

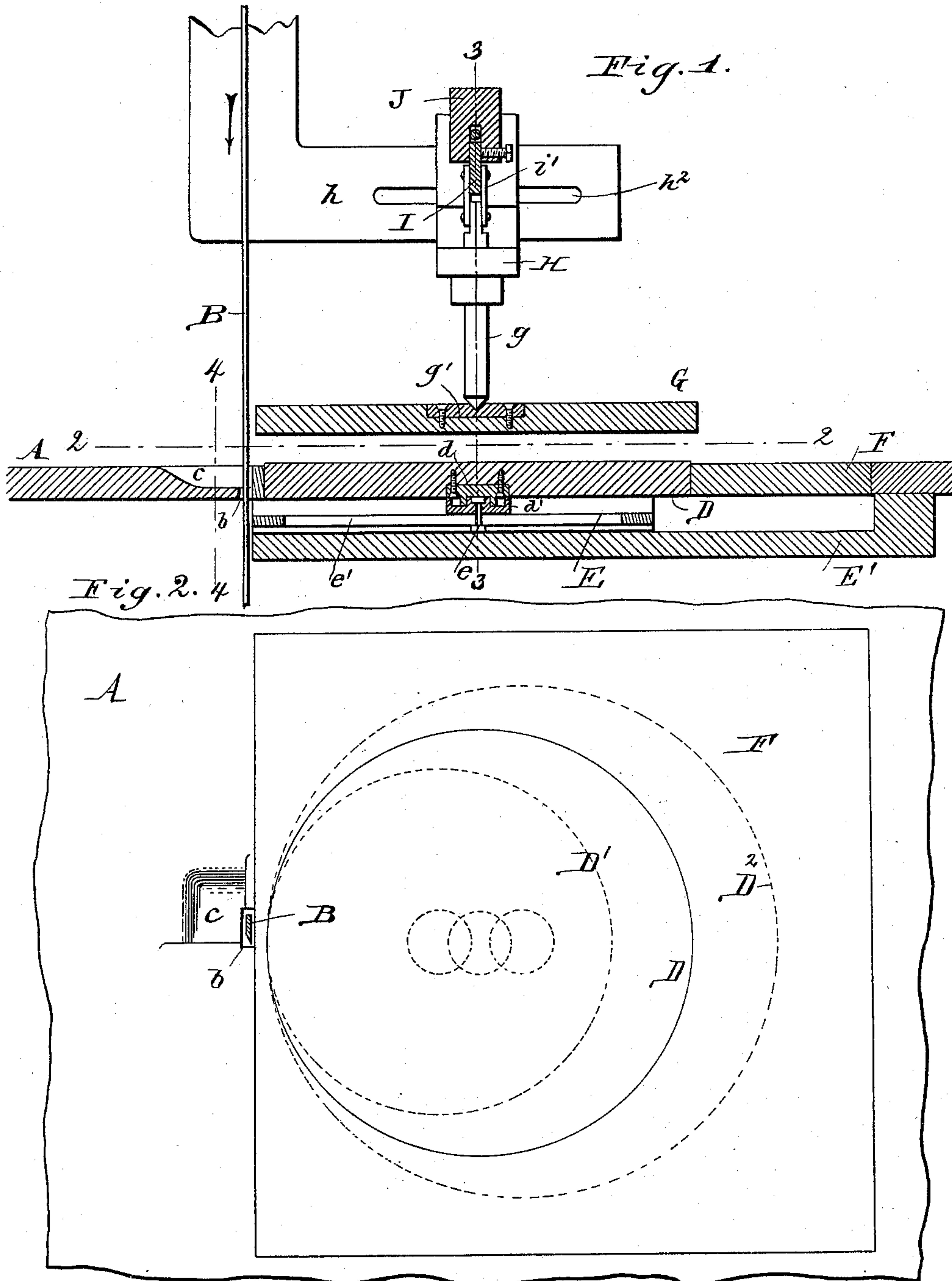
(No Model.)

2 Sheets—Sheet 1.

G. CASTLE.
CLOTH CUTTING MACHINE.

No. 596,738.

Patented Jan. 4, 1898.



Witnesses:
F. Gustav Wilhelm.
Thos. L. Popp.

G. Castle Inventor.
By Wilhelm Popp
Attorneys.

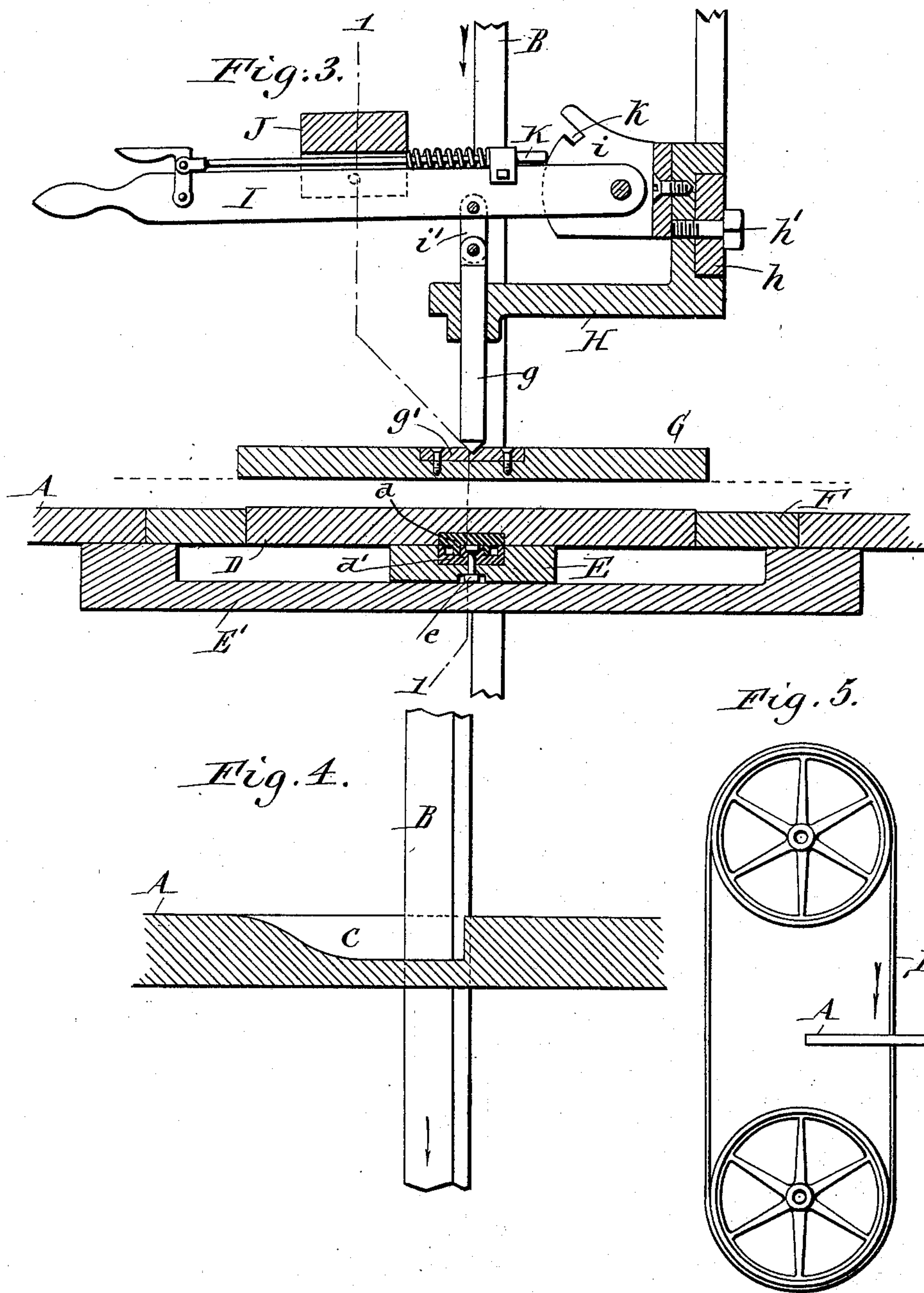
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Thos. L. Popp.
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UNITED STATES PATENT OFFICE.

GOSWIN CASTLE, OF ROME, NEW YORK.

CLOTH-CUTTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 596,738, dated January 4, 1898.

Application filed May 2, 1893. Serial No. 472,701. (No model.)

To all whom it may concern:

Be it known that I, GOSWIN CASTLE, a citizen of the United States, residing at Rome, in the county of Oneida and State of New York, have invented new and useful Improvements in Machines for Cutting Cloth, of which the following is a specification.

This invention relates to a machine for cutting cloth and similar material, and has the object to produce a machine for this purpose by which numerous superposed layers of cloth can be expeditiously cut into the desired form.

In the accompanying drawings, consisting of two sheets, Figure 1 is a fragmentary sectional elevation of my improved cutting-machine, the section being taken in line 1 1, Fig. 3. Fig. 2 is a horizontal section in line 2 2, Fig. 1. Fig. 3 is a cross-section in line 3 3, Fig. 1. Fig. 4 is a cross-section, on an enlarged scale, in line 4 4, Fig. 1. Fig. 5 is a diagram showing the endless knife in front elevation.

Like letters of reference refer to like parts in the several figures.

A represents a table which is supported on the main frame of the machine in any suitable manner and upon which the pile of cloth, fabric, or other goods to be cut is placed.

B represents an endless knife or toothless cutter, consisting of a thin steel band, having its front edge beveled or sharpened to a cutting edge. This endless knife passes with its operative portion downwardly through an opening *b* in the table and with its upper and lower portions around pulleys in the same manner as a band-saw, as indicated in Fig. 5.

The opening *b* extends on the inner or flat side of the knife unbroken from the upper to the lower surface of the table, but opens on the outer or beveled side of the knife into a recess *c*, formed in the upper portion of the table and extending outwardly and rearwardly from the beveled side of the knife, so that the knife is confined between the two edges of the opening *b* to a much less height on its outer or beveled side than it is on its inner or straight side. This permits the portion of the cloth which passes on the outer side of the knife to release itself from the knife and prevents the cloth from hugging the outer

side of the knife, whereby considerable friction would be created and particles of thread or shreds of the cloth would be carried down into the opening, which would become clogged thereby.

The endless knife travels constantly in one direction and upon moving the pile of cloth or other material against its cutting edge the material is cut into the desired form without fraying the edges of the superposed layers of fabric. The endless knife can be easily sharpened when dulled and is cheaply renewed when worn out.

When the endless knife is used for cutting piled cloth into disks—such, for instance, as cheese-caps—a revoluble clamping or supporting device is employed, which is constructed as follows:

D represents a supporting disk or plate which is arranged with its periphery adjacent to the endless knife and with its upper surface flush with or slightly above the table. The supporting-disk is pivotally supported at its center, so that all parts of its periphery can be brought adjacent to the knife by turning the disk. This pivotal support is composed of a pivot-plate *d*, secured to the under side of the disk and resting on a similar plate *d'*, the lower plate *d'* being provided with a central hub which enters a corresponding cavity in the upper plate *d*. The lower plate rests upon a slotted bar E, arranged underneath the table and extending laterally from near the inner side of the band-knife. The lower pivot-plate *d'* is adjustably secured to this bar by a vertical bolt *e*, passing through the lower plate and a longitudinal slot *e'*, formed in the bar, so that the pivotal point can be adjusted toward and from the knife for cutting the material into disks of different diameters.

F represents a rectangular frame having a circular opening by which it incloses the supporting-disk and which fits into a correspondingly-shaped seat formed in the top of the table.

The slotted bar E is secured to a frame E', which is secured to the under side of the table and bridges the opening in which the supporting-disk and its inclosing frame are arranged. This supporting-frame also sup-

ports the frame inclosing the disk. This inclosing frame is removable and is replaced by another frame of the same outline, but having a larger or smaller opening when a larger or smaller disk is substituted.

G represents a pressure disk or plate which presses against the top of the pile of cloth on the supporting-disk and which is arranged axially above the supporting-disk.

g represents a vertically-movable centering-pin which rests with its lower conical end in a socket-plate g' , secured centrally to the upperside of the pressure-disk. This centering-pin is guided in the front end of a bracket H, which is adjustably secured at its rear end to an arm h of the main frame by a bolt h' , passing through a horizontal slot h^2 in said arm.

I represents a hand-lever which is pivoted with its rear end to a segment i , secured to the bracket. The centering-pin is connected at its upper end with the hand-lever by links i' , so that the hand-lever and centering-pin move vertically together. The weight of the hand-lever and connecting parts hold the pressure-disk down upon the pile of cloth, but an additional pressure is preferably applied by a weight J, which is secured to the hand-lever.

K represents a sliding spring-bolt which is adapted to engage with a notch k in the segment and hold the hand-lever in an elevated position.

In operating the machine when cutting cheese-cloth caps the bolt of cloth, consisting of a number of layers, is placed on the supporting-disk, the pressure-disk is placed upon the cloth, and the centering-pin is lowered upon the pressure-disk. Upon turning the disks and the cloth by hand the cloth is moved against the edge of the endless knife and cut. By turning the cloth a complete revolution a pile of disks is cut from the pile of cloth. Upon raising the centering-pin and removing the pressure-disk the cloth can be shifted for cutting a pile of circular cloth disks from another portion of the cloth-bolt.

For the purpose of cutting cloth disks of different diameters the pivots of the upper and lower plates are moved toward or from the cutter until the desired radius of the cloth disks is obtained between the pivots of the plates and the cutter. It is desirable to extend the rotary support of the cloth closely to the cutter, and in order to enable this to be done when cutting cloth disks of different diameter a number of supporting-plates of different diameters is kept on hand, the plate having a size suited to the desired diameter of the cloth disks being placed on the lower plate-pivot. In order to properly fill the space between the periphery of the lower supporting-plate and the table when changing from one size of plate to another, a number of filling-frames F are kept on hand, each of which fits with its outer edge into the opening of the table and is provided with a cir-

cular opening of the proper size and location to receive one of the lower supporting-plates.

When it is desired to cut cloth disks of a radius smaller than the distance between the cutter and the pivots of the supporting-plates in Fig. 1, a smaller lower supporting-disk is employed, as shown, for instance, by the dotted line D' , Fig. 2, and when it is desired to cut cloth disks of a larger radius a larger lower supporting-plate is employed, as shown, for instance, by the dotted line D^2 , Fig. 2. The upper plate G may be interchanged in the same way; but for small differences in the size of disks this is not necessary, as a small plate may be employed which will hold the cloth sufficiently firm on the lower plate, the cloth in being cut finding its support on the lower plate and on the filling-frame F and table surrounding the lower plate.

I claim as my invention—

1. The combination with an endless band-knife provided with a bevel on one of its faces at the cutting edge, of a table adapted to support the material to be cut and provided with an opening through which the knife moves and with a depression in its upper surface on that side of the opening which is adjacent to the bevel of the knife, substantially as set forth.

2. In a cutting-machine, the combination with a supporting-table, of a lower rotary clamping-plate arranged within said table and surrounded by the same, an upper rotary clamping-plate unconnected with said lower plate, and a vertically-movable cutter arranged on one side of said clamping-plates, whereby the material to be cut is clamped between said plates and supported outside of the same on said table and is carried past the cutter by the rotary movement of said plates, substantially as set forth.

3. In a machine for cutting cloth, the combination with a cutter, of a pivotal support for a lower rotary clamping-plate arranged on one side of the cutter and made adjustable toward and from the cutter, interchangeable lower clamping-plates adapted to be placed on said support, an upper clamping device and a table in which the lower clamping-plates are arranged and which is adapted to support the cloth outside of the lower clamping-plate and adjacent to the cutter, substantially as set forth.

4. In a machine for cutting cloth, the combination with a cutter, of a table adapted to support the cloth adjacent to the cutter, a slotted bar secured within the table and extending away from the cutter, a pivotal support adjustably attached to said bar, a lower clamping-plate provided on its under side with a pivot-plate which rests loosely on said pivotal support, and an upper clamping device, substantially as set forth.

5. In a machine for cutting cloth, the combination with a cutter, of a lower rotary clamping-plate arranged on one side of the cutter, a pivotal support for said plate made

adjustable toward and from the cutter, a pressure-plate arranged above said clamping-plate and provided with a centering-pin, a guide-bracket in which said pin is mounted
5 and which is adjustable toward and from the cutter, a lever pivoted to said bracket and connected with said pin, and a table in which said lower clamping-plate is arranged and in

which its support can be adjusted toward and from the cutter, substantially as set forth. 10

Witness my hand this 28th day of April, 1893.

GOSWIN CASTLE.

Witnesses:

R. W. JACOBS,
K. S. PUTNAM.