

No. 674,922.

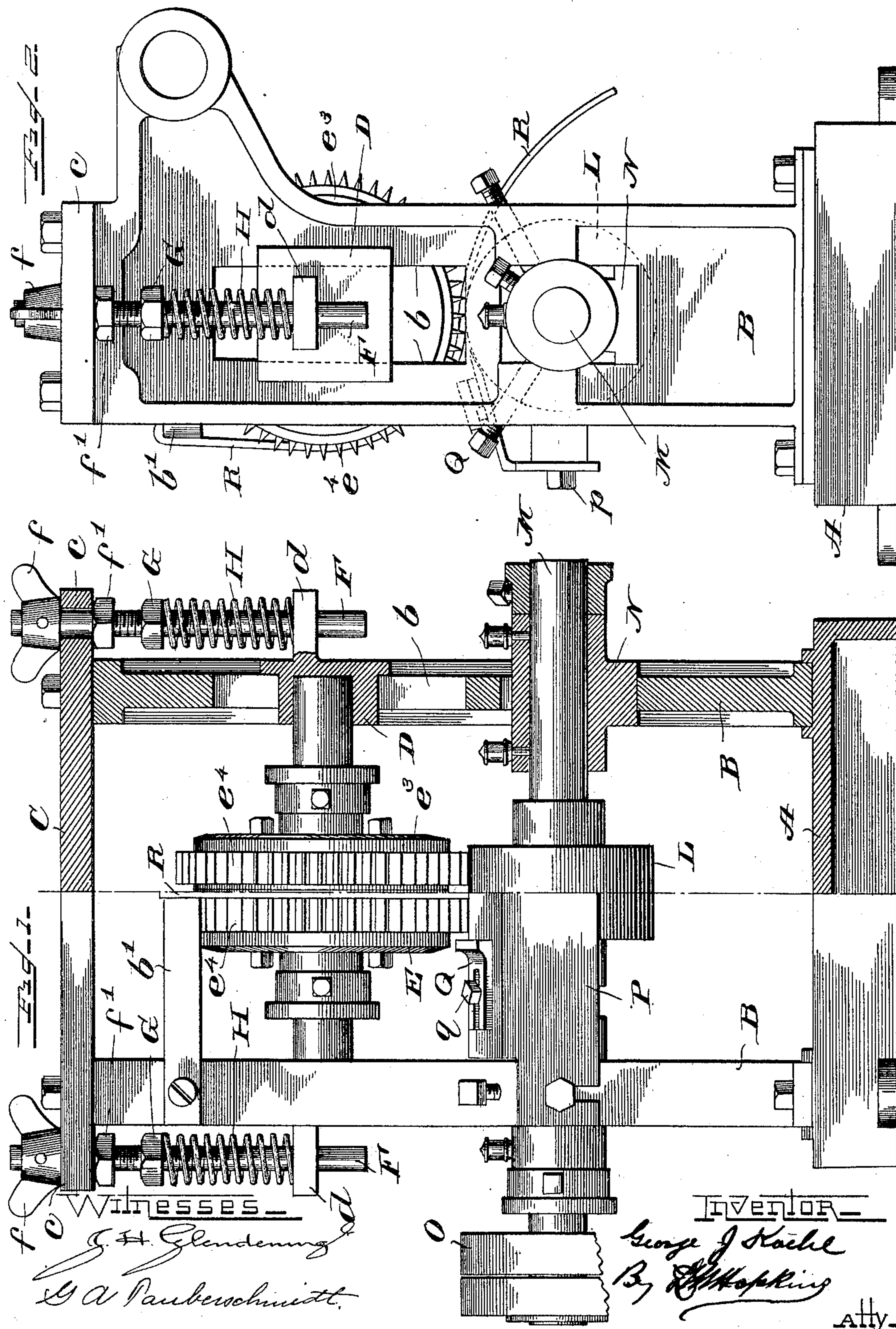
Patented May 28, 1901.

G. J. KOEHL.
RAVELING MACHINE.

(Application filed Nov. 7, 1900.)

(No Model.)

2 Sheets—Sheet 1.



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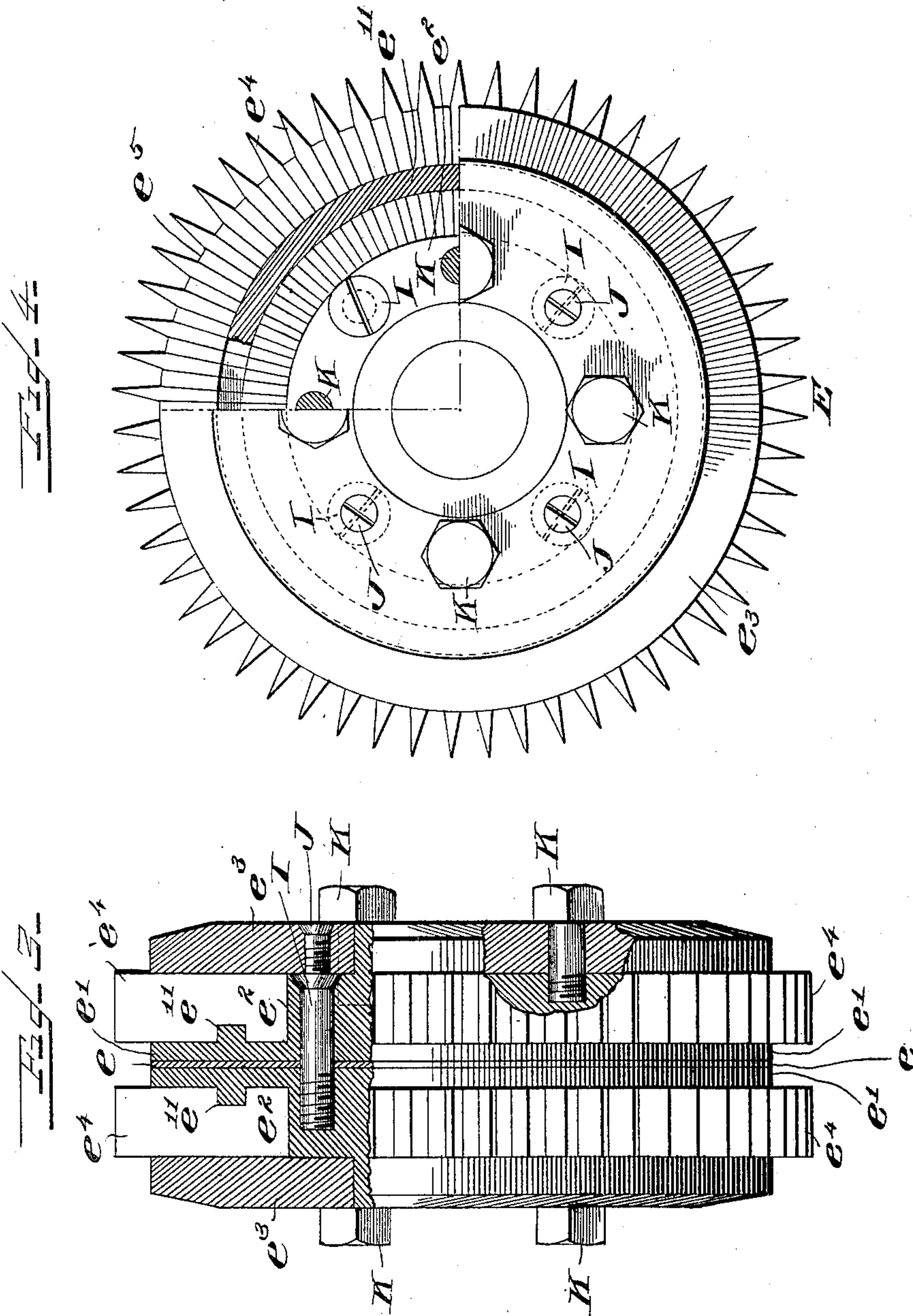
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2 Sheets—Sheet 2.



WITNESSES

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UNITED STATES PATENT OFFICE.

GEORGE J. KOEHL, OF CHICAGO, ILLINOIS.

RAVELING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 674,922, dated May 28, 1901.

Application filed November 7, 1900. Serial No. 35,731. (No model.)

To all whom it may concern:

Be it known that I, GEORGE J. KOEHL, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Raveling-Machines, of which the following is a specification.

The present invention relates to that class of machines that are used for slashing the edges of strips of fabric that are to be again woven into rugs, carpets, and the like for the purpose of raveling the edges of the strips, so that when rewoven the new fabric will have a pile.

The invention relates in part to the general construction of the machine and in part to the construction of the cutter; and it consists in the several features of novelty that are hereinafter described. In order that it may be fully understood, I will describe it with reference to the accompanying drawings, which are made part hereof, and in which—

Figure 1 is a sectional elevation of a raveling-machine embodying the invention, the left side of the machine being shown in elevation and the right side partly in elevation and partly in section, the section being taken in the axial plane of the cutter. Fig. 2 is a side elevation of said machine. Figs. 3 and 4 are views of the cutter, partly in elevation and partly in section.

A represents the base, B the standards, and C the cross-head of the frame, said parts being preferably cast separately and secured together by bolts. The standards are provided with vertical guides *b*, between which fit the boxes D, in which is journaled the shaft of the cutter E, said boxes having lugs or ears *d*, perforated for the passage of rods F, which are swiveled in extensions *c* of the cross-head C and provided at their upper ends above said extensions with heads *f*, whereby they may be turned. In order to prevent the upward movement of the rods, nuts *f'* are turned onto them below the extensions *c*, and below these nuts *f'* other nuts G are turned onto them, these latter nuts being adjustable upon the rods for the purpose of regulating the tension of coiled springs H, which surround the rods between said nuts and the perforated extensions *d* of the boxes

D. By this means the cutter is held down by a yielding force, which force may be regulated by adjusting the nuts G on the rods F. The cutter is built up of a central disk *e*, a pair of disks *e'*, located upon opposite sides of the disk *e*, each of said disks *e'* being provided with an annular rib *e''* and with a hub *e²*, a second pair of disks *e³*, a number of cutting-blades *e⁴*, each provided with a notch for receiving the annular rib *e''*, and, if desired, a number of spacing-blocks *e⁵*, arranged between the cutting-blades for the purpose of spacing them. One of the disks *e'* has through its hub *e²* four or more perforations for the passage of screws I, and the other of said disks is tapped for the reception of said screws, so that by turning up the several screws I the two disks *e'* are drawn tightly together, clamping the disk *e* between them, this latter disk being provided with perforations for the passage of the screws I. The disk *e* is for the purpose of spacing the two annular groups of cutting-blades *e⁴*, and to this end it may be of any desired thickness, or more than one may be used. For the purpose of preventing the screws I from working loose the disks *e³* are provided with threaded openings for the reception of screws J, that come in contact with the ends of the screws I and prevent them from backing out. For the purpose of holding the disks *e³* in place, and thereby confining the cutting-blades *e⁴* between said disks and the disks *e'*, each of the disks *e³* is provided with openings for the passage of bolts K, that are tapped into the hubs *e²* of the disks *e'*. With this construction the two annular groups of cutting-blades may be placed at any desired distance apart, the cutting-blades of each group may be spaced any desired distance apart, and if a blade should become broken or otherwise damaged it can be easily and quickly removed and a new one put in its place.

The cutter derives its rotation from a bed-roll L, having a perfectly smooth surface, said bed-roll being mounted upon a shaft M, journaled in boxes N, secured in the standards B, said shaft being provided with a pulley O or other device, through the medium of which motion is imparted to it. Heretofore in machines of the class to which the present invention belongs it has been custom-

ary to positively rotate both the bed-roll and the cutter; but I find that better results are obtained by positively rotating the bed-roll and allowing the cutter to derive its rotation
 5 from the bed-roll simply by the frictional contact of its blades therewith. Furthermore, in machines of this class as heretofore constructed the cutter has been held to its work by set-screws, which do not permit of its
 10 yielding in order to accommodate itself to variations in the thickness of the material upon which it is operating; but I find that better results are obtained by holding the cutter to its work with a yielding force.

15 In order to guide the strip of fabric, a table P is adjustably secured to the frame by means of bolts *p*, and upon each side of this table a guide Q is adjustably secured by means of bolts *q*, so that the table as a whole
 20 may be adjusted vertically, and the guides Q may be adjusted toward and from each other for the purpose of bringing them to the desired distance apart. Only one of the guides Q is shown in the drawings; but it will be understood that the other one is similar to the
 25 one shown, the two being equidistant from the central plane of the cutter.

For the purpose of shedding the strip after it has passed the cutter and preventing it
 30 from clinging to the cutter I dispose a shedder R in the space between the two groups of cutting-blades, said shedder being simply a strip of spring-steel suspended from a cross-bar *b'* of the frame and passing downward in
 35 front of the cutter and thence between the cutter and bed-roll, beyond which its end is deflected downward, as shown more clearly in Fig. 2.

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

1. In a machine of the class described, the combination with a bed-roll and means for revolving it, of a cutter having an annular
 45 group of cutting-blades, said blades having contact with the bed-roll whereby the cutter derives its rotation from the bed-roll, a shaft carrying the cutter, boxes in which the shaft is journaled, stems passing through perfora-
 50 tions in the boxes, springs surrounding the stems and engaging the boxes, and means for regulating the tension of the springs, substantially as set forth.

2. In a machine of the class described, the combination with a bed-roll and means for revolving it, of a cutter having an annular
 55 group of cutting-blades, said blades being in frictional contact with the bed-roll whereby the cutter derives its rotation from the bed-

roll, a shaft carrying the cutter, boxes in
 60 which the shaft is journaled, said boxes having perforated extensions, rods occupying said extensions, springs surrounding the rods and engaging the extensions, and nuts turned
 65 onto the threaded portions of the rods and engaging the springs whereby the tension of the springs may be adjusted, substantially as set forth.

3. In a machine of the class described, a cutter made up of a disk having an annular
 70 flange and having a hub, a group of cutting-blades disposed radially with respect to the hub and in planes parallel with the axis thereof, said blades having notches for receiving
 75 said annular flange, a second disk engaging the blades, and means for holding the two disks together, substantially as set forth.

4. In a machine of the class described, a cutter having a disk provided with an annular
 80 flange, and a hub, a number of cutting-blades disposed radially with respect to the hub and having notches for receiving said annular flange, said blades being arranged in an
 85 annular group, a number of spacing-blocks disposed between the cutting-blades, a second disk engaging the cutting-blades and spacing-blocks, and means for holding the two disks together, substantially as set forth.

5. In a machine of the class described, a cutter having two annular groups of cutting-
 90 blades, a pair of disks between which the blades of each group are secured, and means for securing together the inner disks of the two pairs, substantially as set forth.

6. In a machine of the class described, a
 95 cutter having two annular groups of cutting-blades, a pair of disks between which the blades of each group are secured, a spacing-disk arranged between the inner disks of the
 100 two pairs, and means for securing said inner disks together and clamping the blades and spacing-disk between them, substantially as set forth.

7. In a machine of the class described, a cutter having two annular groups of cutting-
 105 blades, two disks *e'* having annular flanges *e''* and hubs *e²*, the blades being provided with notches for receiving the flanges *e''*, a pair of disks *e³* engaging the blades, means for securing the disks *e³* to the disks *e'*, a spacing-
 110 disk arranged between the disks *e'*, and screws I passing through the hub of one of the disks *e'* and tapped into the hub of the other disks *e'*, substantially as set forth.

GEORGE J. KOEHL.

Witnesses:

L. M. HOPKINS,
 OLAF TOLLAGSEN.