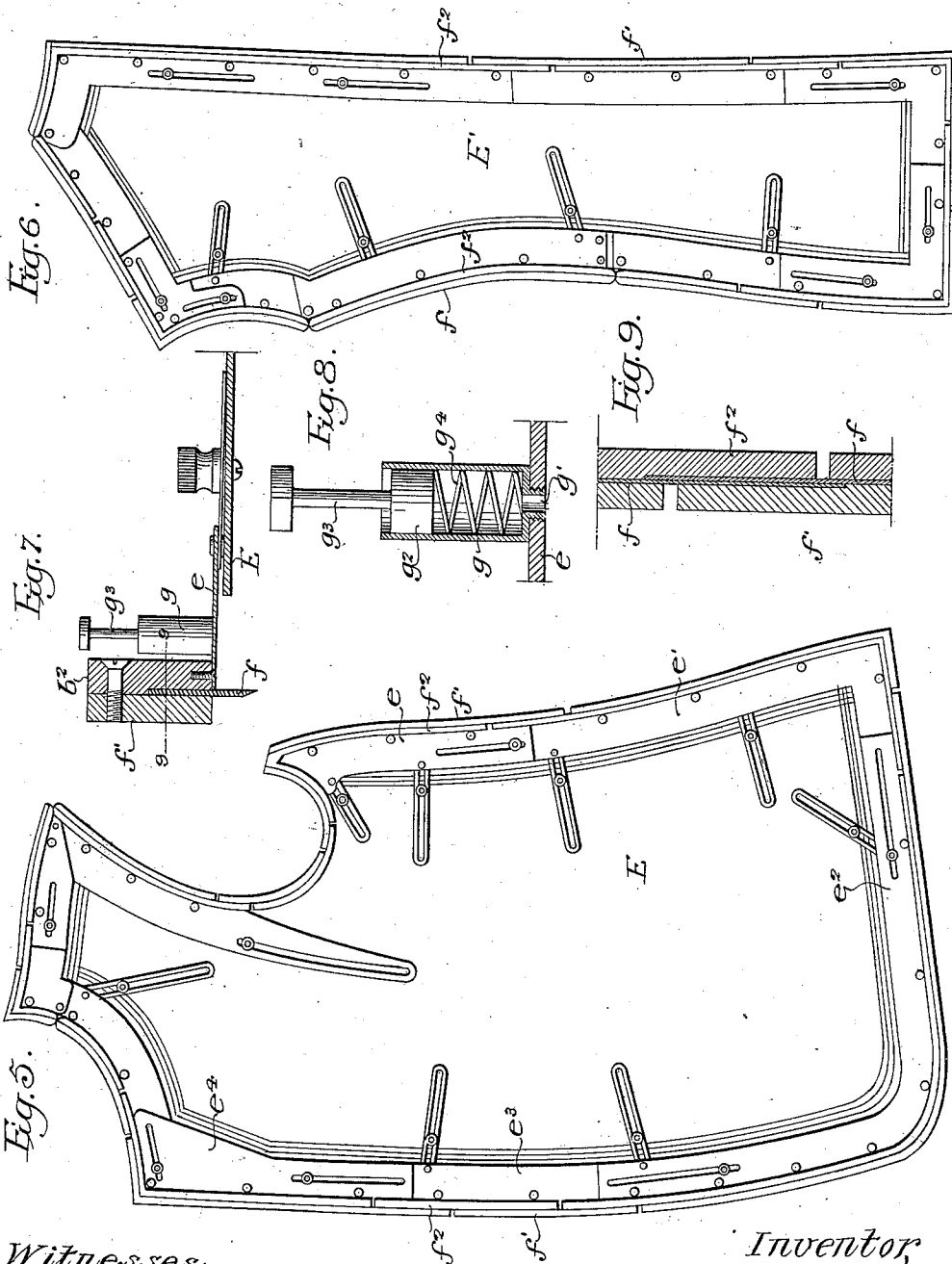


E. H. PETERSON.
CLOTH CUTTING MACHINE.
APPLICATION FILED MAR. 5, 1907.

1,041,341.

Patented Oct. 15, 1912.

2 SHEETS—SHEET 2.



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CLOTH-CUTTING MACHINE.

1,041,341.

Specification of Letters Patent.

Patented Oct. 15, 1912.

Application filed March 5, 1907. Serial No. 360,654.

To all whom it may concern:

Be it known that I, ERICK H. PETERSON, a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented certain Improvements in Cloth-Cutting Machines, of which the following is a specification.

One object of my invention is to provide a novel device for quickly and economically cutting out cloth in the various forms required for the different parts of garments; the machine being so constituted as to require but a minimum of labor for its manipulation.

I further desire to provide an adjustable pattern with a peripheral knife, in combination with means whereby said knife may be made to cut a piece of cloth into a corresponding shape when said pattern is laid upon the same.

I further desire to provide mechanism designed to cooperate with a pattern provided with a peripheral knife and capable of forcing said knife through a piece of cloth when this latter has been placed under the pattern and said mechanism properly manipulated.

These objects and other advantageous ends I attain as hereinafter set forth, reference being had to the accompanying drawings, in which:—

Figure 1, is a vertical section of my improved cloth cutting machine, illustrating certain of its detail features; Fig. 2, is an end elevation of the machine shown in Fig. 1; Fig. 3, is a side elevation of the movable carriage; Fig. 4, is a plan; Figs. 5 and 6, are plans of two typical pattern sections designed for use as part of my improved machine; Fig. 7, is a vertical section illustrating the detail construction of the knife preferably employed on the pattern sections, and also showing the relative positions of the various parts; Fig. 8, is a vertical section on an enlarged scale of one of the marking devices employed in connection with the knives, and Fig. 9, is a horizontal section on the line 9—9, Fig. 7.

In the above drawings, A represents a relatively heavy and rigid table or other similar structure having suitable supporting legs, and a flat sheet *a*, preferably of brass, covering its top surface. Along one edge of

the top is mounted a rack *a'* extending the length of the table, which is relatively long and narrow.

Mounted upon the table so as to be movable from one end to the other thereof is a carriage B having a suitable framework in which are bearings for any number of wheels, of which there are an upper and a lower pair on each side of table. The upper pairs of wheels *b* are flanged and rest upon longitudinally extending tracks *a'* placed along the edges of the upper surface of the table, though it is obvious that if desired the plate *a* may be extended to take the place of said tracks. The lower pairs of wheels *b'* are mounted respectively under the wheels *b* and act against the edges of the undersurface of the table top, which may be provided with tracks *a''*. The framework B is suitably braced by transverse members *b''* and *b'''* and on the latter of these is mounted an electric or other suitable motor C connected in any desired manner with the necessary source of power. This motor is provided with a pinion *c* and there are on the frame B shafts *c'* and *c''* supported at right angles to each other; the first carrying a gear wheel *c'* meshing with the pinion *c*, and also having a beveled pinion *c''* meshing with a beveled gear *c'''* on the shaft *c''*. This latter shaft also has on it a gear *c''''* placed to engage the rack *a'*, which extends on the under side of the table.

The framework B includes two vertical portions or standards *b''''* in which are vertically extending openings forming guideways for blocks *b'''''* in which are journaled the ends of a roller shaft D. Vertically extending screws *d'* respectively engage the two blocks by holding them against upward pressure, and by turning said screws by means of handles *d''*, they may be raised so as to permit the shaft D and its roller *d* to be quickly raised or lowered as desired toward and from the surface of the table by means of a hand lever *d'''* pivoted to the frame B and connected by a link *d''''* to a second lever *d'''''*. One end of this latter is pivoted to the frame and the other to the block *b'''''*; it being understood that this lever mechanism is duplicated on the other side of the machine and that the two levers *d'''''* are operatively connected by a transverse shaft *d''''''*.

In order to utilize the parts of the device so far described to cut cloth in desired shapes, I provide patterns having vertical knives extending around their adjustable peripheries and in Figs. 5 and 6, I have illustrated two typical pattern sections, which may be employed for this purpose. The patterns usually consist of a body E or E' of sheet material having adjustable edge portions e , e' , e^2 , e^3 , e^4 , etc., and these various portions are so made that they may be moved in a plane parallel with the body and toward and from the same so as to correctly delineate patterns whose dimensions vary within predetermined limits. In each instance the adjustable edge section of the pattern carries at or adjacent to its outer edge a vertical knife blade f , as shown in Fig. 7, the blades extending successively around the pattern so as to completely define it. The various blades are mounted between two strips f' and f^2 of which the latter is properly slotted or recessed and is rigidly fastened to the adjustable pattern edge e ; the strip f^2 being in turn removably held to the strip f' so as to permit of the insertion or removal of the knife blade. In addition to the said blade I may, if I desire, provide small cylinders g placed at intervals upon the adjustable edge sections e , e' , etc., adjacent to the knife blades around the pattern. These cylinders have openings g' through the strips on which they are mounted and each has a piston g^2 provided with an upwardly extending rod g^3 whose top surface or head is slightly above the top surface of the knife strips f' and f^2 . If desired, a spring g^4 may be placed within each of the cylinders g so as to normally maintain the pistons g^2 in their elevated positions.

As clearly set forth and claimed in a patent granted to me April 23, 1907, No. 851,374, I provide means whereby the edge strips e , e' , etc., may be moved to and held in any desired positions, as indicated by continuous curved marks or guide lines placed along the edges of the pattern.

Wherever two of the edge strips come together so as to permit of their longitudinal adjustment, I overlap the adjacent knife blades f as shown in Fig. 9, so that as the strips are moved longitudinally toward or from each other, these knives are at all times capable of making what is practically a continuous cut.

If it is desired to cut a piece of cloth into the forms of a number of pattern sections, such as those indicated at E², E³, E⁴, E⁵, E⁶, etc., Fig. 4, I first place such piece to be cut on the surface a of the table and then lay on this the various pattern sections; the cutting edges of the knives of these latter being in engagement with the cloth and the various cylinders g filled with any desired form of light colored powder or other suitable mate-

rial—the carriage B having previously been placed at one end of the table and the roller d adjusted to a height above the surface of the table equal to the distance between the cutting edge of the knives and the top surface of the strips f' and f^2 . Current is now supplied to the motor C in any of the ways well known to the art and its operation causes revolution of the gear wheel c^6 thereby bodily moving the carriage from one end of the table to the other, after which the current is either automatically or manually cut off from the motor. Such action of the carriage causes the roller d to force the peripheral knives of the patterns through the cloth so as to cut this into the desired shapes and in addition engages the tops of the piston rods g^3 , thereby forcing out of the cylinders g onto the surface of the cloth some of the material contained in them; the result being that there is secured adjacent to the edge of the pieces of cloth a series of dots, which indicate the outlets or seams etc.

It is to be noted that the passage of the roller d from one end of the table to the other causes the knife blades to successively assume inclined positions relatively to the plane of the table and thereby cause each blade to cut the cloth gradually from one end to the other rather than simultaneously along the whole length of the knife. As the roller passes over each knife this assumes an angle of which the apex is directly under said roller while the table constitutes one side and the inclined knife edge the other, thereby causing the cloth to be cut by a drawing action.

The cut out portions of cloth and discarded pieces may now be removed and a second piece of cloth placed on the table, after which the patterns may again be placed upon said cloth and by reversing the motor the carriage run back over the table so as to cut out a second series of pieces as desired.

From the above, it will be seen that the cutting out of cloth, particularly for use in manufacturing ready made garments, is greatly facilitated; the labor required being but small and of an inexpensive nature. Moreover, after the patterns have once been designed and the knives properly set along the edges thereof, no more attention is needed in order to cut out an indefinite number of garment parts.

In cases where the adjustable edge strips of my pattern sections are pivoted together, I arrange the knife supporting strips, as shown in Fig. 5, so that these abut and permit the strips to be adjusted as required at any desired angle without interfering with the knife blades.

Where two edge sections of the pattern overlap each other as in Fig. 9, and in process of adjustment are required to move in

and out upon each other, I may magnetize the blades so that they will tend to lie close to one another.

I claim:

5 1. The combination of a table; a pattern having knives; and mechanism mounted on the table in position to pass transversely of the same, over the pattern in engagement with the back portions of the knives to
10 cause them to cut through the material laid between them and said table; said pattern with its knives being free to tilt under the action of said mechanism.

2. A table; a carriage movably mounted
15 thereon and provided with a roller; and a pattern having peripheral knives mounted to have their back portions engaged by the roller of the carriage to cut material between them and the table; the knives of said
20 pattern being free to tilt under the action of said roller.

3. The combination of a table; a carriage mounted thereon and guided so as to be movable from one end of the table to the
25 other; a roller on the carriage supported above the surface of the table; and a pattern or patterns provided with cutting knives arranged to have their back portions engaged by said roller so as to cause their
30 edges to cooperate with the top of the table to cut material laid thereon; said pattern or patterns being free to tilt under the action of the roller.

4. The combination of a table; a carriage
35 movable transversely thereof; a pattern having knives; with means on the carriage cooperating with the back portions of said knives when said carriage is moved across said table to cut material laid between the
40 pattern and the top of the table; said pattern being free to tilt relatively to the table under the action of the carriage.

5. The combination of a table, a carriage
45 movable thereon, a motor on the carriage, mechanism connected to the motor for mov-

ing the carriage over the table, a pattern having cutting knives, and means on the carriage cooperating with the back portions of said knives to force their edges to cut material laid on the table under the pattern, 50 substantially as described.

6. The combination of a table, a pattern having a body of sheet material provided with edge sections also of sheet material and adjustable in a plane parallel to that 55 of the body, knives carried by the edge sections, and means supported independently of the pattern and constructed to cooperate with said knives to cause them to cut material laid between the pattern and the table, 60 substantially as described.

7. The combination of a table having a rack extending along its edge, a carriage mounted on the table and free to move thereon, a motor mounted on the carriage, a 65 gear wheel on the carriage driven by said motor and meshing with the rack on the table, a roller mounted on the carriage, with a pattern having peripheral knives mounted to cooperate directly with the surface of 70 the table to cut material laid thereon when the roller is operated to engage their back portions, substantially as described.

8. The combination of a table, a pattern having knives mounted adjacent to its edges, 75 reservoirs on the pattern having openings through the same, means for forcing material out of the reservoirs through said openings, and a device designed to simultaneously cause the knives to cut material 80 mounted between them and the table and to force the substance from the reservoirs onto the material, substantially as described.

In testimony whereof, I have signed my name to this specification, in the presence of 85 two subscribing witnesses.

ERICK H. PETERSON.

Witnesses:

JOS. H. KLEIN,

WM. A. BARR.