

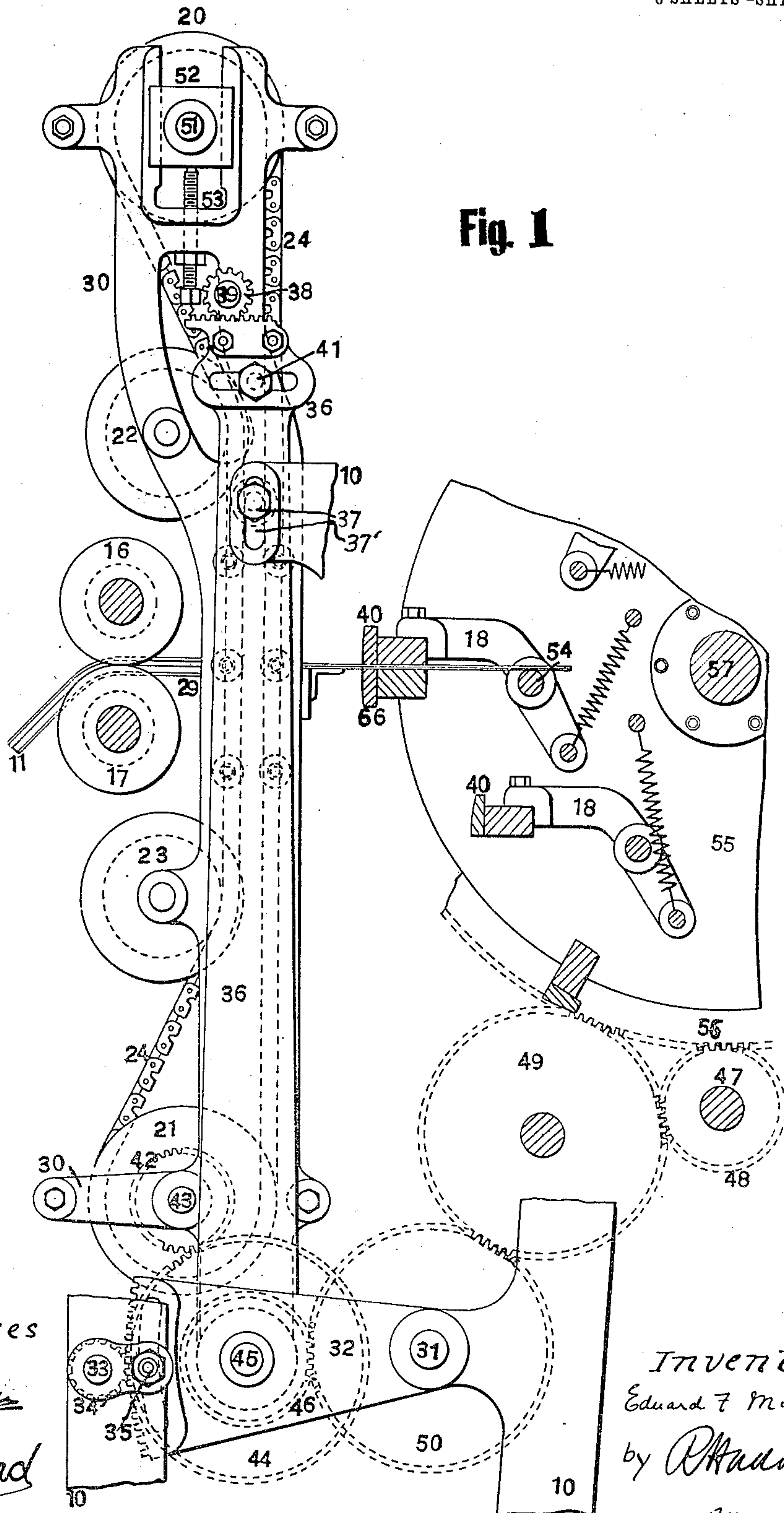
E. F. MÜLLER.
CUTTING MECHANISM FOR PAPER BAG MAKING MACHINES.
APPLICATION FILED FEB. 3, 1908.

920,076.

Patented Apr. 27, 1909.

3 SHEETS—SHEET 1.

Fig. 1



Witnesses
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S. Ford

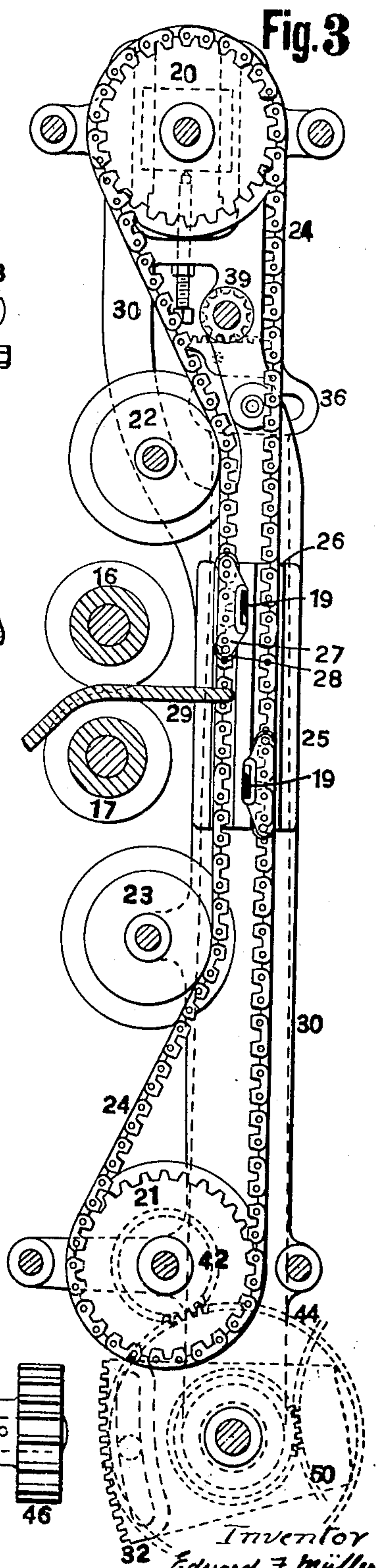
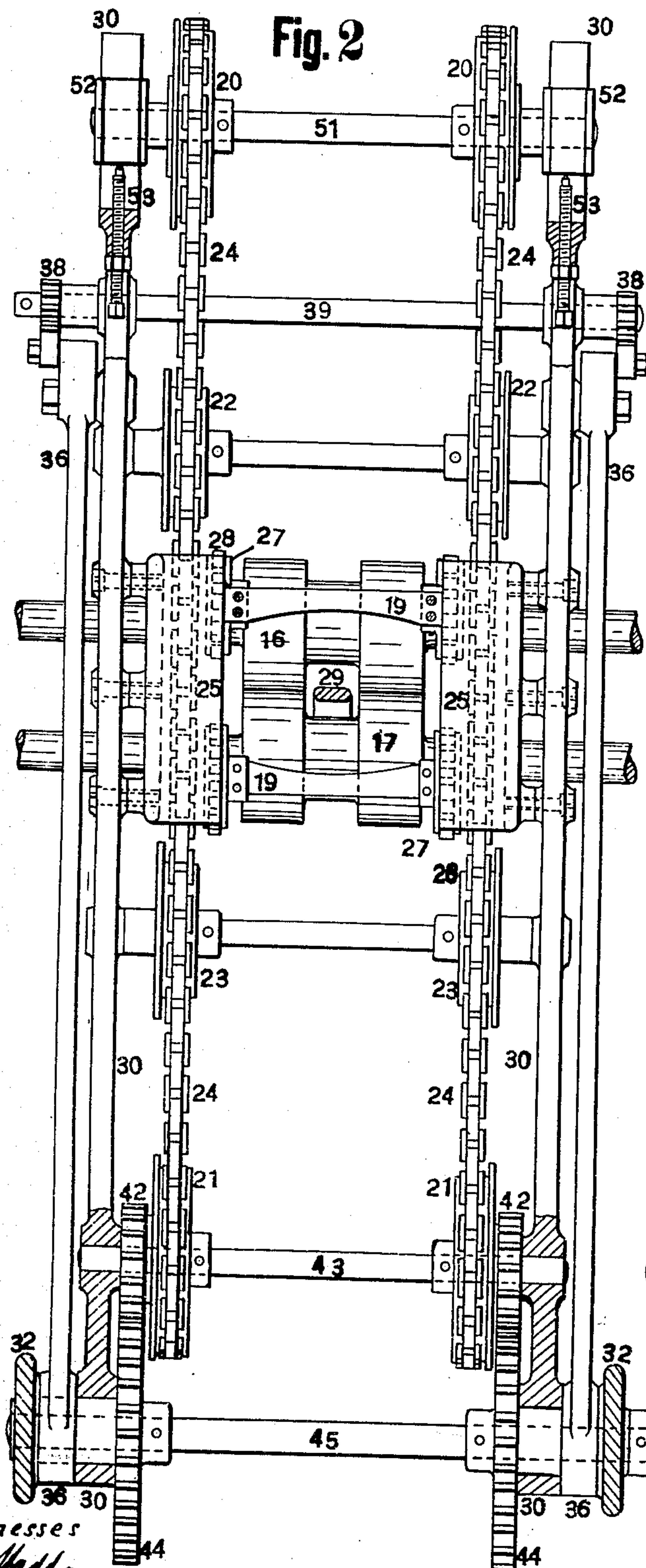
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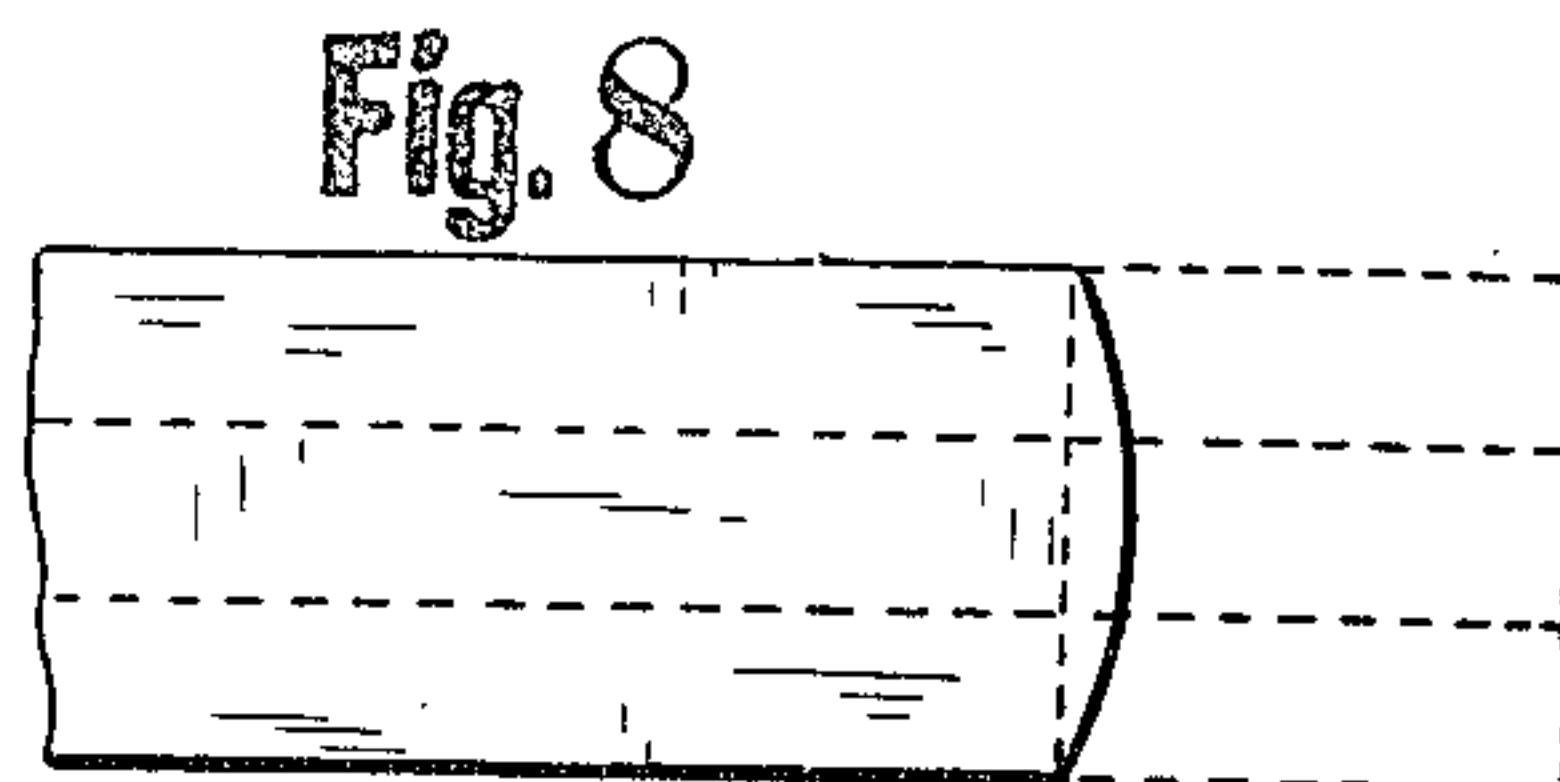
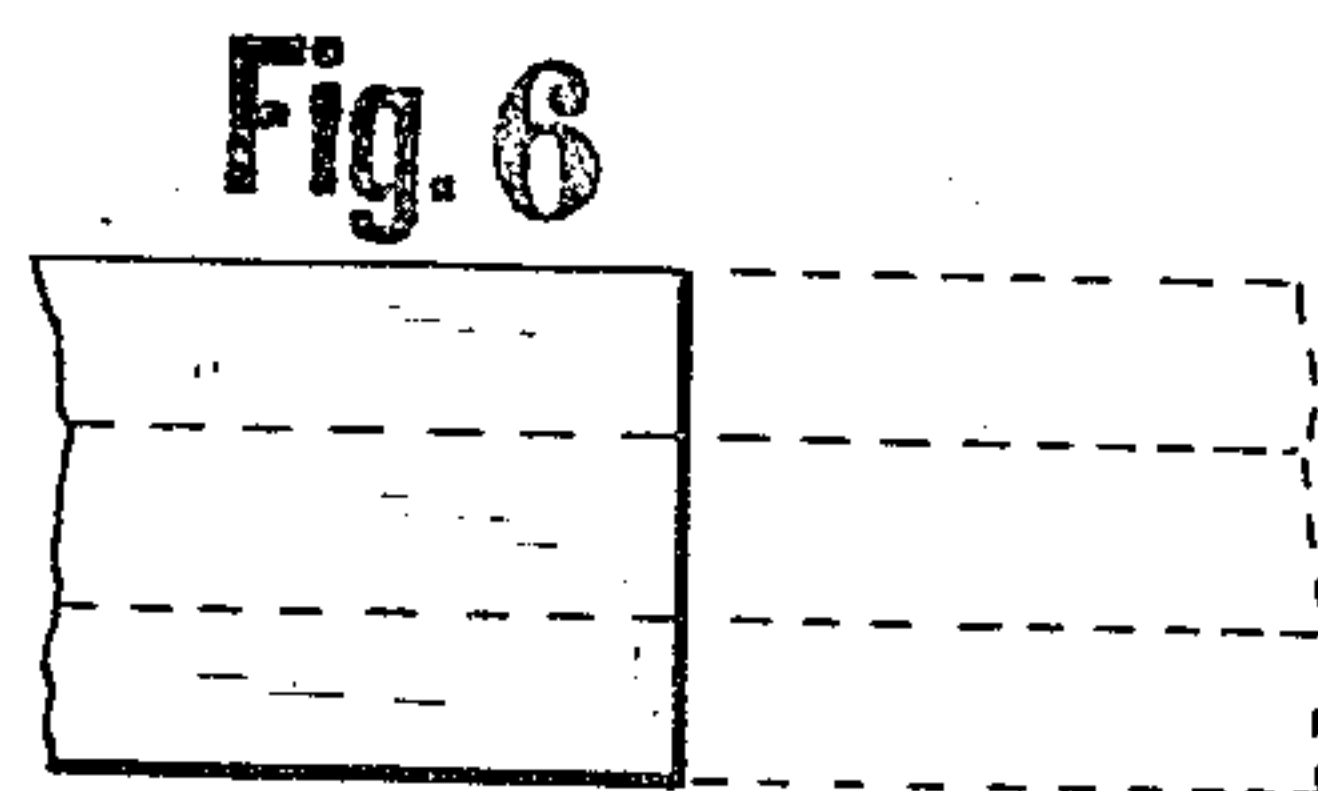
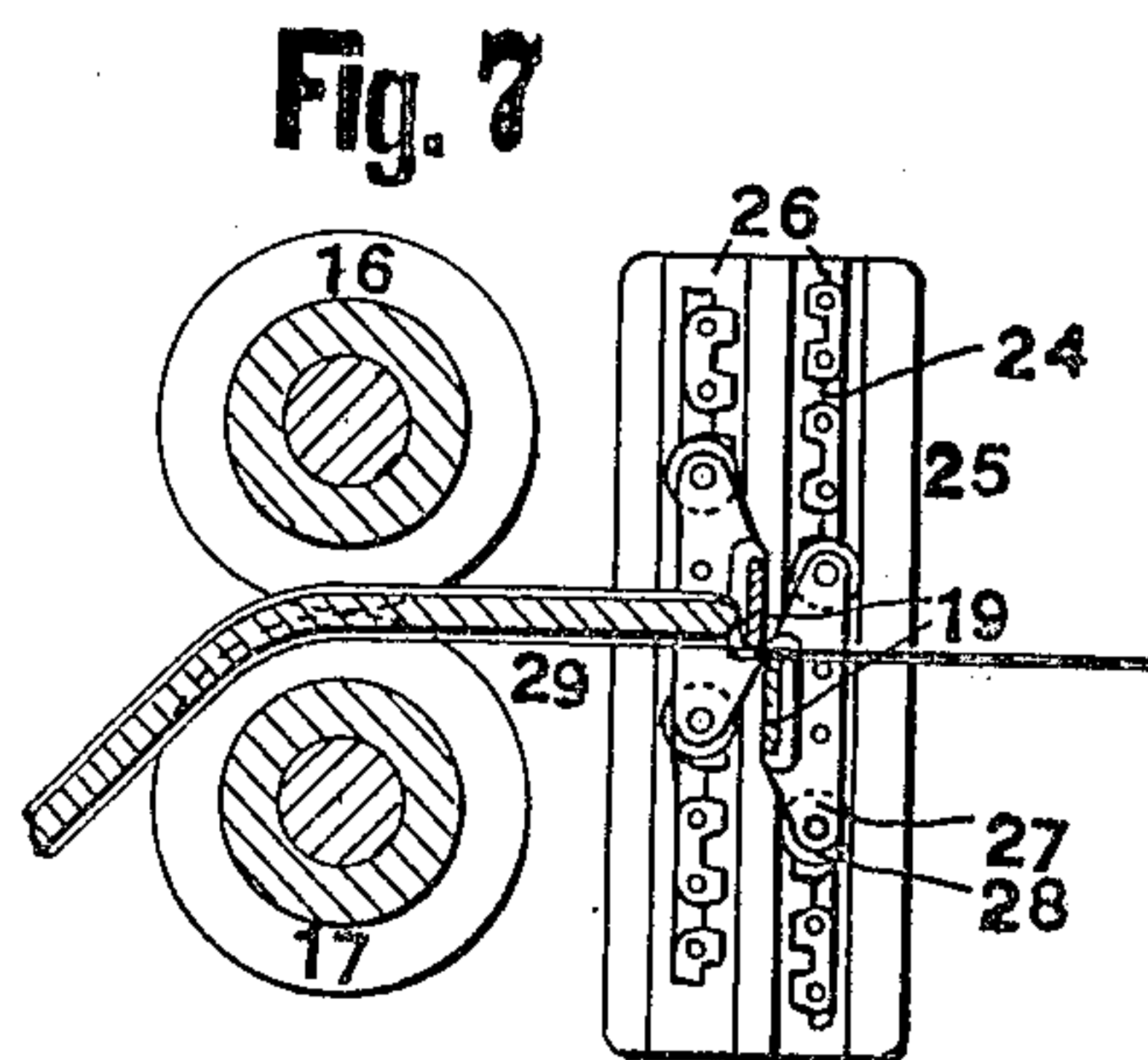
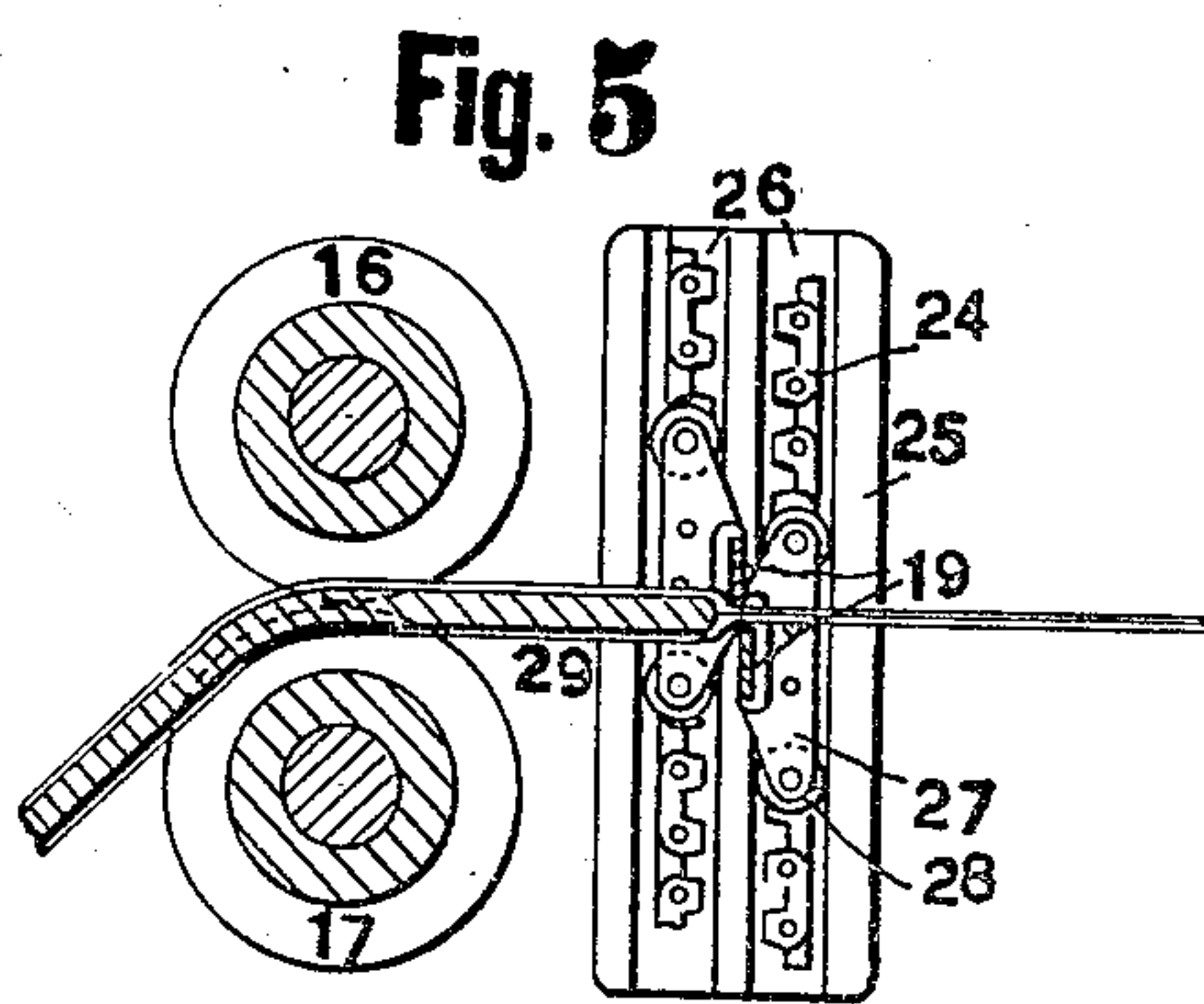
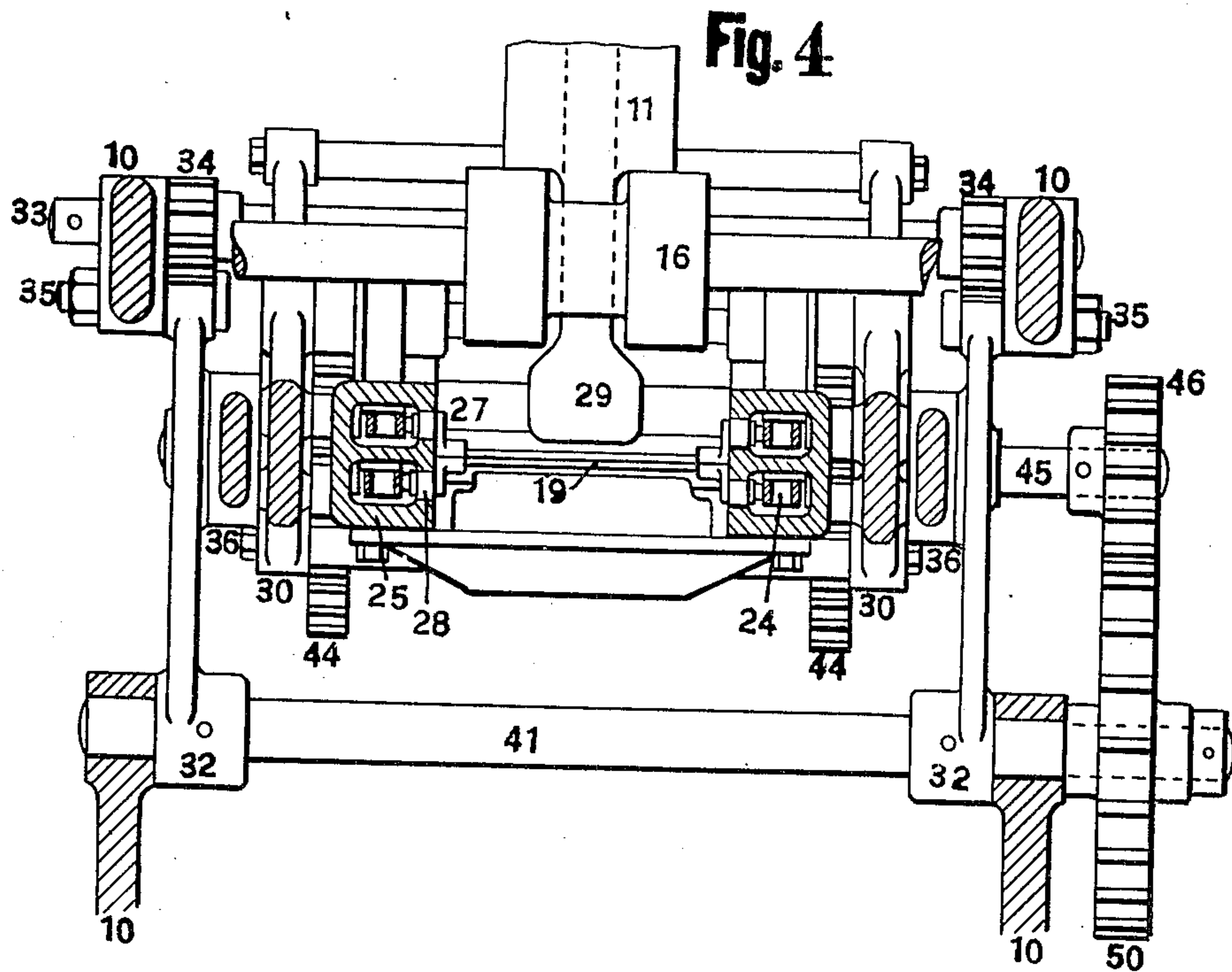
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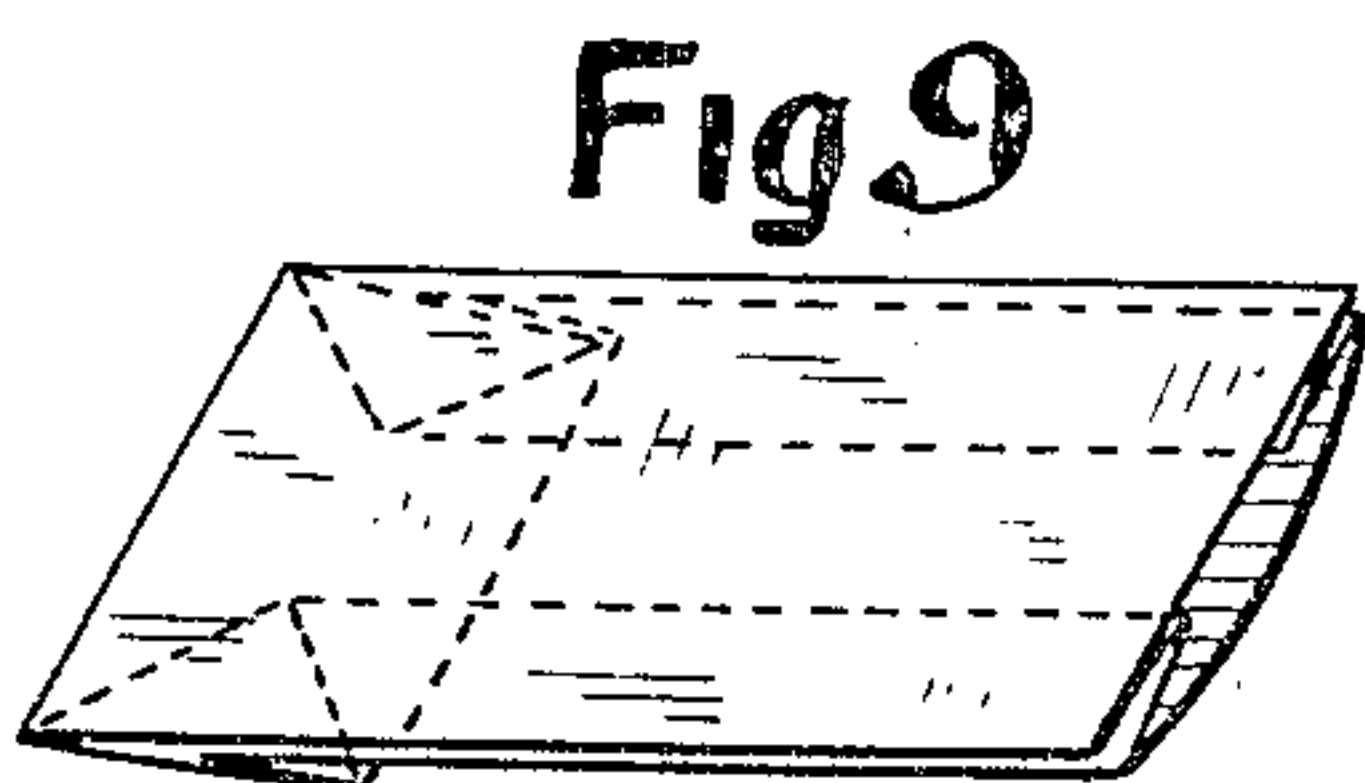
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3 SHEETS—SHEET 3.



Witnesses
A. J. Madden
S. Ford



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UNITED STATES PATENT OFFICE.

EDUARD FELIX MÜLLER, OF LEIPZIG-AUGER, GERMANY.

CUTTING MECHANISM FOR PAPER-BAG-MAKING MACHINES.

No. 920,076.

Specification of Letters Patent.

Patented April 27, 1909.

Original application filed January 12, 1907, Serial No. 352,019. Divided and this application filed February 3, 1908.
Serial No. 414,101.

To all whom it may concern:

Be it known that I, EDUARD FELIX MÜLLER, a subject of the King of Saxony, residing at Leipzig-Auger, in Germany, have
5 invented a certain new and useful Improved Cutting Mechanism for Paper-Bag-Making Machines, of which the following is a specification.

This invention relates to cutting apparatus
10 for use in paper bag making machines more particularly for bags produced from a web by a continuous series of operations due to a continuously rotating drum and accessory rotating machine parts, for example, as illustrated in my application for patent Serial
15 Number 352019, filed 12th January 1907.

The cutting apparatus is illustrated in the annexed drawing in which—

Figure 1 is a side elevation of the same
20 showing also part of the drum and grippers thereon. Fig. 2 is a rear elevation of the cutting apparatus. Fig. 3 a vertical section thereof. Fig. 4 is a horizontal section. Figs. 5 and 7 are detail sectional views illustrating two methods of cutting and Figs. 6
25 and 8 illustrate the forms of cut made thereby. Fig. 9 is a perspective view of a bag with edges cut as in Fig. 8.

The paper tube passes between the feed-
30 rollers 16 and 17 and thence to the cutting mechanism, the tube being cut by the knives 19 at the moment when the front end of the tube is engaged by the grippers 18 (Fig. 1).

The cutting mechanism comprises the endless chains 24 traveling over the sprocket-
35 wheels 20 and 21, and guide rollers 22 and 23, the knives 19 being attached to these chains. The velocity of the knives is considerable compared with that of the paper tube, in
40 order to secure a rapid and clean cut. The rollers 22 and 23 guide the chains in such a manner that the knives act in the manner of shears. The guides 25 (Figs. 4 5 and 7) serve to insure perfect steadiness of the
45 knives during the cutting operation, the knife-holders 27 being provided with anti-friction rollers 28 working in the grooves 26 of the said guides.

The cutting of the paper may take place
50 in various positions of the knives 19, to the guide bar 29 for example the knives may cut the tube exactly in the middle line of the guide-bar 29 (Fig. 5), so that a straight cut is made (Fig. 6) to produce a blank the two

sides of which are of equal length, or the cutting operation may take place above or below the guide-bar 29 (Fig. 7) so that one side of the blank has a rounded edge overlapping the edge of the other side (Fig. 8). The sprocket-wheels 20 and 21 are mounted in
60 the frames 30 pivotally connected to the toothed segments 32 mounted on the shaft 31, the said segments being in mesh with the toothed wheels 34 fixed to the shaft 33, so that by rotating the latter the segments can
65 be raised or lowered to regulate the cutting position of the knives 19 relatively to the guide-bar 29. After adjustment the segments 32 are made fast to the frame 10 by
70 means of screws 35.

Pivotally connected to segments 32 are the two flat levers 36 which are adapted to be fixed to the frame 10 by means of screws 37 passing through slots 37' with which the latter is provided. To each lever 36 is bolt-
75 ed a toothed rack meshing with a pinion 38 fixed to the shaft 39, the latter being mounted in the frames 30. Rotation of the shaft 39 therefore rocks the frames 30 on their pivots and allows of adjusting the distance
80 of the knives from the feed-rollers 16, 17. This arrangement allows of exactly regulating the length of paper-tube outside the gripper-bars 40 and 66 when the paper is cut, from this projecting part of the blank the
85 bottom of the bag is subsequently formed. After adjustment the frames 30 are made fast to the levers 36 by means of the screws 41, the said levers being fixed to the frame
90 10 in the manner already described. The total length of the blank cut is regulated by the circumferential velocity of the feed-rollers 16 and 17, which are driven by means
95 of suitable variable speed-gear. The velocity of the chains 24 and knives 19 is constant, the sprocket wheels 21 being driven by means of the shaft 43 and toothed wheels 42 in mesh with the toothed wheels 44 fixed to the shaft 45, the wheel 46 fixed to the latter is driven from the driving shaft 47 by
100 means of the toothed-wheels 48, 49 and 50. The shaft 51 of the sprocket-wheels 20 is mounted in bearings 52 adapted to be vertically adjusted in the frames 30 by means
105 of screws 53 in order to regulate the tension of the chains 24. Instead of the chains 24, wire ropes or steel bands can of course be used for operating the knives.

What I claim as my invention and desire to secure by Letters Patent of the United States is:—

1. A cutting mechanism for paper bag making machines comprising two continuously moving knives passing each other so as to act in the manner of shears, and chains, bands or ropes, on which said knives are mounted, means for driving the chains, bands or ropes and guides for guiding the knives during the cutting-off process.

2. A cutting mechanism for paper bag making machines comprising two continuously moving knives passing each other so as to act in the manner of shears, and chains, bands or ropes, on which said knives are mounted, means for driving the chains, bands or ropes, guides for guiding the knives during the cutting-off process and means for adjusting the cutting-off mechanism in the vertical and in the horizontal direction.

3. A cutting mechanism for paper bag making machines comprising two knives 19

relatively movable to act in the manner of shears, knife holders 27 provided with anti-friction rollers 28 working in grooves 26, guides 25 serving to insure perfect steadiness of the knives during the cutting operation, continuously movable chains, or bands 24 to which said knife-holders are connected, gears 21, gears 20 and guiding wheels 22 and 23 for said chains or bands, frame 30 carrying gears 20, 21 and wheels 22, 23, lever 36, shafts 39, 31 and 35 toothed rack and pinion 38 on shaft 39 to regulate the cutting position of the knives in the horizontal direction, and segment 32 fulcrumed on shaft 31 and pinion 34 on shaft 33 to regulate the cutting position of the knives 19 relatively to the guide-bar 29 in the vertical direction.

In witness whereof I have signed this specification in the presence of two witnesses.

EDUARD FELIX MÜLLER.

Witnesses:

ERNST JULIUS WAGNER,
RUDOLPH FRICKE.