

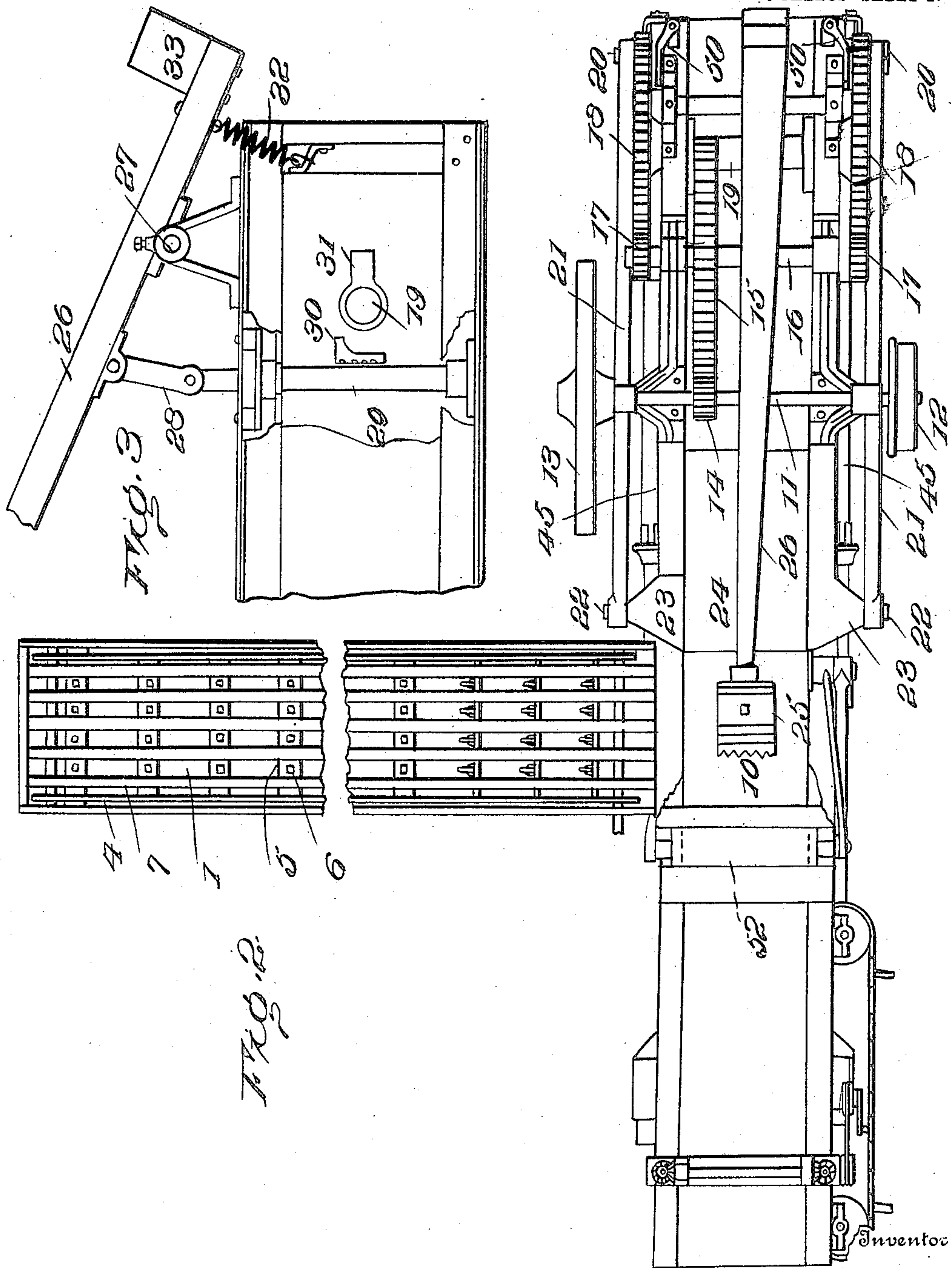
No. 875,271.

PATENTED DEC. 31, 1907.

G. E. JACKSON.
BALING PRESS.

APPLICATION FILED MAY 9, 1907.

6 SHEETS—SHEET 2.



Witnesses

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No. 875,271.

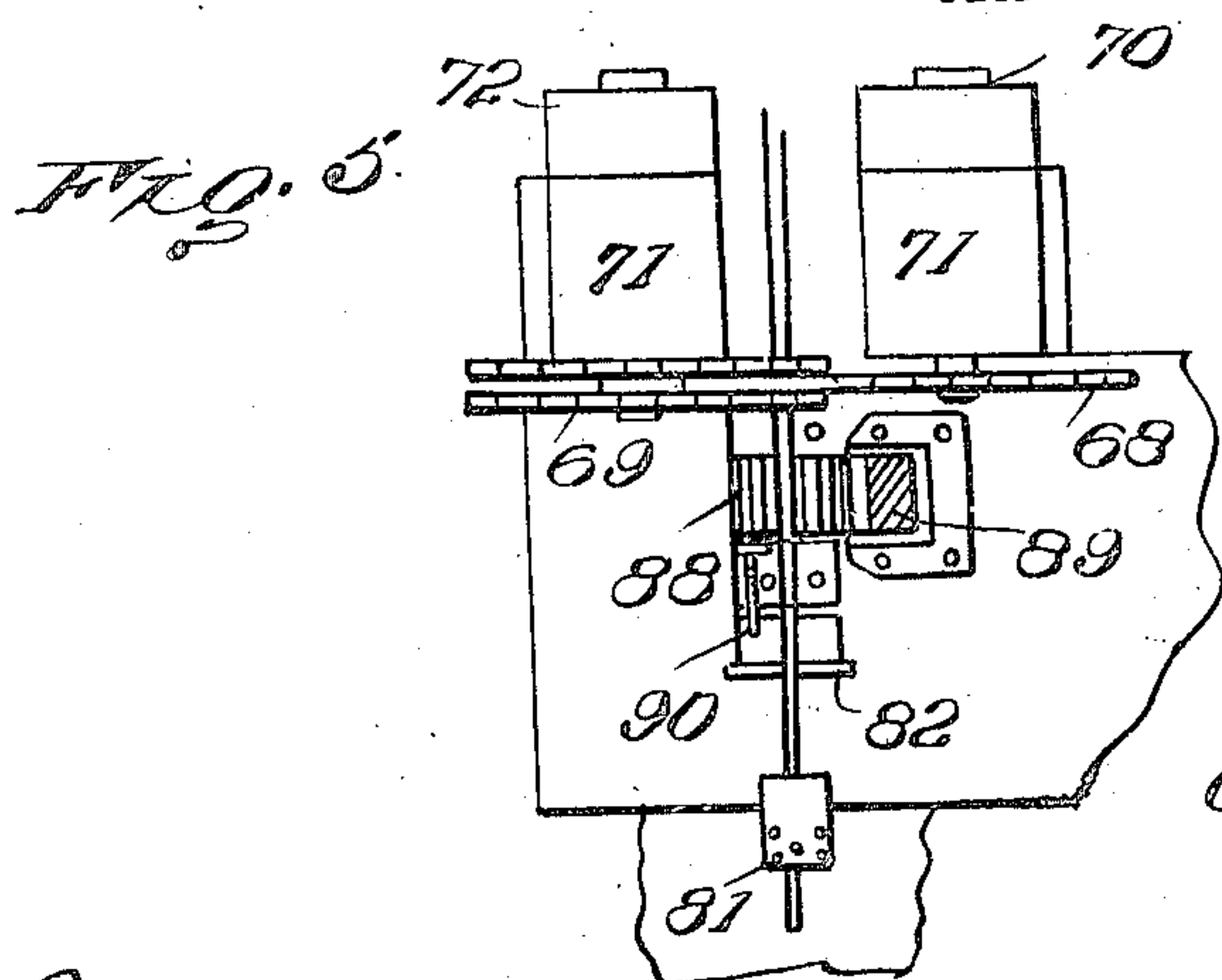
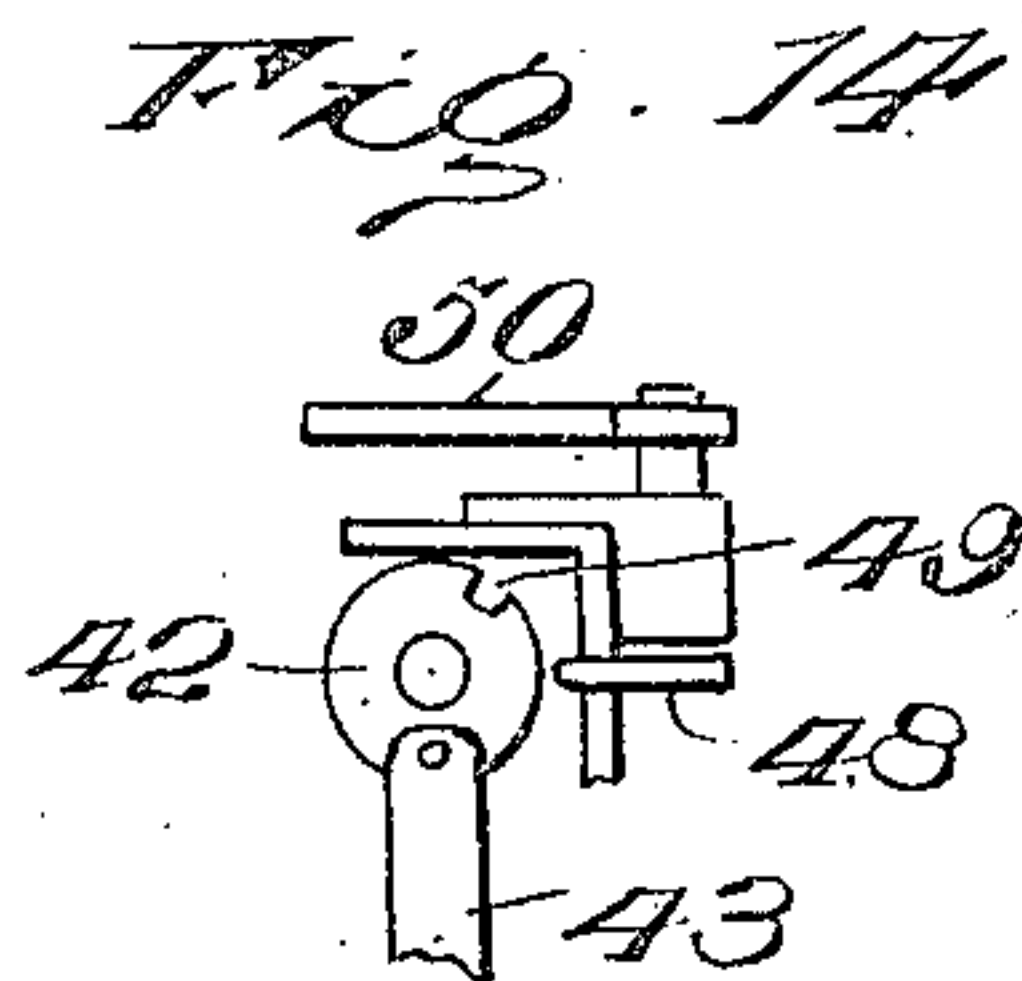
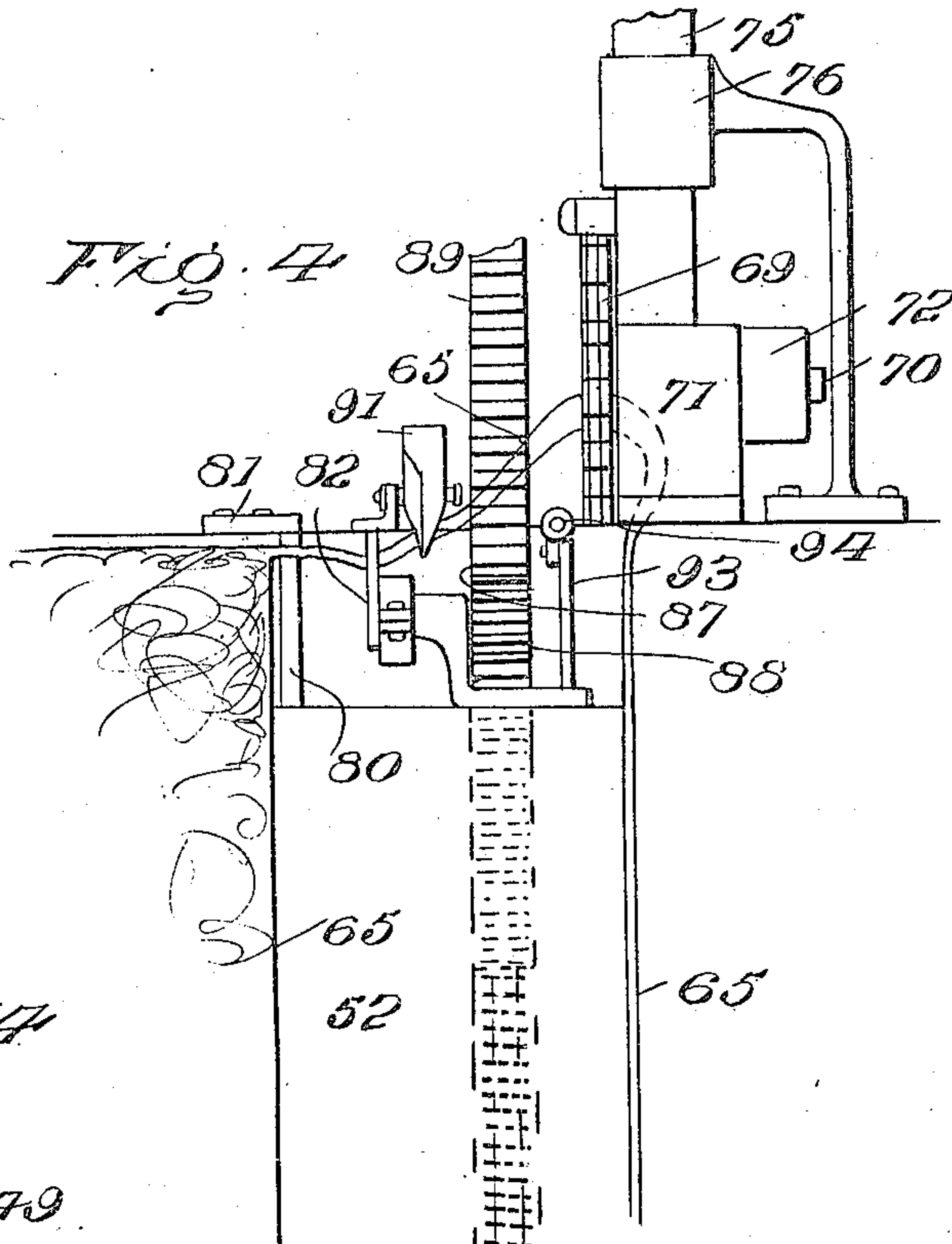
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6 SHEETS—SHEET 3.



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6 SHEETS—SHEET 4.

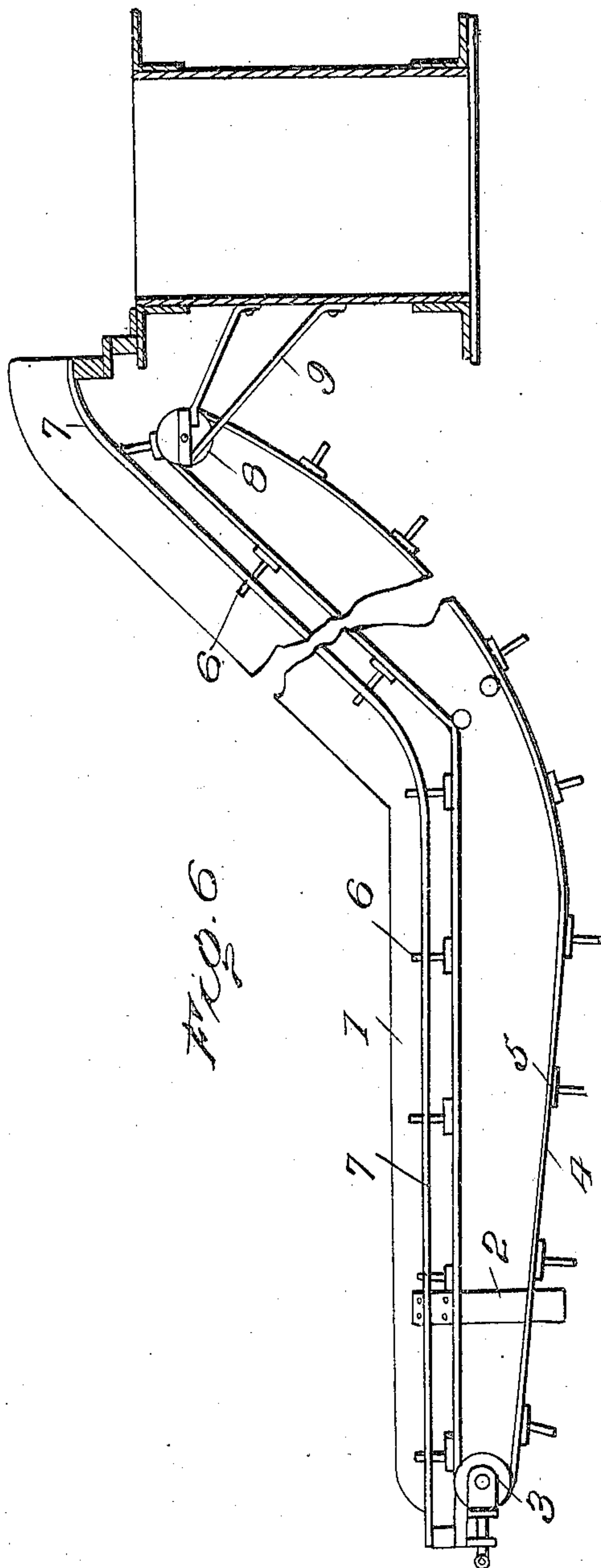


FIG. 6

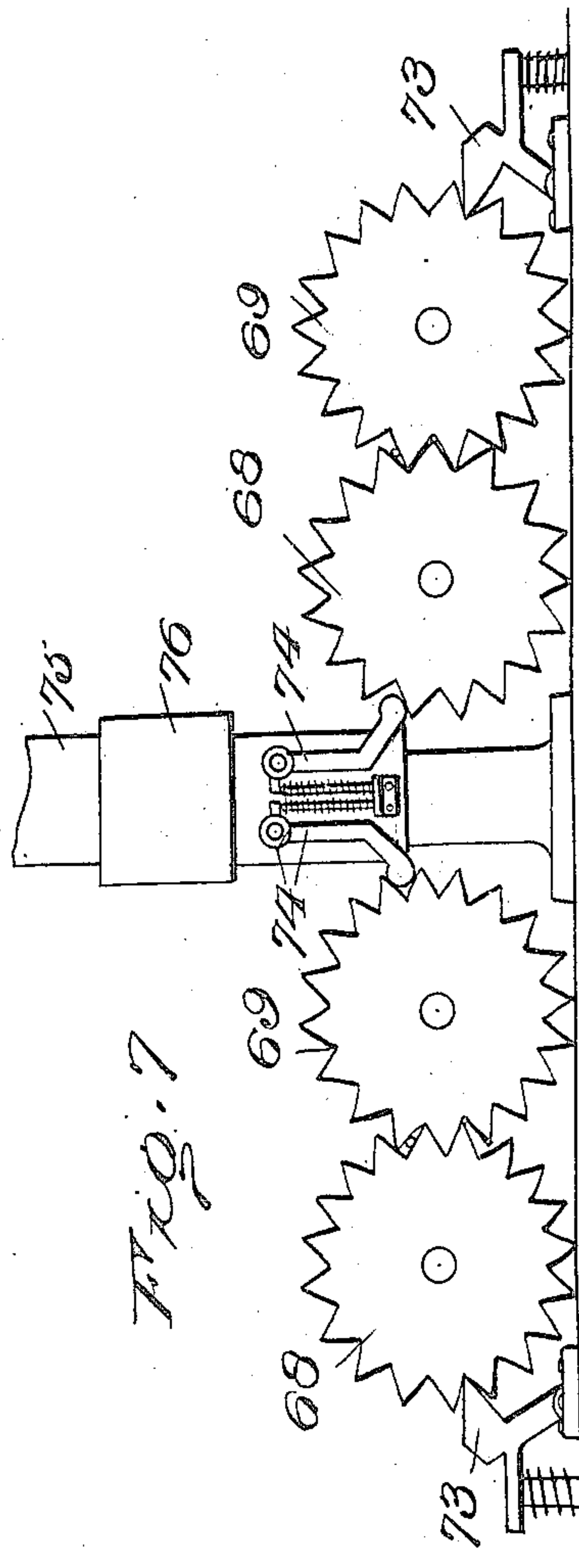


FIG. 7

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6 SHEETS—SHEET 5.

Fig. 8.

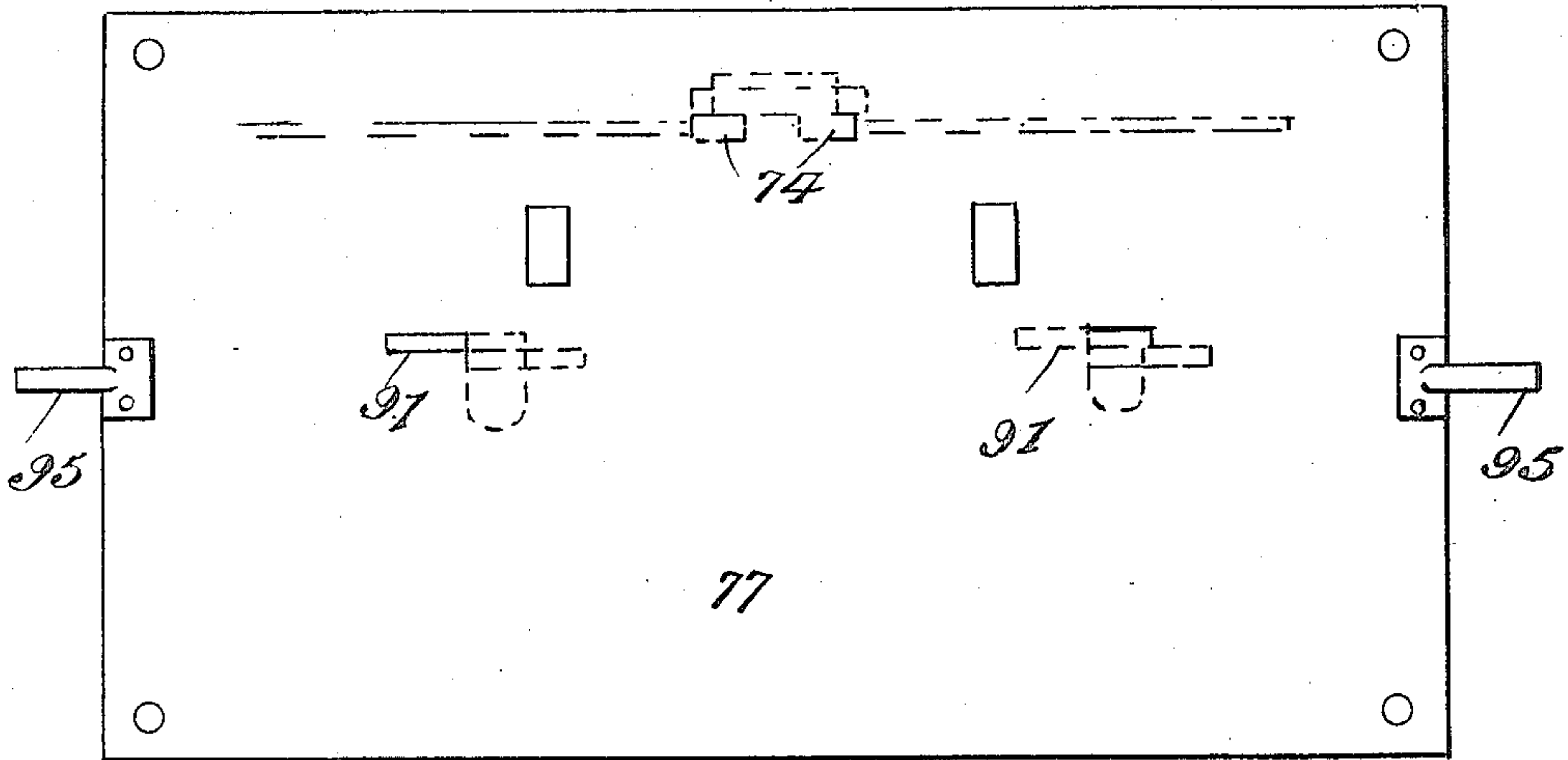


Fig. 9.

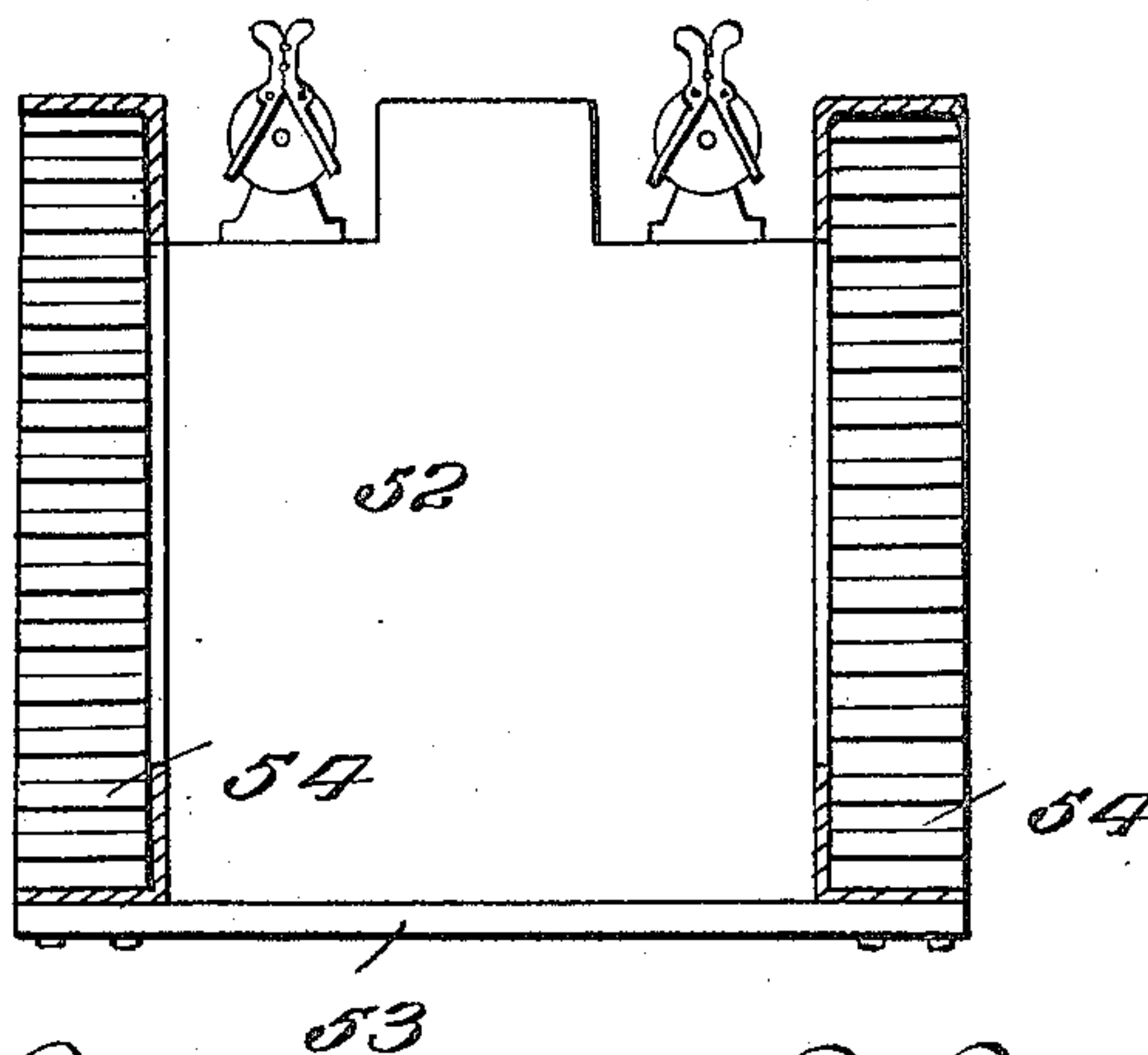


Fig. 10.

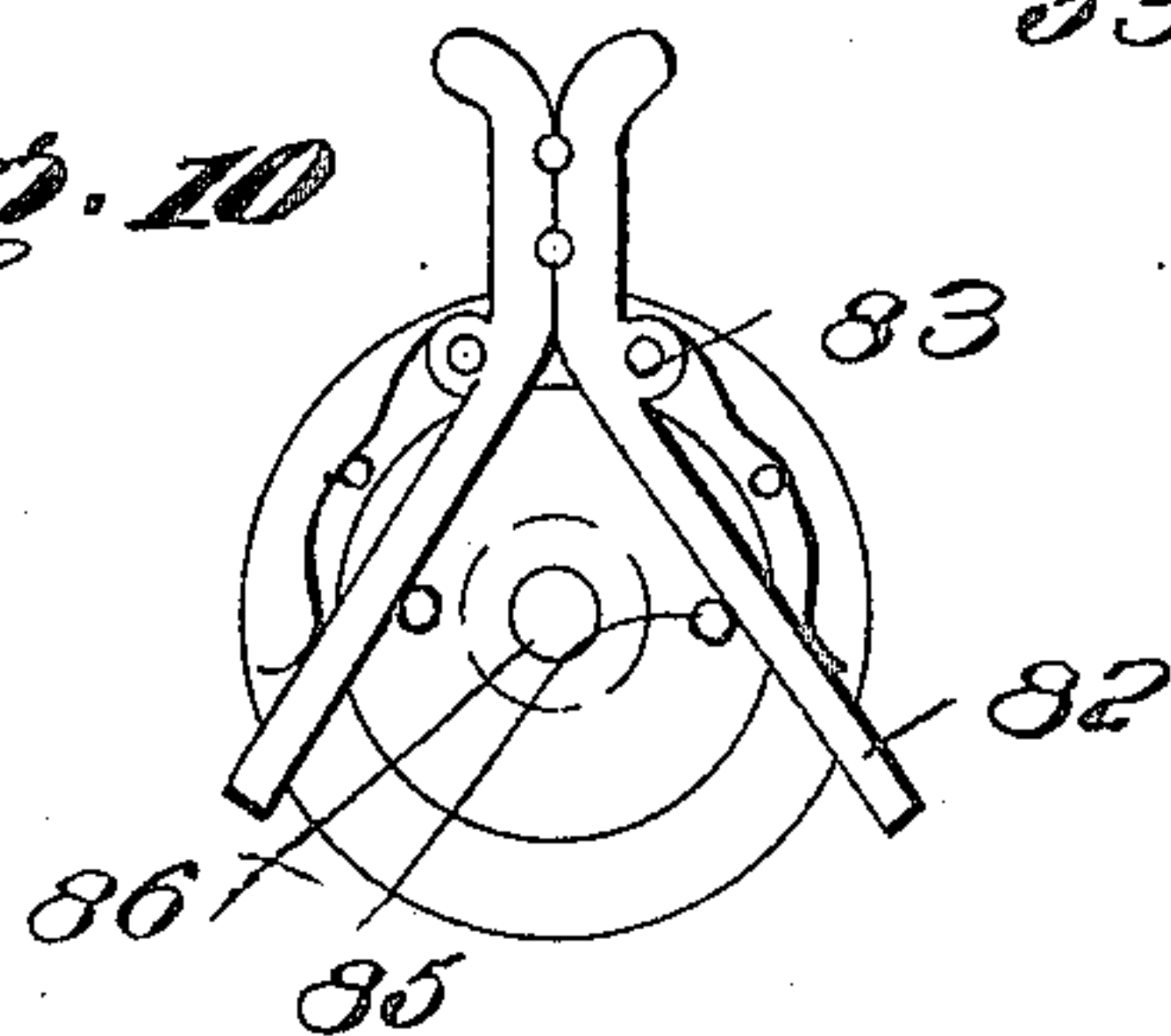
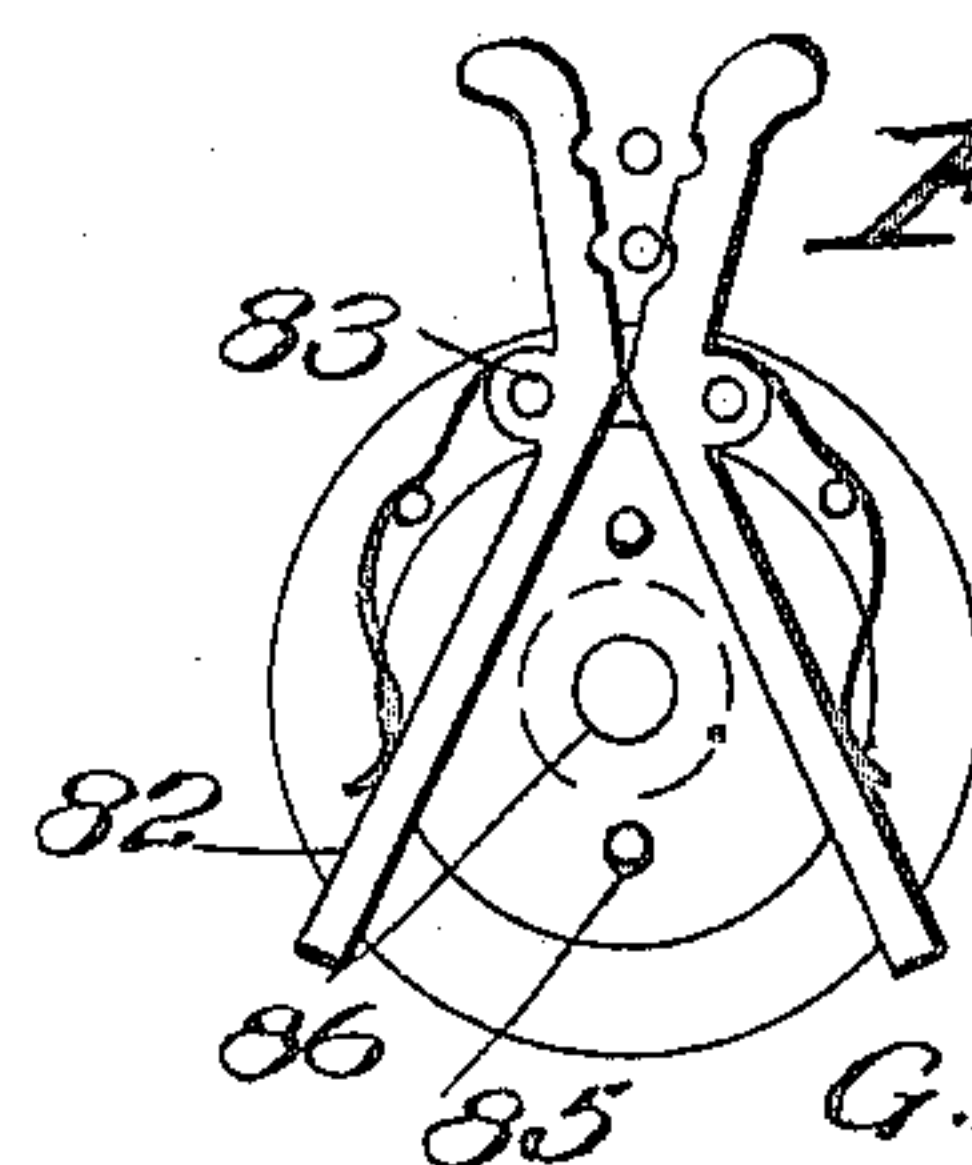


Fig. 11.



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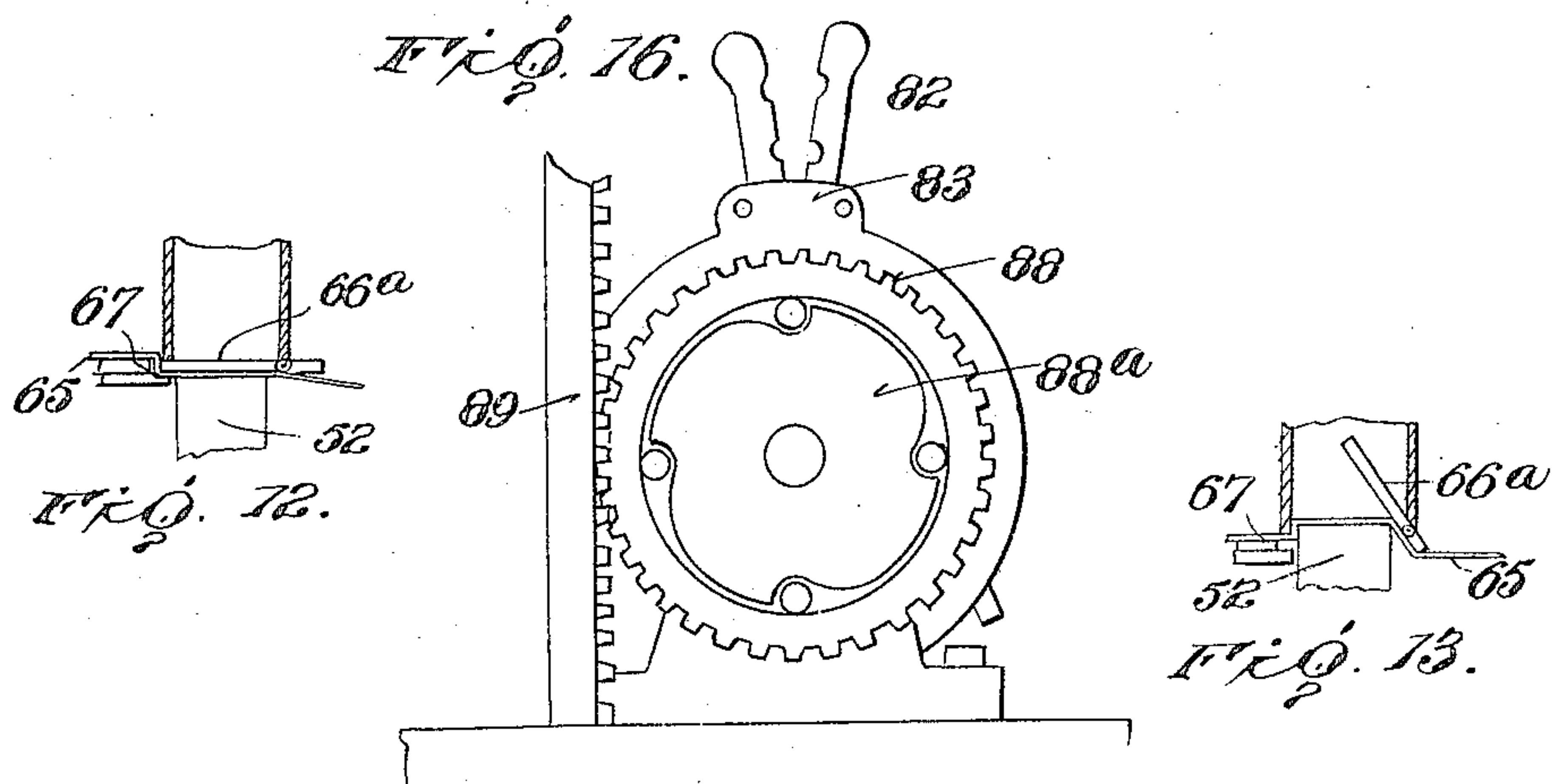
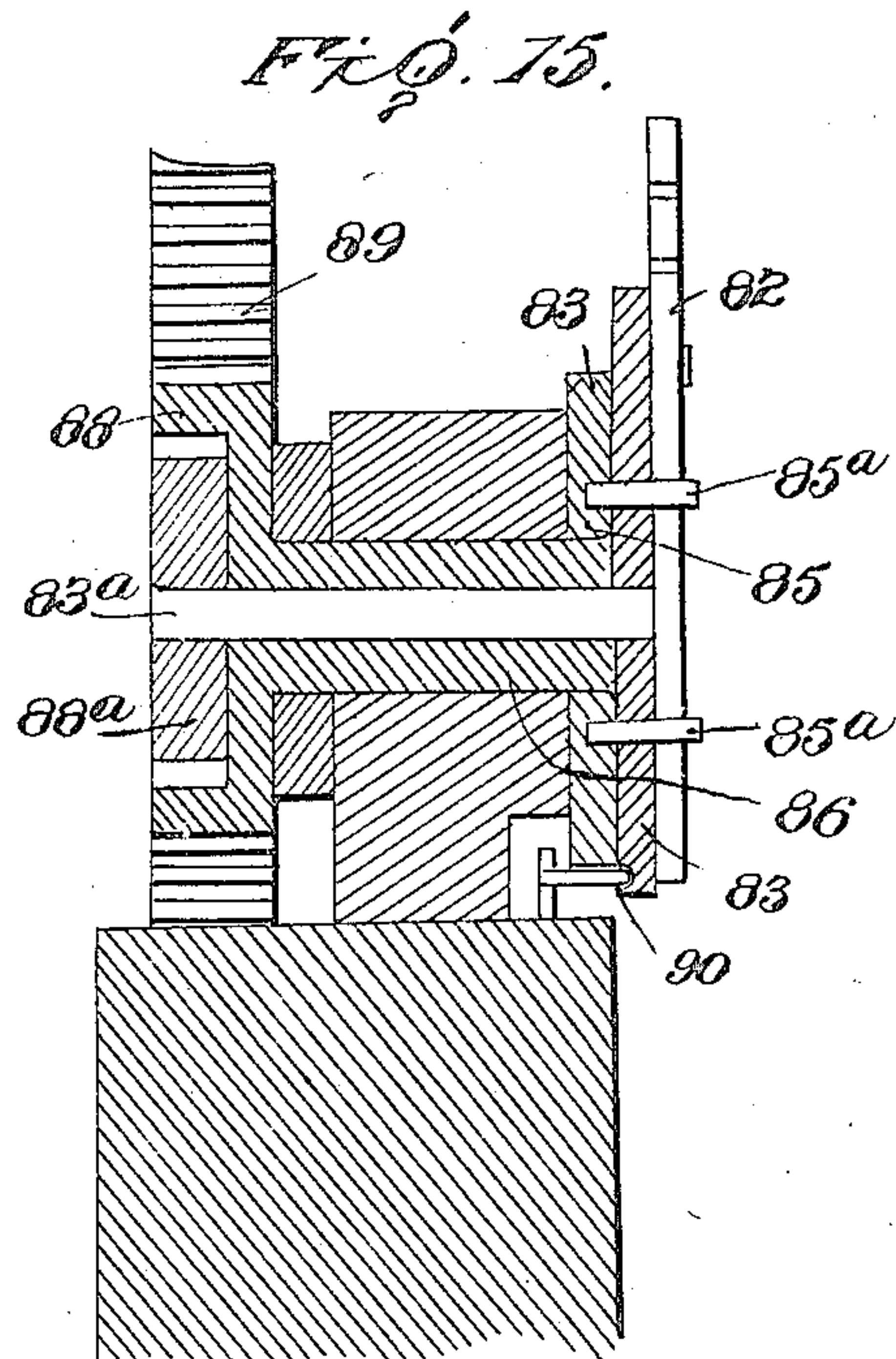
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APPLICATION FILED MAY 9, 1907.

6 SHEETS—SHEET 6.



Witnesses

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UNITED STATES PATENT OFFICE.

GEORGE E. JACKSON, OF NEWARK, ILLINOIS.

BALING-PRESS.

No. 875,271.

Specification of Letters Patent.

Patented Dec. 31, 1907.

Application filed May 9, 1907. Serial No. 372,813.

To all whom it may concern:

Be it known that I, GEORGE E. JACKSON, citizen of the United States, residing at Newark, in the county of Kendall and State of Illinois, have invented certain new and useful Improvements in Baling-Presses, of which the following is a specification.

This invention contemplates certain new and useful improvements in baling presses, and relates particularly to an automatic or self-tying hay press.

The invention consists in certain constructions, arrangements and combinations of the parts which I shall hereinafter fully describe and then point out the novel features in the appended claims.

For a full understanding of the invention and the merits thereof and also to acquire a knowledge of the details of construction of the means for effecting the result, reference is to be had to the following description and accompanying drawings, in which:

Figure 1 is a side elevation of my improved baling press. Fig. 2 is a top plan view thereof. Fig. 3 is a side elevation of one end of the press, parts being broken away. Fig. 4 is a transverse sectional view on an enlarged scale illustrating the wire holding shearing and tying mechanism. Fig. 5 is a horizontal sectional view illustrating such mechanism. Fig. 6 is a side elevation of the elevator or feeding mechanism. Fig. 7 is a detail front elevation of the star wheels and their actuating device. Fig. 8 is a plan view of a spring pressed plate hereinafter specifically referred to. Fig. 9 is a detail elevation of the separating and tying block. Figs. 10 and 11 are detail views of the twist-ers showing the jaws in different positions in the respective views. Figs. 12 and 13 are detail views illustrating a trap door in the bottom of the press chamber. Fig. 14 is a detail view of a trip mechanism hereinafter described. Figs. 15 and 16 are enlarged detail views of the twisting mechanism.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

My invention in its entirety comprehends elevating and feeding mechanism, compressing mechanism, and baling or tying mechanism, all attached to the same frame work, the elevating and pressing mechanisms being preferably mounted upon traveling wheels, their axles, and attachments to fasten them

to the press, these accessories being omitted in the drawings, as they form in themselves no part of the present invention.

The elevating section comprises an elevator frame 1 supported at its lower or ground end on legs 2, one on either side of the frame work. Sprocket wheels 3 are journaled at the ground end of the frame work 1 and sprocket chains 4 pass around said wheels. Transverse bars 5 are secured to the said chains at predetermined intervals, and said bars carry fingers 6, which are adapted to pass, on the upper lap of the conveyor thus formed, between a series of longitudinally extending slats 7. The chains 4 also pass over sprocket wheels 8 journaled in brackets 9, projecting laterally from the press chamber in juxtaposition to the receiving hopper 10. This elevator may be driven by a beveled gear from any one of the shafts of the other section of the press, with a clutch between said shaft and the elevator to permit the stopping or starting of the elevator while the parts are in motion. This driving mechanism and clutch are not shown in the accompanying drawings, as they do not constitute any novel arrangement of parts.

The present section consists of a frame work embodying sheet metal side, top and bottom plates that are of sufficient thickness to withstand any possible strain that may be put upon them, and they are secured to and reinforced by four angle bars in the corners, as clearly illustrated in any of the cross sectional views of the drawings.

11 designates the main shaft of the apparatus, said shaft being provided with a pulley 12 designed to receive its motion from any prime mover or suitable source of power, and the said shaft is provided at its end opposite the pulley 12 with a balance or fly wheel 13 held in suitable boxings. The main drive shaft 11 has a spur pinion 14 fast thereon and said pinion meshes with a larger gear wheel 15, on the transverse shaft 16. The shaft 16 carries at each end a spur pinion 17, and said pinions 17 mesh with larger gear wheels 18 located outside of the frame work on the ends of the counter shaft 19. The spur gears 18 are each provided with an eccentric or crank pin 20, and pitmen 21 are secured at one end to the said crank pins 20, the said pins being so located on the respective wheels 18 as to cause the synchronous movement of the pitmen. The pitmen 21 are connected at their opposite ends to wrist pins 22 on castings 23 which

are flat, as shown, to fit smoothly into slots in the press body, and are at the same time of sufficient strength to stand the work required of them. The plunger 24 is secured to this casting and has sufficient weight back from its front end to steady its motion.

25 designates the feeding fork which is secured to the end of the rocking beam 26 that is pivoted intermediate of its ends on the bearing brackets 27. A link 28 connects the said beam forward of its pivot with the vertically slidable rod 29, and said rod carries a bracket 30, designed for engagement with a cam 31 on the shaft 19. The cam 31 is so adjusted on the shaft that the downward movement of the fork 25 occurs at a time when the plunger 24 is turned farthest back so as to leave the largest possible opening for the entering hay. The beam 26 is restored to its normal inclined position with the fork or conveyer 25 lifted by means of a spring 32 and weight 33.

At one side of the baling chamber at the rear of the frame work, a chain 34 is mounted. This chain is mounted upon sprocket wheels held in suitable brackets on one side of the frame work and consists of a number of links to which lags 36 are secured at predetermined intervals. These lags are detachable, and the links are so formed, as illustrated in the drawings, that the intervals between the lags may be changed each link being formed with two pairs of openings through which fastening means may be inserted to secure the lags of the links. The chain 34 is adapted to enter the baling chamber at one side and to pass along the inner wall thereof, the lags penetrating the bail and thereby causing the chain to move, in an evident manner. The lags may be changed, as above stated, from one link to another, so as to provide for long and short bales. As the chain 34 is thus caused to move, a lag 36 will finally spring up against and engage the lower end of a depending arm 37 on the shaft 37^a. This shaft 37^a carries at each end, a beveled pinion 38 meshing with a similar pinion 39 on the end of a horizontally extending rod 40 mounted in bearings in the frame work to turn about its longitudinal axis. At the front of the machine, the rod 40 is provided with two disks 41 and 42, and said disks are provided with pins, as shown, to which the upper end of the hanger arms 43 are pivotally connected. These arms depend from the pins of the disks and carry rollers 44, at their lower ends, said rollers being arranged to support and lift the pull rod 45. The rod 45 carries a block 46 which is adjustable thereon by means of a set screw or the like, and which is provided with a beveled upwardly extending end, and said block is designed for engagement by a roller 47 on the adjacent spur gear 18. This mechanism just now being described is duplicated, as

shown, on both sides of the frame work, and it is therefore believed to be necessary to describe the device at one side only.

As the chain 34 travels and rocks the arm 37, the rod 40 will manifestly be turned in a direction to raise the depending hanger arms 43. This movement will effect the raising of the pull rod 45 so that its block 46 will come into the path of the roller cam 47, and the latter, will, by engagement with the block, pull the rod 45 forwardly. As the disks 41 and 42 are turned, the rearmost one will be caught by a trip pin 48 entering a notch 49 in the disk, thereby holding the hanger arm 43 and the concomitant parts in raised position. Finally, however, as the roller cam 47 continues to move upwardly, it will engage a retracting arm 50 secured to the same shaft as the trip 48 and will cause the release of the disks 42 thereby permitting the pull rod to lower.

At the front end of the baling chamber, a number of spring pressed retainers 51 are mounted, so as to prevent the hay from springing back by its own resiliency upon the withdrawal of the plunger. In front of these retainers, a separating and tying block 52 is adapted to actuate. This block is mounted within a metal frame and upon a base plate 53, and it is provided at both sides with a vertically extending rearwardly facing rack 54. Toothed segments 55 engage said racks to elevate the separating block 52, and spring pressed pawls 56 are adapted to hold the separating block at the upper limit of its movement. These pawls 56 are provided below their pivots with lugs 57 adapted to be engaged by curved ridges 58 in the segments 55, so that as the said segments are swung upwardly, the pawls will be retracted. At the completion of the movement of the block 52 and segments 55, a cut away portion or recess 59 that communicates at one edge with the ridge 58, will arrive at the lug 57 of the pawl and permit the spring of the pawl to act to throw its nose underneath the lower edge of the block to hold the same in elevated position during the operation of the tying devices or twisters that are carried on the upper end of said separating block 52. The segments 55 are each provided with a power arm 60 and each of said arms is formed with a mortise 61 through which the rod 64 extends, said rod being secured at its front end by any desired form of joint to the rear end of the pull rod 45. Hence it will be seen that when the pull rods 45 are moved forwardly, the segments 55 will be swung upwardly to raise the separating block 52, and that when the rods 45 and 64 move rearwardly, blocks 63 on the rods 64 will tend to positively swing the segments downwardly.

The baling wires 65 are wound upon spools 66 journaled underneath the frame work,

two wires being shown in the present instance, although it is manifest that my invention is not limited to this number. The wires 65 are passed over the upper edge of the block 52 when the latter is in its lower position, and between the upper edge of said block and the lower face of an upwardly movable, gravity closing trap door, in the bed of the baling chamber, the hinge of said door being located below the surface so as to provide a smooth bottom surface for said chamber. The wires 65 are threaded upwardly through openings 67 in the baling chamber and in the initial operation of the press, are inserted by hand, into engagement with star wheels 68 and 69 arranged in two sets, one set for each wire. These star wheels are mounted on shafts 70 held in boxings 71 and are provided with retaining collars 72. They are disposed two on one shaft and one on the other, and are so arranged that the points of the single wheel fit in between the points of the other two on the opposite side. The wire is grasped by a tooth on the single wheel shutting into its fellow wheels just far enough to securely hold it, and the movement of these wheels in the automatic and intermittent actuation thereof, is such as to turn them three teeth at a time, so as to grip the lower wire tightly and loosely hold the top wire, which latter, when cut off drops into the hay and comes out with the bale. 73 designates detent pawls so that said star wheels will not overrun when actuated. The two sets of star wheels 68 and 69 are actuated by means of spring pressed pawls 74 carried by an arm 75 which is guided for vertical reciprocation in a sleeve formed on the bracket 76 supported on the frame work. This arm 75 depends from an actuating plate 77 which extends across the machine just in the rear of the hopper 10, and said plate is mounted for vertical movement on upright posts 78 projecting upwardly from the framework, and is spring pressed upwardly by coil springs 79 which encircle the said posts.

The upper face or end of the separating block 52 is depressed at its ends, and right angle brackets 80 are secured in the said depressions and extend flush with the upper edge of the block, and are adapted to coact with plates or blocks 81, which are secured to the framework at the top of the opening where the tying is done, projecting slightly over the said opening. The brackets 80 and their complementary plates 81 constitute vise jaws, which operate when the tying and separating block 52 is at the upper limit of its traverse, so as to securely hold the wires, one strand or length coming along the top of the bale of hay, and the other being carried up by the tying and separating block 52. The brackets 80 also form guides over which the wires run as the block is raised so

as to bring both ends of the respective wires together properly for a successful twisting operation.

The block 52 carries a twisting mechanism in its depressed ends, said ends being cut away at the top sufficiently to bring the twisting mechanism just flush with the top of the press when the block 52 is at the upper limit of its movement. The twisting mechanism comprises a twister 82 for each wire used in the baling operation. Each twister consists of twisting jaws pivotally connected to the disk 83. The disk 83 is mounted on the shaft 83^a which is provided at its rear end with a clutch disk 88^a adapted to work inside of the gear wheel 88. This gear wheel is adapted to be actuated by the rack 89. The gear wheel 88 is secured to a spindle 86, and the rotator 85 provided with pin 85^a is secured to the spindle 86 to turn therewith so as to spread apart the lower ends of the twisting jaws that their upper ends may clamp the wires. The jaws are formed with sockets for the two portions of the wires illustrated in the drawings. The disk 83 is normally held from turning by means of a spring 90. The clutch consists of four or more substantially round cavities across its face in which are rods of steel. From the cavities there is an inclined plane up to the face of the clutch body wheel. The clutch is turned out in such a way that the face adjacent to the cavities just clears the rods of steel when the movement is in one direction, but the least movement in the opposite direction will engage the rod between the face of the inclined plane of the clutch body and the returned portion of the disk 83. It is purposed that there shall be enough of these cavities and rods of steel so that the gravity will help to put in one of the rods of steel and there will be no hesitation in the gears turning the twister shaft as soon as the plate 77 operates. The stop motion is intended to have the twister arms exactly upright for the next operation of the twister. As the rack 89 descends, the gear 88 will be turned to permit an initial independent movement of the rotator disk 85 with its pins 85^a. This will spread apart the twister jaws at their lower ends so as to clamp the wires with their upper ends. The downward movement of the rack 89 and the gear 88 will effect the clutching of the gear with the clutch disk 83 so as to turn the shaft 83 and both twisting jaws to twist the wire, the movement overcoming the strength of the spring catch 90. This movement is so proportioned that when the twisting action is accomplished, the holder or disk 83 will move around to the spring stop where a V-shaped groove prevents further motion. Preparatory to the twisting operation, however, the wires are cut by shears 91, located between the twisters and the star wheels, as clearly illustrated in the drawings, and actu-

ated by a downward movement of the plate 77 which engages the divergent upper ends of the shears to close the lower ends or jaws thereof. In order to move the said plate 5 downwardly for its several functions, the following mechanism is employed, and operation performed: The plate 77 is provided at each end with a laterally projecting pin 95. Depending links 96 are secured at one end to 10 said pins and are secured at their lower ends to the arms 97 of bell cranks fulcrumed at their elbows on the sides of the framework as indicated at 98. The other arms of said bell cranks extend downwardly, and each of said 15 arms is formed with a mortise 100 through which the respective rods 64 extend. When the pull rods 45 and 64, moved by the roller cams 47 and cam blocks 46, have brought the segment gears 55 to their highest point, a 20 bend 101 in each rod 64 is brought forward and strikes one of the depending hangers 102. This elevates the rods 64 so that their blocks 62 will pass through the mortises 61 in the power arms 60 of the said segments 65. This 25 movement will also bring the blocks 103 on the rods 64 against the arms 99 of said bell crank levers, the forward action pulling down the links 96 and depressing the plate 77 so as to complete the twisting and shearing of the 30 wire. The return movement is accomplished as follows: At the conclusion of the drawing and tying mechanism, when the blocks 46 have been passed by the roller cams 93, the springs 79 force the mechanisms backward, 35 and the plugs 63, by engagement with the power arms 60 of these segments, release the catches or pawls 56. Thereupon the weight of the separating and tying block 52 carries the machine back to the starting point. 40 In the practical operation of my improved self-tying hay press, the wire is first threaded up by hand as above described, to the star wheels, where it is secured by hand. The hay forced by the plunger, as it is propelled 45 by the carrier, carries the wire before it, and takes as much wire as is needed. When the required amount of hay has been packed, (governed by the lags 36 on the sprocket chain 34) the arm 37 is rocked. This actuates the rods 40 so as to lift the pull rods 45. 50 When the roller cams 47 approach, they act upon the blocks 46 and pull the rods 45 and 64 forward. The first action is to start the upward movement of the separating and 55 tying block 52, by means of the racks 54 and segments 55. The separating and tying block 52 carries the twisting mechanism at its upper end as before stated, and when said block has reached the top and is secured by 60 the latches 56, it will have brought wire from the spools with it, (carried by the roller casters 94) thereby carrying the wire into the range of action of the star wheels 68 and 69. Two wires (meaning portions) are now at the 65 star wheels; the one already held by the star

wheels and the one just brought up. Hence it will be seen that there is now a continuous wire from the one fastened at the star wheels at first by hand, and the one just carried up to the star wheels by the roller 94. It is now 70 necessary to secure the bottom wire into the star wheels. This is manifestly done by the actuation of said wheels by the pawls 74 that throw the star wheels forward and together three teeth, thereby moving the wire that 75 has been held to the upper position of the two, where it is held loosely and gripping the wire that has just been entered. Then the shearing and twisting operations are performed and at the conclusion of these opera- 80 tions, the jaws of the twister are permitted to open, permitting the wires to pass freely out of the twisting mechanism, and also permitting the wire which is then uppermost, to pass out of the bale, while the lowermost 85 wire is still held tightly between the star wheels for coaction with the next bale to be formed. The restoration of the separating block to the lower limit of its movement, leaves the wire straight, as it was when 90 threaded through by hand, and the subsequent operations of the mechanisms are entirely automatic.

Having thus described the invention, what is claimed as new is: 95

1. A baling press comprising a baling chamber, a plunger adapted to compress the material therein, means for actuating the plunger, a separating block adapted to close the front end of the baling chamber at the 100 completion of the compressing operation, means for moving said block to operative position, and means actuated by the movement of the material in the baling chamber for bringing the block moving means into 105 operation.

2. A baling press comprising a baling chamber, a plunger adapted to compress material therein, means for actuating said plunger, a separating block adapted to close the 110 front end of the baling chamber at the completion of the compressing operation, actuating means for moving said block to operative position, said actuating means being normally out of operative relation to the plunger moving means, and means actuated by the movement of the material in the baling chamber for automatically moving the block moving means into operative position for ac- 115 tuation by the plunger moving means. 120

3. A baling press comprising a baling chamber, a plunger adapted to compress material therein, means including a revoluble element for actuating said plunger, said revoluble element being provided with a cam, a separating block adapted to close the front 125 end of the baling chamber at the completion of the compressing operation, means for actuating said block, the said last named means including a pull rod and a cam block, means 130

for suspending said pull rod with its cam block out of the path of movement of the cam of the revoluble element, and means actuated by the movement of the material in the baling chamber for automatically moving said pull rod so as to bring its cam block into the path of movement of said cam.

4. A baling press comprising a baling chamber, a plunger adapted to compress material therein, means for actuating said plunger, a separating block adapted to close the front end of the baling chamber at the completion of the compressing operation, means including a pull rod for moving the separating block to operative position, said pull rod being provided with a cam block, and plunger actuating means including a revoluble element provided with a cam, vertically movable supports adapted to hold said pull rod and upon which said rod has a longitudinal movement, automatic means for raising the said supports for the pull rods, means for holding said supports raised, the raising of the supports bringing the cam block of the pull rod into the path of movement of the cam of the revoluble element, whereby to effect a longitudinal movement of said rod and the subsequent movement of the separating block, and means for automatically releasing said pull rod supports and permitting them to move downwardly at an interval for the disengagement of the cam of the revoluble element, from the cam block of the pull rod.

5. A baling press, comprising a baling chamber, a plunger mounted to move therein, means for actuating said plunger, said means including a revoluble element provided with a cam, a separating block adapted to close the front of the baling chamber at the completion of the compressing operation, said block being provided with a rack, a toothed segment meshing with said rack, pull rods adapted to operate said segment, and provided with a cam block, hanger arms supporting said pull rods for longitudinal movement and normally holding said rod with its block out of the path of movement of the cam of the revoluble element, a rod mounted to turn about its longitudinal axis, and provided with disks with which said hanger arms have eccentric connection, a support for said rod, and means actuated by a movement of the material in the baling chamber, for turning said rod.

6. A baling press, comprising a baling chamber, a plunger mounted to move therein, means for actuating said plunger, said means including a revoluble element provided with a cam, a separating block adapted to close the front of the baling chamber, at the completion of the compressing operation, said block being provided with a rack, a toothed segment meshing with said rack, pull rods adapted to actuate said segment and pro-

vided with a cam block, hanger arms supporting said pull rods for longitudinal movement and normally holding said rod with its cam block out of the path of movement of the cam of the revoluble element, a rod mounted to turn about its longitudinal axis, and provided with disks with which said hanger arms have eccentric connection, a support for said rod, the said rod being provided at one end with a bevel pinion, a depending arm having a bevel pinion meshing with the bevel pinion of said rod, and lags actuated by the movement of the material in the baling chamber and adapted to engage said arm to swing the same whereby to turn the rod.

7. A baling press comprising a baling chamber, a plunger mounted to move therein, means for actuating said plunger, said means including a revoluble element provided with a cam, a separating block adapted to close the front of the baling chamber, at the completion of the compression operation, said block being provided with a rack, a toothed segment meshing with said rack, pull rods adapted to actuate said segment and provided with a cam block, hanger arms supporting said pull rods for longitudinal movement and normally holding said rod with its cam block out of the path of movement of the cam of the revoluble element, a rod mounted to turn about its longitudinal axis, and provided with disks with which said hanger arms have eccentric connection, a support for said rod, a depending arm operatively connected to said rod to turn the same, an endless chain mounted at one side of the baling chamber with one lap extending along the inside of said chamber, and lags secured to said chain and adapted to penetrate the material in the baling chamber whereby the movement of the latter will move the chain, one of said lags being mounted for engagement with said arm, as and for the purpose set forth.

8. A baling press comprising a baling chamber, a plunger mounted to move therein, means for actuating said plunger, said means including a revoluble element provided with a cam, a separating block adapted to close the front of the baling chamber, at the completion of the compression operation, said block being provided with a rack, a toothed segment meshing with said rack, pull rods adapted to actuate said segment and provided with a cam block, hanger arms supporting said pull rod for longitudinal movement and normally holding said rod with its cam block out of the path of movement of the cam of the revoluble element, a rod mounted to turn about its longitudinal axis, and provided with disks with which said hanger arms have eccentric connection, a support for said rod, a depending arm operatively connected to said rod to turn the same,

an endless chain mounted at one side of the baling chamber with one lap extending along the inside of said chamber, and lags secured to said chain and adapted to penetrate the material in the baling chamber whereby the movement of the latter will move the chain, one of said lags being mounted for engagement with said arm, as and for the purpose set forth, the said chain embodying links formed with means for holding said lags, and said lags being detachably connected at predetermined intervals to said links.

9. A baling press comprising a baling chamber, a plunger adapted to compress the material therein, means including a revoluble element for actuating said plunger, said revoluble element being provided with a cam, a separating block adapted to close the front end of the baling chamber at the completion of the compressing operation, means including a pull rod for moving said block to operative position, said pull rod being provided with a cam block, hanger arms provided at their lower ends with rollers over which said pull rod is adapted to run, said hanger arms normally supporting said pull rod with its cam block out of the path of movement of the cam of the revoluble element, disks with which the outer ends of said hanger arms have eccentric connection, a rod journaled to turn about its longitudinal axis and carrying said disks, means for automatically turning said rod so as to raise the pull rod and carry the cam block into the path of movement of said cam, one of said disks being provided with a notch, a trip adapted to enter said notch, whereby to hold the eccentric in position to hold the pull rod raised, a shaft upon which said trip is carried, and a releasing arm mounted on said shaft and located in the path of movement of said cam, as and for the purpose set forth.

10. A baling press, comprising a baling chamber, means for compressing material therein, a block adapted to close the front end of the baling chamber at the completion of the compressing operation, means for moving said block in inoperative position, means for locking said block in operative position, the block moving means including a pull rod and a segment operated thereby, bale tying mechanism, actuating means therefor including the same pull rod, and means for releasing said pull rod from the segment near the completion of the initial traverse of said pull rod whereby to effect the operation of the tying mechanism without affecting the segments.

11. A baling press, comprising a baling chamber, means for compressing material therein, a block adapted to close the front end of the baling chamber at the completion of the compressing operation, means for moving said block to inoperative position,

means for locking said block in operative position, the block moving means including a pull rod and a segment operated thereby, a bale tying mechanism, actuating means therefor, including the same pull rod, means for releasing said pull from the segment near the completion of the initial traverse of said pull rod whereby to effect the operation of the tying mechanism without effecting the segments, and means for actuating the segments and throwing the tying mechanism out of operative position upon the return traverse of said pull rod.

12. A baling press comprising a baling chamber, means for compressing material therein, a separating block adapted to close the front end of the baling chamber at the completion of the compressing operation, said block being provided with a rack, a segment having a toothed rack, said segment being provided with a mortised power arm, a pull rod extending through said arm and provided with a block adapted for engagement with said arm, means for actuating said pull rod, to swing the segment in one direction, so as to move the separating block to operative position, means for automatically releasing the pull rod from the power arm during the operation of the initial traverse of the pull rod so as to permit the continuance of movement of the pull rod without affecting the segment, the block being adapted to slide through the power arm during its disconnected movement, means for holding said separating block in operative position during this continued movement of the pull rod, tying mechanism, means for automatically actuating said tying mechanism through such continued independent movement of the pull rod and for swinging the segment in the opposite direction thereby.

13. A baling press comprising a baling chamber, means for compressing material therein, a separating block adapted to close the front end of the baling chamber at the completion of the baling operation, means for automatically moving said block to operative position, spring pressed pawls adapted to hold said block in operative position, the block moving means including a segment, said segment being formed with ridges and the pawls being formed with lags adapted for engagement by said ridges to hold the pawls in retracted position, and said segment being also formed with cut away portions communicating with said ridges whereby to permit the pawls to swing into operative position to hold the block in operative position, bale tying mechanism, and means for actuating the same.

14. A baling press, comprising a baling chamber, means for compressing material therein, a separating block adapted to close the front end of the baling chamber at the completion of the baling operation, means

for automatically moving said block to operative position, wire holding mechanism above the block at the upper limit of the movement thereof, twisters mounted on the upper end of said block and adapted to be moved in position between the rear sides of the block and the wire holding mechanism, when the block is at the upper limit of its movement, means for automatically actuating said twisters, vise jaws carried by the block, and complemental jaws supported so as to project over and be engaged by the first named vise jaws to hold the wire between them.

15 15. A baling press, comprising a baling chamber, means for compressing material therein, a separating block, adapted to close the front end of the baling chamber at the completion of the compressing operation, 20 star wheels provided with overlapping teeth adapted to receive wire between them, supports in which said wheels are mounted to turn, a spring raised plate provided with a depending arm, pawls carried by said arm 25 and adapted to engage said star wheels to turn the same, twisters carried by the block, and adapted to engage the wires, said twisters being provided with gears, racks depending from and supported by said plate, and meshing with said gears, and means for automatically depressing said block. 30

16. A baling press, comprising a baling chamber, means for compressing material therein, a separating block adapted to close the front end of the baling chamber at the completion of the baling operation, and means for actuating said block, bale tying mechanism, means including a spring elevated plate for actuating the tying mechanism, and a connection between said plate and the means for elevating the block to operative position. 35 40

17. In a baling press, the combination with a compressing mechanism, the tying mechanism, comprising means for holding the wires around the bale, means for shearing the wires, and twisters for twisting the wires and means for actuating the latter, said twisters embodying a pair of jaws, a revolvable holder upon which said jaws are pivotally mounted, means for automatically closing said jaws together, means for automatically and subsequently turning the jaws as a whole in closed position, and means for releasing said jaws. 45 50 55

In testimony whereof I affix my signature in presence of two witnesses.

GEORGE E. JACKSON. [L. s.]

Witnesses:

ARTHUR GWIN,
ERNEST S. GOODELL.