No. 725,391. PATENTED APR. 14, 1903.

C. A. AMELANG.

CLOTH CUTTING MACHINE.

APPLICATION FILED DEC. 17, 1901.

NO MODEL. 2 SHEETS—SHEET 1.

Fig. 1.

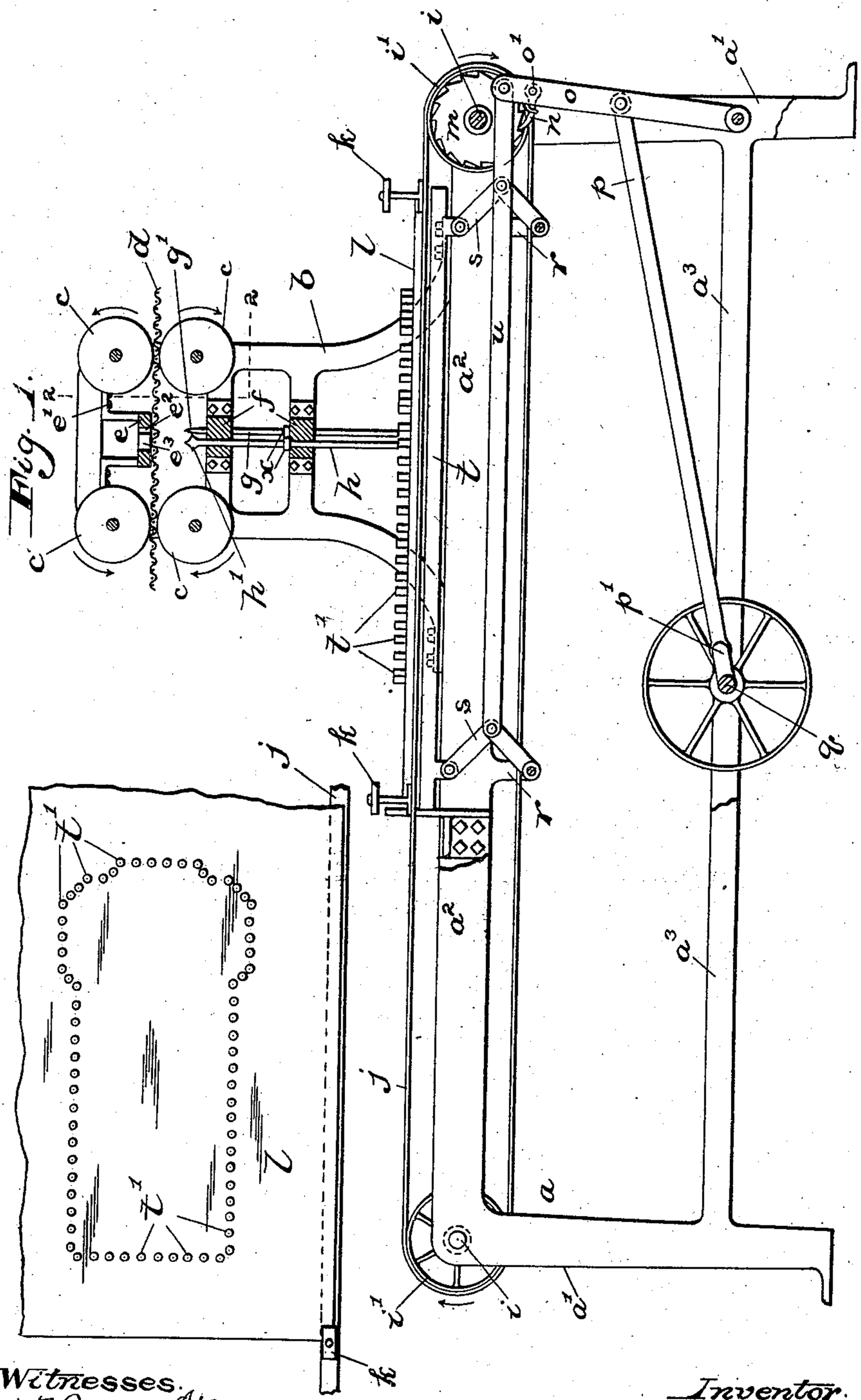

Fig. 4.

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NO MODEL. 2 SHEETS—SHEET 2.

Fig. 3.

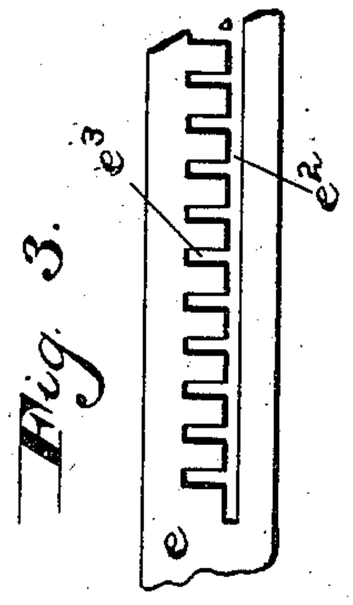
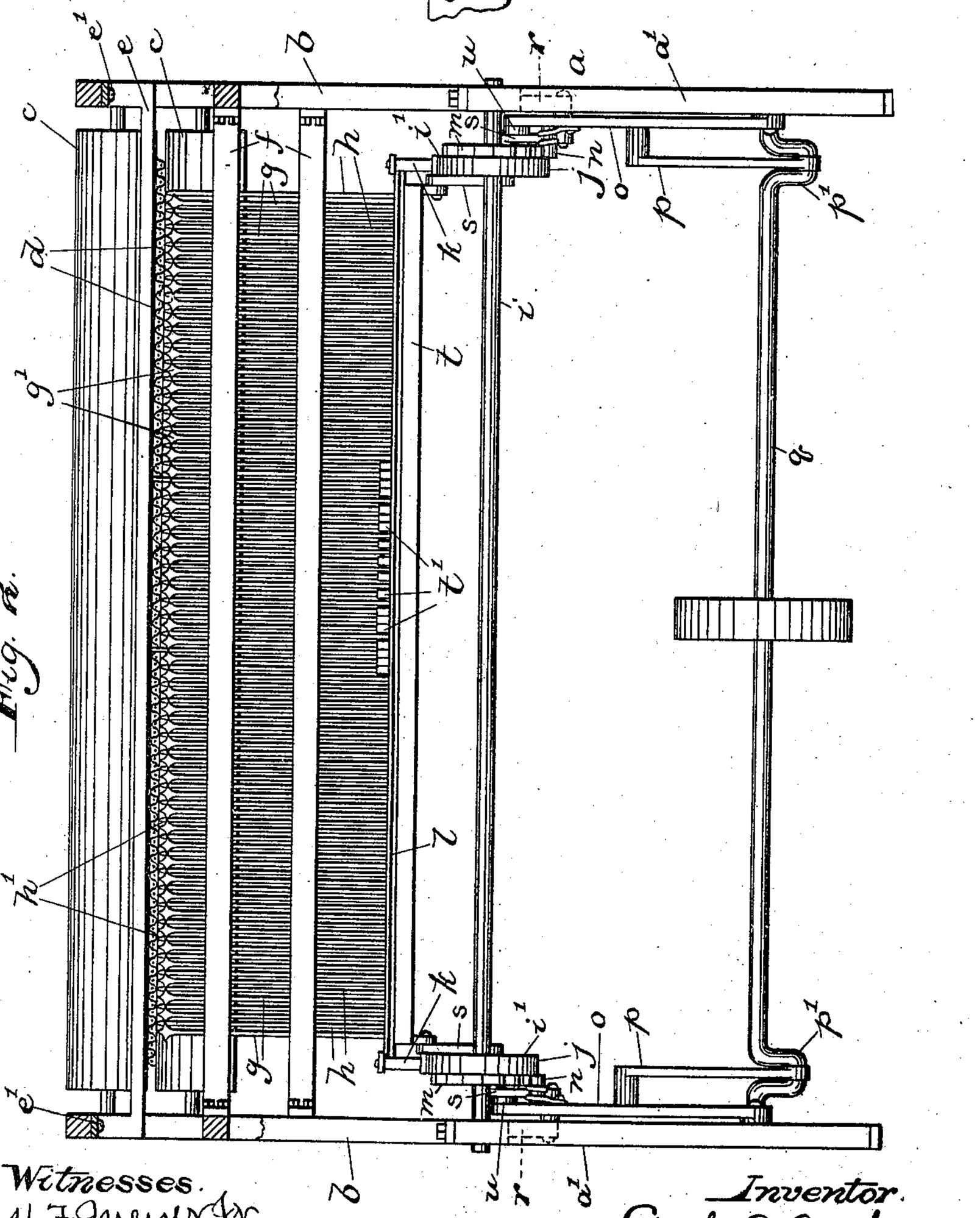


Fig. 2.



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UNITED STATES PATENT OFFICE.

CHARLES A. AMELANG, OF BALTIMORE, MARYLAND.

CLOTH-CUTTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 725,391, dated April 14, 1903.

Application filed December 17, 1901. Serial No. 86,295. (No model.)

To all whom it may concern:

Be it known that I, CHARLES A. AMELANG, a citizen of the United States, residing at Baltimore, State of Maryland, have invented certain new and useful Improvements in Cloth-Cutting Machines, of which the following is a specification.

This invention relates to cloth-cutting machines; and one object of the invention is to provide a machine that will automatically cut out from the cloth shaped parts of garments—such as vest-fronts, coat fronts and backs, sleeves, trousers-legs, and the like—thereby dispensing with hand-guided tools; and another object is to provide pattern devices for controlling the cutting mechanism.

The inventive idea here involved may find expression in various mechanical forms, and I have for the purpose of illustrating the invention shown one of such forms in the accompanying drawings; but it is to be distinctly understood that said drawings are intended for the purpose of illustration only and not as defining the limits or scope of the invention.

In said drawings, Figure 1 is a side elevation of the machine with parts in section. Fig. 2 is an end elevation thereof with the upper parts in section on the line 2 2 of Fig. 1. Fig. 3 is a detail plan view of a portion of the cutting-block. Fig. 4 is a plan view of one form of pattern for controlling the cutting-knives, showing it secured to a belt by one of the clamps.

Referring to the drawings by reference-letters, *a* designates an open framework, which may be placed adjacent the discharge end of a loom, sponging apparatus, or the like, and which is provided with end posts *a'* and upper and lower side bars, (designated a^2 a^3, respectively.)

Supported above the framework *a* on the upper side bars a^2 are two brackets *b*, in which are journaled two pairs of idle rollers *c*, extending across the machine and through which is fed the cloth *d* that is to be cut, as illustrated in the drawings. Between the two pairs of rollers *c* is a cutting-block *e*, detachably secured to the brackets by screws *e'* and provided, as illustrated in Fig. 3, with a continuous longitudinal slot e^2 and a series of cross-slots e^3, extending approximately at right angles to the continuous slot and communicating therewith. The cross-slots e^3 of the said series are located at regular intervals in the cutting-block.

Mounted in guides *f*, secured to the brackets *b*, underneath the cutting-block *e*, are two series of vertically-movable knives, of which one series, *g*, extends across the machine with the ends of their cutting edges *g'* adjoining each other so as to make, whenever desired, a complete transverse cut entirely across or partly across the cloth. The other series of knives, *h*, also extend across, but have their cutting edges *h'* at right angles to and at the junction of every two knives of the first-named series, and each knife of this second series registers with one of the slots in the cutting-block *e*.

Journaled between the two pairs of end posts *a'* of the framework *a* are two horizontal shafts *i*, each of which carries two pulleys *i'*, and endless belts *j* are passed around said pulleys and are provided with clamps *k*, by means of which the pattern-sheet *l* is secured against endwise and lateral movement between the said two belts, but is permitted a limited up-and-down movement.

In order to impart an intermittent forward motion to the belts carrying the pattern, two ratchet-wheels *m* are secured on one of the said shafts *i*, and spring-pressed pawls *n*, mounted on vibrating arms *o*, engage with the teeth of said ratchet-wheels. The said arms *o* have one end pivoted, as at *o'*, and are vibrated by means of connecting-rods *p*, secured to cranks *p'* on the main driving-shaft *q*.

In order to impart an up-and-down motion to the pattern in addition to the intermittent forward motion, the two upper side bars a^2 of the frame *a* are each provided with two downwardly-projecting hangers *r*, to which toggle-levers *s* are connected. A table *t* is supported horizontally on said toggle-levers between the two side bars a^2 and underneath the knife-brackets *b*, and a link *u* connects the several toggle-levers and is itself connected to the upper end of the vibrating arm *o*, so that as said arm vibrates the said table will be given a vertical reciprocating motion.

By the arrangement of parts just described it will be seen that the pattern-sheet *l* is given a step-by-step forward motion in a horizontal

direction between the lower ends of the knives and the vertically-reciprocating table and also an up-and-down motion.

The pattern is provided on its upper surface with protuberances or lugs t', so arranged in outline as to give the shape that the article is to have when cut out. These lugs engage and raise the proper knives to cut out the desired article, and the limit of the up-and-down motion of the table is such that only those knives that are in alinement with the pattern will be thrust through the cloth. With this understanding it will be seen that as the pattern moves along underneath the knives it will repeatedly raise the necessary knives far enough to make the desired cut. For instance, if a straight cut across the cloth is desired only so many of the knives g will be raised far enough to make the necessary length of cut, if a cut in the direction of the length of the goods is desired one of the knives h will be repeatedly raised far enough until a cut of the required length is obtained, and if an oblique cut is desired the knives of one series will alternate in rising with the adjacent knives of the other series. Collars x are secured to the knives to limit their downward movement. Said collars are shown in Fig. 1, but are not shown in Fig. 2, owing to the closeness of the lines representing the knives in said latter figure.

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

1. A machine for cutting out shaped parts of garments such as vest-fronts, coat fronts and backs, and the like, having in combination with cutting mechanism, a pattern for the part to be cut and separate from said cutting mechanism, together with means for producing a relative movement between the pattern and cutting mechanism whereby the pattern actuates the cutting mechanism to cut out from the material the desired shaped part, as set forth.

2. In a cloth-cutting machine, a series of knives extending across the machine with their cutting edges adjoining; a second series of knives located at intervals across the machine with their cutting edges arranged at right angles to the first-named series and at the junction of every two knives of the first-named series; and pattern devices for automatically actuating said knives of either series, substantially as set forth.

3. In a cloth-cutting machine, the combination of the framework; the brackets supported above said framework; cloth-feeding rollers journaled in said brackets; a cutting-block secured to said brackets at one side of the path of the cloth, between said rollers; vertically-movable knives mounted between said brackets at the other side of the path of the cloth; a table underneath said knives; toggle-levers connected to the framework and supporting said table; means for actuating said toggle-levers whereby to vertically reciprocate said table; and a pattern intermittently movable in a horizontal direction and adapted to pass between said knives and table, as and for the purpose set forth.

In testimony whereof I affix my signature in the presence of two witnesses.

CHARLES A. AMELANG.

Witnesses:
FREDERICK S. STITT,
CHARLES L. VIETSCH.