

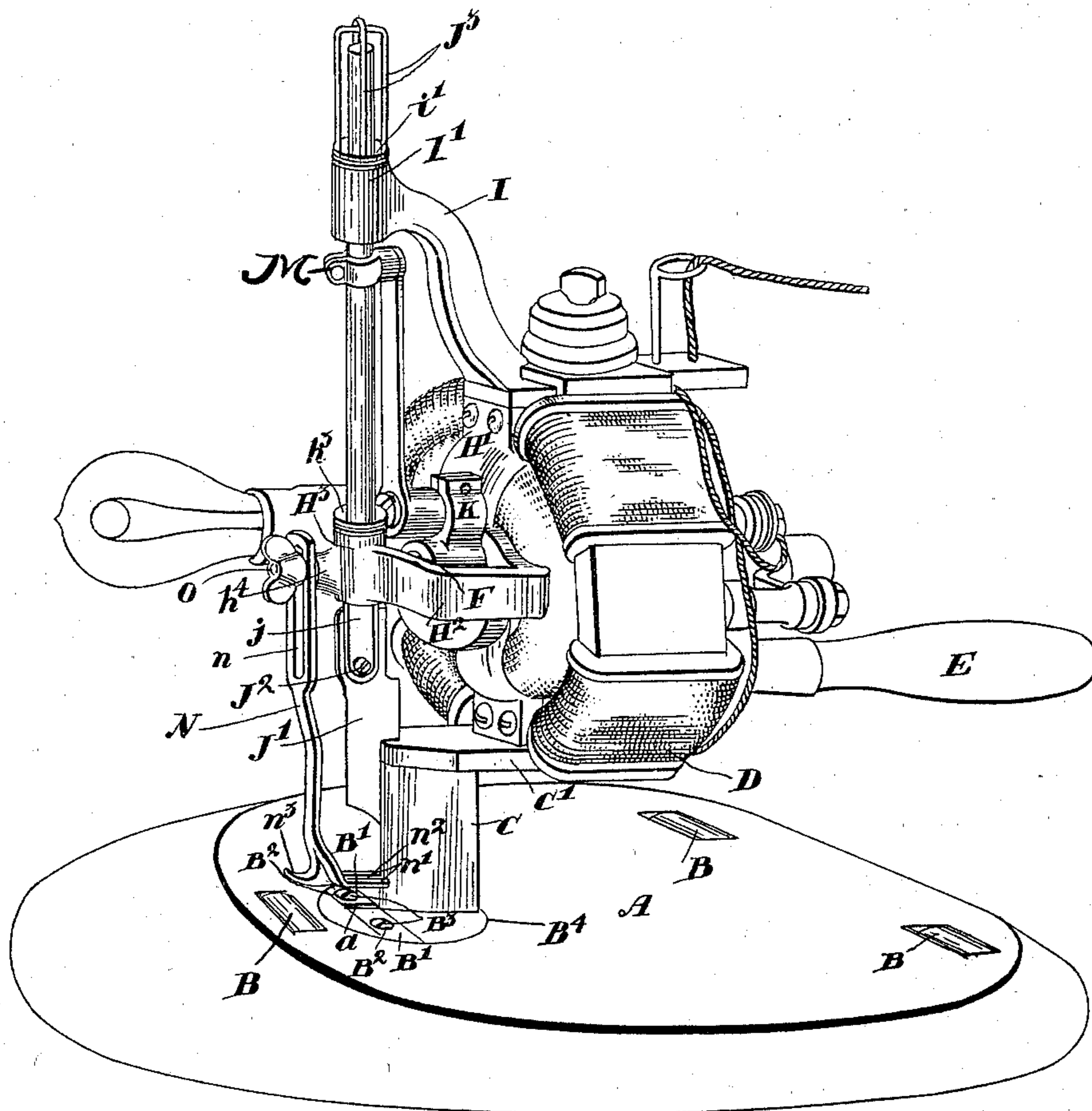
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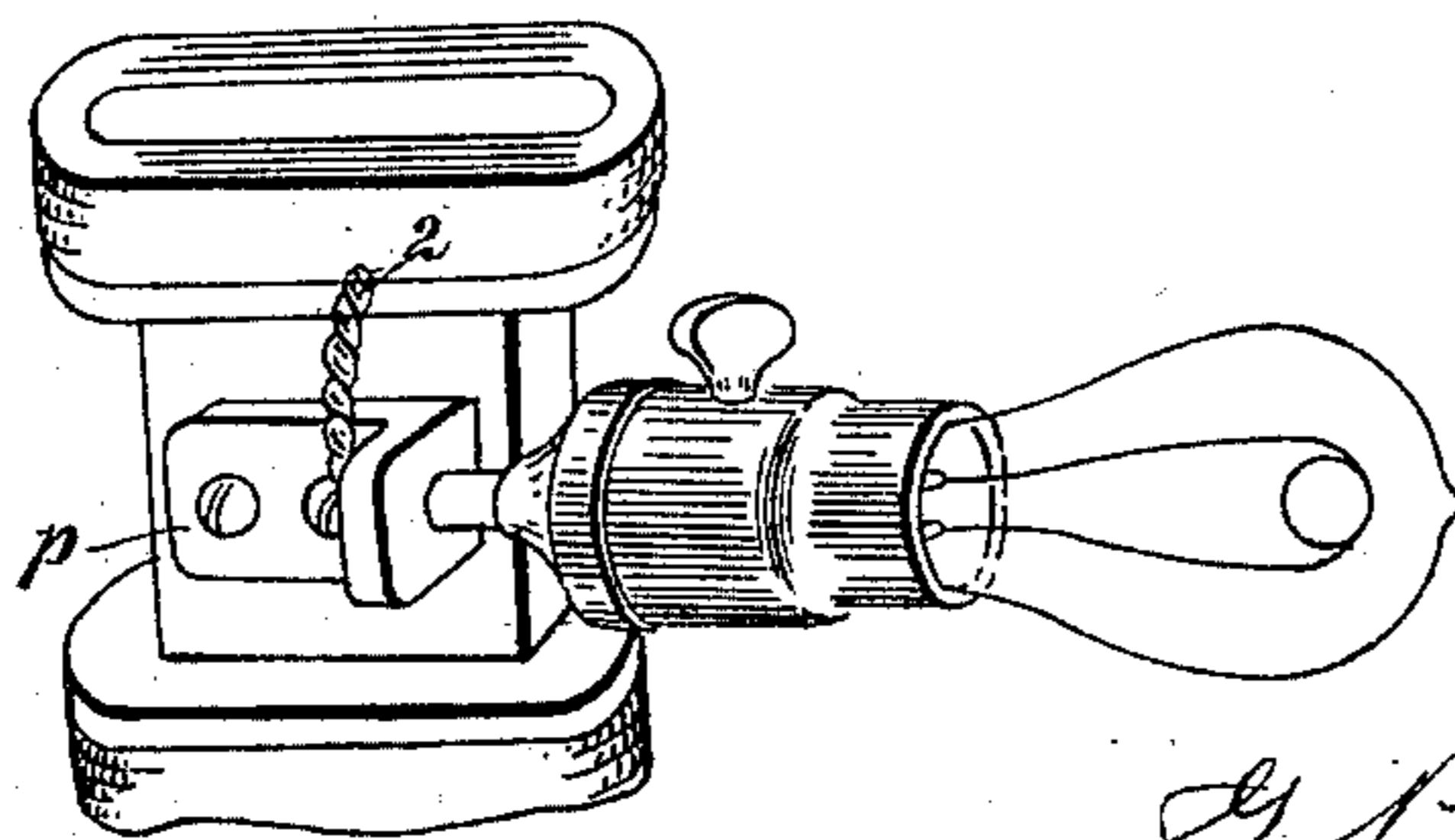
G. P. EASTMAN.  
CLOTH CUTTING MACHINE.

No. 590,140.

Patented Sept. 14, 1897.



*Fig. 1.*



*Fig. 3.*

*Witnesses.*  
*H. T. S. Young*  
*Alfred Leon*

*Inventor*  
*G. P. Eastman*  
*by Fetherstonhaugh & Co.*  
*Attys*

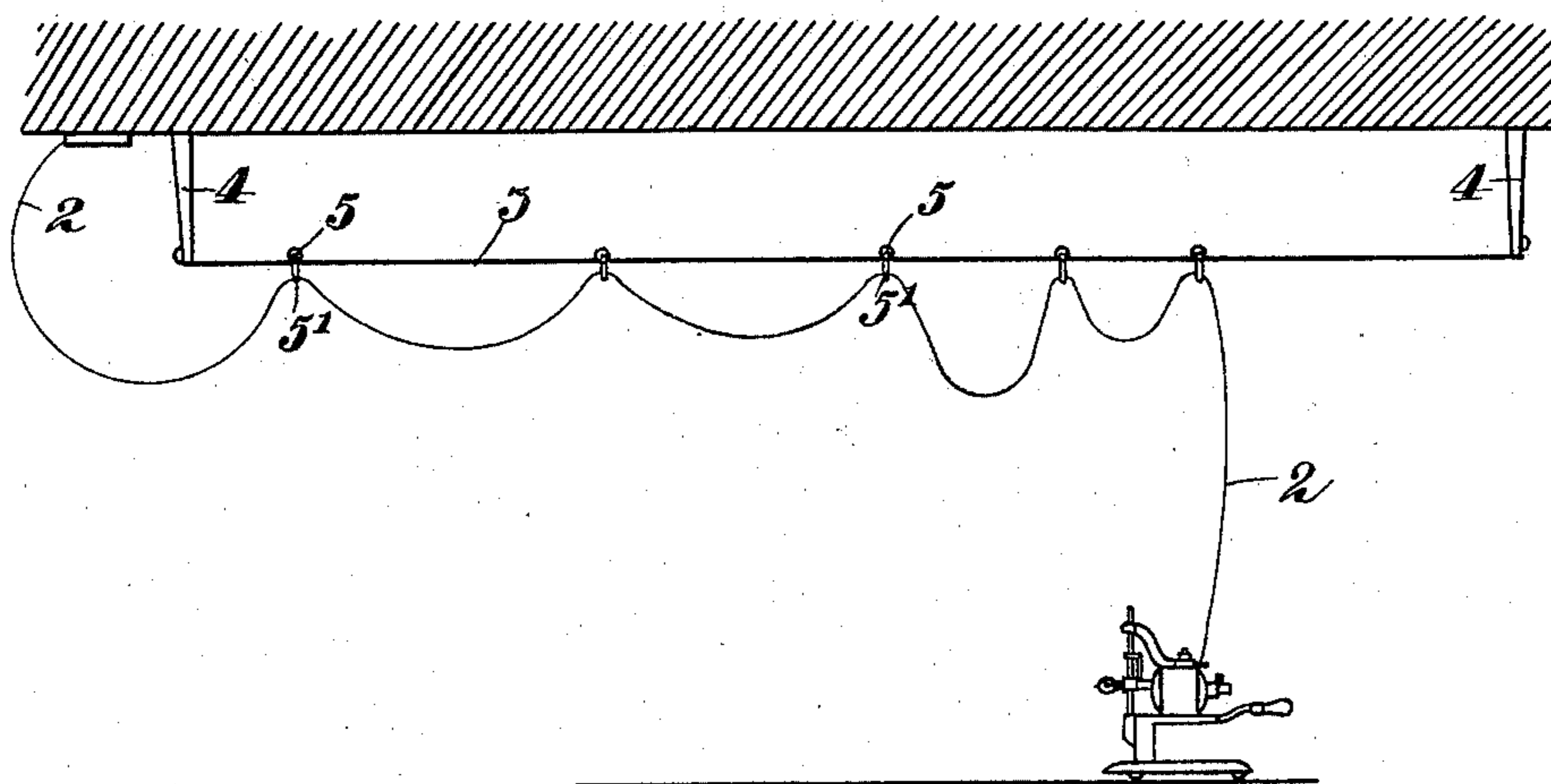
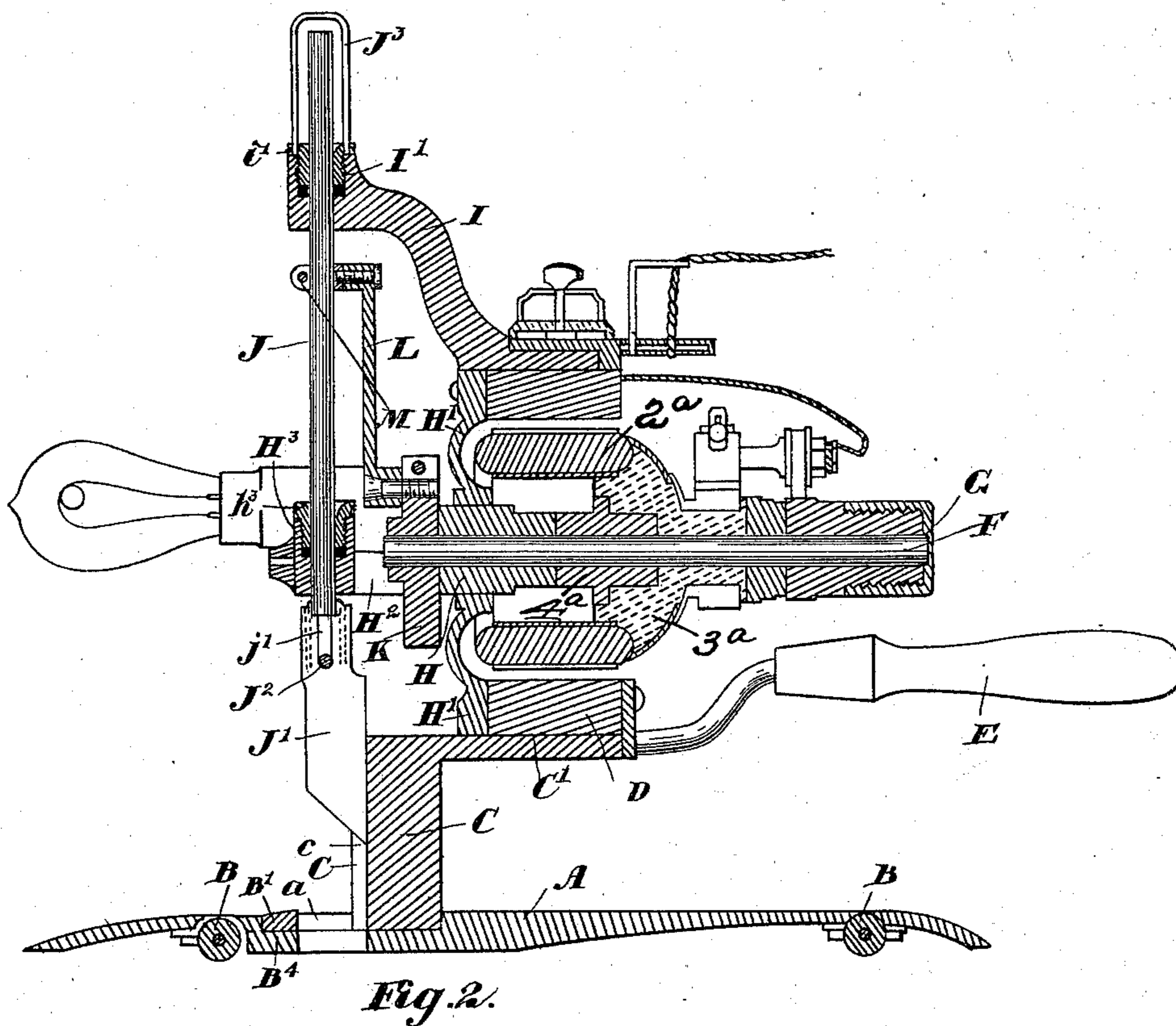
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2 Sheets—Sheet 2.

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### *Witnesses*

H. T. S. Young  
Alfred Scott

*Fig. 1<sup>a</sup>*

*Inventor.*

*E. P. Eastman*  
*by Hetherston & Co.*  
*Edys.*

# UNITED STATES PATENT OFFICE.

GEORGE PETER EASTMAN, OF TORONTO, CANADA.

## CLOTH-CUTTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 590,140, dated September 14, 1897.

Application filed November 18, 1896. Serial No. 612,553. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE PETER EASTMAN, manufacturer, of the city of Toronto, in the county of York, in the Province of Ontario, Canada, have invented certain new and useful Improvements in Electrically-Operated Cloth-Cutters, of which the following is a specification.

My invention relates to improvements in electrically-operated cloth-cutters; and the object of the invention is, first, to design a simple device of this class in which the smallest curves necessary in cutting the cloth for garments may be readily and accurately followed, and in which also, where several thicknesses of cloth are cut together, the knife will cut to the same point on each web of cloth, and, secondly, to provide a simple means whereby the light may be always directed upon the knife from the same point, so as to insure accuracy of cutting; and it consists in the particular construction and arrangement of parts hereinafter described, and particularly set forth in the claims.

Figure 1 is a perspective view of my electric cloth-cutter complete. Fig. 1<sup>a</sup> is a diagrammatic view showing the current-wire supports. Fig. 2 is a longitudinal section through the cutter. Fig. 3 is a detail of the means of supporting the electric lamp.

In the drawings like letters of reference indicate corresponding parts in each figure.

A is the base of the machine, which is provided with the usual rollers B, by which it is supported and upon which it is adapted to have movement in any desired direction.

C is a stem provided with a rearwardly-extending plate C', upon which is supported the field-magnets D.

E is the handle by which my cloth-cutter is manipulated.

F is the main driving-shaft, which is supported on the rear journal G and in the front journal H, which extends within the field-magnets and armature, being connected to the field and base-plate by the arms H' H'.

H<sup>2</sup> are guards, which extend outwardly from the journal H and have formed on their outer end the guide H<sup>3</sup>, which is provided with a screw-plug h<sup>3</sup>, as shown, having suitable packing at the bottom thereof.

I is a bracket secured to the top of the field-magnet frame and having situated at its upper end the upper guideway I'.

J is a knife-rod which extends through the guideway I' and H<sup>3</sup>. The guideway I' is also provided at the top with a screw-plug i', which has packing situated at the bottom of it, as shown.

J<sup>3</sup> is a guard formed of wire or in any suitable manner, which is secured in the plug i' and is designed to extend upwardly to a point beyond the limit of the stroke of the knife-rod J.

K is a crank which is properly balanced, and L is a rod connecting the crank K to a clamp M, suitably formed and secured in any desired position upon the knife-rod J. The knife-rod J is provided at its lower end with a jaw j j, between the members of which is fitted the knife J', which is provided with a slot j' at its upper end.

J<sup>2</sup> is a screw-pin which extends through the members j j of the jaw and the slot j' in the knife, this screw serving to clamp the jaws together, so as to securely and rigidly hold the knife in position. The forward end of the supporting-stem C is provided with a groove c at its front end, in which the vertical knife has movement. The knife J' is a thin blade brought to a fine beveled cutting edge at the bottom. The front, however, is not brought to a cutting edge, but is blunt, but sufficiently narrow, so as to form practically no resistance in passing through the cloth.

a is a slot situated directly underneath the knife and extending from the groove forwardly and on a line with the blade of the knife. The slot a is formed by the abutting sectoral plates B' B'. Through enlarged openings B<sup>2</sup> B<sup>2</sup> set-screws B<sup>3</sup> B<sup>3</sup> extend, so as to hold the edges of the slot firmly in position parallel to each other and allow of the adjustment of the edges of the slot toward each other to any desired width suitable for the most satisfactory reciprocating movement of the knife therein. The sectoral plates are fitted within a circular recess B<sup>4</sup> made in the base.

h<sup>4</sup> is a boss formed in the front of the guide H<sup>3</sup>.

N is a guard which is provided with a slot  $n$  at its upper end. The upper end of the guide N fits against the boss  $h^4$  and is held thereto by the thumb-screw O, which extends through the slot  $n$ . The lower end of the guard has two rearwardly-extending wings  $n'n'$ , with an opening  $n^2$  between them through which the knife is designed to pass, the rear ends of the wings having a movement upon the front edge of the stem C, which forms a guide therefor.

$n^3$  is a pointer also forming part of the guard N and designed to extend directly in front of and slightly to one side of the knife, as indicated, so as to form an accurate means for directing the course of the knife.

The wings  $n'$  and pointer  $n^3$  are designed to rest upon the top of the cloth with but slight tension, and the guard proper serves to protect the operator from the action of the knife as it reciprocates.

In order to provide for night-work and therefore perfectly light the course which the knife is to take in cutting out garments, I provide an electric incandescent lamp, which I support upon a bracket  $p$ , secured to the frame of the field-magnets. The wire 2 leading to the same may be a continuation of the wire leading to the fields, and consequently the simplicity of operating the knife and lighting the cloth in front of the knife will not be interfered with. The operation of the knife is simply a reciprocating motion derived from the driving-shaft F and its crank.

The commutators may be of the usual construction and secured to the shaft F, and the brushes may be also of any desired form, but as I do not claim anything in the construction of same I do not describe them. I also provide (see Fig. 1<sup>a</sup>) a running support for the wire 2, which consists of a supplemental wire 3, supported on the lower end of suitable hangers 4, fastened to the ceiling. Upon the wire 3 is arranged a series of pulleys 5, at the lower end of which are formed eyes or loops 5', to which the wire is connected. The wire 2 leads off to the ceiling from the end of the wire 3.

By such a means as I describe it will be readily seen that the cloth-cutter may have a great freedom of movement and the wire instead of lying on the table will be supported in loops from the pulleys 5, which will move along the wire 3 simultaneously with the longitudinal movement of the cloth-cutter. The armature 2<sup>a</sup>, however, it will be seen on reference to the drawings, is of peculiar form, being cup-shaped, the base or outer portion 3<sup>a</sup> being insulated from the shaft and extending forwardly from the inner end of the bearings 4<sup>a</sup>, which abut the bearing H, attached to or forming part of the arms H'. As before described, the bearing H extends on the shaft within the cup-shaped armature, as indicated, thus providing for the long front

bearing for the shaft within the armature, so that the armature and field-magnets are very compact and the center of gravity is thereby thrown more directly over the stem than in any form of motor used in cloth-cutters of which I am aware. The effect of throwing the center of gravity, it will be clearly understood, is to prevent vibration when the machine is being used, and the importance of this will be understood in the cutting of garments.

What I claim as my invention is—

1. In a cloth-cutting machine, the combination with the base and stem extending upwardly therefrom and a suitable motor and guideways suitably supported, the armature-shaft, suitable bearings therefor, crank on the outer end, connecting-rod, knife-rod and knife having a lower beveled sharpened edge, a slot in the base into which such knife reciprocates and an adjustable guard secured at the top to the front of the lower guide for the knife-rod and depending therefrom said guard being provided at the bottom with lower wings extending on each side of the supporting-stem as and for the purpose specified.

2. In a cloth-cutting machine, the combination with the base and stem extending upwardly therefrom and a suitable motor and guideways suitably supported, the armature-shaft, suitable bearings therefor, crank on the outer end, connecting-rod, knife-rod and knife having a lower beveled sharpened edge, a slot in the base into which such knife reciprocates, a slotted guard secured at the top to the front of the lower guide for the knife-rod and depending therefrom said guard being provided at the bottom with rear wings extending on each side of the supporting-stem and a pointer extending forwardly from the guard and forming part of the same and the binding-screw extending through the slot in said guard to hold said guard in position as and for the purpose specified.

3. In a cloth-cutting machine, the combination with the base and the stem extending upwardly therefrom, and a suitable motor and guideways suitably supported, the armature-shaft, suitable bearings therefor, a crank on the outer end, a connecting-rod, a knife-rod, and knife having a lower beveled sharpened edge, a slot in the base into which said knife reciprocates, an adjustable guard secured at the top in front of the lower guide for the knife-rod and provided at the bottom with a pointer extending forwardly from the guard and forming a part of the same and located entirely to one side of the cutting edge of the knife so as to leave a marked line on the cloth in clear view from the point to the cutting edge of the knife, substantially as described.

4. In combination in a cloth-cutting machine the base, the stem, the magnet-frame supported by the same, the field the cup-shaped armature, the armature-shaft, the

front bearing therefor supported by the magnet-frame and extending within the armature, the rear bearing also supported by the magnet-frame and extending outwardly from the field, said armature being secured to one end of the shaft and extending inwardly within the field immediately to the outside

of the inwardly-extending front bearing and the reciprocating knife operated by the armature, substantially as described.

GEORGE PETER EASTMAN.

Witnesses:

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H. DENNISON.