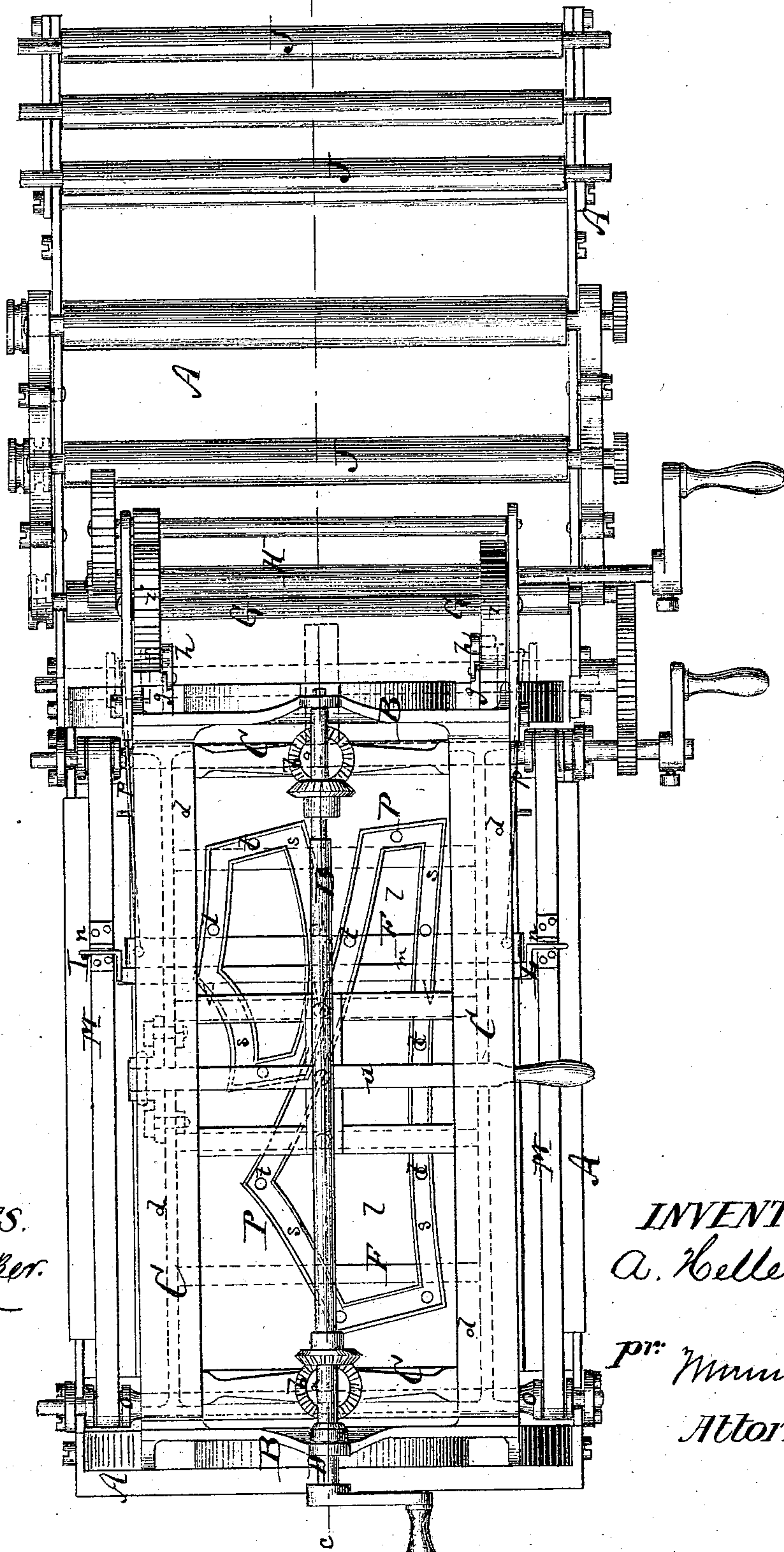


A. HELLER:  
Machines for Cutting Cloth.

No. 126,207.

Patented April 30, 1872.

Fig. 1.



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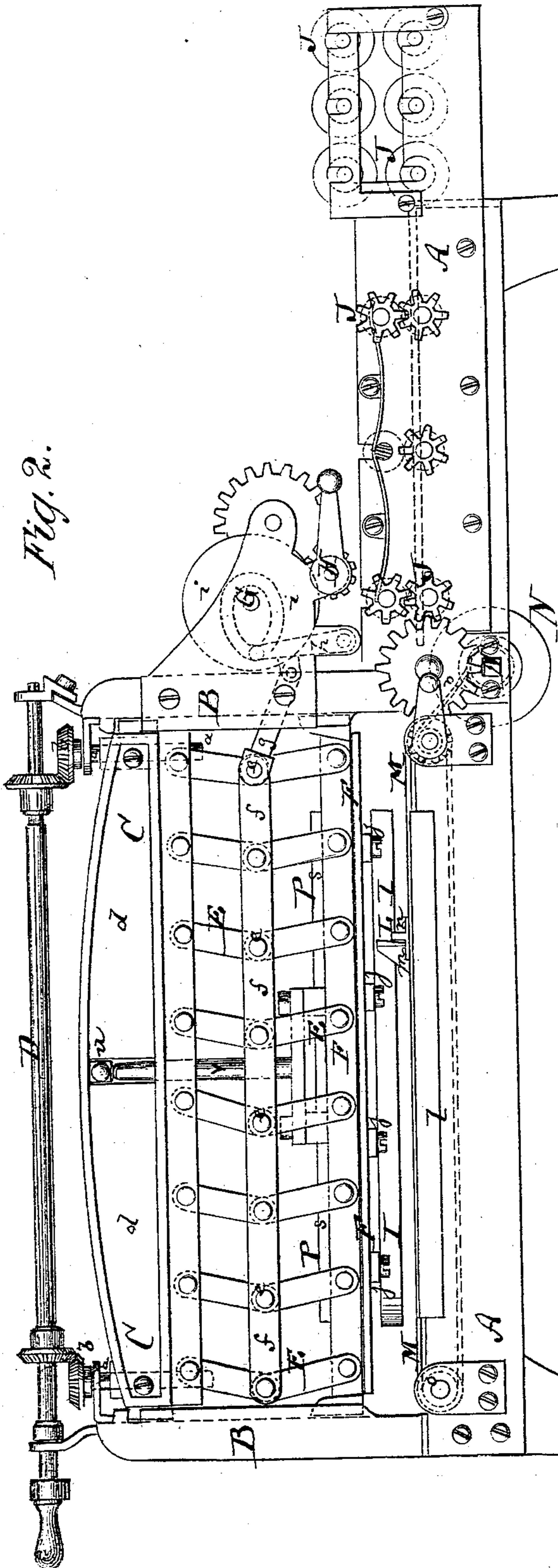
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Fig. 2.



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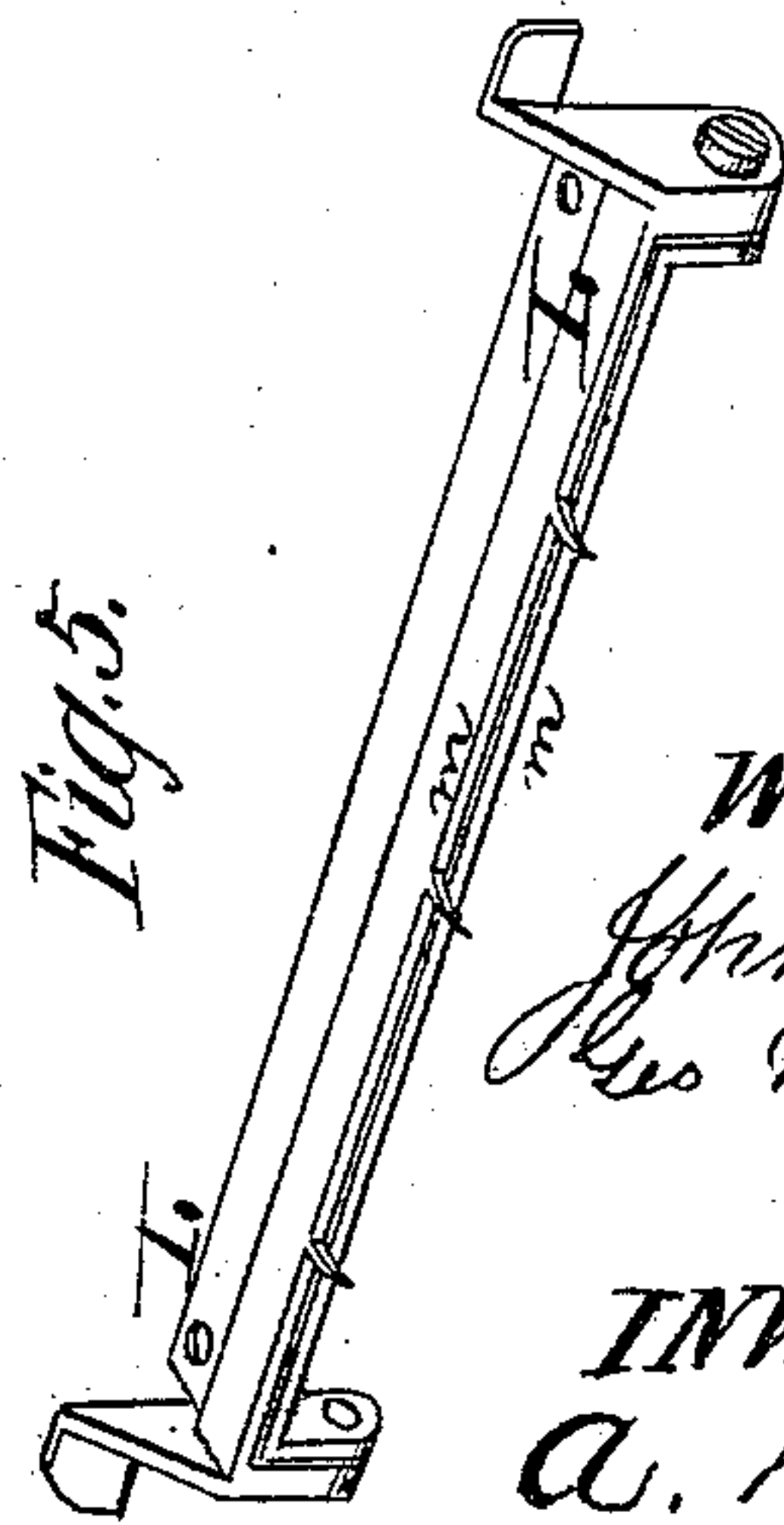
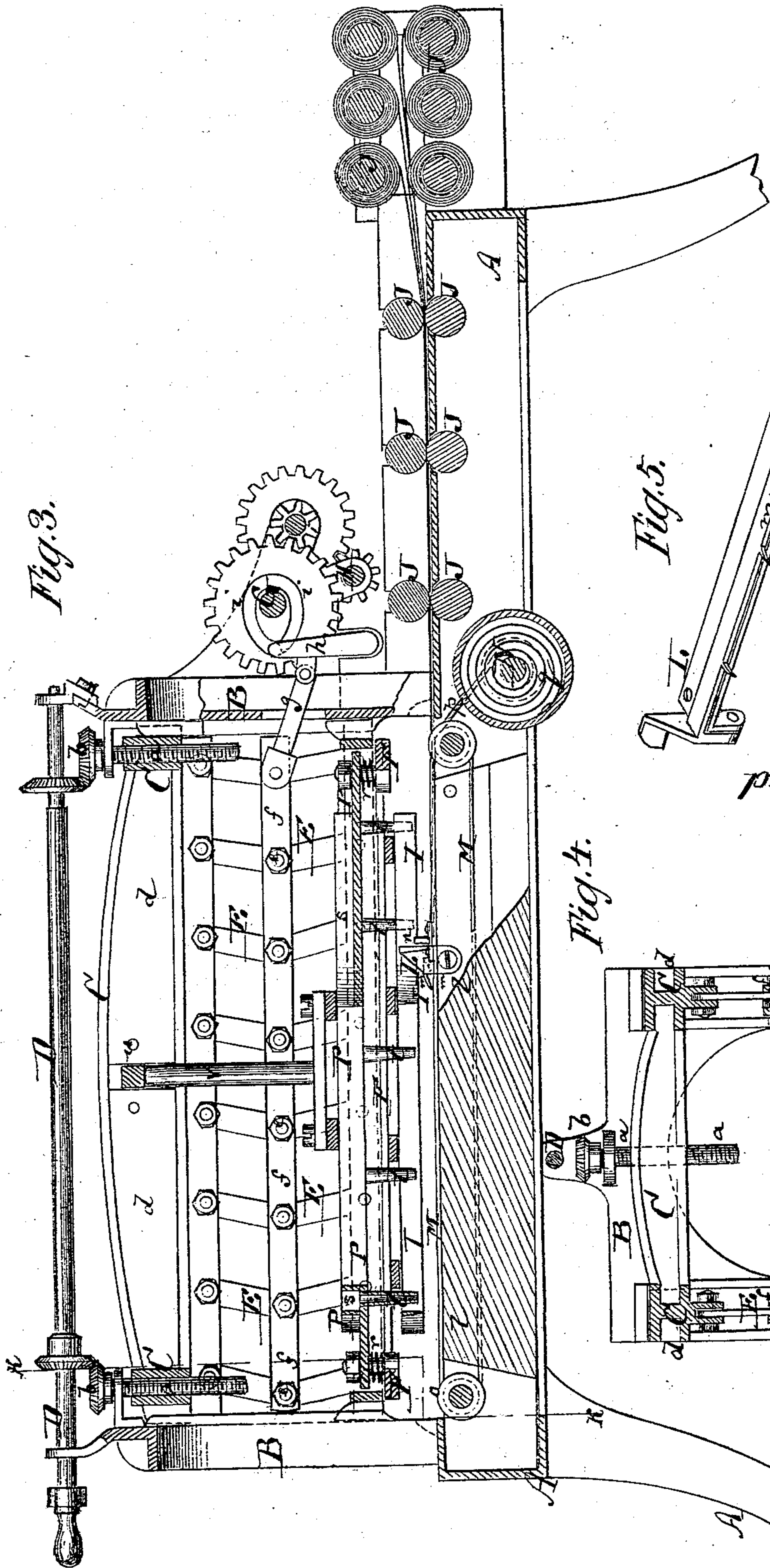
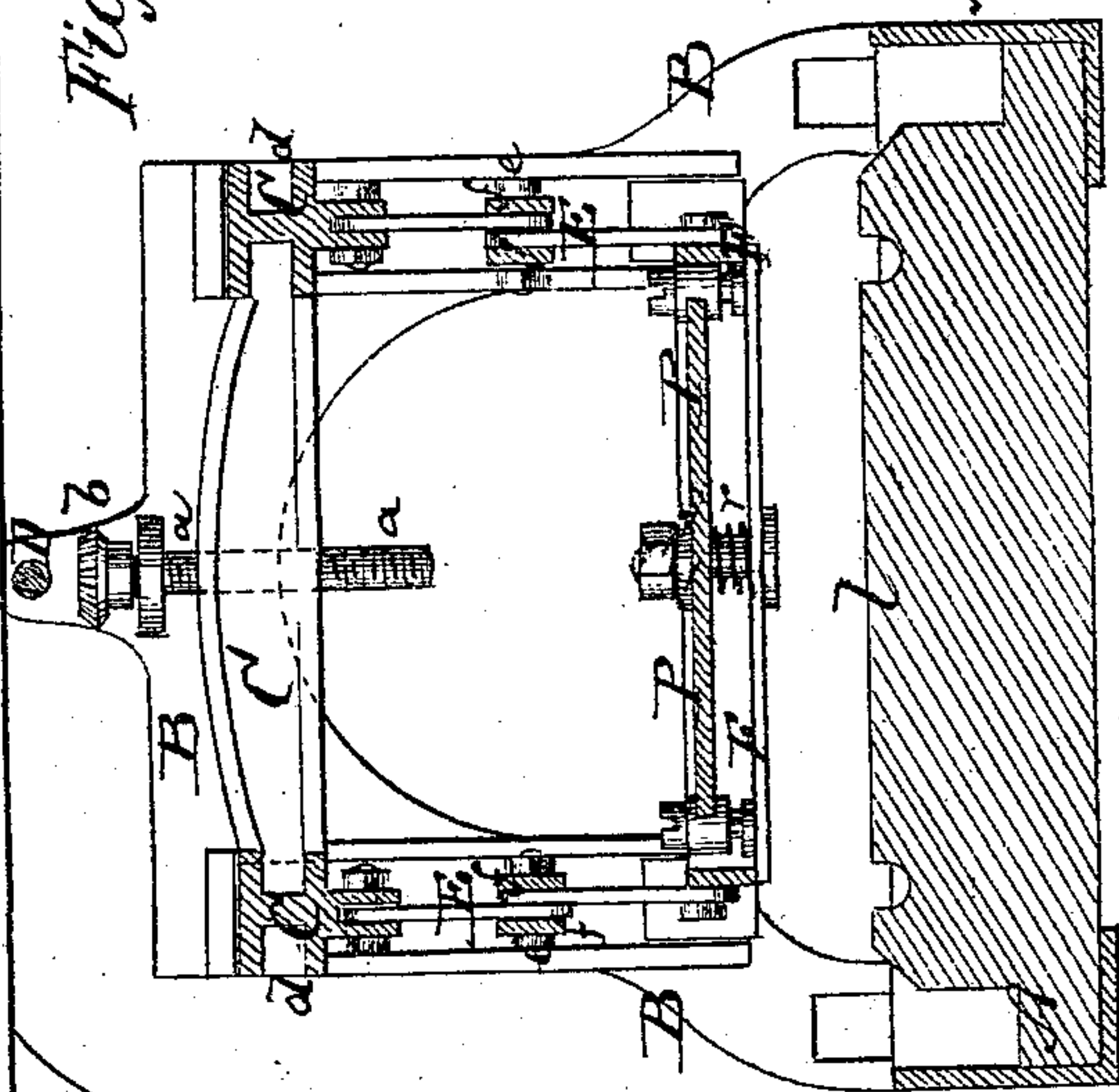


Fig. 4.



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## UNITED STATES PATENT OFFICE.

ANDREW HELLER, OF NEW YORK, N. Y.

## IMPROVEMENT IN MACHINES FOR CUTTING CLOTH.

Specification forming part of Letters Patent No. 126,207, dated April 30, 1872.

Specification describing a new and Improved Machine for Cutting Cloth, &c., invented by ANDREW HELLER, of the city, county, and State of New York.

Figure 1 represents a plan or top view of my improved machine for cutting cloth, &c. Fig. 2 is a side elevation of the same. Fig. 3 is a vertical longitudinal section of the same taken on the plane of the line *c c*, Fig. 1. Fig. 4 is a vertical transverse section on the line *k k*, Fig. 3. Fig. 5 is a detail perspective view of the feeding-clasp.

Similar letters of reference indicate corresponding parts.

This invention relates to a new machine for cutting the cloth used in the manufacture of clothing, and for other purposes, and other fabrics into certain definite shapes, and consists, principally, in the employment of a vertically-reciprocating continuous cutting-blade; in the combination therewith of marking troughs and apertures in the plate to which said blade is attached; and in the arrangement of a clamp for feeding the fabric to be cut to its place under the cutter, all as hereinafter more fully described.

A in the drawing represents the frame of the machine. It is made of metal or other material, preferably in form of a rectangular table, as shown. From this table project two upright frames, B B, which serve as guides for a vertically-adjustable horizontal frame, C, that is, by means of screws *a a* at its ends, suspended from the said frames B B, as shown. The screws *a a* have bevel-gear wheels *b b* at their upper ends, that mesh into similar wheels on a horizontal shaft, D, hung in the frames B. The shaft D has a crank-handle, whereby it can be turned in order to revolve the screws *a a* and set the frame C higher or lower, as may be required. From the longitudinal side pieces *d d* of the frame C are suspended a series of toggle-levers, E E, of equal lengths, their lower ends all being connected with a horizontal plate or frame, F. The joints of all the toggles E E on each side of the machine are, by means of their pivots *e e*, connected with a longitudinal bar, *f*, there being thus two such bars *f*, one on each side. One end of every bar *f* is, by a pitman, *g*, and lever, *h*, or by equivalent means, connected to an eccentric, *i*, on a shaft, G, in such manner

that when rotary motion is imparted to said shaft G by gearing or other connection with the driving-shaft H of the machine, the bars *f* will be moved back and forth to alternately spread and contract the toggles, and thereby alternately lower and elevate the plate or frame F. To the under side of the plate or frame F is fastened, by means of screws that pass through projecting ears *j j* the cutting-blade I, the same being of the form of the piece to be cut out. Thus when the frame F is moved down by the mechanism above described, or by other equivalent mechanism, the cutting-blade will, at one stroke, cut the fabric beneath it into the shape to which it—the blade—has been formed. The fabric is conveyed to the bed *l*, in which it is to be cut, first, by and between series of rollers, J J. When its end arrives on the bed *l* it is clasped between two jaws, *m m*, which constitute the feed-clamp L. This clamp is pushed along by means of ears *n n* that project from two endless belts, M M, at the sides of the frame A, and draws the fabric entirely upon the bed *l* to be cut. When the ears *n* of the belts M pass around the forward pulleys *o o* of said belts, and thus leave the clamp L, the latter is drawn back by a spring-roller, N, with which it is connected by strings or bands, *p*. This roller N, which may, in place of the spring *q*, have a weight to actuate it, is unwound while the clamp J is moving ahead. In being drawn back, the jaws *m* of the clamp open, so as not to affect the fabric, which remains undisturbed upon the bed *l*. In order to insure bringing the fabric to be cut into proper position, a marker, P, is applied above the frame F, being held elevated by means of springs *r r* that rest on F. This marker P is a plate, having troughs or grooves S S on its top, of the same form and outline as the cutter-blade I, and perforated, each perforation having a downwardly-projecting tubular extension, *t*. A lever, *u*, pivoted to the frame C, bears on a post, *v*, projecting from the plate P. Whenever the fabric has arrived in position on the bed *l*, the operator first swings the lever *u* down to lower the plate P and bring the ends of the tubes *t t* in contact with the fabric. White powder being placed into the troughs or grooves *s*, will thus, through the tubes *t*, be caused to mark the fabric by dotting it in the line of the cutter. The oper-



ator is thus enabled to observe whether the fabric is in the right position under the cutter or not, and to rectify, before cutting, the position of the fabric, so that the process may be carried out most economically. Not until the fabric has been properly placed will the cutter be allowed to descend.

The bed *l* is formed of wood or other material, preferably of narrow boards set on edge, to have the grain in line with the movement of the cutter.

Motion is imparted to the several shafts, rollers, &c., by steam or muscular power.

It will be observed that the mechanism described for moving the knife is extremely powerful, and apt to carry the knife through several thicknesses of the heaviest fabric. However, other mechanism may be substituted for moving the knife.

The frame *C* is adjustable, by means of the screws *a*, for letting the frame *E* more or less down, according to the length of cutting-blade.

Having thus described my invention, I claim

as new and desire to secure by Letters Patent—

1. The plate *F*, suspended by toggle-levers *E E* from the vertically-adjustable frame *C*, substantially as specified.

2. The combination of the adjustable frame *C*, toggle-levers *E E*, and frame *F* with the bars *ff* and eccentrics *ii*, as set forth.

3. The marker *P*, provided with the tubular projections *t*, and applied, in combination with the reciprocating cutter *I*, as set forth.

4. The lever *u*, port *v*, and springs *r*, combined with the marker *P*, as and for the purpose herein shown and described.

5. The feed-clamp *L*, composed of the jaws *m m*, and operated by the belts *M* and spring-roller *n*, substantially as herein shown and described.

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Witnesses:

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T. B. MOSHER.