

No. 878,527.

PATENTED FEB. 11, 1903.

A. HEIL.

MACHINE FOR CUTTING FABRICS.

APPLICATION FILED JUNE 24, 1907.

3 SHEETS—SHEET 1.

Fig. 2.

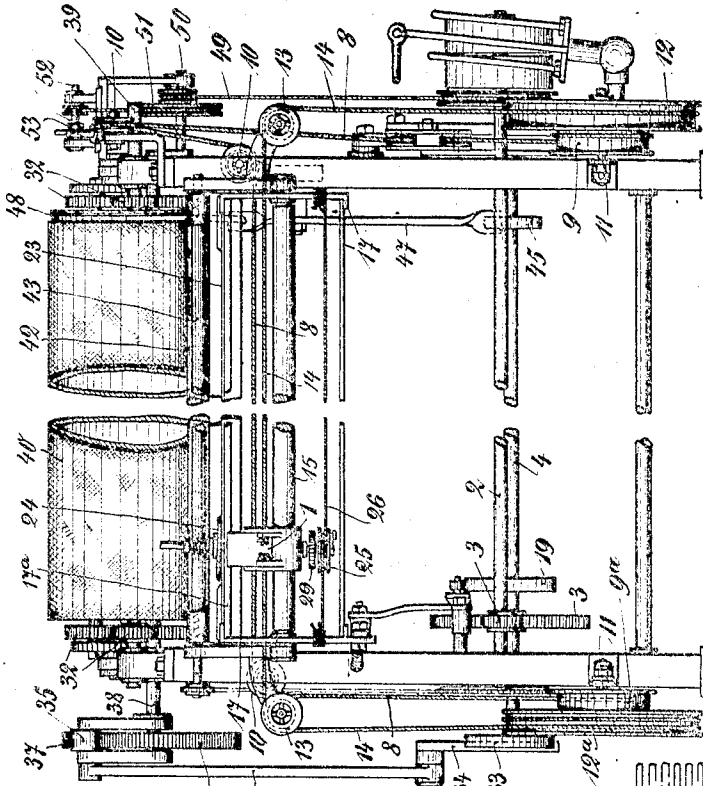
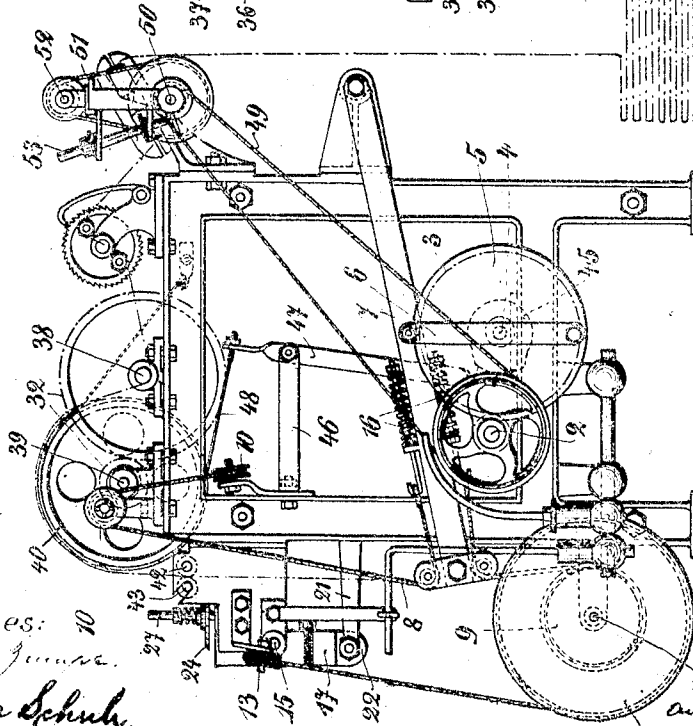


Fig. 1.



Witnesses:
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3 SHEETS—SHEET 2.

Fig. 3.

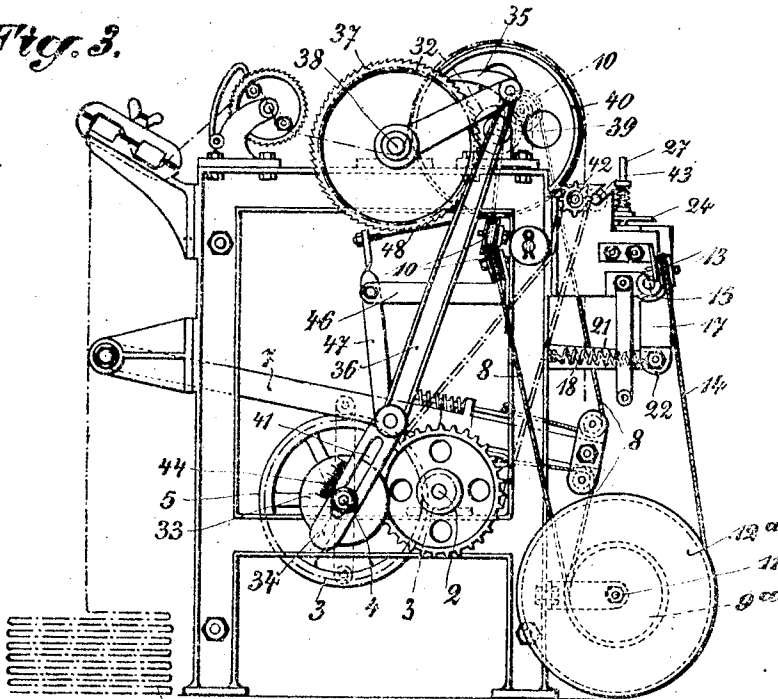


Fig. 4.

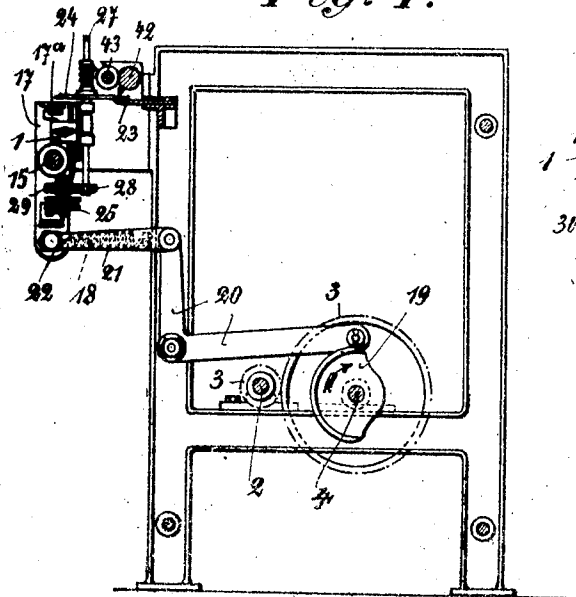
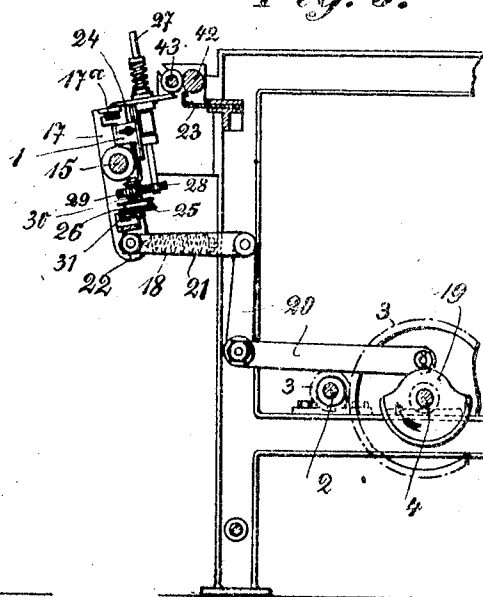


Fig. 5.



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3 SHEETS—SHEET 3.

Fig. 6.

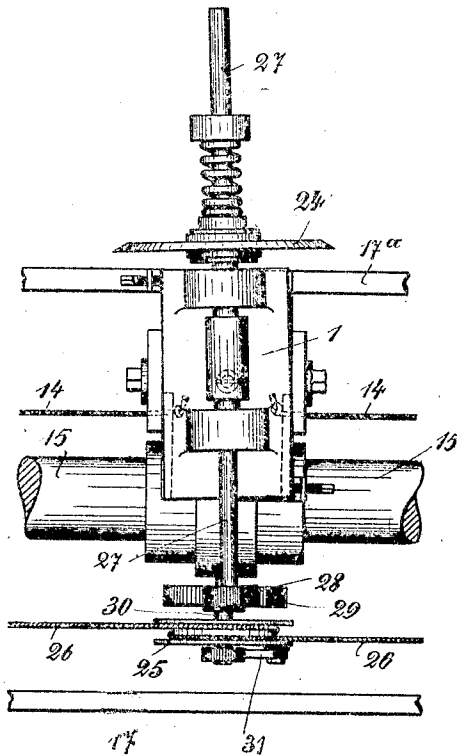
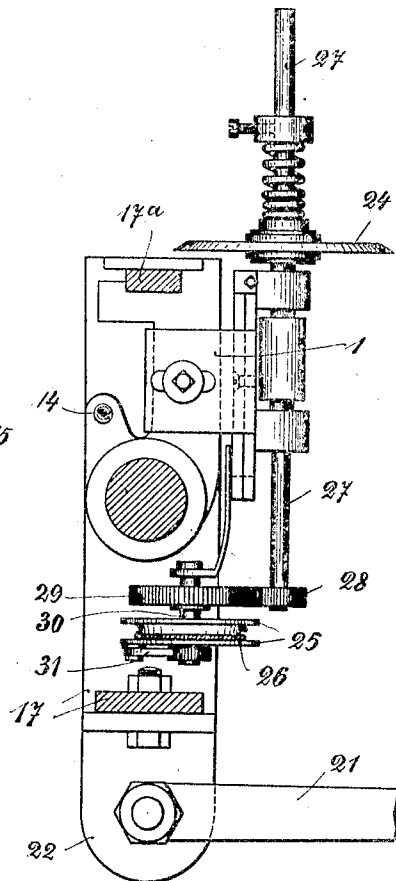


Fig. 7.



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UNITED STATES PATENT OFFICE.

AUGUST HEIL, OF MÜNCHEN-GLADBACH, GERMANY, ASSIGNOR TO H. SIMONS, OF MÜNCHEN-GLADBACH, GERMANY.

MACHINE FOR CUTTING FABRICS.

No. 878,527.

Specification of Letters Patent.

Patented Feb. 11, 1908.

Application filed June 24, 1907. Serial No. 380,562.

To all whom it may concern:

Be it known that I, AUGUST HEIL, a citizen of Germany, residing at München-Gladbach, Germany, have invented new and useful Improvements in Machines for Cutting Fabrics, of which the following is a specification.

This invention relates to a machine for cutting fabrics across their breadth, and is there-
10 by characterized that the knife which is continually moved by the machine in one or other direction, is, before its movement in one direction, automatically tilted back-
15 wards from the opposing knife, and automatically moved into position before its movement in the other direction.

In the accompanying drawings: Figure 1 is a right hand side elevation of my improved fabric cutting machine; Fig. 2 a front eleva-
20 tion; Fig. 3 a left hand side elevation; Fig. 4 a side view, partly in section, of the cutters and operative parts; Fig. 5 a similar view showing the movable cutter in a different position; Fig. 6 a detail front view of the
25 cutters, and Fig. 7 a detail side view, partly in section, thereof.

The holder 1, of the circular knife or cutting member 24, receives reciprocating movement from a power-shaft 2, in the following man-
30 ner: Shaft 2, by gear wheels 3, rotates a shaft 4 provided with a crank disk 5, which, by a link 6, oscillates a lever 7. This lever is connected by a tension device 16 to a rope 8 running over idlers 10, the ends of the rope
35 being secured to pulleys 9, 9^a, respectively. These pulleys are arranged at opposite sides of the machine and will, by the means described, be simultaneously rotated in oppo-
40 site directions. Pulleys 9, 9^a, are fast on axles 11, carrying pulleys 12, 12^a, which are, in turn, connected by a rope 14. This rope passes over idlers 13 and is secured to knife-
45 holder 1, so that by the means described, rope 14 will receive a reciprocating movement and impart the same to knife holder 1.

Holder 1, is rotatably and slidably mounted upon a guide rod 15, around the axis of which also turns a rectangular frame 17, the
50 upper bar 17^a, of which constitutes a guide for holder 1, during its reciprocating movement. Frame 17 is influenced by a spring 18 and receives oscillating movement from shaft 4, by cam 19, elbow lever 20, and a link 21, which engages an arm 22 of frame 17.

55 In addition to the reciprocating and oscil-

lating movement described, cutter 24 receives a rotatory movement by means of a fixed rope 26 encompassing a pulley 25 rotatable on shaft 30 journaled in holder 1. Pulley 25
60 imparts rotary movement to shaft 30 in one direction by a pawl and ratchet mechanism. 31. Shaft 30 is by accelerating gear 29, 28, connected to spindle 27 of cutter 24, so that in this way the reciprocating movement of the cutter causes the latter to simultane-
65 ously rotate.

The movable circular cutting member 24 is adapted to coöperate with a fixed straight cutting member 23 extending across the entire width of the machine.

The fabric to be cut receives intermittent forward movement from shaft 4, by crank 34, rod 36, and pawl 35, which engages a ratchet wheel 37, fast on shaft 38. The lat-
70 ter transmits motion by gear wheels 32 to shaft 39, on which is mounted the delivery drum 40, of the fabric. In order to adjust the length of the pieces to be cut from the fabric, crank 34 is slotted to receive a screw by which it is adjustably clamped to a
75 grooved disk 33 fast on shaft 4, and carrying a scale 44. From drum 40 the fabric passes between a pair of rollers 42, 43, of which roller 42 is rotated from shaft 2, by a suitable chain connection, in such a manner that the
80 peripheral speed of roller 42 is slightly greater than that of drum 40, so that the fabric is held under tension.

Drum 40 is prevented from turning during the cutting operation by a brake-strap 48
85 which is adapted to be tightened up against the roller by a cam 45 on shaft 4. This cam actuates a lever 47 pivoted to an arm 46 and to which the brake-strap 48 is secured.

If desired, the machine may be provided
90 with means for sharpening knife 24. These means consist of a belt 49 driven from shaft 2, and rotating counter-shaft 50 which, in turn, is connected by rope 51 to the axle 52 of a grind stone against which cutter 24 may
100 be held by a spindle 53.

In operation, a certain length of fabric is fed between the open cutters, frame 17 is swung upwards to bring movable cutting
105 member 24 into engagement with the fixed cutting member 23. Rope 14 will now feed member 24 along member 23 through the fabric, to make the cut desired, during which motion the cutter 24 is also rotated. After the cut has been made, frame 17 is tilted to
110

swing the cutter 24 downwards, and then such cutter is returned to its original position, while a new length of fabric is reeled off drum 40.

5 I claim:

1. In a machine of the character described, a fixed knife, combined with a co-acting rotary cutter, means for reciprocating the latter along the fixed knife, and means for alternately swinging the rotary cutter towards and away from the fixed knife, substantially as specified.

2. In a machine of the character described, a fixed knife, combined with a rotary cutter, means for reciprocating the latter along the fixed knife, a cam, and means actuated by the cam for alternately swinging the rotary cutter towards and away from the fixed knife, substantially as specified.

3. A machine of the character described, comprising a cutter, a reciprocating rope operably secured thereto, a fixed rope, a pulley operably connected to the cutter-spindle

and engaged by the fixed rope, and a tilting frame operably engaging the cutter, substantially as specified. 25

4. A machine of the character described, comprising a cutter-holder, a rod on which the holder is slidable and rotatable, a frame oscillating on the axis of said rod, and means for guiding the holder along said frame, substantially as specified. 30

5. A machine of the character described, comprising a cutter, means for reciprocating the cutter, means for rotating the cutter, means for tilting the cutter, a cloth-feed roller, a rotatable disk having a scale, and a crank adjustably engaging the disk and operably secured to the cloth-feed roller, substantially as specified. 35

Signed by me at Dusseldorf, Germany this fourth day of June 1907. 40

AUGUST HEIL.

Witnesses:

ALFRED POHLMAYER,
M. ENGELS.