E. J. VON PEIN.

TICKET ISSUING MACHINE.

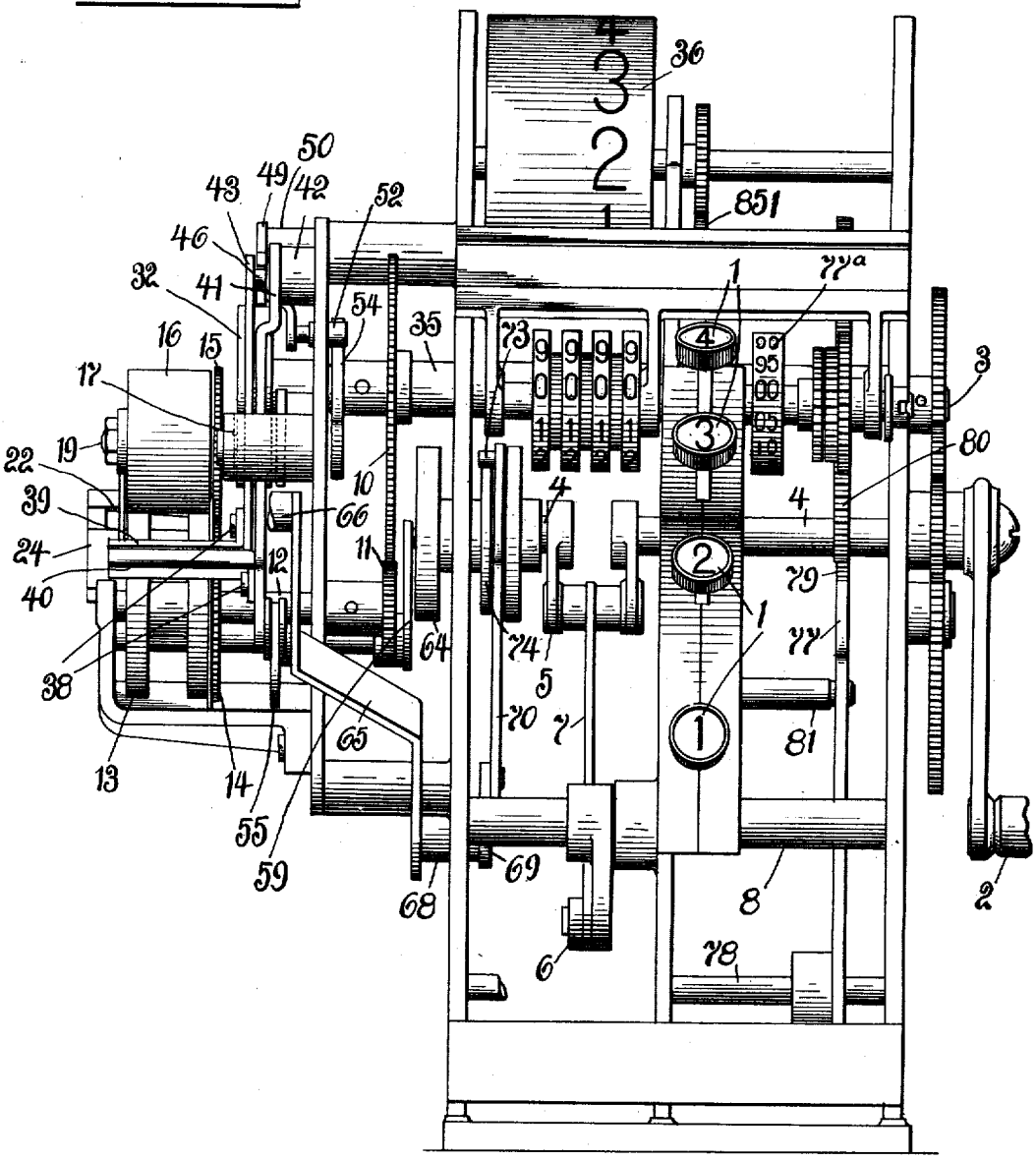
APPLICATION FILED FEB. 10, 1913.

1,279,616.

Patented Sept. 24, 1918.

4 SHEETS—SHEET 1.

Fig. 1.




Witnesses

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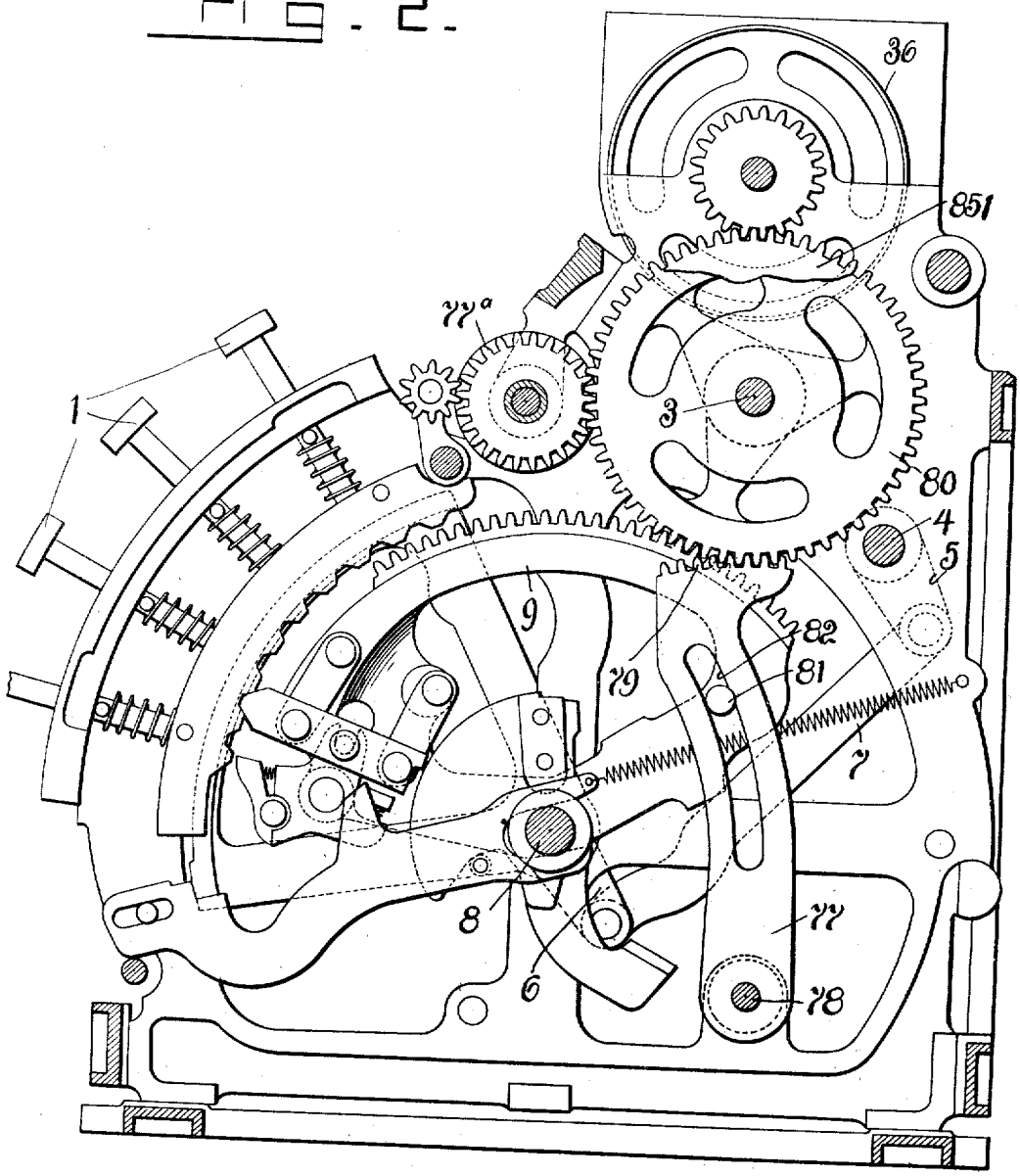
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4 SHEETS—SHEET 2.

Fig. 2.




Witnesses

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4 SHEETS—SHEET 3.

Fig. 4.

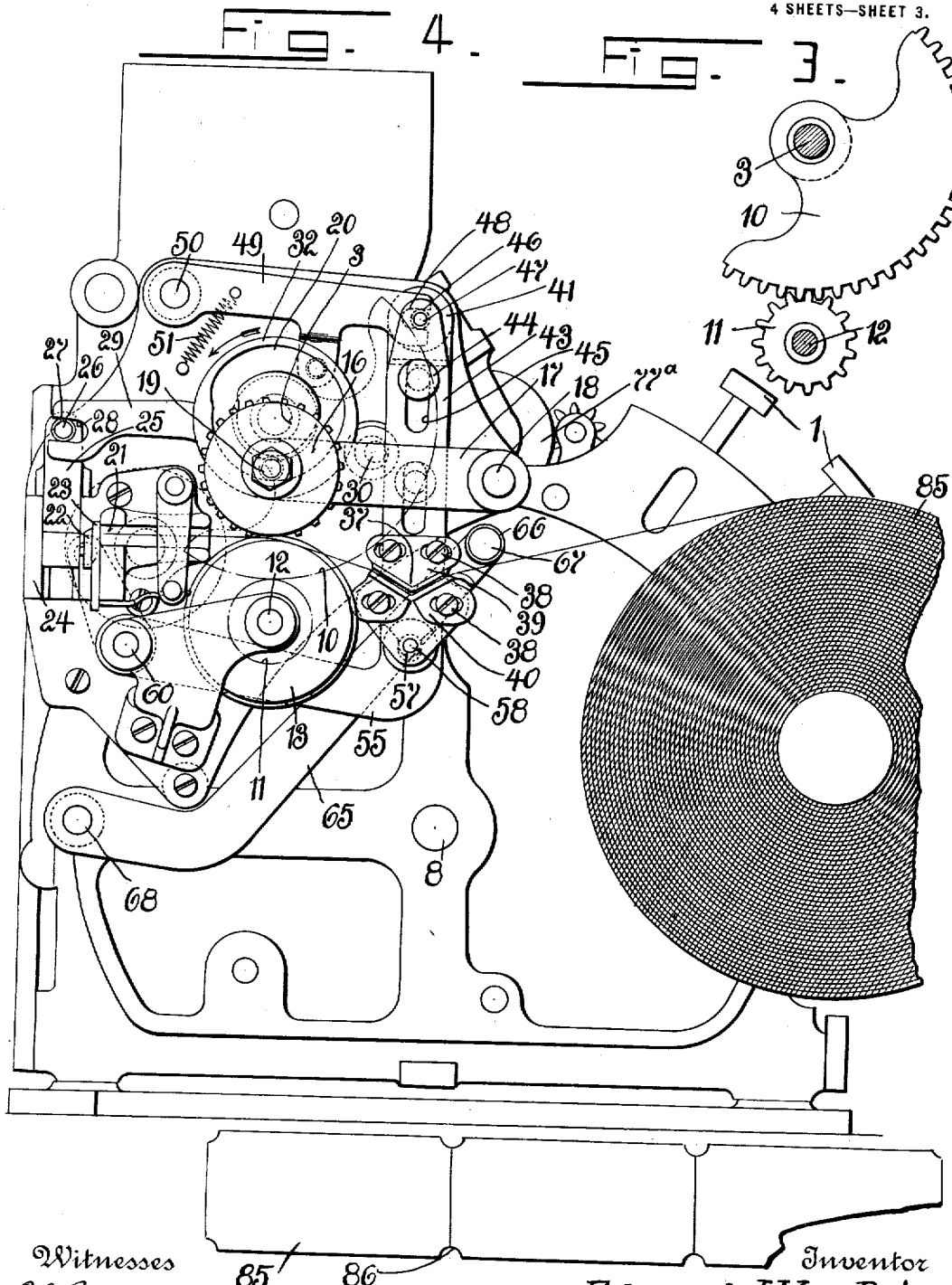



Fig. 3.




Fig. 5.

Witnesses

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4 SHEETS—SHEET 4.

Fig. 6.

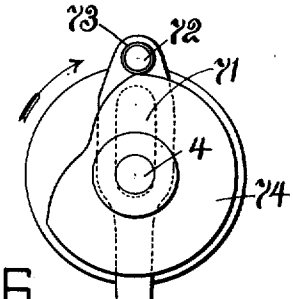



Fig. 9.

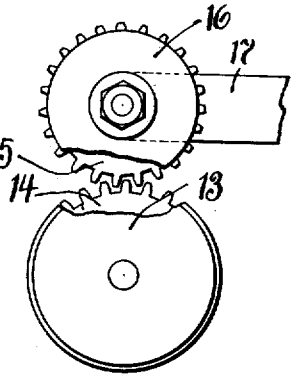



Fig. 7.

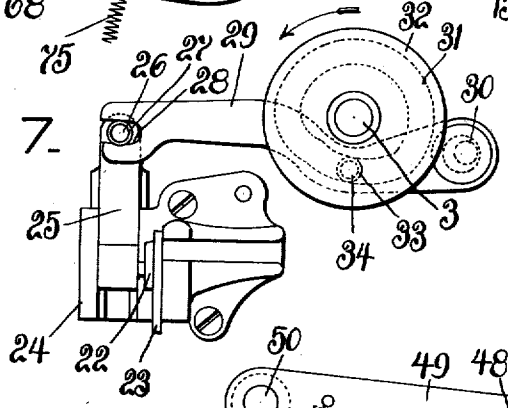
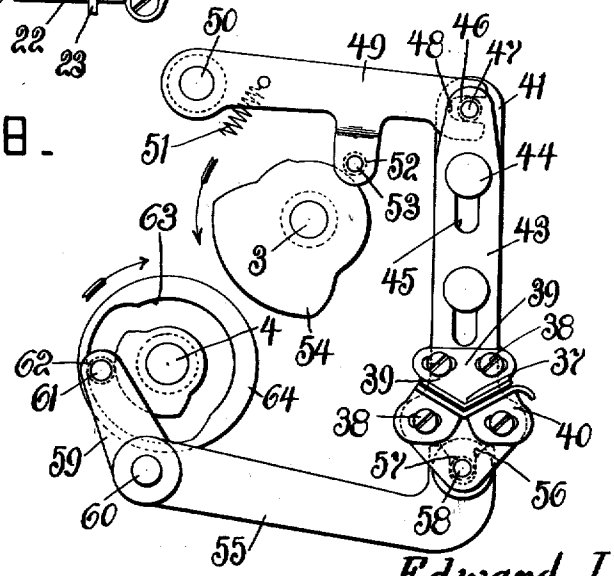



Fig. 8.




Witnesses

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# UNITED STATES PATENT OFFICE.

EDWARD J. VON PEIN, OF DAYTON, OHIO, ASSIGNOR TO THE NATIONAL CASH REGISTER COMPANY, OF DAYTON, OHIO, A CORPORATION OF OHIO, (INCORPORATED IN 1906.)

## TICKET-ISSUING MACHINE.

1,279,616. Specification of Letters Patent. Patented Sept. 24, 1918.

Application filed February 10, 1913. Serial No. 747,327.

*To all whom it may concern:*

Be it known that I, EDWARD J. VON PEIN, a citizen of the United States, residing at Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Ticket-Issuing Machines, of which I declare the following to be a full, clear, and exact description.

This invention relates to cash registers or other forms of accounting machines and to ticket vending machines.

In the drawings and description given below the invention covered by the application is shown embodied with a main operating mechanism on the principle described in Letters Patent of the United States No. 580,378, issued April 13, 1897 to J. P. Cleal and F. A. Reinhard. This is because such a combination seems to give the best and simplest construction to attain the results desired. However, this invention is one that can be applied in different forms of other types of cash registers and accounting machines and it is not the intention to limit its use to any one particular type.

One of the objects of this invention is to provide an accounting machine that will issue from the regular commercial perforated roll one or more tickets at a time, the number depending upon the value of the key depressed.

Another object of the invention is to provide an accounting machine that will, as the tickets are issued, add on a totalizer the price of the ticket or tickets sold.

With these and incidental objects in view the invention consists in certain novel features of construction and combinations of parts, the essential elements of which are set forth in appended claims, and a preferred form of embodiment of which is hereinafter described with reference to the drawings which accompany and form part of this specification.

Of said drawings,—

Figure 1 shows a front elevation of the machine.

Fig. 2 shows a cross section of the machine just inside of the right machine frame.

Fig. 3 shows a detail of the segment and gear to operate the feed rolls.

Fig. 4 shows a left side elevation of the machine.

Fig. 5 shows several tickets taken from a commercial roll of tickets such as are in general use.

Fig. 6 shows a detail of the mechanism for partially unwinding the ticket roll.

Fig. 7 is a detail showing the knife operating mechanism.

Fig. 8 shows the device for folding and regulating the strip of tickets so that the knife will always sever the strip at the perforations.

Fig. 9 shows the upper and lower feed rolls with parts of the rolls broken away to show the normal relation of the driving gears.

Described in general terms, the improvement consists of an addition to the mechanism of a cash register or accounting machine and is designed to handle the sale of tickets of admission to moving picture theaters and other places where the tickets are now simply torn off of a perforated roll and handed to the purchaser. It will use the same perforated roll of tickets and will issue any number of tickets from one up to four at a time, the number depending upon which key is pressed, and add the price of the ticket or tickets on a totalizer.

The specific embodiment of the invention shown in the drawings is that of a ticket issuing machine that can be so placed that the tickets issued will be accessible to the customer, but not to the ticket seller. The machine may be placed in the window of the ticket office with the front or key side of it toward the operator and with the receptacle into which the tickets are delivered at the rear of the machine, and, if the window is so arranged, entirely out of the reach of the ticket seller. This would make very noticeable any attempt to resell used tickets.

As shown in the drawings, the machine is equipped with four keys, numbered from "1" to "4". When one of these keys is pressed, the machine will issue the number of tickets that corresponds to the figure on the key, indicate the number, and add the price on the totalizer. For instance, if the "3" key is pressed, the machine will issue three tickets, indicate "3" and add fifteen cents on the totalizer.

It will be seen that this gives a better check on ticket sales and the cash received

from that source than the previous method of handling such sales. In checking up at the end of the day's business, or at any time during the day, the cash in the drawer or cash receptacle should balance with the amount represented by the tickets in the ticket taker's box and with the amount shown on the totalizer. An additional check can be secured by noting the consecutive number of the first ticket sold that day and the consecutive number of the first ticket remaining attached to the roll. In checking up with the previous system the proprietor had to depend entirely upon the comparison of the consecutive numbers.

So far as known no ticket vending machine has been heretofore designed that will issue from the regular commercial perforated roll one or more tickets with a single operation of the machine and add on a totalizer the price of the ticket or tickets issued. The construction is, therefore, believed to be novel.

This invention is shown in the drawings as being operated from a main operating mechanism on the principle described fully in the Cleal and Reinhard patent hereinbefore mentioned. However, the improvement consists mainly of the ticket issuing device and the following description will mention only so much of the old mechanism as will be necessary correctly to understand the invention.

When one of the operating keys 1 (Fig. 1) is pressed and an operating handle 2 turned, the power is transmitted through suitable gearing on the right side to shafts 3 and 4, revolving these shafts, and through cranks 5 and 6 and a pitman 7, rocking a shaft 8, (Figs. 1 and 2). This rocking movement of the shaft is transmitted by the usual mechanism to a differentially moved member 9 (Fig. 2) the upward movement of which is under the control of the keys 1. This differentially moved member 9 positions an indicated 36 through the usual means and in doing this rotates a gear 85 and a sleeve 35 (Fig. 1) to which it is attached. The rotation of the sleeve is, therefore, in direct proportion to the travel of member 9 (Fig. 2) and it will rotate a greater or less distance on the upward stroke of the member 9, depending upon the value of the key pressed. Attached to the sleeve 35 (Fig. 1) is a segment 10 (Fig. 3) which engages a gear 11 secured to the shaft 12. The lower feed roll 13 which is also attached to the shaft 12, has a gear 14 attached to it which engages a gear 15 attached to the upper feed roll 16 and drives that roll. As the feed rolls are positively driven by the mechanism just described, it will be seen that the rolls are rotated in direct proportion to the travel of member 9 and that they will, on the upward stroke of member 9, turn a greater or less distance, depending upon the key pressed. It is through this arrangement of the parts that the machine is able to issue one, two, three or four tickets when the proper key is pressed and the operating handle turned.

As the gears 14 and 15 (Fig. 1) on the feed rolls must always be in mesh and as the first movement of member 9 (Fig. 2) is always downward, the first movement of the feed rolls 13 and 16 is backward, that is, in the direction opposite to which the tickets are to be fed. If the feed rolls were gripping the ticket paper at this time the ticket strip would be mutilated. The following mechanism has been provided to prevent this:—

The upper feed roll 16 (Fig. 4) revolves on a bolt 19 in an arm 17 which swings from a stud 18 in the frame of the machine. The inner end of the bolt 19 has the form of a stud and carries a roll which works in a cam race 20 of a cam 32 attached to the shaft 3. This cam race and stud normally hold the upper feed roll 16 up so that while the gears are loosely in mesh as shown in Fig. 9, the feeding surfaces of the rolls do not grip the ticket paper. On the down stroke of the differentially moved member 9 (Fig. 2), the upper feed roll 16 (Fig. 4) being held up, the rolls revolve in the opposite direction to that in which the paper is to be fed, but the paper is not affected. However, immediately on the beginning of the up stroke of the differentially moved member 9 the cam race 20, acting on the stud mentioned, forces the upper feed roll down against the lower feed roll 13, thereby gripping the ticket strip and feeding it back through the guide slot 21 to knives 22 and 23 where the number of tickets that has been fed through is cut off and dropped into the receiver.

The knives are carried by a frame 24 (Figs. 4 and 7). The stationary knife 23, which has a slot for the paper to pass through, is fastened to the block 24 and the front knife 22 is carried by a sliding member 25. In the upper end of the sliding member is a stud 26 and a roll 27 resting in the slot 28 of a lever 29 which is pivoted on a stud 30. The movement of this lever is controlled by cam race 31 (Fig. 7) in the opposite side of cam 32 (Figs. 4 and 7) working against a roll 33 (Fig. 7) on a stud 34 in lever 29. As the cam 32 revolves, lever 29 swings on its stud 30, lowering and then raising the sliding member 25. This slides the knife 22 across the face of knife 23 and severs the tickets.

In view of the fact that this machine is designed to use the regular printed tickets from the perforated commercial roll 85 (Fig. 4), it is necessary that the tickets always be cut off at the perforations 86 (Fig. 5). The paper is adjusted so that this is

accomplished by the mechanism shown in detail in Fig. 8 and assembled in the machine in Fig. 4. There should always be just two full tickets between point 37 (Fig. 4) and the knives 22 and 23 when the machine is in its normal position and, if this relation is not maintained, the tickets will not be cut off at the perforations. In order to regulate the distance between the point 37 and the knives so as to accommodate tickets of different lengths, there is provided an adjusting device comprising members 39 and 40 held by screws 38 (Fig. 8). The members 39 and 40 can be shifted either way to accommodate the length of the tickets being used and the screws tightened to hold them in that position. However, there may be slight variations in the lengths of the tickets in a roll or, in the operation of the machine, the ticket strip might be moved slightly so that if no means were provided for correcting this automatically the operator would have to open the machine and adjust the paper by hand when it was discovered that the tickets were not being cut off at the perforated lines. This would, of course, be unsatisfactory. One purpose of the members 39 and 40 is to search for the perforation in the ticket strip and fold the paper there. The entire device shown in detail in Fig. 8 and assembled in the register in Fig. 4 is flexible so that the device can move either way and adapt itself to the perforations. The lower member 40 is fastened to an arm 41 which is swung at its upper end from a stud 42 (Fig. 1). A sliding plate 43 (Fig. 8) is loosely held on this arm by rivets 44 through slots 45 in the sliding plate. The upper member 39 of the folding device is attached to the lower end of this sliding plate 43. On the upper inner side of the sliding plate 43 is a roll 46 held by a stud 47 and resting in the operating slot of a lever 49 which is pivoted on a stud 50. This lever is always being drawn down by the tension of spring 51, holding a roll 52 on a stud 53 on lever 49 against the edge of a cam 54 fastened to the shaft 3 (Figs. 8 and 1) and normally holds the member 39 of the folding device down so that the ticket strip is held in position until the feed rolls 13 and 16 (Fig. 1) are ready to grip the paper and feed it through the machine. Levers 55 and 59 are both fastened to a shaft 60 journaled in the printer frames, and in the upper end of the lever 59 (Fig. 8) is a stud 61 carrying a roll 62. This stud and roll work in a cam race 63 of a cam 64 (Figs. 8 and 1) which is fastened to the shaft 4. As this cam 64 is revolved, shaft 60 (Fig. 8) is rocked by lever 59 and the forward slotted end of the lever 55 is lowered and raised. The slot in the lever 55 normally holds the arm 41 in the position shown in Fig. 8. Just an instant before the differentially moved member 9 starts on its upward stroke, the part of the cam 54 (Fig. 8) having the greater radius comes in contact with the roll 52 and lever 49 and raises the sliding plate 43 and folding device member 39, releasing the ticket paper so that the feed rolls can carry it forward to the knives. As the roll 52 passes off the greater radius of the cam, the spring 51 starts to draw the lever 49 back to normal position, carrying the member 39 down. At the same instant that the arms 49 and 41 are raised the lever 55 is drawn down so that a guide slot 56 will clear a roll 57 and stud 58 on the arm 41, allowing arm 41 to swing free from the stud 42 at its upper end. As the lever 49 (Fig. 8) continues its return to normal position, member 39 of the folding device is forced down into member 40, folding the strip. As arm 41 is at this time swinging free from its upper end, it and all of the parts assembled on it are free to move either to the right or the left. This allows the device to accommodate its position to the place in the strip where the paper naturally breaks the quickest, which is, of course, the perforated line. By the time member 39 is down in the position shown in Fig. 4, the entire device has shifted one way or the other and the perforated line will be under the point 37. Lever 55 is then carried up and the swing slot 56 will guide the arm 41 in either direction to its normal position and hold it there, bringing the perforated line under point 37 to the correct distance from the knives and thereby causing the ticket strip to be severed at the line of perforation.

One of the commercial rolls of tickets usually contains 2,000 tickets and is heavy enough to prevent the ticket issuing mechanism from working correctly if it had to overcome the inertia of the roll at the time when the machine starts to feed the tickets. Even if it could start the roll at the proper time, the sudden jerk on a quick operation would possibly tear the strip in two at one of the perforations. To partially unwind the ticket roll and give loose paper to start with, the invention provides the mechanism shown in detail in Fig. 6 and assembled in the machine in Figs. 1 and 4. These parts accomplish the desired result in the following manner: A lever 65 (Fig. 1) is fastened to a shaft 68 through the machine frame. Fastened to the other end of the shaft 68 is a lever 69 to the upper end of which is pivoted a pitman 70 (Figs. 1 and 6). This pitman has a slot 71 through which the shaft 4 passes and at the upper end of the pitman is a stud 72 carrying an anti-friction roll 73. This roll is held against the face of a cam 74 by the tension of a spring 75 that has one end attached to the lever 69 and the other end to the machine frame. As the cam 74 is revolved by the shaft 4, to which

it is attached, it allows the tension of a spring 75 acting on the lever 69 to rock the shaft 68 (Fig. 4) and carry the forward end of the lever 65 down. The lever 65 has fastened to it a stud 67 carrying a sleeve 66 that normally extends across the face of the ticket strip as shown in Fig. 4. At the beginning of an operation or before the folding die members 39 and 40 release the ticket strip, this lever 65 is swung down in the manner just described and the stud 67 and sleeve 66 pull down on the strip and unwind enough from the roll to give loose coils from which to issue the tickets. This effectually overcomes the difficulties mentioned at the beginning of this paragraph.

As the machine issues from one to four tickets at one operation, it is necessary to give the differentially moved member 9 (Fig. 2) more than the ordinary travel upward between keys, to permit it to actuate the feed rolls in the ticket issuing device the proper length of time for them to feed the desired number of tickets. To accomplish this result the keys 1 are placed twice as far apart as in the usual construction. Also, when a key is pressed and the handle turned, the price of the tickets at 5¢ each is added on a totalizer wheel 77ª (Fig. 1). This wheel adds 5¢ and multiples of 5¢ up to $1.00. In other words, it has twenty divisions instead of the usual ten divisions.

To actuate the totalizer a segment 77 (Figs. 1 and 2) is provided. This segment is pivoted loosely at its lower end on a rod 78 through the frames of the machine with teeth 79 at the other end of the segment in engagement with a gear 80. This segment 77 is operated by a stud 81 which is fastened in the differentially moved member 9 and passes through a graduated cam slot 82. Any movement of member 9 is, therefore, transmitted in a certain proportion to the segment 77. This cam slot 82 formed in the segment is designed so that if, for example, the differentially moved member 9 travels up until it is stopped by the top key 1, the segment 77 will, through the gear 80 and the other usual mechanism, space the totalizer wheel 77ª four divisions or four twentieths of a revolution, thereby adding 20¢ on the totalizer. When the keys of lower values are used, this mechanism will space the totalizer, one, two or three twentieths, depending upon which key was pressed in, and add corresponding amounts on the wheel.

At the present time the ticket offices of moving picture theaters and other places of amusement have in them a perforated roll of tickets of admission. When there is a call for tickets, the ticket seller simply tears them off and hands them to the purchaser, then places the money received in some receptacle for the purpose. With a machine such as is described in this application, the ticket roll will be placed in the machine and the end of the strip started through the feeding mechanism. Then when there is a call for tickets the ticket seller will press the key representing the number of tickets called for and turn the handle. The proper number of tickets will be issued, cut off and dropped into the receptacle in front of the purchaser. The ticket seller will not be able to reach the receptacle, provided, of course, the window in the office has been arranged accordingly. The number of tickets sold will, as they are issued, be indicated at the top of the machine and the price of the tickets will be added on the totalizer. This system, with the consecutive numbers printed on the tickets, gives a complete check on the tickets issued and the money received from their sale, and, if properly placed in the ticket window, will make it practically impossible to resell used tickets without being detected.

While the form of mechanism herein shown and described is admirably adapted to fulfil the objects primarily stated, it is to be understood that it is not intended to confine the invention to the one form of embodiment herein shown and described, as it is susceptible of embodiment in various forms, all coming within the scope of the claims which follow.

What is claimed is:—

1. In a machine of the class described, the combination with an operating mechanism, of means controlled thereby for issuing one or more tickets from a perforated ticket strip, means for cutting the ticket strip at the perforations, and devices for automatically adjusting the ticket strip so that the perforations are in the path of the cutting means.

2. In a ticket issuing cash register or accounting machine having ticket strip feeding rolls attached to and drawn by gears that are always in mesh one with the other, and driven toward and away from a zero position of devices for holding the rolls apart while they are rotating toward the zero position so that the ticket strip is not moved.

3. In a machine of the class described, the combination with means for feeding and cutting from a perforated ticket strip one or more tickets on a single operation, of a flexible device for automatically finding the perforations in the strip and adjusting the strip so that the perforations are in the path of the cutting means.

4. In a machine of the class described, the combination with a pair of feeding rollers for a ticket strip, of devices for rotating said feeding rollers backward and forward differentially at each operation of the machine, keys for determining the extent of differential rotation of said rollers, and devices for

automatically separating said rollers for their backward rotation.

5. In a machine of the class described, the combination with a pair of feeding rollers for a ticket strip, of devices for rotating said rollers differentially in opposite directions at each operation of the machine, with means for controlling the extent of such rotation, and a cam shaped to separate said rollers for their rotation in one of said directions.

6. In a machine of the class described, the combination with feeding and cutting devices for a perforated ticket strip, of devices for adjusting the perforations of the ticket strip relative to said cutting means, comprising; upper and lower die members between which said strip passes, bars supporting said die members, one being slidably mounted on the other, a stud on which one of said members is pivoted, and means for sliding the other of said members along said first member.

7. In a machine of the class described, the combination with feeding and cutting devices for a perforated ticket strip, of devices for adjusting the perforations of the ticket strip relative to said cutting devices, comprising; a pair of die members, and a stud from which one of said die members is pivotally hung, with means for moving said members toward and away from each other.

8. In a machine of the class described, the combination with means for feeding tickets from a perforated strip, of means for severing the strip, a device controlled by the strip for folding the strip at a perforation, and means for then adjusting the device to a constant position whereby to position a perforation in the path of the severing means.

9. In a machine of the class described, the combination with devices for feeding and severing from a perforated ticket strip one or more tickets on a single operation, of a flexible device for automatically finding a perforation in the strip, and means for restoring the flexible device to a constant position thereby adjusting the strip with reference to the feeding and severing devices.

10. In a machine of the class described, the combination with differential devices returned to a normal starting point as a preliminary to the differential adjustment of said devices, means for feeding a record strip, connections between the differential devices and the feeding means whereby any movement of the differential devices is transmitted to the feeding means, and means for rendering the feeding means ineffective during the return of the differential devices to the normal starting point.

11. In a machine of the class described, the combination with a pair of feeding rollers for a ticket strip, key controlled differential mechanism for differentially controlling said feeding rollers in either direction during an operation of the machine, and means controlling said feeding rollers to grip the ticket strip and feed same in one direction only.

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

EDWARD J. VON PEIN.

Witnesses:

R. C. GLASS,

F. E. HAMILTON.

Corrections in Letters Patent No. 1,279,616.

It is hereby certified that in Letters Patent No. 1,279,616, granted September 24, 1918, upon the application of Edward J. Von Pein, of Dayton, Ohio, for an improvement in "Ticket-Issuing Machines," errors appear in the printed specification requiring correction as follows: Page 2, line 46, for the word "indicated" read *indicator;* same page, line 47, for the reference-numeral "85" read *851;* same page, line 111, for the word "block" read *frame;* page 3, line 96, for the word "swing" read *guide*, and same line for the word "guide" read *swing;* page 4, line 41, after the reference-numeral "82" and before the period insert the words *formed in the segment;* same page, line 44, strike out the words "formed in the segment"; page 5, line 7, claim 5, strike out the word "with"; same page and claim, line 9, for the word "shaped" read *arranged;* and that the said Letters Patent should be read with these corrections therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 28th day of January, A. D., 1919.

[SEAL.]

R. F. WHITEHEAD,
*Acting Commissioner of Patents.*

Cl. 211—33.