

(No Model.)

3 Sheets—Sheet 2.

H. G. ROGOWSKI.
CLOTH CUTTING MACHINE.

No. 472,715.

Patented Apr. 12, 1892.

Fig. III

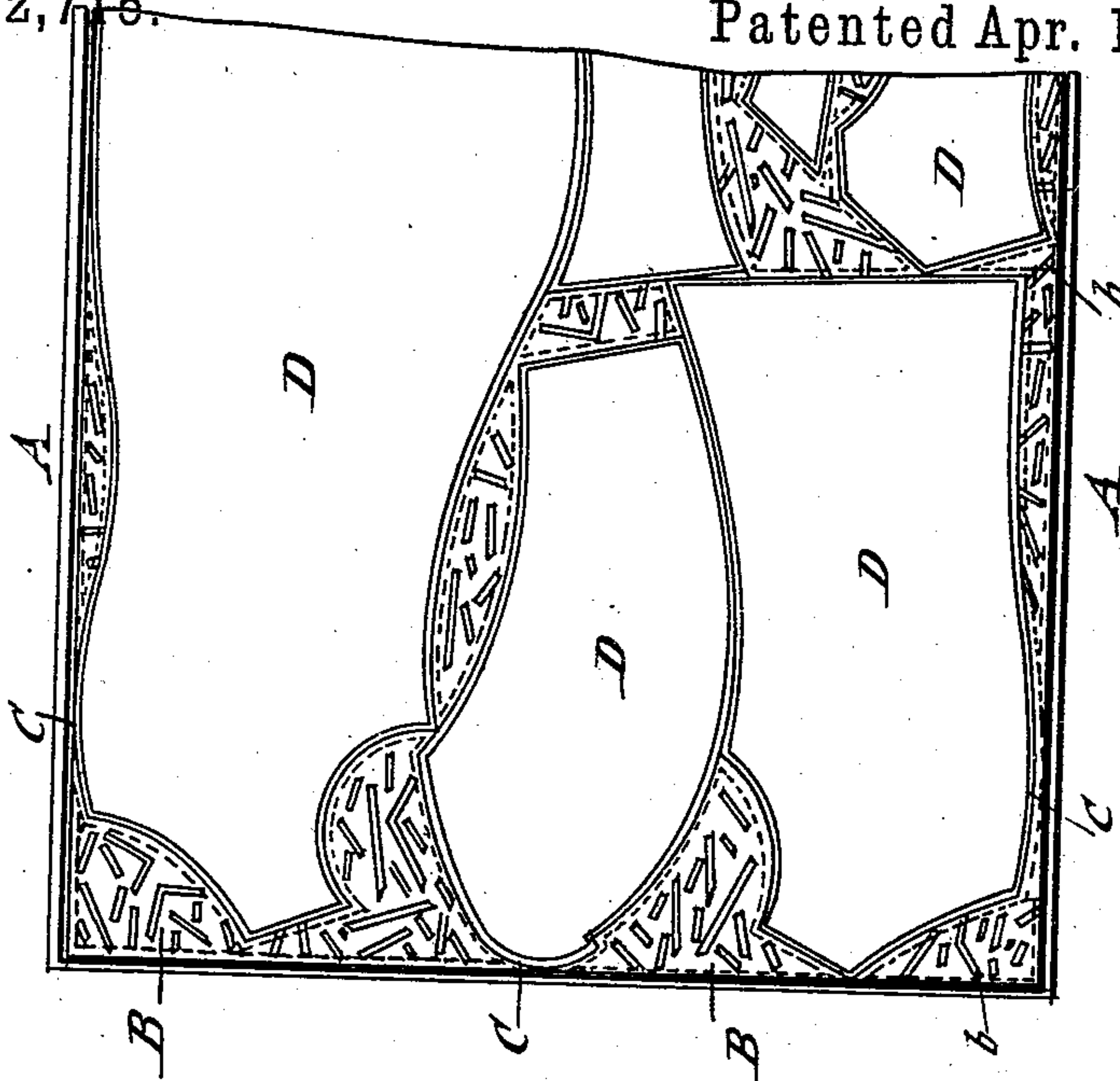
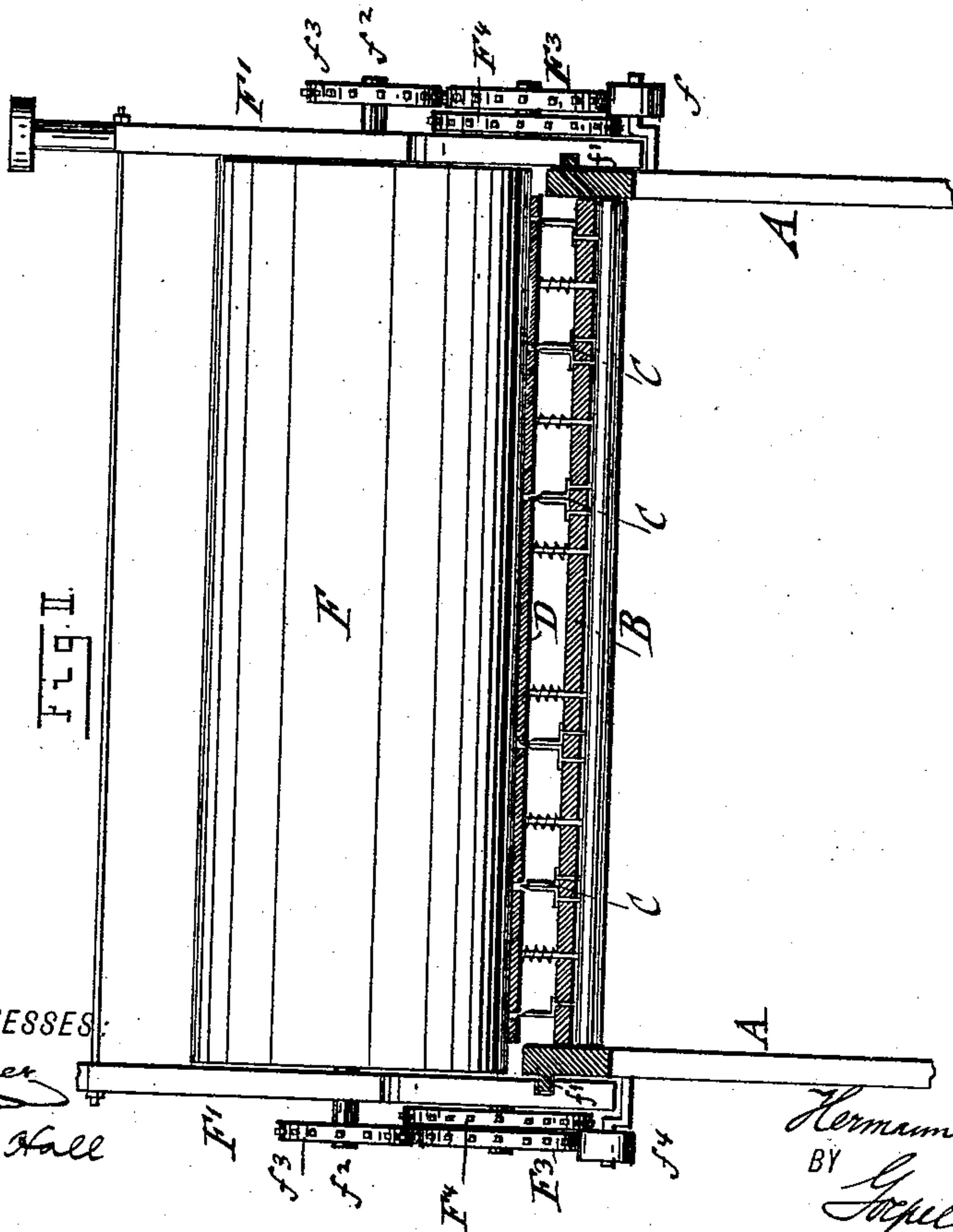


Fig. II



WITNESSES:

Marion Hall

INVENTOR

Herman G. Rogowski
BY *Joseph A. Wagner*
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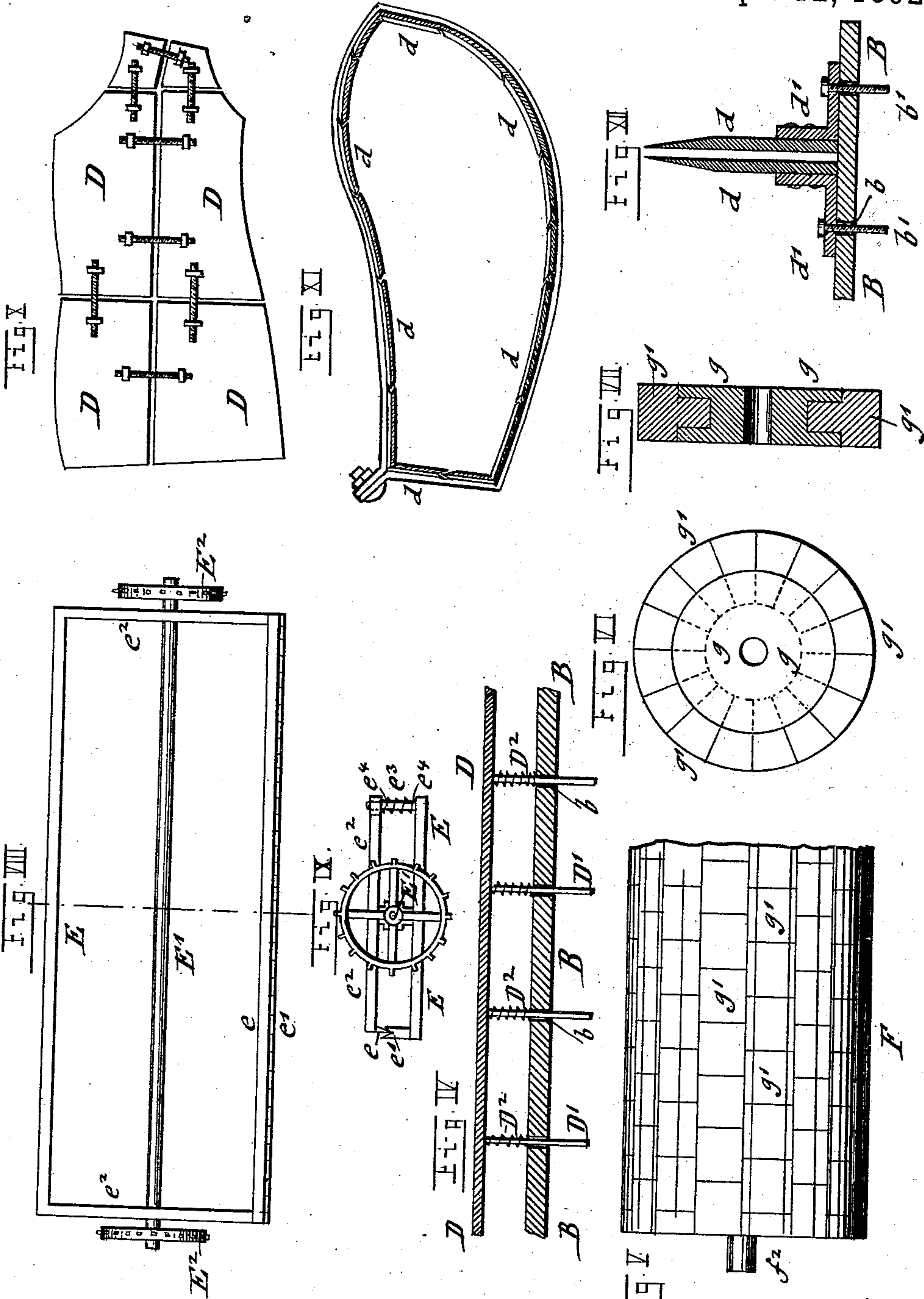
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WITNESSES:

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INVENTOR
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UNITED STATES PATENT OFFICE.

HERMANN G. ROGOWSKI, OF NEW YORK, N. Y.

CLOTH-CUTTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 472,715, dated April 12, 1892.

Application filed May 14, 1891. Serial No. 392,659. (No model.)

To all whom it may concern:

Be it known that I, HERMANN G. ROGOWSKI, a citizen of the German Empire, residing in the city, county, and State of New York, have
5 invented certain new and useful Improvements in Machines for Cutting Cloth for Garments, of which the following is a specification.

This invention relates to an improved machine for cutting cloth or other fabrics for garments and other purposes by means of shaped cutting knives or dies; and the invention consists of a machine for cutting cloth, which comprises a table having a number of
10 slots, to which are applied a number of shaped cutting knives or dies, which are formed of sections, which together form the patterns to be cut from the cloth, the knife-sections being provided with bottom flanges, which are
20 attached to the slots of the table. Spring-cushioned pattern-plates are supported by springs above the level of the cutting-edges of the shaped knives, the different layers of fabrics to be cut being stretched over said
25 pattern-plates and subjected to the pressure of a heavy roller that is drawn over the fabrics and pattern-plates, so as to depress the latter and cut the fabric by pressing the layers over the cutting-knives, the pattern-plates
30 giving sufficiently for this purpose.

The invention consists, further, of certain details of construction which will be fully described hereinafter, and finally pointed out in the claims.

35 In the accompanying drawings, Figure I represents a side elevation of my improved machine for cutting cloth and other fabrics. Fig. II is a vertical transverse section of the same on the line 2 2 of Fig. I, drawn on a
40 larger scale. Fig. III is a plan view of the cutting-table, also drawn on a larger scale. Fig. IV is a detail vertical section of one of the spring-cushioned pattern-plates. Figs. V, VI, and VII are details of the pressure-roller
45 for cutting the different layers of fabric stretched over the pattern-plates. Figs. VIII and IX are a top view and an end view of the transverse frame for stretching the layers of fabric over the pattern-plates. Fig. X is a
50 bottom view of a sectional pattern-plate. Fig. XI is a detail horizontal section of one of the shaped cutting knives or dies; and Fig. XII is

a vertical transverse section, drawn on a larger scale, through two adjacent cutting knives or dies.

Similar letters of reference indicate corresponding parts.

In the drawings, A represents the supporting-frame of my improved machine for cutting cloth or other fabrics. On the frame A
60 are supported suitable bearings for the transverse rollers *a*, on which is supported a table B, which is provided with a number of slots *b*, that serve for attaching the cutting-knives C. The table B is made of cast-iron or other
65 suitable material of sufficient strength to bear the strain exerted thereon, and is removed from the supporting-frame A when a new set of shaped cutting-knives has to be arranged on the same.

70 The shaped cutting knives or dies C are formed of sectional knives *d*, which are fastened to the table B by means of screw-bolts *b'* through the slots *b*, said slots being so arranged that any required pattern can readily
75 be made up from the sectional knives *d*, which are provided in different shapes—straight, curved, angular, &c.—so that any desired shape or pattern can be made up from the
80 same. The knife-sections *d* are provided with bottom flanges *d'*, which are either riveted to the lower part of the knife-sections *d* or bent up from the same. One end of the knife-section *d* is beveled, while the other end is grooved,
85 so that the knife-sections interlock with each other.

It is preferable to use with each machine at least two tables and two sets of cutting-knives, so that while one is used for the cutting operation the other can be prepared for
90 another size of pattern. For this purpose the table B is removed from the supporting-frame A to a stand of about the same size, so that access is given to the table from all sides, whereby the different shapes of patterns can
95 be readily put together by attaching the fastening-screws of the knife-sections to the slots of the table. At the inside of the so-shaped knives or dies C are arranged pattern-plates D, which are guided by means of rods *D'* in
100 the slots or openings of the table B, said pattern-plates being supported on spiral cushioning-springs *D''*, as shown clearly in Fig. IV.

The pattern-plates D are made either of one

piece of strong sheet metal or of sectional pieces which are connected by screw-bolts or slide-pieces, so as to be readily adjusted to the different sizes of patterns to be cut, as shown in Fig. X.

The layers of fabric that are to be cut on the machine are stretched over the pattern-plates D, which is accomplished by means of a frame E, having toothed clamping-jaws *e e*, to which the ends of the different layers of fabric are attached. This clamping device is shown in Figs. VIII and IX. The fabrics while being stretched over the pattern-plates are unwound from rollers *r*, on which they are wound, which rollers are supported in bearings of an inclined supporting-frame A' at one end of the machine, the fabrics being passed over transverse guide-rods *r'* of the supporting-frame of the machine, and between guide-rollers *r''*, over the pattern-plates D, to the opposite end of the machine, where the layers of the fabric are rigidly fastened by a suitable clamping device *r'''*, Fig. I.

The frame E for stretching the fabrics over the pattern-plates is composed of a shaft E', having fixed sprocket-wheels E², which are operated by sprocket-chains F², arranged at both sides of the machine. The jaws *e e'* are arranged at the ends of arms *e²*, that are strapped to the shaft E', and pressed together by means of spiral springs *e³*, applied to studs *e⁴* at the opposite ends of the arms *e²*, so that the toothed jaws take a firm hold of the ends of the fabric. When therefore the toothed clamping-frame E is drawn over the machine by the action of the endless chains F² on the sprocket-wheels E², the layers of fabric are tightly stretched over the pattern-plates D until they arrive at the opposite end of the table B, and are there clamped by the device *r'''* to the end of the supporting-frame A. The traversing frame E is then removed from the supporting-frame or moved back to the left-hand end of the same, so as to be out of the way, as shown in Fig. I.

The cutting of the superposed layers of fabric is accomplished by means of a heavy roller F, the shaft of which is supported in spring-pressed bearings *f f* of slotted standards F', which are guided in exterior longitudinal ways *f'* of the supporting-frame A, as shown in Fig. II. The supporting-standards F' are connected by a rigid transverse brace at their upper ends, while the shaft *f²* is provided at its ends with sprocket-wheels *f³*, which mesh with the endless sprocket-chains F², that are guided over suitable sprocket-wheels F³ at the ends of the supporting-frame A, and guided in intermediate rollers *f⁴*, as shown clearly in Fig. I. Traversing motion is imparted by the chains F² to the pressure-roller F by means of a suitable belt and cross-belt transmission and intermediate sprocket-wheels F⁴ and chain F⁵, as shown clearly in Fig. I, so that the endless chains F² can be moved in one direction or the other according as the pressure-roller F is to be moved

forward or backward over the machine. The pressure-roller F is made of a number of sections which are composed of flanged iron cores *g*, that are splined to the axle of the roller, and of wedge-shaped wooden blocks *g'*, which are arranged in longitudinal rows in such a manner that the blocks of two adjoining rows break joint with each other. The wedge-shaped blocks *g'* of wood are turned off smoothly and form a covering for the roller that can be passed over the cutting-knives without dulling the same. From time to time the surface of the roller is turned off, so as to be made true again.

In place of the pressure-roller F described a heavy iron roller may be used, in which case an intermediate plate of zinc or other pliable metal has to be interposed between the roller and the fabrics, said soft-metal plate preventing the dulling of the knives. The cutting-edges of the knife-sections are so arranged that their vertical side is at the outside of the shaped cutting-die, while the tapering side is at the inside of the same, as shown in Fig. XII, in which one knife belongs to one cutting-die and the other knife to the adjoining cutting-die. By the close adhesion of the layers of fabric to the pattern-plates, produced by the tight stretching of the fabrics, the cutting action of the knives is facilitated and expedited. When the sections of the cutting knives or dies are screwed to the table, they are firmly bound together by means of a suitable band or hoop iron, which is passed around the same and which is tightly clamped together at the ends, as seen in dotted lines in Fig. XI. This binds the knife-sections of one entire cutting frame or die together, so that they abut against each other and offer the required resistance to the action of the heavy pressure-roller as the same passes over the fabrics. The cutting-knives may further be rigidly held together by interposing wedge-pieces between the side walls of the supporting-frame A and the knives adjacent thereto, which assists in securing the knives arranged on the supporting-table B against lateral change of position. The intermediate spaces between the different cutting-dies may also be covered by means of auxiliary spring-cushioned plates, as indicated in dotted lines in Fig. III, so as to take up the remnants of cloth that are cut off from the patterns, which remnants can thereby be more conveniently removed from the machine after the cutting of the patterns is accomplished and with less danger of injury to the fingers by the sharp cutting-knives.

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

1. The combination of a supporting-frame having a horizontal table provided with a number of vertical slots, cutting-knives arranged in sections and provided with L-shaped bottom flanges resting on the table, vertical fastening screw-bolts passing through said

flanges and certain of the slots in the table, and spring-cushioned pattern-plates located in proximity to the knives and having depending stems passing through other of said slots, substantially as set forth.

2. The combination of a supporting-table, upright cutting-knives formed in sections and provided with bottom flanges, means for attaching said cutting-knives to the table in the form of a pattern, spring-cushioned pattern-plates arranged inside of the pattern formed by the cutting-knives, means for stretching the layers of fabric tightly over the pattern-plates, a pressure-roller, and means for moving the pressure-roller over the layers of fabrics to be cut, substantially as set forth.

3. The combination of a supporting-table, upright cutting-knives attached to said table and arranged so as to form cutting frames or dies, spring-cushioned pattern-plates arranged inside of the cutting frames or dies, means for stretching the layers of fabric over the pattern-plates, and means for clamping the layers of fabric to the frame, substantially as set forth.

4. The combination of a supporting-table, upright cutting-knives forming cutting frames or dies, attached to the said table, spring-cushioned pattern-plates located inside of the dies formed by the cutting-knives, a traversing pressure-roller supported on standards guided on the supporting-frame, sprocket-wheels on the shafts of the pressure-roller, and endless chains for moving said pressure-roller over the fabrics, substantially as set forth.

5. In a machine for cutting patterns from fabrics, the combination of a supporting-table provided with slots, cutting-dies formed of knives having bottom flanges, fastening-bolts passing through the flanges of the knives and the slots of the table for securing the cutting-

knives to the table, and a metal band or hoop passing around the bodies of the knives in each die and having its ends connected, substantially as set forth.

6. In a machine for cutting patterns from fabrics, the combination of a supporting-table with cutting frames or dies formed of knife-sections attached to said table, said knife-sections being provided with groove-and-tongue joints at their adjacent ends, substantially as set forth.

7. The combination, with a supporting-table, upright cutting-knives forming pattern frames or dies, attached to said table, spring-cushioned pattern-plates arranged inside of the cutting frames or dies, a traversing frame provided with sprocket-wheels and spring-actuated clamping-jaws for moving the layers of fabrics over the pattern-plates, and endless chains for drawing the traversing frame over the pattern-plates, substantially as set forth.

8. The combination, with a supporting-table, upright cutting frames or dies attached to said table, spring-cushioned pattern-plates arranged inside of said cutting-frames, guiding and stretching devices for the fabrics at one end of the supporting-table, a traversing frame provided with spring-actuated clamping-jaws for taking hold of the different layers of fabrics and stretching them over the pattern-plates, and means for clamping the fabrics arranged at the opposite end of the table, substantially as set forth.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

HERMANN G. ROGOWSKI.

Witnesses:

PAUL GOEPEL,
CHARLES SCHROEDER.