

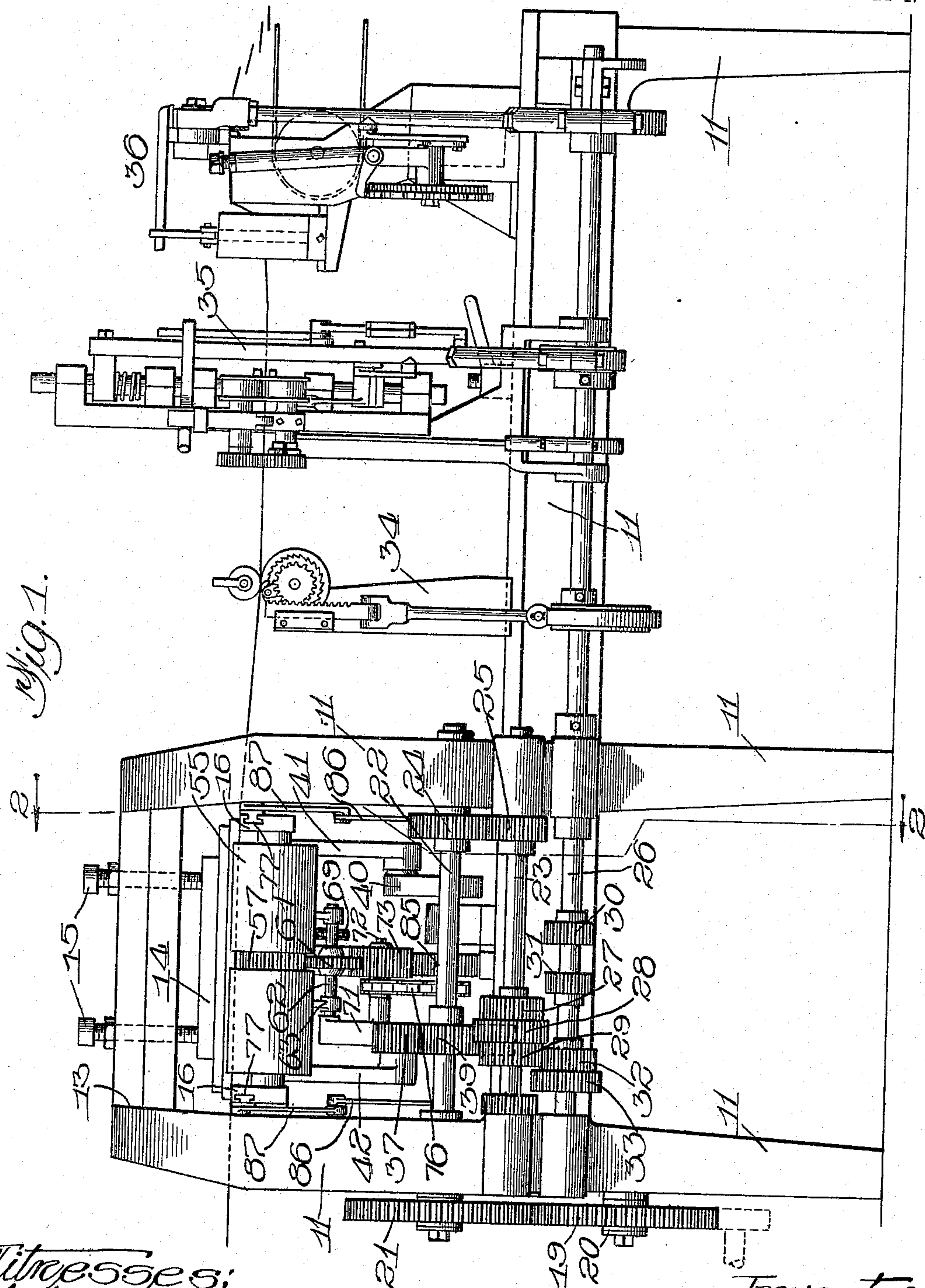
S. B. SEATON & R. G. TRAVIS.  
PRINTING PRESS.

APPLICATION FILED AUG. 20, 1908.

930,497.

Patented Aug. 10, 1909.

4 SHEETS—SHEET 1.



Witnesses:  
J. V. Donatus Jr.  
Geo. D. Perry

Inventors  
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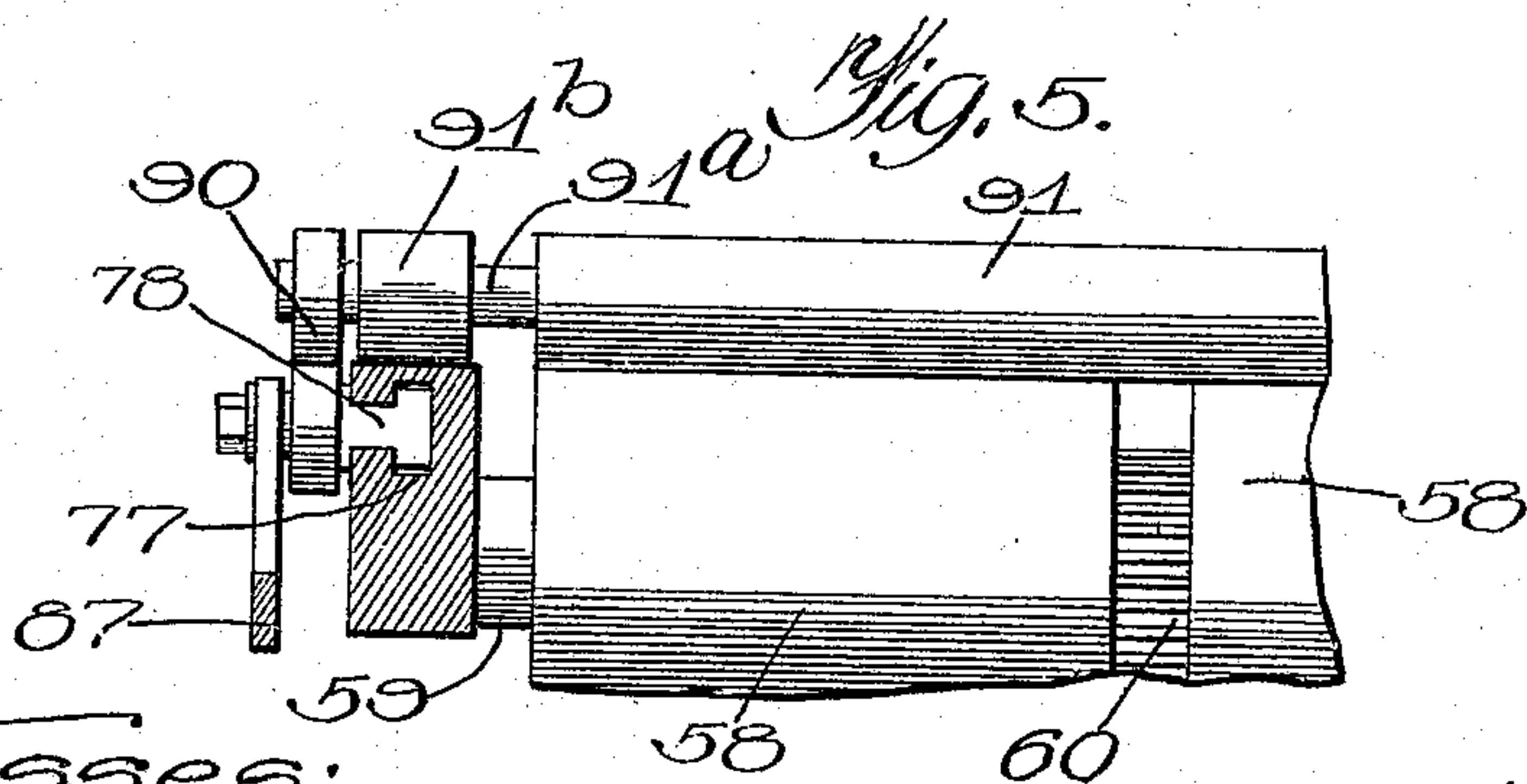
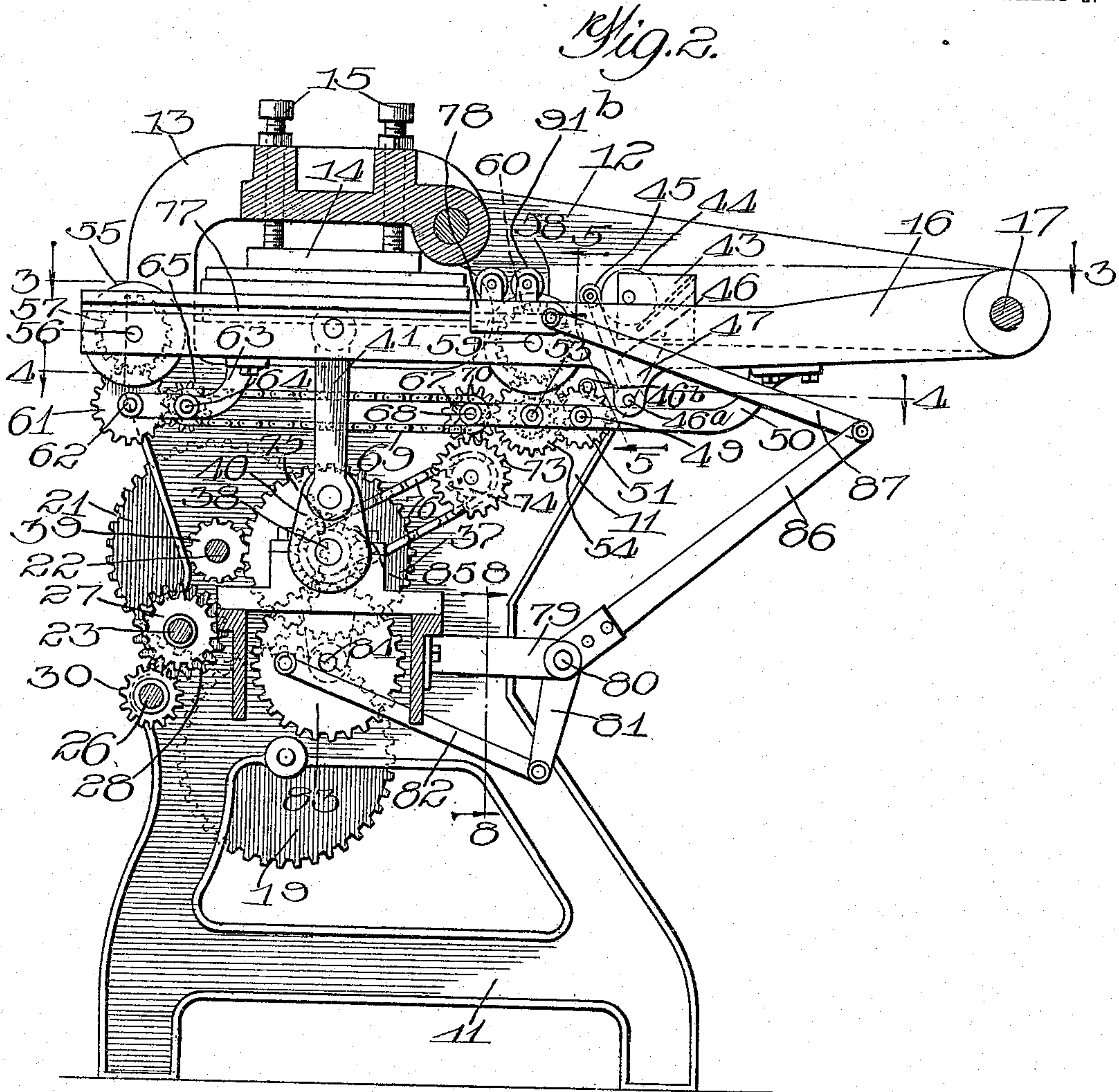
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4 SHEETS—SHEET 2.



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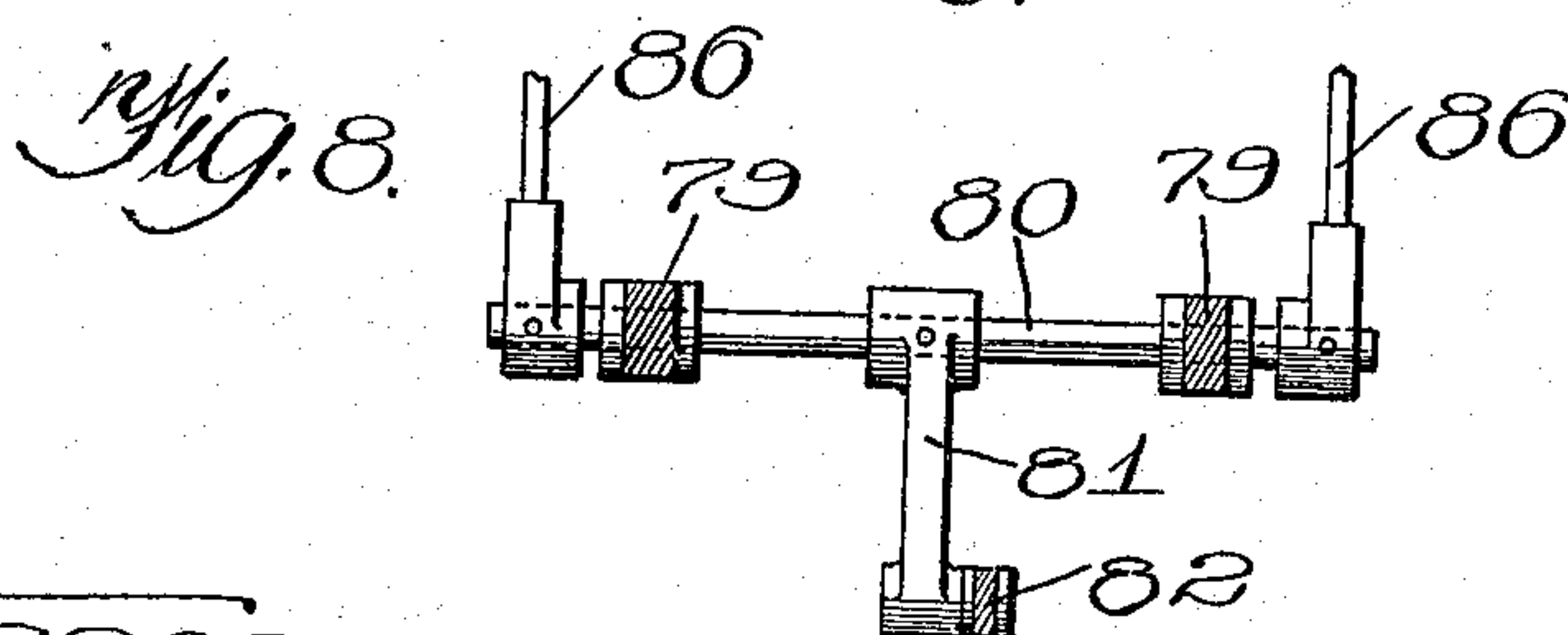
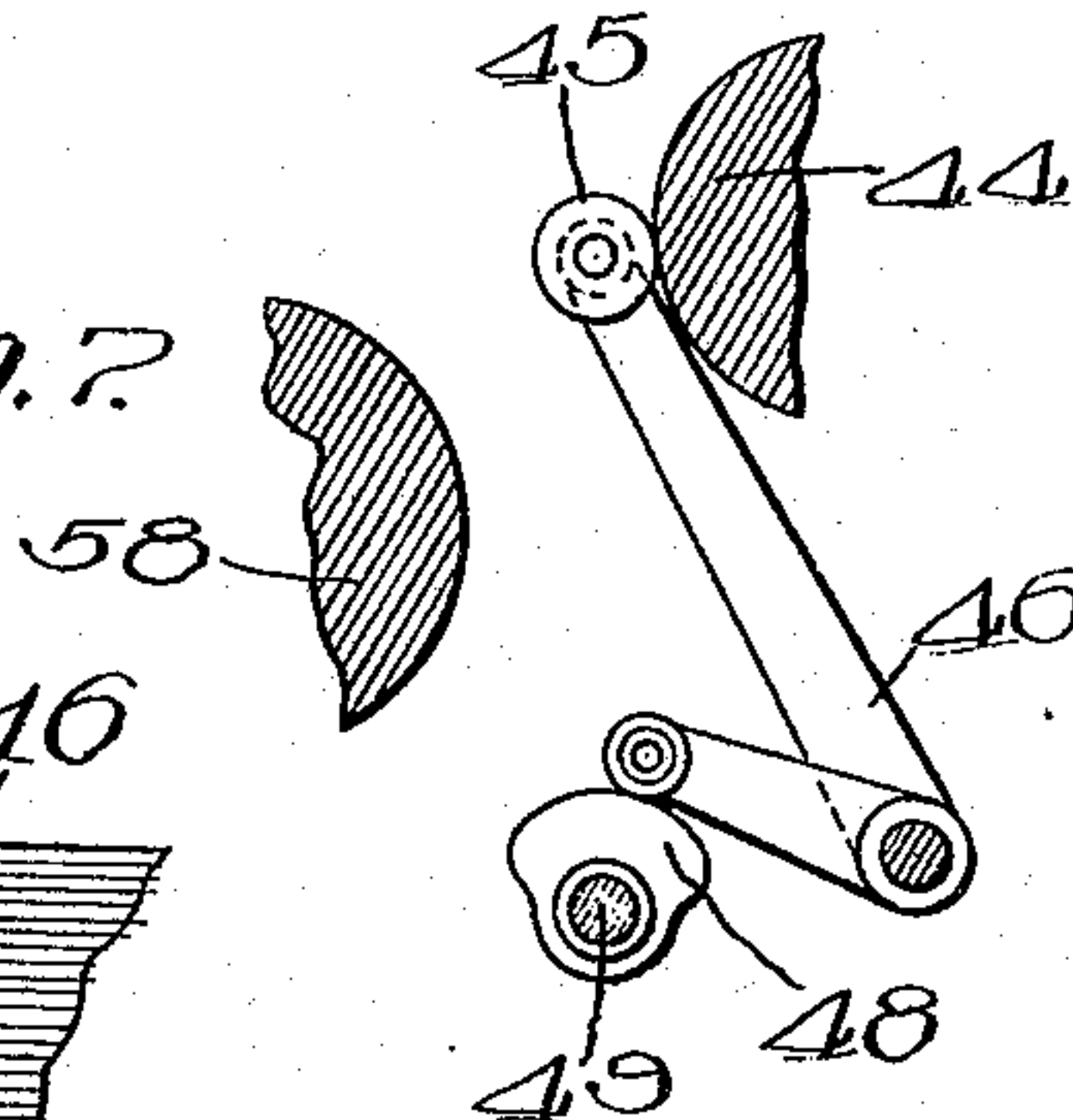
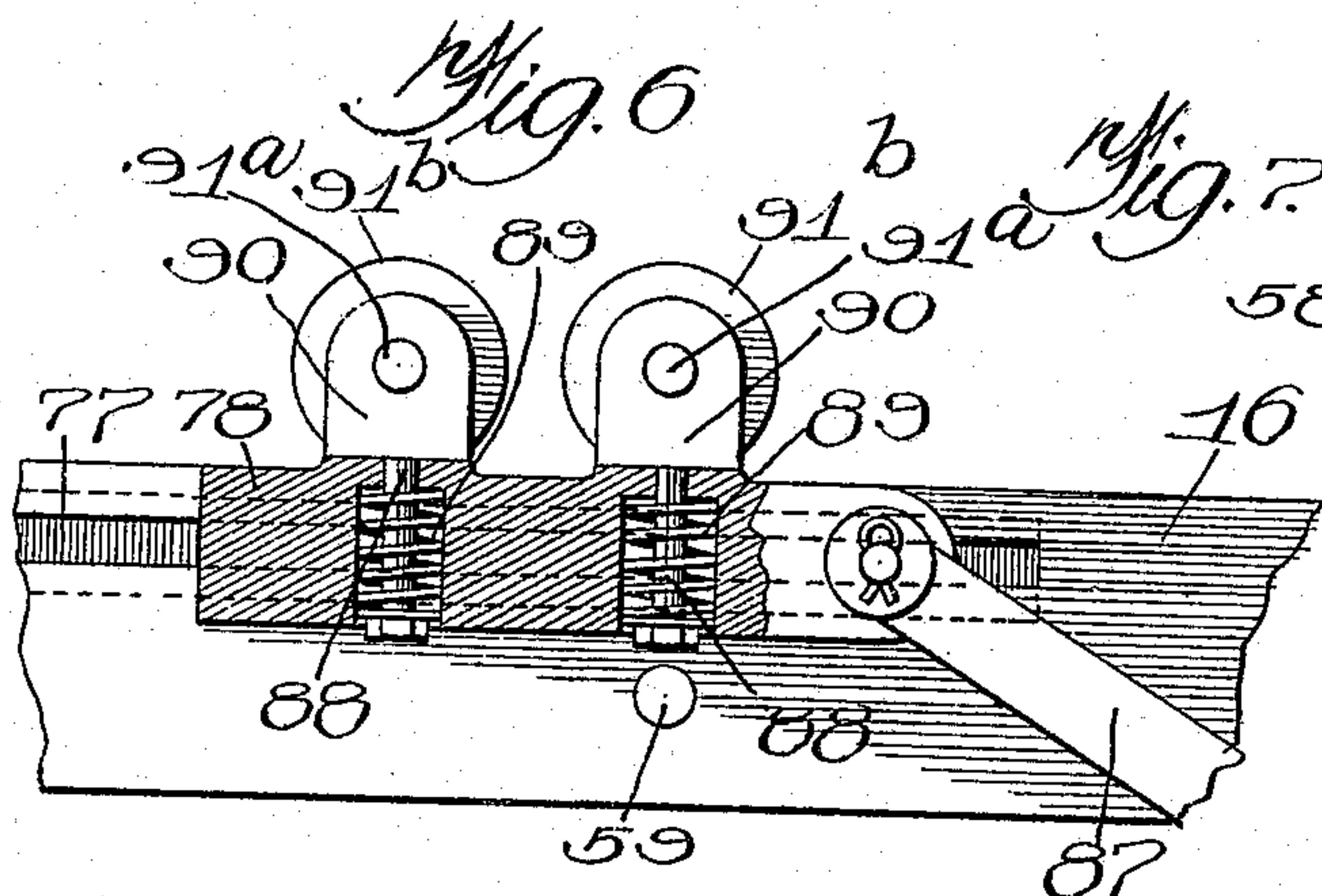
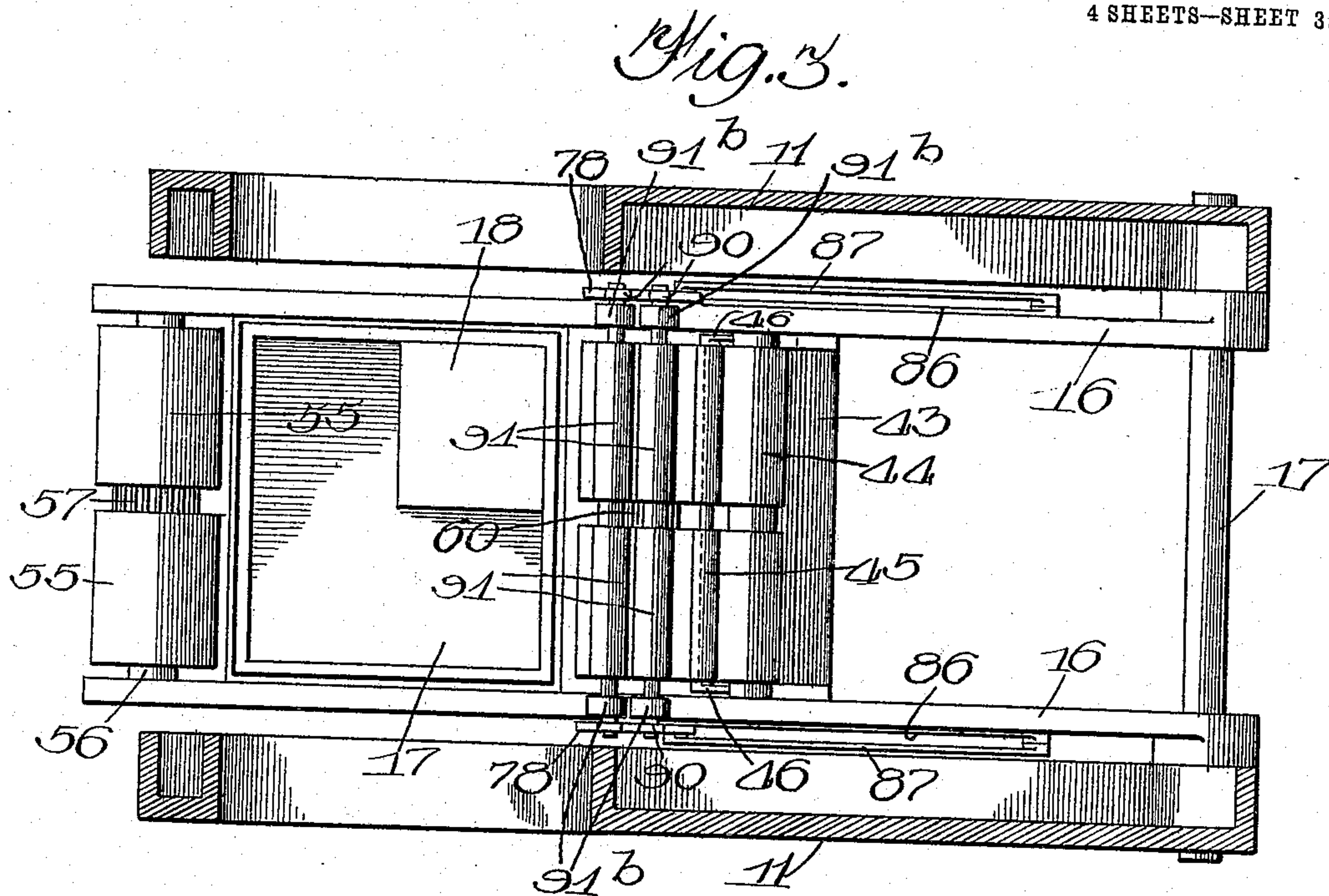
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 4 SHEETS—SHEET 3.



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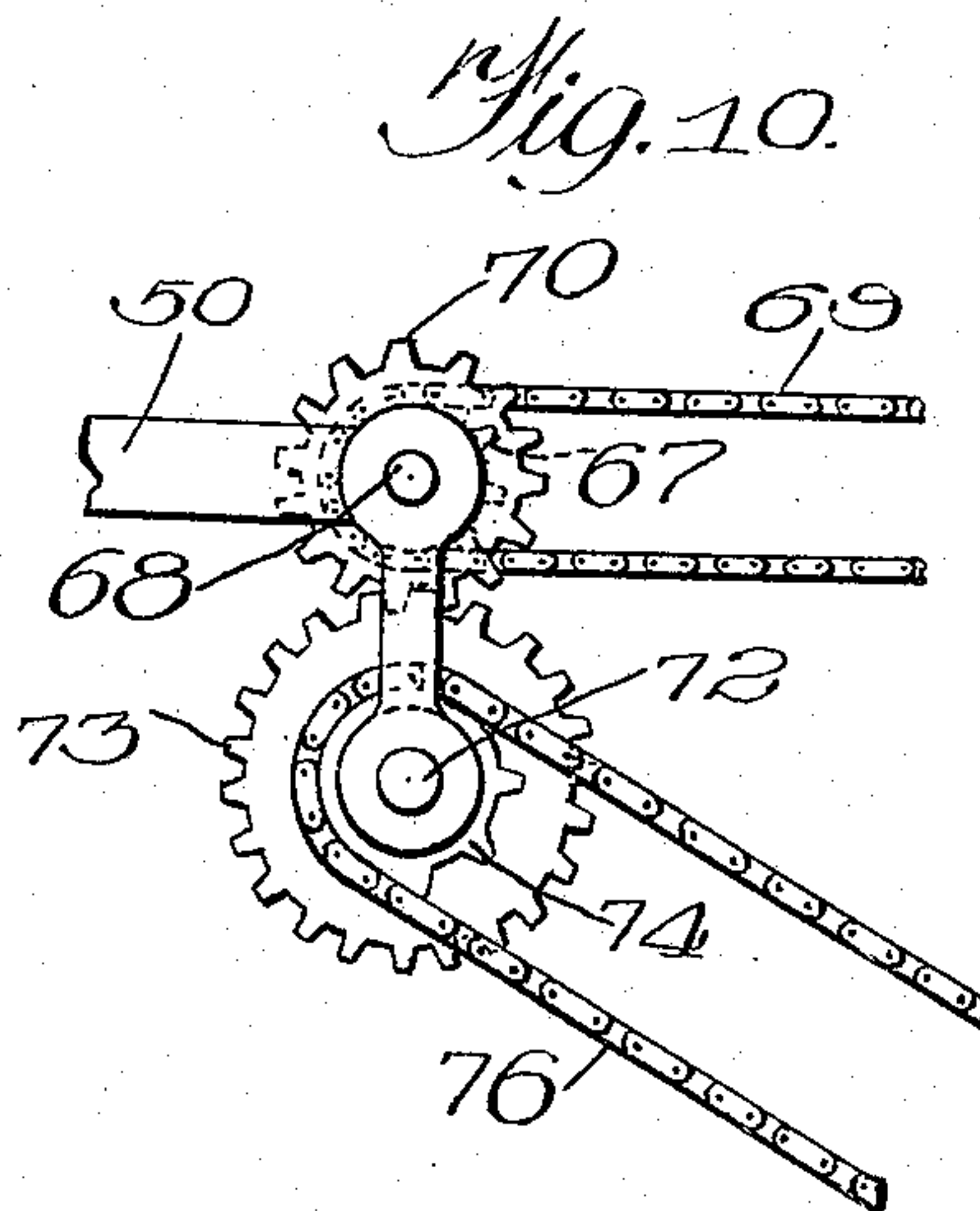
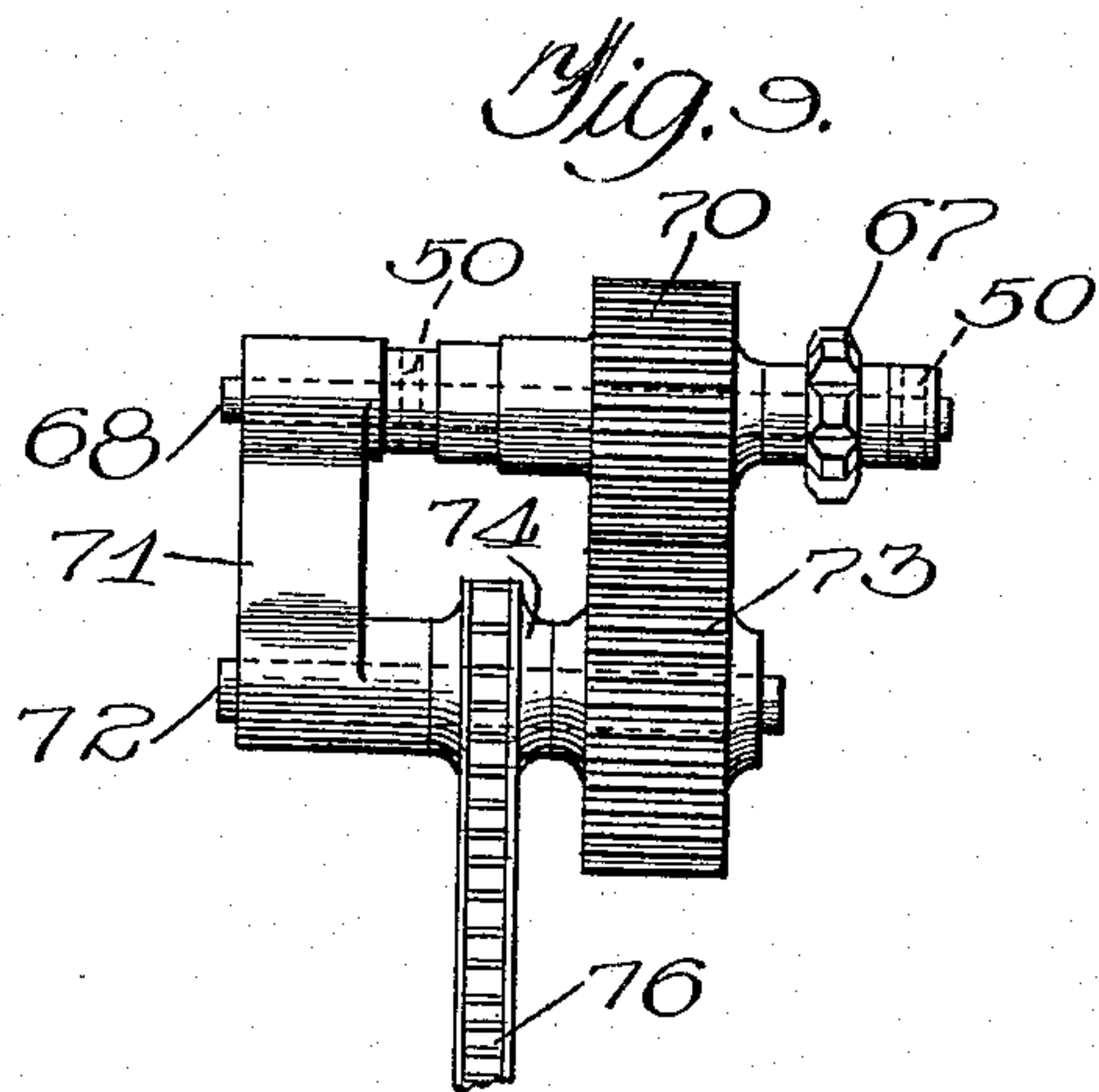
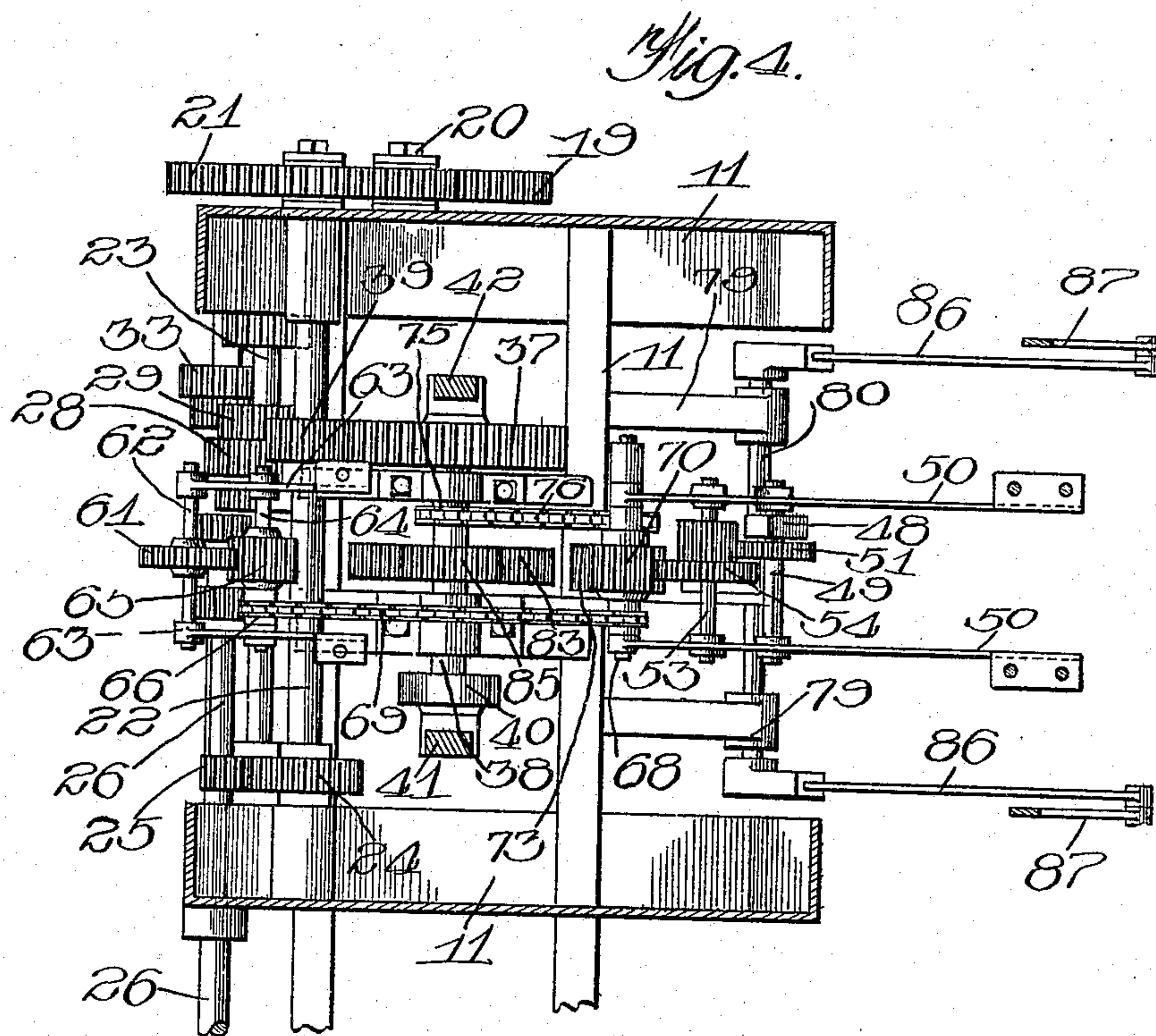
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4 SHEETS—SHEET 4.



Witnesses:  
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# UNITED STATES PATENT OFFICE.

STROWBRIDGE B. SEATON AND ROY G. TRAVIS, OF CHICAGO, ILLINOIS, ASSIGNORS TO  
INTERNATIONAL TAG COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF NEW  
JERSEY.

## PRINTING-PRESS.

No. 930,497.

Specification of Letters Patent.

Patented Aug. 10, 1909.

Application filed August 20, 1908. Serial No. 449,474.

*To all whom it may concern:*

Be it known that we, STROWBRIDGE B. SEATON and ROY G. TRAVIS, citizens of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Printing-Presses, of which the following is a specification, reference being had to the accompanying drawings.

Our invention relates to printing presses and particularly to presses having a reciprocatory motion and adapted especially for the printing of tags and similar articles, although it may be applied to any form of press having a fixed platen and a bed that moves toward and away from the platen. Its principal object is to provide a new and improved form of inking mechanism by which the type bed may be inked by both the forward and the backward reciprocatory movements of the inking rollers and may be operated between each of the two movements thereby gaining in speed.

It has for a further object the improvement of reciprocatory printing mechanism in sundry details hereinafter pointed out.

In the accompanying drawings:—Figure 1 is a side elevation of the press in connection with intermittent forwarding, tag-forming and cutting mechanisms. Fig. 2 is a side elevation, being a vertical section on line 2—2 of Fig. 1. Fig. 3 is a top or plan view, being a section on line 3—3 of Fig. 2. Fig. 4 is a plan view, being a section on line 4—4 of Fig. 2. Fig. 5 is an enlarged detail, being a partial section on line 5—5 of Fig. 2. Fig. 6 is an enlarged detail, showing the slide carrying the spring-seated inking-rollers, partially in section. Fig. 7 is an enlarged detail, showing the reciprocating distributing rollers, and their operating cam. Fig. 8 is an enlarged detail, being a section on line 8—8 of Fig. 2. Fig. 9 is an enlarged detail, being a view of the gears and sprocket chain which operate the inking drums. Fig. 10 is a side elevation of the same parts as are shown in Fig. 9, seen from the left.

Referring to the drawings:—11 indicates the frame of the machine on which are mounted the hereinafter described mechanisms.

12 indicates brackets on the frame 11, car-

rying thereon arms 13 on which the platen 14 of the press is secured, held in position by set-screws 15. The platen of course is rigidly held in place during the operation of the press.

16 indicates arms which are pivoted at one end on a shaft 17 secured in the outer ends of the brackets 12. The arms 16 support the bed 17 on which may be mounted any desirable form, as 18, from which the printing is done.

19 indicates a gear mounted upon a stud 20 upon the framework 11 and adapted to be driven by any suitable power. 21 indicates a gear which is secured upon a shaft 22 which is journaled in the framework 11, the gear 21 meshing with the gear 19. 23 indicates a counter-shaft which is journaled in the framework 11, and is connected by suitable gearing, as 24—25, to the shaft 22. 26 indicates a shaft which is journaled in the framework 11 and operates to drive the sheet-feeding, tag-forming and cutting mechanism hereinafter mentioned. 27—28—29 indicate gears of varying sizes secured to the shaft 23. 30—31—32—33 indicate gears of varying sizes slidably mounted on the shaft 26 and adapted to mesh with one or another of the gears on the shaft 23 whereby the relative speeds between the shafts 22 and 23 and the shaft 26 may be varied. As these devices are old and well-known in the tag-machine art, and form no part of our present invention, it is believed that it is unnecessary to describe them more fully here.

34 indicates intermittent variable-speed web-feeding mechanism which is operated from the shaft 26 in any well-known and approved manner. 35 indicates a washer-forming and applying mechanism which is operated from the shaft 26 in any well-known manner. 36 indicates a corner-cutting and tag-severing mechanism which is operated from the shaft 26 in any well-known manner. As these several mechanisms form no part of our present invention, and as we are filing a separate application of even date herewith for sundry improvements therein, it is believed that no further description of them is necessary here, inasmuch as, so far as our present invention is concerned, these mechanisms may be of any approved form and description and as they



have no necessary connection with our present improvements, which may be used without any of these mechanisms, although it is especially adapted for use in connection with them.

37 indicates a gear which is secured upon a counter-shaft 38 and meshes with a gear 39 on the shaft 22. Upon the other end of the shaft 38 is secured a crank-arm 40 to which is pivotally connected a link 41.

42 indicates a link which is pivotally connected to the outer surface of the gear 37 at the same radial distance from the center of the shaft 38 as the pivotal connection of the link 41 with the crank-arm 40. The links 41—42 are pivotally connected at their upper ends with the arms 16 whereby by the revolution of the shaft 38, the bed of the press 17 is reciprocated toward and from the platen 14. 43 indicates an inking-fountain of any approved form which is carried upon the arms 16 between the bed of the press and the pivotal connection of said arms 16, and is provided with a fountain roller 44.

45 indicates an ink-distributing roller which is mounted on the upper ends of the arms 46 on rock shaft 46<sup>a</sup> journaled in suitable lugs 47 depending from the under surface of the arms 16. The other arm 46<sup>b</sup> of the rock shaft rides upon a cam 48 secured to a shaft 49 which is journaled in brackets 50 bolted or otherwise secured to the under side of the arms 16 and extending a suitable distance along the under side thereof.

51 indicates a gear on the shaft 49 which meshes with a gear 52 on the shaft 53 journaled between the brackets 50 and carrying a second gear 54.

It will be obvious that by the operation of the cam, the rock shaft 46 will be rocked, vibrating the ink-distributing roller 45 from the fountain roller 44 to the ink-drum hereinafter described.

55 indicates an ink-drum which is journaled at the outer ends of the arms 16 upon a suitable shaft 56 upon which is mounted a gear 57. The ink-distributing drum is preferably formed of two parts with the gear 57 between them, as hereinafter described. 58 indicates a second ink-drum which is journaled between the arms 16 upon a shaft 59 upon which is mounted a gear 60. The ink-drum 58 is preferably like the drum 55 formed of two sections with the gear 60 between them.

61 indicates a gear which is journaled upon a shaft 62 between brackets 63 bolted to and depending from the under side of the arms 16 near their outer extremities. The gear 61 meshes with the gear 57 and operates to rotate the ink-drum 55. The gear 54 on the shaft 53 meshes with the gear 60 and operates to drive the ink-drum 58.

64 indicates a shaft journaled in the brackets 63.

65 indicates a gear secured to the shaft 64, and meshing with the gear 61, and operating to drive the same.

66 indicates a sprocket-wheel secured to the shaft 64.

67 indicates a sprocket-wheel secured to a shaft 68 which is journaled between the inner ends of the arms 50.

69 indicates a sprocket-chain which connects the sprocket-wheels 66 and 68.

70 indicates a gear which is secured to the shaft 68.

71 indicates an arm (see Fig. 9) which is pivotally mounted upon the outer end of the shaft 68 and depends therefrom.

72 indicates a pin which is secured in the lower end of the arm 71 and carries journaled thereon a gear 73 which meshes with the gear 70.

74 indicates a sprocket-wheel journaled upon the pin 7 and either formed integral with or secured to the hub of the gear 73 so as to rotate therewith.

75 indicates a sprocket-wheel which is secured upon the shaft 38.

76 indicates a sprocket-chain which connects the sprocket-wheels 74 and 75. The gear 70 also meshes with the gear 54 on the shaft 53.

It will be obvious that when the shaft 38 is rotated, the rotation is communicated by means of the sprocket-chain 76 to the sprocket-wheel 74 and gear 73, thence to the gear 70, rotating the shaft 68, and thus, through the medium of the sprocket-chain 69, to the shaft 64, thence to the gear 61, rotating the ink-drum 55. The rotation of the gear 70 will also rotate the gear 54, as above described, which, in its turn, rotates the ink-drum 58. The gear 51 and cam 48 will also be rotated, causing the vibration of the ink-distributing roller, thus carrying the ink from the fountain roller 41 to the ink-drum 58.

The swinging arm 71, whose lower end carries the sprocket-wheel 74, will permit the sprocket-chain to be kept at proper tension while the gears 70 and sprocket-wheel 67 are being moved in an arc with the reciprocation of the arm 16, above described. The arms 16 are provided, upon their outer surfaces, each with a slot 77 which extends from the outer end of the arm 16 to a suitable distance beyond the bed to permit the reciprocating of the inking-rollers from drum to drum, as hereinafter described.

78 indicates blocks which are slidingly mounted one in each of the slots 77 and are adapted to slide longitudinally of the arms 16 in the said slots 77.

79 indicates brackets which are secured to a suitable portion of the framework of the machine.

80 indicates a rock-shaft journaled in the bracket 79 and provided with an arm 81 se-



cured thereto preferably centrally of the said rock-shaft.

82 indicates a link which is pivotally connected at one end to the lower end of the arm 81 and at the other end to a gear 83 journaled upon a shaft 84 carried by the framework of the machine and meshing with a gear 85 on the shaft 38. By the rotation of the gear 83, the rock-shaft 80, through the medium of the link 82, will be rocked.

86 indicates arms which are secured to the outer ends of the rock-shaft 80.

87 indicates links which are pivotally connected at one end to the arms 86 and at their other ends to the sliding blocks or carriages 78.

88 indicates pins which are spring-seated, by means of springs 89 in the blocks or carriages 78, and are movable longitudinally of themselves in suitable openings in the said blocks 78.

90 indicates brackets which are secured to the upper ends of the pins 88 and whose bottom surfaces are normally yieldingly held against the upper surfaces of the blocks 78 by means of the springs 89.

91 indicates inking-rolls which are journaled on suitable shafts 91<sup>a</sup> in the brackets 90 and extend across nearly from side to side above the arms 16,—that is to say, they are of a length equal to the width of the type-bed 17. The inking-rolls 91 are preferably divided in the center, as is shown in Fig. 3, in the same way as are the ink-drums 55 and 58.

91<sup>b</sup> indicates rollers on the shafts 91<sup>a</sup> and adapted to travel on the upper surfaces of the arms 16.

By the vibration of the rock-shaft 80, the blocks 78 will be moved longitudinally of the arms 16 in the slots 77, carrying the inking-rollers back and forth between the ink-drums 55 and 58, and inking the form 18 on the bed 17 with movement in either direction. The rollers 91 being spring-seated, as above described, will rise to ride upon the ink-drums 55 and 58, as may be necessary and to bear yieldingly upon the form 18 upon the bed 17 as they pass over it. The inking-rollers 91 will first take their ink from the ink-drum 58 to which it is supplied from the ink-fountain 43 by means of the fountain roller 44, and the distributing roller 45, and, inking the type in their passage, will supply ink to the rotating ink-drum 55, again taking the supply from that portion of the ink-drum 55 previously supplied by them for their backward movement across the type-bed. The moving parts are so timed that when the bed 17 is brought into contact with the platen 14, the ink rollers will be first at one end and then at the other end of their movement, inking the form as it rises with each movement in either direction. Suppose, for illustration, the type-bed is in its

lower position and the ink-rollers are in contact with the drum 58. As the bed rises, the ink-rollers travel across the form, inking the form as it rises, and will be brought out of the way of the form in contact with the ink-drum 55 as the impression occurs. Both distributing ink to and getting ink from the drum 55 as the bed falls, the ink-rollers as the bed rises will again travel across its surface from the ink-drum 55 toward the ink-drum 58, inking it while traveling in that direction. As the form is thus inked by the ink-rollers while traveling in either direction, and the inking-rollers brought out of the way of the form at the end of each movement in either direction, it is obvious that the ink-rollers have to travel across the form only once for each impression.

Inasmuch as the speed of a reciprocating press of this kind is limited very largely by the speed of the inking-rollers, it is obvious that the press may be worked at considerably higher speed where the impression occurs between each movement in either direction of the inking-rollers than it can where the inking-rollers have to travel across the bed and back again out of the way with each impression.

What we claim as our invention and desire to secure by Letters Patent is:—

1. The combination with a platen, a frame, a type-bed carried by said frame and means for bringing said frame with its type-bed and said platen intermittently into and out of contact with one another, of ink drums carried by said frame, one upon each side of said bed, blocks mounted in said frame and slidable longitudinally therein, inking rollers carried by said blocks, and means for moving said blocks longitudinally to and fro in said frame to carry said rollers from ink drum to ink drum across said type-bed between each operation of said frame and platen.

2. The combination with a stationary platen, a swinging frame, a type-bed carried by said swinging frame, and means for reciprocating said frame toward and away from said platen, of ink-drums carried by said frame one upon each side of said bed, blocks mounted in said frame and slidable longitudinally therein, spring-seated inking-rollers carried by said blocks, and means for moving said blocks and carrying said rollers from ink-drum to ink-drum with each reciprocation of said frame.

3. The combination with a main frame, a stationary platen carried by said main frame, a swinging frame pivotally connected at one end to said main frame, a pair of ink-drums carried by said swinging frame one upon each side of said bed, means for supplying ink to one of said ink-drums, and means for swinging said swinging frame, of carriages slidably mounted on said swinging frame, spring-seated inking-rollers carried by said



carriages, a rock-shaft, arms on said rock-shaft, link connections between said sliding carriages and said arms, and means for operating said rock-shaft to move said inking-rollers across said bed from one drum to the other with each impression of the press.

4. The combination with a main frame, a stationary platen carried by said main frame, a swinging frame pivotally connected at one end to said main frame, a pair of ink-drums carried by said swinging frame one upon each side of said bed, means for supplying ink to one of said ink-drums, and means for swinging said swinging frame, of a slot on each side of said swinging frame extending longitudinally thereof, slide-blocks mounted in said slots, spring-seated inking-rollers carried by said slide-blocks, a rock-shaft, arms on said rock-shaft, link connections between said slide-blocks and said arms, and means for operating said rock-shaft to move said inking-rollers across said bed from one drum to the other with each impression of the press.

5. In a reciprocating printing press, the combination with a main frame, a stationary platen carried by said main frame, a swinging frame pivoted at one end to said swinging frame and carrying a bed near its other end, mechanism for operating said swinging frame to intermittently move said bed toward and away from said platen, ink-drums revolubly carried by said swinging frame, one at each side of said bed, means for supplying ink to one of said ink-drums, inking-rollers carried by said swinging frame, and means for carrying said inking-rollers across from one ink-

drum to the other before each impression, of a shaft journaled in said main frame, means for driving said shaft, a hanger swung from said swinging frame, a gear revolubly mounted on said hanger, sprocket-wheel and sprocket-chain connections between said gear and said shaft, and gearing between the gears on said hanger and said ink-drums.

6. In a reciprocating printing press, the combination with a main frame, a stationary platen carried by said main frame, a swinging frame pivoted at one end to said swinging frame and carrying a bed near its other end, mechanism for operating said swinging frame to move said bed toward and away from said platen, ink-drums revolubly carried by said swinging frame, one at each side of said bed, means for supplying ink to one of said ink-drums, inking-rollers carried by said swinging frame, and means for carrying said inking-rollers across from one ink-drum to the other before each impression, of a shaft journaled in said main frame, means for driving the same, a second shaft journaled on said swinging frame, a hanger pivotally mounted on said second shaft, a gear carried upon the free end of said hanger, sprocket-wheel and sprocket-chain connections between said first shaft and the gear on said hanger, gearing between the gear on said hanger and said second shaft, and gearing between said second shaft and said ink-drums.

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