

**July 28, 1942.**

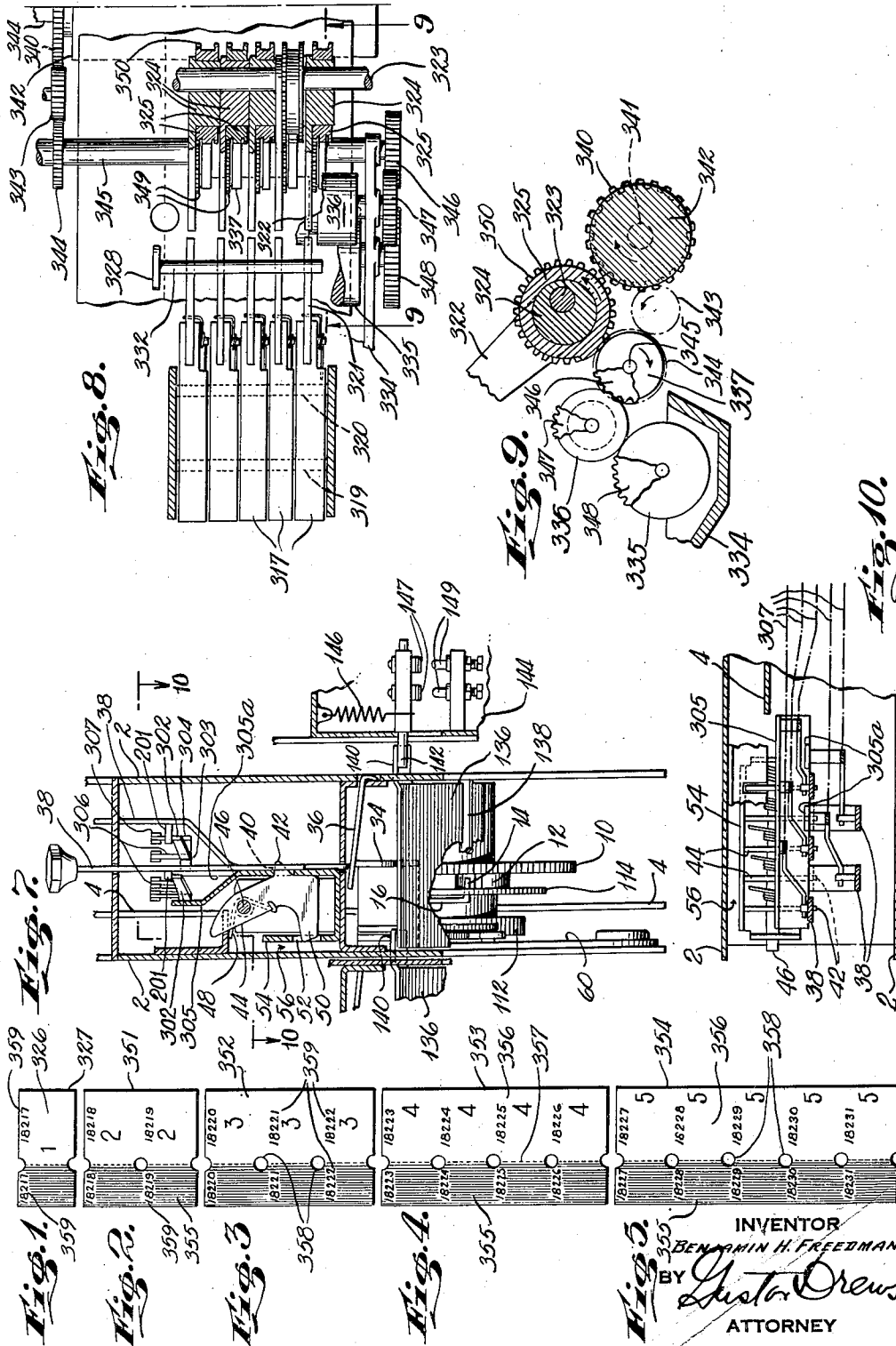
**B. H. FREEDMAN**

**2,290,871**

# MACHINE FOR DISPENSING TICKETS

Filed Sept. 2, 1939

4 Sheets-Sheet 1



July 28, 1942.

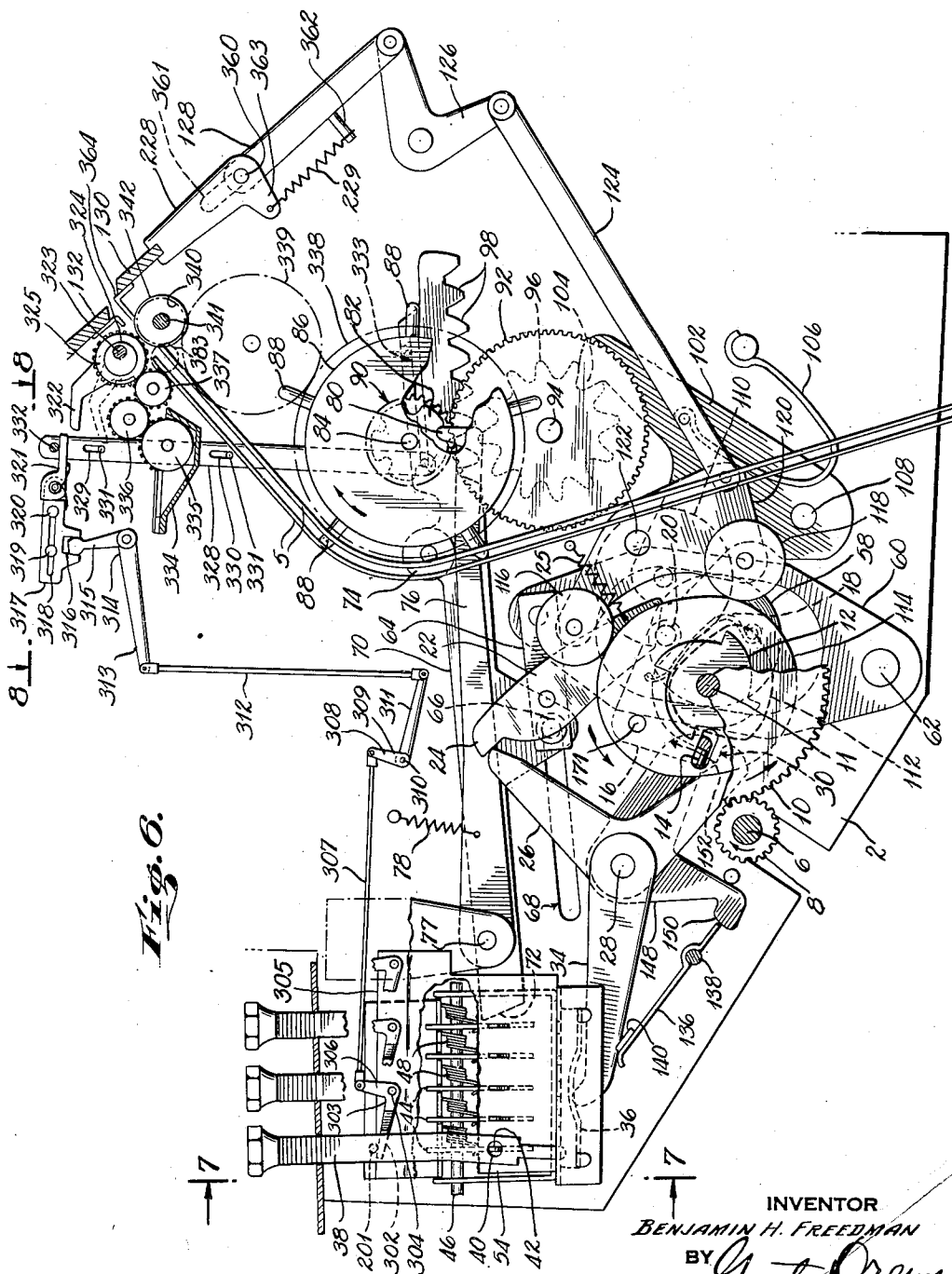
B. H. FREEDMAN

2,290,871

MACHINE FOR DISPENSING TICKETS

Filed Sept. 2, 1939

4 Sheets-Sheet 2



INVENTOR  
BENJAMIN H. FREEDMAN  
BY *Gustav Orens*  
ATTORNEY

July 28, 1942.

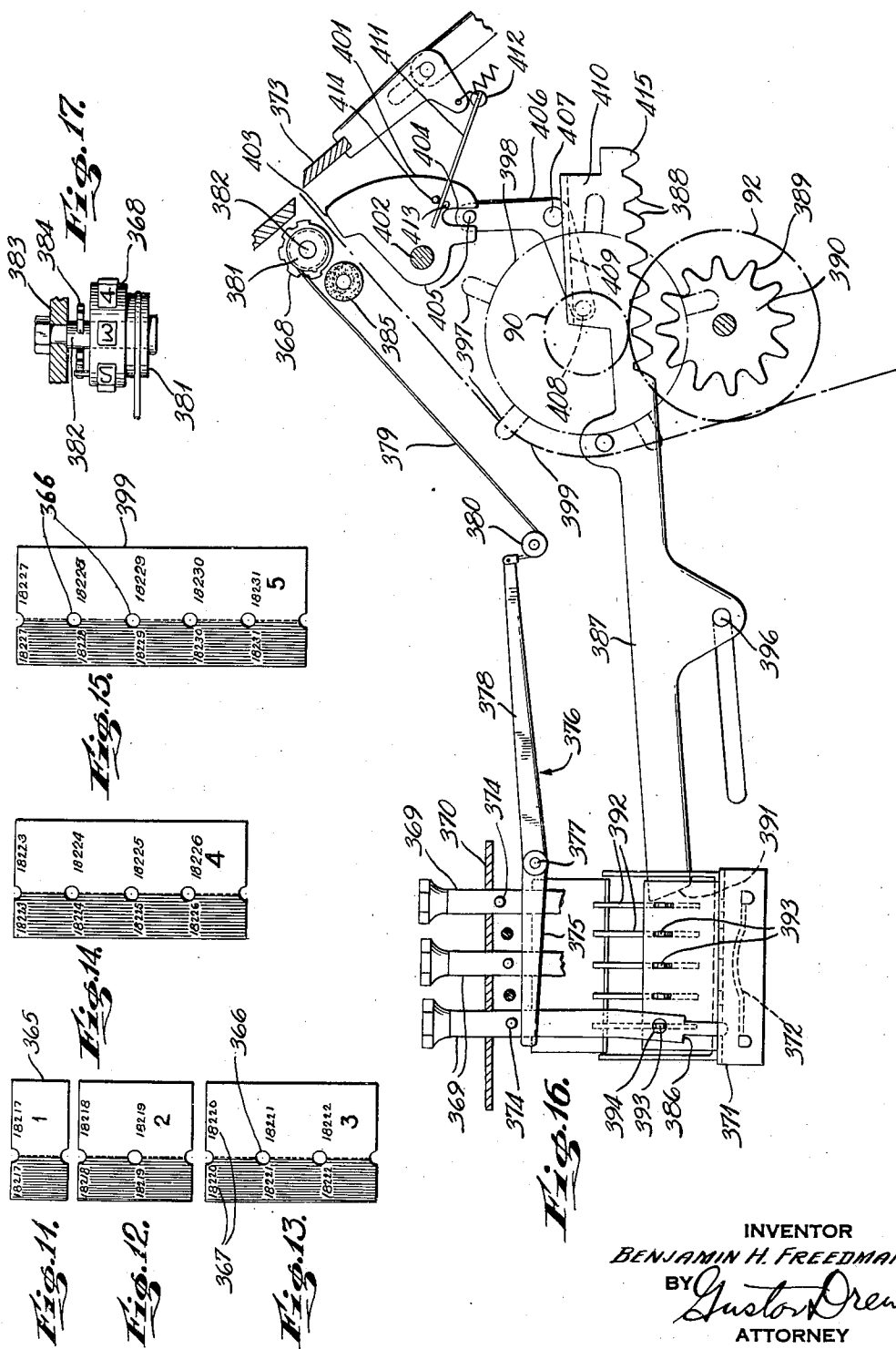
B. H. FREEDMAN

2,290,871

MACHINE FOR DISPENSING TICKETS

Filed Sept. 2, 1939

4 Sheets-Sheet 3



INVENTOR  
BENJAMIN H. FREEDMAN  
BY *Gustav Drews*  
ATTORNEY

**July 28, 1942.**

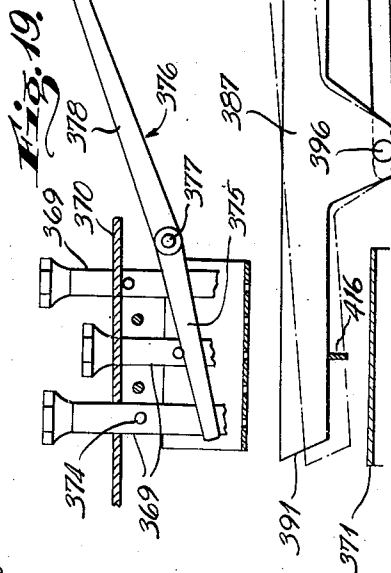
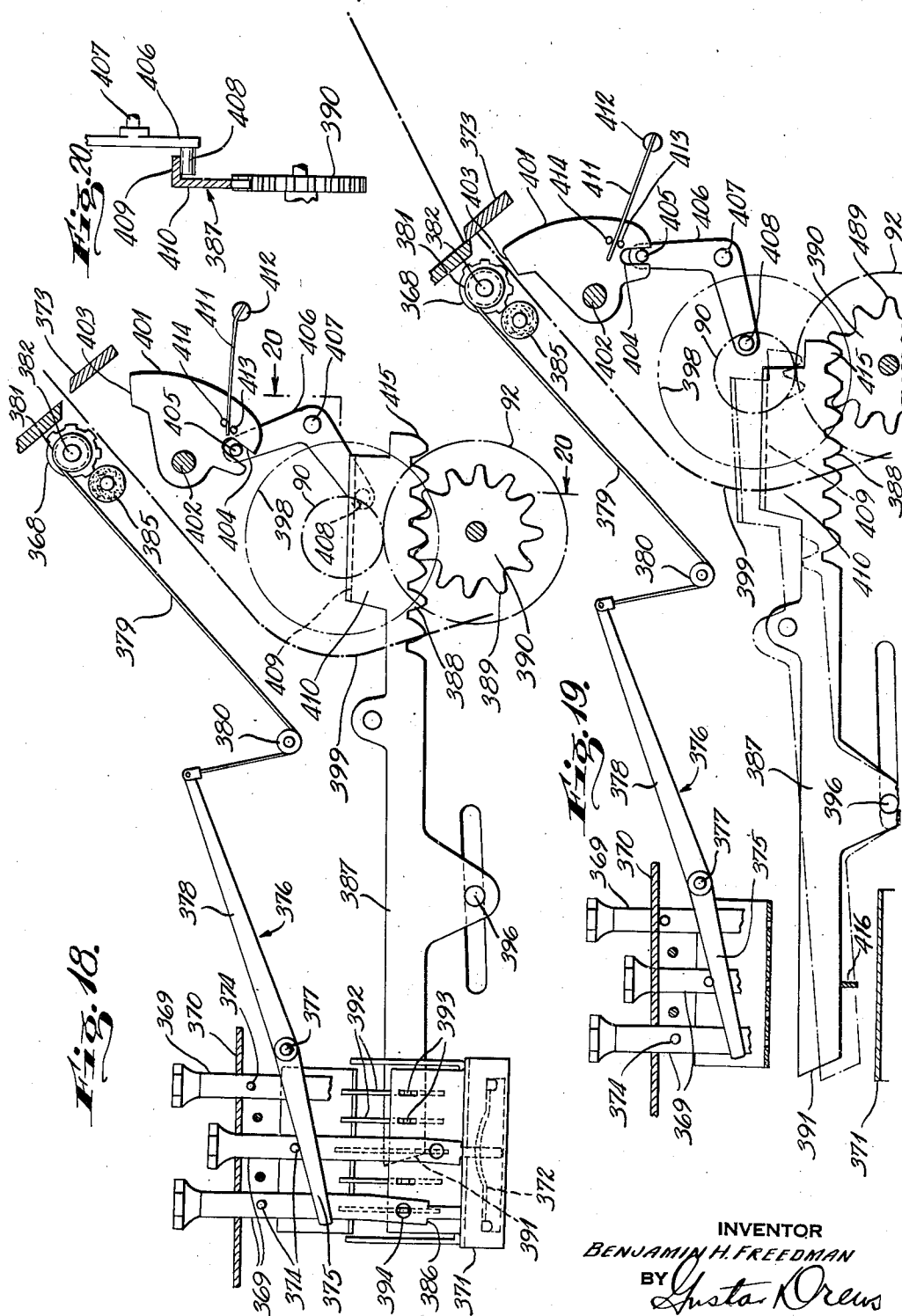
**B. H. FREEDMAN**

**2,290,871**

# MACHINE FOR DISPENSING TICKETS

Filed Sept. 2, 1939

4 Sheets-Sheet 4



INVENTOR  
BENJAMIN H. FREEDMAN  
BY *Gusta Drew*  
ATTORNEY

## UNITED STATES PATENT OFFICE

2,290,871

## MACHINE FOR DISPENSING TICKETS

Benjamin H. Freedman, Asbury Park, N. J.

Application September 2, 1939, Serial No. 293,169

12 Claims. (Cl. 101—69)

This invention relates to the machine and method for dispensing a theatre ticket and the like and to the theatre ticket to be dispensed by such machine and method.

Among the objects of the present invention it is aimed to provide an improved theatre ticket which will lend itself to being dispensed by a theatre ticket dispensing machine of the type today extensively used in moving picture theatres and the like, see as an instance the machine disclosed in the patent to Reuben H. Helsel, No. 2,103,720. The present machine is particularly characterized by dispensing a ticket which corresponds in size, according to a predetermined minimum, to the number of patrons admitted on a ticket, and which has a marking or markings thereon defining the number of patrons to be admitted on such ticket, which markings furthermore correspond in number to the number of patrons to be admitted.

It is still another object of the present invention to provide an improved theatre ticket which will lend itself to be dispensed by a theatre ticket dispensing machine of the type today extensively used in moving picture theatres and the like which theatre ticket is characterized by corresponding in size to the number of patrons to be admitted, and by forming markings thereon to define the number of patrons to be admitted and which has a tear-defining line extending lengthwise of the ticket or series of tickets, the area to either side of such line being distinguishable from one another either by color, markings, or a marking contrasted with no marking or the like readily to indicate to the doorman which side is to be retained by him for the auditing department.

It is still another object of the present invention, which will appear from the foregoing, to provide an improved theatre ticket which will facilitate the detection of fraud by employees and the like, and in addition facilitate the auditing department in counting the number of patrons covered by the tickets in sorting the same.

It is still another object of the present invention to provide an improved machine having means for feeding a ticket either to cover a single patron or a plurality up to a predetermined number corresponding in size, relative to a predetermined minimum, to the number of patrons to be covered by the particular ticket, means for cutting the ticket of a predetermined length, and means for marking on the ticket a marking corresponding to the number of patrons to be covered by the ticket.

It is still another object of the present invention to provide an improved machine having means for feeding from a roll or strip of ticket material a ticket either to cover a single patron or a plurality of patrons corresponding in size

to the number of patrons to be covered by the particular ticket, according to a predetermined minimum covering a single patron, means for cutting the ticket strip fed out, and means for marking on the ticket a marking corresponding to the number of patrons to be covered by the ticket which ticket has a tear-defining line extending lengthwise of the ticket or series of tickets, the areas to either side of such line being distinguishable from one another either by color, markings, and a marking contrasted with no marking or the like, readily to indicate to the doorman or ticket collector which side is to be retained by him for the auditing department or the like and which ticket is preferably free of all creases, perforations or the like in a transverse direction so that the tickets may readily be stacked when sorting the same for size preparatory to auditing the same.

It is still another object of the present invention to provide a method for facilitating the detection of fraud and for facilitating the auditing of theatre tickets consisting in dispensing a theatre ticket corresponding in size to the number of patrons to be admitted including feeding a ticket strip of a length corresponding to the number of patrons to be admitted, from a roll of ticket strip having a tear-defining line extending lengthwise between two areas distinguishable from one another by color, a marking or the like, which strip has sufficient body and is free from all creases, perforations or the like in a transverse direction so that the tickets after having been cut and dispensed may be readily stacked when sorting the same, cutting the strips so fed, tearing the ticket along such predetermined tear-defining line to separate one distinguishable portion to be retained for the auditing department and sorting the portions retained by stacking the same.

These and other features, capabilities and advantages of the invention will appear from the subjoined detail description of specific embodiments thereof illustrated in the accompanying drawings in which

Figures 1, 2, 3, 4 and 5 are plan views respectively of tickets dispensed according to one embodiment of the present invention to correspond in size and marking to the number of patrons to be admitted on each ticket;

Fig. 6 is a transverse section of one embodiment of the dispensing machine including means for feeding a portion from a ticket strip, marking the same and cutting the same after having been fed out;

Fig. 7 is a section on the line 7—7 of Fig. 6;

Fig. 8 is a section on the line 8—8 of Fig. 6;

Fig. 9 is a section on the line 9—9 of Fig. 6;

Fig. 10 is a section on the line 10—10 of Fig. 7;

Figs. 11, 12, 13, 14 and 15 are plan views re-

spectively of tickets dispensed according to another embodiment of the present invention but corresponding in size and marking to the number of patrons to be admitted on each ticket;

Fig. 16 is a side elevation more or less diagrammatically showing the type wheel and impression forming mechanism of the present embodiment in the normal inactive position;

Fig. 17 is a fragmental plan view showing the type wheel;

Fig. 18 is a side elevation more or less diagrammatically showing the type wheel and impression forming mechanism of this embodiment, after actuating the type wheel into a predetermined printing position and just prior to the printing operation;

Fig. 19 is a side elevation more or less diagrammatically showing the type wheel of the present embodiment after having been actuated into a predetermined printing position after the impression actuation and after the ticket has been severed, and

Fig. 20 is a section on the line 20—20 of Fig. 18.

According to the present invention, the length of a ticket will correspond to the number of patrons to be selected and since this is more or less old in the art, reference is had to the disclosure in Patent No. 2,103,720 of Reuben H. Helsel in which the machine unit comprises a pair of side plates 2—2 suitably connected by cross members in a general fashion common to this art. A plurality of units are intended to be arranged side by side within a casing (as indicated in Fig. 7) to issue tickets of various denominations. Between the side plates there is located an intermediate supporting plate 4 which carries or aids in the support of various operating elements. Suitable guiding means for the ticket strip are provided, including members 5 forming a channel approaching the feeding pin-wheel and to maintain the ticket strip in engagement with the pins and lead it past the severing knives.

Extending across the various units so as to be common to all of them, there is a shaft 6 carrying a number of pinions 8 equal to the assembled units. The shaft 6 is driven through a suitable reduction means, either gearing or belting, from a motor which is carried by the housing for the units. Each of the pinions 8 engages a gear 10 in the corresponding unit and through such engagement effects the drive of the unit.

The gear 10 is journaled on a pin 11 extending between the side plates 2 and has secured to it a toothed clutch member indicated at 12. The teeth of the member 12 are designed to engage the laterally turned end 14 of a bell crank 16 which is pivoted at 17 upon a cam member 114 and urged in a counterclockwise direction as viewed in the figures by a spring 18 to bring its turned end 14 into the path of the teeth of the member 12. When the machine is in its stationary condition illustrated in the figures, a pin 20 on one of the arms of the lever 16 is engaged with the end of a lever 22 having a nose 24 under which there is engaged the end of a latching lever 26 pivoted upon a pin 28 extending between the side frame members. The lever 26 is provided with a cam following extension indicated at 30.

The latching lever 26 carries an arm 34 which underlies a plate 36 pivoted in the frame at one side as indicated in Fig. 7. Above the plate 36 and guided through slots in various frame members there are a plurality of key rods, one of which is indicated in the drawings at 38 in Fig. 7.

The others are of similar type, being suitably offset at their upper ends to provide any desired arrangement of the keys. In all cases these keys are constrained to move vertically in contact with the right-hand arm of a U-shaped member 54.

Each of the key rods 38 is provided with an opening 40, see Fig. 6, through which there normally projects an ear 42 formed on a corresponding selector member 44. Assuming that five tickets are to be issued as the maximum in a cycle of operation, there will be five keys rods and five selector members 44 pivoted upon the pin 46 and individually urged in a counter-clockwise direction as viewed in Fig. 7 by springs 48. Each of the selector members 44 is provided with a camming projection 50 designed to be projected through a corresponding slot 52 in the left-hand arm of the bracket 54, which is spaced from the left-hand side plate 2 to provide a channel 56. When any of the keys is operated by being depressed, its engagement with the ear 42 of the corresponding selector member 44 will rock that selector member 44 in a clockwise direction, projecting the camming projection 50 across the channel 56. After this action occurs, the key will be moved further downwardly and a solid portion of the key bar will be opposite the ear 42, effectively locking the selector member 44 in its new position. It will accordingly retain such position until the key is raised.

Returning now to the drive, there is secured to the cam 114 an eccentric 58 which operates within an elongated slot in a yoke 60 pivoted at 62 to the left-hand side plate 2. The yoke 60 at its upper end is connected by a link 64 with a pin 66 which is guided for rectilinear movements within a slot 68 formed in the left-hand side plate 2. Pivoted on the pin 66 is a bar 70 which is provided with a bevelled forward end 72 designed to engage and ride up the camming projection 50 of any of the selecting members which happens to be in its clockwise actuated position due to key actuation. The bar 70 carries a roller 74 arranged to be engaged by a lever 76 along the upper edge of which it may roll. A spring 78 urges the lever 76 in a counter-clockwise direction about its pivot 77 so as to initially bring a nose 80 thereof within one of a series of slots (in the present case five) in a member 82 which is pivoted upon a pin 84 and which is secured to a pinwheel 86 having five pins 88 arranged to engage perforations in a ticket strip to advance the same in the delivery operation. A pinion 90 also secured to the pinwheel and member 82 meshes with a gear 92 pivoted upon a pin 94 and carrying a toothed member 96 designed to be engaged by a nose 104 of a detent member 102 pivoted at 108 to the frame and urged in a counter-clockwise direction by a spring 106. The detent member 102 carries a cam following roller 110 arranged to ride upon and be actuated by a cam 112 secured to the cam 114. The bar 70 is provided with a series of teeth 98 designed to engage the teeth of the pinion 96. The bar 70 is normally held, when the machine is stationary, in the upper position illustrated in Fig. 6 so that, upon lengthwise movement of the bar 70, the teeth 98 would clear the teeth of the pinion 96.

The cam 114 to which reference has been heretofore made is designed to act on the pair of follower rollers 116 and 118 carried by a lever 120, which is pivoted at 122 and connected through a link 124 with a knife-operating bell crank lever

126 to the upper end of which is pivoted a two-piece pusher 128, 228 pivotally connected to one another by the pin 360 slidably mounted in a slot 361 formed in the side plate 2, the spring 229 connecting the pin 362 on the arm 128 with the projection 363 on the arm 228 so that the movable knife 130 will slide on the shoulder 364 to co-operate with the stationary blade 132.

In each of the units there is pivoted at 138 a plate 136 underlying the arm 34. Each of these plates 136 has extending toward the right through the right-hand side plate an ear 140. In the case of the left-hand unit the ear 140 overlaps the plate 136 of the unit to its right (see Fig. 7) and so on until, in the case of the most right-hand unit, the ear 140 overlaps a pin 142 controlling a switch within a housing 144. The pin is urged upwardly by a spring shown at 146 effective to hold contacts 147 away from contacts 149 when no unit is operating and thus open the motor circuit. When the pin 142 is lowered by depression of the plate 136, the switch is closed and actuates the motor, serving to drive the assembled units. It will be obvious that due to the overlapping of the successive plates 136 by the ears 140 the depression of a key in any of the series of assembled units will effect closure of the switch and starting of the driving motor. A lever 148 pivoted on the same pin 28 as carries the lever 26 is provided with an end 150 designed to engage a tail portion of the plate 136 for the purpose hereafter described. The lever 148 is provided with a follower extension 152 arranged to be engaged by the cam 112. The cam 112 performs a triple function, acting upon the roller 110 and the follower ends 30 and 152 of the respective levers 26 and 148.

Assuming that a single ticket is to be issued, the operator will depress the most forward key, which is the one shown in Fig. 7. This will rock its corresponding selector member 44 to cause the projection 50 thereof to extend across the channel 56. The depression of the key beyond the position causing the opening 40 to clear the ear 42 will lock the selector member in such position to cause it to resist a mechanical thrust to which it is later subjected. The depression of the key will also depress the arm 34, causing the latching lever 26 to move out from beneath the end of the lever 24 and thus release the pin 20 on the clutch lever 16. As a result, the end 14 of this lever will be moved into the path of the teeth of the member 12 by the action of the spring 18.

As the arm 34 moves downwardly, it depresses the plate 136 to bring its tail above the lever end 150 and either directly or through intermediate plates 136 closes the switch in the housing 144 by depressing the pin 142 against the action of spring 146, which is a light spring incapable of moving the key upwardly because of the substantial friction involved due to the pressure of the selector member 44 upon it because of the action of its spring 48. The parts so far moved, therefore, unless additional pressure is applied, will retain the positions indicated. Upward movement is further resisted by the fact that the end of the latch lever 26 will now lie to the left of the nose 24 of lever 22, which will prevent its clockwise movement until substantial force is applied.

The motor will now drive the shaft 6 and consequently the clutch 12, imparting counter-clockwise rotary movement to the cams 112 and 114 and the eccentric 58. The cam 112 immediately acts upon the roller 110 to withdraw the projection 104 of the detent lever 102 from between the

teeth of the pinion 96, thereby releasing this pinion for movement. The eccentric 58 also begins the counter-clockwise movement of the yoke 60, thereby driving the bar 70 toward the left. During the initial portion of such movement, the rack teeth 98 are held out of position to engage the teeth of the pinion 96. The movement just described takes place without engagement of the rack and pinion until the bevelled end 72 of the bar 70 engages the projection 50 of the selector member 44 which has been actuated. The left-hand end of the bar is then cammed upwardly and the bar is caused to swing about its pivot pin 66, which is being guided within the slot 68, with the result that the roller 74 will force downwardly the lever 76, disengaging its end 80 from the slot in the member 82 into which it projected. At the same time the rack 98 is moved downwardly to engage the teeth of the pinion 96. The downward movement of the end 80 releases the pinwheel 86 and the parts geared thereto, including the pinion 96, so that the rack during the further leftward movement of the bar 70 will drive the pinion and rotate the pinwheel 86 to feed the ticket strip. In the case just described, when a ticket for a single patron is issued the left-hand movement of the bar continues only sufficiently to move the pinwheel through a peripheral extent corresponding to the length of a single ticket such as the ticket 327 of Fig. 1, the movement ceasing when the eccentric 58 reaches its forward dead center position.

It will now be obvious how tickets of varying lengths are issued. The length issued depends upon the movement of the rack in engagement with the pinion before the forward dead center position is reached. The length of a ticket is determined by the delay before the rack engages the pinion, which delay is determined by the position of the selector member 44 which has been actuated. If a length of ticket for five patrons is to be issued, for example, the rack is engaged with the pinion almost immediately after the forward movement of the bar 70 begins, while intermediate lengths of tickets involve suitable delays prior to the engagement. In any event, the total length of a ticket to be issued will be projected past the knives 130 and 132 during the left-hand movement of the bar 70.

Adjacent the left-hand dead center position a substantial rotation of the eccentric 58 will take place without any appreciable movement of the bar 70 when lost motion is considered. During this period the cam 112 will engage successively the follower ends 152 and 30 of the levers 148 and 26. Engagement with the first causes the projection 150 to engage below the tail of the plate 136 so as to prevent its rising even though the arm 34 is raised, thus maintaining the switch closed and the motor operating. The cam 112 engaging the follower end 30 of lever 26 will cause arm 34 to be forcibly raised, moving the plate 36 upwardly and raising the depressed key bar and permitting the selector member 44 to again assume its counter-clockwise position with the ear 42 projecting through the hole 40. As a consequence of this action, the forward end of the bar 70 is released by the projection 50 of the selector member 44. This action preferably occurs just prior to the dead center position of the eccentric 58, and in order to avoid noise and effect also accurate positioning of the pinwheel, there is prevented the immediate upward movement of the bar 70 by reason of the fact that the projection 80 of the lever 76 is riding upon the periphery of

the member 82 and consequently will not raise the bar 70 immediately. However, as soon as sufficient further movement takes place to bring one of the notches in the member 82 adjacent the projection 80, the projection will fall into such notch and the bar 70 will be rocked counterclockwise under the action of the lever 76, disengaging the teeth 98 from the pinion 96.

After this occurs, the roller 110 is released by the cam 112 and the pinion 96 is locked in fixed position by the detent 102. The detent 102 is provided so that the cam action between the nose 104 and the teeth 96 may accurately align the ticket strip to bring the portion to be cut into alignment with the knives.

The clockwise movement of the lever 26 may take place because of the fact that its end applies a thrust to the end 24 of the lever 22 in a direction laterally of the pivot of lever 22, which is thereby caused to be rocked clockwise against the action of its spring 25 to bring its lower end into the path of the pin 20 on the clutch lever 16 to ultimately disengage the clutch and stop the operation.

The reverse movement of the bar 70 now occurs. The rack teeth 98 move rearwardly, clearing the pinion 96. During this reverse movement the cam 114 acts upon the rollers 116 and 118 to impart first a cutting movement to the knife 130 and then a retracting movement to clear a passage for the next advance of the ticket strip. It will be seen that when a plurality of tickets is issued the cutting will take place at the end of the series, so that the plurality will be issued in a single strip.

As the end of the cycle of rotation is reached, the levers 26 and 148 are released by the cam 112. The release of the lever 26 merely permits it to be later rocked by a key actuation. The release of the lever 148 permits the withdrawal of the projection 150 from beneath the plate 136 so that the spring 146 can lift this plate 136 and the associated plates and also open the motor circuit. At the same time the pin 20 will be engaged by the lower end of the lever 22, causing the end 14 of the lever 16 to rock out of the path of the teeth of the clutch member 12. The engagement of the pin 20 with the end of the lever 22 determines the initial position of the parts.

In the present invention, as distinguished from the Helsel patent aforesaid as an instance, the guide members 5, 5 continue alongside of the pin wheel 86 and then to and beyond the printing mechanism now to be described and which constitutes one of the main parts of the present invention.

Each key rod 38 is provided with a projection 201 formed on its side as shown in Figs. 6 and 7, to be engaged by the upper edge of an arm 302 of a bell crank lever 303 pivoted at 304 to the plate portion 305 of the bracket 54. The upper end of the arm 306 is pivotally connected to the link 307 pivotally connected to the upper end of the arm 308 of the bell crank 309 pivotally connected at 310 to one of the plates 2, the end of the other arm 311 being pivotally connected by the link 312 to the end of the arm 313 of the bell crank lever 314, the end of the other arm 315 of which extends in the recess 316 of the shoe or slide 317 provided with the slot 318 slidably mounted on the pins 319, 320.

The slide 317 has a finger 321 formed thereon to engage the arm 322 formed on the shaft 323 of the eccentric 324 on which the type wheel 325 is fixed. There is a type wheel 325 for each key

rod 38, the type wheel 325 for the unit length ticket being shown as uppermost in Fig. 8 to form the impression on the left-hand side of the area 326 of the ticket 327, see Fig. 1. The selection of the type wheel 325 desired is made in the manner now to be described.

I provide a vertically extending bar 328 provided with guiding slots 329, 330 working over pins 331 carried by one of the sides plates 2. The upper end of the bar 328 is provided with a pin 332 which extends across the upper face of all the fingers 321. The lower end of the bar 328 is connected by a pin extending through the slot 333 formed in the bar 70. During a cycle of movement all fingers 321 will be pulled down but only the one moved forward by its key rod 38 will actuate an eccentric 324. The key rod 38 selected will extend its corresponding finger 321 which in turn will overlap the finger 322 of its corresponding type wheel 325. Thereupon, upon the downward movement of the bar 70, it will depress the several fingers 321 and in turn the finger 321 extended to overlap a finger 322 which will rock the type wheel 325 into impression forming position with the ticket strip passing through the channel formed by the guide rails 5, 5.

I have provided an ink fountain 334 having the ink roll 335 which, through rolls 336 and 337 transfers ink to the type wheel 325. The ink roll is driven through a train of gears from shaft 84 consisting of gear 338 on shaft 84 to intermediate gear 339, gear 340 mounted on shaft 341 to drive the lower feed and impression roll 342, pinion 343, gear 344 on shaft 345 which carries ink transfer roll 337, gear 346 on shaft 345 to gear 347 driving transfer roll 336, and gear 348 on the shaft carrying ink roll 335. The transfer roll 337 has a number of gears 349 in mesh with gears 350 which are formed on the type wheels 325. Therefore the several type wheels will all be driven together keeping the ink fresh but only the wheel selected to print will be moved into position for impression. Furthermore the type wheel 325 will be rotated a number of times corresponding to the number of patrons to be admitted on the ticket selected, the ratio being such that the type wheel will turn once for each patron so that, see Figs. 2, 3, 4 and 5, if the ticket selected is intended for two patrons the numeral "2" will be impressed twice and brought into the second column, if for three patrons the numeral "3" will be impressed three times, see Fig. 3, and brought into the third column and so on.

The ticket strip in the present instance, see Figs. 1, 2, 3, 4 and 5, consists essentially of a more or less stiff or shape-retaining paper or of a lightweight cardboard strip such as the single patron ticket 327, the two patron ticket strip 351, the three patron ticket strip 352, the four patron ticket strip 353, and the five patron ticket strip 354. In addition, this ticket strip is preferably divided into two areas 355 and 356, distinguishable from one another by any suitable markings such as color, the shading of area 355 indicating red and the lack of shading on area 356 indicating white. Still furthermore, while as an instance, there do not appear any transversely extending perforations, creases or tear-defining lines, these tickets are provided with a longitudinally extending tear-defining line 357 common to all of the tickets of a strip which preferably is formed at the boundary between the two adjacent areas 355 and 356. Aside from the foregoing, the strip is provided with pin-receiving perfora-

tions 358 to cooperate with the pins 88 for feeding the length of ticket strip required.

With the present ticket, while the area 355 is shown as narrower than the area 356, it is of course obvious that the areas may vary relative to one another according to the taste or requirements of a theatre without departing from the general spirit of the invention.

Since the area 356 is to be retained, according to one requirement, the broader this area, the better, so that the rigidity of the cut ticket strip may be enhanced and sufficient body provided to facilitate handling.

Still furthermore, it will here appear that when the ticket is turned in at the door, and it be predetermined as an instance that the white portion be retained, fraud can be quickly detected by a watcher. Furthermore, since the ticket strips will be maintained more or less rigid, the auditor at the end of a day's receipts can stack the tickets received and quickly sort those of like size and thereby facilitate counting the same.

As will appear from Figs. 1, 2, 3, 4 and 5, the ticket strip may be previously provided with serial numbers 359 in the conventional way to facilitate counting the patrons admitted. Obviously, see Fig. 1, the serial number 359 on the red area will be the same as that on the white area.

With the embodiment shown in Figs. 11 to 20 inclusive while the tickets will still vary in size to correspond to the number of patrons to be admitted here each ticket whether for the admission of one patron or for the admission of a plurality will have only one numeral printed on it corresponding to the number of patrons to be admitted, and such numeral preferably printed in the lowermost area. Still furthermore, instead of a different printing wheel for each numeral here a single printing wheel will be used and the wheel set according to the number to be selected prior to a printing operation and which printing operation in turn will take place just before the ticket is fed into its final discharge position ready for the cutting operation.

In the present embodiment, the tickets 365 of Figs. 11 to 15 inclusive, may correspond to the tickets 327 illustrated in Figs. 1 to 5 inclusive respectively, in size, formation of the pin wheel receiving perforations 366, markings such as the serial numbers 367, and background such as the left-hand area lined to indicate the color red as a background and the right-hand area free from lines to indicate the color white as a background. The tickets 365 however distinguish from the tickets 327 in that here the number indicating the number of patrons to be admitted as for instance the numerals 1, 2, 3, 4 and 5 in Figs. 11 to 15 inclusive only appear once on each ticket instead of being repeated as in the tickets 327. Furthermore these numerals 1 to 5 inclusive here appear in a common column to one another, and on the tickets covering a plurality of patrons the numerals 2, 3, 4 and 5 as an instance appear only in the lowermost area.

The machine for producing these numerals 1 to 5 inclusive on the other hand and as a result of which they are produced as just described differs from the first embodiment primarily in that a single printing wheel, to wit the printing wheel 368 of Fig. 17 is here used having all of the numeral producing type on one and the same type wheel instead of a plurality of type wheels, one for each numeral, as in the first embodiment. Still furthermore the mechanism of the present machine for operatively associating the key rods 75

369 with the printing wheel 368 and the impression producing mechanism contains fewer parts and in other respects of necessity differs from the machine of the first embodiment.

5 The key rods 369 in the present embodiment also correspond in number to the number of different tickets to be produced, five here being shown as an example, with their upper broader shank portions extending through the plate 370 and their lower diminished ends guided in the plate portion 371. The depression of a key rod 369 here will also actuate a rock plate 372 such as the rock plate 36 of the first embodiment to initiate a cycle of operation including the actuation of the movable knife blade 373 similar to the actuation of the movable knife blade 130 of the first embodiment and the ultimate restoration of the mechanism preparatory to the succeeding cycle of operation.

20 The mechanism for the setting of the type wheel 368 preparatory to a printing impression will now be described. Each of the key rods 369 has extending from its side a projection 374. The projections 374 of these rods are disposed at different levels, the one nearest to the left of Fig. 16 being at the lowest level and the others gradually increasing in height with the projection 374 of the key rod 369 farthest to the right at the highest level. These projections 374 are provided to engage the arm 375 of the lever 376 pivoted at 377 with the free end of its arm 378 connected to the flexible cable 379 which extends under the idler 380 for guidance and then extends to and is connected to the drum extension 381 on the side of the type wheel 368 which is rotatably mounted on the shaft 382 fixed in the frame 383. In order to return the type wheel 368 to its normal at rest position, the coil spring 384 connects the shaft 382 with the type wheel 368 as in Fig. 17.

40 Disposed immediately below the type wheel 368 but in engagement with its type there is provided the inking roller 385. The projections 374 are positioned as aforesaid so that when the shoulder 386 engages the plate 371, the number "1" key rod 374, as an instance will have positioned the numeral "1" on the type wheel 368 for printing, and in turn if the number "2" key rod 374 is actuated it will position the numeral "2" on the type wheel 368 for printing, and so on.

50 The bar 387 similar to the bar 70 of the first embodiment is operatively associated to cause the teeth 388 of its rack to engage the teeth 389 of the pinion 390 although in the position shown in Fig. 16 upon lengthwise movement the teeth 388 would clear the teeth 389 and the teeth 388 only engage the teeth 289 when the right-hand end of the arm 387 is depressed as a result of its cammed end 391 engaging one of the camming projections 416, see Fig. 19, on one of the selector plates 392.

60 The selector plates 392 are substantially identical in construction and in operative association as the selector plates 44 of the first embodiment and serve the same purpose. These plates 392 are pivotally mounted and normally spring pressed so that their ears 393 normally extend through the openings 394 in the key rods 374. When a key rod 374 is depressed as for instance the middle key rod 374 of Figs. 18 and 19 operatively associated for actuating the type wheel 368 to position the numeral "3" for printing, the camming projection of the selector plate 392 actuated will extend into the path of movement of the cam face 391 of the bar 387. Thereupon as the result of initiating the drive, not here shown, due to

actuating the plate 372 similar to the plate 36 of the first embodiment, the bar 387 will be actuated to move in a left-hand direction until its cam face 391 engages the camming projection of the plate 392 whereupon its right-hand end will be depressed to cause its teeth 388 to engage the teeth 389 whereupon the pinion 390 will be rotated until the bar 387 reaches its extreme left-hand position. As with the first embodiment the number of tooth spaces advanced will be determined by the distance of travel of the bar 387 after it has been rocked about its pin 396 due to its engagement with a camming projection on a selector plate 392. Thus if the camming projection of the first selector plate to the right has been depressed the distance of travel will correspond to five pins 397 on the pin wheel 398. If the third selector plate 392 from the right has been depressed, as shown in Fig. 18 the distance of travel will be shorter and correspond to three pins 397 on the pin wheel 398. In other words the length of the ticket strip 399 will be determined by the number of teeth 397 which have engaged successive perforations 366 in the ticket strip 399. The return movement of the bar 387 will be effected in the same manner and by mechanism identical to that used in the first embodiment and therefore the description and illustration thereof will not here be repeated.

The impression producing actuation will now be described. In the present instance when the numeral as an instance the numeral "3" as shown in Fig. 18 has been positioned the hammer plate 401 is ready to be released. This hammer plate 401 is pivoted at 402, has an impacting surface 403, and is provided with a recess 404 receiving the pin 405 of the upper arm of the bell crank 406 pivoted at 407. The lower arm of the bell crank 406 is provided with a pin 408, see Fig. 20 and normally engages the lower face of the shelf or ledge 409 formed on the upper edge of the enlarged portion 410 of the bar 387. This pin 408 is disposed beneath and in engagement with the lower face of this ledge 409 in the at rest position of the bar 387, that shown in Fig. 16.

Due to the depression of the right-hand end of the bar 387 when its left-hand end engages and rides on a camming projection 416, see Fig. 19, the hammer plate 401 will be rocked about its pivot pin 402 into the position shown in Fig. 18 against the tension of the spring 411 extending from the abutment 412 to and between the projections 413 and 414 on the hammer plate 401. The ledge 409 remains in engagement with the pin 408 until just before the last tooth 415 starts its advancing movement on the pinion 390, see Fig. 19, so that the hammer plate 401 will be released to be actuated by the spring 411 while the last area of the ticket strip 399 has not been advanced to and beyond the cutting position where the knife 373 is actuated to sever the strip. The printing according to this embodiment will take place on the fly, a practice perfectly feasible and satisfactory when the impressing moment is as infinitesimal as here, with the spring actuated hammer plate 401 especially when as here the bar 387 is actuated by a yoke such as the yoke 60 of the first embodiment and its position consequently is slowed down as the extreme left-hand position is being approached preparatory to returning the yoke 60 to the right, see Fig. 6.

The normal position of the pin 408 as shown in Fig. 19 after the impact has taken place will prepare it ready to be received by the ledge 409

as soon as the camming projection 416 engaged by the bar 387 is retracted and the right-hand end of the bar 387 has again risen, see the dash and dot line position of the bar 387 in Fig. 19.

From the foregoing it will appear that with the ticket dispensed either according to the first embodiment or to the second embodiment, the doorman or ticket chopper may either tear the ticket along the tear defining line in which the perforations 358 of the first embodiment or the perforations 366 of the second embodiment may be located and either retain the white or auditing section as an instance the section 356 of the first embodiment and return the other section as an instance the red section marked 355 of the first embodiment to the patron or else retain both portions. With this type of ticket it is of course obvious that a wrongdoer cannot substitute the colored section as an instance the section 355 for the other section 356 or vice versa. In turn in theatres having a one-price admission for all seats where it has become the practice not to return a portion of the admission ticket to the patron, a ticket made according to the present invention as aforesaid is a deterrent to many of the dishonest practices on the part of unscrupulous employees which have been perpetrated. As an instance the parts of the tickets of admission or theatre stubs which were returned to the patron when entering the theatre were customarily dropped on the floor underneath the theatre seats after the patrons had taken their places. The work associated with the daily collection of the stubs so dropped underneath the theatre seats was not only unpleasant but consumed a great deal of time. Therefore the cost of labor and the consequent cost of theatre operation was no doubt a factor in bringing about the aforesaid practice of not returning a portion of the theatre ticket to the patron. With the development of this latter practice, however, there has been a striking increase on the part of unscrupulous employees to perpetrate various nefarious schemes for defrauding the theatre owner of his just returns for the patrons admitted. Among such practices, it was not unusual for the ticket chopper not to turn in all of the tickets collected, but in some instances to deposit the two halves of one and the same ticket for two successive patrons and to palm the second ticket for an unauthorized resale. With the present two color ticket if the wrong half were deposited, it could, of course, quickly be detected by its color. As a result thereof the auditing department would not have to scrutinize carefully the serial numbers of each half deposited but could select the wrong colored portions by a very superficial inspection. Still furthermore a watcher in the theatre lobby could without difficulty be able to spot the wrongful deposit of the improper half of the ticket by its color.

In the next place, with the second embodiment where the impression is made on the fly, it is of course obvious that due to the harmonic action already referred to resulting from the movement of the yoke 60 by the eccentric 58, as the bar 387 approaches its left-hand end of movement it will have slowed down materially. In addition to this retarded movement of the strip at the time of printing, the fact, that the paper strip 399, preferably composed of paper or cardboard, is yieldable longitudinally, is relied upon for co-operation with the type on the type wheel 368, either composed of metal, rubber or the like, to facilitate the production of an excellent impres-

sion by the impacting plate 401 while the paper 399 is moving at the reduced speed aforesaid, without in any way smearing or blurring the impression produced.

It is of course obvious that the indicia placed on the single area when the ticket is intended for a single patron or in the last area of a ticket when the ticket is intended for a plurality of patrons, may be used to define not only the number of patrons for which the ticket is intended but also define as an instance that that area is located at the end of the ticket without departing from the general spirit of the invention. It is of course also obvious that the mechanism of the second embodiment may be used to print any marking in the sole area when the ticket is intended for a single patron or in the last area when the ticket is intended for a plurality of patrons, other than the marking specifically illustrated in the second embodiment, whereby advantage may be taken of the retarded speed of the feed at the end of the advance stroke in co-operation with a hammer blow impression and a ticket material that is yieldable longitudinally without departing from the general spirit of the invention. It is of course also obvious that the indicia so formed in the sole area when the ticket is intended for a single patron or in the last area when the ticket is intended for a plurality of patrons may be formed on the ticket either before the feed is completed as depicted in the second embodiment or after the feed has been completed and either with the severing operation or immediately thereafter, without departing from the general spirit of the invention.

It is obvious that various changes and modifications may be made in the steps of the method, in the details of the ticket and machine constituting the present invention without departing from the general spirit of the invention as set forth in the appended claims.

I claim:

1. A ticket dispensing machine having a feeding means for advancing different lengths of ticket strip, each length having a succession of unit areas corresponding in number to the number of patrons to be admitted on the ticket, selectors for predetermining the length of strip to be fed, a drive for actuating said feeding means operatively associated with said selectors to be operated whenever one of said selectors is actuated, severing means operatively associated with said selectors for severing the strip at the end of feed of the length selected, and a plurality of individual printing means, one printing means for each selector and operatively associated with its selector to be operated thereby.

2. A ticket dispensing machine having a feeding means for advancing different lengths of ticket strip corresponding to a plurality of unit areas in turn corresponding to the number of patrons to be admitted on the ticket, selectors for predetermining the length of strip to be fed, a drive for actuating said feeding means operatively associated with said selectors to be operated whenever one of said selectors is actuated, severing means operatively associated with said selectors for severing the strip at the end of feed of the length selected, and a plurality of printing means, one printing means operatively associated with each selector and normally out of printing position but operable when its selector is operated, each printing means being operable in a predetermined column on the strip.

3. A ticket dispensing machine having a feed-

ing means for advancing different lengths of ticket strip corresponding to a plurality of unit areas in turn corresponding to the number of patrons to be admitted on the ticket, selectors for predetermining the length of strip to be fed, a drive for actuating said feeding means operatively associated with said selectors to be operated whenever one of said selectors is actuated, severing means operatively associated with said selectors for severing the strip at the end of feed of the length selected, individual printing means for each selector operatively associated with each selector to be operated thereby, and means associated with said feeding means for repeating the printing operation of said printing means a number of times corresponding to a multiple of the minimum length of ticket strip fed out.

4. A ticket dispensing machine having a feeding means for advancing different lengths of ticket strip corresponding to a plurality of unit areas in turn corresponding to the number of patrons to be admitted on the ticket, selectors for predetermining the length of strip to be fed, a drive for actuating said feeding means operatively associated with said selectors to be operated whenever one of said selectors is actuated, severing means operatively associated with said selectors for severing the strip at the end of feed of the length selected, printing means, one operatively associated with each selector normally out of printing position and operable when its selector is operated, each printing means being operable in a predetermined column on the strip, and means associated with said feeding means for repeating the printing operation of said printing means a number of times corresponding to a multiple of the minimum length of ticket strip fed out.

5. The combination of a drive, a ticket strip advancing means operatively associated with said drive, a plurality of selectors having abutments arresting said advancing means at different distances and operatively associated to initiate said drive, a strip severing means operatively associated with said drive to sever the strip at the end of any cycle selected by said selector, printing means including a plurality of printing wheels, each wheel operatively associated with one of said selectors and corresponding to the distances advanced by said advancing means and arranged at different points transversely of the path of movement of the strip, said printing wheels each forming its indicia in an independent column, the distance of movement effected by said advancing means determining the number of printing impressions effected by said printing wheels, said printing impressions being effected successively during the movement of the strip.

6. The combination of a drive for effecting a cycle of operation, a ticket strip advancing means operatively associated with said drive, a strip severing means, a plurality of printing means, means for guiding a ticket strip from a supply successively to said advancing means, printing means and severing means, abutments for arresting said advancing means at different distances to enable said advancing means to advance different lengths of a ticket strip corresponding in length to a multiple of a predetermined minimum length, the size of areas advanced in turn corresponding to the number of patrons to be admitted, and each length corresponding to one of said printing means, a plurality of selectors, each selector operatively associated with one of said

abutments and its associated printing means whereby the actuation of any selector will position one of said abutments to determine the distance of advance of said advancing means and position its associated printing means for actuation, and a control for said drive operable by any one of said selectors to initiate a cycle of operation of the drive thereby in turn to effect a cycle of operation of said advancing means, the printing means positioned by a selector and severing means.

7. In a ticket dispensing machine having a feeding means for advancing different lengths of ticket strip, each length having a succession of unit areas corresponding in number to the number of patrons to be admitted on the ticket, selectors for predetermining the length of strip to be fed, a drive for actuating said feeding means operatively associated with said selectors to be operated whenever one of said selectors is actuated, severing means operatively associated with said selectors for severing the strip at the end of feed of the length selected, and printing means having different type corresponding to the length of strip to be fed, each type corresponding to a different length of strip, said printing means being operatively associated with said selectors to be set according to the selector actuated.

8. In a ticket dispensing machine having a feeding means for advancing different lengths of ticket strip, each length having a succession of unit areas corresponding in number to the number of patrons to be admitted on the ticket, selectors for predetermining the length of strip to be fed, a drive for actuating said feeding means operatively associated with said selectors to be operated whenever one of said selectors is actuated, severing means operatively associated with said selectors for severing the strip at the end of feed of the length selected, a printing wheel operatively associated with said selectors to be set according to the selector actuated, and impact means cooperating with the type selected to impress such type on the ticket immediately before the severing operation.

9. In a ticket dispensing machine having a feeding means for advancing different lengths of ticket strip, each length having a succession of unit areas corresponding in number to the number of patrons to be admitted on the ticket, selectors for predetermining the length of strip to be fed, a drive for actuating said feeding means operatively associated with said selectors to be operated whenever one of said selectors is actuated, severing means operatively associated with said selectors for severing the strip at the end of feed of the length selected, a printing wheel, printing wheel actuating means including a lever operatively associated with and actuated by any one of said selectors according to the selector actuated, and impact means operatively associated with said feeding means to enable said impact means to impress on the ticket the type selected immediately before the severing operation.

10. In a ticket dispensing machine having a feeding means for advancing different lengths of ticket strip, each length having a succession of unit areas corresponding in number to the number of patrons to be admitted on the ticket, selectors for predetermining the length of strip to be fed, a drive for actuating said feeding means operatively associated with said selectors to be operated whenever one of said selectors is actuated,

the drive including a reciprocating bar having an advance and return movement in each cycle of operation and operatively connected to said feeding means to actuate said feeding means during its advance movement, said reciprocating bar being retarded in its movement as it approaches the end of its advance stroke and before starting its return stroke, severing means operatively associated with said selectors for severing the strip at the end of feed of the length selected, a printing wheel, printing wheel actuating means including a lever operatively associated with and actuated by any one of said selectors according to the selector actuated, and spring pressed impact means operatively associated with said feeding means, said feeding means releasing said impact means toward the end of its feeding stroke to enable it under its spring pressed momentum to impress on the ticket the type selected before the feeding movement has been completed and before the severing operation has taken place.

11. The combination of a drive for effecting a cycle of operation, a ticket strip advancing means operatively associated with said drive, a strip severing means, a printing wheel having a plurality of printing means, means for guiding a ticket strip from a supply successively to said advancing means, printing means and severing means, abutments for arresting said advancing means at different distances to enable said advancing means to advance different lengths of a ticket strip corresponding in length to a multiple of a predetermined minimum length, the size of areas advanced in turn corresponding to the number of patrons to be admitted, and each length corresponding to one of said printing means, a plurality of selectors, each selector operatively associated with one of said abutments and said printing wheel whereby the actuation of any selector will cooperate with one of said abutments and actuate said printing wheel to select its associated printing means, and a control for said drive operable by any one of said selectors to initiate a cycle of operation of the drive thereby in turn to effect a cycle of operation of said advancing means, printing means and severing means.

12. The combination of a drive for effecting a cycle of operation, a ticket strip advancing means operatively associated with said drive, a strip severing means, printing means having different type, means for guiding a ticket strip from a supply successively to said advancing means, printing means and severing means, abutments for arresting said advancing means at different distances to enable said advancing means to advance different lengths of a ticket strip corresponding in length to a multiple of a predetermined minimum length, the size of areas advanced in turn corresponding to the number of patrons to be admitted, and each length corresponding to one of said type, a plurality of selectors, each selector operatively associated with one of said abutments and said printing means whereby the actuation of any selector will cooperate with one of said abutments and actuate said printing means to select its associated type, and a control for said drive operable by any one of said selectors to indicate a cycle of operation of the drive thereby in turn to effect a cycle of operation of said advancing means, printing means and severing means.

BENJAMIN H. FREEDMAN.