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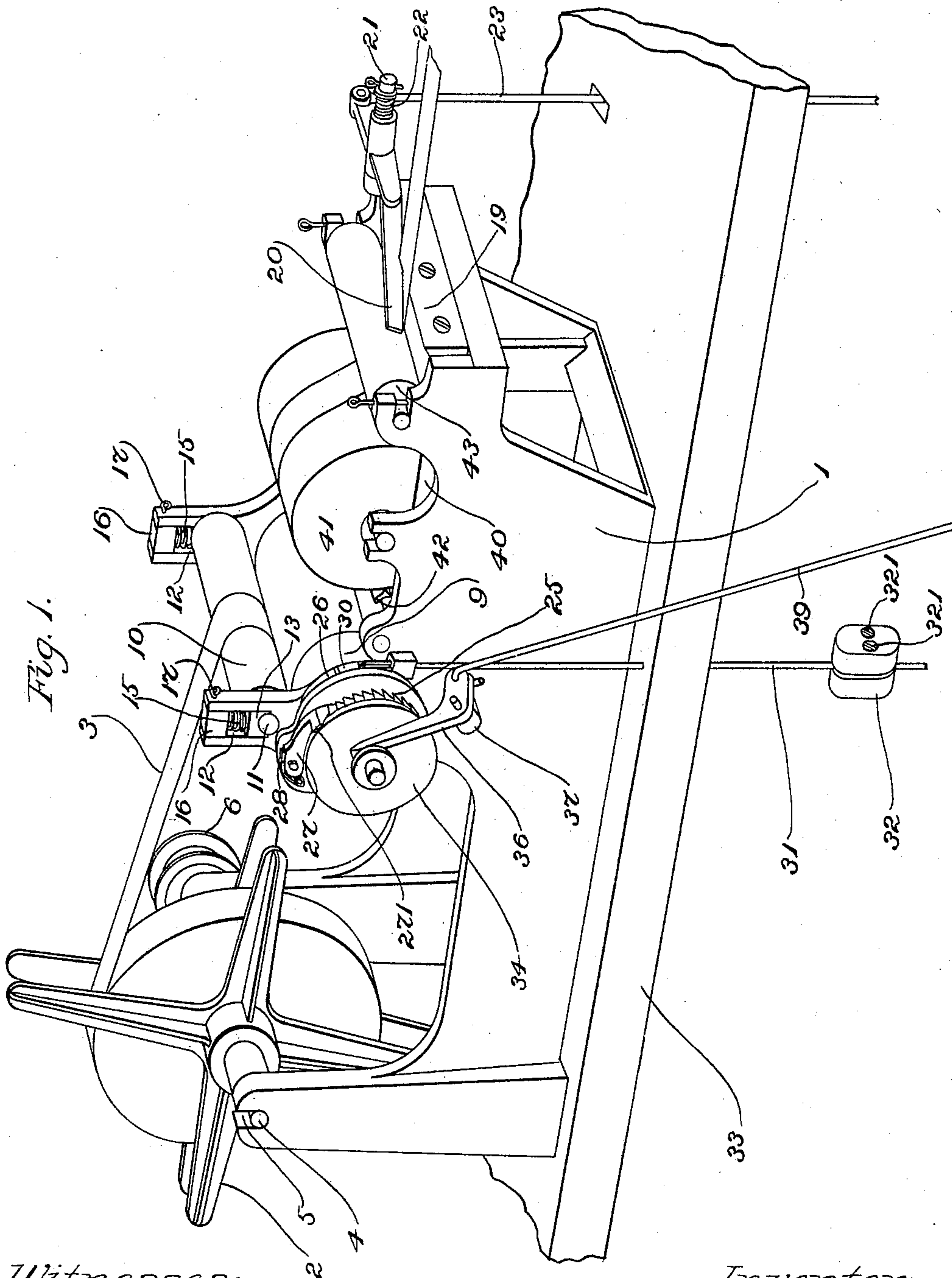
Patented July 19, 1898.

C. H. CROWELL.  
MACHINE FOR CUTTING CLOTH.

(Application filed July 17, 1897.)

(No Model.)

3 Sheets—Sheet 1.



Witnesses:

Oscar F. Bill  
Edith J. Anderson.

Inventor:

Chas. H. Crowell  
by Skelton, Calver & Randall  
Attorneys.

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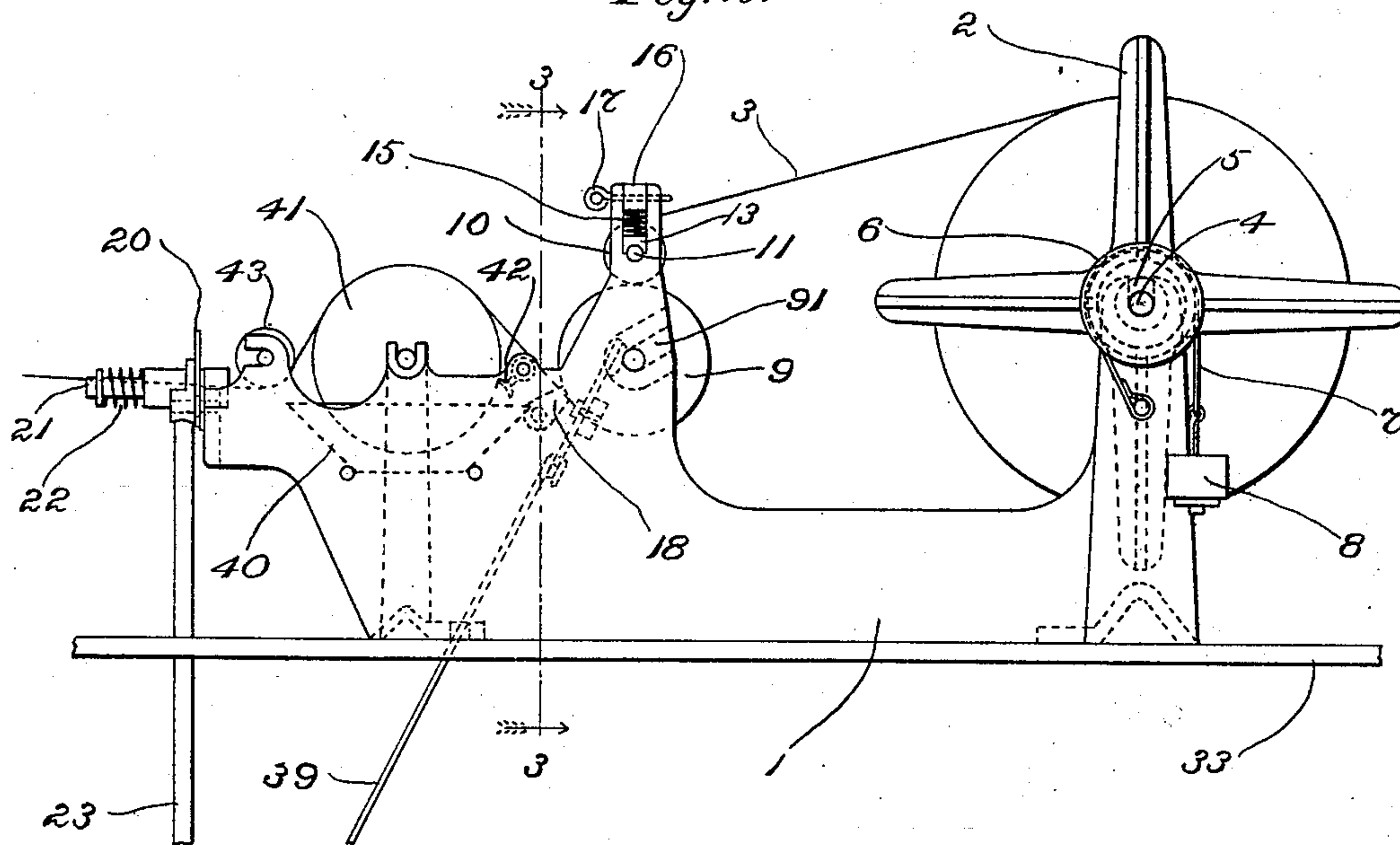
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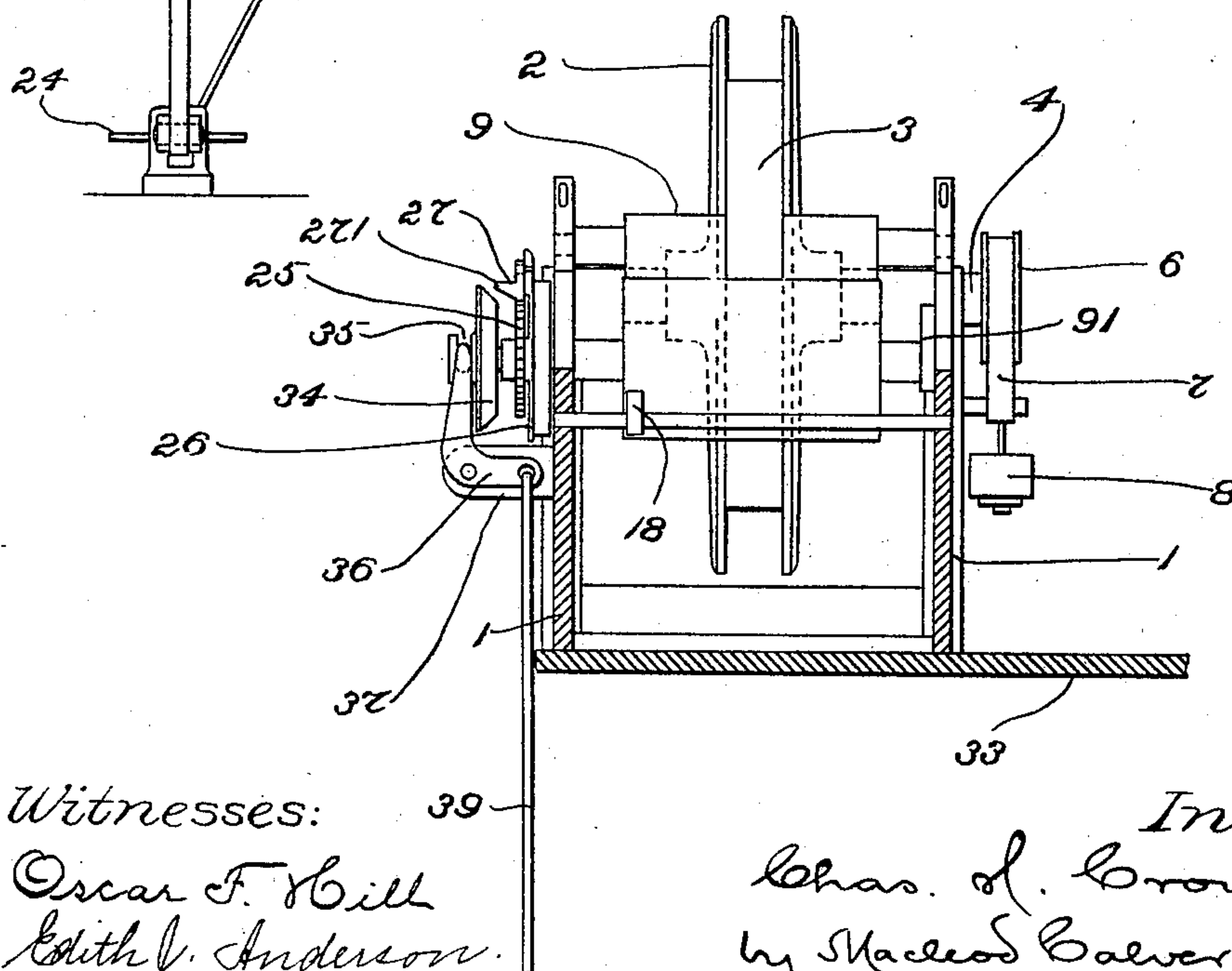
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*Fig. 2.*



*Fig. 3.*



Witnesses:

Oscar F. Bill  
Edith J. Anderson

*Inventor:*

Chas. J. Brownell  
by Maceo Balver & Randall  
Attorneys.

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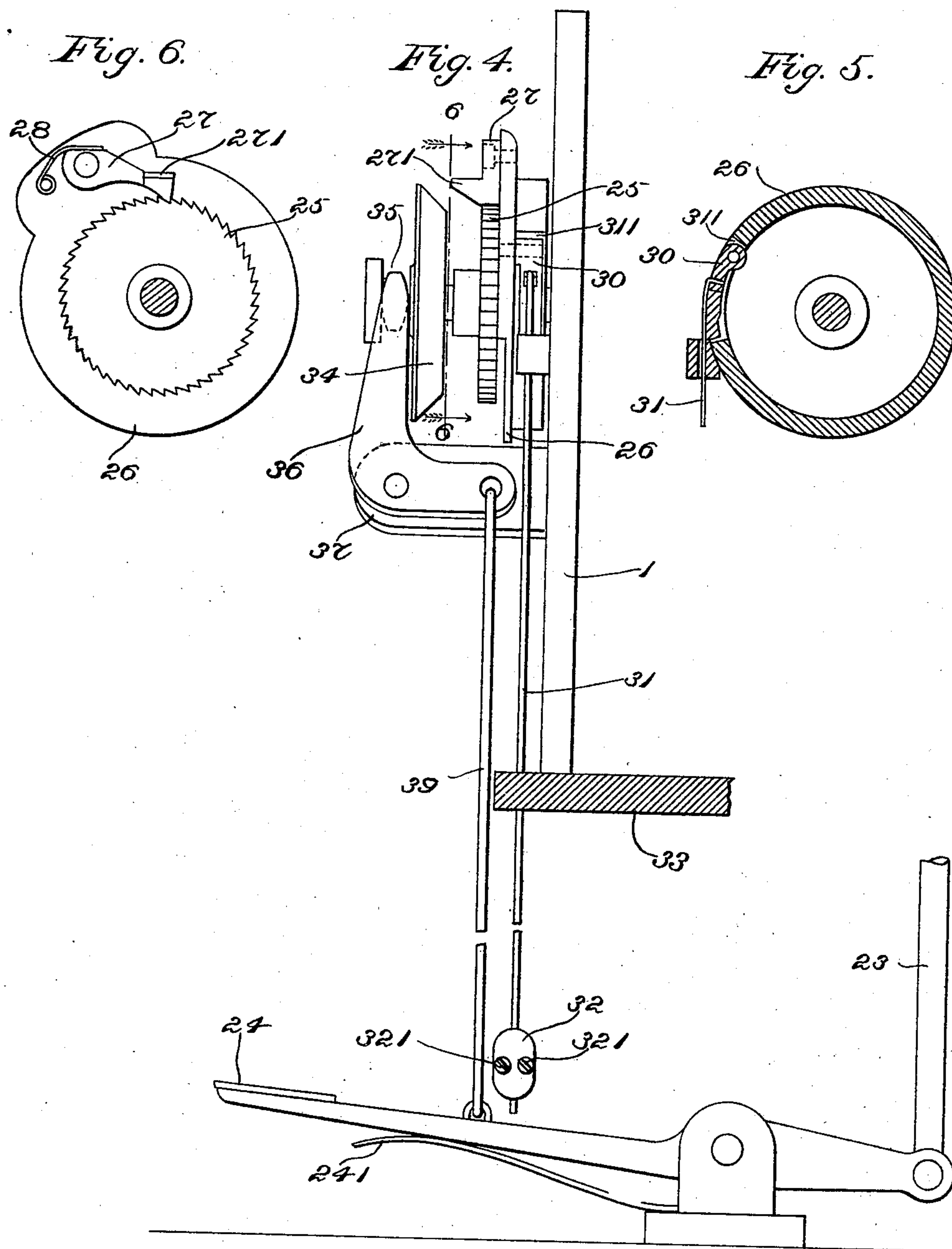
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Witnesses:

Oscar F. Bill

Lepine Hall Rice

Inventor:

Chas. H. Crowell  
by Mackay, Baker & Randall  
Attorneys.



# UNITED STATES PATENT OFFICE.

CHARLES H. CROWELL, OF LYNN, MASSACHUSETTS, ASSIGNOR TO JAMES R. CARTER, OF BOSTON, MASSACHUSETTS.

## MACHINE FOR CUTTING CLOTH.

SPECIFICATION forming part of Letters Patent No. 607,586, dated July 19, 1898.

Application filed July 17, 1897. Serial No. 644,907. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES H. CROWELL, a citizen of the United States, residing at Lynn, in the county of Essex and State of Massachusetts, have invented certain new and useful Improvements in Machines for Cutting Cloth, &c., into Predetermined Lengths, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention consists in a machine of simple and practical character by means of which a continuous strip of cloth or paper may be divided up readily, conveniently, expeditiously, and without waste of material into sections of predetermined length and whereby the said strip, if previously gummed, may be moistened to prepare the said sections or lengths for immediate use, or, if not previously gummed, may have gum or other adhesive applied thereto.

The invention will be described first with reference to the accompanying drawings, in which I have illustrated the best form in which I have thus far embodied the same, after which the distinguishing characteristics of the invention will be particularly pointed out and distinctly defined in the claims at the close of this specification.

Figure 1 of the drawings shows in perspective a machine embodying the invention. Fig. 2 is a view thereof in side elevation, looking from the rear in Fig. 1. Fig. 3 is a view in vertical section on the line 3 3 of Fig. 2, looking in the direction indicated by the arrows at the ends of the said line. Fig. 4 is an elevation, on an enlarged scale, of the devices which are located at the left-hand end of the measuring-roll in Fig. 3. Fig. 5 is a view in section of the barrel 26, its latch, and the stop coöperating with the said latch. Fig. 6 is a section on line 6 6 of Fig. 4, looking in the direction which is indicated by the arrows at the ends of such line.

1 designates the framework of the machine.

2 designates a supply-reel, the same having wound thereupon a continuous strip of material 3. The said reel is made fast upon a shaft 4, the latter being journaled in open bearings 5 5 on the framework 1 and having fast thereon the brake-pulley 6, around which latter is passed the brake-band 7, the

said brake-band having one end thereof made fast to the framework 1 and having a weight 8 applied to the other end thereof.

For the purpose of measuring off the strip into predetermined lengths I employ a measuring-roll 9, to which the strip is taken after leaving the supply-reel. The strip is held tightly in contact with the surface of the measuring-roll 9, so that when the strip is drawn forward by taking hold of the same at the delivery end of the machine and pulling thereon the contact of the strip with the said surface of the measuring-roll shall rotate the latter. A convenient means of pressing the strip into contact with the surface of the measuring-roll and gripping it firmly thereagainst comprises a presser-roll 10, the journals 11 of which are mounted in slotted bearings 12 12 in the framework, each journal having in contact therewith a block 13, receiving the pressure of a spring 15, which is compressed between the same and another block 16, held in place by a removable pin 17. As shown in the drawings, the construction is such that after removing the pins 17 the presser-roll and the pressure devices readily may be removed, after which the measuring-roll 9 may be removed from its bearings 9 1, which latter are open. For the purpose of preventing accidental reverse movement of the measuring-roll a dog 18 (see dotted lines, Fig. 2) may be pivoted to the framework, with its extremity disposed in contact with the adjacent end of the roll, the said dog being eccentrically pivoted and operating in obvious manner to permit forward rotation of the roll, while instantly arresting rotation thereof in a reverse direction.

It is intended that the strip shall be pulled through the machine by hand and that after the required length thereof shall have been drawn forward at the delivery end of the machine the strip shall be severed at the said delivery end, so as to cut off the said length. For the purpose of severing the strip I employ at the delivery end of the machine cutting devices, which may be of any preferred construction, but which conveniently may consist of a fixed cutter-blade 19 and a movable cutter-blade 20, the latter being mounted pivotally at one side of the machine upon the



pin 21 and acted upon by a spring 22, which tends to hold it pressed up to the edge of the fixed cutter. The movable cutter 20 is connected by a rod 23, in the arrangement shown in the drawings, to a treadle 24, that is intended to be worked by the foot of the operative, the said treadle being pressed upon whenever the cutters are to be made to act and the movable cutter being held raised normally by the action of the spring 24 upon the treadle, so as to permit the strip to be drawn forward between the cutters. In order to insure the cutting of the strip into proper lengths, I combine with the measuring-roll 9 devices whereby automatically to arrest the feed of the strip after a portion of the required length has been caused to pass the cutters. Thus at 25 is a detent-wheel which is made fast upon the shaft of the measuring-roll, and 26 is a barrel which is mounted to turn loosely upon the said shaft and has connected pivotally thereto a pawl 27. The said pawl is pivoted to the side of the barrel 26 and overhangs the detent-wheel 25, so as to engage normally in the teeth of the latter, it being acted upon by a spring 28, which holds its engaging end in contact with the said teeth. Thereby as the measuring-roll is rotated by the forward movement of the strip the barrel 26 is caused to rotate in unison with the said roll.

30 is a latch which is connected pivotally with the barrel, a recess 311 being made in the periphery of the barrel for the reception of the said latch 30. To the free end of the said latch is connected one end of a cord or wire 31, the latter having a weight 32 attached thereto and the said weight being suspended by the wire or cord. As the measuring-roll and barrel rotate in unison, the wire or cord 31 is wound upon the periphery of the barrel 26 until a stop or enlargement upon the wire or cord, which stop or enlargement preferably is constituted by the upper end of the weight itself, is brought into engagement with a fixed stop, which last may be constituted by a portion of the framework or a suitable attachment thereto or by the support for the machine. In the drawings I have shown the said fixed stop as constituted by the bench 33, upon which the machine is mounted. When by the winding up of the wire or cord upon the barrel 26 the stop or enlargement upon the said wire or cord is brought against the said fixed stop, the rotation of the measuring-roll is arrested, which operates to arrest the forward movement of the strip under the pull that is transmitted to the free end thereof by the operative. In this way I provide for determining when a sufficient length of the strip has passed the cutters, which last may then be operated to sever the said length.

For the purpose of enabling the length of the section which is severed by the cutters to be varied I render the weight 32 adjustable upon the cord or wire 31. In the drawings I have shown the said weight as made in two

parts, which receive between them the cord or wire, the said two parts being held together, so as to clamp the cord or wire between them, by means of screws 321 321.

The mechanism which I have described as employed in connection with the measuring-roll constitutes detent mechanism by means of which to arrest the forward rotation of the measuring-roll when the proper length of material has been drawn forward between the cutters. After such length of material has been severed it becomes necessary to disengage the said detent mechanism from the measuring-roll and reset the said mechanism prior to drawing forward and severing a second length of the strip of material coming from the supply-reel. To this end I mount loosely upon the shaft of the measuring-roll a throw-off disk 34, the same being mounted at the side of the detent-wheel 25 and being capable of movement along the said shaft toward and from the said detent-wheel. The hub of the said throw-off disk is grooved, as at 35, the groove receiving the upper end of the throw-off lever 36, the said lever being pivoted upon the support 37, which is provided on the framework. When this throw-off lever 36 is operated so as to carry the throw-off disk 34 toward the detent-wheel 25, the edge of the said disk acts against the lateral projection 271 of the pawl 27 and disengages the said pawl from the teeth of the detent-wheel. When this disengagement is effected, the weight 32 operates to unwind the cord or wire 31 and rotates the barrel 26 reversely upon the shaft of the measuring-roll 9. The cord or wire 31 passes through a guide 38, located adjacent to the periphery of the barrel 26, and for the purpose of arresting the reverse rotation of the said barrel in a positive manner at the proper point I arrange this guide close enough to the said barrel to enable the free end of the latch 30 to engage therewith and remain resting thereon. As will be obvious, the draft of the weighted wire or cord is vertical and also tangential to the periphery of the barrel, and hence such draft operates to cause the free end of the latch to project somewhat beyond the periphery of the barrel as the latch descends in the rotation of the barrel. For the purpose of operating the lever 36 to move the throw-off disk into position to disengage the pawl, as aforesaid, I connect the said lever with the treadle 24 by means of a rod 39. When the pedal is pressed upon by the operative to cause the cutters to sever the strip, the connections described operate to move the throw-off disk, so as simultaneously therewith to disengage the pawl from the detent-wheel on the shaft of the measuring-roll, thereby freeing the said measuring-roll and also allowing the detent mechanism to reset itself in readiness for measuring a fresh length of the strip coming from the supply-reel. When the operative relieves the pressure upon the treadle and allows the latter to resume its former position, the bell-crank is operated, through the con-



necting-rod 39, to move the throw-off disk outwardly away from the detent-wheel, and thus releases the pawl 27, allowing the spring 28 to force the said pawl again into engagement with the teeth of the detent-wheel. The parts are now in readiness to permit another length of material to be drawn forward through the cutters.

At 40 is a trough located between the measuring-roll and the cutters. At 41 is a roll supported on the framework above the said trough, with its lower portion entering the said trough, and at 42 is a doctor arranged to cooperate with the surface of the said roll 41 in well-known manner. The strip of material coming from the supply-reel passes over this roll 41 and in contact with the periphery thereof after leaving the measuring-roll 9, the said strip being held down in contact with the surface of the said roll 41 by a guide-roll 43 adjacent the cutter. When the said strip of material wound upon the supply-reel is already gummed, the trough and roll 41 may be used simply for moistening purposes. When, however, the said strip wound upon the supply-reel is ungummed, the trough 40 and roll 41 may be employed for the purpose of applying gum, glue, or other adhesive to the strip as it is drawn through the machine. In some cases the roll 41 and trough 40 may be dispensed with.

The machine constructed and arranged as shown in the accompanying drawings is fitted especially for use in connection with previously-gummed strips of cloth or paper, although obviously not restricted necessarily to such use. Strips of cloth thus gummed on one side thereof are extensively manufactured and sold at the present time and are used for various purposes, especially in book-binding. For use in connection with such previously-gummed strips the trough 40 is to be fitted with water or other moistening agent. The location intermediate the measuring-roll and the cutters of the device for rendering the surface of the strip adhesive is of extreme importance in the case of quick-setting glues and the like. In such case the contact of the adhesive face of the strip with the surface of a roll intermediate the said device and the cutters—as, for example, the measuring-roll—during the pause which occurs between the severing of one length of the strip (and the application of such length to the thing to which it is to be applied) and the next advancing movement of the strip under the pull given to the forward end thereof by the operator would result in adhesion of the strip to such surface. This would occasion annoyance and delays.

I claim as my invention—

1. A machine for dividing a strip of material into measured lengths, comprising a measuring-roll around which the said strip of material is passed, means for preparing the said strip to adhere to the surface to which it

is applied, cutting devices on the delivery side of the said measuring-roll, detent mechanism to arrest the rotation of the said roll and thereby stop the feed of the strip after a given length of the latter has been drawn forward past the cutting devices, and actuating connections whereby simultaneously to operate said cutting devices to sever the strip and to disengage said detent mechanism from the measuring-roll, substantially as described.

2. A machine for dividing a strip of material into measured lengths, comprising a measuring-roll around which the said strip of material is passed, cutting devices on the delivery side of the said measuring-roll, detent mechanism to arrest the rotation of the said roll and thereby stop the feed of the strip after a given length of the latter has been drawn forward past the cutting devices, and actuating connections whereby simultaneously to operate said cutting devices to sever the strip and to disengage said detent mechanism from the measuring-roll, substantially as described.

3. The improved machine comprising the measuring-roll around which a continuous strip of material is passed, cutting devices to act on the said strip after it has left the measuring-roll, a device interposed between the said measuring-roll and cutting devices for rendering the surface of the said strip adhesive, and detent mechanism to arrest the rotation of the said measuring-roll and thereby stop the feed of the strip after a given length of the latter has been drawn forward past the cutting devices, substantially as described.

4. The improved machine comprising the measuring-roll around which a continuous strip of material is passed, cutting devices to act on the said strip after it has left the measuring-roll, a trough and roll interposed between the said measuring-roll and cutting devices, detent mechanism to arrest the rotation of the said roll and thereby stop the feed of the strip after a given length of the latter has been drawn forward past the cutting devices, and actuating connections whereby simultaneously to operate said cutting devices to sever the strip and to disengage said detent mechanism from the measuring-roll, substantially as described.

5. The combination with the measuring-roll, of the detent-wheel moving in unison therewith, the barrel movable independently of the said roll and provided with a detent to engage the said detent-wheel and thereby cause the barrel to move in unison with the roll, the cord or wire attached to the said barrel and provided with a stop, and a fixed stop with which the former stop engages to arrest the rotation of the measuring-roll, substantially as described.

6. The combination with the measuring-roll, of the detent-wheel moving in unison therewith, the barrel movable independently of the said roll and provided with a detent to engage the said detent-wheel and thereby



4  
 5 cause the barrel to move in unison with the roll, the cord or wire attached to the said barrel and provided with a stop, a fixed stop with which the former stop engages to arrest the rotation of the measuring-roll, the throw-off disk to disengage the said detent from the detent-wheel, and means to actuate the said throw-off disk, substantially as described.

10 7. The combination with the measuring-roll, of the detent-wheel moving in unison therewith, the barrel movable independently of the said roll, a detent on the said barrel to engage the said detent-wheel and thereby cause the barrel to move in unison with the  
 15 roll, the latch pivoted to the said barrel, the cord or wire connected to the said latch and provided with a stop, a fixed stop with which the former stop engages to arrest the rotation of the measuring-roll, throw-off devices to  
 20 disengage the said detent from the said detent-wheel, and the fixed stop with which the said latch engages to determine the starting

position of the barrel, substantially as described.

25 8. The improved machine comprising the measuring-roll around which a continuous strip of material is passed, cutting devices to act on said strip after it has left the measuring-roll, a device for rendering the surface of the said strip adhesive, detent mechanism in  
 30 operative connection with said measuring-roll to arrest the feed of the strip after a given length of the latter has been drawn past the cutting devices, and actuating connections whereby simultaneously to operate the said  
 35 cutting devices to sever the strip and to disengage said detent mechanism.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES H. CROWELL.

Witnesses:

CHAS. F. RANDALL,  
 WILLIAM A. COPELAND.