May 29, 1951 R. H. HELSEL 2,554,827

TICKET ISSUING MACHINE

Filed May 1, 1945 4 Sheets-Sheet 1

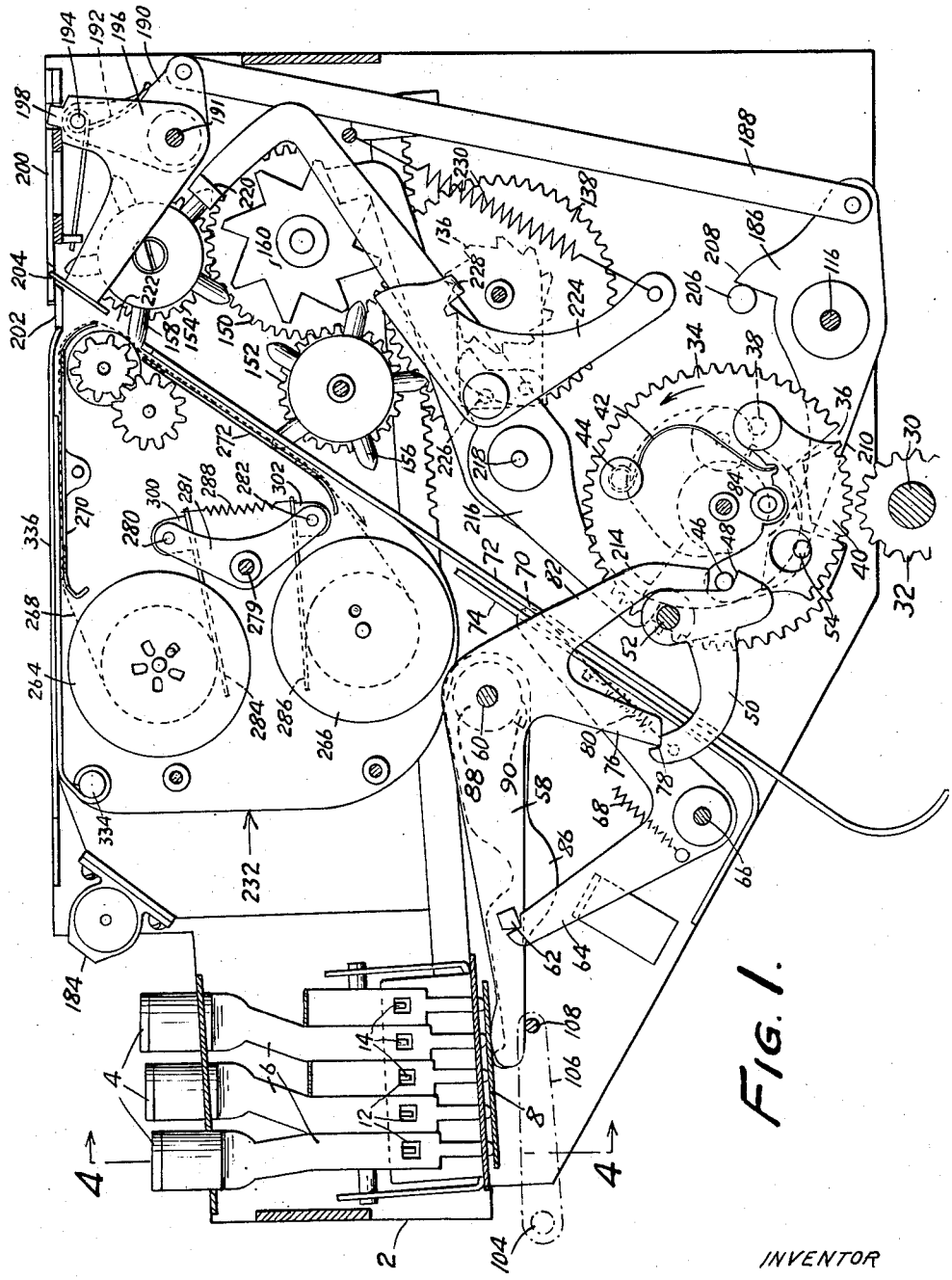


FIG. 1.

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TICKET ISSUING MACHINE

Filed May 1, 1945 4 Sheets-Sheet 2

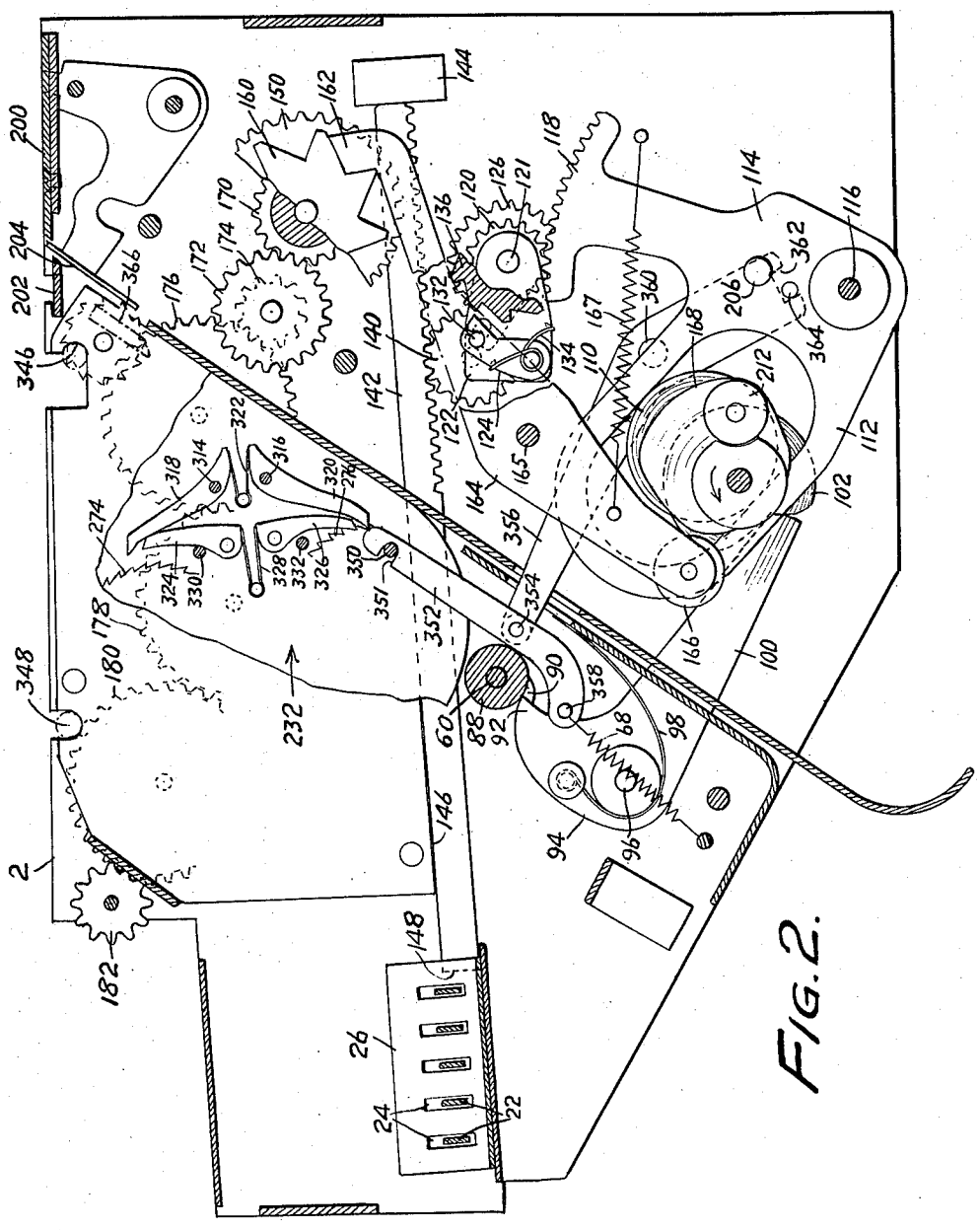


FIG. 2.

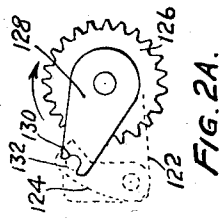


FIG. 2A.

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TICKET ISSUING MACHINE

Filed May 1, 1945 4 Sheets-Sheet 3

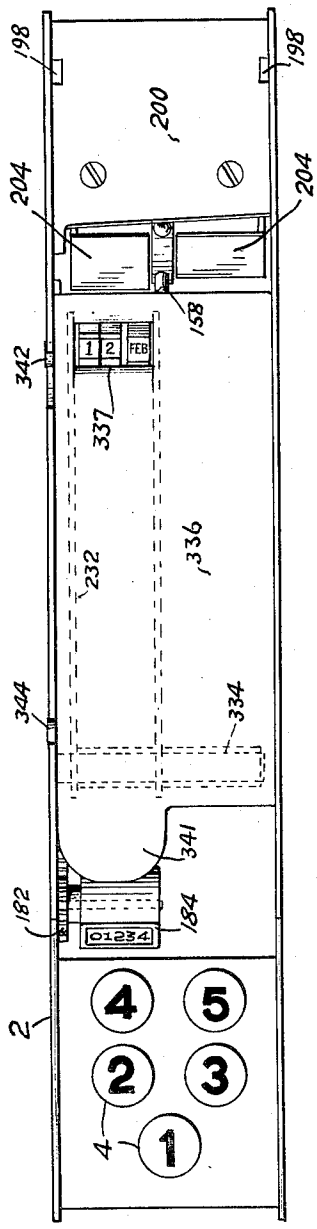


FIG. 3.

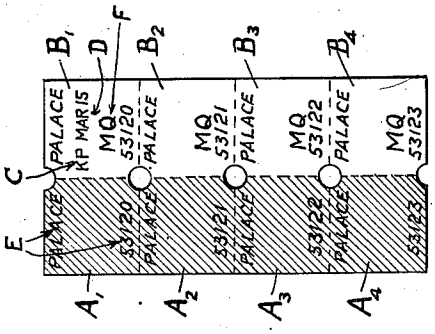
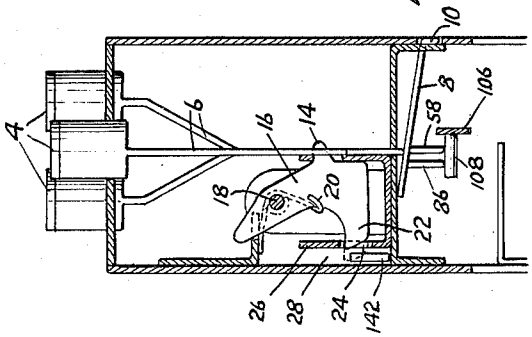


FIG. 9.

FIG. 4.



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TICKET ISSUING MACHINE

Filed May 1, 1945 4 Sheets-Sheet 4

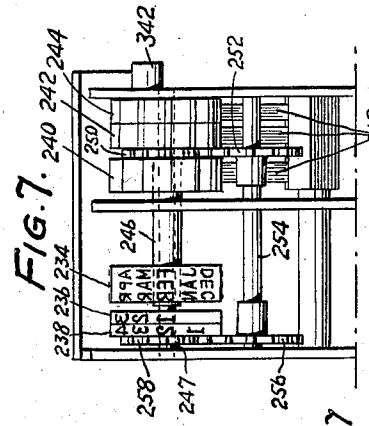


FIG. 7.

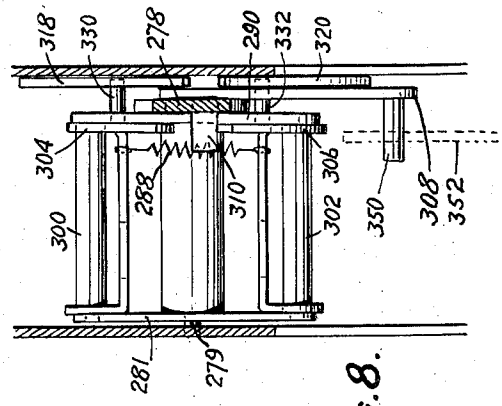


FIG. 8.

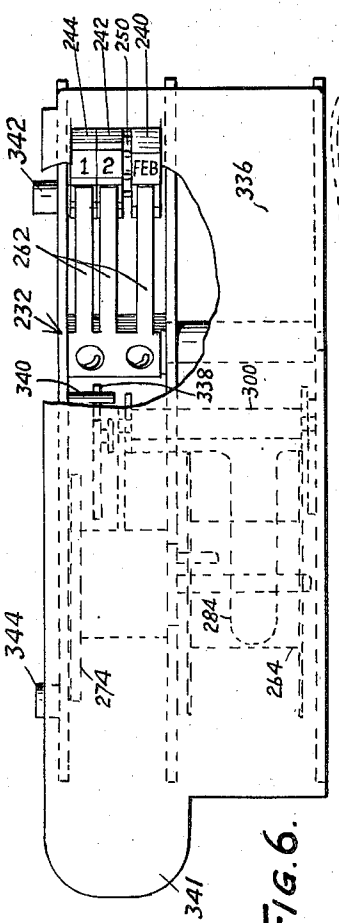


FIG. 6.

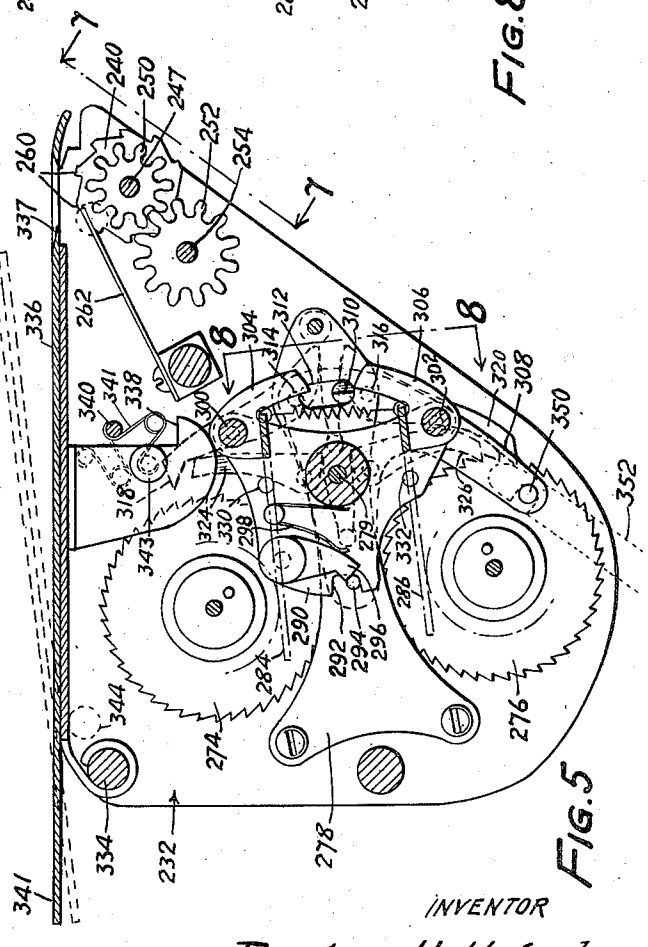


FIG. 5.

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Patented May 29, 1951

2,554,827

UNITED STATES PATENT OFFICE

2,554,827

TICKET ISSUING MACHINE

Reuben H. Helsel, Long Island City, N. Y., assignor, by mesne assignments, to General Register Corporation, Long Island City, N. Y., a corporation of New York

Application May 1, 1945, Serial No. 591,383

10 Claims. (Cl. 164—49)

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This invention relates to a ticket issuing machine and particularly the type of machine designed to issue tickets for places of amusement, such as motion picture theaters.

The machine of the present invention is designed to issue tickets from continuous partly preprinted ticket strips and specifically to print thereon the date and/or other markings such as code numbers to identify the particular ticket issuing machine used, the period of issuance, the denominations of the tickets or the like.

One object of the present invention is the provision of a ticket issuing machine adapted to provide printing on the tickets in an improved fashion to insure clarity of impression and the issuance of a ticket which can be handled immediately without blurring of the printed matter or the inking of the fingers. In accordance with this object of the invention, there is provided an improved means for controlling the step-by-step advance of an inking ribbon, the inking means being contained in a readily removable unit securely held in place for the printing operation but automatically coupled, when it is placed in the machine with, an operating mechanism.

Further objects of the invention relate to various features of the machine which may be used in machines which do not print as well as those which do. One of these objects is to provide an improved ticket feeding means in which the ticket strip passes in straight condition through the machine without being deflected in the usual fashion about a pinwheel. In particular, the machine is designed to issue tickets which, as contrasted with ordinary tickets heretofore in common use, are relatively wide across the ticket strip but narrow in the direction of the strip so that tearing by the ticket taker is effected longitudinally of the strip. The machine is preferably designed to issue one or more tickets as a unit in a single cycle of operation.

Another object of the invention relates to an improved cycle controlling mechanism for effecting the issue of one or more tickets. This is applicable to either machines of the printing or non-printing type.

A further object of the invention relates to improved control of the ticket strip in the vicinity of the severing knives so as to prevent the possible catching of the tickets by the knives, made possible by the location of the feeding means closely adjacent to the knives.

The foregoing and other objects of the invention particularly relating to details will become

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apparent from the following description read in conjunction with the accompanying drawings in which:

Figure 1 is a longitudinal sectional view through a unit of the preferred type;

Figure 2 is a similar sectional view but taken on a plane behind that illustrated in Figure 1;

Figure 2A is a fragmentary detail provided for the purpose of clarifying the operation for the means for controlling the issue of various numbers of tickets in a single cycle of operation;

Figure 3 is a plan view of the unit with the fixed knife removed;

Figure 4 is a fragmentary transverse section taken on the plane the trace of which is indicated at 4—4 in Figure 1;

Figure 5 is a longitudinal sectional view through the inking and type unit of the machine;

Figure 6 is a plan view of the same, partly broken away to show details;

Figure 7 is a fragmentary view of the inking and type unit viewed in the direction indicated at 7—7 in Figure 5;

Figure 8 is a fragmentary section taken on the plane the trace of which is indicated at 8—8 in Figure 5; and

Figure 9 is a plan view of a typical group of tickets issued in a single operation of the machine.

As is customary in connection with theater ticket issuing machines, a number of units are designed to be arranged side by side in a suitable housing so as to issue tickets of different denominations. These associated units, as is also customary, are designed to be operated by a single motor through the medium of a common transverse shaft and are so arranged that operation of any one of them will be effective to close the motor circuit. Each unit is provided with its individual clutch so that it may be operated independently of the other units and, if desired, a number of units may actually operate simultaneously. Inasmuch as the units are duplicates of each other and the association with each other is essentially conventional, there is illustrated in the present case only a single unit with indications of the fashion in which it is conventionally associated with other units.

The ticket issuing unit is relatively narrow and its transverse direction is little greater than the width of the ticket strip which it handles. The unit comprises a casing consisting of suitable side plates and intermediate framework joining them and mounting the movable parts. This

casing is generally indicated by the numeral 2 and need not be described in detail.

The machine as illustrated is designed to issue selectively one to five tickets through the manipulation of keys indicated at 4. Each of these keys is provided with a stem 6 mounted in the frame with the lower ends of the stems located above the tiltable plate 8 which is pivotally mounted in the casing through the medium of ears indicated at 10 passing through suitable openings. Each of the key stems is provided with an opening 12 through which extends an ear 14 of an individual lever 16, these levers being pivoted upon a rod 18 and individually urged in a counterclockwise direction as viewed in Figure 4 by a spring 20. Each of the levers 16 is provided with an extension 22 arranged to pass through a slot 24 in a plate 26 which, in conjunction with a side plate of the frame, provides a narrow channel 28. Extending below all of the associated units in the usual fashion is a shaft 30 driven by the motor. This shaft 30 carries individual pinions 32, one for each unit, adapted to mesh with main driving gears 34 in the units when the units are properly located in the housing. The gear 34 is discontinuous as indicated at 36 and pivoted thereon is a gear segment 40 which, when the unit is stationary, is radially withdrawn so as to be out of mesh with the associated pinion 32. A spring 42 reacting between a fixed pin 44 on the gear 34 and the segment 40 urges the segment toward a meshing position in which its teeth would be continuous with the teeth of the gear 34. It is normally restrained against the action of the spring 42 by reason of engagement of a pin 46 carried by the segment with a ledge 48 formed on a lever 50 pivoted on a fixed pin 52. A pin 54 carried by the gear 34 is located within an opening in the segment and limits the motion of the segment when released so that its teeth will form a continuous circle with the teeth of the gear.

A lever 58 pivoted on a fixed pin 60 has its forwardly extending arm located beneath the plate 8. This lever is provided with a lug 62 which is arranged to be engaged by one arm 64 of a lever pivoted at 66 and provided with another arm 70 which, in the absence of a ticket strip between the guides 72 and 74, will extend through a pair of slots in these guides. This condition, involving the absence of a ticket strip is illustrated in Figure 1. Under these conditions the lever arm 64 urged clockwise by a spring 68 will prevent operation of the machine by holding the lever 58 against counterclockwise rotation. If, however, a ticket strip is present, this detent lever will be rocked counterclockwise so as to clear the lug 62.

When the machine is at rest a depending arm 76 of the lever 58 engages a notch 78 in the lever 50, holding it against the action of the spring 80 so as to maintain the ledge 48 in position to hold the pin 46. A third arm 82 is provided on the lever 58 in a plane clearing the path of pin 46 and is arranged as hereafter described to be engaged during the cycle of operation by a roller 84 carried by the gear 34.

A second lever 86 also pivoted on the pin 60 is, like the lever 58, arranged to underlie the plate 8. This lever 86 is provided with a hub 88, see Figure 2, having a projection 90 engaging one arm 92 of a lever 94 mounted on a fixed pivot 96 and normally urged in a counterclockwise direction by a spring 98. A downwardly and rearwardly extending arm 100 of the lever 94 is arranged to be acted upon by a cam 102 secured to the gear 34.

For the purpose of controlling the motor switch of the machine a shaft 104 extends transversely of the housing and is provided at the location of each unit with an arm 106 carrying a transverse pin 108 underlying the forwardly extending arms of both the levers 58 and 86. The switching arrangement is conventional and need not be described and it will suffice to state that the motor switch is closed to energize the motor when the shaft 104 is rocked clockwise from the position illustrated in Figure 1.

The gear 34 carries an eccentric 110 which operates in a yoke 112 forming part of a lever 114 pivoted on a fixed pin 116. This lever 114 carries a gear segment 118 which meshes with a pinion 120 mounted upon a transverse pin 121. Secured to the pinion 120 is an arm 122 on which is pivoted a pawl 124. Also mounted on the pin 121 is a second pinion 126 which carries an arm 128 provided at its outer end with a notch 130, as illustrated in Figure 2A, in which is adapted to seat the pin 132 which is carried by the pawl 124 and passes through a slot in the arm 122. A strong spring 134 urges the pawl clockwise as viewed in Figures 2 and 2A to yieldingly maintain the pin 132 in the notch. As will be evident from Figure 2A, the upper wall of this notch is short and rounded so that if the pawl is forcibly moved clockwise when the arm 128 is held stationary, the pin 132 may snap out of the notch.

A ratchet 136 is pivoted on the pin 121 and is arranged to be engaged by the pawl. This ratchet 136 carries a gear 138 through which feeding movements are imparted to the ticket strip as described hereafter.

The pinion 126, see Figure 2, meshes with an intermediate pinion 140 which, in turn, meshes with a rack 142 guided for sliding movement in the unit by the lower edge 146 of a frame plate and by engagement of its forward end 148 in the bottom of the channel 28 previously mentioned. A stop 144 is provided for the rear end of the rack for the purpose hereafter described.

The gear 138 meshes with the gear 150 which, in turn, meshes with a pair of pinions 152 and 154 which carry pin wheels 156 and 158 arranged to enter holes in a ticket strip guided above the guideway 72. The gear 150 carries a star wheel 160 between the teeth of which there engages the end 162 of a lever 164 pivoted at 165 and provided with a follower roller 166 arranged to cooperate with a cam 168 carried by the gear 34. This lever 164 is urged in a counterclockwise direction by means of a spring 167.

The gear 150 carries a pinion 170 which, through an intermediate set of pinions 172, 174, 176, 178 and 180, drives the pinion 182 of the counter 184 which is located at the forward end of the unit where it will be visible through a suitable opening in the top plate of the machine housing. This counter registers the issue of tickets.

A lever 186, mounted loosely on the pin 116, is connected by a link 188 to a lever 190 normally urged in a counterclockwise direction by a spring 192 and connected through the medium of a transverse pin 194 to side levers 196 which are engaged as indicated at 198 with openings in a slidably mounted movable knife 200 arranged to cooperate with a fixed knife 202 to sever groups of tickets from the ticket strip, the opening between these knives being located in alignment with the straight path of the ticket strip. In

order to provide auxiliary guidance for the advancing end of the ticket strip to insure against its possible catching under the movable knife 200 the ticket guideway is continued by the provision of a pair of plates 204 flanking the pinwheel 158 and carried by forwardly extending arms of the levers 196. As will be evident from Figure 1, these plates 204 project upwardly in the path of the movable knife blade 200. They normally occupied this position but by reason of the fact that they are carried by the levers 196 they are withdrawn downwardly at the time the knife blade moves forwardly in its cutting operation so as to clear its path. Knife retracting movements are imparted to the lever 196 by engagement with an extension 208 thereon of a pin 206 carried by the yoke 114. A forwardly extending arm 210 of the lever 186 is arranged to be acted upon by a roller 212 secured to the gear 34 for the purpose of driving the knife in its cutting movement. A cam 214 carried by the gear 34 acts upon the lower end of a lever 216 pivoted on a pin 218 and provided at its upper end with a hammer or ticket striking member 220 which is arranged to be projected through the gap 222 between the upper end of the guide plate 72 and the lower end of one of the guide plates 204. A lever 224 pivoted at 226 to the lever 216 is provided with a laterally extending ear 228 engaging the lower side of the lever 216 and is urged in a counterclockwise direction by a strong spring 230. In the position illustrated in Figure 1, the lever 216 is cocked and, as will be evident, upon the first movement of the gear 34 in a counterclockwise direction will drop off the cam 214 whereupon the spring 230 will forcibly cause the hammer 220 to strike the back of the ticket strip. The purpose of the connection between spring 230 through the lever 224 with the lever 216 is to permit the lever 216 to overrun the pull of the spring 230, thereby striking the ticket strip a sharp blow but being, following the blow, under a condition of exerting only a very light, if any, pressure upon the ticket strip impeding its advance, the lever 224 being arrested in its forward movement by engagement with a suitable stop such as the hub of the pinwheel 156.

For the purpose of providing the ink to print the ticket strip a ribbon of the conventional type used in typewriters, except for width, is used. This inking ribbon and the type are mounted in a separate unit indicated generally at 232 and comprising suitable supporting plates with transverse connecting members.

In the printing unit are mounted type wheels 234, 236 and 238, respectively, carrying type indicative of months and the tens and units integers for indicating days. These wheels are connected to ratchet wheels 240, 242 and 244 which carry proper corresponding markings visible through an opening 337 in the top of the unit. The ratchet wheel 240 is connected to the type wheel 234 by a sleeve 246. This sleeve 246 is mounted on a shaft 247 to which are secured the ratchet 244 and the type wheel 236. The ratchet 242 is connected through the pinions 250 and 252 and the countershaft 254 and pinions 256 and 258 to the type wheel 238, the arrangement being such that the unit wheels are connected together and the tens wheels are also connected together. Detent springs 262 engage the ratchets to hold them yieldingly in adjusted positions wherein they indicate to the operator the settings of the type wheels for printing.

Reels 264 and 266 support the inking ribbon

268 which passes about guide plates 270 and 272 around the faces of the type wheels between them and the opening 222 through which projects the hammer 220 when operative. Ratchet wheels 274 and 276 are arranged to drive respebtively the reels 264 and 266. In the frame, including intermediate frame member 278, there is mounted on a pin 279 a rocking assembly comprising a member 281 and a second member 290 joined by a central post which is pivoted on the pin 279. Yokes 300 and 302 are mounted in this rocking frame as indicated at 280 and 282 and are provided with feeler extensions 284 and 286 designed to bear upon the portions of the ribbon wound on the reels 264 and 266. A spring 288 urges these two fingers in contact with the ribbon.

The plate 290 is provided with a notch 292 receiving a fixed pin 294. Projecting centrally into this notch is the pointed end of a pawl 296 pivoted on plate 290 and acted upon by a spring 298 to define, in conjunction with the notch, alternate seats for the reception of the pin which, upon rocking of the frame will serve to latch it by engagement on one side or the other of the point of the pawl.

The yokes 300 and 302 are respectively provided with extensions 304 and 306 which are arranged on opposite sides of a pin 310, flattened on one side, which is carried by a lever 308 pivoted on the pin 279. The pin 310 projects through a slot 312 in the frame member 278 into the plane of the extensions 304 and 306. Pivoted at 314 and 316 respectively on the lever 308 are pawls 318 and 320 arranged to act upon the teeth of the ratchets 274 and 276. These pawls are urged toward active position by a U-shaped spring 322 acted upon their rear ends.

Detents 324 and 326 are pivoted on the frame so as to come between the pawls 318 and 320 and the ratchets with which they cooperate. A spring 328 normally urges these detents toward positions to cooperate with the teeth of the ratchet. Pins 330 and 332 are carried by the oscillating frame and are arranged to engage the detents to move them alternately out of engagement with their respective ratchets and, at the same time, remove the pawls from engagement, the latter being forced outwardly by the corresponding inactive detents.

The operation of the ribbon advancing means just described is as follows:

As illustrated in Figure 5 the ratchet 276 is being operated upon to cause the take up of the ribbon in the corresponding reel 266. Under these conditions the plate 290 and its associated parts are yieldingly latched by the location of the pin 294 in the lower portion of the slot 292 on the underside of the detent 296. Oscillatory movements are imparted in each cycle of the machine as described hereafter to the lever 308. The pawls 318 and 320 have corresponding strokes and the pawl 320 is free to act upon its ratchet 276 by reason of the fact that due to the clockwise position of the plate 290 the pin 332 is withdrawn from engagement with the detent 326 which is also in position to engage the teeth of the ratchet 276. The strokes of the pawl 320 accordingly advance step by step, the lower reel and reverse movements thereof as the pawl moves on its withdrawing strokes are prevented by the detent 326. At this time, however, the pin 330 occupies a clockwise position so as to engage the detent 324 and through it the pawl 318 so as to render both the detent and pawl inoperative, the

pawl making idle movements guided by the end of the detent.

At the same time, the pin 310 oscillates through the slot 312, during the period illustrated, missing in its oscillation both the extensions 304 and 306 of the feeling members.

As the amount of ribbon on the reel 264 decreases the feeler extension 284 gradually moves clockwise until eventually the extension 304 is brought into the path of movement of the pin 310. When this occurs the pin 310 will strike the extension 304 and in so doing will rock the plate 290 and associated parts against the yielding action of the detent 296 so that it will snap to a counterclockwise position in which the pin 294 will be located above the nose of the detent 296 in the upper end of the slot 292. The result of this will be to release the detent 324 and the pawl 318 to their operative positions by withdrawal of the pin 330 and, at the same time, the pin 332 will raise the detent 326, and through it the pawl 320, to their inactive positions. Accordingly, the ratchet 274 will then be operated to reverse the direction of movement of the ribbon until a corresponding action occurs on the other side by engagement of the pin 310 with the extension 306 when the amount of ribbon reeled upon the lower reel is reduced to a predetermined extent. The result of this action is to cause the ribbon to move step by step back and forth to present a new portion to the type upon each operation of the machine.

For convenience of removal and location of the printing unit there is pivoted upon a pin 334 a top plate 336 which is provided with the opening 337 previously mentioned. A hook 338 on this top plate is adapted to engage a fixed pin 340 when the top plate is raised. When the top plate is raised by depression of its tail portion 331 its main portion rises upwardly to the dotted line position illustrated in Figure 5 and this may be grasped to remove the unit. The top plate is held both yieldingly closed and yieldingly open by the use of a strong spring 341 acting between the pin 340 and the pin 343 on the hook 338. In passing between the positions assumed in the open and closed conditions of the top plate this spring is compressed giving rise to a resistance to both movements.

In order to latch the printing unit in position it is provided with pins 342 and 344 at its upper edge which are respectively engageable in the bayonet slot 346 and the notch 348 in the machine frame. This arrangement, as will be evident from consideration of Figure 2, is such that when the printing unit is to be removed it must first be rocked in a clockwise direction to carry the pin 344 out of the notch 348 whereupon it may be moved forwardly and lifted out. An opposite sequence of manipulations occurs in placing it in position. The arrangement of the pin 344 in the notch 348 provides a rigid backing for the unit when the printing blow is struck by the hammer 220.

For the purpose of imparting oscillating movements to the lever 308 this lever is provided with a pin 350 which engages a notch 351 in the upper end of lever 352 pivoted at 354 to a lever 356 and acted upon at 358 by the spring 68 referred to above, the lower end of which is connected to the lever 64. By reason of the bent lower end of the lever 352 it will be clear that the spring 68 not only tends to pull the lever 352 downwardly but also holds it in a counterclockwise position for interengagement with the pin 350. The movements referred to above involved in taking out or replacing the printing unit in the machine serve to disengage or reengage the pin 350 in the notch 351.

The lever 356 is pivoted at 360 in the machine and this lever at its rearward end is provided with a notch 362 within which projects the pin 364 carried by the oscillating yoke 114. The movements of this yoke accordingly serve to impart through the levers 356 and 352 the motions to the lever 308 required to move the ribbon.

In the operation of the machine the parts are originally in the positions illustrated in the various figures. The gear segment 40 of the clutching mechanism is withdrawn from mesh with the pinion 32 so that the shaft 30 is free to operate other units of a group without affecting the idle units. A ticket strip located in the guideway is held with its upper edge at the position of the knives by engagement by the pins 156 and 158 which are so arranged that the strip is at all times engaged by at least one pin. The movable knife 200 is in its withdrawn position. The hammer 220 is cocked against the action of spring 230 by the retention of the lever 216 on the cam 214. The yoke 114 is in its rearmost position as is also the case of the rack 142 which rests against the stop 144. The pin 132 is located in the notch 130 of the arm 128.

Assume the depression of the key which effects the issue of two tickets in a cycle of operation. This key will be the one the stem of which is the second from the left in Figure 1.

The depression of this key will lower the plate 8 and force downwardly both the levers 58 and 86 which, in turn, by engaging the pin 108 will rock the shaft 104 to close the motor switch. The countershaft 30 is thus caused to rotate under power.

The counterclockwise rocking of lever 58 (which is not prevented by the lever 64 so long as a ticket strip is in the machine) will release the lever 50 for clockwise movement and the gear segment 40 will then be moved into mesh with the pinion 32 under the action of spring 42. Thus a power connection is afforded for the driving of the unit.

As rotation of the gear 34 and its associated parts begins, the eccentric 119 is on dead center so that the oscillation of the yoke 114 begins quite slowly. The first active event in the operation of the machine, following immediately upon the beginning of rotation of gear 34 is the release of lever 216 by the cam 214. The result of this release is the striking of a sharp blow against the ticket strip by the hammer 220 forcing it against the inking ribbon and the type backing up the ribbon so as to imprint the desired indicia on the leading ticket of the group to be issued. The arrangement as described above is such as to produce a very sharp blow under the action of the spring 230 and the inertia of the hammer followed by a condition of the hammer in which it is either released from the ticket or presses thereon only very lightly.

As the yoke 114 swings counterclockwise, the pinion 120 is driven clockwise, the pawl 124 carrying with it the arm 128 by reason of the releasable engagement of the pin 132 in the notch 130. The result of this is to drive the rack 142 forwardly through the pinion 140. The motion of this rack is initially unopposed and consequently there is no substantial force exerted which would disengage the pin 132 from the notch 130. As a result the pawl 124 is held outwardly to avoid

engagement with the teeth of the ratchet 136. Before the forward end 148 of the rack reaches the position of the rearmost lever 16 the follower 166 on lever 164 will ride sufficiently up the cam 168 to disengage its end 162 from the star wheel 160 so that the pinwheels engaging the ticket strip will be free to be revolved.

The depression of the key will have resulted in the rocking of the corresponding lever 16 clockwise as viewed in Figure 4 so as to project its end 22 across the channel 28 in the path of the rack 142. Depression of the key will cause its opening 12 to clear the ear 14 of its lever and the result of this is to lock the lever 16 in its new position while, at the same time, the spring 20 will exert through the lever 16 sufficient friction on the key stem to prevent accidental rise of the key despite the urge of a spring tending to open the motor switch.

When the rack 142 is moved sufficiently far forwardly to cause its end 148 to engage the projected lever 16 its forward movement is positively arrested and, in turn, this produces a stoppage of the arm 128. Since a positive driving movement is imparted to the pawl 124, the result of this will be to snap the pin 132 out of the notch 130, which release of the pawl will permit it to drop into engagement with one of the teeth of ratchet 136. The parts are so designed that the driving of the ratchet by the pawl through the remaining part of the forward movement of the rack 142 will cause the pinwheels to be advanced through the intermediate gearing to an extent to carry the length of two tickets beyond the line of action of the knives. The forward movement of the rack 142 ceases with the forward dead center position of the eccentric 110.

Immediately following the attainment of the forward dead center position the lever 164 will be released by the cam 168 resulting in positioning of the end 162 of the lever between teeth of the star wheel 160. This positioning of the end of the lever not only locks the pinwheels in position but insures a definite alignment of the ticket strip in proper fashion with the knives. In general, this alignment will only be approximate due to the action of the pawl 124 on the ratchet 136 and it is desirable that a quite accurate alignment be achieved in the fashion just indicated.

Following this alignment of the ticket strip the roller 212 acts upon the forward end of the lever 186 to move the knife 200 forwardly to sever the strip. As this movement begins, the plates 204 which have heretofore guided the ticket strip will move downwardly to clear the path of the knife so that it may perform its ticket severing operation. At the end of the cycle the knife is retracted by the action of the pin 206 as the yoke 114 attains its rearmost position and, at the same time, the plates 204 are restored to their normal ticket guiding position, shielding the ticket strip from the edge of the movable knife.

The termination of the cycle of operation is controlled during the rearward oscillation of the yoke 114 by a series of operations as follows:

First is the engagement of the arm 82 of lever 58 by the roller 84. This serves to raise the lever 58 forcing the plate 8 upwardly and so restoring the depressed key to its upper position. At the same time, by the action of the arm 76 on the forward arm of the lever 50, this lever is moved counterclockwise to present ledge 48 in the path of the pin 46. The rocking of the lever 58 just described occurs well prior to the end of the cycle and provision must be made to hold the motor circuit closed until the end of the cycle. This result is achieved through the fact that the arm 100 will have been acted upon by the cam 102 to maintain forcibly lowered the lever 86 through the action of the end 92 of lever 100 upon the projection 90 of the hub 88. Just prior to the end of the cycle the lever 100 will drop off the cam 102 releasing the lever 86 to permit the motor switch to open. The final and substantially simultaneous operation of the cycle involves engagement of the pin 46 with the ledge 48 to withdraw the segment 40 from the pinion 32 which will continue to revolve to some extent due to overrun of the motor. It may be noted that reverse movement of the gear 34 and its associated parts is prevented by the engagement of the lever 100 behind the cam 102.

The restoration of the driving pawl arrangement at the end of the cycle of operation is effected by the arrest of the rack 142 by the stop 144. As the rearward movement of the pawl 124 takes place it will ride freely over the ratchet teeth 136 and the pin 132 will engage the upper surface of the arm 128 pulling it in counterclockwise direction to drag backwardly the rack 142. When the rack is arrested, however, the pin 132 will be cammed outwardly by the surface of the arm 128 and will snap into the notch 130. Thus the pawl and its associated parts are restored to initial position.

During the advance of the ticket strip the counter 184 will be correspondingly operated through the intermediate gearing from the pinion 170. Advancing movements are imparted to the inking ribbon in the fashion described above by reason of the oscillation imparted to the link 352 by the action of the pin 364 carried by the yoke 114.

The fashion in which different numbers of tickets are issued in a cycle of operation will be clear from the above. The number of tickets issued depends upon the interval following arrest of the rack 142 preceding the attainment of forward dead center position by the yoke 114. If arrest occurs by the rearmost lever 16, five tickets will be issued, the pawl 124 engaging the ratchet 136 very soon after the forward oscillation of the yoke 114 begins. On the other hand, if this engagement of the ratchet by the pawl is delayed until the rack 142 reaches the most forward lever 16 only one ticket will be issued. The intermediate numbers of tickets are fed by varying intermediate arresting times of the rack 142.

The recocking of the hammer 220 may begin almost any time after the beginning of the cycle and preferably takes place through an elongated rise of the cam 214 so as to impose a minimum load on the driving mechanism.

The type of ticket for which the machine is particularly adapted is illustrated in Figure 9 which shows a ticket strip consisting of four tickets issued in a single cycle of operation. This ticket is of the so-called wide variety in which each ticket is adapted to be torn into two parts along a scored or perforated line running lengthwise of the ticket strip. In some cases the ticket strip may be provided with transverse perforations or scorings desirably running centrally through the feeding holes. In other cases these transverse weakened lines may be omitted. The four tickets illustrated in Figure 9 comprise left hand areas A_1, A_2, A_3 and A_4 which are to constitute the checks to be removed from the ticket strip and given to the patron by the doorman. The other areas B_1, B_2, B_3 and B_4 are to be re-

tained by the doorman. These two sets of areas may be imprinted with different colors or designs to enable them to be readily distinguished. Both may be preprinted as indicated with such matter as the name of the theater and serial numbers indicated at E. Additionally, the portions to be retained by the doorman may be preprinted with suitable indicia such as indicated at F indicative of the ticket supply used.

The machine prints additional indicia such as indicated at C and D. What is printed at C for example, may be some code markings characteristic of the ticket issuing machine carried by a slug type indicated at 366 in Figure 2 located in the machine adjacent to the dating wheels. The date indicated at D is printed by the wheels previously described. In accordance with the present invention this data is printed only on the first ticket of an issued group. The various indicia mentioned are utilized in the conventional accounting procedures which need not be described. It will, of course, be evident that the type of printing which is effected may be substantially changed without departing from the invention. The number of tickets issued in a cycle may be printed, if desired, following the system disclosed in my Patent 2,325,054.

While the machine may be arranged to issue tickets of the type illustrated in Figure 9 it is evident that the mechanisms of the machine may be readily adapted to print and issue tickets of the usual type which have their major length in the direction of the length of the ticket strip and which are generally severed transversely to provide the portions given to the patron and retained by the doorman. Various features of the invention are also applied to machines which issue preprinted tickets without printing action in the machine itself. The machine is smooth and quiet in operation and in particular by feeding a ticket strip without bending the same about a pinwheel avoids feeding difficulties inherent in the class of machines which impart curvature to the strip.

It will be evident from the above that various changes may be made in details of construction and operation without departing from the invention as defined in the following claims.

What I claim and desire to protect by Letters Patent is:

1. A ticket issuing machine comprising means for feeding a ticket strip, driving means, engageable means for coupling the driving means to the feeding means to drive the latter, and means for delaying the coupling of the driving means to the feeding means for predetermined variable intervals after the beginning of a cycle of operation, thereby to control the issuance of variable lengths of the ticket strip in a cycle, the last mentioned means comprising a member subject to variable arrest of movement during the earlier portions of a cycle of operation.

2. A ticket issuing machine comprising a guideway, means for advancing a ticket strip along the guideway, severing means located beyond the exit end of the guideway, and means arranged to provide an extension of the guideway to shield the ticket strip during its advance from engagement with the severing means.

3. A ticket issuing machine comprising a guideway, means for advancing a ticket strip along the guideway, severing means located beyond the exit end of the guideway, and means arranged to provide an extension of the guideway to shield the ticket strip during its advance from engagement with the severing means, and means for moving said shielding means from a position of interference with the severing means during a severing operation.

4. A ticket issuing machine comprising a guideway, means for advancing a ticket strip along the guideway, severing means located beyond the exit end of the guideway, and means arranged to provide an extension of the guideway to shield the ticket strip during its advance engagement with the severing means, and means connecting the severing means and the shielding means for moving said shielding means from a position of interference with the severing means during a severing operation.

5. A ticket issuing machine comprising means for feeding a ticket strip, driving means, a member releasably connected to the driving means to be driven thereby, means for arresting movement of said member, the member first moving with the driving means while connected thereto but the connection being disrupted when the member is arrested so that thereafter the driving means moves independently of the member, and means rendered operative upon release of the member from the driving means to couple the driving means to the feeding means to advance the ticket strip.

6. A ticket issuing machine comprising means for feeding a ticket strip, driving means, a member releasably connected to the driving means to be driven thereby, selective means for arresting movement of said member after predetermined variable movements thereof, the member first moving with the driving means while connected thereto but the connection being disrupted when the member is arrested so that thereafter the driving means moves independently of the member, and means rendered operative upon release of the member from the driving means to couple the driving means to the feeding means to advance the ticket strip.

7. A ticket issuing machine comprising means for feeding a ticket strip, driving means, a member releasably connected to the driving means to be driven thereby, key controlled means for arresting movement of said member, the member first moving with the driving means while connected thereto but the connection being disrupted when the member is arrested so that thereafter the driving means moves independently of the member, and means rendered operative upon release of the member from the driving means to couple the driving means to the feeding means to advance the ticket strip.

8. A ticket issuing machine comprising means for feeding a ticket strip, driving means, a member releasably connected to the driving means to be driven thereby, key controlled selective means for arresting movement of said member after predetermined variable movements thereof, the member first moving with the driving means while connected thereto but the connection being disrupted when the member is arrested so that thereafter the driving means moves independently of the member, and means rendered operative upon release of the member from the driving means to couple the driving means to the feeding means to advance the ticket strip.

9. A ticket issuing machine comprising means for feeding a ticket strip, driving means, a member releasably connected to the driving means to be driven thereby in one direction, means for arresting movement of said member, the member first moving with the driving means while con-

nected thereto but the connection being disrupted when the member is arrested so that thereafter the driving means moves independently of the member, means rendered operative upon release of the member from the driving means to couple the driving means to the feeding means to advance the ticket strip, and means for returning said member to its initial position and for reestablishing its connection to the driving means.

10. A ticket issuing machine comprising means for feeding a ticket strip, driving means, a member releasably connected to the driving means to be driven thereby in one direction, selective means for arresting movement of said member after predetermined variable movements thereof, the member first moving with the driving means while connected thereto but the connection being disrupted when the member is arrested so that thereafter the driving means moves independently of the member, means rendered operative upon release of the member from the driving means to couple the driving means to the feeding means to advance the ticket strip, and means for returning said member to its initial position and for reestablishing its connection to the driving means.

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