

A. J. MEIER.

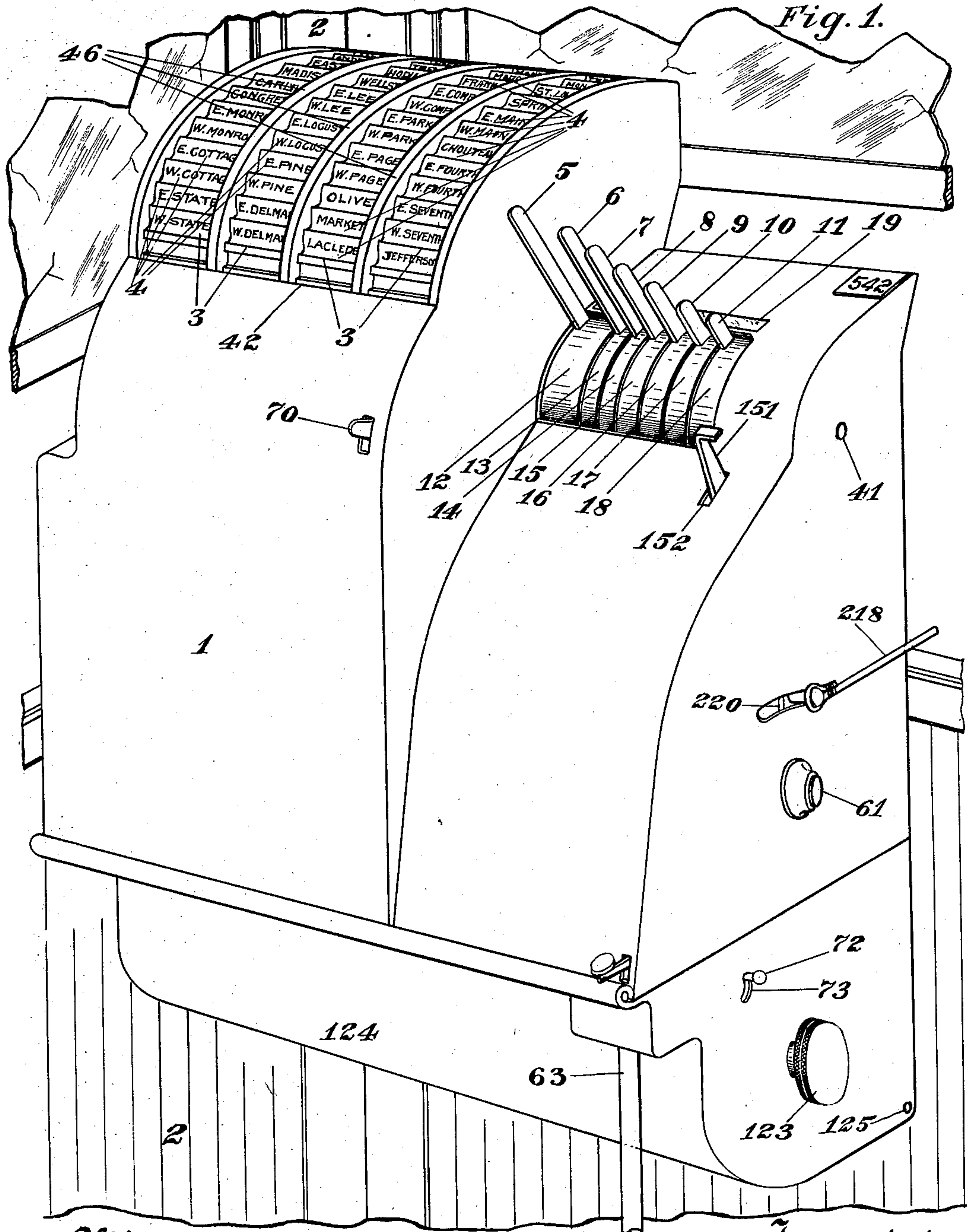
STREET CAR TRANSFER PRINTING AND DELIVERING APPARATUS.

APPLICATION FILED SEPT. 24, 1909.

Patented June 6, 1911.

11 SHEETS—SHEET 1.

994,685.



Witnesses:

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George G. Anderson.

By

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His Attorney.

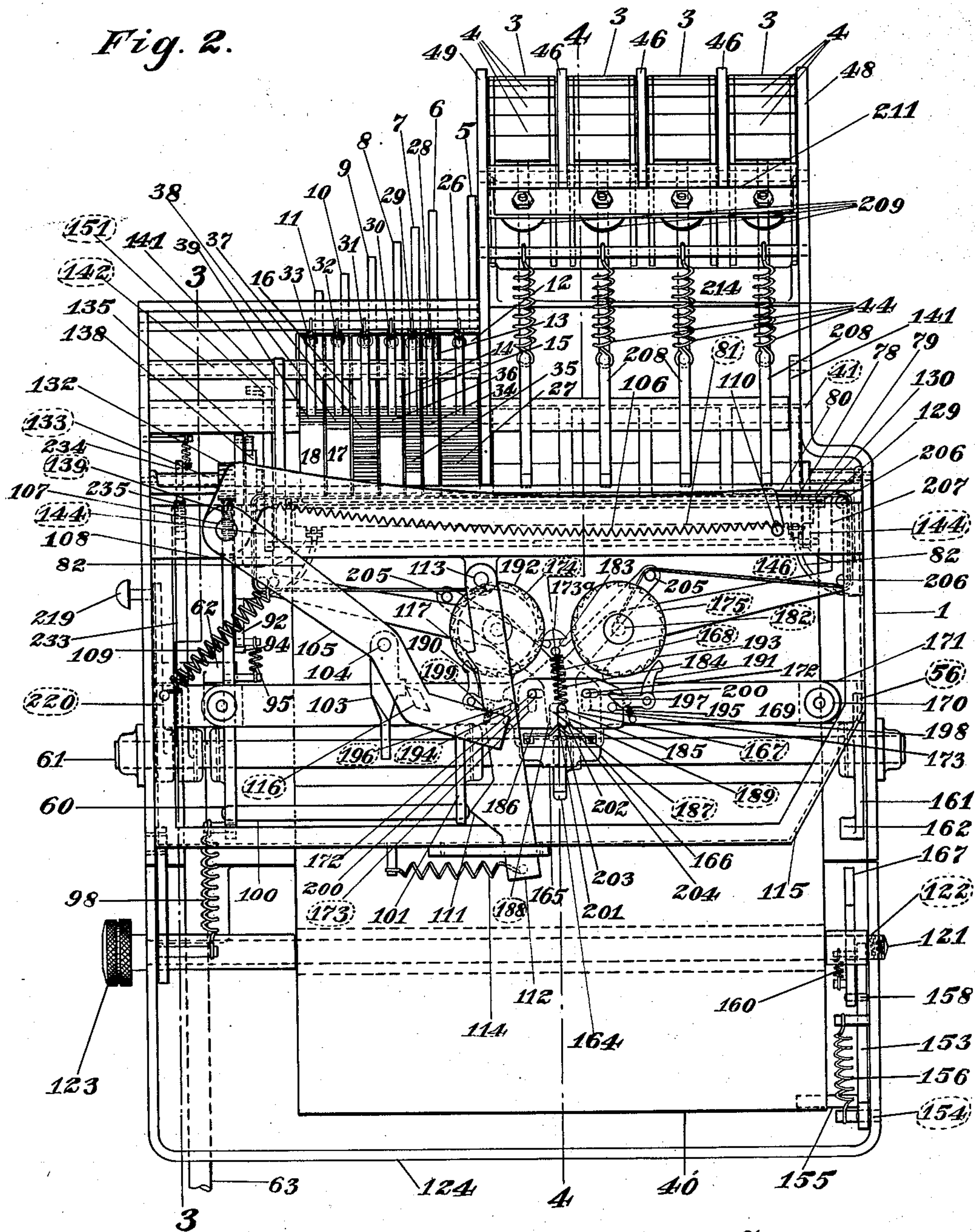
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11 SHEETS—SHEET 2.

Fig. 2.



Witnesses:

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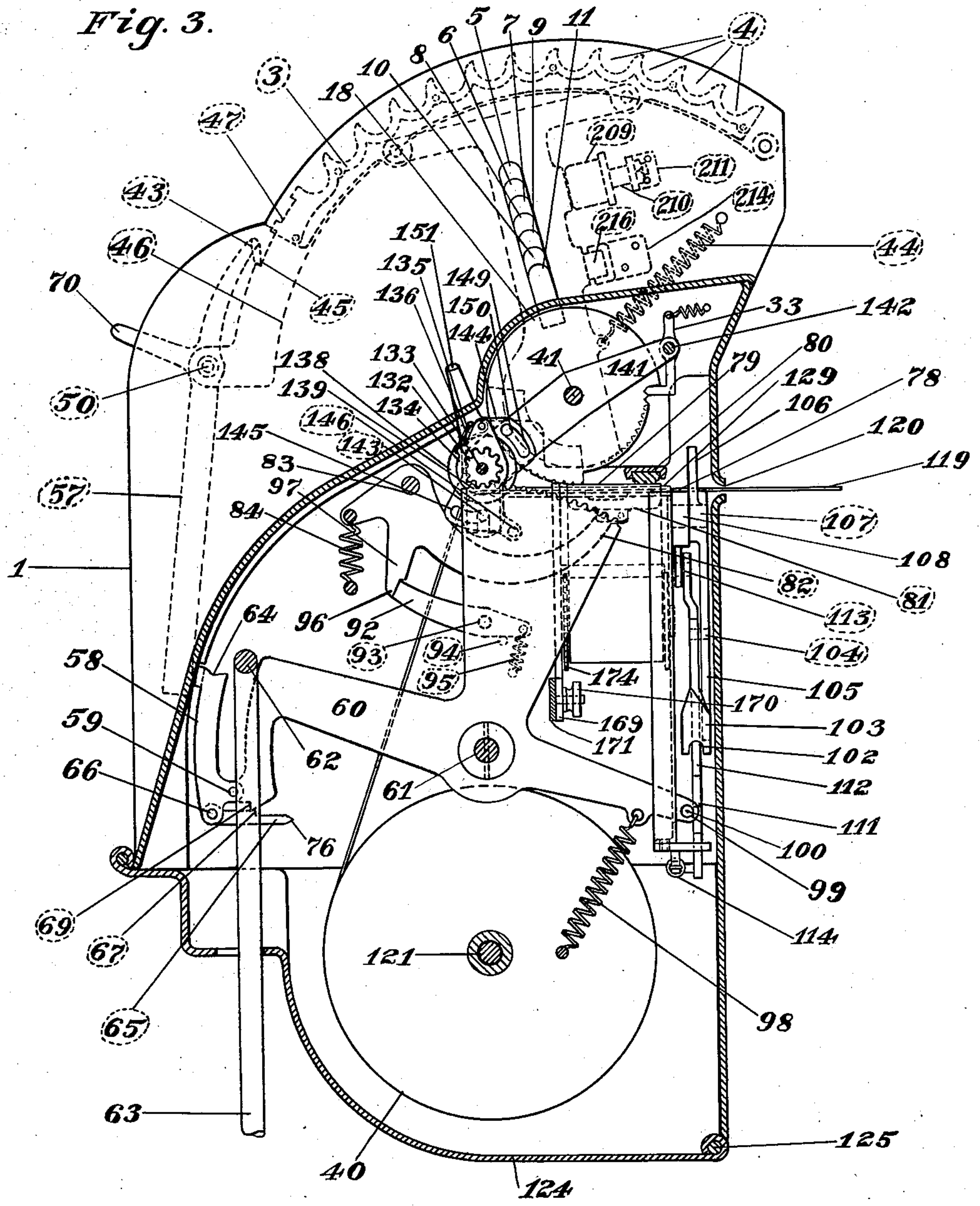
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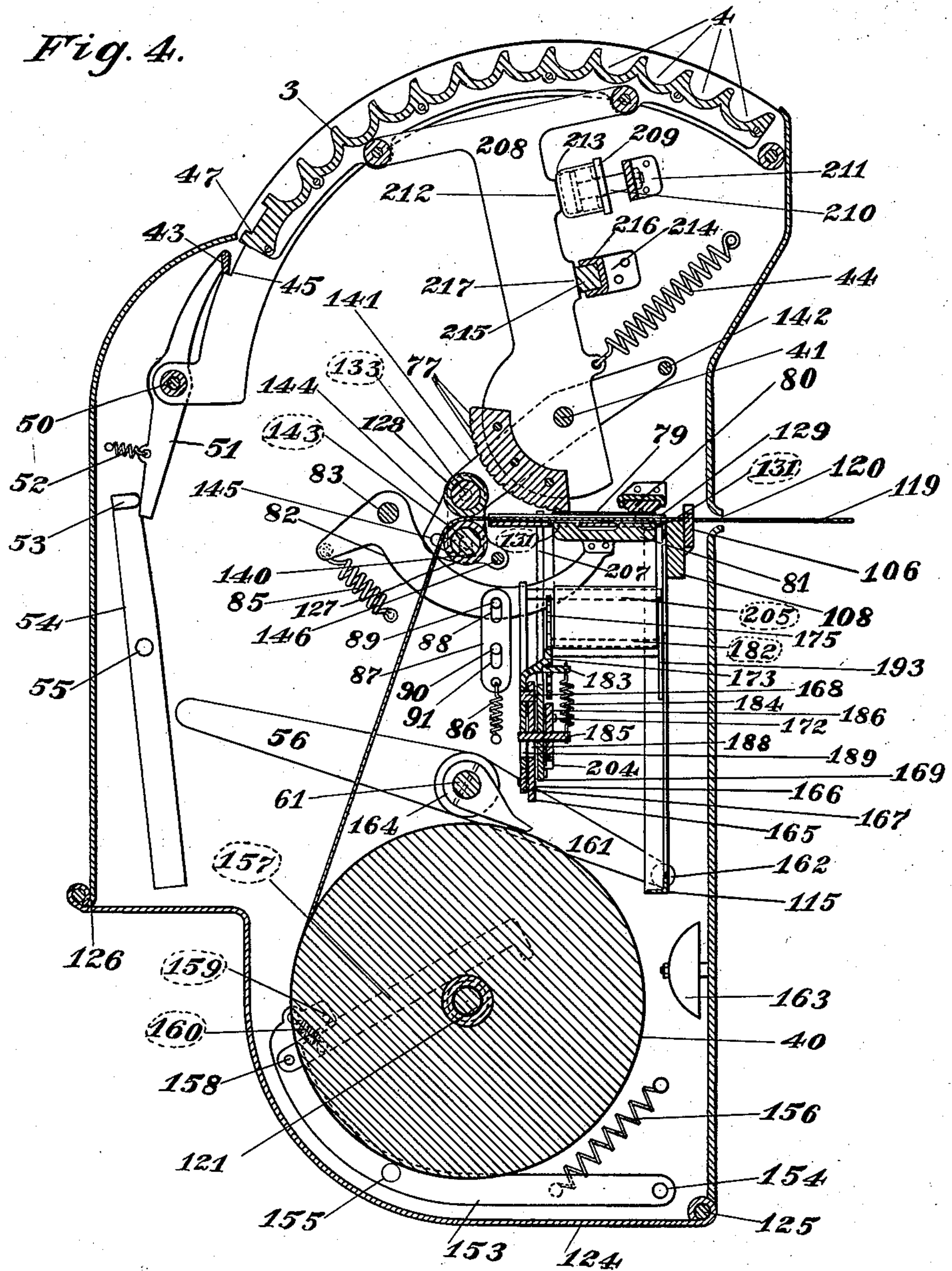
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11 SHEETS—SHEET 4.

Fig. 4.



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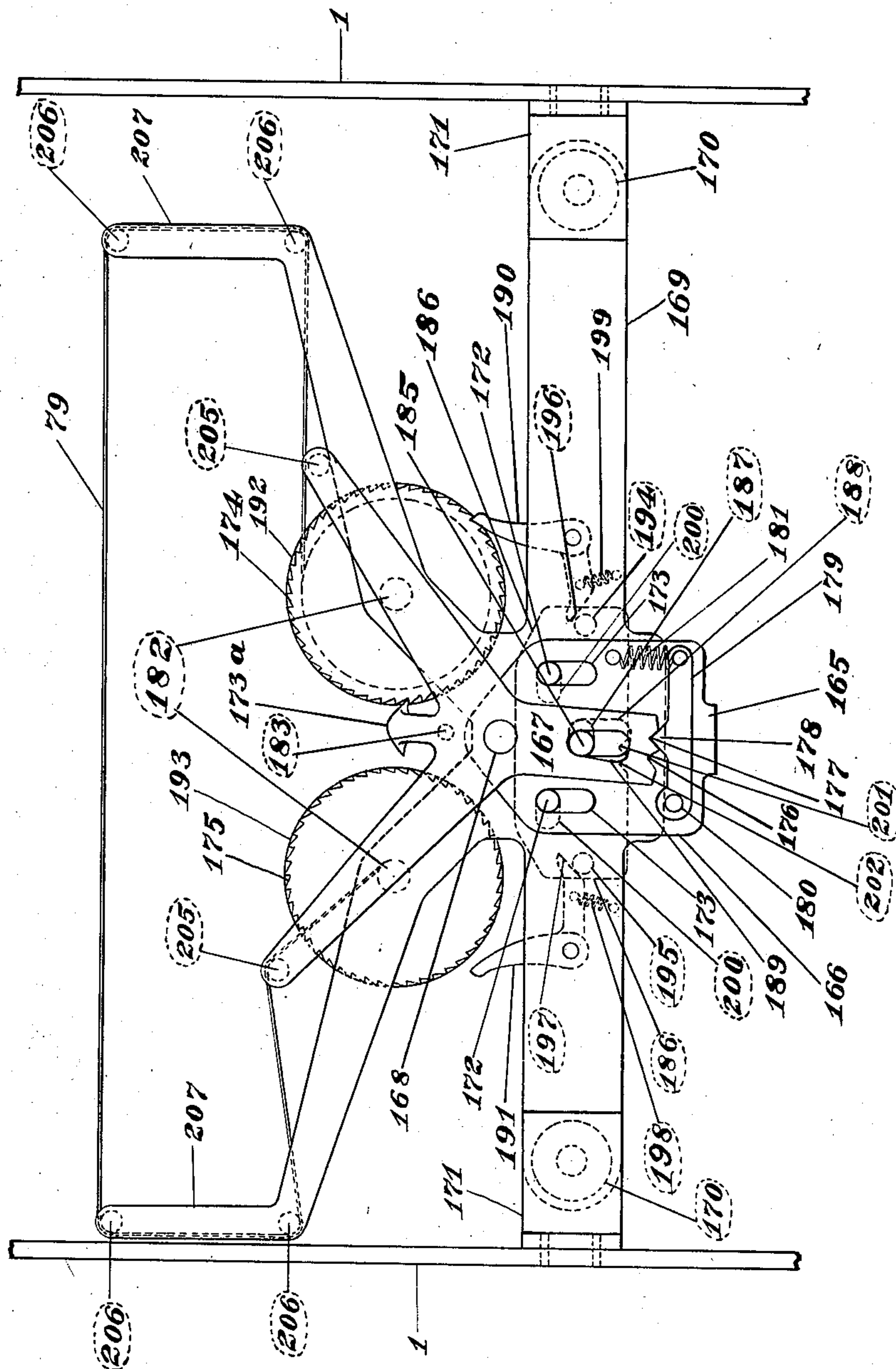


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11 SHEETS—SHEET 5.

Fig. 5.



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11 SHEETS—SHEET 6.



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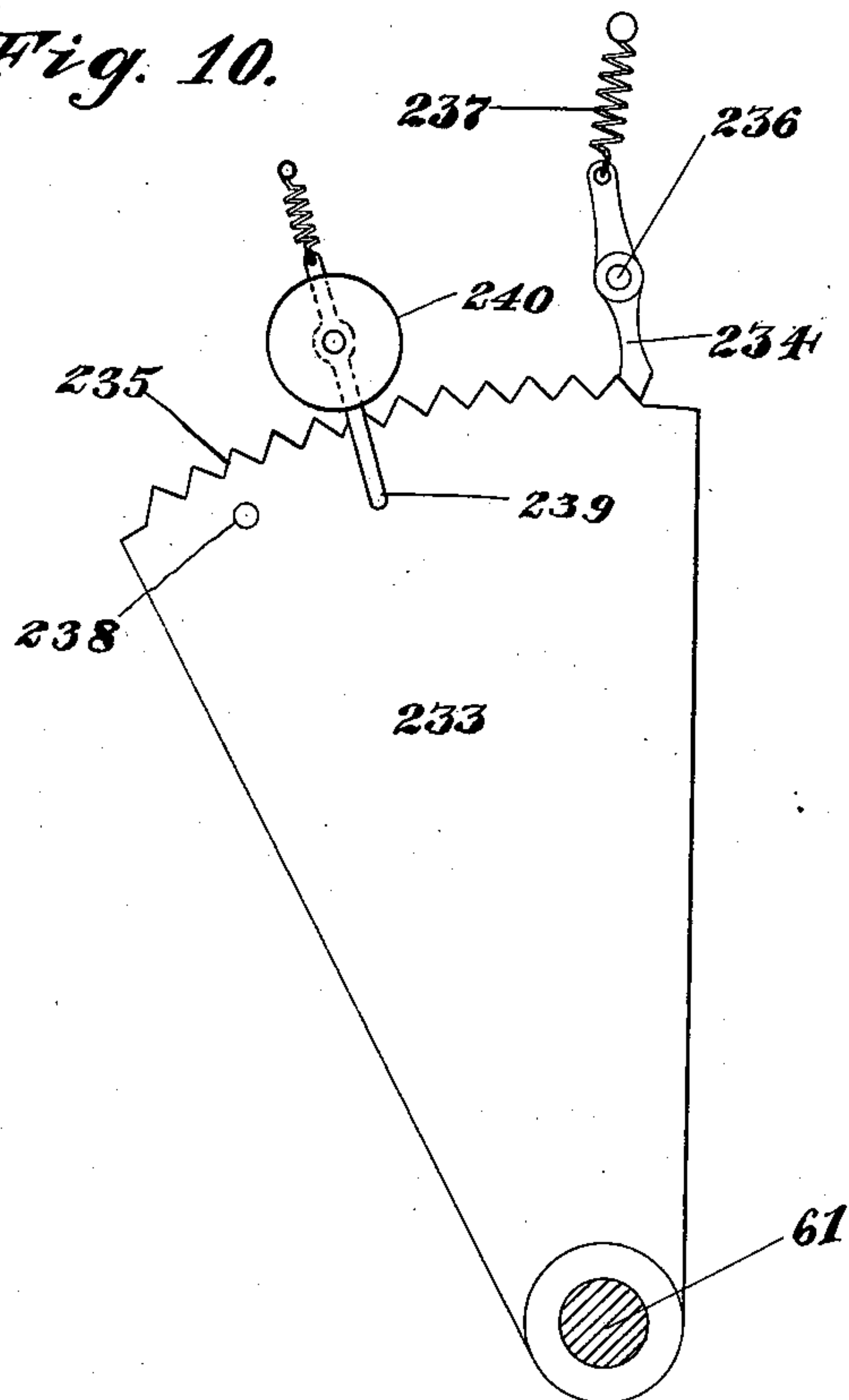
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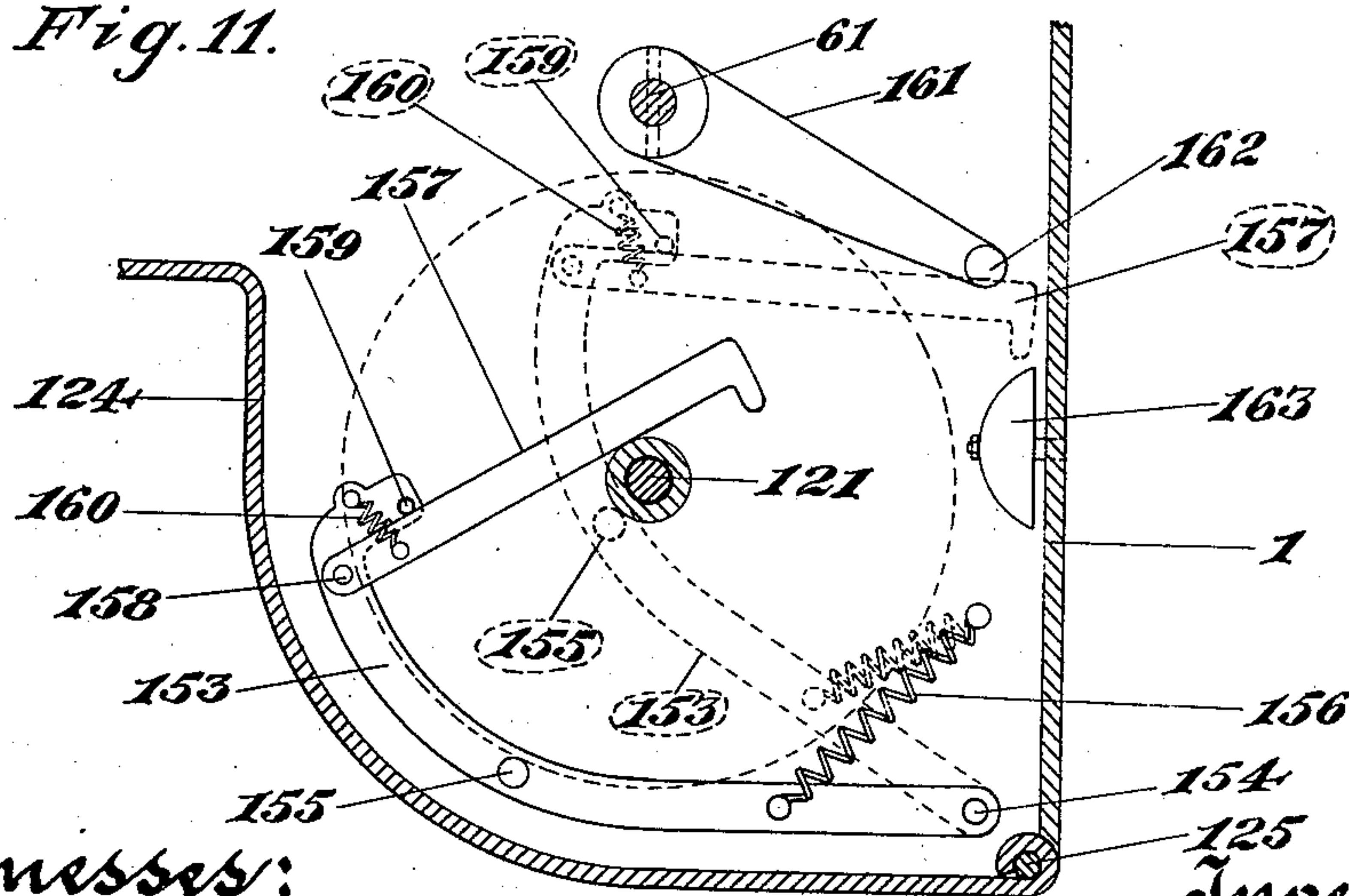
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*Fig. 10.*



*Fig. 11.*



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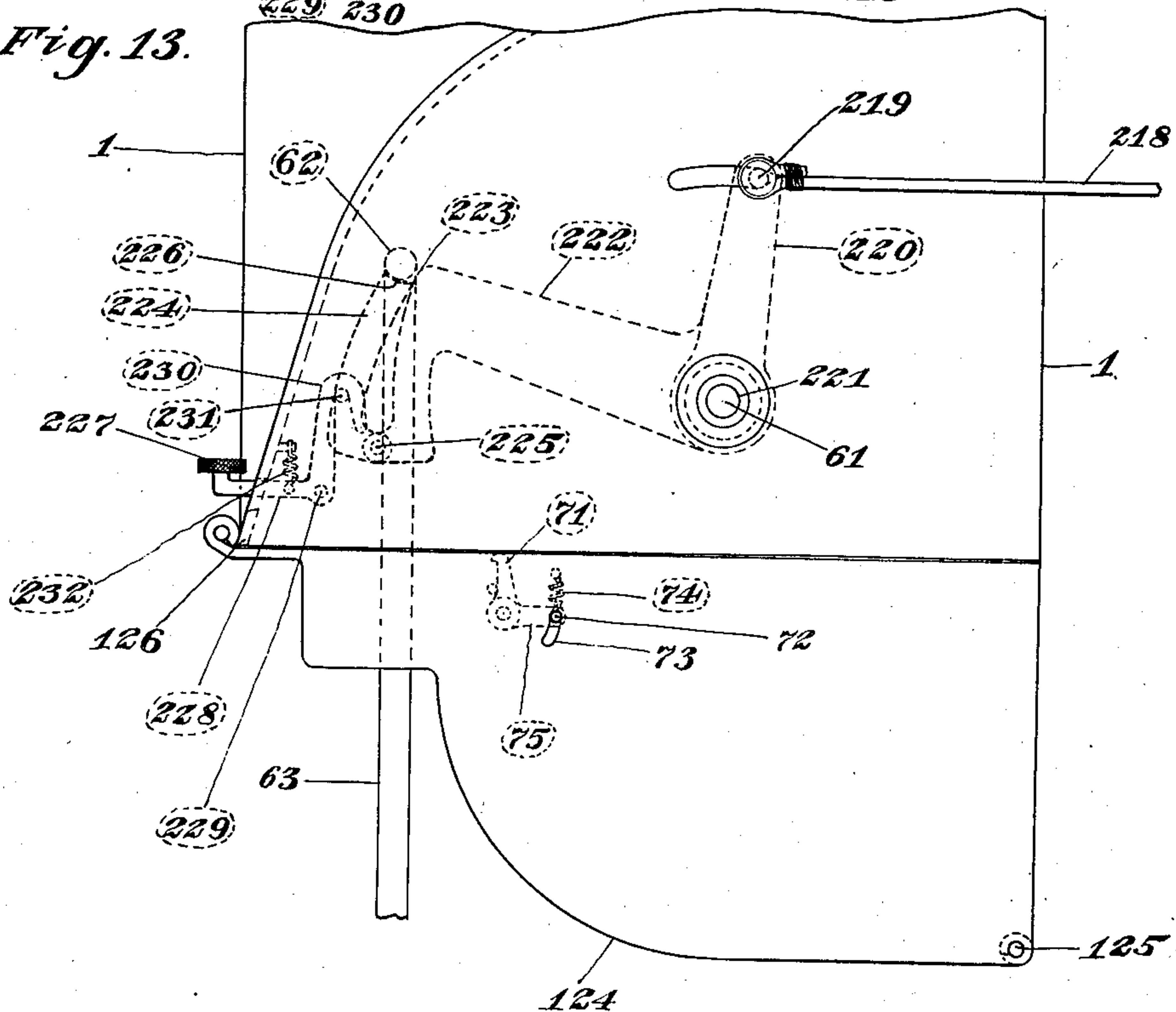
# STREET CAR TRANSFER PRINTING AND DELIVERING APPARATUS.

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11 SHEETS—SHEET 8.

*Fig. 13.*



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STREET CAR TRANSFER PRINTING AND DELIVERING APPARATUS.

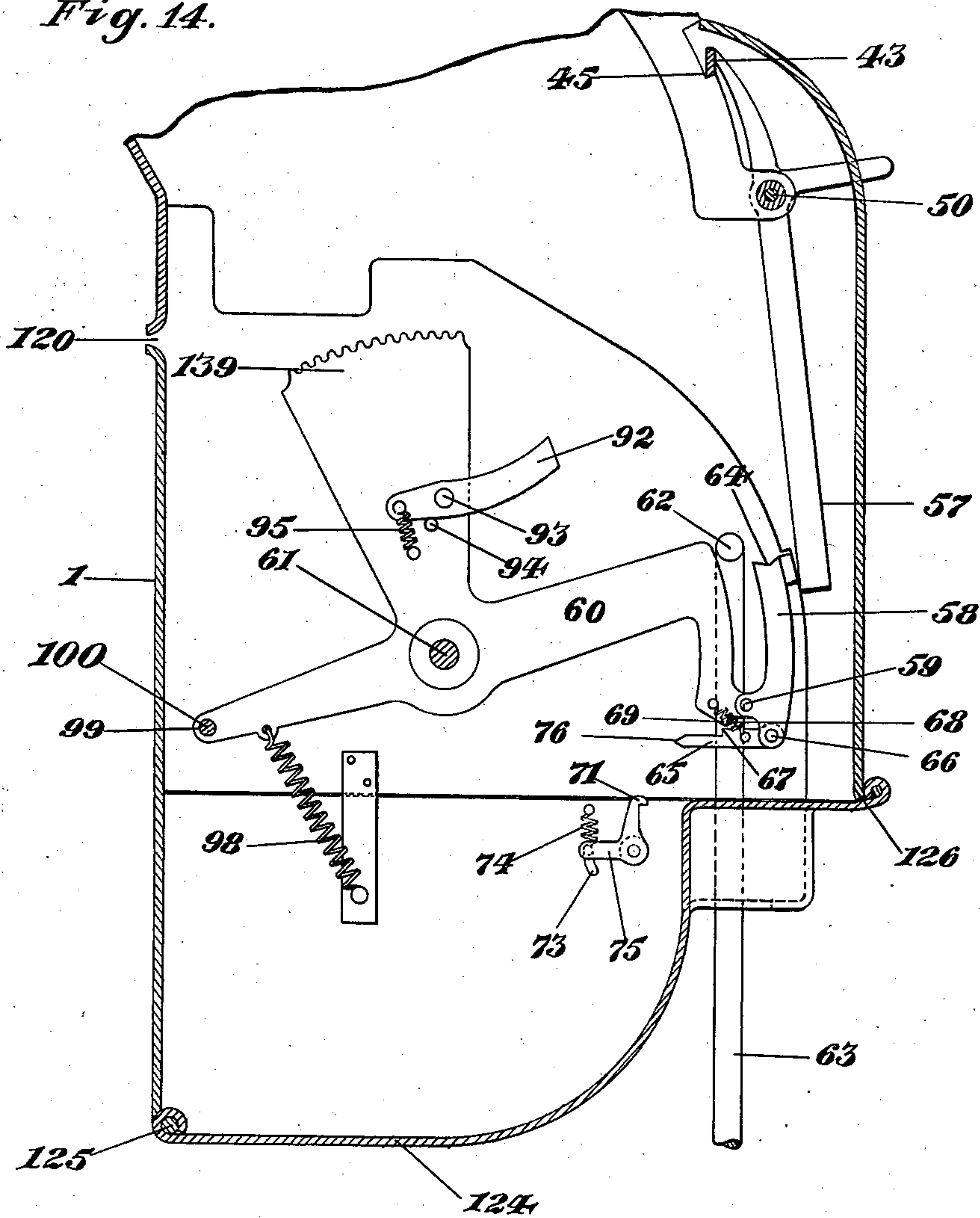
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11 SHEETS—SHEET 9.

Fig. 14.



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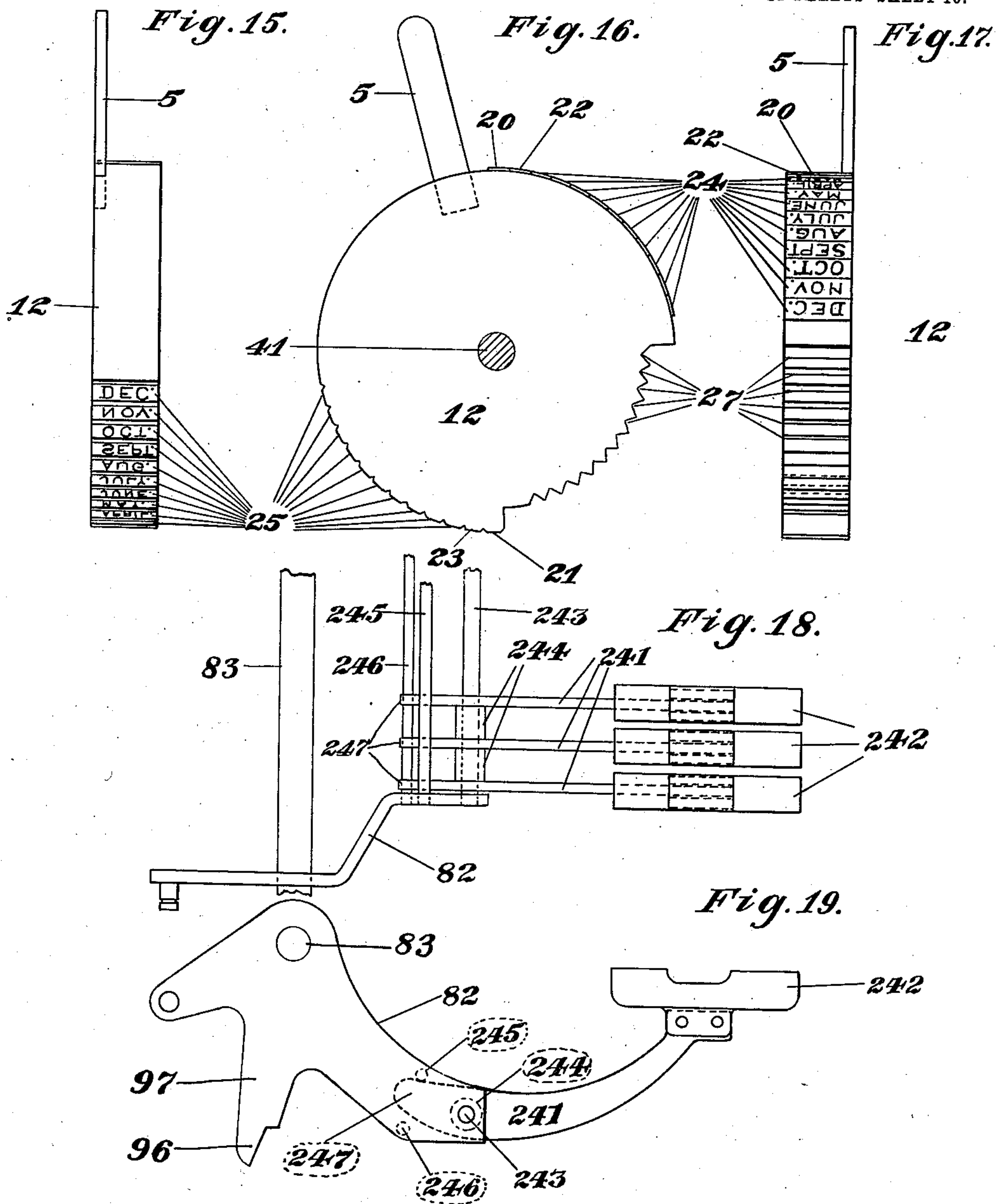
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11 SHEETS—SHEET 10.



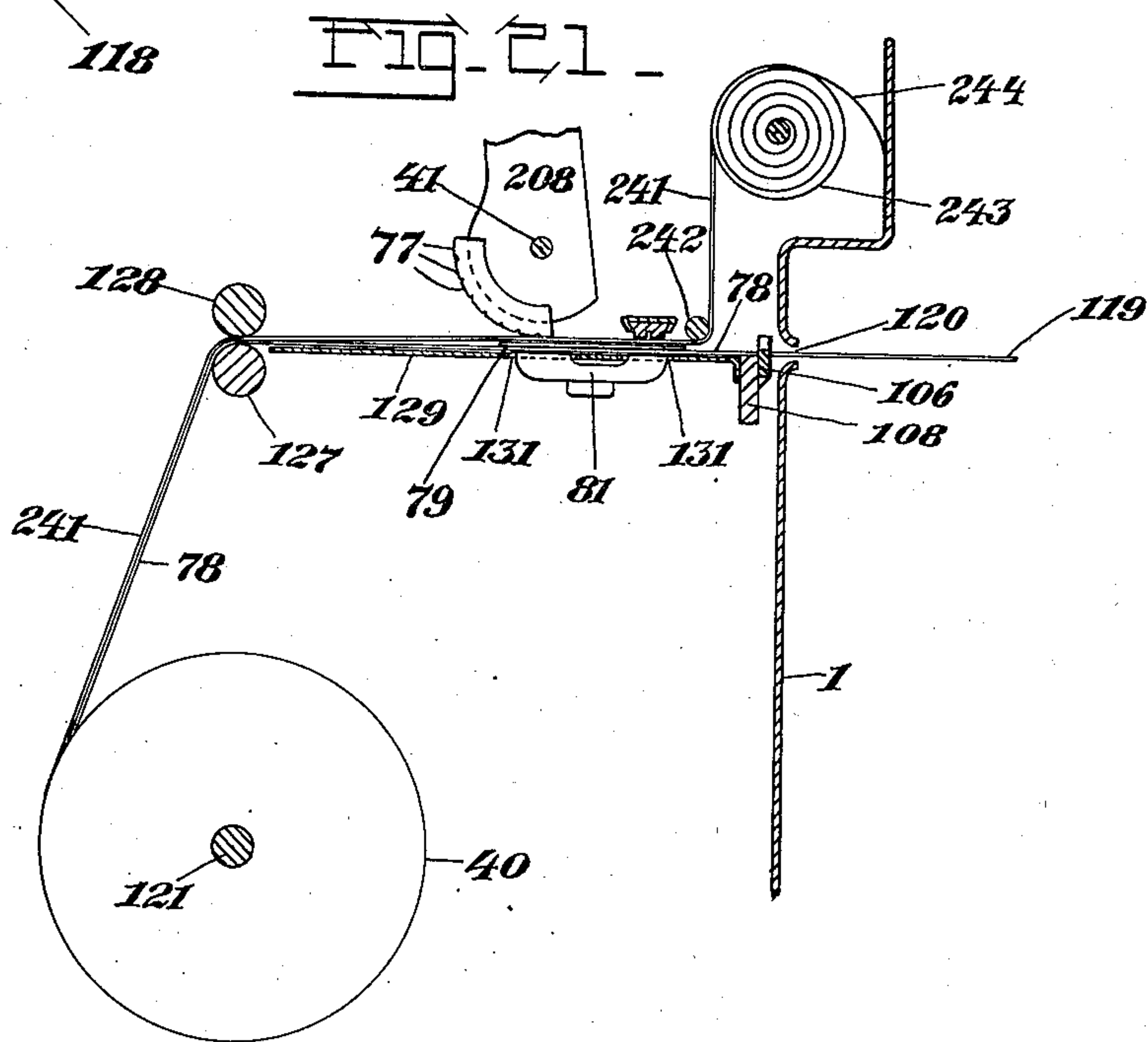
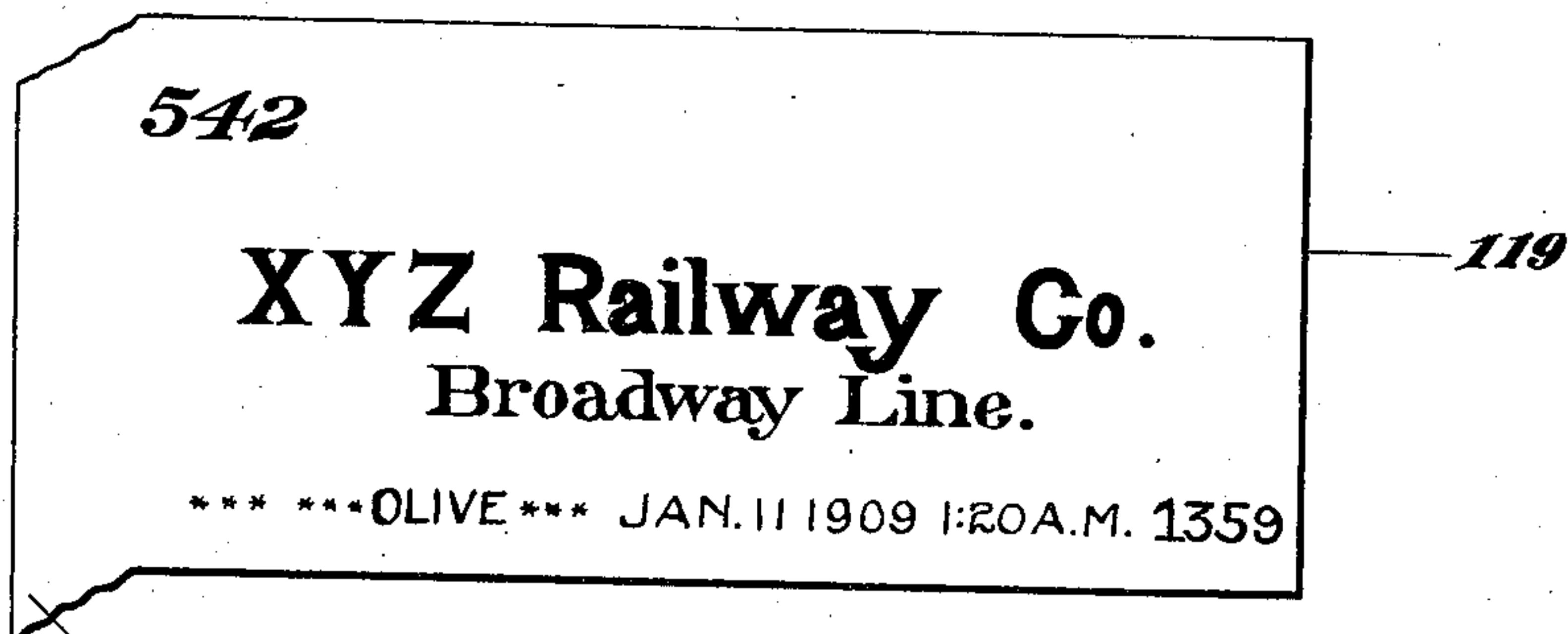
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FIG. 20 -



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# UNITED STATES PATENT OFFICE.

ALBERT J. MEIER, OF GLENDALE, MISSOURI, ASSIGNOR TO THE TEMCO MANUFACTURING COMPANY, OF ST. LOUIS, MISSOURI, A CORPORATION OF MISSOURI.

## STREET-CAR-TRANSFER PRINTING AND DELIVERING APPARATUS.

994,685.

Specification of Letters Patent.

Patented June 6, 1911.

Application filed September 24, 1909. Serial No. 519,351.

*To all whom it may concern:*

Be it known that I, ALBERT J. MEIER, a citizen of the United States, residing at Glendale, in the county of St. Louis and State of Missouri, have invented certain new and useful Improvements in Street-Car-Transfer Printing and Delivering Apparatus, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention consists in mechanism to be installed on a street-car, or any other kind of car or conveyance, such as a ferry boat, train, or the like, for the printing and delivery of so-called "transfers" or the like, it being understood that by the term "transfers" is meant such slips, cards, or tickets as are customarily issued at junctions or terminal points as evidence of the right of the bearer to further transportation on some connecting line or conveyance.

While the foregoing is the primary object of the mechanism hereinafter described, it is obvious that same may be used for various useful purposes, and its use is not, therefore, limited merely to the printing of street-car transfers, but it may, also, be utilized at the box offices of theaters, baseball grounds, and the like, and at the ticket offices of elevated, subway, and other railways, and the like for printing and issuing tickets, etc. The mechanism is adapted, also, whether or not a transfer be printed and issued, to operate the usual fare register.

In the drawings, like numbers of reference denote like parts wherever they occur, and Figure 1 is a perspective view of the assembled machine; Fig. 2 is a view with the rear plate removed; Fig. 3 is a sectional view on the line 3—3, Fig. 2; Fig. 4 is a sectional view on the line 4—4, Fig. 2; Fig. 5 is a front view of the ribbon feed; Fig. 6 is a rear view of the same; Figs. 7 and 8 are details of supports for the feed rollers; Fig. 9 is an elevation showing a feed roll and its connections; Fig. 10 is a detail of a return detent and cyclometer connection; Fig. 11 is an elevation taken within the machine showing mechanism for giving a signal that the paper or other material on which the transfers are printed has become exhausted; Fig. 12 is a top plan view showing the connection between the operating segment and

the register cord; Fig. 13 is an elevation of the same; Fig. 14 is a sectional view on the line 14—14, Fig. 12; Figs. 15, 16, and 17 are detailed views of one of the dating disks; Figs. 18 and 19 are substitutionary forms of the printing hammer; Fig. 20 is a face view of a transfer; and Fig. 21 is a sectional view showing means for printing the transfer or ticket in duplicate.

In a street-car transfer or exchange check, such as referred to above, it is desirable that the following items shall appear: the name of the issuing line; the name of the line to which issued; the month, day, and year of issue; and the hour of issuance. Such information is customary in most tickets of the kind mentioned. By preference, they are, also usually serially numbered. By reason of the use of individual printing machines, one such machine being attached to each car, as hereinabove described, it becomes necessary, with the use of the machines contemplated herein, not only to identify the issuing line, but also the issuing car, *i. e.*, machine. Hence, a new article of manufacture is produced by the use of these machines, namely, a transfer having printed thereon the number of the particular printing machine as well as the serial number of the particular transfer, as shown in Fig. 20. In Fig. 20, the number in the upper left-hand corner shows that machine 542 issued that particular transfer which happens to bear the number 1359, the name of the company issuing same, namely, The X Y Z Railway Company, also being printed thereon, and said transfer having been issued by the Broadway line of that company to the Olive line of the same company on January 11, 1909, at 1.20 a. m.

The casing 1 of the machine may be supported in any suitable manner by the car platform, floor, or body, and may conveniently be attached to the partition 2 forming part of the inclosure or vestibule in which the conductor stands in what are known as pay-as-you-enter cars. Said casing 1 incloses most of the moving parts of this machine, those only projecting therefrom to which access is necessary for its normal operation.

It will be understood that, while the machine is herein illustrated and described as



of a certain prearranged capacity, yet same can be constructed with either greater or lesser capacity, or two or more such machines in bank can be used, according to the needs of the use to which it is to be put. Thus, while the drawings illustrate four sectors 3, each containing twelve finger indentations 4, each indentation 4 governing the issuance of a transfer or exchange ticket to some one particular line, yet if there are not forty-eight junction points on, or cross lines for, the line carrying such machine, it will, generally speaking, be unnecessary to employ on such line machines having four sectors each containing twelve indentations, but machines may be provided containing either a greater number of sectors or a lesser number of finger indentations, or any other optional arrangement as may be desired. Likewise, the number of sectors or the number of indentations, or both, may be increased, as necessity requires. It should, furthermore, be observed that, while seven levers 5, 6, 7, 8, 9, 10 and 11 are provided, each controlling its own disk—respectively, 12, 13, 14, 15, 16, 17, and 18, yet, as each lever and disk controls a particular item of information appearing on the transfer, any one or more of same may be omitted if the needs of the particular user do not require the printing of the item of information produced by such particular lever or levers. On the other hand, if some other user requires additional information upon transfers, additional disks and levers may be added to the machine for the production of such information items upon the transfers without departing from the scope and spirit of this invention.

For the convenience of the conductor in setting his machine, an aperture, preferably closed by a transparent plate 19, is provided in casing 1 adjacent to the above-mentioned group of lever-controlled disks. Suitable printed matter on each of said disks appears within the range of vision of the conductor underneath said plate 19, and enables him to see what will be next printed by each disk, said printed matter on each disk being so arranged relative to the type-faces on the same disk as to synchronize—the printed matter in its appearance underneath the plate 19 and the type-faces in the act of printing. Thus (referring to Figs. 15-17), when the part 20 on disk 12 underlies plate 19, the type-face 21 will be ready to print "Jan.", meaning January. When the printed matter reading "Feb.", for February, appearing at part 22 underlies plate 19, the type-faces 23 will, upon actuation of the machine, print "Feb." In like manner, each of the parts 24 on disk 12 can be made to appear under plate 19, where the printed matter appearing on each of said parts can be seen by the conductor, their movement into

such position necessitating the simultaneous movement of the other type-faces 25 into such position as, upon actuation of the machine, to print the same matter appearing on the corresponding part 24.

The actuation of disk 12 is by movement of lever 5. Pawl 26, engaging with the succession of notches 27 in disk 12, allows said disk to be rotated forward or backward only one notch at a time, the normal setting being to rotate said disk forward throughout the segment demarked by the twelve notches in said disk 12, which is the month disk. Of course, if a particular machine had been out of use the greater part of a year, it might be desirable to rotate said disk backward to begin again at January, or in any other month, when it were again put into service.

In the last preceding paragraph, disk 12 has been used as an illustration as well as to describe its own indicating surface, type-faces, and mode of actuation and use, and substantially the same description answers for disks 13, 14, 15, 16, 17, and 18, each of which is provided with a pawl like the pawl 26 that actuates disk 12, the pawl for disk 13 being pawl 28, and the pawls for disks 14, 15, 16, 17, and 18 being, respectively, pawls 29, 30, 31, 32 and 33. While disk 12 bears in succession the names of the months of the year from January to December, inclusive, both on its indicating surface and type-faces; the ordinals 1, 2, and 3 appear in like manner on disk 13; on the indicating surface and type-faces of disk 14 appear the ordinals 1, 2, 3, 4, 5, 6, 7, 8, and 9 and 0; disk 15 is the year disk, and either the year 1909 or a succession of years may appear thereon; disk 16 is the hour disk, and bears numbers from 1 to 12, both inclusive; disk 17 is the minute disk, and may either bear numbers from 1 to 59 or quarter hour or half hour indicators or indicators for other fractional parts of an hour, the preferred form being to place on said disk 17 provision for printing and indicating twenty minutes after the hour, forty minutes after the hour, and the hour; and disk 18 is the a. m. and p. m. disk. Corresponding to the description just given, disk 13 will be provided with three notches 34; disk 14 will be provided with ten notches 35; disk 15 will be provided with as many notches 36 as the estimated number of years of life of the machine, which, in the drawings, is indicated as four; disk 16 will be provided with twelve notches 37; disk 17 will be provided with notches 38 depending in number upon the particular division of the hour desired, and when the hour is to be divided into three parts three such notches will be used; and disk 18 will be provided with two notches 39.

As an illustration of one mode of using



this machine, it can be supposed that, before starting on a run, the car conductor will set his machine so that disk 12 will be in position to print the month in which said run is being made; disk 13 will, likewise, be set to print either 1, 2, or 3, according to the particular third of the month in which the date of that run falls; disk 14 will be set so as, with the help of disk 13, to print the exact date of the run; disk 15 will, likewise, be set correctly to print the year; disks 16 and 17 can be set to print the time at which the particular run will end, or any intermediate time, this being governed by the rules of the conductor's employer; and disk 18 will be set to indicate either a.m. or p.m. The machine being thus set, it will be unnecessary for the conductor to manipulate during the run any part thereof except the sectors 3, which, as mentioned above, govern the printing and issuance of the transfers, said transfers consisting in pieces detached from the outer end of the paper roll 40, and the mechanism for printing the matter appearing on the transfer, as depicted in Fig. 20, on the outer end of said roll of paper, feeding said paper forward, detaching the transfer, and delivering same being all actuated from the sectors 3, said sectors 3 being operated by the conductor's placing one of his fingers in the indentation 4 that governs the issuance of a transfer to some particular line, the name of which is marked in the particular indentation into which the conductor thus inserts his finger. When the conductor has thus inserted his finger into a particular indentation 4, he pulls toward him the particular sector containing that indentation, each sector being rotatable upon shaft 41. When the conductor's finger has moved so far while inserted in such indentation 4 that the finger strikes the edge 42 forming a stop or check of casing 1, the further movement of the sector toward the conductor is stopped, and pawl 43 catches in one of the indentations 4 and thus retains the sector in its forward position against the returning tension of spring 44 until the time when the cycle of operations of the hereinafter-described parts has been completed, whereupon pawl 43 rests in notches 45 formed in partitions 46. In case the conductor's finger is inserted in any one of the row of indentations 4 nearest to the conductor in sectors 3, pawl 43 seats in notch 47 instead of an indentation 4 when such sector is pulled toward the conductor. Pawl 43 consists of a long strip or rod or the like and, therefore, extends past all the partition walls 46 and substantially from casing wall 48 to casing wall 49. The sheet or strip which terminates in pawl 43 is pivoted at 50 to the walls 48 and 49, the arm 51 being normally held by spring 52 in such position as to seat pawl 43 in notch 45 and to hold the lower end of arm 51 against pro-

jection 53 on lever 54 formed of resilient metal and pivoted at 55 to the wall of casing 1. Said lever 54 is a releasing means for the return of the sector to initial position, and is normally inactive, but only actuated by lever 56 after the transfer has been printed, in order to enable the return of sector 3 to the starting position. From the sheet which terminates in pawl 43 another arm 57 depends, projecting to such position as to be adapted to trip movable member 58 pivoted at 59 to rocking member 60, which is mounted on the main shaft 61 of the machine and adapted to rotate same therewith. When arm 57 trips member 58, it pushes same under projection 62 on operating rod 63, preferably operated by a foot treadle (not shown). When said treadle is depressed, rod 63 descends, pulling projection 62 with it, and, as said projection is then seated in notch 64 in member 58, and as member 58 is pivoted at 59 to rocking member 60, the descent of rod 63 rocks member 60 and with it the main shaft 61. Plate 65, pivoted at 66 to member 58, is provided with a shoulder 67, which is pulled by spring 68 into engagement with shoulder 69 when the rocking of member 58 toward rod 63 has caused plate 65 to move in the opposite direction. By this means, when member 58 has been moved into engagement with projection 62 on the operating rod by arm 57, member 58 will be held in said position by the interlocking of shoulders 67 and 69. The movement of arm 57 toward member 58 is caused by the act of the conductor in pulling sector 3 forward, as, thereby, pawl 43 is caused to ride out of notch 45 and over the rims of indentations 4. In the operation of the machine, therefore, the first act of the conductor is the pulling toward him of one of the sectors 3, and his second act is the pulling downward with his foot of operating rod 63. Assuming that the machine has been set as above described, the only acts on the part of the conductor necessary to set in motion a complete cycle of operation, terminating in the printing and delivery of a transfer and return of all parts to initial position, are those of thus pulling the appropriate sector 3 toward him and depression of the foot treadle and the release of the latter.

In case the conductor desires to issue several transfers of the same kind, it would be a waste of effort to repeat the operation of pulling the appropriate sector 3 toward him, and, accordingly, under such circumstances, he is enabled, by means of handle 70, to hold the sector 3 in the position to which he has first pulled it by merely pressing upward on said handle, it being possible to hold the sector 3 in its advanced position either by means of said handle or by keeping the finger in the indentation 4 in which



it has been inserted. As before stated, lever 54 is formed of resilient metal, and, as is evident from Figs. 3 and 4, when arm 70 is held in upper position, shaft 50 is prevented from being rotated by the arm 56. Said arm 56, therefore, bearing against lever 54, and overcoming the resilience thereof, rides along said lever without causing the rotation of said shaft 50. But, when the arm 70 is released, and the shaft 50 is free to rotate, lever 54 rotates with shaft 55 instead of bending, and arm 56 will cause said shaft 50 to rotate. Auxiliary to said sector-retaining device is the pawl 71 governed by the pin 72 that projects through slot 73 in casing 1, which pin the conductor can depress with his free hand. Said pawl 71 normally occupies the position shown in Fig. 14, in which the upward pull of spring 74 on arm 75 causes pawl 71 to occupy a position in which the beveled point 76 of plate 65 rides past pawl 71 while said beveled point 76 is descending, but to catch thereon while ascending, said plate 65 being caused to travel downward when member 60 rotates in one direction, and to travel upward when said member makes its return rotation, the object of pawl 71 in its coaction with plate 65 being to throw member 58 back to its initial position by releasing same from the lock of shoulders 67 and 69. When, however, pin 72 is moved downwardly, nothing interferes with the rise of plate 65, and member 58, accordingly, remains in engagement with projection 62 on rod 63, enabling the conductor, by simply pressing down with his foot on the foot treadle connected with rod 63, to print and deliver as many of the same kind of transfers as he desires, their particular character being determined by the nature of the type-face 77 on the particular sector originally depressed.

The loose end 78 extending from the paper roll 40 passes underneath the ink ribbon 79, said paper and said ribbon being fed, preferably, transversely to each other. The transfers are printed upon the end of said loose part 78 of the paper. The ribbon 79 and part of the paper 78 underlie the type-faces 77 of the various sectors 3 and, also, the various disks 12, 13, 14, 15, 16, 17, and 18. The reading-matter indicated and adapted to be printed by each of said disks has already been described. The type-face on each sector 3 is adapted to print the names of the lines to which the transfers are to be issued, which names are indicated by the matter printed in each indentation 4. In addition, a fixed or set-type printing-surface 80 is provided, which is, also, located above the ribbon 79 and paper 78 and which is adapted to print the matter that is identical in each transfer issued by the particular machine in which it is found—*e. g.*, the number

of the issuing machine, the name of the issuing corporation, and the name of the issuing line of that corporation.

The operation of printing is performed by the hammer 81 carried by arm 82 pivoted to rod 83 that is supported by casing 1 and runs from end to end thereof. Hammer 81 is normally held adjacent to the paper 78 by springs 84 and 85, but slightly out of engagement with the paper by spring 86, which pulls plate 87 downwardly, so as to cause the upper part of slot 88 to engage pin 89, the travel of said plate 87 being limited by pin 90, which is fixed to the wall of casing 1 and which enters slot 91. With the hammer 81 normally in the position just stated, same is tripped by the arm 92 pivoted at 93 to rocking member 60 and normally held against stop 94 by spring 95 fastened to rocking member 60. The free end of arm 92 normally engages the lip 96 on the end of arm 97 of the arm 82. When rocking member 60 rocks toward the lip 96, arm 92 pushes against same until arm 82 has been rotated on its pivotal point 83 to such an extent as to allow arm 92 to ride off lip 96. The hammer 81, which has been thus depressed from its normal position, being suddenly released by the disengagement of arm 92 and lip 96, is, by means of spring 84, caused suddenly to spring upward and to make a sharp impact against the paper 78 underneath ribbon 79, and thus to print through ribbon 79 upon paper 78 from all the various printing surfaces hereinbefore mentioned. Rocking member 60 is caused to rotate toward lip 96 by the downward pull of rod 63 when resting in notch 64 in member 58 attached to said rocking member 60. When pressure of the foot treadle that pulls rod 63 downwardly has been removed, spring 98 immediately returns rocking member 60 to its initial position, thus causing arm 92 to reengage lip 96.

At 99 rocking member 60 is pivoted to rod 100, which is pivoted to plate 101, which is fixed to the main shaft 61 and rotates with said shaft 61. When shaft 61 is rotated by the depression of rod 63, plate 101 and member 60 cause rod 100 to swing up into engagement with notch 102 in the pendent 103, said pendent being pivoted at 104 to arm 105. Arm 105 is fixed to knife 106 so that when arm 105 is raised by the push of rod 100 on pendent 103 knife 106 is simultaneously raised, said knife and said arm 105 being pivoted on pin 107 to cross-piece 108 which extends from one side wall to the other of casing 1, which cross-piece 108 is located so nearly adjacent to knife 106 as to act as the shear against which knife 106 presses paper 78 to sever sections thereof from the roll. As knife 106 is pivoted at 107, it rotates counterclockwise when being raised by the pressure on pendent 103. When such pres-



sure has been removed, knife 106 descends to the position shown in Fig. 2 under the impulsion of spring 109 until it is stopped by projection 110 fixed to cross-piece 108.

The knife 106 having been raised as just described, it is desirable that same should be locked in raised position until the transfer has been fed out of the machine. The knife is thus locked in its raised position by the following means: When plate 101 is rotated by shaft 61 so as to cause rod 100 to engage pendent 103, the V-shaped projection 111 on plate 112, which is pivoted at 113 to cross-piece 108, is pulled by spring 114, fastened to cross-piece 115, underneath said plate 101, so as to prevent its return to its original position. When plate 101 continues to rotate, lug 116 on arm 105 is raised so as to ride over and be caught by projection 117 from plate 112. The knife 106 is thus effectually held in its elevated position until, by the release of the rod 63, rocking member 60 has been allowed to return to its initial position, carrying with it, through intermediate parts, plate 101 to its initial position, the descent of plate 101 pressing against projection 111, so as to push plate 112 from the perpendicular to the position shown in Fig. 2, thus withdrawing projection 117 from detaining engagement with lug 116, whereupon arm 105 and knife 106 are free to fall. Knife 106 thus falls upon the paper 78, and indents same and cuts same from the paper roll 40, leaving, however, a small uncut part 118, this slight uncut part being left for the purpose of holding the transfer until removed by the hand of the passenger, so as to prevent the transfer from dropping on the floor or being blown away by the wind. Before this cutting operation takes place, the paper 78 has been so fed forward as to have projected the printed transfer 119 through the mouth 120 of the machine. Said delivery of the transfer 119 and feed of the paper 78 forward, so as to present it in proper position for the severance therefrom of transfer 119 by the descent of knife 106, is accomplished by the following mechanism. The paper roll 40 is mounted on shaft 121, journaled in both sides of casing 1, said shaft 121 being threaded at 122, so that turning of the button 123 in one direction will fasten said shaft firmly in place, while turning said button in the opposite direction will disengage threads 122 from cooperating threads in the side of casing 1, making it possible to pull out the shaft, in order to mount thereon a fresh roll of paper, the bottom part 124 of casing 1 (including both the bottom proper and the lower side walls attached to same) being pivoted at 125 to the back of casing 1 and normally fastened in position by being sprung over lip 126 on the front wall of casing 1. When the bottom has been dropped, access is afforded

into the interior of the casing 1 for the purpose either of changing the paper roll or any other desired purpose. The loose end of the paper 78 is led away from the roll 40 between the rolls 127 and 128 and over paper guide 129 and between the retaining flanges 130 of said paper guide, said paper guide being supported by cross-piece 108. An opening, or openings, 131 in paper guide 129 allows hammer 81 to impact the paper for the printing operation, hereinbefore described. The rolls 127 and 128 are adjusted so close to each other as to apply a reasonable amount of pressure to the paper 78 therebetween, so that, when roll 128 is rotated, it will pull the paper 78 and feed same forward toward the knife 106, which is located adjacent to the termination of the paper guide 129. Roll 127 is driven only by the frictional contact between it and the paper and roll 128; but roll 128 is positively driven by pinion 132, which is loosely mounted on the shaft 133 of said roll 128. Plate 134 is attached to pinion 132, and itself bears a dog 135, which is normally pressed by spring 136 into the notch 137 in plate 138, which is fixed to shaft 133. When dog 135 is seated in said notch 137 and segmental rack 139 on rocking member 60 is moving toward the right in Fig. 3, pinion 132 is rotated and thus drives roll 128, which causes the paper 78 to feed between rolls 127 and 128 and forward toward knife 106, and the feed of said paper is continued past knife 106 by reason of the small remaining point of attachment of the severed transfer to the paper 78, and thus the transfer 119 is delivered out of mouth 120. The operation of the foot treadle that causes the descent of operating rod 63 causes segmental rack 139 to assume the position that will later, as just described, produce the desired paper feed, but in moving to said operative position segmental rack 139 causes pinion 132 to rotate only loosely upon shaft 133, due to the fact that dog 135, held by spring 136 in notch 137 in plate 138, is thus caused to ride out of notch 137 and upon the periphery of plate 138 until a complete loose rotation of pinion 132 has been effected, whereupon spring 136 reseats dog 135 in notch 137, ready for the return operative movement of segmental rack 139, whereby the paper is fed, as has been described.

Roll 127 is journaled in notches 140 in plates 141, which are, in turn, fixed to shaft 41 and, also, to rod 142 that runs from one side wall to the other of casing 1. The journals 143 of roll 127 are first inserted in said notches 140. Thereupon, plates 144, each containing a slot 145, are slipped over the outer ends of journals 143, so that said journals rest in said slots 145, said plates 144 being held together by connecting rod 146, and being, in addition, pivoted at 147



to the shaft 133 of the upper roll 128, which shaft is journaled in both sides of casing 1. When the journals 143 of roll 127 have been inserted in slots 145, same are effectually locked in notches 140. Plate 144 at one end of roll 127 is provided with the additional slot 149, in which pin 150, extending from plate 141, fits so as to hold plates 141 and 144 in fixed relation to each other except for the movement allowed by the length of slot 149 relative to the thickness of pin 150. When arm 151 is moved in one direction, slot 149 travels with relation to pin 150, and vice versa. Arm 151 extends from plate 144 through slot 152 in casing 1. Arm 151 controls the spacing apart and bringing together of rolls 127 and 128 when a new roll of paper 40 is supplied to the machine. When such new roll of paper 40 is placed on shaft 121, it is necessary to start paper 78 through the space between rolls 127 and 128, but this can not be conveniently accomplished without first separating them slightly by moving arm 151 toward the operator. After the paper has been passed between rolls 127 and 128, arm 151 is then pushed away from the operator. Thus, the separation and restored connection of rolls 127 and 128 are effected. When arm 151 is moved toward the operator, it rotates loosely upon shaft 133. Slots 145 and 149, being non-concentric to each other, act as cam slots riding, respectively, on journal 143 and pin 150 to spread apart rolls 127 and 128. If plate 144 were connected to arm 151 by merely a pin, like 150, and slot 149 were omitted, said movement of arm 151 would, nevertheless, cause roll 127 to separate from roll 128, due to the leverlike force upon journals 143 that would thus be exercised by arm 151, same being fulcrumed on the shaft 133.

As the supply of paper decreases from the continuous printing and issuing of transfers, it is desirable for the conductor to be warned before the inner end of paper roll 40 passes off shaft 121. Member 153, which is pivoted at 154 to a side wall of casing 1, is provided with a projection 155, which extends partly across roll 40 and is held thereagainst by spring 156. Arm 157 is pivoted at 158 to member 153, and is held against stop 159 by spring 160. Spring 156 holds projection 155 constantly against roll 40, and, as said roll diminishes in size, member 153 travels toward shaft 121 and carries with it arm 157. Fixed to shaft 61 is member 161, which is provided with a projection 162 and is adapted to rotate with said shaft. When roll 40 diminishes to a few winds on shaft 121, member 153 and arm 157 travel to the position depicted in dotted lines in Fig. 11, and as member 161 rocks with shaft 61 projection 162 engages said arm during the return stroke of member 161, thereby causing

said arm to strike the alarm bell 163, which is fastened to casing 1.

The arm 164, so mounted on shaft 61 as to rotate therewith, initially actuates the ribbon feed. Said arm 164, when rocked upwardly from the position shown in Fig. 4, impacts projection 165 on plate 166, and raises said plate. The forked member 167 is pivoted on projection 168 borne by plate 166 and is adapted to rock thereon. Said plate 166 is located adjacent to the horizontal part of frame 169, which is fastened by thumb-screws 170 to brackets 171 and thus supported by casing 1. Stud 172 projects from frame 169 through slots 173 in plate 166 and limit its travel upwardly and downwardly. As forked member 167 is attached by projection 168 to plate 166, the rise or fall of the latter raises or lowers forked member 167. Between the arms of said fork is located a pawl 173<sup>a</sup> which is adapted alternately to engage ratchets 174 and 175 when member 167 is rocked on projection 168 in either one direction or the other. The main body of member 167 contains two notches 176 and 177, in which alternately seats pawl 178 borne by arm 179 pivoted at 180 to plate 166. Spring 181 pulls pawl 178 into engagement with the notched lower part of member 167, so as to seat pawl 178 in notches 176 and 177.

Whenever shaft 61 is rotated by the pulling down of operating rod 63, arm 164 is raised, and causes plate 166 to raise member 167. While member 167 is rising, pawl 173<sup>a</sup> slides over the teeth of the particular ratchet (174 or 175) with which it is at that time engaged, but on its downward travel bites the teeth on said ratchet, and causes said ratchet to rotate on its shaft 182, and thus intermittently to feed the ribbon. From member 167 stud 183 projects to attach spring 184, which is at its other end attached to stud 185. Said stud 185 is borne by plate 186, and projects in both directions therefrom. That part of said stud that projects from the side of plate 186 opposite to 184 passes through slot 187 in frame 169 and through slot 188 in plate 166 and through slot 189 in forked member 167. Pawls 190 and 191 engage, respectively, ratchets 174 and 175, said ratchets being mounted on the ribbon spools 192 and 193, mounted on shafts 182. When pawl 190 is in engagement with ratchet 174, pawl 191 is disengaged from ratchet 175, and vice versa. Pawl 190 is in engagement with ratchet 174 at the same time that pawl 173<sup>a</sup> engages that ratchet and holds said ratchet from retrogression while pawl 173<sup>a</sup> is rising; but, while pawl 173<sup>a</sup> is descending, pulling with it ratchet 174, pawl 190 rides freely over the teeth of ratchet 174. The operation of pawl 191 in connection with ratchet 175



is similar. The alternate engagement of  
 5 pawls 190 and 191 with their respective  
 ratchets is produced by stud 185, which  
 moves plate 186 to cause studs 194 and 195  
 to actuate pawls 190 and 191 either to en-  
 10 gage or disengage the ratchets 174 and 175.  
 When plate 186 is moved to the left (Fig.  
 6), stud 194 rides on the beveled foot 196 of  
 pawl 190 in such manner as to throw pawl  
 10 190 out of engagement with ratchet 174,  
 while simultaneously stud 195 so rides on  
 the beveled foot 197 of pawl 191 in such  
 manner as to allow same, under the influence  
 of spring 198, to engage ratchet 175. When  
 15 plate 186 is moved in the opposite direction,  
 stud 195 throws pawl 191 out of engagement  
 with ratchet 175 and, by removal of stud  
 194 from proximity to foot 196, allows  
 20 spring 199 to throw pawl 190 into engage-  
 ment with ratchet 174. Stud 172 pass  
 through slots 200 in plate 186 and support  
 same on frame 169. The movement of stud  
 185 to the right or left, which causes simul-  
 25 taneous and similar movement of plate 186,  
 is produced by the rocking of forked mem-  
 ber 167; and thus, when forked member 167  
 has rocked so as to cause pawl 173<sup>a</sup> to en-  
 gage ratchet 174, pawl 190 will also be  
 30 caused to engage the same ratchet. When,  
 on the other hand, pawl 173<sup>a</sup> engages ratchet  
 175, pawl 191 will simultaneously be thrown  
 into engagement therewith. To prevent  
 loose motion of plate 186, its edge is notched  
 35 as at 201 202, which notches receive the bent  
 portion 203 of spring 204. Slots 188 and  
 189 allow the vertical movement of the  
 forked member 167 and of plate 166. Slot  
 187 allows horizontal movement of plate 186.

The ribbon 79 passes from the ribbon  
 40 spools over ribbon guides 205 at the ends  
 of the forked arms of member 167 and  
 thence around idlers 206 supported by the  
 branched arms 207 of frame 169. When, for  
 instance, the ribbon is feeding from spool  
 45 193 to spool 192 and has been nearly all  
 unwound from spool 193 (as shown in Figs.  
 5 and 6), the amount of ribbon on spool 193  
 is so small that the angle at which same  
 feeds to the ribbon guide 205 adjacent there-  
 50 to is such as to put a tension on ribbon 79  
 between spool 193 and the nearest idler, the  
 resultant of the pressure exerted by the rib-  
 bon on the guide which causes the sharpest  
 angular pull being greater than that ex-  
 55 erted by the substantially straight away  
 pull exerted by the opposite stretch of said  
 ribbon. Such tension results in rocking  
 forked member 167 until pawl 173<sup>a</sup> engages  
 the ratchet on spool 193, whereupon the rib-  
 60 bon 79 obviously begins to feed in the oppo-  
 site direction and so continues until spool  
 192 is nearly emptied, which produces such  
 tension of the ribbon thereupon that the  
 member 167 rocks in the opposite direction,

said rocking movement of said forked mem- 65  
 ber 167 producing not only the necessary  
 engagement of pawl 173 with the appropri-  
 ate ratchet 174 or 175 but also the engage-  
 ment of the appropriate pawl 190 or 191  
 with the appropriate ratchet 174 or 175, as 70  
 hereinbefore explained.

In order to produce a gentle stoppage of  
 the sectors 3 when they return, under the  
 impulsion of spring 44, to their initial posi-  
 tions, each arm 208 is provided with a dash- 75  
 pot 209 which is not attached thereto but  
 borne by piston 210 supported by bracket  
 211 attached to side walls 48 and 49 of cas-  
 ing 1, said dash-pot 209 being impacted by  
 hammer 212 on arm 208. Each of said arms 80  
 is pivoted on shaft 41. Bracket 211 con-  
 sists of a plate which runs from wall 48 to  
 wall 49 of the top part of casing 1 and bears  
 a plurality of pistons 210 and each of said  
 pistons supporting its dash-pot in line with 85  
 its arm 208. To prevent too great resiliency  
 of the air in the dash-pots, each is provided  
 with an escape vent 213. Said dash-pots  
 provide a cushioned seat for the return of  
 the arms 208, said return being more or less 90  
 rapid by reason of the pull of spring 44.  
 The first stoppage of the return of arms  
 208 is, therefore, gentle and non-jarring, but  
 after said arms have been thus resiliently  
 received, a final stop is provided for each 95  
 sector in the shape of a block 214 furnished  
 with a felt or other suitable similar pad 215  
 in cup 216 in block 214, hammer 217 on arm  
 208 impacting said felt or like material.

Cord 218 runs to the ordinary fare regis- 100  
 ter, and is fastened to pin 219 projecting  
 from the upright arm 220 of a bell-crank  
 lever pivoted at 221 to the side wall of cas-  
 ing 1, the other arm 222 of said bell-crank  
 lever being provided with a nose 223 against 105  
 which arm 224 normally rests, said arm be-  
 ing pivoted at 225 to the lower part of nose  
 223. The opposite end of projection 62 from  
 that which rocks arm 60 normally is seated  
 in a notch 226 in the top of pivoted arm 110  
 224, and when thus arranged, whenever the  
 foot treadle pulls down operating rod 63,  
 said projection 62 pushes on arm 224 so as to  
 rock the bell-crank lever to which bell cord  
 218 is attached, thus registering a fare. If, 115  
 however, for any reason, it be undesirable  
 to register a fare at the time when the other  
 operations of the machine are necessary, the  
 key 227 can be depressed, same being mounted  
 on bell-crank lever 228 pivoted at 229 to the 120  
 side wall of casing 1, said bell-crank having  
 a hooked end 230 which normally engages  
 and overlaps a pin 231 projecting from arm  
 224. Spring 232 normally pulls key 227 to  
 the position in which hook 230 holds arm 125  
 224 against nose 223 and underneath pro-  
 jection 62. When, however, key 227 is de-  
 pressed, bell-crank 228 is rocked on pivot



229, which causes hook 230 to move forward and to pull against pin 231, thus rocking arm 224 on pivot 225 from engagement with projection 62, thus leaving the equivalent of a long groove in which projection 62 can descend when operating rod 63 is pulled downward. The waste motion of projection 62, when arm 224 has thus been moved out of the way, prevents the rocking of the bell-crank having arms 220 and 222, the former of which is connected to cord 218 and thus prevents the registering of a fare by the depression of the operating rod 63.

To prevent getting the paper feed out of order or possible other detriment to the mechanism, it is desirable to provide means necessitating the completion of the operation of the foot treadle for depression of the operating rod 63 after same has once been started, and for this purpose the detent 233 is fixed to shaft 61. Pawl 234 engages the segmental rack 235 on detent 233, said pawl being pivoted at 236 to one of the side walls of the casing 1. The pawl 234 is made of such length that the distance from its pivotal center to the end of its tooth or point is greater than from said pivotal center to the bottom of one of the depressions in segmental rack 235, which construction results in said pawl being constantly in a position slightly off center, by which means it is possible for segmental rack 235 to travel in only one direction relative to said pawl, as said pawl can not ride backward over any tooth in rack 235 until the end of said rack has been reached, whereupon said pawl has room enough for play so as to be off center in the opposite direction and to ride backward on said teeth. As detent 233 is fixed to shaft 61, it is obvious that the cycle of operations of the machine must be completed when once started. Spring 237 holds the pawl 234 against the teeth of rack 235. Pin 238 is arranged to strike arm 239 or other suitable part of a numbering machine 240 (of any ordinary form of construction) to cause said numbering machine to print a consecutive number on each transfer issued.

In the modification of the hammer shown in Figs. 18 and 19, a plurality of arms 241 are provided each of which bears a hammer 242. Each of said arms 241 is loosely mounted on rod 243 extending between arms 82, and is separated from the one adjacent thereto by a spacing collar 244 on said rod. Rods 245 and 246, also, extending between arms 82 hold end 247 on each arm 241 in place and obviate the necessity of plate 87. In this form of hammer springs 84 and 85 hold hammers 242 adjacent to the paper 78, rod 245 holds said hammers out of engagement with said paper and rod 246 limits the rotation of each arm but allows said arm

241 to rotate and cause said hammers to impact said paper.

The operation of the machine is as follows: On starting each trip, the conductor will set the disks 12 to 18, inclusive, in position to print the month, date, year, and time of the day he is due at an intermediate or terminal point on that trip in accordance with the rules of his employer as hereinabove described. The said disks having thus been set, the conductor, upon desiring to issue a transfer to a line intersecting or connecting the one on which he is running, will place his finger into the particular indentation 4 of a sector 3, which bears the name of the line to which the transfer is to be issued and then pull that sector toward himself until his said finger strikes the edge 42 of casing 1, whereupon the conductor will remove his finger and the said sector will be held in place by the pawl 43. The pulling of the said sector in this manner causes the type faces 77 to rotate on shaft 41 and the particular type face bearing the same name of the line as borne by the said finger indentation, to occupy a printing position. The pulling forwardly of the said sector causes the pawl 43 to ride over notch 47 and an indentation or indentations 4, and the arm 57 to move inwardly against member 58, which is rotated thereby on pivot 59 on rocking member 60. Normally, shoulder 67 on plate 65 is out of engagement with shoulder 69 on rocking member 60, but when said member 58 is rotated inwardly by arm 57, said shoulder 67 is moved over said shoulder 69 and pulled into engagement therewith by spring 68. Notch 64 in said member 58 is moved to a position underlying projection 62 which is seated therein when rod 63 is depressed by pressure on the foot lever. The depression of the foot lever on the lower end of rod 63 causes said rod to move downwardly and projection 62 to seat in notch 64, whereby member 60 is rocked and with it shaft 61 and all parts rigidly secured thereto. As member 60 nears the end of its downward movement the beveled point 76 of plate 65 rides past pawl 71. During the first portion of the rocking of member 60, arm 92 pushes on lip 96 of arm 97 causing arms 82 and rod 83 to rotate and lower the hammer 81 from proximity with paper 78. As said member 60 is continued to be rocked by the depression of the foot lever, the pushing of arm 92 on lip 96 increases the tension of springs 84 and 85 which cause the hammer 81 to return suddenly and impact the paper 78 when said arm 92 passes out of engagement with said lip 96. This impact of hammer 81 on paper 78 causes the set type 80 and the said types set as above described to print through ribbon 79. As detent 233 rocks with said shaft,



pin 238 engages arm 239 of the numbering machine 240, and causes said numbering machine to print a serial number on the paper 78. Immediately following the printing of the transfer, member 56, which is secured to and rocked by shaft 61, engages lever 54 and causes same to rotate on pivot 55. Projection 53 on said lever is pushed inwardly against arm 51 of pawl 43 whereby the sector 3 is released and allowed to return to its initial position under the tension of spring 44. When the sector, that has been pulled forward by the conductor, has been released as hereinabove described, hammer 212 on arm 208 impacts the dash pot 209, which works over piston 210, and the sudden return of said sector is thereby decreased to a slow easy motion until hammer 217 reaches the final stop 215. During the entire rocking of member 60 by the depression of the foot lever, segmental rack 139 rotates pinion 132 and with it plate 134 and dog 135 attached thereto (clockwise in Figs. 3 and 8) loosely on shaft 133. Dog 135 is normally seated in notch 137 in plate 138, which is rigidly fastened to said shaft 133, but when said pinion is rotated in the manner as just described, said dog travels upon the periphery of said plate 138 until it is re-seated in said notch by spring 136. Simultaneous with the rocking of member 60 and with it shaft 61 by the downward movement of rod 63, plate 101 moves out of engagement with the V-shaped projection on plate 112 which is immediately drawn to a vertical position by spring 114. Rod 100, borne by plate 101 and said member 60, enters notch 102 in pendent 103, which is pivoted to arm 105, and raises same, causing lug 116 to ride over projection 117 on plate 112. Said lug rests upon said projection and knife 106, being fixed to arm 105, is held thereby in a raised position which allows the end 78 of roll 40 to be fed out of the machine beneath said knife. Member 164 engages projection 165 on plate 166 and raises said plate and forked member 167, which causes pawl 173<sup>a</sup> to ride over one or more teeth of the ratchet 174 (Fig. 6) with which it is in engagement. The tension of spring 184 is increased by the upward movement of said member 167 and the pawl 190 prevents the backward movement of said ratchet. At the completion of the downward movement of rod 63 and with it member 60, the pressure on the foot lever is released and said member is returned to its normal position by spring 98. During the return of said member 60, beveled point 76 on plate 65 is caught by pawl 71 which draws shoulder 67 out of engagement with shoulder 69 and member 58 is then moved by spring 68 to its normal position. Arm 92 then rides past lip 96 and spring 95 seats

said arm behind said lip in the position to again trip hammer 81. The return of segmental rack 139 rotates pinion 132 in the opposite direction and by reason of dog 135 having been seated in notch 137 in plate 138, said plate and with it roll 128 are rotated with said pinion and end 78 of paper roll 40 is fed out of the machine through mouth 120. Member 164, returning to its normal position, disengages projection 165 on plate 166, which is returned to its normal position by spring 184. As said plate 166 descends, forked member 167 and pawl 173<sup>a</sup> travel therewith and said pawl rotates ratchet 174 and with it spool 192, whereby ribbon 79 is caused to be wound on said spool and unwound from spool 193. Ribbon 79 will continue to be fed intermittently from spool 193 to spool 192 during the successive operations of the machine until the feeding mechanism has been reversed as hereinabove described, which will cause said ribbon to be fed in the opposite direction. At the end of the return stroke of member 60 plate 101 striking projection 111 on plate 112 pushes projection 117 from beneath lug 116 and spring 109 then causes knife 106 to drop suddenly on end 78 which is severed thereby and transfer 119 held by the uncut portion 118 to said end is ready to be torn off by the passenger.

In some places where the machine can be used it is desirable to print the transfer, ticket, or the like, in duplicate and to store the duplicate form within the machine, and this is accomplished as follows: The paper roll 40 comprises two pieces of paper which are fed between the roller 127 and the roller 128 toward the type faces. The piece 78 receives the printed matter and is fed in the usual way out of the machine through the mouth 120. The piece 241, is preferably transparent, passes across the type faces, then over the guide 249 and is wound on the roll or spool 250 which is inclosed within the machine and is adapted to be removed when desired. Ribbon 79 passes between piece 78 and piece 248, and, when the hammer 81 is tripped and caused to impact paper 78, the printed matter is imprinted thereon and, also, on the piece 248. Obviously the same printed matter would appear backwardly on one side of piece 248, but said piece being transparent allows the printed matter to be readily read from the opposite side of the paper. Spring 251 is adapted to maintain a tension on the piece of paper 248 and, also, to cause said paper to wind on roll 250 when said paper is fed forwardly by roller 128. In the preferred form (shown in the drawings) the ribbon 79 is used to print the duplicate, but it should be understood that a piece of carbon paper can be advantageously used for the



same purpose. Any desired number of duplicate forms can be printed by increasing the number of pieces of paper on roll 40 and by feeding a piece of carbon paper between  
5 each two adjacent pieces of paper.

I claim:

1. The combination of a rocking member provided with a pivoted arm, an operating rod for rocking said member in one direc-  
10 tion, said rod being adapted to engage said arm when the latter is in one position, means for effecting the movement of said arm into such position, a swinging platen provided with a lip, and a trigger pivoted to said  
15 member and arranged to normally engage said lip, for swinging said platen when said member is rocked in such direction.

2. The combination of a rocking member provided with a pivoted arm, an operating  
20 rod for rocking said member in one direction, said rod being adapted to engage said arm when the latter is in one position, means for effecting the movement of said arm into such position, a spring controlled swinging  
25 platen provided with a lip, and a trigger pivoted to said member and arranged to normally engage said lip, for retracting the platen bodily against the action of its controlling spring when said member is rocked  
30 in such direction, to tension said spring.

3. The combination of a rocking member provided with a pivoted arm, an operating rod for rocking said member in one direc-  
35 tion, said rod being adapted to engage said arm when the latter is in one position, means for effecting the movement of said arm into such position, means for automatically rocking said member in the opposite direction at the termination of the first rocking move-  
40 ment, means for returning said arm to its normal position during the second rocking movement, a swinging platen, and a trigger pivoted to said member and arranged to normally engage said platen, for operating  
45 the platen during one of said rocking movements.

4. The combination of a rocking member, means for initially rocking same, a sector, a  
50 connection between said sector and said rocking member adapting same to be operated by said rocking means, printing means adapted to be operated by the initial movement of said rocking member, paper-feeding means in inoperative connection with said  
55 rocking member during its initial movement and in operative connection therewith during its return movement, and severing means adapted to be placed in operative position by the initial movement of said rock-  
60 ing member and to be left free for operation by the return movement thereof.

5. The combination of printing, feeding and severing mechanisms, a rocking mem-  
65 ber adapted to operate said printing, feeding, and severing mechanism; a sector hav-

ing a detent mounted on said rocking mem-  
ber; a movable member in connection with said rocking member; a member operative between said rocking member and said mov-  
70 able member and adapted to hold the latter in operative position; and means for engaging the operative member to operate said rocking member and thus its connected mechanism.

6. The combination of a rock shaft, a  
75 member secured thereto and provided with a pivoted arm, a foot-actuated operating rod adapted to engage said arm for effecting its temporary connection to said member, and ribbon-feeding, paper feeding, print-  
80 ing, numbering and severing means actuated by said rod through such temporary connection.

7. The combination of a rocking member provided with a pivoted arm, an operating  
85 rod for rocking said member in one direction, said rod being adapted to engage said arm when the latter is in one position, means for effecting the movement of said arm into such position, means for automatically rock-  
90 ing said member in the opposite direction at the termination of the first rocking movement, means for returning said arm to its normal position during the second rocking movement, and printing means operated by  
95 said member during one of its rocking movements.

8. The combination of a rocking member provided with a pivoted arm, an operating  
100 rod for rocking said member in one direction, said rod being adapted to engage said arm when the latter is in one position, means for effecting the movement of said arm into such position, means for automatically lock-  
105 ing said arm in such position, means for automatically rocking said member in the opposite direction at the termination of the first rocking movement, means for automati-  
110 cally unlocking said arm during the second rocking movement, and printing means operated by said member during one of its rocking movements.

9. The combination of a sector adapted to be rotated and having printing means in  
115 connection therewith, a plurality of stops on the face of said sector, said stops also constituting means to be engaged to move said sector, a pawl adapted to engage any one of said stops, means for disengaging said  
120 pawl from any one of said stops, and means for returning said sector to its normal position and means whereby said sector is brought to a gradual stop.

10. The combination of a sector adapted to be rotated and having printing means in  
125 connection therewith, a stop to denote the desired extent of movement in one direction of said sector, operating means in the face of said sector, said operating means also constituting a lock for engagement by a pawl, a  
130



pawl adapted to engage said operating means, means for disengaging said pawl with said operating means, means for returning said sector to its normal position, 5 and means for retarding the return movement of said sector.

11. The combination of a sector adapted to be rotated and having printing means in connection therewith, a stop to denote the 10 limit of movement in one direction of said sector, operating means in the face of said sector, a pawl adapted to engage said operating means, means for disengaging said pawl with said operating means, a spring 15 adapted to return said sector to its normal position, and a dash pot adapted to retard the return movement of said sector.

12. The combination of a sector having printing means in connection therewith, operating means in the face of said sector, a 20 pawl adapted to engage said operating means, an operating rod, a rocking member, a plate borne by said rocking member and adapted to be moved into engagement with 25 said operating rod by said pawl, means for holding said plate in engagement with said operating rod, means for actuating said operating rod, and means for disengaging said plate with said operating rod.

13. The combination of an operating rod, 30 a rocking member operated thereby, a plate pivoted to said rocking member and adapted to be engaged by said operating rod, means for moving said plate into engagement with 35 said operating rod, means for holding said plate in engagement with said operating rod, a pawl adapted to disengage said plate and said rod, said pawl, also, being adapted to be moved out of the path of motion of said 40 plate whereby said plate is prevented from being disengaged with said operating rod, and printing means operated by said rocking member.

14. The combination of sectors having a 45 type-surface actuated thereby, disks having type-surfaces in connection therewith, a support for a supply of ticket material comprising a plurality of pieces and adapted to receive imprints from said type-surfaces, an 50 inking ribbon passed between the layers of said ticket material, means for moving each piece of ticket material simultaneously adjacent said type-surfaces, means for producing said imprints on each of said pieces of 55 ticket material, means for feeding one of said imprinted pieces, means for storing the remaining imprinted pieces, means for severing said imprinted piece which is fed and means to automatically tension and reverse 60 said ribbon.

15. The combination of sectors having a type surface actuated thereby, disks having type surfaces in connection therewith, a support for a supply of ticket material adapted 65 to receive imprints from said type surfaces

and a support for a supply of material adapted to receive said imprints in duplicate, a ribbon passed transversely between the layers of said ticket materials, means for producing said imprints on said ticket materials, means for feeding the imprinted materials, means for severing the first mentioned material, means for storing the second mentioned imprinted material, and means to automatically tension and reverse 75 said ribbon.

16. A ticket printing machine, comprising, in combination, a group of commonly pivoted sectors, printing surfaces carried by said sectors from one side of their pivotal 80 point, selective means carried in arcuate groups concentric with said printing surfaces, and adapted to be engaged to position said sectors for printing, a printing platen 85 adapted to be reciprocated against said printing surfaces, means to actuate said platen and return said sectors to normal position, and means mounted to act as buffers to gradually bring said sectors to a stop 90 upon their return to normal position.

17. The combination of a rocker provided with a rack portion, a paper supporting roll, paper feeding means, actuated by said rack 95 portion, a spring-controlled hammer platen located between said feeding means and said roll and adapted to be operated by said rocker, and means carried by said rocker for normally holding said platen in inoperative position.

18. The combination of a rotatably mounted printing member, means to hold the same 100 in adjusted position, a platen, a rocker operatively connected with the platen, and provided with a movable arm, means arranged for engagement with said arm when the latter is in one position, to actuate said rocker, 105 and means carried by said holding means for moving said arm into such position.

19. The combination of a movable printing member, a pawl arranged for automatic 110 engagement with said member, to hold the same in adjusted position, an impression member, operating means for said impression member including a movable arm, a depressible member arranged to engage said 115 arm when the latter is in one position, to actuate said operating means, and means carried by said pawl for moving said arm into such position.

20. The combination of a manually adjustable printing segment, means for holding the same in adjusted position, a platen, means for operating said platen including a movable arm, actuating means for said 120 platen-operating means arranged to engage said arm when the latter is in one position, and means carried by said holding means for moving said arm into such position. 125

21. The combination of a spring-controlled platen, a rocker provided with a trig- 130



ger arranged for normal engagement with said platen, to hold the same in inoperative position, a depressible foot-actuated member connected to said rocker for swinging the latter in one direction to release said trigger from such engagement, and means for automatically returning said rocker to its original position to reengage said trigger with said platen.

22. The combination of a platen, a rocker, coacting means associated with said rocker and platen for operating the latter when the former is actuated, a movable arm connected to said rocker, a member arranged to engage said arm when the same is in one position, to actuate said rocker, and means for moving said arm into such position.

23. The combination of a platen, a rocker, coacting means associated with said rocker and platen for operating the latter when the former is actuated, a movable arm connected to said rocker, a depressible member having a projection adapted to engage said arm when the same is in one position, to actuate said rocker, and means for moving said arm into such position.

24. In a ticket printing and issuing machine, the combination of two independent groups of rotatable printing elements mounted on a common shaft, means for automatically returning one of said groups of elements to normal position after each printing operation, the other group being arranged to maintain a temporarily fixed adjusted position for a plurality of printing operations, means for feeding a continuous strip of paper through the machine, means for producing imprints on the strip from the selected printing elements, and means for ultimately severing the printed ticket from said strip.

25. The combination of a spring-controlled platen, a rocker, a trigger carried by the rocker and arranged for normal engagement with the platen, to hold the same in inoperative position, a movable member carried by said rocker, a member arranged to engage said movable member when the latter is in one position, to operate said rocker and release said trigger, and means for moving said movable member into such position.

26. The combination of an adjustable printing segment, means for holding the same in adjusted position, a spring controlled platen, operating means for said platen including a movable arm, means carried by said operating means and arranged for normal engagement with said platen to hold the same in inoperative position, a member for actuating said operating holding means to release said platen from engagement with the second-named means, said member being arranged for engage-

ment with the first-named arm when the latter is in one position, and means carried by said holding means for moving said arm into such position.

27. The combination of a rocking member, means for operating same, printing means and paper-feeding means operated by said member, a cross-piece located adjacent said member, and a normally inoperative severing blade pivoted to said cross-piece and adapted to be raised into operative position by the movement of said member in one direction, and to be released by the return movement thereof, said blade being arranged parallel with and sufficiently close to said cross-piece to permit the latter to act as the shear against which said blade presses the paper.

28. The combination of a rocking member, means for operating same, printing means and paper-feeding means operated by said member, a pivotally mounted normally inoperative-severing blade, an arm rigidly secured to said blade and provided with a lug, connections between said member and said arm for swinging the latter and said blade into operative position, and means arranged for automatic engagement with said lug for holding said arm and blade in such position.

29. The combination of a rocking member, means for operating same, printing means and paper-feeding means operated by said member, a pivotally mounted normally inoperative severing blade, an arm rigidly secured to said blade and provided with a lug, connections between said member and said arm for swinging the latter and said blade into operative position, a swinging member having a projection arranged to engage said lug when said arm is in raised position, and means for automatically moving said swinging arm into position to effect such engagement.

30. The combination of a rocking member, means for operating same, printing means and paper-feeding means operated by said member, a pivotally mounted normally inoperative severing blade, an arm rigidly secured to said blade and provided with a lug, connections between said member and said arm for swinging the latter and said blade into operative position, and a swinging spring-controlled plate having a projection arranged to engage said lug when said arm is in raised position.

31. The combination of a rocking member, means for operating same, printing means and paper-feeding means operated by said member, a normally inoperative severing blade, an arm rigidly secured to said blade and provided with a pendent, and a member connected to the first-named member and adapted to engage said pendent for



raising said arm and blade into operative position during the movement of said first-named member in one direction.

32. The combination of a shaft, a rocking member and a plate secured thereto in spaced relation, means for operating said member, printing means and paper-feeding means operated by said member, a connecting means between said member and plate, a normally inoperative severing blade, and an arm rigidly secured to said blade and provided with a pendent adapted to be engaged by said connecting means when said shaft is rocked in one direction, for raising said arm and blade into operative position.

33. The combination of a shaft, a rocking member and a plate secured thereto in spaced relation, means for operating said member, printing means and paper-feeding means operated by said member, a connecting means between said member and plate, a normally inoperative severing blade, an arm rigidly secured to said blade and provided with a pendent adapted to be engaged by said connecting means, when said shaft is rocked in one direction, for raising said arm and blade into operative position, and a pivoted lock adapted for automatic engagement with said arm when the latter is in such position.

34. The combination of a shaft, a rocking member and a plate secured thereto in spaced relation, means for operating said member, printing means and paper-feeding means operated by said member, a connecting means between said member and plate, a normally inoperative serving blade, an arm rigidly secured to said blade and provided with a pendent adapted to be engaged by said connecting means, when said shaft is rocked in one direction, for raising said arm and blade into operative position, and a pivoted lock adapted for automatic engagement with said arm when the latter is in such position, said lock being provided with a projection adapted to be engaged by said plate during the return movement of said shaft for releasing said lock.

35. The combination of a shaft, a rocking member and a plate secured thereto in spaced relation, means for operating said member, printing means and paper-feeding means operated by said member, a connecting means between said member and plate, a normally inoperative severing blade, an arm rigidly secured to said blade and provided with a pendent adapted to be engaged by said connecting means, when said shaft is rocked in one direction, for raising said arm and blade into operative position, and a spring-controlled swinging member provided with a pair of projections, one of which is adapted for engagement with said arm when the latter is in such position, the

other projection being arranged for engagement by said plate during the return movement of said shaft, for releasing the first-named projection.

36. The combination of a rocking member, means for operating same, printing means and paper feeding means operated by said member, a pivotally-mounted severing blade, a spring connected to said blade for normally holding the latter in lowered position, means operated by said member for raising said blade to tension said spring, a lock for holding said blade in raised position, and means for subsequently releasing said lock, to permit the effective operation of said blade consequent upon the removal of pressure from said spring.

37. The combination of a rocking member, means for initially rocking same, printing means operated by said member during its initial movement, means for returning said member to its normal position, paper-feeding means operated by said member during its return movement, a severing blade, a spring for normally holding said blade in lowered position, means for raising said blade during the initial movement of said member to tension said spring, a lock for holding said blade in raised position, and means for releasing said lock during the return movement of said member to permit the effective operation of said blade consequent upon the removal of pressure from said spring.

38. The combination of an operating member, means for actuating same, printing means operated by said member, and paper-feeding means likewise operated by said member and comprising a pair of feeding rolls, one of which has a loose driving connection with said member, means for rendering said loose connection fast during the movement of said member, a pair of connected plates pivoted to the shaft of said loose roll and formed each with an eccentric slot wherein the adjacent trunnion of the other roll is received, and an arm projecting from one of said plates for rocking the same, to separate said rolls.

39. The combination of an operating member, means for actuating same, printing means operated by said member, and paper-feeding means likewise operated by said member and comprising a pair of feeding rolls, a pair of connected plates pivoted to the shaft of one of said rolls and formed each with an eccentric slot wherein the adjacent trunnion of the other roll is received, and an arm projecting from one of said plates for rocking the same, to separate said rolls.

40. The combination of a rotatable type carrying body, a pawl for holding same in adjusted position, a shaft, a rocker secured thereto, means for operating said rocker to



rock said shaft, a member secured to said shaft, a releasing device for said pawl adapted to be struck by said member, and means for returning said body to its initial position when said pawl is released.

41. The combination of a rotatable type-carrying body, a pawl for holding same in adjusted position, a projection on said pawl, a shaft, means for rocking said shaft, a releasing lever adapted to strike said projection, means carried by said shaft for operating said lever, and means for automatically returning said body to its initial position when such release takes place.

42. The combination of a rotatable type-carrying body, means for holding same in adjusted position, a lever for releasing said holding means, a shaft, means for rocking said shaft, means carried by said shaft for operating said lever, means for returning said body to its initial position when said holding means is released, and means for retarding said return movement.

43. The combination of a rotatable type-carrying body, means for holding same in adjusted position, a lever for releasing said holding means, a rocker, a shaft to which said rocker is secured, means for operating said rocker to rock said shaft, a member secured to said shaft for operating said lever, means for returning said body to its initial position when such release takes place, and means for retarding said return movement.

44. The combination of a rotatable type-carrying body, a pawl for holding same in adjusted position, a projection on said pawl, a releasing lever adapted to strike against said projection, a shaft, a rocker secured thereto, a depressible member for operating

said rocker to rock said shaft, a member secured to said shaft and adapted to strike against and rock said lever, to release said holding means, and means for returning said body to its initial position when said holding means is released.

45. The combination of a rotatable type-carrying body, a pawl arranged to automatically engage said body, for holding same in adjusted position provided with a pair of depending projections, a shaft, a rocker secured thereto and provided with a movable arm, a member for operating said rocker arranged to engage said arm when the latter is in one position, said arm lying in the path of movement of one of said projections, for movement by said projection into position for such engagement, a lever arranged to strike the other projection, to release said pawl, means secured to said shaft for rocking said lever, and means for returning said body to its initial position when said pawl is released.

46. The combination of a sector having indicating finger pieces, a pawl for automatically engaging said finger pieces, to hold the sector in adjusted position, means carried by said sector for printing matter corresponding to the finger piece engaged, a lever for releasing said pawl, a shaft, means for rocking same, means secured to said shaft for operating said lever, and means for returning said sector to normal position when said pawl is released.

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

ALBERT J. MEIER.

Witnesses:

GEORGE G. ANDERSON,  
GLADYS WALTON.