

No. 635,178.

Patented Oct. 17, 1899.

C. NIGRO.  
TICKET STAMP AND RECORDER.

(Application filed Aug. 6, 1898.)

(No Model.)

3 Sheets—Sheet 1.

Fig. 1.

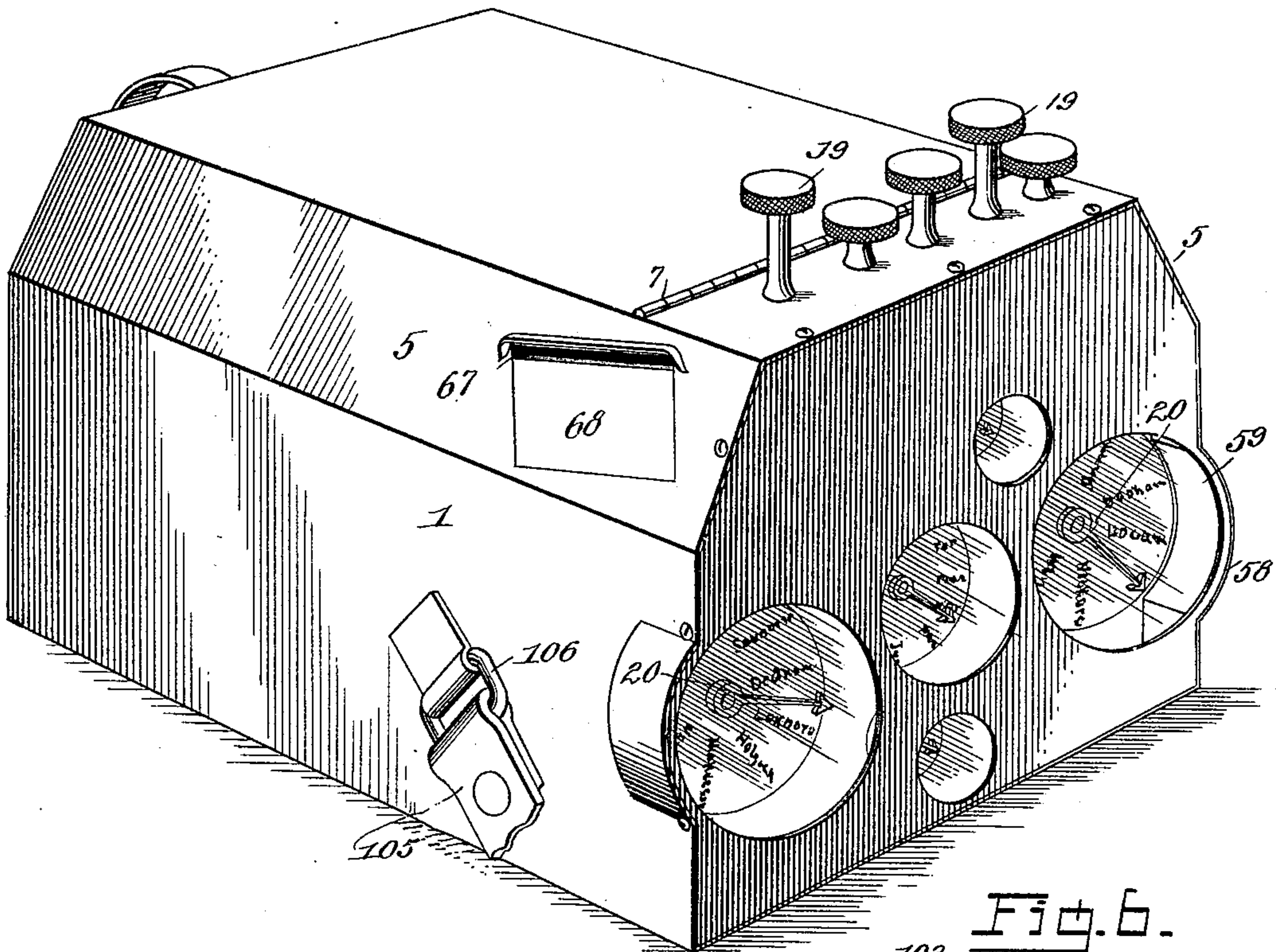


Fig. 6.

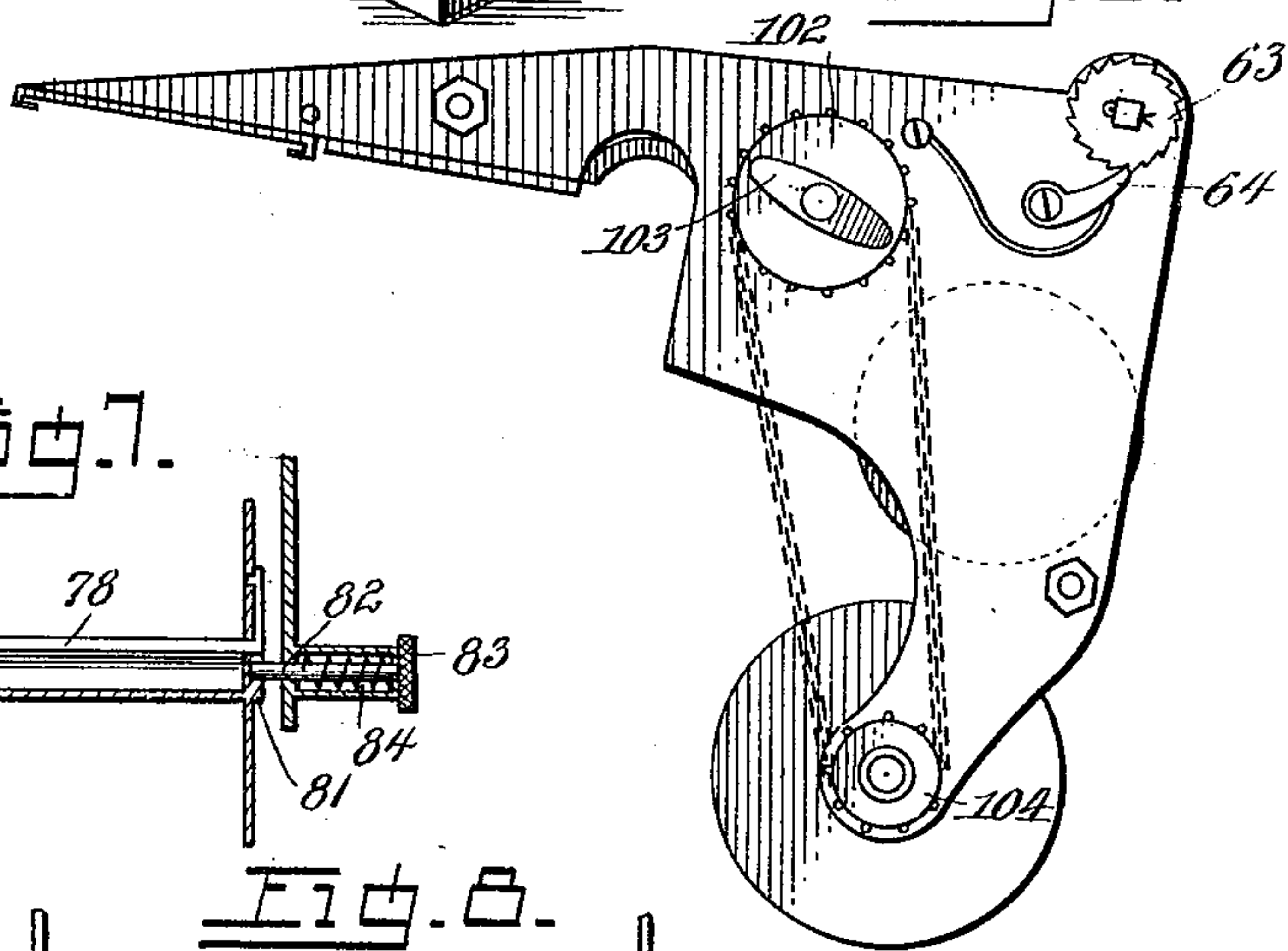


Fig. 7.

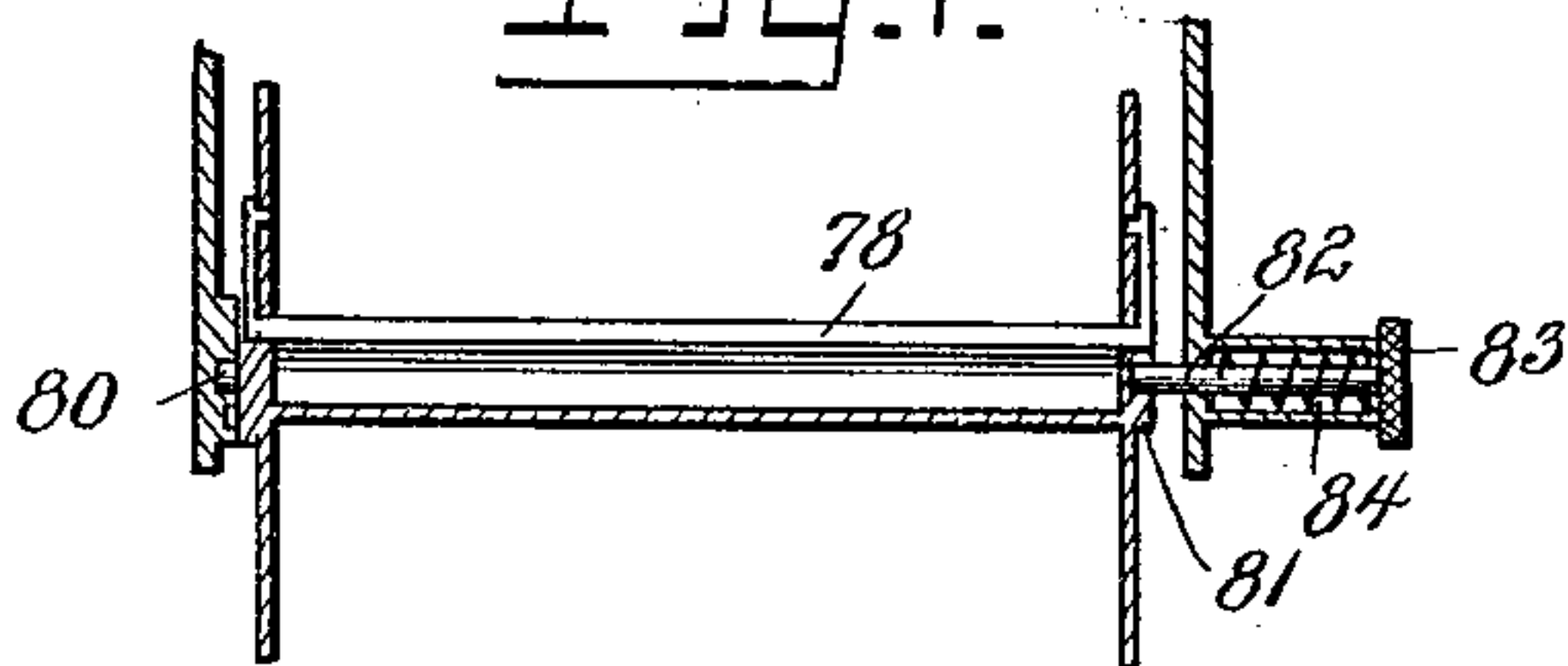
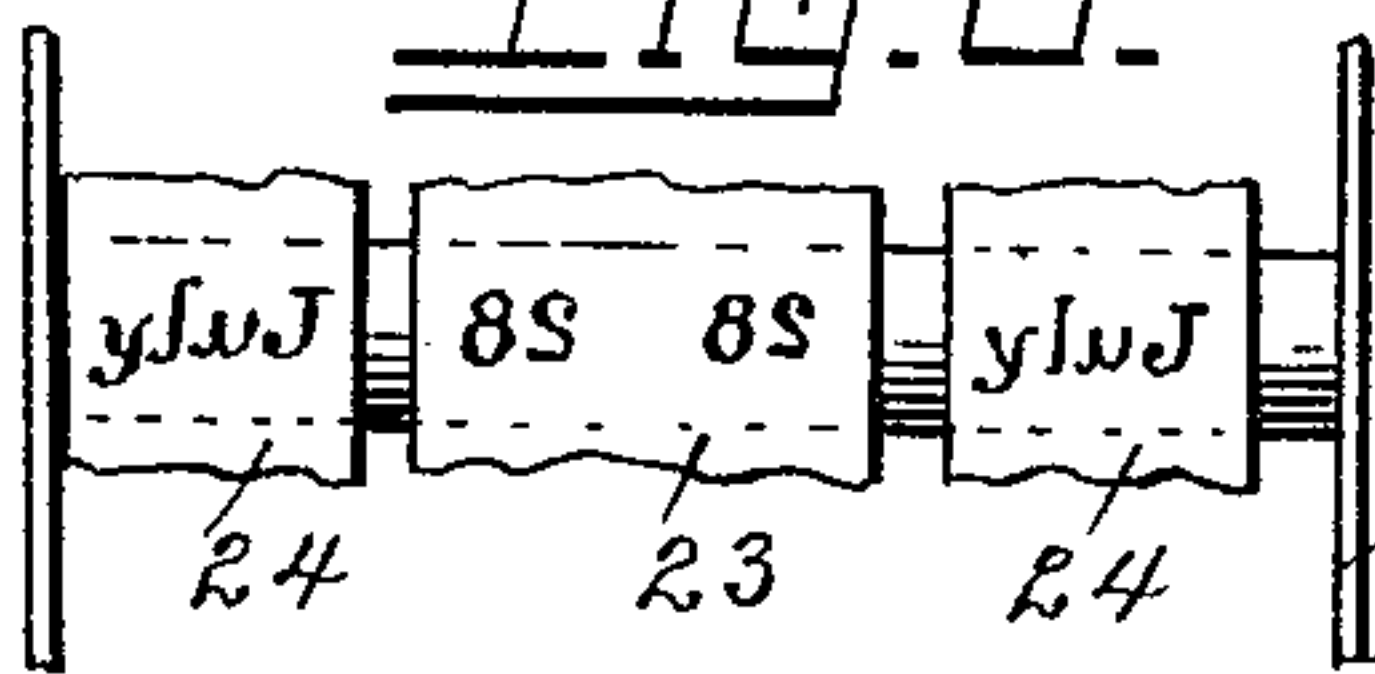


Fig. 8.



WITNESSES

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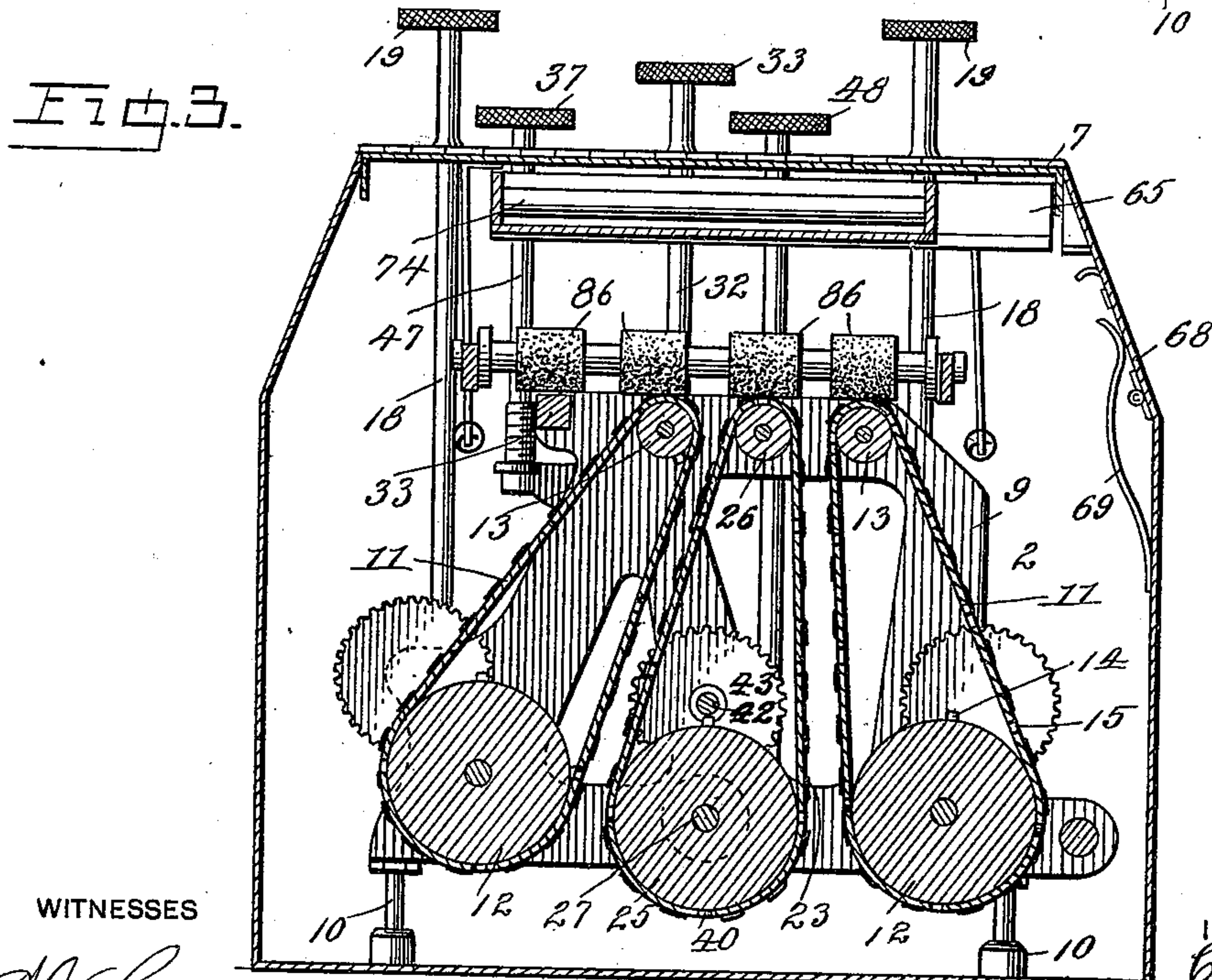
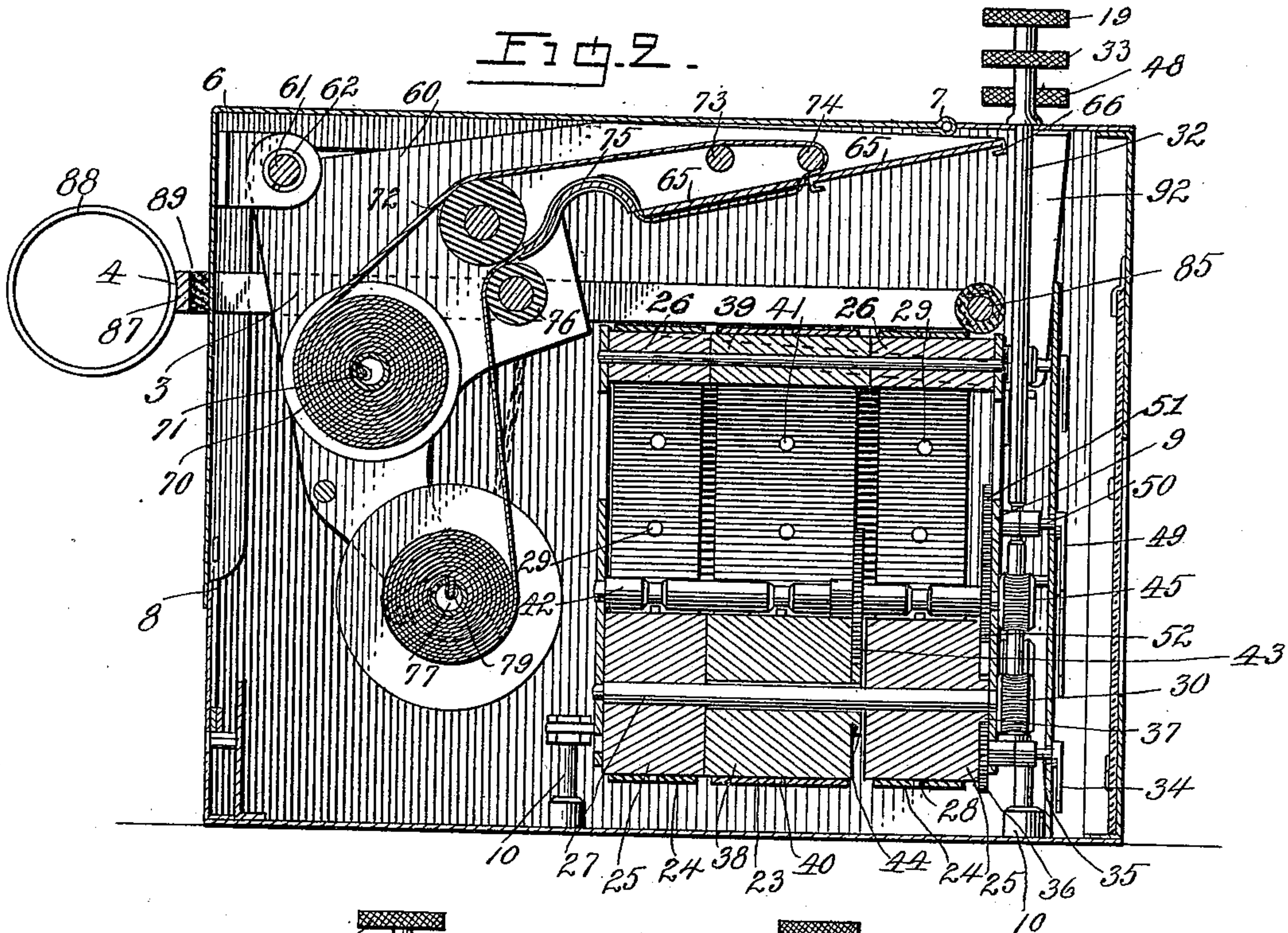
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(No Model.)

3 Sheets—Sheet 2.



WITNESSES

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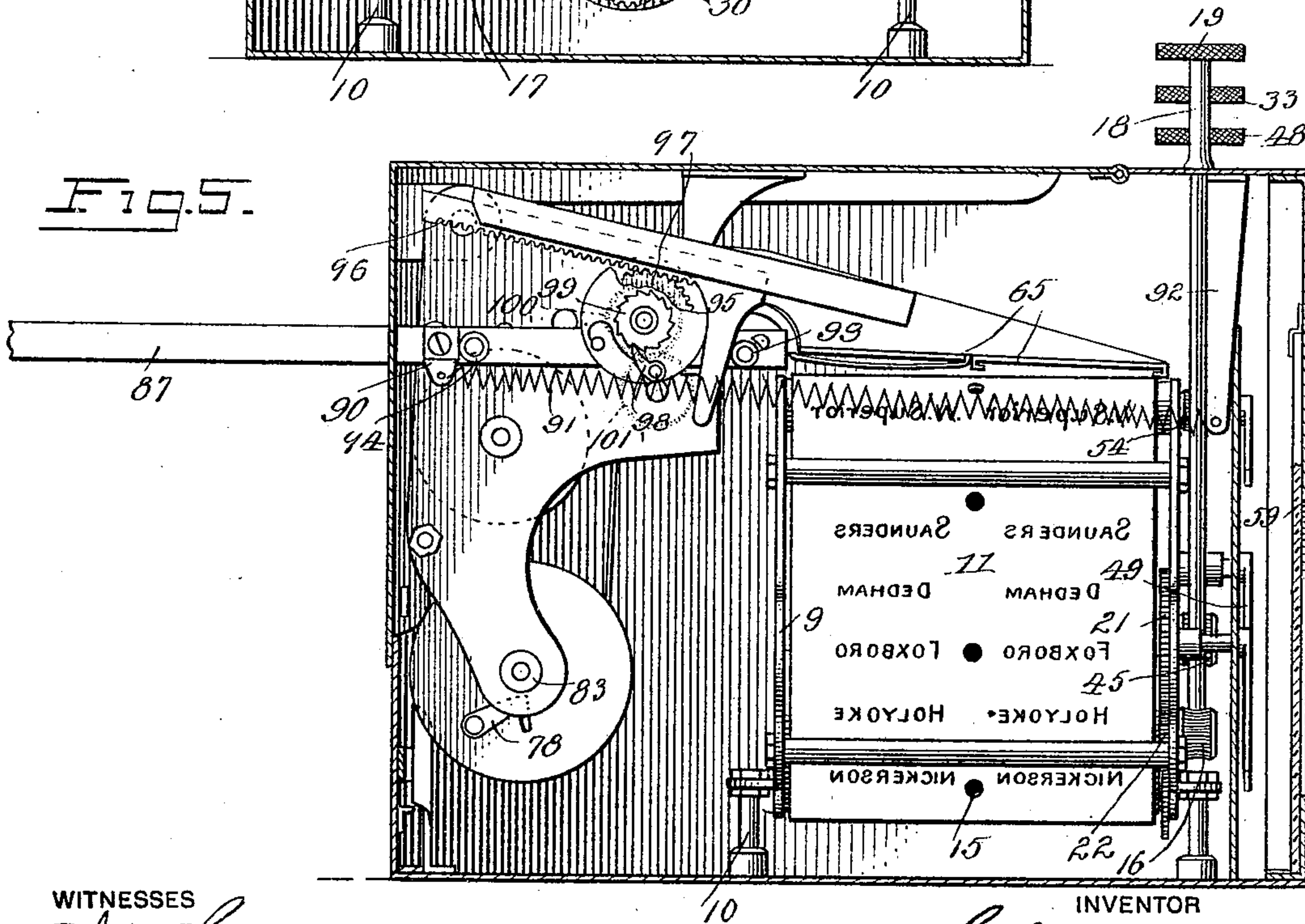
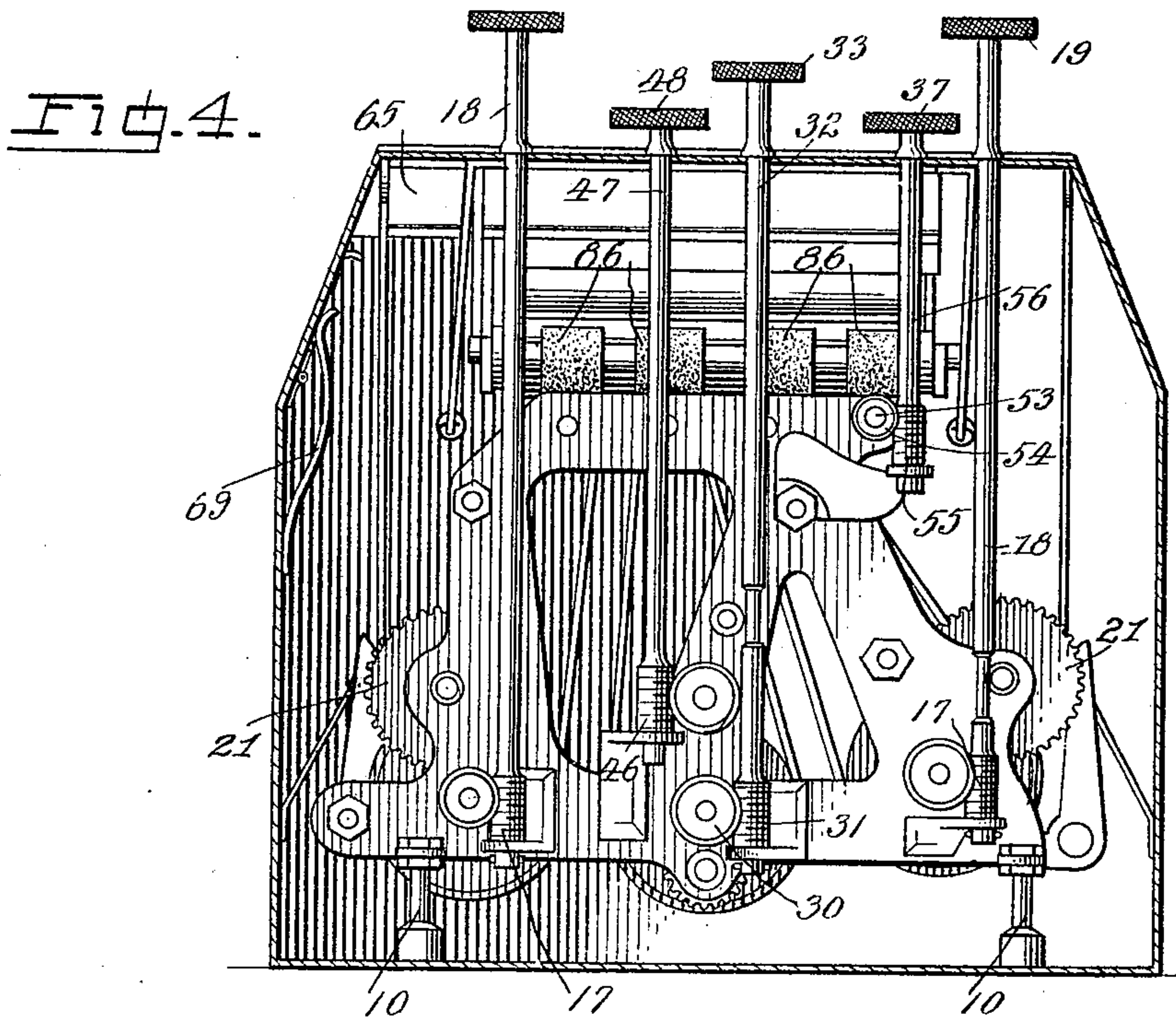
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TICKET STAMP AND RECORDER.

(Application filed Aug. 6, 1898.)

(No Model.)

3 Sheets—Sheet 3.



WITNESSES

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# UNITED STATES PATENT OFFICE.

CHARLES NIGRO, OF BIWABIK, MINNESOTA, ASSIGNOR OF ONE-HALF TO  
ANNIE B. HILL, OF SAME PLACE.

## TICKET STAMP AND RECORDER.

SPECIFICATION forming part of Letters Patent No. 635,178, dated October 17, 1899.

Application filed August 6, 1898. Serial No. 687,983. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES NIGRO, a citizen of the United States, residing at Biwabik, in the county of St. Louis and State of Minnesota, have invented certain new and useful Improvements in Ticket Stamps and Registers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in ticket stamping and registering machines, and its object is to provide a machine which will stamp tickets showing the fares for passengers and at the same time stamp a duplicate registration interiorly of the machine to be kept as a record.

It consists in providing a machine having a suitable casing with stamping-dies mounted therein, a pivoted platen adapted to be pressed against the said printing-dies for producing a duplicate registration, and a slide adapted to ink the said dies and operate the said platen.

It also consists in a casing having printing-dies mounted therein, the said dies being carried by suitable belts, means for taking an impression from the said dies, pointers, or indicators connected with the belt-operating mechanism, and means extending exteriorly of the casing for setting the said belts according to the indications of the pointers to bring the desired dies in position to receive the platen.

It also consists in certain other novel constructions, combinations, and arrangements of parts, as will be hereinafter more fully described and claimed.

In the accompanying drawings, Figure 1 represents a perspective view of the complete ticket-recorder. Fig. 2 represents a longitudinal vertical section through the same. Fig. 3 represents a transverse section through the said ticket-recorder. Fig. 4 represents a transverse section through a portion of the casing, showing an end elevation of the working parts located interiorly thereof. Fig. 5 represents a longitudinal section through the casing, showing the internal working parts in side elevation. Fig. 6 represents a side ele-

vation of the pivoted platen. Fig. 7 represents a central section through one of the spools for holding a roll of paper, and Fig. 8 represents a detail plan view of the printing-rollers, showing a portion of the dating-belts.

1 in the drawings represents a casing; 2, a die-carrying mechanism; 3, a pivoted platen, and 4 an operating-frame working in the said casing.

The working parts of the ticket-stamping mechanisms of this character are preferably completely inclosed in the casing, the said casing being locked before the register is sent out upon the road, the only external operating means being the means for setting the dies and the means for operating the platen to produce the necessary impression.

In embodying my invention in a practical form I construct the casing 1 of generally rectangular shape, two of the corners thereof, as at 5 5, being slightly beveled to improve the appearance of the casing. The box or casing 1 is preferably open upon a portion of one side and upon a portion of one end, the said open part being adapted to be closed by means of a hinged cover or lid, as 6, the said cover being hinged, preferably, to the side of the casing, as at 8.

The printing mechanism 2 comprises a machine, as 9, preferably secured to one side of the box upon standards, as 10 10, and has pivoted in it suitable rollers for carrying the type-belts for making the desired impression upon the tickets. The base of the said casing 2 is preferably made wider than the portion which presents the type for printing. In either side of the casing 2 are mounted place-indicating type-belts, as 11 11, the said belts being of sufficient width, as seen in Fig. 5 of the drawings, to hold a duplicate list of places between which fares are to be paid. The said belts 11 engage actuating-rollers 12 12 and printing-rollers 13 13, the said actuating-rollers 12 being preferably much larger than the rollers 13. The rollers 12 are also provided with projections or teeth, as 14, arranged at suitable intervals to engage apertures, as 15, formed in the said belts 11 11, so that by rotating the rollers 12 12 motion will be communicated therefrom to the belts 11 11, the teeth 14 engaging the said aper-



5 tures 15, preventing the slipping of the belts upon the said rollers. In order to actuate the rollers 12 12 so as to impart the desired movement to the belts, the shafts of the said rollers are passed through one end of the casing 2 and are each provided with a worm-gear, as 16 16. These worm-gears mesh with corresponding worms, as 17, mounted upon the inner ends of operating-shafts, as 18, which extend outwardly through the casing and carry upon their outer ends operating knobs or wheels 19. By turning the knobs 19 19 motion may be imparted to either one of the rollers 12 12 through the worm-gearing just described. In order to know how far to turn the rollers so as to bring the desired names upon the printing-rollers 13, pointers or indicators, as 20 20, are mounted interiorly of the casing upon suitable shafts, which carry two gear-wheels, as 21 21, meshing with corresponding gear-wheels, as 22 22, carried by the rollers 12 12. By this construction when the rollers 12 12 are turned the pointers or indicators 20 20 will be correspondingly operated, so that when the indicators point to the desired name the conductor or official will know that the proper dies are in position upon the printing-rollers to make the right impression upon the tickets. These two belts 11 11 provide for the stamping upon the tickets and record-roll of the names of the place from which the party travels and the name of the place to which he is going. In order to date the tickets, I mount suitable belts in the frame 2 and preferably between the belts 11 11, said intermediate belts being preferably three in number, as at 23 24 24. Inasmuch as the dates do not take up so much room as the names of the places between which the traveling takes place, the belts indicating the same can be arranged upon rollers occupying together only the space occupied by single rollers in the case of the belts 14. The belts 24 are mounted upon actuating-rollers 25 and printing-rollers 26, the said actuating-rollers 25 being about the same diameter as the rollers 12. These rollers 25 are mounted upon a shaft, as 27, in the base portion of the frame 2 and also provided with teeth, as 28, which engage corresponding apertures 29 29, formed in the belts 24 24, so that the belts will not slip upon the said rollers. By turning the rollers 25 25 the belts 24 24 will be operated to bring the name of the proper month in printing position upon the rollers 26 26. In order to actuate these rollers 25, they are rigidly secured to the shaft 27, the said shaft projecting through the casing 2 and carrying a worm-gear, as 30, the said worm-gear 30 meshing with a worm, as 31. The worm 31 is mounted upon the inner end of an operating-shaft 32, which extends through the casing 1 and carries a thumb-operating knob or wheel 33. It will be apparent that by rotating the shaft 32 movement will be communicated to the rollers 25 25 through the worm-gears 30 and 31. In order to produce the duplicate print-

ing of the dates, the arrangements of the dies or printing-types upon the two belts 24 24 are identical and they are adapted to be turned simultaneously. In order to indicate to the eye the position of the belts 24 24, a pointer, as 34, is mounted interiorly of the casing upon the shaft 35, which carries a gear-wheel 36, meshing with pinions, as 37, formed upon one of the rollers 25. The relation of this pointer and the gearing connecting it with the roller is so arranged that when the pointer shows a certain month the corresponding type or dies will be in printing position upon the rollers 26. The type-belt 23, which is located between the belts 24 24, carries in duplicate the numbers indicating the days of the month. This belt travels upon the actuating-rollers 38, loosely mounted upon the shaft 27, and upon the printing-roller 39, also loosely mounted in the frame 2. The roller 38 is also provided with engaging teeth, as 40, which mesh with the apertures 41, formed in the said belt 23, and prevent the said belt slipping upon the said roller. In order to actuate the roller 38, a shaft, as 42, is mounted in the frame 2 and carries a gear-wheel, as 43, which meshes with a corresponding gear wheel or pinion, as 44, formed upon one end of the roller 38. One end of the shaft 42 extends through the casing 2 and carries a worm-gear, as 45, which engages a worm, as 46, carried by an operating-shaft 47, which extends out through the casing and carries an operating-knob, as 48. As in the case with the other rollers, by rotating the roller 38 movement may be imparted to the belt 23 to adjust the dating-numbers. An indicator, as 49, is also connected with the belt 23, the said indicator being secured to a shaft 50, upon the inner end of which is a gear-wheel 51, meshing with a gear-wheel 52, secured to the shaft 42. This pointer and the gear-wheels actuating the same are also arranged in proper relation to the belt 23, so that the position of the type carried by the said belt may be indicated by the pointer.

It is also desirable upon the tickets to indicate whether the fare is a cash fare or a half-fare or a pass, and for this purpose I mount a revolving shaft, as 53, in the casing 2, the said shaft 53 being preferably square and carrying dies upon its faces adapted to indicate the kind of fare paid. This shaft 53 extends through the casing 2 and is provided with a worm-gear 54, meshing with a worm 55, secured to the inner end of a shaft 56. The said shaft 56 also projects through the casing 1 and is also provided with an operating-knob 57. It will thus be seen that the type-carrying mechanism is adapted to impress both upon the tickets and a record-roll the names of the places between which a journey is to be taken and the date of the month and the month of the year, and also the kind of fare tendered for the journey. While the pointers or indicators connected with the type might be arranged exteriorly of the casing, yet I prefer



to arrange them interiorly thereof and to arrange apertures in the end of the casing, as at 58, immediately over the said pointers and closing the said apertures by means of transparent glass 59, so that while the pointers can be seen they cannot be tampered with and are not likely to be injured in any way. Of course each of the pointers travels over a dial having the necessary indications upon the same to correspond with the type upon the belts.

The means for bringing the tickets and the record paper or ribbon in contact with the printing-type comprises principally a pivoted platen 3 and the operating-frame 4. The platen 3 is formed of side pieces, as 60, jointed together by suitable shafts and brace-rods, the said platen being pivotally mounted upon a shaft, as 61, secured in the corner of the lid 6. A coil-spring, as 62, surrounds the shaft 61 and is so connected with the platen 60 as to exert a constant pressure upon the same to hold it in its retracted position. The end of the shaft 61 carries a ratchet 63, which is controlled by means of a spring-actuated dog 64. By turning the shaft 61 the tension of the spring 62 may be increased or diminished, the pawl 64 operating to hold the said spring in its adjusted position. The outer free end of the platen 60 is provided with a double compressor-plate, as 65, one-half of said plate being adapted to receive a ticket, while the other half carries a loop of a roll of paper. The portion of the compressor-plate 65 which carries the ticket is preferably provided with receiving-flanges, as 66, to firmly hold the ticket in place, the said flanges registering with an opening, as at 67, formed in the side of the casing 1. The tickets to be stamped may be inserted through the opening 67 into the guides 66 66. In order to render the opening 67 larger when it is desired to insert the finger to extract the ticket which has been stamped, I provide a hinged door, as 68, which covers a large recess cut in the side of the casing. This door is preferably hinged interiorly of the casing and is normally held closed by means of a spring, as 69, also mounted interiorly of the casing. When it is desired to extract the printed ticket, it is only necessary to push the finger against the door 68, when the same will fold inwardly and permit the securing and withdrawing of the said ticket.

In order to retain a complete record of the tickets stamped, I mount a roll of paper, as 70, in the platen 60, the said roll being secured upon a shaft, as 71, removably secured in the frame of the platen 60. The web of the paper is then passed from the roll 70 over a roller 72 and thence over the rollers 73 and 74 to the compressor-plate 65. It then passes through a slot in the central portion of the said compressor-plate and along upon the outer face thereof. Thence the web of paper passes through curved guide-pieces, as at 75, between the feed-rollers 72 and 76. From this point the web passes about a shaft or

spool, as 77, upon which it is adapted to be wound as fast as it is used. As seen in Figs. 2 and 7 of the drawings, the ends of the paper web may be securely fastened to the spools 71 and 77 by means of a hinged bail, as 78, which may be forced into notches or grooves, as 79, formed in the central portions of each spool. Both of the spools 71 and 77 are removably mounted upon the platen 60, each of said spools having a short journal or trunnion, as 80, at one end and provided with a socket, as 81, at the other end, into which a spring-actuated pin may be inserted. The said pin 82 is provided with a head, as 83, by which the pin may be withdrawn against the action of the spring 84 to release the spool from its place. By withdrawing the pin 82 the spool may be easily detached from or inserted in the frame of the platen 60. The operating-frame 4 carries at its inner end a shaft, as 85, upon which are secured a series of inking-rollers, as 86 86. The said inking-rollers are so arranged upon the shaft 85 that when the frame 4 is drawn out of the casing the inking-rollers will run over the type in position for printing and suitably ink them. The side bars of the frame 4 extend, preferably, through the end of the casing 1 and are connected by a cross-bar, as 87, to which a hand-operating ring, as 88, may be attached. In order to receive the impact of the frame upon its return to the casing, a rubber cushion, as 89, may be interposed between the bar 87 and the end of the casing 1. Upon the outer sides of the side bars of the frame 4 lugs, as 90, are secured, which engage retractile springs, as 91, arranged upon each side of the said frame 4 and engaging at their opposite ends standards, as 92, secured to the far end of the casing upon the inside thereof. The action of these springs is to retract the frame 4 and hold the same normally inside the casing. The frame 4 is thus adapted to be operated by being pulled out by hand and returned by the said springs 91. In order to operate the platen 60, so as to bring the impression-plate 65 against the type, one of the side bars of the said frame 4 is provided with antifriction-rollers, as 93 94, mounted upon studs secured to the said frame. As the frame 4 is drawn outwardly the antifriction-roller 93 engages an arm, as 95, formed upon a sliding rack, as 96, moving in a suitable groove formed upon the platen 60. The said rack 96 is adapted to mesh with the teeth of the gear-wheel 97, loosely mounted upon the shaft of the feed-roller 72. The said gear-wheel 97 also carries a spring-pressed pawl, as 98, which engages the teeth of a ratchet-wheel 99, rigidly secured to the shaft of the said feed-roller 72. As the rack 96 is moved by the drawing out of the frame 4, it will rotate the gear-wheel 97, carrying the pawl 98 around the ratchet 99, so as to take a new hold thereon. When the frame 4 is allowed to be retracted by the springs 91, the friction-roller 94 comes into contact with the



projection or arm 95 and moves the rack in the opposite direction, thus causing the gear-wheel 97 to rotate in such a manner as to carry the ratchet 99 around with it. In this manner the feed-roller 72 is actuated to feed the paper forward. In order that the feeding of the paper may be more positive, the feed-rollers 72 and 76 are connected by means of gear-wheels, as 100 and 101, secured to the ends of the said rollers. In order that the slack thus produced in the web of paper may be taken up by the spool 77, one end of the shaft of the roller 72 is passed through the sides of the platen 60 and carries a chain or sprocket wheel, as 102. In order to actuate the said chain-wheel 102 and yet not to make a positive connection between the same and the shaft of the roller 72, the said sprocket-wheel 102 is loosely mounted upon the end of the said shaft, and a compression-spring, as 103, is also secured upon the end of the said shaft and so arranged as to exert a pressure with its free ends upon the side of the said sprocket-wheel 102. The spring 103 is preferably held in place by means of a screw, so that its tension may be adjusted, as desired. The sprocket-wheel 102 is connected with a sprocket-wheel 104, which is connected with the spool 77. The size of the sprocket-wheels 102 and 104 is so arranged that the tendency of the spool is to move a trifle faster than the paper is fed through the feed-rollers, the difference in movement being allowed for by the spring 103 engaging the side of the gear-wheel 102. By this movement the web of paper is always held tightly wound upon the said spool 77. The movement of the rack 96 is sufficient to move the paper far enough to present a new space to receive the next impression.

A ticket stamp and recorder constructed in accordance with my invention is preferably adapted to be carried about by the person operating the same, and for this purpose a strap, as 105, is secured to any suitable eyes or loops, as 106, fastened to the side of the casing. The said strap is made of sufficient length to pass over the shoulder or about the neck of the person wearing the same and can be adjusted in any suitable manner to hold the ticket-stamp at the desired height. A ticket stamp and recorder held in this manner presents the indicating-dials and indicating-pointers uppermost, so that they are always in sight and the operating-knobs for setting the printing-type are within easy reach.

In using ticket stamps and recorders the party carrying the same sets the pointers so as to indicate the day and month and the places from and to which the ticket is issued and the kind of fare tendered, when the mechanism is in position to receive the ticket to be stamped. This ticket is inserted through the apertures 67 and pushed into the guides 66 of the impression-plate 65. The frame 4 is then pulled outwardly as far as it will go

by means of the handle or ring 88, thereby inking the dies and forcing the platen 60 against the same, whereby a duplicate impression is made, one being upon the ticket issued and the other upon the web of the record-paper. Upon releasing the frame 4 the springs will retract it within the casing and the platen 60 will resume its normal position, thereby feeding the paper forward by means of the rack 96, so as to present a new and clean portion of the same for the next impression. It is not possible for the record-paper to be tampered with, as the ticket-recorders when they are sent out from the central office are locked and the key retained at the office. When the recorders are returned and the record of fares handed in, it can be compared with the record upon the strip of paper in the register. It will be apparent that a device of this kind is very effective for keeping the proper record and is not likely to be tampered with.

Having now described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a ticket stamp and recorder, the combination with a casing, of a printing mechanism mounted therein, said printing mechanism comprising a frame supporting type-belts having duplicate printing-dies, actuating-rollers and printing-rollers for supporting the said type-belts, said actuating-rollers having teeth adapted to engage apertures formed in the said belts for preventing the same from slipping upon the actuating-rollers, and means for operating the said actuating-rollers, so as to operate the duplicate dies in unison, substantially as described.

2. In a ticket stamp and recorder, the combination with a casing, of a printing mechanism mounted therein, comprising a frame supporting type-belts having duplicate dies, two of said belts being mounted upon actuating and printing rollers upon each side of the frame, and intermediate actuating and printing rollers carrying a belt having the numbers of the days and two belts having the names of the months, and means for actuating each of the said belts so that the duplicate dies may operate in unison, substantially as described.

3. In a ticket stamp and recorder, the combination with a casing, of a printing mechanism mounted therein, comprising a frame carrying type-belts, dating-belts mounted in said mechanism, two of said belts carrying duplicate type and a third belt interposed between the same carrying also duplicate type, means for operating the outside belts simultaneously, and means for operating the intermediate belt to bring the proper type into printing position, substantially as described.

4. In a ticket stamp and recorder, the combination with a casing, of a printing mechanism mounted therein, a cover adapted to close a part of the said casing and hinged thereto, a platen pivotally mounted upon the said



cover so as to extend interiorly of the said casing, and means for tipping the said platen upon its pivotal point to bring the tickets and record-webs against the printing-dies, substantially as described.

5. In a ticket stamp and recorder, the combination with a printing mechanism, of a platen mounted in the casing, a sliding frame for operating the said platen, feed-rollers mounted in said platen and adapted to feed forward a web of paper, and a rack carried by the said platen and adapted to be operated by the sliding frame, the construction being such that when the frame is pulled outwardly, the rack will be moved in one direction without operating the web of paper and when the frame is returned within the casing, the rack will be operated to feed the said paper, substantially as described.

6. In a ticket stamp and recorder, the combination with a casing, of a printing mechanism mounted therein, a pivoted platen also mounted therein, a roll of paper carried by said platen, feed-rollers for feeding the roll of paper forward, a spool mounted in said platen adapted to receive the slack of the said paper, a sprocket-wheel secured to one of the feed-rollers by a frictional contact, a sprocket-chain connecting the said wheel with a sprocket-wheel upon the said slack-spool, the construction being such that as the paper is fed forward, the spool receiving the slack will be fed so as to keep the paper tight, substantially as described.

7. In a ticket stamp and recorder, the combination with a suitable frame, of a printing mechanism mounted therein, a pivoted platen also mounted in the said casing, the said platen being carried by shafts, a coil-spring surrounding the said shaft, and a ratchet-wheel mounted upon the end of the said shaft, and a pawl controlling the said ratchet-wheel, the construction being such that by turning the shaft, the tension of the spring may be increased or diminished and may be held in its adjusted tension by means of the said pawl and ratchet, substantially as described.

8. In a ticket stamp and recorder, the combination with a suitable casing, of a printing mechanism mounted therein, a pivoted platen also mounted in said casing, a sliding frame working in the said casing and carrying inking-rollers, springs secured to the said casing

at one end and to the said sliding frame at the other end for normally retracting the same, 55 antifriction-rollers mounted upon one side of the said frame and adapted to engage the arm of a rack sliding upon the platen, a gear-wheel engaging the said rack and connected by means of a pawl and ratchet with the feed- 60 roller, a web of paper also carried by the said platen and adapted to be fed by the said roller, the construction being such that when the sliding frame is drawn outwardly, the platen will be brought against the type and 65 the rack will be brought to a position ready to feed the paper, and when the frame is returned into the casing, another friction-roller will move the rack in the opposite direction and feed the paper forward, substantially as 70 described.

9. In a ticket stamp and recorder, the combination with a printing mechanism, of a platen mounted therein, said platen being provided with guides for receiving a ticket to 75 be printed, the guides being adapted to coincide with an aperture formed in the side of the casing, a hinged door mounted so as to cover part of said aperture, and a spring for holding the same normally closed, the construction being such that when it is desired 80 to insert or remove a ticket from the said guides in the platen, the door can be pushed inwardly by the said platen, substantially as described. 85

10. In a ticket stamp and recorder, the combination with a suitable casing, of a printing mechanism mounted therein, a pivotal platen also mounted in said casing, spools carried by the said platen, the said spools being 90 adapted to carry a web of paper, a bail pivotally mounted in each of said spools and engaging a recess formed in the spindle of each spool, the construction being such that when the end of the web of paper is inserted be- 95 neath the bail and the bail is pushed into the recess in the spindle, the paper will be held firmly upon the spools, substantially as described.

In testimony whereof I hereunto affix my 100 signature in presence of two witnesses.

CHARLES NIGRO.

Witnesses:

W. W. BROWNE,  
E. C. BROWNE.