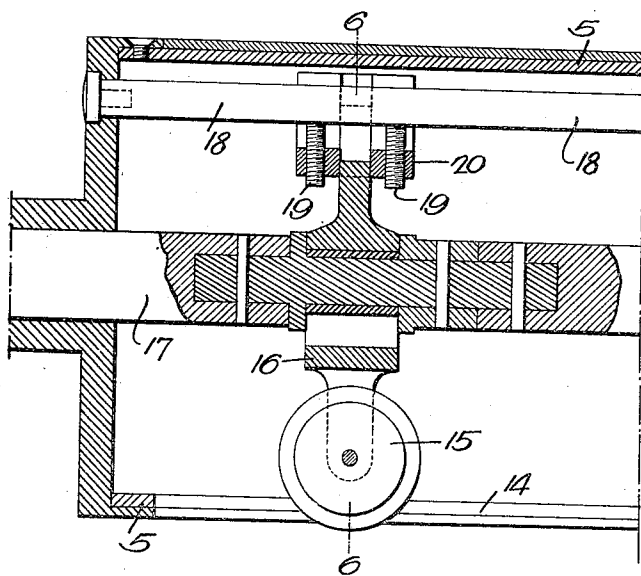


Fig. 5.



Inventor:
Rudolf Loeb
by his Attorneys
Howe & How

R. LOEB.
MEANS FOR CUTTING FABRICS.
APPLICATION FILED SEPT. 1, 1920.

1,421,969.

Patented July 4, 1922.

5 SHEETS—SHEET 5.

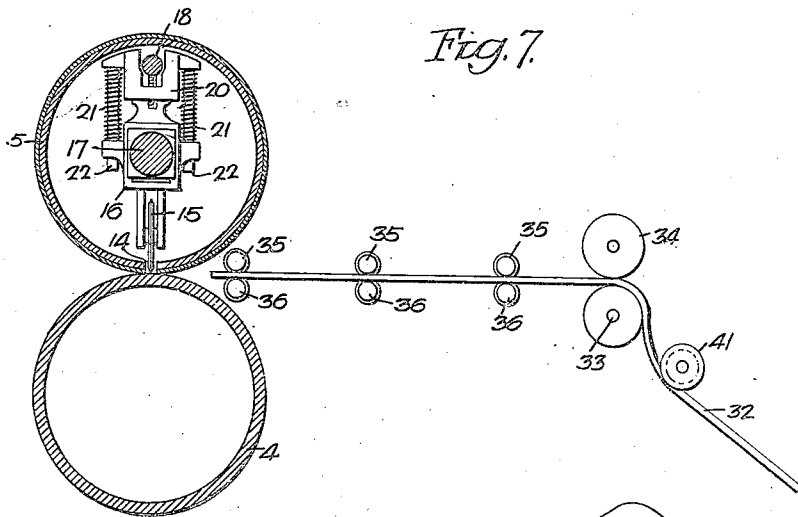


Fig. 8.

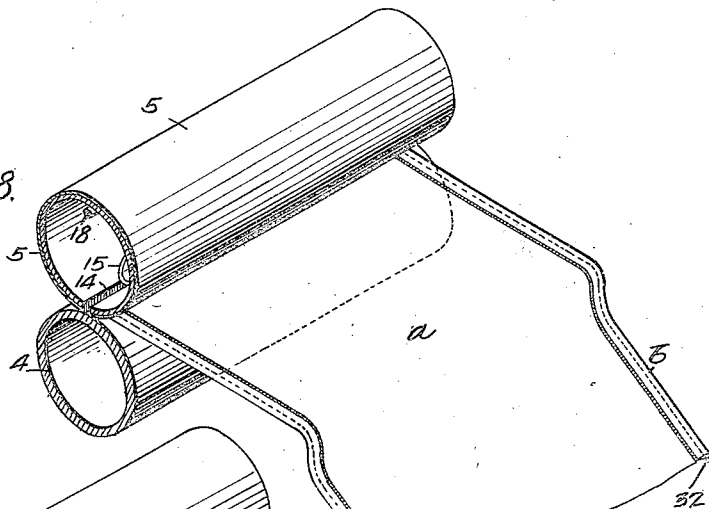
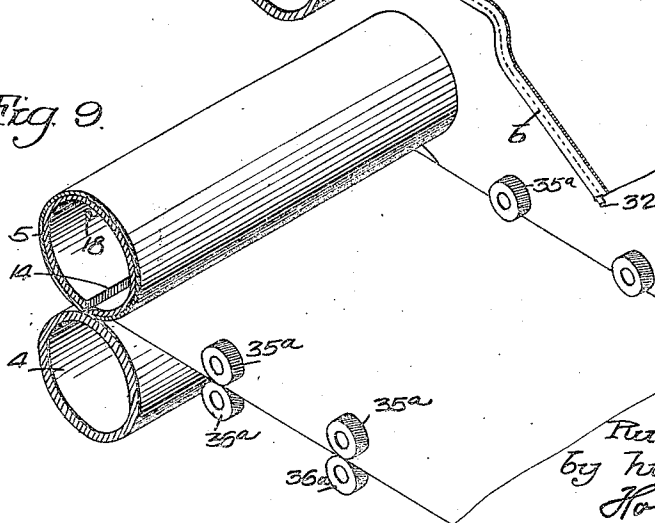


Fig. 9.



Inventor:
Rudolf Loeb.
by his Attorneys
Houson & Pomeroy

UNITED STATES PATENT OFFICE.

RUDOLF LOEB, OF JENKINTOWN, PENNSYLVANIA.

MEANS FOR CUTTING FABRICS.

1,421,969.

Specification of Letters Patent.

Patented July 4, 1922.

Application filed September 1, 1920. Serial No. 407,453.

To all whom it may concern:

Be it known that I, RUDOLF LOEB, a citizen of the United States, residing in Jenkintown, Montgomery county, Pennsylvania, have invented certain Improvements in Means for Cutting Fabrics, of which the following is a specification.

My invention relates to improvements in machines for cutting fabrics in given lengths from a piece or roll, which is plain or hemmed at each edge.

One object of the invention is to provide a machine which will cut fabric in pieces of a given length and to provide means for guiding the fabric to the cutter so as to cut the goods substantially on the line of the threads.

A further object of the invention is to guide the fabric by the hems and to provide a reciprocating cutter located in a rotating roll.

My invention also relates to certain improvements in details of construction, which will be fully described hereinafter, reference being had to the accompanying drawings, in which:

Fig. 1 is an end view of my improved fabric cutting machine;

Fig. 2 is a front elevation of the upper portion of the machine;

Fig. 3 is a front elevation at one end of the machine showing the means for operating the cutter.

Fig. 4 is a plan view of the machine;

Fig. 5 is a sectional view of the line 5—5, Fig. 6, illustrating the details of the cutter;

Fig. 6 is a sectional view of the line 6—6, Fig. 5;

Figs. 7 and 8 are diagrammatic views illustrating my invention; and

Fig. 9 is a sectional perspective view illustrating a modification.

Referring to the drawings, 1 is the base of the machine mounted on legs 2 of any suitable design. On this base are two housings 3 for the feed rolls 4 and 5. In the present instance, 7 is the driving shaft adapted to suitable bearings on the legs of the machine. 8 is a sprocket wheel around which

passes a chain 9, which also passes around a sprocket wheel 10 on the journal 11 of the wheels 12 and 13. Other means of driving the rolls may be used without departing from the essential features of the invention. The roll 5 is hollow, as shown in Figs. 5 and 6, and is slotted at 14.

15 is a rotary cutter arranged to travel in the slot and to cut the fabric against the roll 4. This cutter 15 is mounted on a carrier 16, which is adapted to a shaft 17 extending the full length of the roll 5 and is guided by rods 22 projecting from a block 20 slotted to receive the longitudinal rod 18. Adjusting screws 19 on a block 20 bear against the rod 18, and springs 21 are located on the guide rod 22 between this block 20 and the carrier 16. Thus the cutter is yieldingly mounted on the roll 5.

On the end of the shaft 17 is attached a rack section 23 with which meshes a pinion 24 on a shaft 25. A smaller pinion 26 on this shaft meshes with the teeth of a segment 27 carried by an arm 28 pivoted at 29 to a bracket 30 and actuated by a cam 31 on the shaft 7, as clearly shown as Fig. 3. The coupling between the shaft 17 and rack section 23 is such that the shaft can turn freely with the roll 5. In the present instance, I have shown only one means of operating the cutter, but other means will readily suggest themselves.

In order to guide the fabric to the cutter and to stretch it while being guided, I provide two wires 32, each wire being bent, as shown in Fig. 1, so that it can be held in position. The wires are adapted to be passed between the primary feed rollers 33 and 34 and between guide rollers 35 and 36. The guide rollers 36 are mounted in slides 37 adapted to guideways in the frame of the machine, while the guide rollers 35 are carried by bearings 38 pivoted at 39 to the slides 37 and held yieldingly in position by springs 40. In advance of the rollers 33 and 34 are guide rollers 41 carried by arms 42 and held by springs 43. The slides 37, and the rollers carried thereby, place tension upon the fabric and, in the present instance,

I have shown two bell-crank levers 44 pivoted at 45. One arm of each bell crank lever engages a pin 46 on a slide 37, while the other arm is connected by links 47 to a rod 48 under the control of a spring 49. The tendency of this spring is to spread the slides apart. The shaft 33^a, on which the rolls 33 are mounted, is made in two parts, as shown clearly in Fig. 2, one part sliding in the other so as to allow for the movement of the slides 37. While I have shown certain means for applying tension to the fabric, other means may be resorted to without departing from the spirit of the invention.

15 The operation is as follows: When the machine is used in the manufacture of handkerchiefs, the fabric *a*, which is in long strips and preferably mounted on rolls, has been hemmed, as at *b* at both sides. The hems 20 are threaded on the guide rods 32 as shown in Fig. 8, and the fabric passes under the roller 41 and between the primary feed rolls 33 and 34, and between the tension rolls 35 and 36 the latter rolls being flanged. As 25 these rolls are carried by the slides, they stretch the fabric and hold it taut, so that, when it passes between the rolls 4 and 5, it is gripped by these rolls and immediately after the fabric is gripped the cutter is 30 quickly reciprocated and severs the fabric. This cutter is operated at intervals so that a handkerchief blank of sufficient length is cut from the fabric each time the cutter is operated. Then the feed rolls draw in a 35 given length of fabric and the cutter again acts to sever the fabric. After this operation, the other hems are made, completing the handkerchief.

In Fig. 9, I have illustrated a modification, 40 in which rollers 35^a and 36^a are roughened to engage fabric that has not been hemmed and which it is desired to cut in given lengths. These rollers are mounted on slides provided with tension mechanism.

45 I claim:

1. The combination in a machine for cutting fabrics, of means for severing the fabric at predetermined intervals; and means in advance of the severing means for guiding 50 and placing tension on the fabric.

2. The combination in a machine for cutting fabrics, of means for guiding the fabric at each edge; tension means engaging the edges of the fabric; feed rolls; and means 55 for severing the fabric at predetermined intervals at the feed rolls, the tension means being in advance of the severing means.

3. The combination of a machine for cutting fabrics provided with a hem on each 60 side; guides extending into the hems for guiding the fabric; and means for severing the fabric at predetermined intervals.

4. The combination of means for cutting a fabric having a hem at each side; guides 65 adapted to extend into the hems; means for

holding the guides; mechanism for feeding the fabric; and means for severing the fabric transversely.

5. The combination in means for cutting a fabric having a hem at each side, of two 70 feed rolls; a transversely reciprocating cutter carried by one of said feed rolls; means for stretching the fabric in advance of said rolls; and means for guiding the fabric at the hems.

6. The combination of a machine for cutting a fabric having a hem at each side; a pair of feed rolls; a reciprocating cutter carried by one of said rolls; a guide wire at each side of the machine adapted to be 75 inserted in the hems of the fabric to be cut; rollers engaging the fabric at the hems; and means for placing tension on the fabric through said rollers.

7. The combination in a machine for cutting a fabric provided with a hem at each 85 side, of a pair of feed rollers; a reciprocating cutter carried by one of said rollers; guide wires for the fabric, the fabric being threaded onto the wires at the hems; a pair 90 of primary feed rolls; a series of tension rolls at each side; slides carrying the tension rolls; and means for moving the slides so as to place tension on the fabric as it enters the feed rolls.

8. The combination in a machine for cutting a fabric provided with a hem at each 95 side, of feed rolls; a reciprocating cutter carried by one of said rolls; a bent guide wire at each side of the machine, the fabric 100 being threaded onto the wires at the hems; a pair of primary feed rollers; a roller at each wire in advance of the primary feed rollers; and means for placing tension on the fabric between the primary feed rollers 105 and the main feed rolls.

9. The combination of a machine for cutting a fabric having a hem at each side; guide wires adapted to enter the hems of the fabric; guide rollers for engaging the 110 fabric at the wires; slides carried by the guide rollers; levers connected to the slides; a tension spring connected to the levers for applying tension to the fabric; and means 115 for cutting the fabric at the rollers.

10. The combination in a machine for cutting a fabric having a hem at each side, of a base; housings mounted on the base; two feed rolls mounted in the housings; means 120 for driving said feed rolls, one of said feed rolls having a longitudinal slot therein; a cutter extending through the slot; means for carrying the cutter; means for reciprocating the carrier; two slides mounted in advance of the feed rolls; lower guide rolls 125 carried by the slides; a pivoted block mounted on the slides and carrying the upper guide rolls; a guide wire at each side of the machine and extending between the rolls and through the hems of the fabric; pri- 130

mary feed rollers in advance of the slides; a lever engaging each slide; and a spring connected to the levers for placing tension on the fabric prior to its entering the space between the feed rollers. 5

11. The combination in a machine for cutting fabrics, of two feed rolls; means for guiding the fabric to the rolls, one of said rolls having a longitudinal slot therein; a rotating cutter projecting through said slot; 10 a carrier for the cutter; a reciprocating bar on which the carrier is mounted; a guide bar yieldingly connected to the carrier; springs between the carrier and the block; means for reciprocating the bar; and means for ro- 15 tating the feed rolls.

RUDOLF LOEB.