

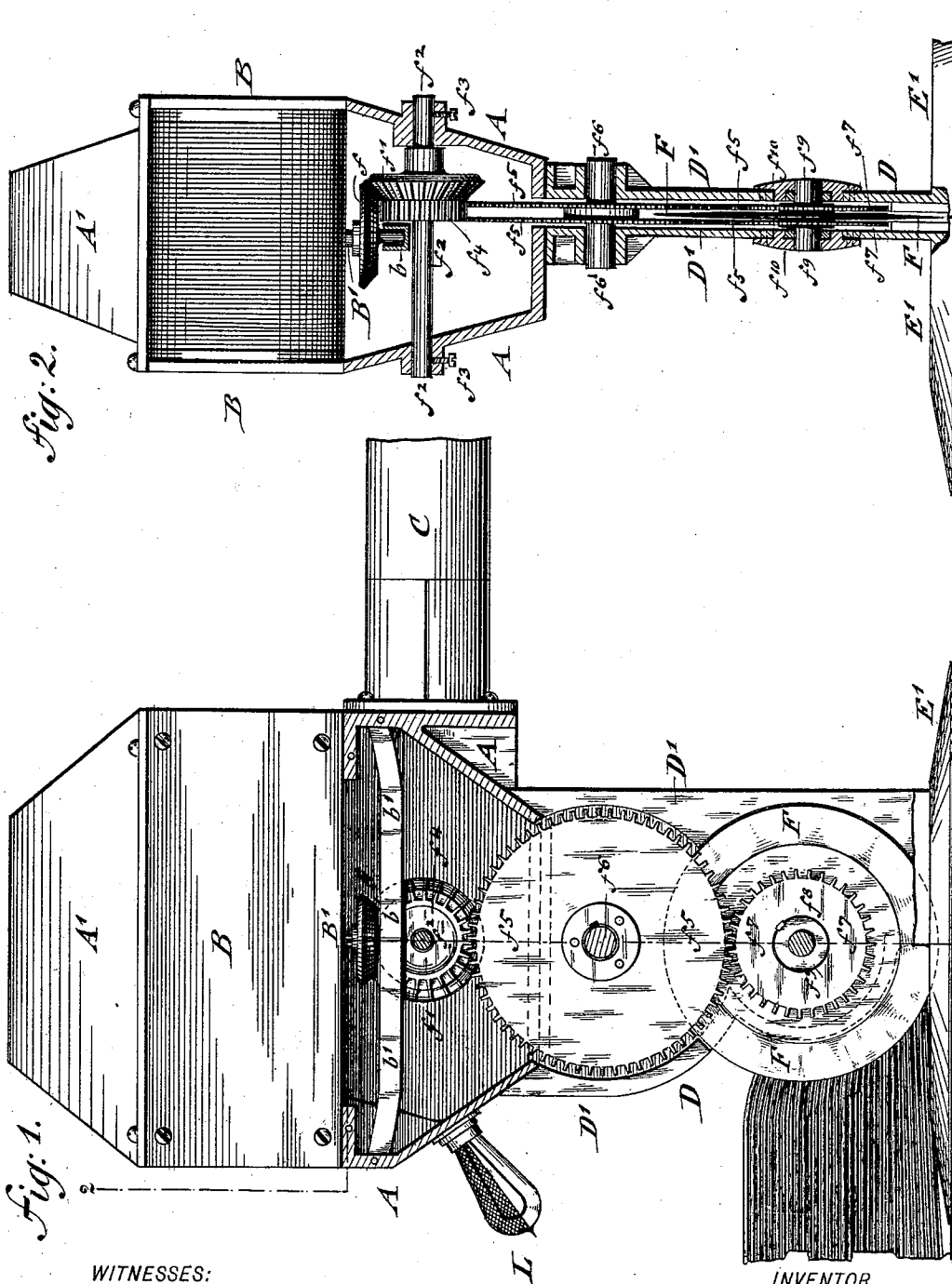
(No Model.)

2 Sheets—Sheet 1.

A. K. THYLL.
CLOTH CUTTING MACHINE.

No. 513,741.

Patented Jan. 30, 1894.



WITNESSES:

Charles Schroeder.
Harry Willard Griffiths

INVENTOR

Arthur K. Thyll

BY

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ATTORNEYS.

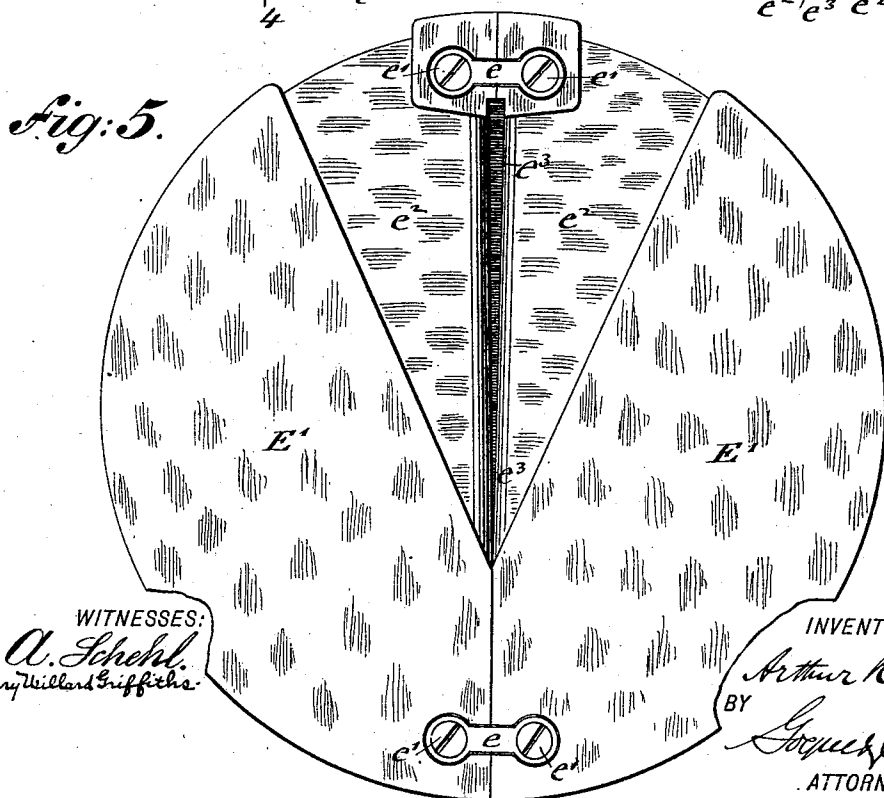
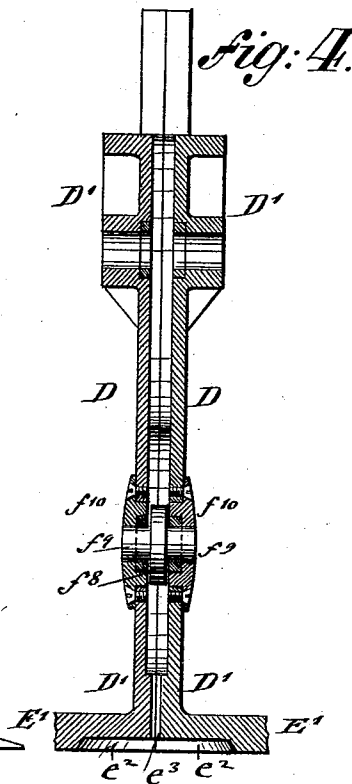
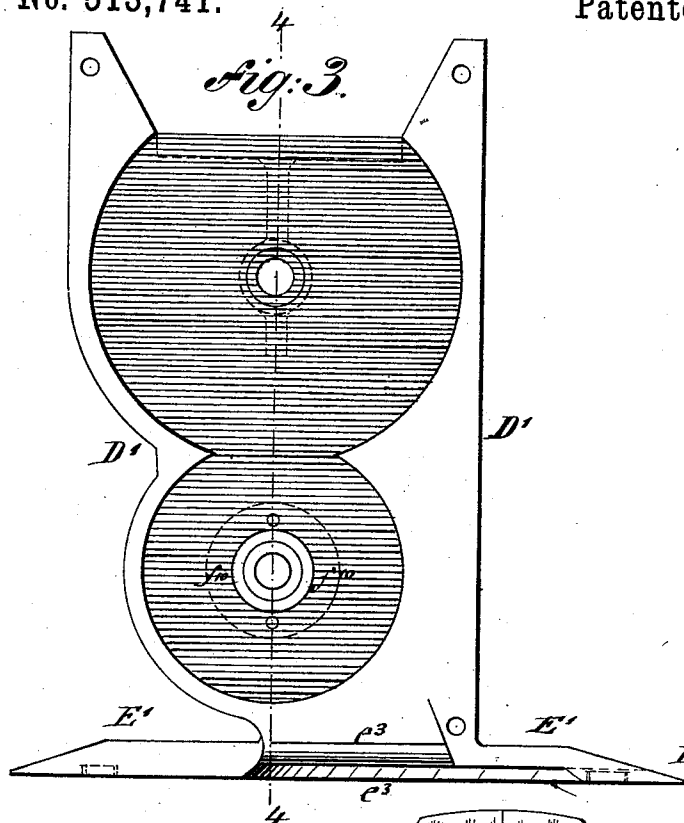
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UNITED STATES PATENT OFFICE.

ARTHUR K. THYLL, OF NEW YORK, N. Y., ASSIGNOR TO THE ELECTRIC CUTTER COMPANY, OF SAME PLACE.

CLOTH-CUTTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 513,741, dated January 30, 1894.

Application filed October 14, 1892. Renewed December 30, 1893. Serial No. 495,262. (No model.)

To all whom it may concern:

Be it known that I, ARTHUR K. THYLL, a subject of the Emperor of Austria-Hungary, residing in the city, county, and State of New York, have invented certain new and useful Improvements in Electric Cloth-Cutters, of which the following is a specification.

This invention has reference to certain improvements in the construction of cloth-cutters of that class in which the motive power is supplied by electricity and the motor forms a part of the casing of the cutter and in which the driving-mechanism by which the power is transmitted to the disk-shaped cutter is so arranged as to impart a uniform and steady motion to the same, while the supporting standard and base are so arranged as to form bearings for the axes of the transmitting-gears and to permit the ready cleaning of the parts from adhering fibers and impurities.

In the accompanying drawings, Figure 1 represents a side-elevation, partly in vertical longitudinal section, of my improved electric cloth-cutting machine. Fig. 2 is a vertical transverse-section of the same on line 2-2, Fig. 1. Fig. 3 is a side-elevation of one of the semi-sections of the supporting standard of my improved cloth-cutting machine. Fig. 4 is a vertical transverse-section through the standards, on line 4-4, Fig. 3, and Fig. 5 is a bottom-view of the base of the cloth-cutter, Figs. 3, 4 and 5 being drawn on a larger scale.

Similar letters of reference indicate corresponding parts.

Referring to the drawings, A represents the casing of my improved electric cloth-cutting machine, which casing is attached to the under side of the pole-pieces of the field-magnets of the electric motor B, which forms the upper part of the cloth-cutter. The shaft B' of the armature of the electric motor B is supported by suitable bearings in vertical position, the step-bearing b being arranged in a bridge b' at the upper part of the casing A. The commutating devices are located at the upper end of the shaft B' and inclosed by a cover A' that is attached to the top part of the pole-pieces of the electric motor, so as to protect said commutating-devices.

To the rear-part of the casing A is attached

a handle C by which the cloth-cutter is directed in its motion into the cloth to be cut.

The current is admitted to the electric motor B by suitable conducting wires, a switch being arranged at any suitable point, preferably at the point of connection of the handle with the casing A, so that the motor can be conveniently stopped and started.

To the bottom-part of the casing A are attached two semi-sections D' D' which together form the supporting-standard D of the cloth-cutter. Each semi-section D' is provided at its lower end with a semi-circular extension E' which is arranged at right angles to the semi-section D' and which together form the base E on which the cloth-cutting device is supported. The semi-section D' of the standard and its semi-circular base-portion E' are made in one integral casting, the upper end of which is attached to the bottom-part of the casing A. The base-portions E' are connected by transverse links or straps e e which are attached by fasteningscrews e' to the under side of the base-portions, said straps and fasteningscrews being arranged in recesses of the base-portions, so as to be flush with the under side of the base and permit their unimpeded motion over the cutting-table.

The semi-sections D' of the standard D are provided with suitable bearings for the shafts of the driving gear-wheels by which motion is transmitted from the shaft of the armature to the axle of the rotary cutting-knife.

The driving-mechanism by which motion is transmitted to the rotary cutter consists of two beveled wheels f f', of which one is keyed to the lower end of the armature-shaft B', while the other wheel f' is placed loosely on a fixed shaft f² that is attached by set-screws f³ to bearings of the casing A, as shown clearly in Fig. 2. The bevel wheel f' is provided at its inner face with a pinion f⁴, which is made of a sufficient width so as to intermesh with two thin gear-wheels f⁵ that are keyed to a short transverse shaft f⁶ which is supported in the upper bearings of the standard D. The thin gear-wheels f⁵ mesh with the gear-wheels f⁷, which are of smaller size, but of the same thickness, and which

are keyed to the opposite sides of a collar f^8 on the axle f^9 of the rotary cutting-knife F. The axle f^9 of the cutting-knife F is supported in disk-shaped detachable bushings f^{10} which form the bearings for the axle and which are fastened near their circumference to the semi-sections D' of the standard by means of screws, as shown clearly in Figs. 2 and 4. The rotary cutting-knife is keyed to the collar f^8 of the axle and can be readily removed from between the semi-sections of the standard by unscrewing the bushings f^{10} and loosening the key by which the knife is attached to the collar of the axle, so that the axle can be removed in lateral direction through the openings in the standards, while the cutting-knife is removed through the throat formed by the semi-sections at the rear-part of the standard D. The base E is beveled at the circumference so as to enter readily under the layers of cloth and present the same to the action of the rotary cutting-knife F. The driving-mechanism described produces the uniform rotation of the cutting-knife in one and the same vertical plane, as the power is imparted to its axle at both sides of the knife, whereby a steady vertical motion is obtained and the wobbling and uneven cutting of the knife prevented.

Another advantage of the driving-mechanism described consists in the fact that the semi-sections of the supporting-standard are close together, so that the layers of cloth as they are cut by the knife are readily parted and moved past the standard. This arrangement also permits the cutting of a greater number of layers or of layers of greater thickness as compared to the rotary cloth-cutters heretofore in use, for the reason that the cutting-knife can readily cut through a large number of layers of cloth, even if the thickness of the same be greater than the radius of the cutting-knife, as indicated in Fig. 1.

The under side of the base E is provided with sector-shaped recesses e^2 which extend at the rear-part of the base from both sides of the gradually widening center-slot e^3 , into which the lower part of the cutting-knife extends. The edges of the recesses e^2 converge from the circumference of the rear-part of the base toward the center-line of the same, as shown clearly in Fig. 5, said recesses serving for the purpose of producing the clearance of any threads, fibers and other matters that accumulate during the working of the cloth-cutter. The base is from time to time cleaned from the accumulations of fibers, &c., which to some extent are passed off along the converging edges of the recesses and removed by a brush.

To the front part of the casing is applied an incandescent electric lamp L, the upper part of which is coated with a suitable reflecting material, so that the light of the lamp is thrown in downward direction on the pat-

tern-lines of the cloth to be cut, whereby the cutter can be more conveniently operated in badly-lighted shops or in the evening hours. Said electric lamp receives its current from the main-conductors.

My improved electric cloth-cutter is handled with great facility, the cloth being evenly cut and passed smoothly along both sides of the narrow supporting-standard, the driving-gear producing the uniform motion of the knife, so that a reliable and even cut through the layers of cloth is obtained.

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

1. The combination, of an electric motor, a casing for said motor, a standard, supporting said casing and motor and formed of two semi-sections, each section being provided with a base-portion extending at right angles therefrom, a cutter-disk supported in bearings of the standard, and driving-mechanism interposed between the armature-shaft of the motor and the axle of the cutter-disk, substantially as set forth.

2. The combination, with the armature-shaft of the electric motor, of bevel-gears, one of which is attached to the armature-shaft and the other to a transverse shaft below the same, a pinion attached to the face of the bevel-wheel on the transverse shaft, an intermediate shaft provided with thin gear-wheels both meshing with said pinion, and a cutter-disk, the shaft of which is provided at both sides of the disk with gear-wheels meshing with the gear-wheels of the intermediate shaft, substantially as set forth.

3. The combination, with the casing and electric motor supported thereon, of a standard attached to the bottom of said casing, said standard being composed of two semi-sections, each of which is provided with bearings for the shafts of the driving-gears and with a base-portion extending at right angles to said section, substantially as set forth.

4. An electric cloth cutter supported by a standard composed of two semi-sections, each provided with a semi-base portion, links flush with the face of said base for connecting said base portions, said base portions being provided with recesses converging from the rear part of the base toward the longitudinal center slot for the cutter disk, substantially as set forth.

5. In an electric cloth cutter, the combination of a supporting standard composed of two semi-sections provided with registering openings, detachable bushings inserted in said openings, an axle journaled in said bushings, and a rotary cutting disk detachably connected with said axle, substantially as set forth.

6. An electric cloth-cutter, supported by a standard formed of two semi-sections, each provided with a semi-circular base-portion,

means for connecting said base-portions, and
recesses at the rear-part of the base, said re-
cesses being arranged so as to converge from
the rear-part toward the longitudinal center-
5 slot for the cutter-disk, substantially as set
forth.

7. An electric cloth-cutter, the base of which
is provided with a sector-shaped recess ex-
tending at both sides of the longitudinal cen-
10 ter-slit for the cutting-knife from a point in

front of the center of the base toward the rear
part of the same, substantially as set forth.

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

ARTHUR K. THYLL.

Witnesses:

PAUL GOEPEL,

CHARLES SCHROEDER.