

No. 639,272.

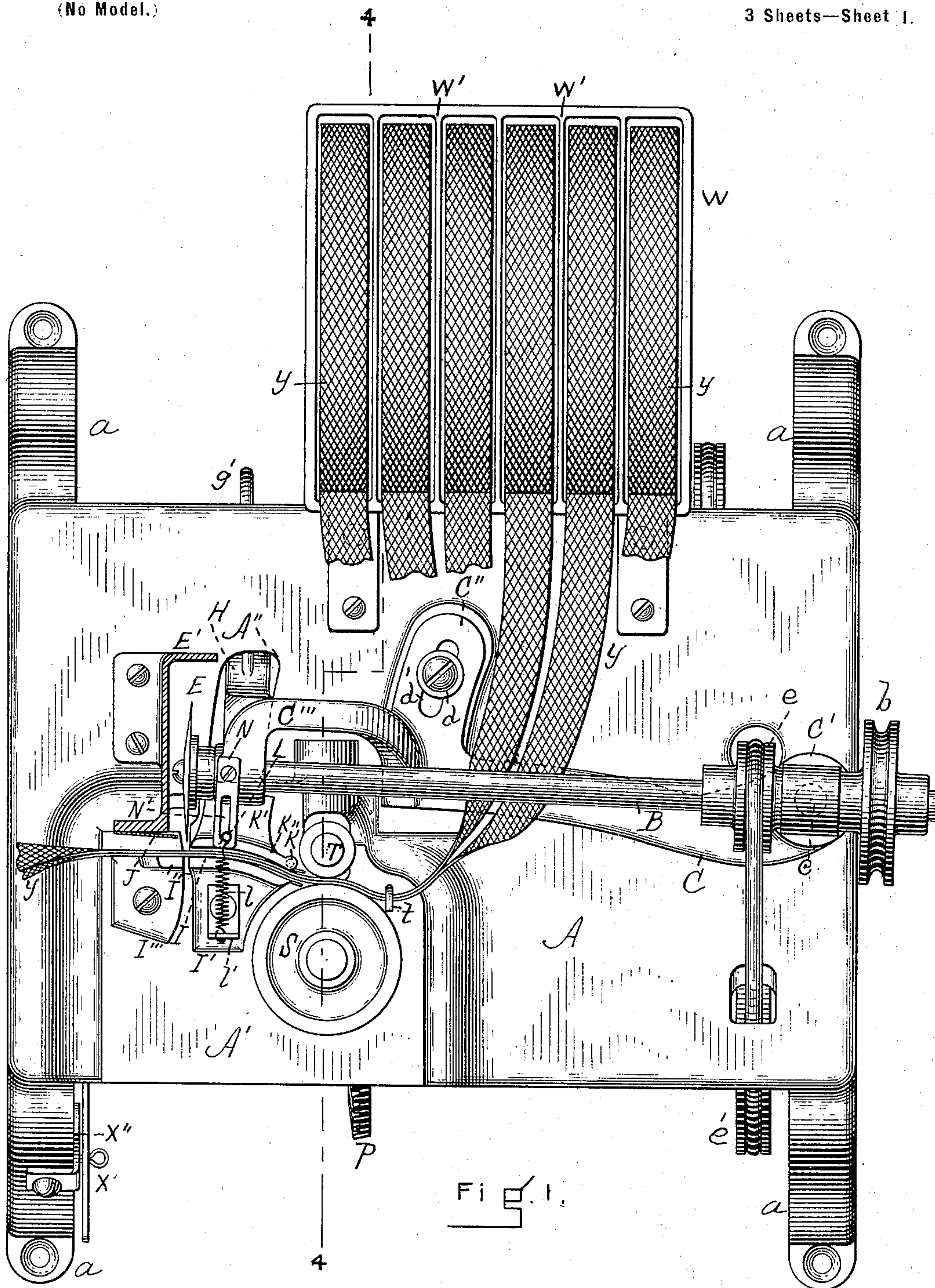
Patented Dec. 19, 1899.

C. W. NEWTON.
STRAP CUTTING MACHINE.

(Application filed Oct. 4, 1899.)

(No Model.)

3 Sheets—Sheet 1.



WITNESSES:

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E. A. Swett

INVENTOR:

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By His Atty.
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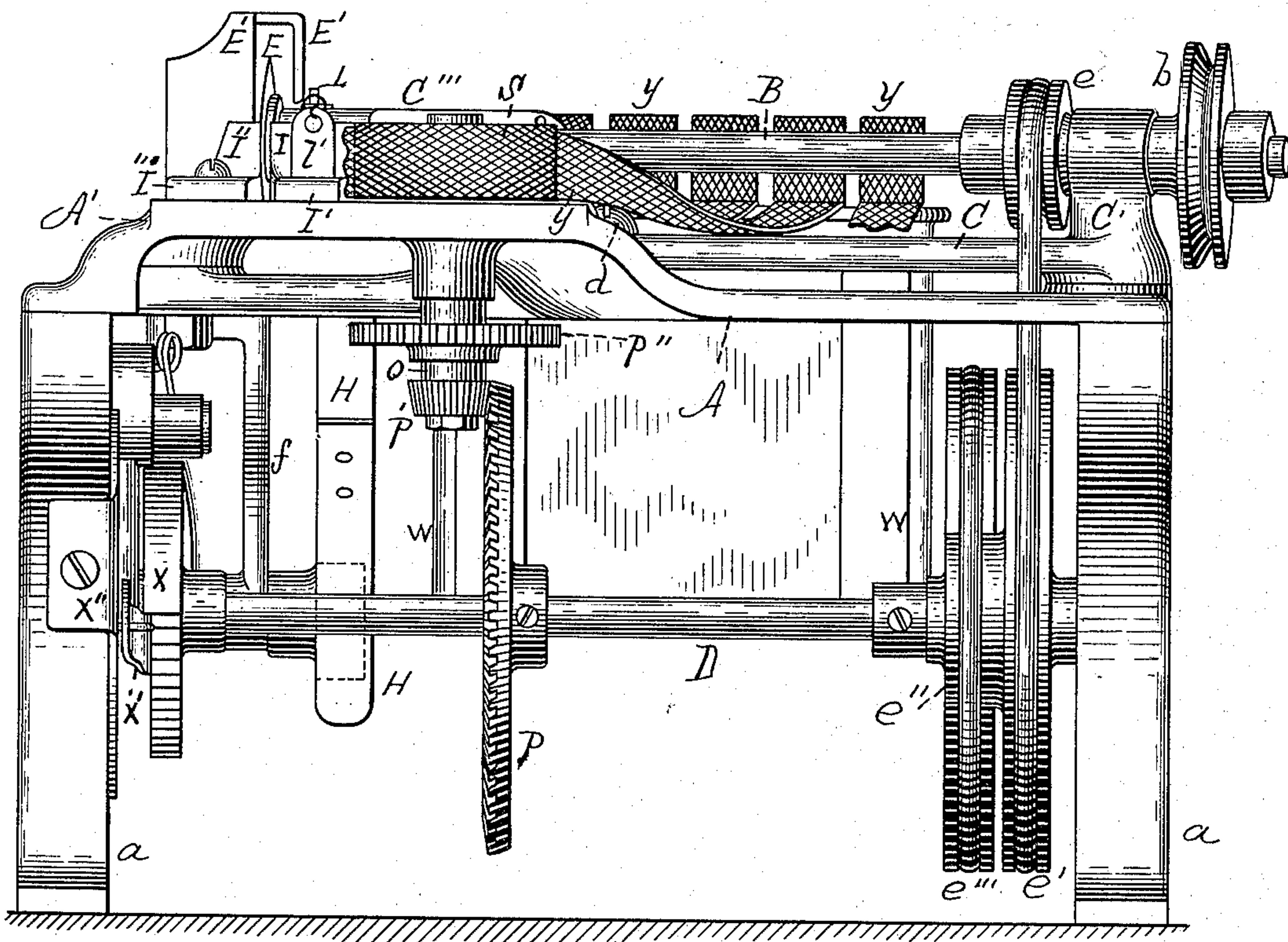


FIG. 2.

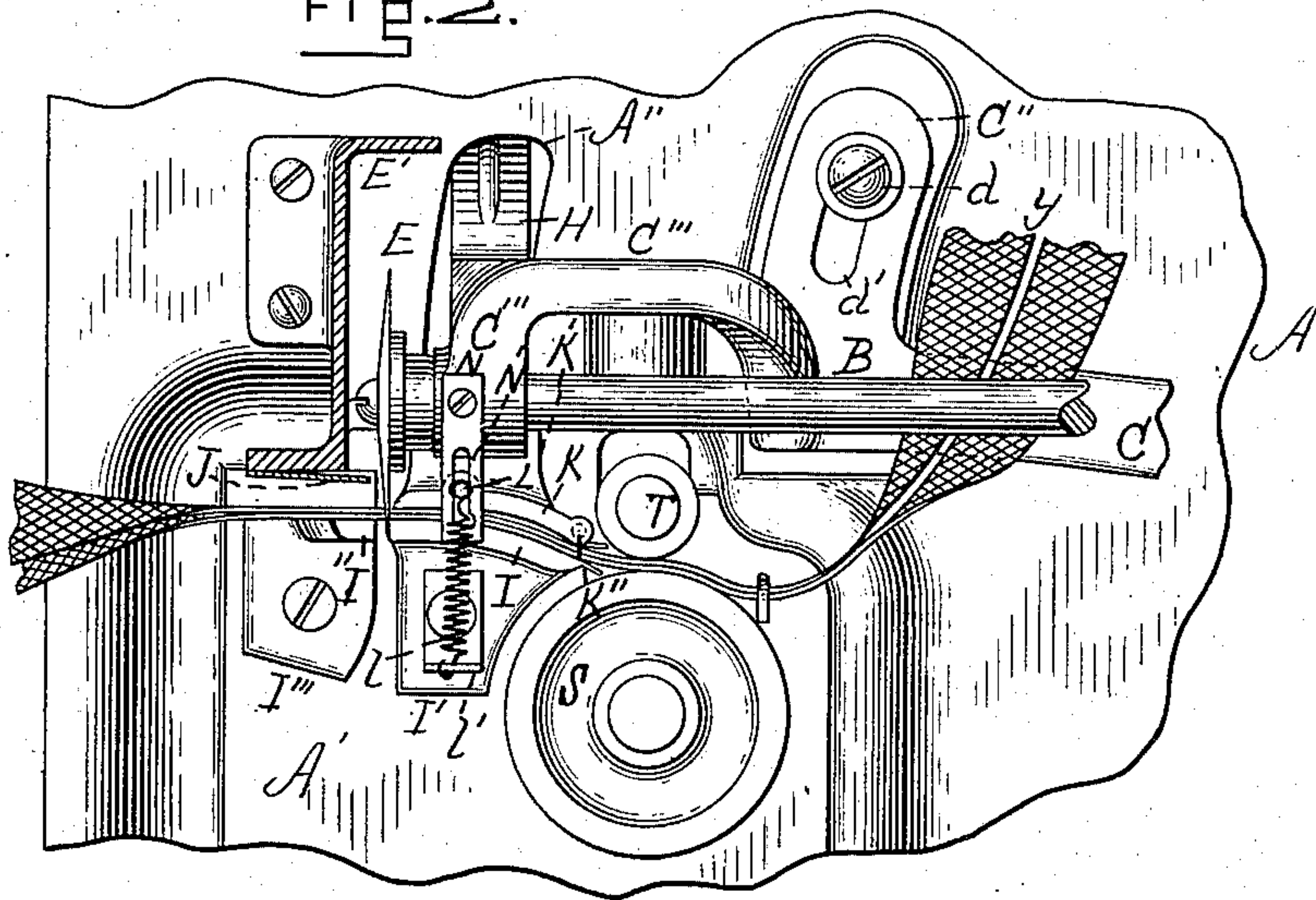


FIG. 3.

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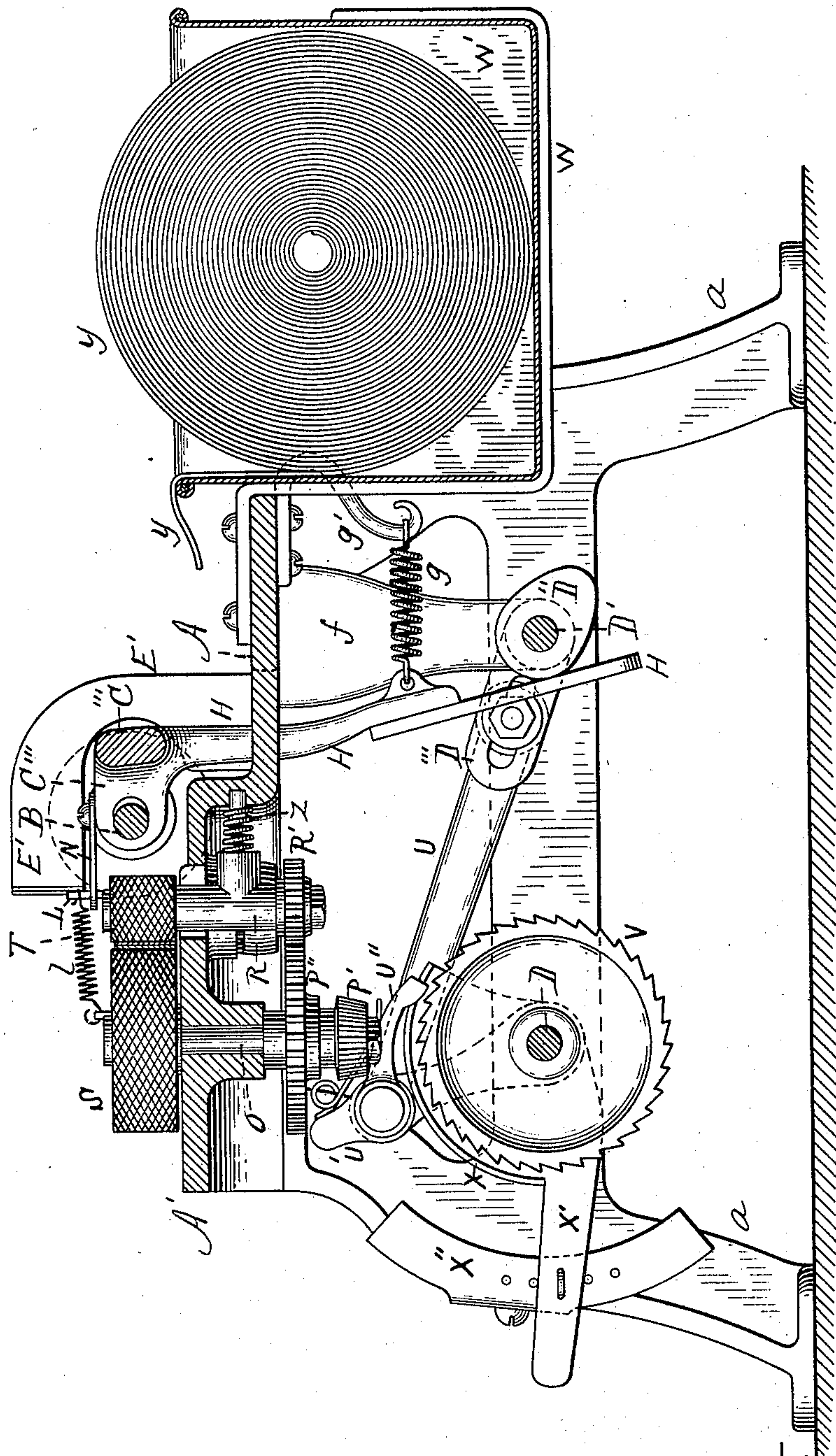


Fig. 4

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UNITED STATES PATENT OFFICE.

CHARLES W. NEWTON, OF MARLBOROUGH, MASSACHUSETTS, ASSIGNOR OF ONE-HALF TO THE S. H. HOWE SHOE COMPANY, OF SAME PLACE AND BOSTON, MASSACHUSETTS.

STRAP-CUTTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 639,272, dated December 19, 1899.

Application filed October 4, 1899. Serial No. 732,468. (No model.)

To all whom it may concern:

Be it known that I, CHARLES W. NEWTON, a citizen of the United States, residing at Marlborough, in the county of Middlesex and State of Massachusetts, have invented new and useful Improvements in Strap-Cutting Machines, of which the following is a specification.

This invention has for its object to cut off pieces of strap, the length being regulated by the machine, from narrow strips which are fed into the machine. These straps are preferably, but not necessarily, fabric or webbing; and the principal object of the contrivance is to cut off pieces from this webbing of suitable length to be used for shoe-straps—that is, straps or loops applied to boots or shoes and used as aids in drawing them onto the foot.

In this machine one or more tapes or straps are unwound from a corresponding number of spools or bobbins and conducted by feed-rolls between a pair of open jaws until the desired length of strap or tape extends beyond said jaws. The jaws then close upon the tape, and a rotating knife advances and cuts off the length which extends beyond the jaws. The jaws then open to allow of another length of tape to be fed into and through them.

The nature of the invention is fully described in detail below, and illustrated in the accompanying drawings, in which—

Figure 1 is a plan view of the machine, a portion of the housing of the knife being shown in horizontal section. Fig. 2 is a front elevation of the same. Fig. 3 is a detail in plan showing the position of the parts when the tape or strap is being cut off. Fig. 4 is a section taken on line 4, Fig. 1.

Similar letters of reference indicate corresponding parts.

A represents a suitable table or frame formed up into the raised bed A' and supported by legs a.

b is the driving-pulley, fast on the driving-shaft B, mounted in the frame C, which is formed with a standard C', pivotally secured to the table A at c, Fig. 1, and swings horizontally thereon, being guided and limited in such swinging movement by the screw d,

which extends through the slot d' in the horizontal arm C'' of the swinging frame to the table A. This swinging frame C is formed with a curved extension C''', and the driving-shaft is mounted on the extension C''' and standard C'.

The shaft B is belted by means of the fast pulley e to the pulley e', loose on the shaft D, supported in the frame, and a pulley e'', integral with the pulley e', is belted to the pulley e'', fast on the shaft D', one end of which is supported directly by the frame and the other end is sustained by a bracket f, extending downward from the under side of the table A'. Rigid on this shaft is the cam D''.

The inner end of the shaft B has mounted on it a cutter E, which is protected by a housing E' of substantially the shape shown. The table A is provided with an opening or slot A'', through which an arm H extends from the swinging frame C, said arm being held normally against the shaft D' in the path of the cam D'' by a spring g, whose opposite ends are secured to said arm and to a hook g', Fig. 4, secured to the under side of the table. By this means both the arm and the frame C are held swung normally back.

I is a stationary jaw extending vertically from the base I', secured to the bed A', and I'' is a guide extending vertically from the base I'', secured to the bed A', said guide being opposite a vertical spring-guide J, secured to the front edge of the housing E.

K is a movable jaw extending vertically from the sliding base K' and pivoted at K'' to the bed A' opposite the stationary jaw I. A pin L extends up from the jaw K through a slot N' in the engaging plate N, secured to the portion C''' of the frame C, and a spring l has its opposite ends attached to said pin and to a standard l', extending up from the base I'.

Mounted on the shaft D is the beveled gear-wheel P, which engages with the pinion P' on the vertical stud or shaft O, which has mounted on it a gear-wheel P'', engaging a gear-wheel R' on the stud or shaft R. The vertical shafts O and R are supported by the bed and have mounted on their upper ends above said bed the feed-wheels S and T, respectively.

One end of the shaft D' is provided with a

crank D''', Fig. 4, whose outer end is connected by the crank-arm U with the arm U', loose on the shaft D, said arm being provided with a pawl U'', adapted to engage the ratchet-wheel V, fast on said shaft D.

A suitable box W, preferably divided into compartments by partition W', has in each compartment a roll of tape Y to be fed into the machine and cut into strips. One or more, preferably two or more, ends from the rolls are fed around the guide *l* and in between the feed-rolls S and T, the jaws I and K being open or apart. Power being applied to the machine, the shaft D' is operated, by means of the pulleys *e*, *e'*, *e''*, and *e'''* and their connections, with the effect that the crank D''' through the crank-arm U and pawl U'' imparts a partial rotation to the ratchet-wheel V, which, through the shaft D, imparts a similar rotation to the gear-wheel P, thus rotating the feed-rolls S T by means of intermediate gear P, P'', and R'. By this means the tapes are fed by the rolls between the jaws I K and through them between the guiding-plates I' and J. This feeding process continues until the crank D''' has swung under and rearward and has commenced to swing upward from the level of the shaft D'. Just before the crank has reached this point the cam D'' has swung up and forward and has commenced to bear against the arm H. As the rotation of the shaft D' continues the cam presses the arm H forward and of course swings the frame C forward, allowing the spring *l* to draw forward and close the jaw K against the tapes, which are between it and the stationary jaw I. The same forward movement of the frame C causes the knife, which is rotating with the shaft B, to move between the outer ends of the jaws I K and the inner ends of the guiding-plates I' J and cut off the tapes. Further operation of the machine of course duplicates the above-described process.

In order to regulate the lengths of tape cut off, I apply to the ratchet the well-known shield X, whose arm X' is engaged in suitable openings in the plate X'', secured to the frame of the machine, the contrivance being too common to require further explanation.

A spring adjustment Z preferably holds the feed-roll T against the feed-roll S. Thus any reasonable number of tapes may be fed into and through the jaws and suitable lengths cut therefrom with economy and accuracy.

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

1. In a machine of the character described, a table; a frame pivoted to said table and adapted to swing horizontally thereon; a shaft mounted on said frame and provided with a cutter; mechanism for imparting rotation to said shaft; a stationary jaw supported by the table; a movable jaw pivotally secured to the frame of the machine at the end next the feed-rolls whereby the end next the cutter is

adapted to swing horizontally with relation to the stationary jaw; mechanism adapted to swing the end of the shaft containing the cutter up to the jaws; feed-rolls for feeding the tape between said jaws; mechanism connecting the movable jaw with the swinging frame whereby said jaw is swung away from the stationary jaw; and mechanism for moving the swinging jaw toward the stationary jaw when the former is released by the swinging frame, substantially as set forth.

2. In a machine of the character described, a table; the frame C pivotally secured at one end to the table and swinging horizontally thereon, said frame being formed with the portion C'''; the shaft B mounted on said frame and provided at one end with the cutter E; mechanism for actuating said shaft; the stationary jaw I rigidly secured in a vertical position to the table; the jaw K pivotally secured in a vertical position at K'' to the table and swinging horizontally with relation to the stationary jaw; a spring adapted to hold said swinging jaw normally against the stationary jaw; a link connecting the swinging jaw with the swinging frame whereby said frame draws one end of the swinging jaw away from the stationary jaw; and mechanism for reciprocating said swinging frame, substantially as described.

3. In a machine of the character described, a table; the frame C pivotally secured at one end to the table and swinging horizontally thereon, said frame being formed with the portion C'''; the shaft B mounted on said frame and provided at one end with the cutter E; mechanism for actuating said shaft; the stationary jaw I rigidly secured in a vertical position to the table; the jaw K pivotally secured in a vertical position at K'' to the table and swinging horizontally with relation to the stationary jaw; a spring adapted to hold said swinging jaw normally against the stationary jaw; a link connecting the swinging jaw with the swinging frame whereby said frame draws one end of the swinging jaw away from the stationary jaw; the arm H extending down from the swinging frame through the table; the shaft D' provided with a cam D'' adapted to engage with said arm; and mechanism intermediate of the shafts B and D' whereby rotation is imparted to the latter, substantially as set forth.

4. In a machine of the character described, a table; the frame C pivotally secured at one end to the table and swinging horizontally thereon, said frame being formed with the portion C'''; the shaft B mounted on said frame and provided at one end with the cutter E; mechanism for actuating said shaft; the stationary jaw I rigidly secured in a vertical position to the table; the jaw K pivotally secured in a vertical position at K'' to the table and swinging horizontally with relation to the stationary jaw; a spring adapted to hold said swinging jaw normally against the stationary jaw; a link connecting the

swinging jaw with the swinging frame where-
by said frame draws one end of the swinging
jaw away from the stationary jaw; the arm
H extending down from the swinging frame
5 through the table; the shaft D' provided with
a cam D'' adapted to engage with said arm;
the feed-rolls S, T mounted on the shafts O,
R; mechanism connecting said shafts; mech-
anism intermediate with said shafts O, R and
10 the driving-shaft B for imparting rotation to
the feed-rolls; mechanism intermediate with

the driving-shaft and the shaft D' for impart-
ing rotation to the cam; and a ratchet-and-
pawl mechanism actuated by a connection
with the shaft D', whereby the tape is fed in- 15
termittently between the jaws, substantially
as described.

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