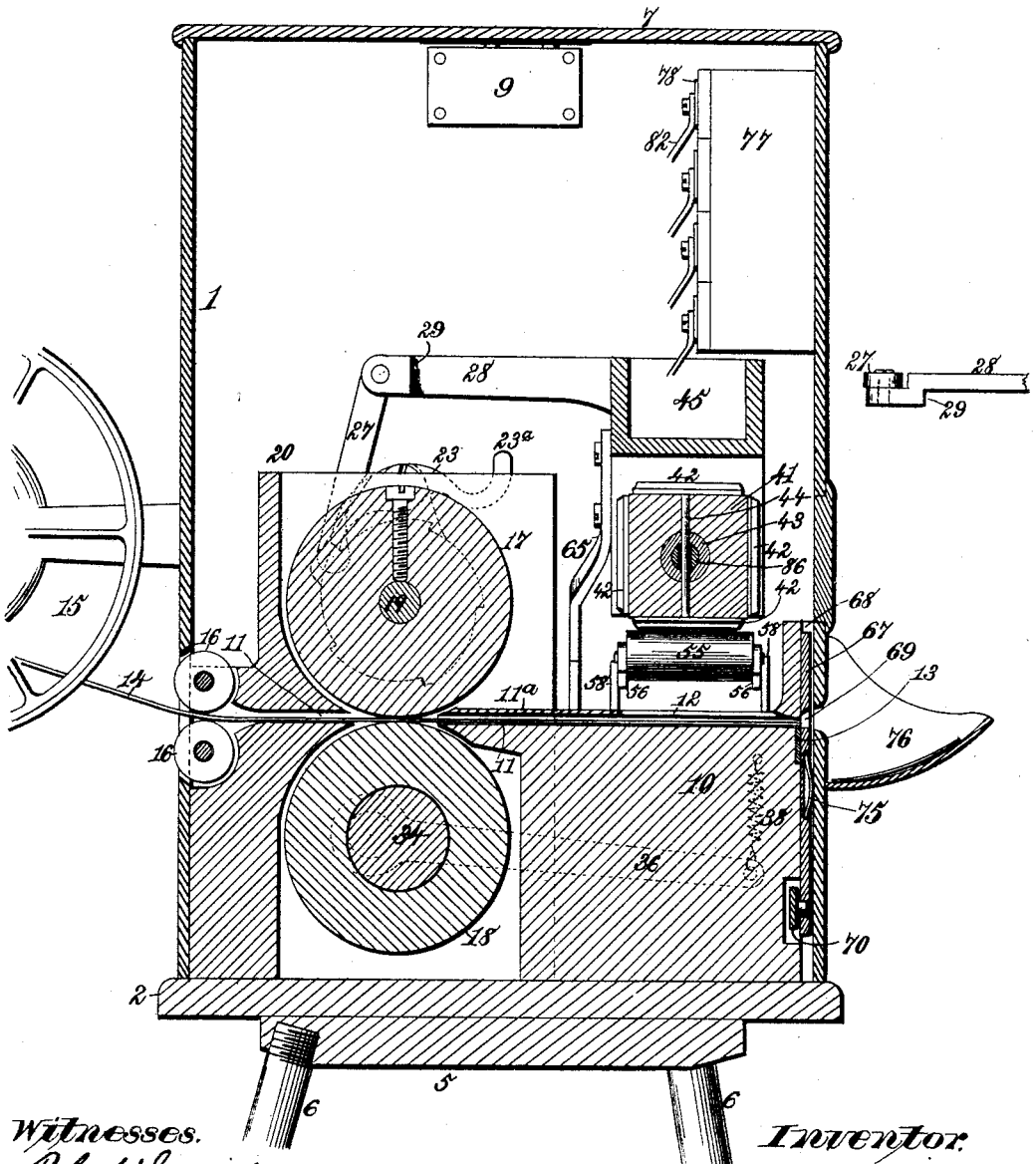
(No Model.) 6 Sheets—Sheet 1.

J. P. DUNN.

MACHINE FOR PRINTING AND REGISTERING TICKETS.

No. 345,623. Patented July 13, 1886.

Fig. 1.



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(No Model.) 6 Sheets—Sheet 2.

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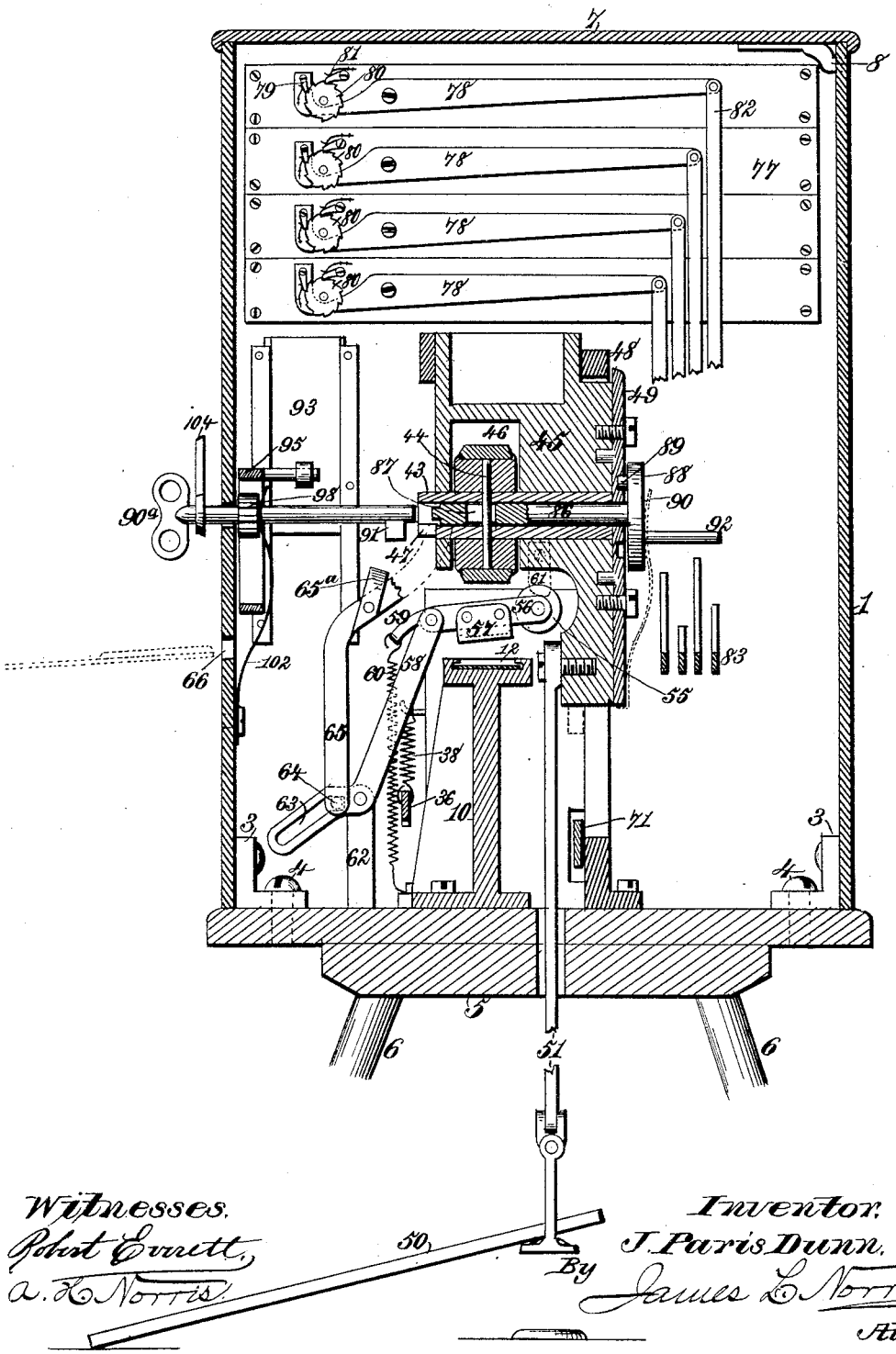
Fig. 2.



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(No Model.) 6 Sheets—Sheet 3.

J. P. DUNN.

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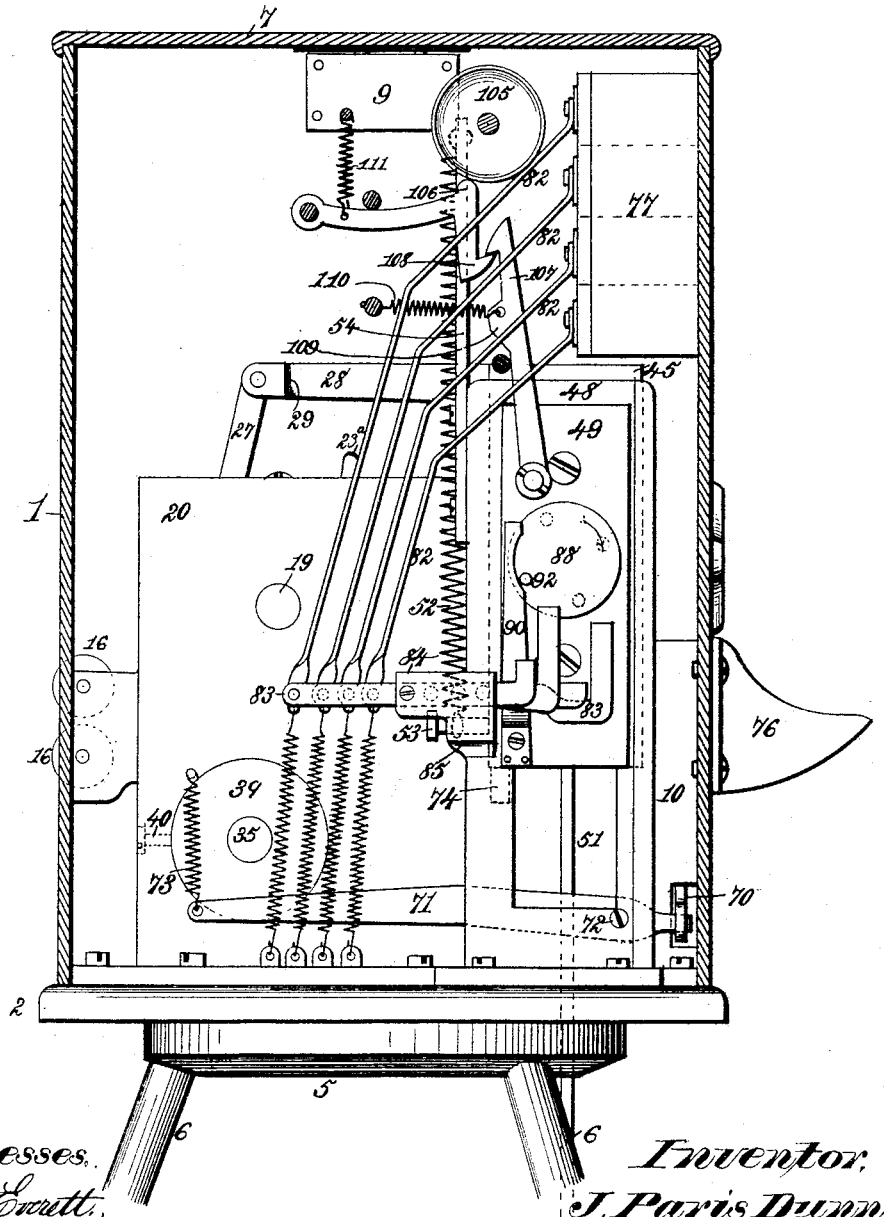
Fig. 3.



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J. P. DUNN.

MACHINE FOR PRINTING AND REGISTERING TICKETS.

No. 345,623. Patented July 13, 1886.

Fig. 4.

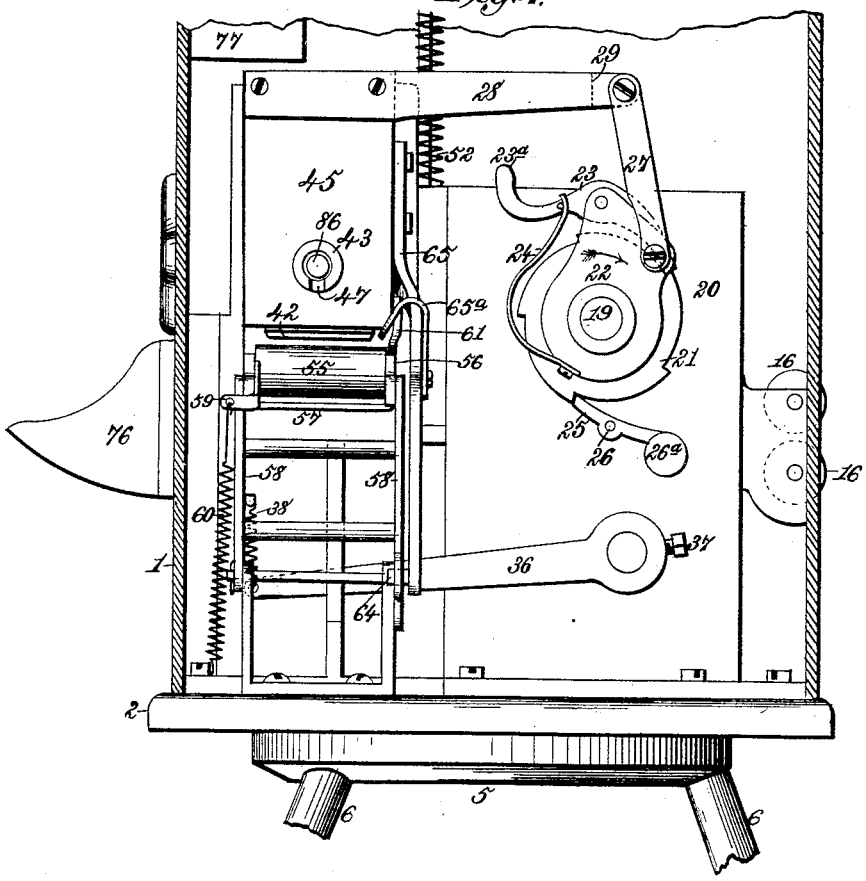


Fig. 5.

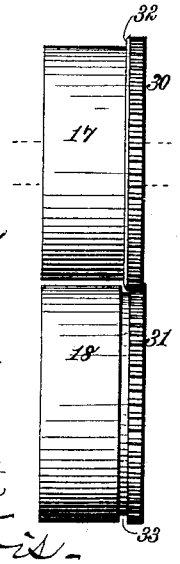
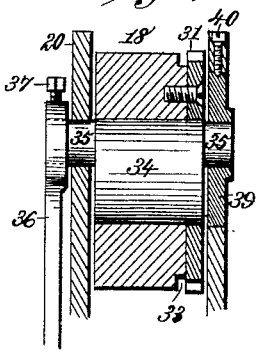


Fig. 6.



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J. P. DUNN.

MACHINE FOR PRINTING AND REGISTERING TICKETS.

No. 345,623. Patented July 13, 1886.

Fig. 7.

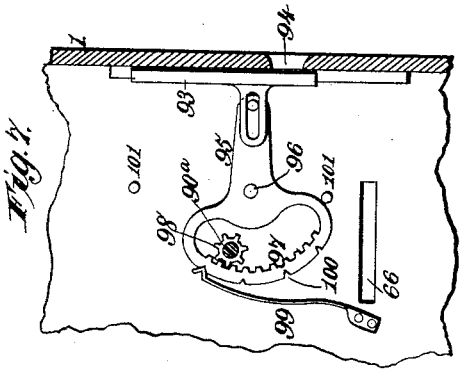


Fig. 8.

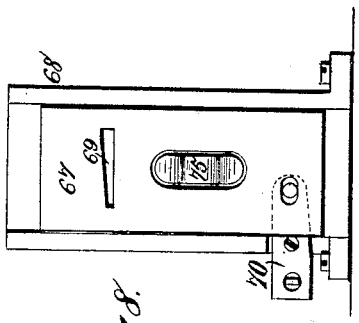
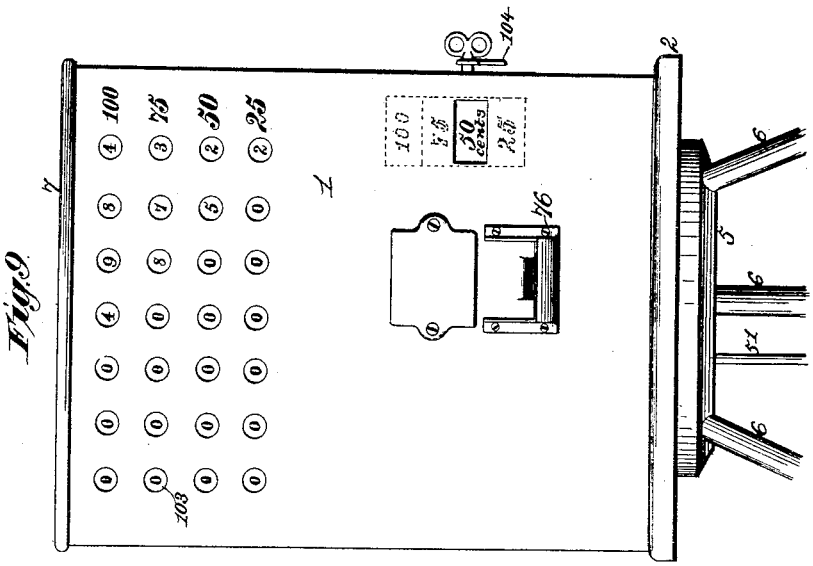


Fig. 9.



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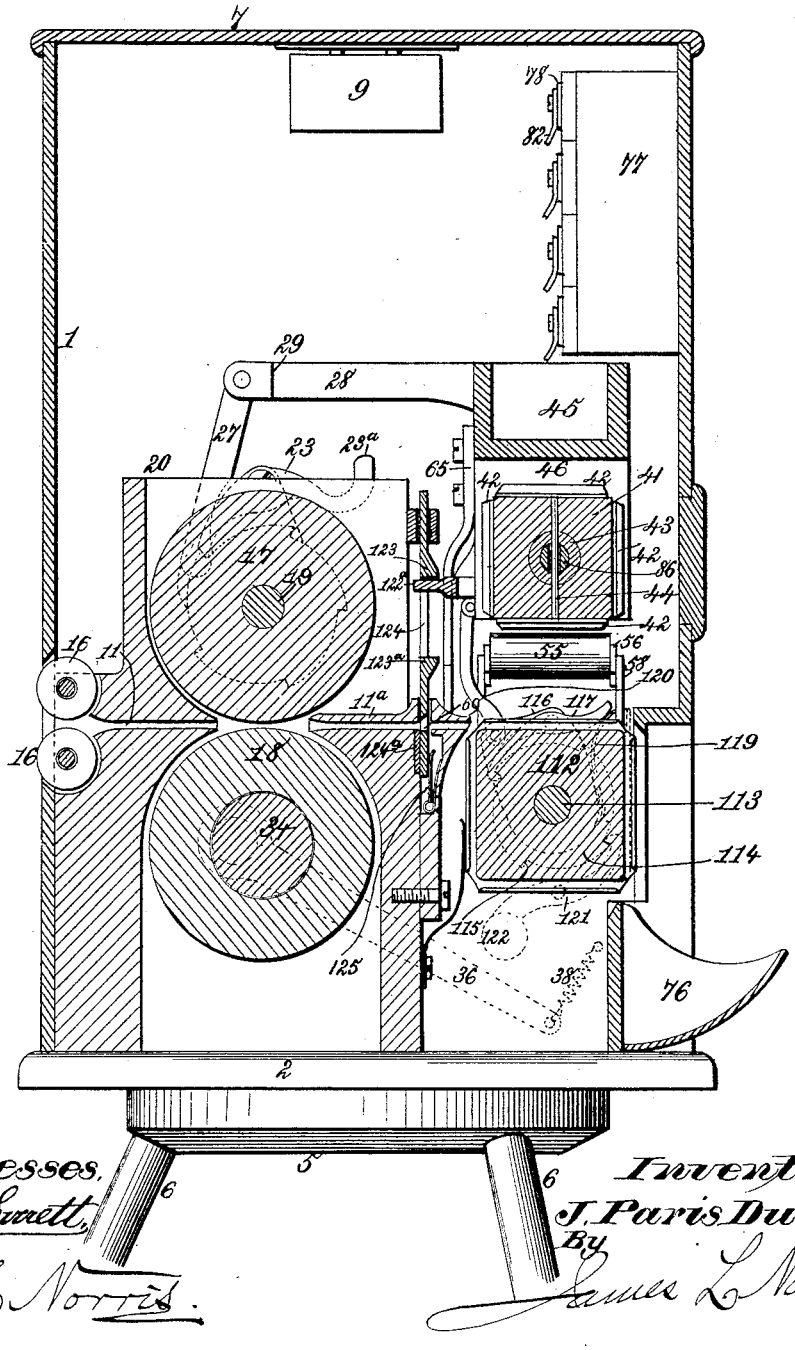
J. P. DUNN.

MACHINE FOR PRINTING AND REGISTERING TICKETS.

No. 345,623. Patented July 13, 1886.

Fig. 10.



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UNITED STATES PATENT OFFICE.

J. PARIS DUNN, OF NEW YORK, N. Y.

MACHINE FOR PRINTING AND REGISTERING TICKETS.

SPECIFICATION forming part of Letters Patent No. 345,623, dated July 13, 1886.

Application filed January 15, 1885. Renewed September 16, 1885. Again renewed June 3, 1886. Serial No. 204,102. (No model.)

To all whom it may concern:

Be it known that I, J. PARIS DUNN, a citizen of the United States, residing at New York, in the county and State of New York, have invented new and useful Improvements in Machines for Printing and Registering Tickets, of which the following is a specification.

My invention relates to machines for printing, or printing and dating, tickets as they are separately sold for issuing, and detaching the ticket from the continuous strip from which it is printed, and at the same time registering by independent mechanism the sale of each ticket, and showing the gross number of sales, the entire series of operations being accomplished by automatic means.

It is the purpose of my invention to provide an apparatus for use in all places where tickets or checks are issued as evidence of cash payments or of value received; but it is more especially intended for the ticket-offices of ferries or railroads, where great numbers of short-trip tickets are sold daily—such, for example, as the ferries of the East and North rivers and the elevated roads of New York city.

It is my object to provide automatic mechanism whereby tickets may be printed as they are sold, cut from the continuous strip and delivered, and the sale simultaneously registered, the construction and organization being such that by a single movement the operative parts may be shifted to print tickets in series of different prices, and to register by separate and independent devices the gross number of sales of each price, all opportunity of tampering with any part of the mechanism being avoided.

It is also my purpose to improve the construction and operation of the devices for feeding the continuous blank strip from which the tickets are successively taken by providing positive mechanism for that purpose, to simplify the construction and improve the operation of the devices for detaching the tickets, and for inking the stamp by which they are printed without opening the case containing said parts, and to provide simple and efficient means whereby the inking-stamp may be rotated to print and the mechanism adjusted to register tickets of different prices, said changes being effected by one movement of a single device without opening the locked casing containing the parts.

It is a further purpose of my invention to combine with the registering mechanism a plate having a series of numbers denoting the prices at which tickets of different grades are sold, the connection being such that at each adjustment said plate will be moved, bringing into view through an opening in the case the number denoting the price of tickets being printed and registered under said adjustment, the figures brought out by each separate series of registering devices being shown through openings in the case.

It is also my purpose to improve and simplify the construction and operation of certain portions of the mechanism shown in an application for Letters Patent filed by me upon the 30th day of September, 1884, Serial No. 144,361, upon which the present invention is an improvement.

My invention consists in the several novel features of construction and combinations of parts, hereinafter fully described, and then definitely pointed out in the claims.

Referring to the drawings forming part of this application, Figure 1 is a vertical section taken longitudinally of the continuous ticket-strip. Fig. 2 is a vertical section taken transversely to the ticket-strip, and not far from the center of the casing. Fig. 3 is a vertical section taken in a plane parallel to the section-plane in Fig. 1, the operative parts contained within the casing being in elevation. Fig. 4 is a similar view, looking from the opposite side, the upper portion of the machine being broken away. Fig. 5 is a detail view of the feed-rolls detached. Fig. 6 is a detail section showing the manner of mounting and means for preserving the tension of the lower roll relatively to the upper. Fig. 7 is a detail view showing means for shifting the fare-indicating plate. Fig. 8 is a detail elevation of the knife-plate and guides. Fig. 9 is an elevation of the front of the machine. Fig. 10 is a vertical section taken in the line of the ticket-trough, showing a modified construction and arrangement of the parts.

In the said drawings, the reference-numeral 1 indicates the casing, within which all the operative parts are contained, excepting the foot-lever, by which the mechanism is actu-

ated. This casing is made of iron, and may be of any desired size, the vertical walls being united to the floor-piece 2 by angle-bars 3, which receive screws 4, applied interiorly. The floor-piece 2 is connected by rivets or otherwise with a base, 5, having any suitable supporting parts—such as legs 6. This construction precludes the removal of the casing from its stand or support, except by those having access to its interior through the lid 7. The latter is provided upon one side with lugs 8, which enter openings in the vertical wall of the casing, and upon the opposite side is placed a lock, 9, of any suitable character.

Mounted upon the floor-piece 2 is a casting, 10, T-shaped in cross-section, and upon the cross-head thereof is formed a trough or guide-way for the blank strip from which the tickets are printed. This trough or way is shown at 11, Fig. 1, and throughout a portion of its length it is covered over by a shield-plate, 11ª, the latter being partly cut away beneath the printing-stamp, in order to expose the ticket-strip through an opening, 12, the edges of said strip being still protected, however, by an overhanging edge of metal upon each side of the trough. Both the trough and the shield-plate are also cut away to admit the feed-rolls by which the strip is advanced, and the trough terminates at the front wall of the casing in a knife-plate, 13, formed of steel, having its cutting-edge flush with the surface of said trough.

The blank paper strip 14, from which the tickets are printed and cut successively, is taken from a suitable spool, 15, mounted in bearings upon the rear wall of the machine. From this spool it enters the casing between friction-rolls 16, and thence passes into the trough 11. At a little distance from the mouth of the trough it passes between an upper and a lower feed-roll, 17 and 18, respectively.

The construction and operation of these devices will now be explained. The upper roll, 17, is mounted upon a shaft, 19, arranged within a casting, 20, having a recess or chamber overhanging the trough 11 and containing the roll. Upon one end of the shaft 19, outside the casting, is mounted a ratchet, 21, rigid with the shaft, as also is the feed-roll. Upon the outer end of the shaft is loosely mounted a plate, 22, lying against the outer face of the ratchet, and having a portion which projects upward beyond the periphery of the latter. Upon this projecting part is pivotally mounted a pawl or dog, 23, the point of which is thrown by a spring, 24, into engagement with the teeth of the ratchet, said spring being mounted upon the plate 22. A holding-pawl, 25, pivoted at 26, prevents backlash or retrograde movement of the roll, being held in engagement with its ratchet by means of a weight, 26ª, upon its tail. Upon the plate 22, nearly opposite the nose of the pawl 23, is attached a link, 27, having its other end pivotally connected with an arm, 28, rigidly mounted upon the reciprocating carriage, by which the printing-stamp is moved. Upon the arm 28 is formed or mounted a shoulder or lug, 29, and as the descent of the arm rocks the plate 22 in the direction of the arrow in Fig. 4, carrying the pawl 23 and the ratchet 21, and rotating the feed-roll 17, the shoulder 29 at a certain point in the descent of the arm arrests the movement of the pawl 23 by engaging with the curved tail 23ª of said pawl. This instantly throws the pawl off the ratchet, and at the same moment the latter is locked by the stop-pawl 25. By this operation the feed-rolls are always turned at each feed movement through the same or equal arcs of rotation, and their action ceases and the movement of the ticket-strip is arrested just a little before the printing-stamp comes in contact with the paper, thereby avoiding any blurring of the ink or want of accuracy in the operation of the parts.

In order to give positive movement to both feed-rolls they are geared together by a toothed annulus, 30, upon one gearing into a similar annulus, 31, upon the other. To avoid injury to the ticket-strip a flange or annular shield, 32, is formed upon the upper roll between the body of the roll and the teeth. This shield rises as high as the points of the teeth and runs in a channel, 33, in the lower roll, forming an effectual guard for the strip.

The tension or bite of the feed-rolls upon the strip is obtained by making the lower roll, 18, adjustable toward and from the upper roll. In order to give a constant pressure of the rolls upon the strip and at the same time permit an elastic yielding movement, to enable the rolls to accommodate themselves to variations in thickness or other inequalities in the paper, I have adopted the following construction: The lower roll, 18, is journaled upon a large bearing, 34, having trunnions 35 upon each end, which are eccentric to the axis of the bearing. These trunnions have bearing in the opposite walls of the casting 20, and one of them is prolonged and receives a lever, 36, rigidly attached by means of a set-screw, 37. This lever extends toward the front wall of the machine, and to its extremity is attached a spring, 38, connected to the casting 20 above the end of the lever. By reference to Fig. 1 it will be seen that as the end of the lever is lifted the axis of the bearing 34 will rise and approach the upper roll, and that after contact between the rolls is made their pressure upon the strip may be varied by altering the tension of the spring 38.

In order to insert the bearing 34 after the roll is placed within the casting, a circular opening of proper size is made in one wall of the latter, and after the parts are in place a disk, 39, is inserted in said opening, said disk having an aperture which receives one of the trunnions 35. After the disk is in place a set-screw, 40, is inserted through the rear edge of the casting, having its end bearing upon the edge of the disk and holding it in place, as shown in Figs. 3 and 6.

The next step in the order of procedure is

the printing of the ticket. This is effected by means of a vertically-reciprocating stamp, 41, consisting of a block which is polygonal in cross-section, and carries upon each of its faces a stamp, 42, formed of rubber or other suitable material. These stamps are formed to print tickets of as many different prices as there are separate stamps. I have shown in the drawings a rectangular block having four separate stamps; but it is evident that a less, or even a greater, number might be employed, if required.

The stamp block 41 is mounted upon a shaft, 43, to which it is pinned by a bolt, 44, passing through the block and transversely through the shaft. The latter is hollow, as shown in Fig. 2, for a purpose presently to be described, and is journaled in a block, 45, which contains a recess or chamber, 46, in which the stamp-block is arranged. One end of the shaft projects from the wall of this chamber and is provided with a notch or slot, 47, the function of which will be shown hereinafter.

The carrier-block 45 has vertical reciprocation in a guideway or frame, 48, consisting of uprights supported upon the floor of the casing. The block lies upon one side of these uprights, and has a projecting portion which lies between the uprights and is flush with their outer surface. A plate, 49, is attached to this surface, having its edges overlapping the uprights, thereby giving support to the block and holding it in engagement with the vertical guides. The carrier-block 45 is thrown downward to bring the stamp upon the ticket-strip by means of a foot-lever, 50, connected to the block by a bar, 51, or other means. It is raised when the lever is released by means of a spiral spring, 52, having one end attached to a pin, 53, upon the block, and the other to an arm, 54, mounted upon the guide-frame 48, and extended upward to give sufficient length to the spring.

The stamp is inked at each reciprocation of the carrier-block by means of an inking-roll, 55, covered with felt or other absorbent material. This roll is journaled in the ends of two arms, 56, connected and braced by a plate, 57, which overhangs the ticket-strip when the stamp is raised, and protects it from any possible dropping of ink from the latter. The arms 56 are pivoted upon the ends of two arms, 58, and one of the said arms 56 is prolonged to form a finger-piece, 59, to which a spring, 60, is connected, the other end thereof being connected to a pin below, the tension of the spring tending normally to rock the arms 56 upward and throw the roll 55 toward and against the stamp 42. When the parts, however, are in the position shown in Fig. 2, this tendency is resisted and the roll is held down by a lug, 61, upon the carrier-block 45, the end of said lug bearing upon one of the arms 56, as indicated in Figs. 2 and 4. The arms 58 are pivoted upon a support, 62, and one is prolonged beyond its pivotal point, forming a short horizontal and a longer downwardly-inclined portion, the latter having a slot, 63, which is prolonged into the horizontal portion, each portion of the slot being parallel with that part of the extended arm in which it is formed. In this slot is arranged a pin, 64, carried by an arm, 65, which is rigidly mounted upon the carrier-block 45, the arrangement being such that when the block is at its upward limit of movement the pin 64 will lie in the horizontal portion of the slot 63. When the block begins its downward movement, the pin, acting upon the horizontal part of the arm 58, rocks it upon its pivot, together with its parallel member, throwing the inking-roll 55 upward and toward the stamp, and at the same time giving it a movement across the face of the stamp. As the arms 58 approach the vertical, the pin 64 passes into the inclined part of the slot, drawing the ink-roll completely out, after passing it over the type-surface, the simultaneous downward movement of the stamp being accommodated by the elasticity of the spring 60. After the ink-roll has passed out from under the stamp it is held in position to re-enter by a stop plate, 65ª, carried by the arm 55, which prevents the arms 56 from being thrown too far upward by the tension of the spring 60.

The inking-roll is supplied, when fresh ink is needed, by throwing the stamp down and holding it, and inserting a flat pad charged with ink through a slot, 66, in the wall of the casing. This pad is brought against the periphery of the roll and moved back and forth, giving rotation to the latter upon the inked surface. By this means ink may be supplied without opening the case.

The printed tickets are severally cut from the ticket-strip by a knife, 67, which slides in a knife-guide, 68, formed in the end of the casting 10, which lies adjacent to the front wall of the casing. The knife-blade consists of a long strip of steel moving in said guide and lying flat between it and the wall of the case. In the strip is formed a slot, 69, having an inclined upper edge and a straight lower edge, the latter forming, when the knife rests in its normal position, a continuation of the ticket-trough. To the lower end of the knife is pivotally connected a lever, 70, pivoted between its ends upon the base of the casting 10, and provided at its opposite extremity with an eye which receives the end of a lever, 71, arranged at right angles with the lever 70, and pivoted at 72 upon the side of the casting 10. This lever is extended toward the rear wall of the casing, and its end is connected to a spring, 73, fastened above it, by the tension of which the knife is normally raised. It is thrown down to sever the ticket by a stud, 74, carried by the block 45, contact being made by the stud as the block approaches its lowest point of descent. The knife-blade is held in close contact with the cutter-plate 13 by means of a leaf-spring, 75, lying in a shallow recess in the strip 67, and pressing against it and against the front wall of the casing. Each time the knife descends and severs a

ticket from the strip the stamp is also brought down and a second ticket is printed upon the succeeding portion of the strip, and this stamp is in turn protruded through the slot in the knife over the hopper 76, and in turn detached. Simultaneously with each operation action is given to a registering mechanism, whereby the sale is registered. I propose to employ for this purpose any known apparatus best adapted thereto, and no description therefore is given of this portion of the mechanism. The registering machinery is arranged in a closed casing, 77, lying within and against the front wall of the casing, being wholly separated from all the other parts. I employ as many separate and independent trains of registering devices as there are different stamps upon the stamp-block 41, whereby every sale of every price is registered under the proper head; or, in other words, each class of tickets is registered by a separate and independent apparatus.

Each train of registering devices is operated by a lever, 78, pivoted upon the register-casing, and carrying a dog, 79, which takes into a ratchet, 80, by which movement is given to the initial disk, the ratchet being held by a stop-pawl, 81. The lever 78 is actuated by a link-bar, 82, connected to one end of a lever, 83, fulcrumed upon a support, 84, which is mounted on a bracket, 85, projecting from the upright guide 48. The power end of the lever 83 is turned upward, as in Fig. 3, and is actuated in the manner and by the means now to be described.

In adjusting the machine to print tickets of different prices, it is necessary to rotate the stamp-block 41 to bring the proper stamp 42 into position to engage with the strip. It is also necessary to lock the stamp in whatever position it may be placed, and these adjustments must be made without giving access to the interior of the casing, and by means so simple that they may be used by an unskilled person. Simultaneously, also, with the change of the stamp the device operating the registering mechanism must be so shifted that it will actuate the proper lever and register the sales under the new adjustment upon the proper train of registering-disks. Within the hollow shaft 43, which carries the stamp-block, is placed a solid shaft, 86, having a slot, 87, through which the bolt 44 passes. The shaft 86 is prolonged nearly to the open end of the hollow arbor or shaft 43, and upon its other end it carries a disk, 88, rigid with it, and having short nipples 89 projecting from that face which is adjacent to the plate 49, against which it lies. This plate has recesses which receive the nipples 89, whereby the disk and its shaft 86 are prevented from rotation. The nipples are normally held in engagement with the recesses of the plate by a leaf-spring, 90, mounted on the plate 49, and bearing on the outer face of the disk. By this construction the stamp-block 41 is locked in any position to which it may be adjusted, and is always held in a true position relatively to the strip on which it acts. This is effected by forming in the plate 49 as many apertures for the nipple or nipples 89 as there are faces upon the block, and placing them at such intervals that when the nipple makes engagement the printing-face of the stamp shall be horizontal and next the ticket-trough.

The stamp is shifted by a key, 90^a, having a ward, 91, which enters the notch 47 in the end of the hollow shaft 43. The end of the key which projects beyond the ward is of such size and length as to enter the end of the hollow shaft, engage with the shaft 86, and push it inward until the nipple 89 is drawn out of engagement with the plate 49, this movement being permitted by the slot 87 in the shaft 86. The key is then turned, and by means of the ward 91 the new adjustment is effected, when it is withdrawn, whereupon the disk 88 locks the stamp-block in the new position. Projecting from the disk 88 is a bar, 92, which in any one of the four different adjustments of which the stamp is capable is brought into position to act upon one of the four separate levers 83, by which the different registers are actuated. By reference to Figs. 2 and 3 it will be seen that the upwardly-turned power ends of these levers are arranged, both vertically and horizontally, so that in every adjustment the bar 92 will, upon the descent of the stamp-carrying block 45, move through the same distance before engaging with the corresponding lever. By the change of the stamp, therefore, the position of the bar is shifted in such manner that it will operate a different register, and that at all times, whenever the same stamp is brought into action, it will actuate the same register, thereby keeping separate account of the tickets sold in each class.

To indicate the stamp-adjustment and inform the operator what price of tickets it is adjusted to print, a price-plate, 93, is arranged within the casing, having the different denominations of tickets printed on it. This plate slides in front of an opening, 94, in the front wall of the casing, and is adjusted by a lever, 95, pivoted at 96, and having upon its end a segment-rack, 97. This rack meshes with a pinion, 98, upon the shank of the key 90^a. As the latter is revolved to turn the stamp-block the lever 95 is rocked upon its fulcrum 96, and the plate is moved until the required figures show in the opening 94. The arrangement of the parts is such that this plate will indicate correctly the proper stamp-adjustment, and the degree of movement required will also be denoted by a spring-dog, 99, engaging with one of a series of notches, 100, in the outer edge of the segment-gear 97. A stop, 101, is placed above and below to limit the movement of the lever in both directions. I intend that the key 90^a shall remain permanently in the casing, wherein it has support by a leaf-spring 102, bearing against the pinion 98, and holding it against the side wall of the box. Openings 103 are formed in the front

wall of the casing, by which the numbers brought out by the action of each train of registering devices may be seen at a glance. Each series of openings may be numbered, or otherwise distinguished to denote what class of tickets is registered by each separate apparatus. A stop-bar, 104, is mounted upon the shank of the key 90^a, between the handle and the casing, to prevent it from being pushed so far in as to disengage the pinion 98 from the segment-gear 97.

Each ticket, when detached, falls into a hopper upon the front wall of the casing, from which it may readily be removed by the purchaser, avoiding all necessity for the operator handling the same in any manner.

If desired, a gong, 105, may be placed in the casing, which will sound at each operation of the parts by a hammer, 106, the latter being retracted by a spring-actuated hook, 107, carried by the reciprocating block 45. As the hook descends, it is thrown off from a hooked lug, 108, on the hammer by means of a pin on the guide-frame 48, which strikes a projection, 109, on the hook. A spring, 110, throws the hook forward, and the hammer is thrown against the bell by a spring, 111.

In the apparatus as hereinbefore set forth it will be seen that in changing the printing-stamp from one price to a different grade or price at least one ticket must issue and be recorded by the registering mechanism before the ticket of the price called for will be brought out of the box and delivered to the purchaser. By this operation of the mechanism mistakes and confusion are always liable to occur, especially in those offices where frequent changes are required in the grade or price of tickets sold. To obviate these objections I have devised the form of apparatus shown in Fig. 10, it being understood that the mechanism heretofore described is adapted for use in such offices as those of the New York elevated roads, wherein the tickets are sold at different prices during certain different and fixed hours during the day or night.

The mechanism shown in Fig. 10 is intended for use in those cases wherein a call may at any moment be made for a ticket of different price from those tickets previously sold and recorded, and differs from that previously described in the following particulars. Beneath the reciprocating stamp-carrier the casting which supports the ticket-trough is cut away, and a rectangular block, 112, is mounted in the space thus formed. This block is carried by a shaft, 113, upon one end of which is mounted a plate, 114, having its edge divided into four equal parts, each division being marked by a hook or notch, 115, in said plate, which forms a ratchet resembling in all essential respects the ratchet 21, (shown in Fig. 4,) by which the upper feed-roll is turned. Loosely mounted upon the shaft of the block 112 is a plate, 116, lying adjacent to the ratchet or plate 114, and carrying a pawl, 117, having a hooked nose, which is normally engaged with the notched plate 114 by means of a spring, 119. The said plate is connected by a link, 120, with the reciprocating stamp-carrier 45 in such manner that as the stamp rises the pawl 117 will rotate the shaft 113, together with its block 112, through one-quarter of a revolution, all backlash being prevented by a holding-pawl, 121, having a weighted end, 122, by which it is held in engagement with the ratchet. The block 112 is constructed upon each of its four faces to form a continuation of the ticket-trough 12 at that point where the printing-stamp operates—that is to say, the strip 14 is exposed as it lies upon the block 112 to the action of the stamp; but its edges are covered by the overhanging edges of the block, which are similar to that portion of the trough already described in connection with Fig. 2.

The cutting-blade by which the tickets are separated from the strip consists of a plate of steel having a slot, 69, for the passage of the strip 14. This cutter is supported between the inking and printing devices and the feed-rolls, passing through an opening in the shield-plate 11^a, which covers the ticket-trough. The knife is operated by a lug, 122^a, projecting from the stamp-carrier 45, and acting upon two solid shoulders, 123 and 123^a, which lie at the upper and lower ends, respectively, of a slot, 124, in the knife-plate, in which the lug 122^a moves. The lower end of the knife-plate is prolonged below the slot 69, as in that form of construction shown in Fig. 8, and its lower end lies in a recess in the ticket-trough and moves against a cutter-plate, 124^a, set in said recess, and having its edge flush with the feeding-surface of the trough. A spring, 125, is set in said recess, and bears against the blade, pushing it against the cutter 124^a, and having sufficent force to hold the knife, when raised, in such position that the ticket-strip can pass through its slot, as shown in Fig. 10, until the actuating-lug 122^a drives the knife down and severs the ticket which has been printed by the same movement of the stamp-carrier by which the knife is operated. As the stamp-carrier now rises, the printed and severed ticket lying upon the block 112 is carried by the rotation of the said block out of the casing and brought into a perpendicular position by the quarter-revolution of the block, as shown in dotted lines in Fig. 10. It then falls at once into the hopper beneath, whence it is taken by the purchaser. In this manner a ticket of any required denomination is printed, cut, sold, and registered as it is called for, and the apparatus is adapted for use in all places and under all circumstances for the sale of tickets of different denominations or values, in whatever order they may be called for.

I do not claim, broadly, the combination, with a changeable stamp, of feed-rolls for advancing the ticket-strip, two or more independent levers actuating separate trains of registering devices, said levers being moved

by a striker reciprocating with the stamp, and gearing for shifting the stamp and the striker operating the registers. The subject-matter mentioned is shown, described, and claimed in an application for Letters Patent filed by me upon the 16th day of March, 1885, Serial No. 159,059.

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

1. In an apparatus for printing and registering the sales of tickets, the combination, with feeding devices for advancing the ticket-strip, of an adjustable stamp adapted to print tickets of different prices or grades, and two or more independent registers, each actuated by the printing devices, and an actuating device, substantially as described, connected with the stamp-carrier, which may be shifted to actuate any one of said registers, substantially as and for the purpose described.

2. In an apparatus for printing tickets and registering the sales thereof, the combination, with an adjustable stamp having two or more faces, each carrying a form of different character, and two or more separate series of registering devices, of an actuating device, substantially as described, carried by the stamping mechanism, and means, substantially as described, for shifting the position of the same to act upon any one of said registers, substantially as and for the purpose set forth.

3. In an apparatus for printing and registering the sales of tickets, the combination, with a stamp-block carrying two or more separate stamps for printing tickets of different grades or prices, of two or more separate and independent trains of registering devices, two or more levers, each connected with one of said trains, and an actuating device, substantially as described, which is shifted to correspond with the change of the stamp, said device being by each shift placed in position to operate upon a different register, substantially as described.

4. In an apparatus for printing and registering the sales of tickets, the combination, with a reciprocating stamp-block having a plurality of stamps, of an inking-roll carried by spring-actuated arms pivoted upon the extremities of arms pivotally mounted on the fixed frame, and a bar carried by the reciprocating stamp-carrier, said bar having a pin engaging with the end of one of the arms carrying the spring-actuated roll-supporting arms, the end of said arm having a horizontal and an inclined portion projecting beyond the pivotal point, and provided with an inclined and a horizontal slot communicating with each other, in which the pin runs, substantially as described.

5. In an apparatus for printing and registering the sales of tickets, the combination, with a polygonal stamp-carrying block, of a hollow arbor carrying said block, a solid shaft placed in the arbor and having a longitudinal slot, a bolt passing through the block, arbor, and slotted interior shaft, a disk upon one end of the latter, having nipples which engage with the carrier, and means, substantially as described, which release said disk and engage with and rotate the arbor, all substantially as described.

6. In an apparatus for printing and registering the sales of tickets, the combination, with two, three, or more independent trains of registering devices, of a polygonal stamp, an adjustable actuating-bar carried by said stamp, a series of levers, each connected with one of the registering-trains, and means, substantially as described, for shifting said actuating-bar, to adapt it to engage with any one of the levers, substantially as described.

7. In an apparatus for printing and registering the sales of tickets, the combination, with feed-rolls, one of which is journaled upon a bearing having trunnions eccentric to its own axis, of a lever rigidly mounted on one of said trunnions, and a spring drawing the end of said lever toward a line passing between the rolls, substantially as described.

8. In mechanism for printing and registering the sales of tickets, the combination, with feed-rolls for advancing the continuous ticket-strip, of toothed annuli upon one end of said rolls, meshing together, and a shield upon one roll intermediate between the annulus and the body of the roll, said shield being received by a similarly-located channel in the other roll, substantially as described.

9. In mechanism for printing and registering the sales of tickets, the combination, with a feed-roll for advancing the continuous ticket-strip, of a ratchet rigid upon the roll-shaft, a pawl carried by a plate rocking on said shaft, a reciprocating arm connected with said plate by a link, and a curved tail upon the pawl, engaging with a shoulder upon the reciprocating arm to throw off the pawl at the proper point, substantially as described.

10. The combination, with a changeable stamp, of a price-indicating plate moving in front of an opening in the wall of the casing, a lever connected with said plate and having a segment-gear upon one end, and a shifting-key for changing the stamp, said key being provided with a pinion meshing with the segment-gear, whereby the alteration in the stamp is indicated by the shifting of the plate, substantially as described.

11. The combination, with a series of independent levers, each connected with an independent train of registering devices, of a reciprocating carrier containing an adjustable stamp, an actuating-bar mounted on a disk carried by the axis of the adjustable stamp, and means, substantially as described, for rotating the latter, whereby the stamp is shifted and the actuating-bar placed to operate upon a different register-lever by the same movement, substantially as described.

12. The combination, with the reciprocating stamp, of pivotally-mounted arms, one of which is prolonged beyond its support, the ex-

tended portion having an inclined and a horizontal slot, communicating, an arm upon the stamp carrier having a pin running in said slots, and a roll-supporting frame pivoted to the ends of said arms, and normally thrown upward by a spring, substantially as described.

13. The combination, with an adjustable stamp, a locking device, and an indicating price-plate, of a lever connected with said plate and having a segment-rack on one end, an actuating-bar moved by the adjustment of the stamp, a series of register-levers actuated by said bar, and a key having a point which unlocks the stamp, a ward which shifts it, together with the actuating-bar, and a pinion which engages with the segmental rack of the lever, substantially as set forth.

14. The combination, with two, three, or more separate and independent series of registering devices, of a corresponding series of levers, each operating one of said series, a stamp which is adjustable upon its axis to print two or more different grades of tickets, and an actuating-bar shifted in position relatively to the register-levers by the adjustment of the stamp, substantially as described.

15. The combination, with the axially-adjustable stamp, of a hollow shaft or arbor, by which it is carried, a shaft contained within said arbor, a locking-disk carried by said shaft, a bolt passing through the stamp-block, the arbor, and through a slot in the shaft, and a key having an end which disengages the locking-disk, and a ward engaging the notched end of the arbor, substantially as described.

16. The combination, with the price-indicating plate, of a lever having a segmental rack upon its end, a key having a pinion meshing with said rack, and a stamp-block having a plurality of stamps, which are shifted by said key to correspond with the indications of the plate, and a plate or disk having a locking-pin, said plate being carried by a slotted bar passing through the arbor upon which the stamp is mounted, said arbor having a notched end, with which the shifting-key engages, substantially as described.

17. The combination, with feeding devices for advancing the ticket-strip, of a stamp which may be adjusted to print tickets of different denominations or values, two or more independent registers for recording the sale of tickets, each under its proper head, a cutter which severs the printed ticket upon the descent of the printing-stamp, and a ticket-carrying device, substantially as described, which discharges the printed and severed ticket from the case, said device being actuated by the rise of the printing devices, substantially as and for the purpose set forth.

18. The combination, with a printing-stamp having two or more faces which may be brought successively into operation, and two or more separate registering-trains, by which the action of each stamp may be separately registered, of a cutter for separating the printed ticket, actuated by the descent of the stamp, a rotary carrier-block turned by the rise of the printing-stamp into position to discharge the printed and cut ticket, and an actuating-bar carried by the stamp-carrier and shifted by each adjustment of the stamp to act upon a different registering-train, substantially as and for the purpose set forth.

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

J. PARIS DUNN.

Witnesses:

ALBERT H. NORRIS,

JAMES A. RUTHERFORD.