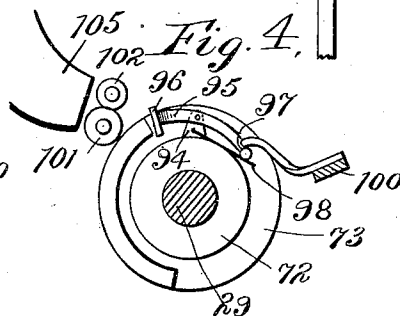
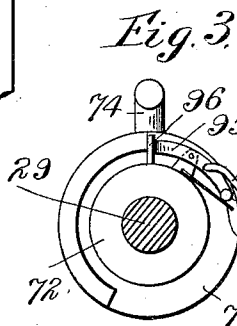
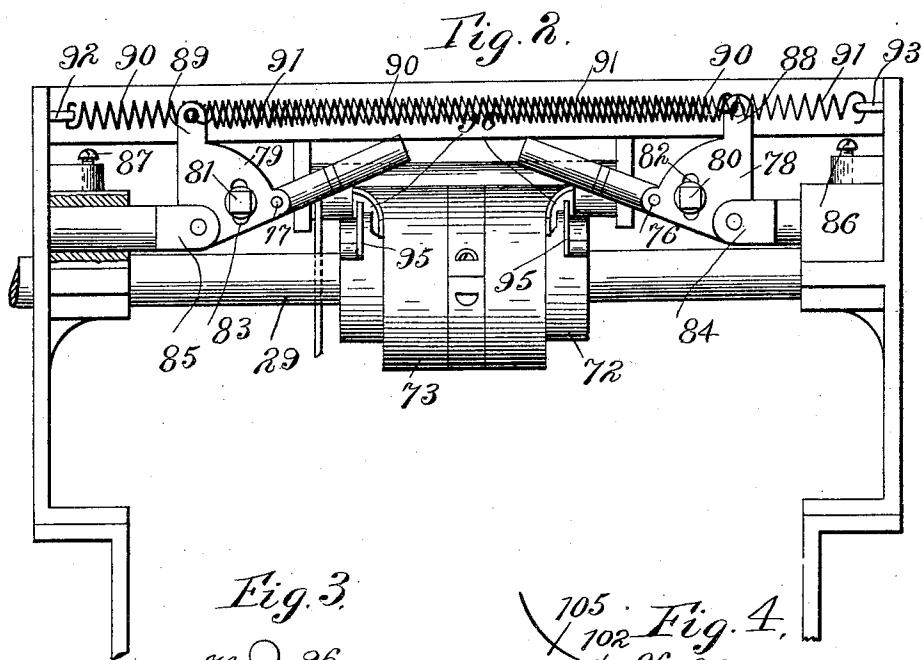
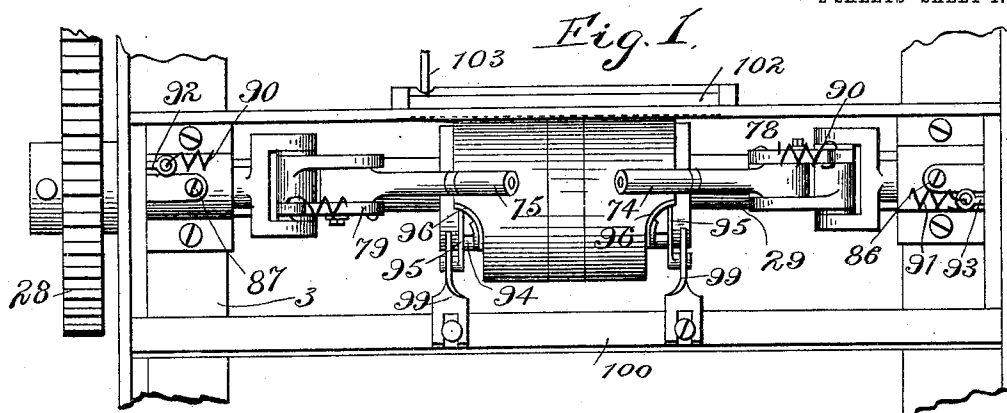


T. W. KIENAST.
CUTTING MECHANISM.
APPLICATION FILED FEB. 9, 1905.

933,712.

Patented Sept. 7, 1909.

2 SHEETS—SHEET 1.



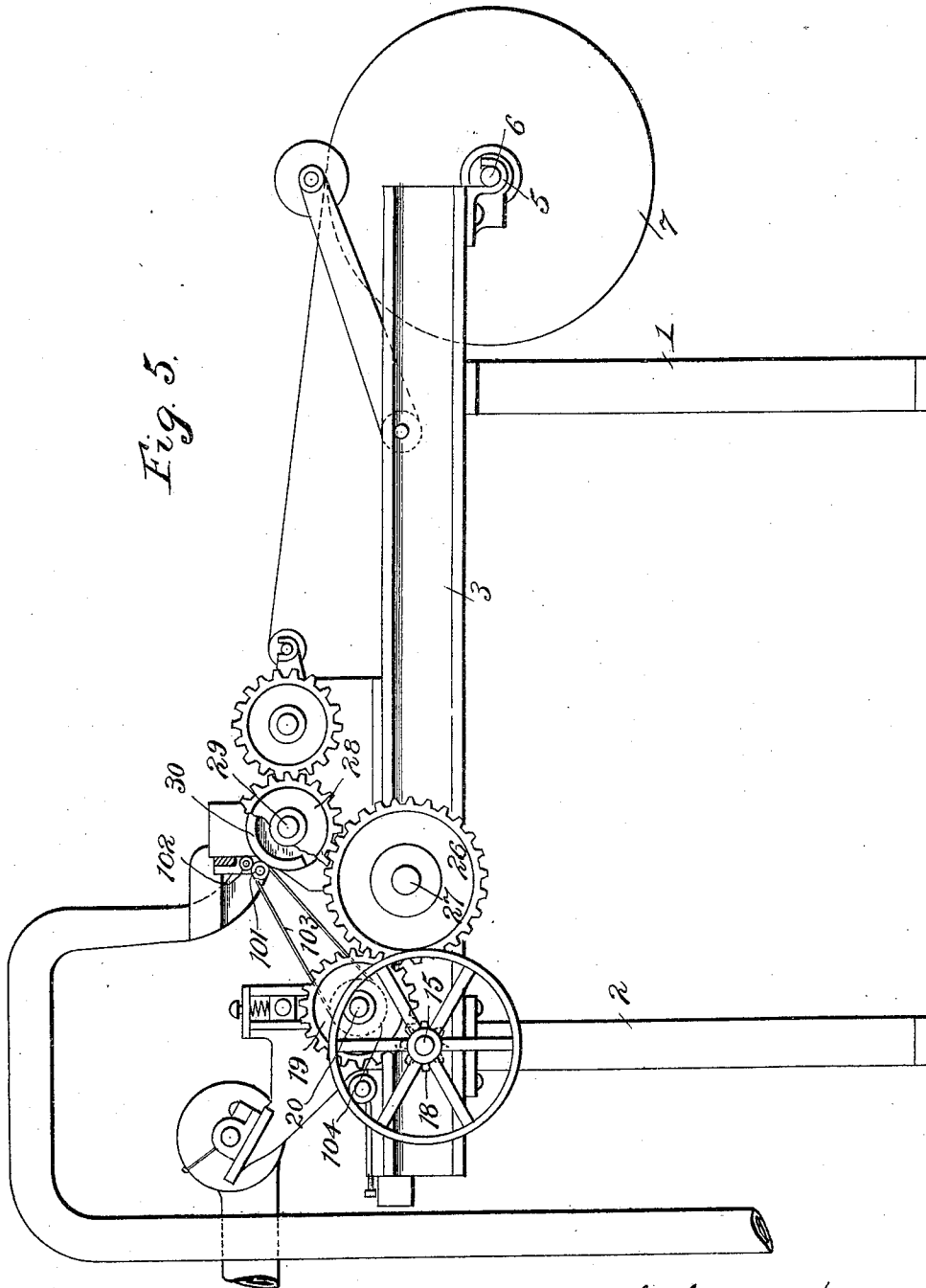
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UNITED STATES PATENT OFFICE.

T. WILLIAM KIENAST, OF NEW YORK, N. Y., ASSIGNOR TO SAMUEL CUPPLES ENVELOPE COMPANY, OF NEW YORK, N. Y., A CORPORATION OF MISSOURI.

CUTTING MECHANISM.

933,712.

Specification of Letters Patent.

Patented Sept. 7, 1909.

Original application filed December 15, 1904, Serial No. 236,988. Divided and this application filed February 9, 1905. Serial No. 244,983.

To all whom it may concern:

Be it known that I, T. WILLIAM KIENAST, a citizen of the United States, residing in the borough of Manhattan, in the city and State of New York, have invented certain new and useful Improvements in Cutting Mechanism, of which the following is a specification.

My invention relates to a cutting mechanism and is a division of a co-pending application filed by me on December 15th, 1904, serially numbered 236,988 for envelop machine.

My cutting mechanism may be applied to numerous arts and I do not wish to limit the scope of my cutting mechanism to its use in envelop machines, but I shall describe the same in connection with an envelop machine as an illustration of how it may be used.

In order that my invention may be clearly understood, I have hereunto annexed two sheets of drawings, in which—

Figure 1 is a top plan view of the cutting mechanism. Fig. 2 is a front elevation of the same. Fig. 3 is a detail sectional view of the cutting mechanism showing the breaking-away means, and Fig. 4 is a detail sectional view showing the breaking-away means in its connection with means for carrying away the strip cut and broken away. Fig. 5 shows the invention applied to a machine for working upon a web of paper.

Referring now to the drawings 1 and 2 designate the front and rear legs of the machine. Supported upon said legs are the beams 3. These beams 3 constitute the main frame of the machine, and upon them the various mechanisms are mounted. Hung in a pair of depending hooks 5 at the forward end of the frame, is the roll axle 6, having a roll of paper 7, which is to be made into envelops.

The power shaft which may receive power from any suitable source is shown at 15. This shaft 15 has mounted on it an idle pulley and a driving pulley. In order to operate the mechanism the power shaft 15 carries a gear wheel 18. This gear wheel 18 is in mesh with a gear wheel 19 which imparts motion to an idle gear wheel 26. The idle gear wheel 26 is carried by a shaft 27 and meshes with the gear wheel 28 which is

keyed to the shaft 29 of the rotary cutter cylinder 30. This cylinder, as clearly shown in Figs. 4 and 5 is not regular, but has a body portion 72 and a cutter portion 73. Said cutter portion 73 has edges adapted to cut the paper, when pressed against them, and to effect this pressure, I provide the mechanism with a pair of pressure rollers 74 and 75. Said pressure rollers 74 and 75 are pivoted by pivot pins 76 and 77 in yokes 78 and 79, and the bolts 80 and 81 passing through the ends of said pressure rollers lie in slots 82 and 83 so that the rollers may be moved to the desired angle in the yokes and then secured in place by tightening their bolts 80 and 81. Said yokes are themselves pivoted to studs 84 and 85 which are secured in the frame by screws 86 and 87.

For the purpose of holding the pressure rollers against the cutting edges of the cylinder 30, the yokes 78 and 79 have formed integral therewith the upwardly extending lugs 88 and 89. These lugs are provided with perforations or other analogous devices for attaching the ends of the springs 90 and 91. The other ends of the springs 90 and 91 are attached respectively to hooks 92 and 93, said hooks being secured to the frame. It is thus obvious that the pressure of the rollers 74 and 75 upon the cutting edge of the cylinder 30 may be increased or diminished by adjusting the position of said rollers 74 and 75 in their sockets 78 and 79 without unfastening the springs. This is a very efficient and readily operated means of adjustment. Another feature of novelty in this cutting mechanism is a device for breaking away the waste which has been cut off. It is found in practice that the cut made by the mechanism just described is not "clean" at the end and the waste has a tendency to hold on to the web. To obviate this difficulty, I provide each side of the body portion 72 of the cylinder 30 with a stud 94 and pivot thereon a rocking lever 95 as clearly shown in Figs. 3 and 4. Said rocking lever 95 has at one end a flange or bent portion 96 and at the other a lug 97. Said lug 97 has engaging it a leaf spring 98 which is so mounted in the cylinder 30 that the flange end 96 of the rocking lever 95 is held normally down. When it is desired to break away the waste strip the lever is rocked

against the tension of the spring 98. This is done by supporting in the path of said lugs 97 a tripping finger 99, which may best be mounted upon a bar 100 extending across the machine at the proper place. In Fig. 3, I have shown the rocking lever 95 before it is tripped, and in Fig. 4 I have shown the same as it is being tripped. As seen in Figs. 3 and 4, the rocking lever 95 is tripped just at the proper moment to guide the end of the waste strip between a pair of rollers 101 and 102. Just before the cylinder 30 reaches the position in its rotation when the lever 95 would strike the roller 101, the tripping finger 99 disengages the lug 97 and allows the lever to be rocked by the spring so as to avoid the roller 101. The said roller 101 is rotated by a belt 103 driven by a pulley 104 on the bottom roll shaft 20. The roller 102 being in contact with the roller 101 will rotate with the same and the waste strip will thus be gripped by the pair and carried into a suction shaft 105 of any well known construction.

Having thus described my invention, the following is what I claim as new therein and desire to secure by Letters Patent:

1. In a cutting mechanism, the combination with a cutter cylinder having a cutting edge corresponding in contour to the outline to be cut; of a pivotally supported pressure roller, a spring for holding said pressure roller yieldingly against said cutting edge, and means separate from said spring and its support for varying the tension under which said pressure roller is held against said cutting edge.

2. In a cutting mechanism, the combination with a cutter cylinder, of a pivotally mounted yoke, a pressure roller adjustably and fixedly secured in said yoke and adapted to bear upon the cutting edge of said cutter cylinder and a spring engaging said yoke to hold said pressure roller yieldingly against said cutting edge.

3. In a cutting mechanism, the combination with a cutter cylinder; of a stud adjustably secured in the framework of the machine, a yoke pivoted to said stud, a pressure roller adjustably and fixedly secured in said yoke and adapted to bear against the edge of said cutter cylinder, and a spring engaging a portion of said yoke and holding said pressure roller yieldingly against the said cutting edge.

4. In a cutting mechanism, the combination with a cutter cylinder having cutting edges corresponding in contour with the outline to be cut; of a bifurcated stud, means for securing said stud at variable distances from said cutter cylinder, a recessed yoke pivoted in said bifurcated stud, a pressure roller pivoted in said yoke and adapted to bear against the cutting edge of said cutter cylinder, a securing member passing through

the recessed portion of said yoke, and the end of said pressure roller, for fixing said pressure roller at variable angles in said yoke, and a spring suitably attached to said yoke for holding said pressure roller yieldingly against the cutting edge of said cutter cylinder.

5. In a cutting mechanism, the combination with means for cutting the strip, and means adapted to break away the waste; of means for operating said breaking away means, and means for adjusting said operating means to vary the operation of said breaking away means.

6. In a cutting mechanism, the combination with a cutter cylinder for cutting the strip, and a rocking lever pivoted on said cutter cylinder for breaking away the waste; of a stationary trip finger adapted to engage and operate said rocking lever, and means for adjusting the position of said trip finger to vary the operation of said rocking lever.

7. In a cutting mechanism, the combination with means for cutting the strip, means for receiving and carrying away the waste, and means for breaking away the waste, and directing it to said receiving and carrying away means; of means for operating said breaking away and directing means, and means for adjusting said operating means to suit the coöperation of the breaking away and directing means with the receiving and carrying away means.

8. In a cutting mechanism, the combination with a cutter cylinder adapted to cut the strip, a positively driven gripping and carrying away means for the waste, a rocking lever traveling with said cutter cylinder and adapted to break away the waste and direct it to said gripping and carrying away means, stationary tripping means adapted to operate said rocking lever, and means for adjusting said tripping means to suit the action of said rocking lever to its coöperation with said gripping and carrying away means.

9. In a cutting mechanism the combination with a rotary cutter cylinder adapted to cut the strip, a rocking lever pivoted thereto having a flanged end for engaging the waste, and a lug at the other end, and a spring normally holding the lug end thereof raised; of a stationary trip finger projecting into the path of the lug on said rocking lever for operating the same to break away the waste.

10. In a cutting mechanism, the combination with a rotary cutter cylinder adapted to cut the strip, a rocking lever pivoted thereto having a flanged end for engaging the waste, and a lug at the other end, and a spring normally holding the lug end thereof raised; of a stationary trip finger projecting into the path of the lug on said rocking lever for operating the same to break away the

waste, and means for adjusting the position of said stationary trip finger to vary the operation of said rocking lever.

11. In a cutting mechanism, the combination with means for cutting the strip, and positively driven means for gripping and carrying away the waste; of automatic means for intermittently breaking away the waste and directing it to said gripping and carrying away means.

12. In a cutting mechanism, the combination with means for cutting the strip; of a rocking lever adapted to free the waste from the rest of the strip, a spring holding said lever normally in inoperative position, and

means for rocking said lever against the tension of said spring.

13. In a cutting mechanism, the combination with a cutter cylinder adapted to cut the strip, and a rocking lever pivoted on said cutter cylinder and adapted to free the waste from the rest of the strip; of a spring holding said lever normally in inoperative position, and means for operating said lever against the tension of said spring.

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