(No Model.)

D. ROCHE.

CLOTH CUTTING MACHINE.

No. 457,431. Patented Aug. 11, 1891.

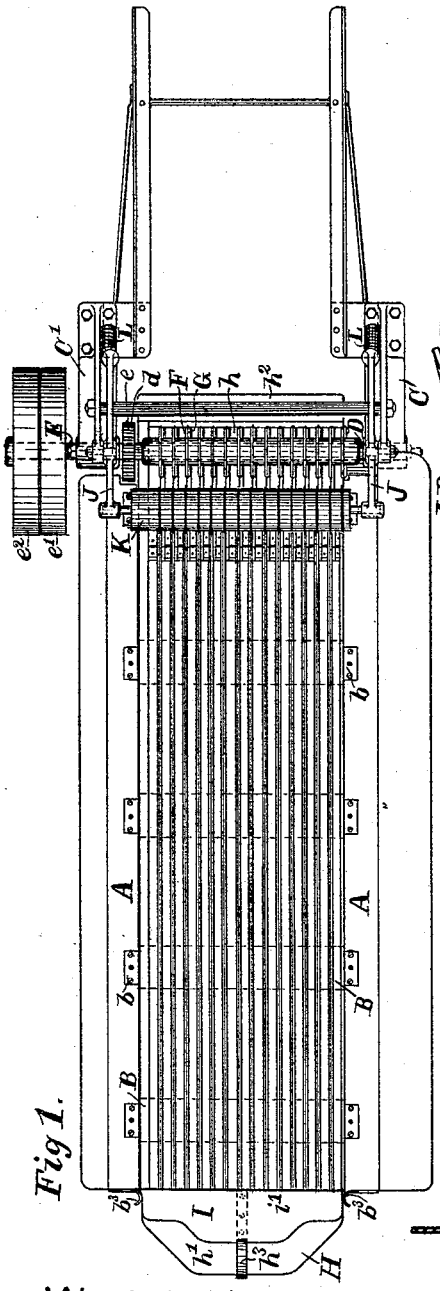

Fig 1.

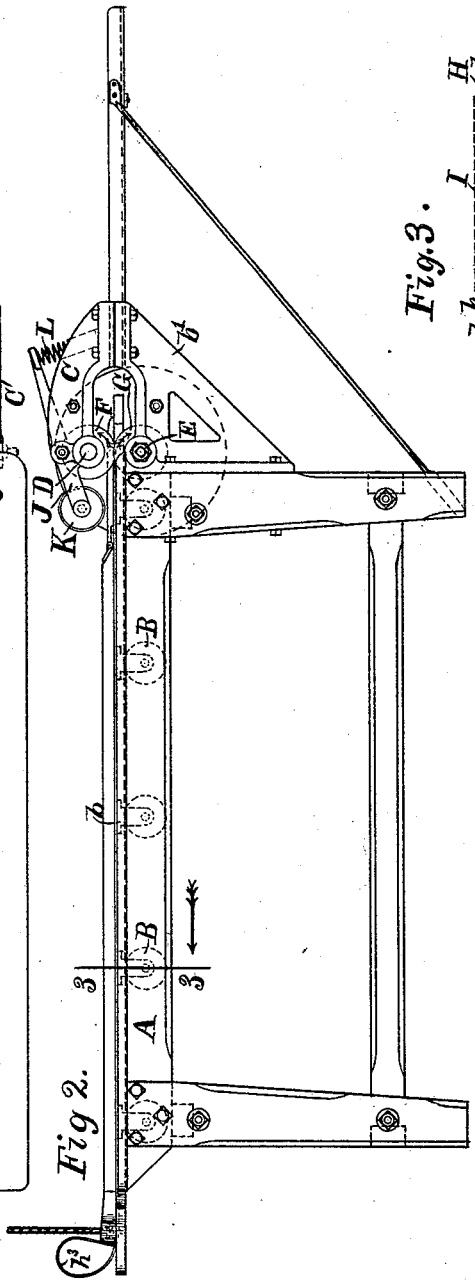

Fig 2.

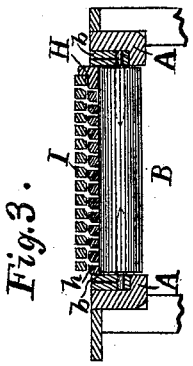

Fig. 3.

WITNESSES.

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DAVID ROCHE, OF CLEVELAND, OHIO.

CLOTH-CUTTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 457,431, dated August 11, 1891.

Application filed May 18, 1891. Serial No. 393,142. (No model.)

To all whom it may concern:

Be it known that I, DAVID ROCHE, a subject of the Queen of Great Britain, residing at the city of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Machines for Cutting Cloth, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, in which—

Figure 1 is a plan view of said machine. Fig. 2 is a side elevation of the same, and Fig. 3 is a transverse sectional view on the line 3 3.

The principal object of my invention is to provide a machine especially adapted to cut narrow bias strips of velveteen smoothly, of uniform width, and with great rapidity.

My invention consists in the construction and combination of the parts hereinafter described, and definitely pointed out in the claims.

I will now proceed to describe the machine illustrated in the drawings, referring to the parts by letters.

A A represent the side rails of the frame, and B B represent transverse rollers, which are journaled in boxes *b b*, secured to said side rails.

b' b' represent brackets, which are secured to one end of the frame, one on each side thereof. To each of these brackets are secured the two arms C C'.

D represents a transverse shaft journaled in the ends of the upper arms C C', and E represents a transverse shaft directly below the shaft D, which is journaled in the ends of the lower arms C C'.

On the shafts D and E are keyed the interlocking gears *d e*, by means of which one shaft is driven by the other in the opposite direction and at the same rate of speed. On the end of one shaft are the fast and loose pulleys $e' e^2$, upon which a driving-belt may run.

To each of the shafts D E are rigidly secured a number of circular knives F and G. Each knife F is in such relation to a corresponding knife G, substantially as shown, that a fabric drawn between the knives is cleanly sheared thereby. The distance between the shearing-edges of each pair of knives corresponds to the width of the strips it is desired to cut.

H represents a reciprocating table, which rests upon the rollers B B, and is guided in its back and forth movement by the side rails. This table is provided with as many longitudinal slots as there are knives secured to the lower shaft, and said knives project and operate through said slots. As the machine which is illustrated in the drawings is constructed, this table is made of longitudinal strips *h*, of wood, slightly narrower than the distance between two adjacent knives, which strips are secured at their ends to the cross-pieces $h' h^2$, respectively, and at a distance apart sufficient to accommodate the knives.

I represents a frame composed of similar slats so placed that the knives secured to the upper shaft may pass between them. At one end these slats are secured to a cross-piece *i'*, while at the other end each slat is hinged by means of flexible hinges (as leather hinges) to the corresponding slat *h* of the table.

J J represent two levers pivoted to some stationary part of the frame, one on each side of the machine.

K represents a roller journaled in the forward ends of said levers, and L L represent two expanding coil-springs which are compressed between the brackets *b'* and the rear ends of said levers J. These springs force the roller K downward onto and in contact with the frame I when the machine is in operation. One of the rollers B is placed just below the roller K, substantially as shown, wherefore the table and frame are pressed between said roller B and roller K.

In operating the machine the table is first drawn to the left until the frame I is freed from engagement with the roller K. Then said frame is swung upward and held up until the fabric has been placed upon the table. Five or six thicknesses of the fabrics may be placed upon the table at one time and the knives will cut them all cleanly. When the fabric has been properly laid, the frame I is swung downward upon said fabric, which is thereby compressed between said frame and table, and the end of the frame is fastened by any suitable catch—as, for example, the spring h^3. The knives F and G having been set in revolution in the direction indicated by the arrows, the table is pushed toward the knives. Before the fabric reaches the knives said ta-

ble passes between the rollers K and B, and said roller K, by pressing upon the frame I, prevents any displacement of the fabric by the knives. The table may be moved by hand both backward and forward, although suitable mechanism may be provided to produce this movement, if desired. As the fabric is forced between the the shearing-knives it is cut into strips of a width substantially equal to the distance between the shearing-edges of adjacent pairs of knives. The table is then drawn back to the position shown, where the cross-piece h' engages with the stops b^3, after which the operation above described is repeated.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination of a longitudinally-slotted reciprocating table, a longitudinally-slotted frame, and means for fastening said frame to the table, with two revoluble shafts, one above and one below said table, two series of circular knives secured to said shafts and projecting through said slots into shearing relation with each other, substantially as and for the purpose specified.

2. The combination of the frame of the machine and transverse rollers journaled therein, a longitudinally-slotted table resting upon said rollers, and a longitudinally-slotted frame suitably secured to said table, with the spring-actuated pressure-roll K, the two transverse shafts D and E, each having secured thereto a series of circular knives, and means for revolving said shafts, substantially as and for the purpose specified.

3. The combination of the frame and transverse rollers journaled therein, the longitudinally-slotted table, and a longitudinally-slotted frame composed of slats, each one of which is separately hinged to a corresponding slat in the frame, and a spring-catch with which the other end of said frame may be connected with the table, with the two pivoted levers J J, a transverse roller journaled in said levers, and the coil-springs L L, compressed between the other ends of said levers and the frame of the machine, with two transverse shafts, interlocking gears secured to said shafts, and a series of circular knives secured to each shaft, substantially as and for the purpose specified.

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