

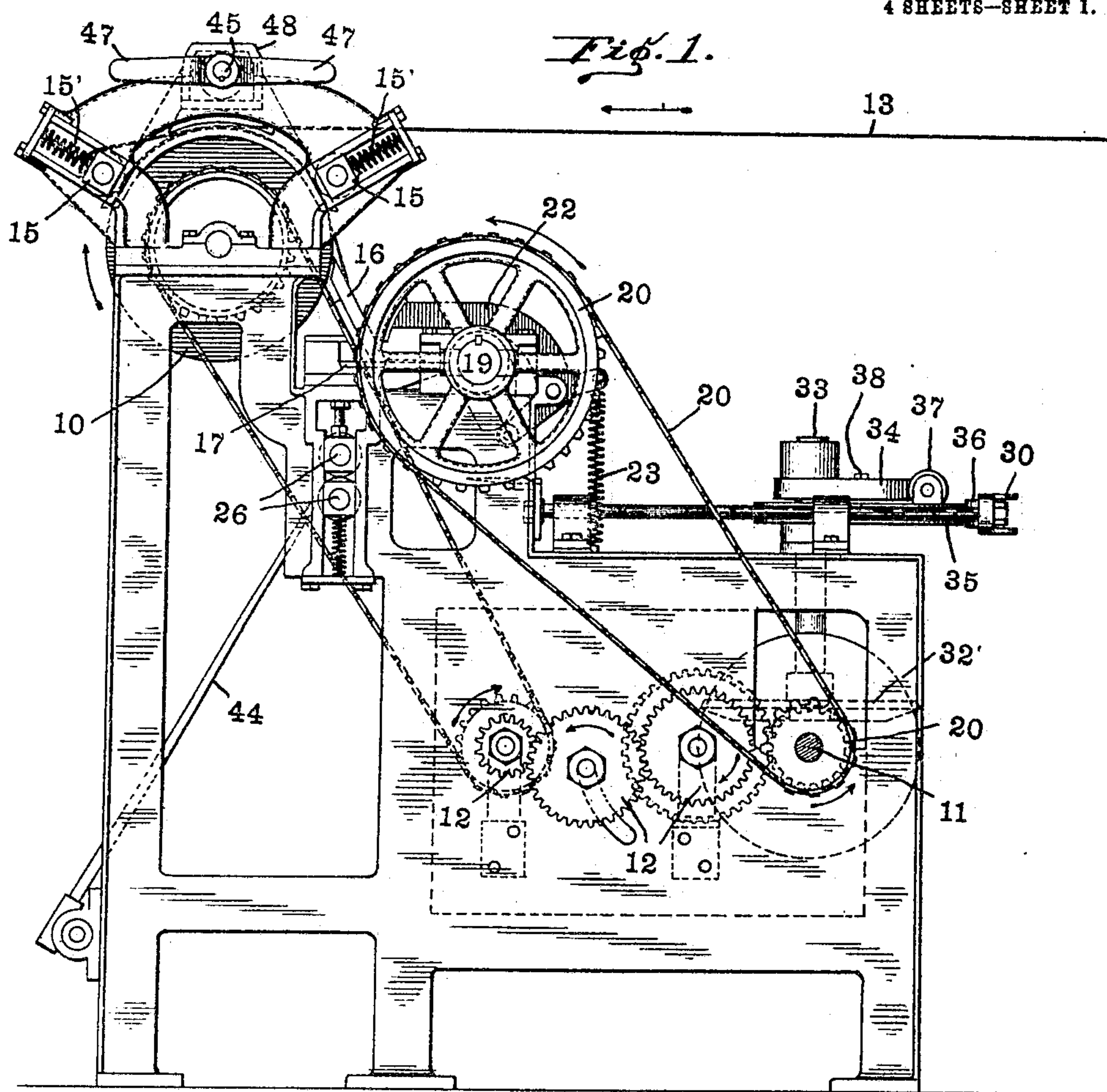
No. 801,488.

PATENTED OCT. 10, 1905.

C. A. TRIPP.
CUTTING AND FOLDING MACHINE.

APPLICATION FILED APR. 22, 1904.

4 SHEETS—SHEET 1.



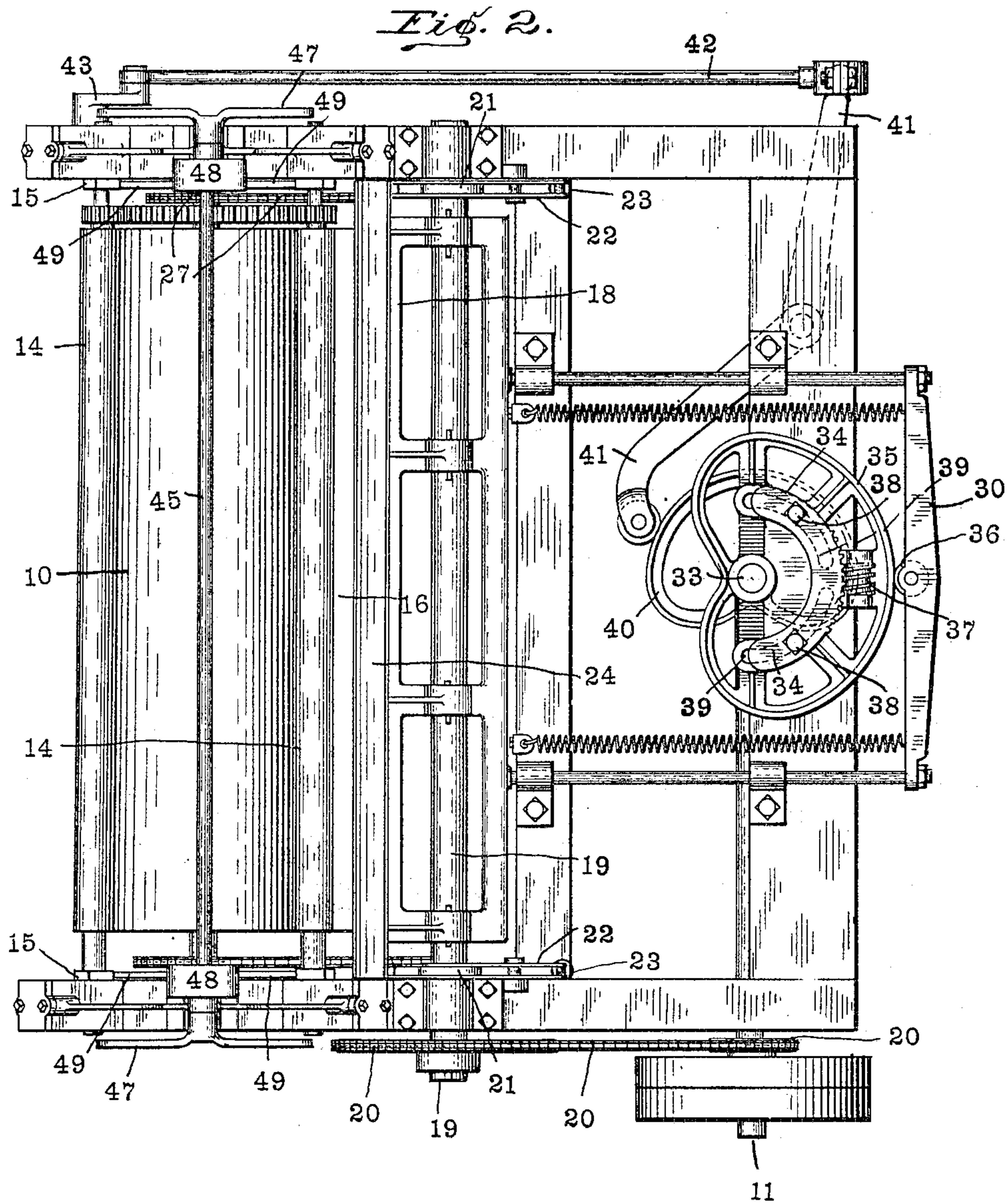
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4 SHEETS—SHEET 2.



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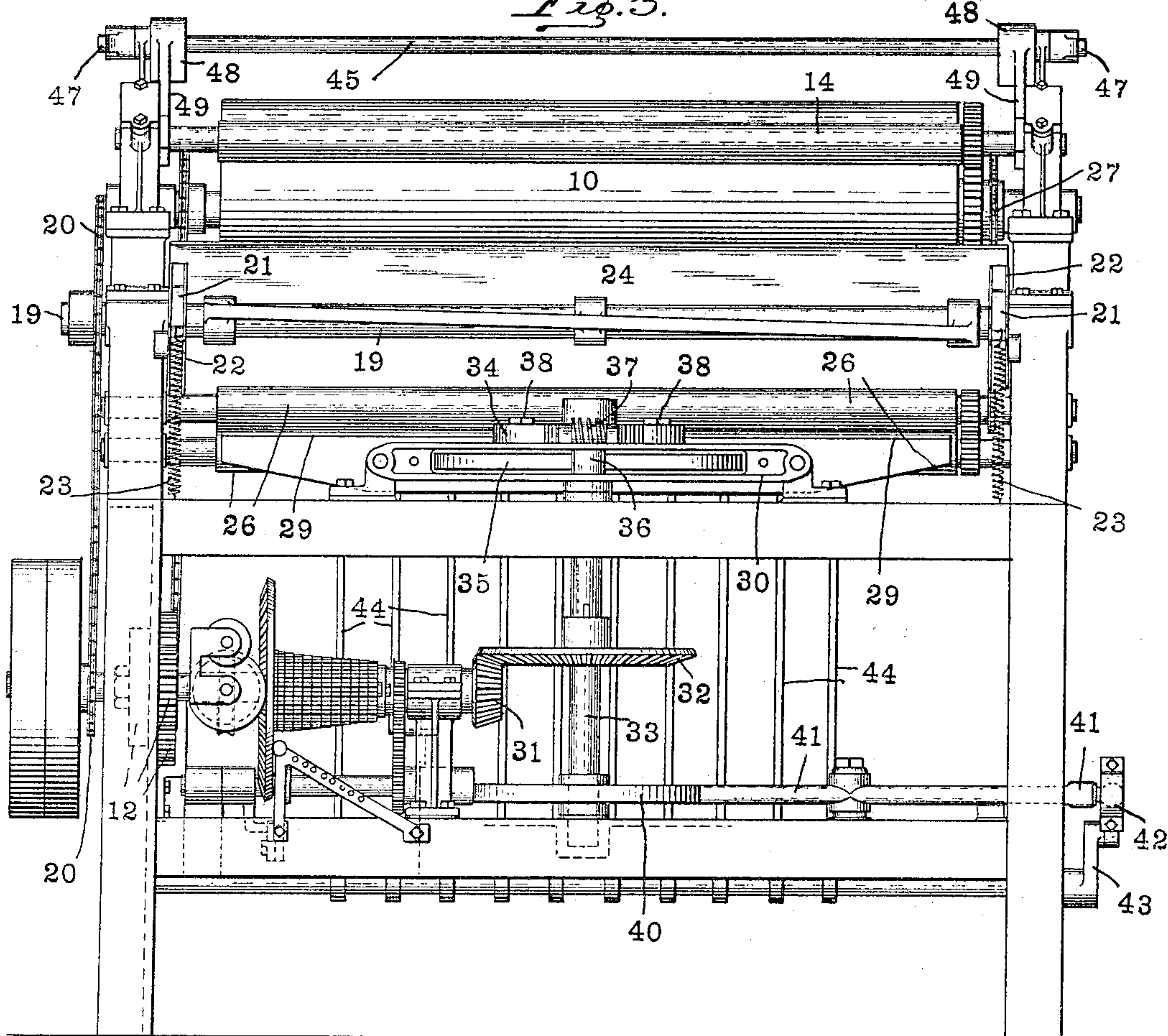
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Fig. 3.

4 SHEETS--SHEET 3.



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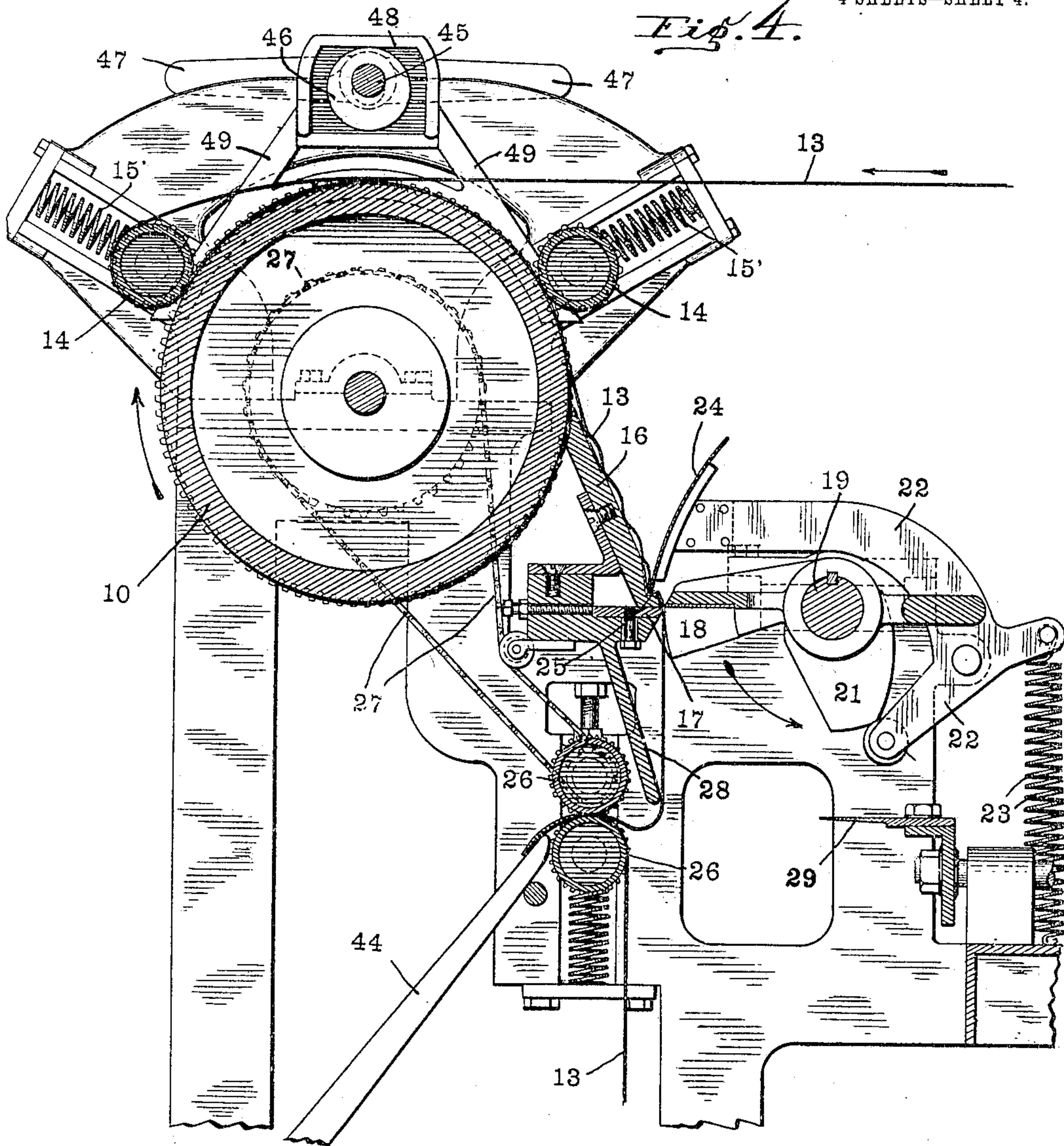
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4 SHEETS—SHEET 4.

Fig. 4.



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UNITED STATES PATENT OFFICE.

CHARLES A. TRIPP, OF INDIANAPOLIS, INDIANA.

CUTTING AND FOLDING MACHINE.

No. 801,488.

Specification of Letters Patent.

Patented Oct. 10, 1905.

Application filed April 22, 1904. Serial No. 204,421.

To all whom it may concern:

Be it known that I, CHARLES A. TRIPP, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented certain new and useful Improvements in Cutting and Folding Machines, of which the following is a specification.

In the manufacture of cloth bags it is necessary that the bag-stock be cut accurately into desired lengths and folded preparatory to sewing.

The object of my present invention is to produce a machine capable of taking the webbing from a large roll and cutting the same accurately into any desired lengths and automatically folding the same, the folding mechanism being such that the fold may be produced along any desired line between the two ends of the cut pieces.

The fundamental features of the present invention are to be found illustrated and originally claimed in my Patent No. 763,337.

The accompanying drawings illustrate my invention.

Figure 1 is a side elevation of a machine embodying my invention; Fig. 2, a plan; Fig. 3, a rear elevation; and Fig. 4 a vertical section, on an enlarged scale, of the cutting and immediately adjacent folding mechanism.

In the drawings, 10 indicates a feed-roll driven from a main shaft 11 by any suitable intermediate speed-changing gearing 12, the construction of the means by which the speed of roll 10 may be adjusted with relation to the driving-shaft being entirely immaterial. For the purpose of holding the web 13 upon the feed-roll 10 I provide pressure-rollers 14, which are mounted in suitable bearings 15 and normally held in engagement with the feed-roll 10 by suitable pressure-springs 15'. Leading downward from the forward or delivery side of the feed-roll 10 is a guideway 16, over which the delivered end of the web 13 may run, dropping downward along said guideway by gravity. Arranged at the lower end or edge of the guideway 16 is a stationary cutter 17, which is adapted to cooperate with a rotary cutter 18, which is slightly spiral (similar to a lawn-mower cutter.) The cutter 18 is carried by a shaft 19, and this shaft is rotated by a suitable train of gearing 20, which connects it with the main shaft 11. Shaft 19 carries a cam 21, which is adapted to engage an arm 22, which is yieldingly held in engagement with the cam by means of a suitable

spring 23. Arm 22 carries at its forward or free end a clamping-plate 24, which by reason of the action of cam 21 is arranged to be brought down upon a shelf 25, formed at or near the foot or lower edge of the guide 16 and immediately above the cutter 17, the arrangement being such that the web 13 may be clamped on the ledge 25 by the clamping-plate 24. Arranged a desired distance below the cutter 17 are two coacting folding-rollers 26 26, one of said rollers being connected by chain 27 or otherwise, so as to be positively rotated by the drum 10 or other suitable moving member. A guard-finger 28 projects in front of the upper roller 26 for purposes which will appear. Arranged in line with the crotch between the two rollers 26 is a folding-blade 29, which is carried at the forward end of a reciprocating carriage 30, mounted to reciprocate in a horizontal plane. Geared to the main drive-shaft 11 by a pair of beveled gears 31 and 32 is a vertical shaft 33, to the upper end of which is secured a segmental worm-wheel 34. Loosely sleeved upon shaft 33, immediately beneath the worm-wheel segment 34, is a cam 35, which is adapted to engage a roller 36, (forming part of the frame 30,) and thus reciprocate the frame 30. Journaled upon cam 35 is a worm 37, which meshes with the segmental worm-wheel 34, so that by turning worm 37 the position of cam 35 upon shaft 33 may be accurately timed; yet the cam is at all times securely locked to the shaft, so as to rotate therewith. For greater security after adjustment of the cam with relation to the shaft the cam is additionally secured to the worm-wheel segment by means of bolts 38, which pass through suitable segmental slots 39, formed in the cam 35. Shaft 33 also carries a cam 40, which operates upon a lever 41, which in turn is connected through pitman 42 and arm 43 with the usual delivery-fly 44, the upper free end of which may be brought to the delivery side of the crotch between the two folding-rollers 26.

It sometimes occurs that it is desirable to withdraw the idlers 14 from contact with the feed-roll 10, and for this purpose I arrange above roll 10 a shaft 45, which carries at each end a cam 46. Shaft 45 is also provided at one end with an operating-lever 47. Saddled upon each cam 46 is a casting 48, provided with a pair of diverging fingers 49 49, one of which runs under each journal 15, so that by rocking shaft 45 the wedge formed by the fingers 49 may be drawn upward between the

boxes 15, and thus force the rollers 14 radially away from the feed-roll 10, so that the web may be straightened upon roll 10 or otherwise manipulated without difficulty.

5 In operation the web 13 is brought over feed-roll 10 in the manner shown in Fig. 4, and the feed-roll serves to drive the free end of the web onto guide 16, and this free end falls by its own gravity down past cutter 17
10 and the folding-rolls 26, being held away from the folding-rolls by means of the guard-finger 28. By regulating the speed of feed-roll 10 relative to the speed of shaft 33 any desired length of web may be caused to hang below
15 the crotch between the folding-rolls 26, and it is by this means that the length of material for bags of different sizes is determined. As soon as the desired length of webbing has passed below the crotch between the folding-
20 rollers 26 cam 35 allows the folding-blade 29 to move forward and engage the web and force a doubled portion thereof into the crotch between the folding-rollers 26, whereupon the feed-rolls pinch the doubled web between them
25 and drive the same therethrough onto the delivery-fly 44.

It will be noticed that the distance between the cutter 17 and the crotch between the folding-rollers 26 remains constant, and the ad-
30 justment of the cam 35 is therefore necessary in order that its time of action upon the folding-blade 29 may be adjusted with relation to the time of action of cam 21 upon the arm 22. If the minimum-size bag is to be cut—i. e., a
35 bag having a width slightly greater than the distance between the knife 17 and the crotch between the rollers 26—ledge 25 is adjusted, so as to throw the folding-blade 29 into the crotch between the folding-rolls just before
40 the cam 21 brings clamp 24 down upon ledge 25, the clamp holding the web stationary, while cutter 18 comes into coaction with cutter 17 and severs the web. If larger sizes are desired, cam 35 is advanced on the shaft 33,
45 so that the blade 29 will come into action before the clamp 24 is brought down upon ledge 25, so that the web is carried between the folding-rolls before clamp 24 engages the web and before the web is severed by the cutters.
50 In order to permit this delayed action, the peripheral speed of the rolls 26 is somewhat less than the peripheral speed of the feed-roll 10, so that there is no danger of the folding-rolls 26 taking up the slack in the web before
55 it is severed.

I claim as my invention—

1. In a web-cutting machine, the combination, with web-feeding means, of cutting means arranged beneath the feeding means whereby
60 the uncut web will pass through the cutting means by gravity, and a clamp for engaging the web between the feeding and cutting means.

2. In a web-cutting machine, the combina-

tion, with feeding means, of cutting means ar- 65
ranged beneath the feeding means whereby the uncut web will pass through the cutting means by gravity, a clamp for engaging the web between the feeding and cutting means, and a transferring means arranged beneath 70
the cutting means in position to receive the cut portions of the web.

3. In a web-cutting machine, the combination, with the web-feeding means, of cutting means arranged beneath the feeding means, a 75
pair of folding-rollers arranged beneath said cutting means substantially at right angles to the line of movement of the web, a folding-blade, and means for driving said blade into engagement with the depending web and 80
carrying a fold thereof into the crotch between the rollers.

4. In a web-cutting machine, the combination, with web-feeding means, of folding means arranged beneath said feeding means substan- 85
tially at right angles to the line of movement of the web, means for introducing an intermediate fold of the depending web to said folding means, and cutting means between the folding means and feeding means. 90

5. In a web-cutting machine, the combination of feeding means, cutting means, a clamp for engaging the web at the time of cut, fold- 95
ing means, and means for adjusting the relative time of action of the clamp and cutter on the one hand and the folding means on the other, for the purpose set forth.

6. In a web-cutting machine, the combination with feeding means and cutting means, of a clamp for engaging the web between the 100
feeding and cutting means, folding means for engaging the web beyond the cutter, and means for regulating the time of action of the folding means with relation to the time of action of the clamp. 105

7. In a web-cutting machine, the combination with feeding means and cutting means, of a clamp for engaging the web during the time of cut, folding means for engaging the web beyond the cutter, and means for regulating 110
the time of action of the folding means with relation to the time of action of the cutter and clamp.

8. In a web-cutting machine, the combination with feeding means for the web, means 115
for varying the speed of feed, cutting means, a clamp for engaging the web between the feeding means and cutting means, folding means for engaging the web beyond the cutter, and means for adjusting and maintaining the time of action of the folding means with relation to the time of action of the clamp. 120

9. In a web-cutting machine, the combination with feeding means for the web, means 125
for varying the speed of feed, cutting means, a clamp for engaging the web during the time of cut, folding means for engaging the web beyond the cutter, and means for adjusting

the time of action of the folding means with relation to the time of action of the cutter and the clamp.

10. In a web-cutting machine, the combination with web-feeding means, of means for changing the speed of said feeding means, a cutter arranged beneath said feeding means, a pair of folding-rollers arranged beneath said cutter, a folding-blade, means for projecting said folding-blade into the crotch between the folding-rollers so as to carry the web therebetween, and means for adjusting the time of action of said folding-blade with relation to the time of action of the cutter.

11. In a web-cutting machine, the combination with web-feeding means, of means for changing the speed of said feeding means, a cutter arranged beneath said feeding means, a clamp adapted to intermittently engage the web between the feeding means and cutter, a pair of folding-rollers arranged beneath said cutter, a folding-blade, means for projecting said folding-blade into the crotch between the folding-rollers so as to carry the web therebetween, and means for adjusting the time of action of said folding-blade with relation to the time of action of the cutter and clamp.

12. In a web-cutting machine, the combination with web-feeding means, of means for changing the speed of said feeding means, a cutter arranged beneath said feeding means, a pair of folding-rollers arranged beneath said cutter, a folding-blade, a driving-shaft for said folding-blade, a cam carried by said shaft and engaging said blade, and means for adjusting said cam angularly upon the shaft whereby the time of action of the folding-blade may be adjusted with relation to the time of action of the cutter.

13. In a web-cutting machine, the combination with web-feeding means, of means for changing the speed of said feeding means, a cutter arranged beneath said feeding means, a clamp adapted to intermittently engage the web between the feeding means and cutter, a pair of folding-rollers arranged beneath said cutter, a folding-blade, a driving-shaft for said folding-blade, a cam carried by said shaft

and engaging said blade, and means for adjusting said cam angularly upon the shaft whereby the time of action of the folding-blade may be adjusted with relation to the time of action of the cutter and clamp.

14. In a web-cutting machine, the combination with web-feeding means, of means for changing the speed of said feeding means, a cutter arranged beneath said feeding means, a pair of folding-rollers arranged beneath said cutter, a folding-blade, means for projecting said folding-blade into the crotch between the folding-rollers so as to carry the web therebetween, said means consisting of a driving-shaft for said folding-blade, a cam sleeved thereon, and a worm and a worm-segment, one carried by the cam and the other by the shaft whereby the cam may be angularly adjusted upon the shaft and the time of action of the folding-blade thus adjusted with relation to the time of action of the cutter.

15. In a web-cutting machine, the combination with web-feeding means, of means for changing the speed of said feeding means, a cutter arranged beneath said feeding means, a clamp adapted to intermittently engage the web between the feeding means and cutter, a pair of folding-rollers arranged beneath said cutter, a folding-blade, means for projecting said folding-blade into the crotch between the folding-rollers so as to carry the web therebetween, said means consisting of a driving-shaft for said folding-blade, a cam sleeved thereon, and a worm and a worm-segment, one carried by the cam and the other by the shaft whereby the cam may be angularly adjusted upon the shaft and the time of action of the folding-blade thus adjusted with relation to the time of action of the cutter and clamp.

In witness whereof I have hereunto set my hand and seal, at Indianapolis, Indiana, this 8th day of April, A. D. 1904.

CHARLES A. TRIPP. [L. s.]

Witnesses:

ARTHUR M. HOOD,
JAMES A. WALSH.