

(No Model.)

F. H. CALDWELL.
CLOTH CUTTING MACHINE.

No. 563,741.

Patented July 14, 1896.

Fig. 1.

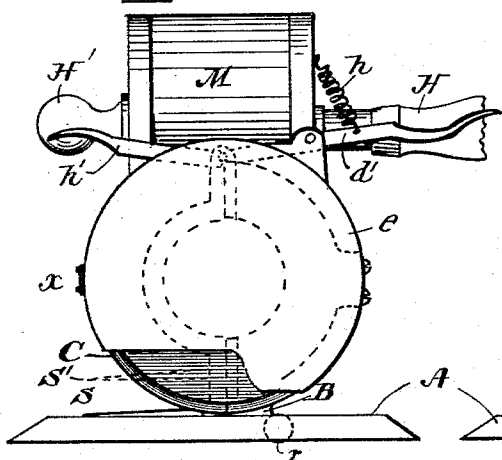


Fig. 2.

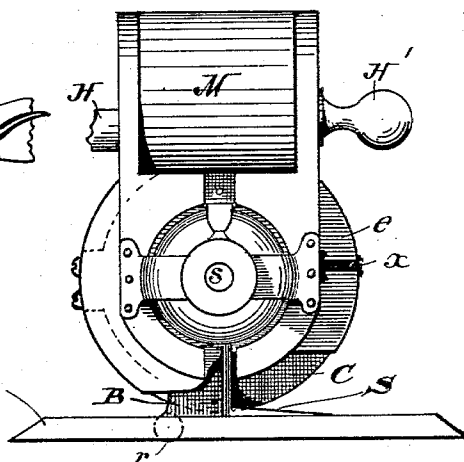


Fig. 3.

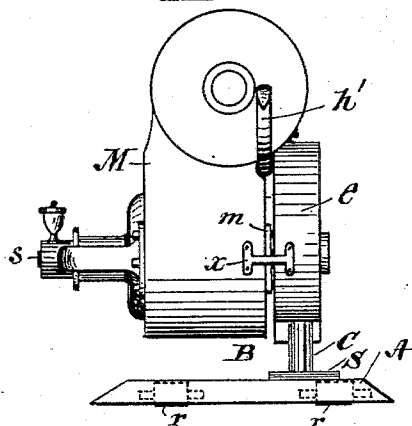


Fig. 4.

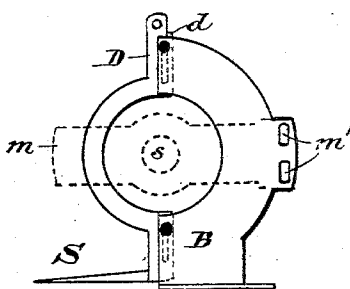
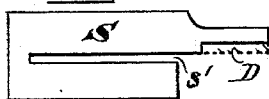


Fig. 5.



Witnesses:

A. H. Shrasher

Frank H. Caldwell

Frank H. Caldwell

Inventor

by L. M. Hoesa Atty.

UNITED STATES PATENT OFFICE.

FRANK H. CALDWELL, OF DAYTON, KENTUCKY, ASSIGNOR OF ONE-HALF
TO HARVEY PALMER, OF CINCINNATI, OHIO.

CLOTH-CUTTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 563,741, dated July 14, 1896.

Application filed January 6, 1896. Serial No. 574,409. (No model.)

To all whom it may concern:

Be it known that I, FRANK H. CALDWELL, a citizen of the United States, residing at Dayton, Campbell county, Kentucky, have invented new and useful Improvements in Cloth-Cutting Machines, of which the following is a specification.

My invention relates to cloth-cutting machines, its object being to simplify and improve the construction and enhance the efficiency of these implements in several particulars.

To these ends it consists in the cloth-cutting machine hereinafter described, embodying a movable base-plate with a supporting-standard rising therefrom, to which is adjustably attached a rotary electric motor and a cloth-cutting disk carried upon and driven by the armature-shaft of said motor, and in the combination, with said cloth-cutting disk, of a vertically-moving shoe, by whose manipulation the cloth can be raised against the cutter to prolong the cut when the machine itself is stationary, and in certain details of construction, all as herein set forth.

Mechanism embodying my invention is illustrated in the accompanying drawings, in which—

Figures 1 and 2 are opposite side elevations of my improved cloth-cutting machine. Fig. 3 is a front view; Fig. 4, a side elevation of the base-plate and supporting-standard, showing the shoe-raising device; Fig. 5, a plan view of the shoe.

Referring now to the drawings, A designates a base-plate adapted to be moved by hand over a table, and B a standard attached thereto and rising therefrom as a support for the working parts of the machine, consisting of an electric motor M, cutting-disk C, &c., hereinafter more particularly described.

The base-plate A is substantially rectangular in form, with beveled edges, and is provided with two rollers *r*, slightly after the center cross-line, as indicated by dotted lines in Figs. 1, 2, and 3, projecting very slightly below the bottom to ease the movements of the base-plate and facilitate turning.

The standard B is curved rearward in semi-circular form, as indicated in Fig. 4, and may be integral with the base-plate or attached

thereto by nuts and screws. The front side of the standard is slotted vertically to admit guide-tongues *d* of a vertical arm D, to the lower end of which is attached a shoe S, whose function will be described later.

To the standard B is attached an electric motor M, of any suitable description, in such relations that the shafts will be substantially eccentric with the curvature of the standard B, and project across and beyond the standard to carry the cutting-disk C, adjacent to the opposite face of the latter. The motor is attached to the standard B by the cross-plate *m* of the motor forming one of the bearings of the shaft *s*. The connection is made by bolts passing through slots *m'*, Fig. 4, permitting a vertical adjustment of the cutter in relation to the base-plate to compensate for wear, &c., of the cutter.

The cutting-disk C is mounted directly upon the armature-shaft *s* of the electric motor M. Its outer edge is beveled in the usual manner and operates in an open slot *s'* of the shoe S, Figs. 1 and 5.

The shoe S is a wedge-shaped plate lying upon the base A in front of and at both sides of the cutter C and normally guides the cloth by an upwardly-inclined path to the cutting edge of the cutter C, as indicated in Figs. 1 and 2. It is attached, as already explained, to the lower end of the arm D, which is held and guided in the standard B with a limited vertical play as compelled by a pivoted lever *d'*, adjacent to the main cutting-handle H of the machine. A spring *h*, connecting said lever with the motor-casing, normally holds the lever elevated and the shoe depressed. The lifting function of the shoe is to continue the cut of the machine to an exact point or line, or to cut into a corner or angle without danger of overrunning the desired limit. To this end the bodily movement of the machine is stopped short of the desired line or point and the remainder of the cut effected by elevating the cloth against the cutter by means of the shoe, as indicated by the position S' of the shoe in dotted lines, Fig. 1. By this means an exact cut is assured to any point desired. Otherwise, in the movement of the entire machine against the uncertain resistance of friction, &c., it is difficult to stop the

movement with accuracy in all cases and dangerous to lift the cloth by hand.

I also provide at the front side of the machine a supplemental knob or handle *H'* and a supplemental lever *h'*, connected to the elevating-arm *D* in actuating proximity thereto, so that the operator may move and operate the machine with equal facility by seizing either handle.

To protect the working parts of the machine and prevent any accidental injury to persons, I inclose the outer side and edges of the cutter in a shallow cylindrical casing *e*, continuous except at the lower edge of the cutter, as indicated in Figs. 1 and 3. The casing is supported in any convenient manner, as by screws upon the rear of the standard *B*, which it incloses, upon the casing of the field-magnet of the motor, and by an arm or extension upon the front field-piece of the motor, as shown.

The general operation of the device is sufficiently obvious and its special relation to corners and the like has been described. The particular advantages of its use arise from the simplicity of construction and the direct application of the rotatory motive power to the cutting-disk, whereby all lost motion and wear of gear-wheels and connections is avoided and the machine is noiseless in its operation. Further than this, the center of gravity of the entire machine is brought to the lowest point, and top-heaviness is thus avoided. I am thus enabled to employ a relatively larger cutting-disk with relatively higher speed at the cutting edge, and also move the actual cutting-point farther forward of the vertical plane of the axis without detriment to the ease of cutting, whereby the manipulation of the machine is greatly facilitated. Lastly, the expense of construction and maintenance is much reduced.

I claim as my invention and desire to secure by Letters Patent of the United States—

1. In a cloth-cutting machine the combina-

tion of a base-plate, a vertical standard attached to and rising therefrom, a rotary electric motor attached to one side of the standard and projecting its armature-shaft beyond the same, and a cutting-disk secured upon and rotated by the shaft at the side of the standard opposite the motor, substantially as set forth.

2. In a cloth-cutting machine the combination of a base-plate, a vertical standard secured to and rising therefrom, a rotary electric motor attached to one side of said standard and projecting its armature-shaft beyond the same, a cutting-disk secured upon and rotated by the said armature-shaft at the side of the standard opposite the motor, and means for securing the motor and cutting-disk to the supporting-standard adjustably in relation to the base-plate, substantially as set forth.

3. A cloth-cutting machine, embodying the following elements in combination, viz: a base-plate; a vertical standard rising therefrom; a rotary electric motor attached at one side of said standard and a disk-cutter attached directly to the armature-shaft of the motor at the opposite side of said standard; an operating-handle projecting rearwardly from said machine; an elevating-shoe, having a vertical shank held and guided upon and in front of the standard; and an operating-lever connected with said shank and projected rearward alongside of the main operating-handle, whereby the machine is conveniently controlled and the shoe operated by one hand of the operator, leaving the other free to manipulate the cloth, substantially as and for the purpose specified.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

FRANK H. CALDWELL.

Witnesses:

L. M. HOSEA,

FRANK K. BURMAN.