March 18, 1947. R. H. HELSEL 2,417,596

TICKET ISSUING MACHINE

Filed Jan. 22, 1945 4 Sheets-Sheet 1

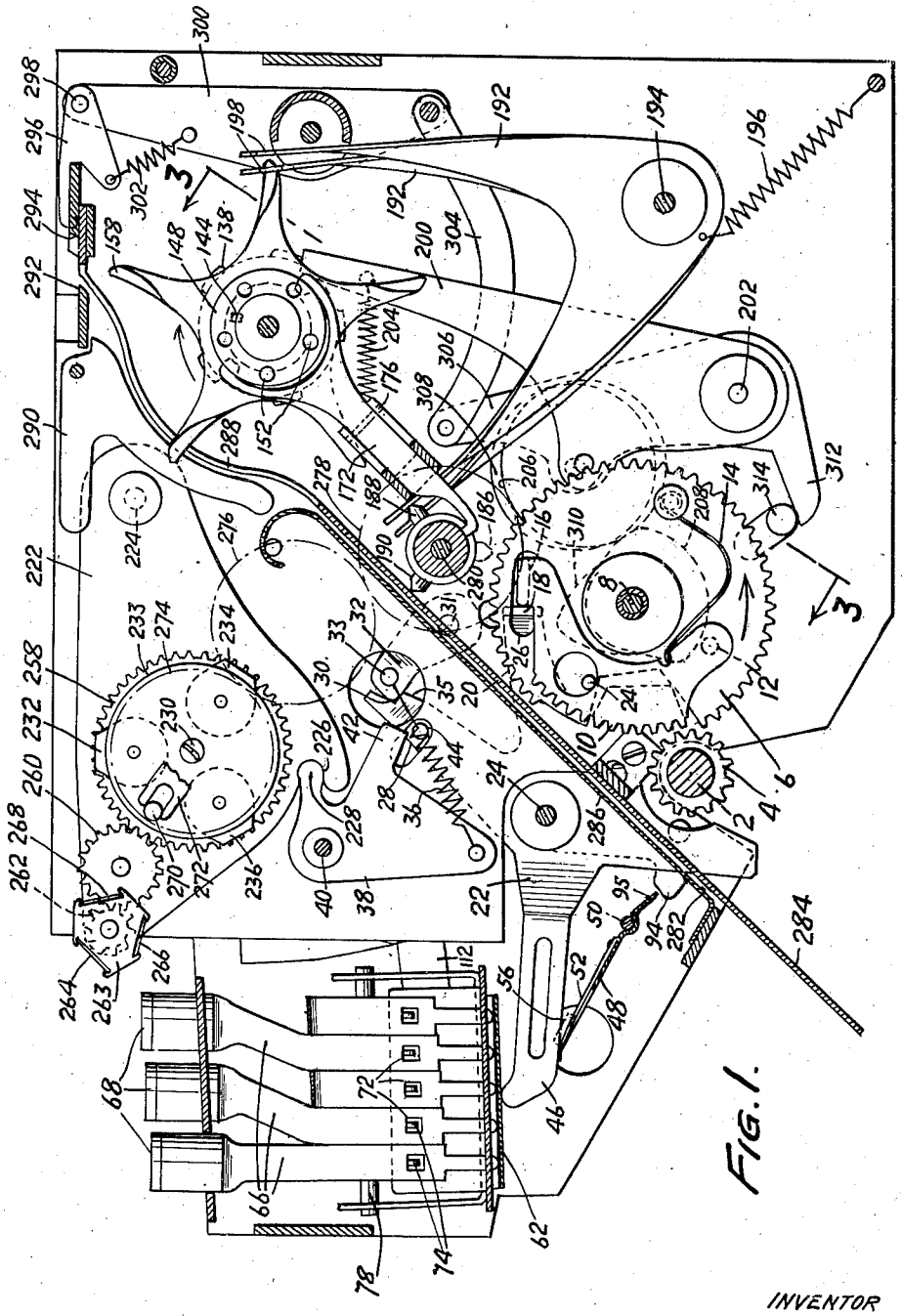


FIG. 1.

WITNESS:

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TICKET ISSUING MACHINE

Filed Jan. 22, 1945 4 Sheets-Sheet 2

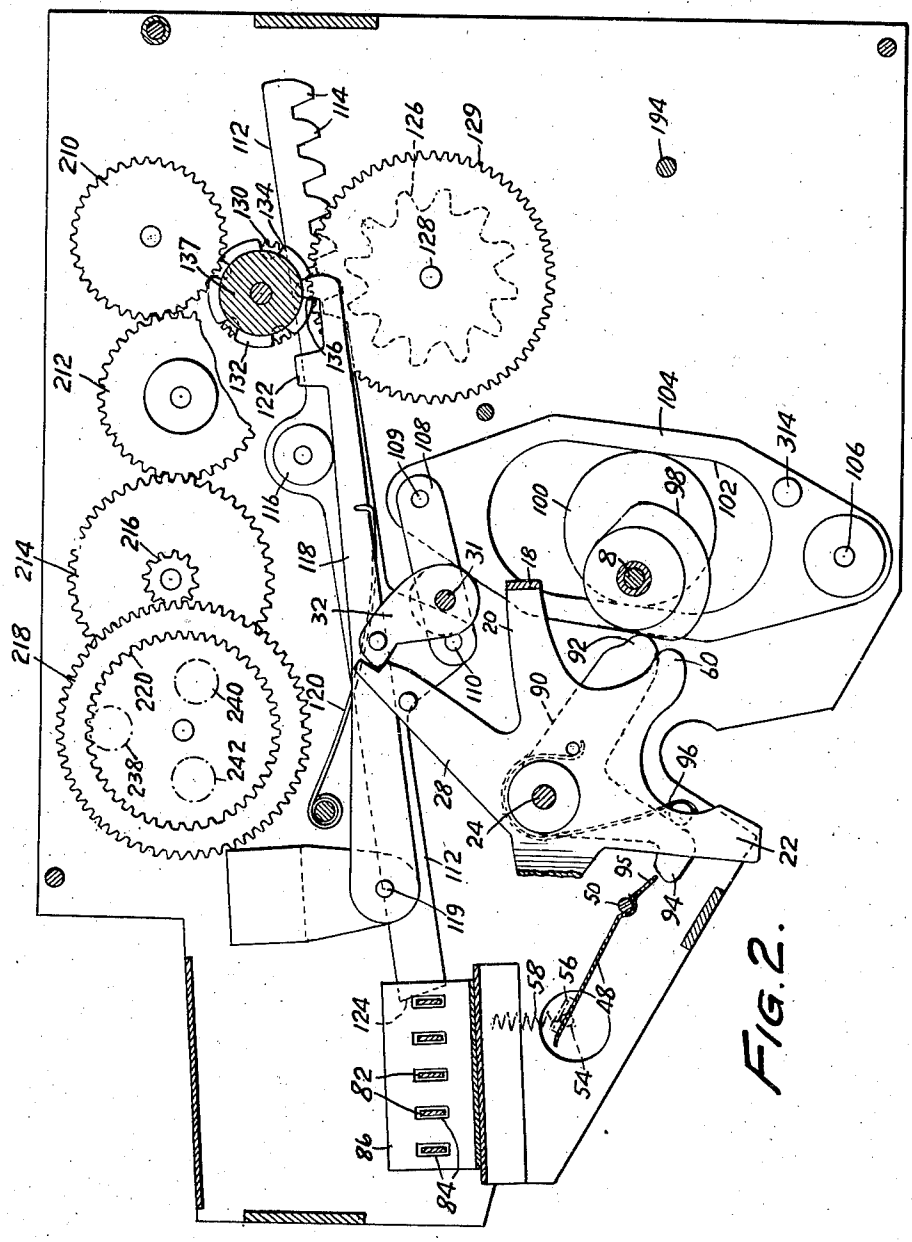


FIG. 2.

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TICKET ISSUING MACHINE

Filed Jan. 22, 1945 4 Sheets-Sheet 3

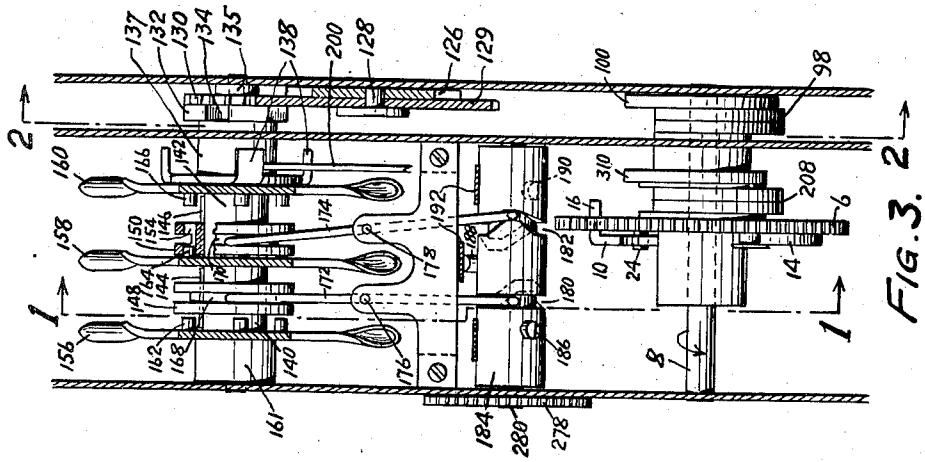


FIG. 3.

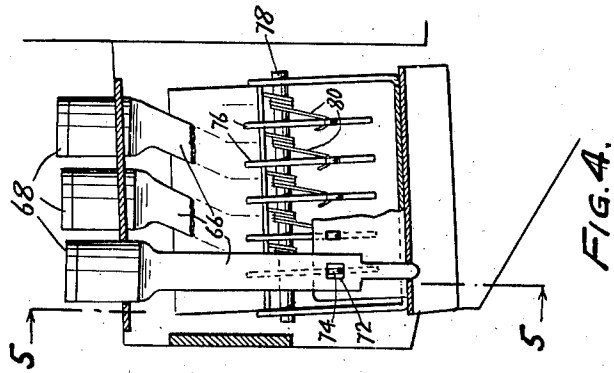


FIG. 4.

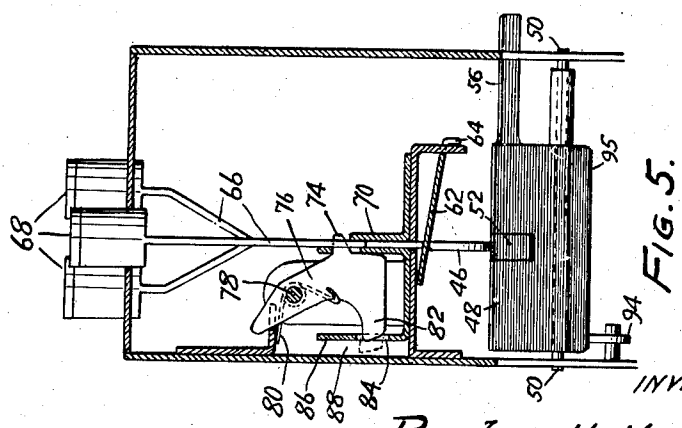


FIG. 5.

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March 18, 1947. R. H. HELSEL 2,417,596

TICKET ISSUING MACHINE

Filed Jan. 22, 1945 4 Sheets-Sheet 4

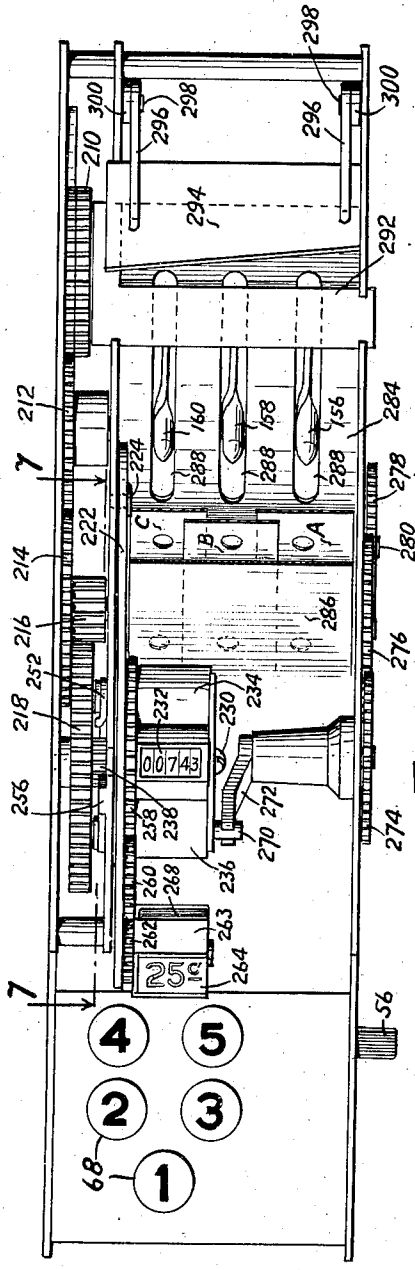


FIG. 6.

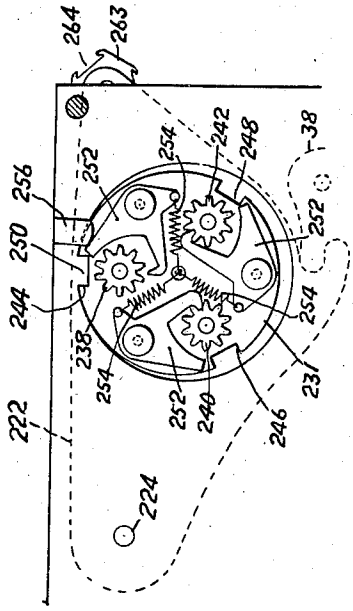


FIG. 7.

WITNESS:

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Patented Mar. 18, 1947

2,417,596

UNITED STATES PATENT OFFICE

2,417,596

TICKET ISSUING MACHINE

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Application January 22, 1945, Serial No. 574,018

19 Claims. (Cl. 164—49)

1

This invention relates to a ticket issuing machine of the type designed to issue one or more tickets such as is customarily used in motion picture theater box offices.

Ticket issuing machines commonly used in theaters or other places of amusement are generally required to issue tickets of various denominations, one or more, generally up to five in a single operation. Heretofore it has been generally customary to provide, for example in a motion picture theater box office, a ticket issuing machine which comprises a number of separate units each of which, at a particular time, is adapted to issue tickets of only a single denomination. For example, if a machine comprises three units, one of the units may issue adult orchestra tickets, another adult balcony tickets and the third children's tickets. In such theaters the prices of the tickets vary from time to time, for example, in theaters which are open a greater part of the day, one schedule of prices may prevail in the morning and early afternoon, a second schedule in the later afternoon and still another schedule in the evening. Under such circumstances there may be required as many as nine different types of tickets to be issued from the three available units which requires that, at predetermined times, the box office must be closed and a responsible party must substitute for one type of ticket strip in a unit another to take care of the next price schedule. Since the box offices are generally quite small this is obviously a procedure involving some difficulty. The only alternative to this would be the provision of a large number of individual units, investment in which the theater may not desire to make.

One object of the present invention is the provision of a unit which, without any great complication over the construction of present units, is adapted to issue, with very minor adjustment, tickets of different denominations, the strips for which are continuously in the machine. In brief, according to the present invention, a machine is provided which may, for example, be loaded continuously with three ticket strips, more or less, and is designed to issue at will any one of them without the necessity for removal of a strip previously used and replacement with another. This is effected through the medium of a single cycle controlling mechanism with the same keyboard being useable for issuing varying numbers of the tickets of different denominations.

In accordance with the invention, furthermore, independent accounting of the different tickets is provided without the possibility that the accounting means will record the issue of one type of tickets when another is actually issued, the machine in its preferred form indicating at all times the denomination of the ticket which is then being issued and the adjustment to shift from one type of ticket to the other being secured by a simple manipulation capable of being carried out in a few seconds.

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In providing for the issue of a number of tickets from the same unit the present invention involves a substantial saving in space. For example, in one practical form of the invention, two units, each capable of issuing three different types of tickets, may be incorporated in the same space as three individual units of the present type collectively capable of issuing only three different denominations of tickets. Furthermore, the major number of parts of the new machine are such that the three units would involve these parts in triplicate with the net result that six denominations of tickets may be issued with a single duplication of parts whereas with prior machines a triplicate set of similar mechanisms would be required to issue only three types of tickets.

The foregoing will indicate the major objects of the present invention. Further objects of the invention relate to the details of attainment of these results. Still other objects of the invention relate to improvements in the ticket issuing mechanism of more general applicability, for example, to units of conventional type adapted to issue tickets of a single denomination.

These and other objects of the invention particularly those relating to details will become apparent from the following description read in conjunction with the accompanying drawings in which:

Figure 1 is a vertical section taken inside the right hand cover plate of an improved unit, the section being taken on a broken plane indicated at 1—1 in Figure 3;

Figure 2 is a similar vertical section but taken on the plane indicated at 2—2 in Figure 3;

Figure 3 is a transverse section taken on the plane indicated at 3—3 in Figure 1;

Figure 4 is a fragmentary section taken to show the particular details of the key selection mechanism;

Figure 5 is a vertical section taken on the broken plane indicated at 5—5 in Figure 4;

Figure 6 is a horizontal view partly in section showing in particular the upper parts of the unit; and

Figure 7 is a fragmentary section taken on the plane indicated at 7—7 in Figure 6.

In view of the fact that the unit is designed to be located in a housing and associated with other units in quite conventional fashion, the unit alone is illustrated with omission of cover plates, locks, etc., as well as with omission of the driving mechanism, all of which are quite conventional. In brief, a unit of the type illustrated is designed to be associated side by side with other similar units within a locked housing to which access may be had only by some authorized person, such as the manager of a theater. Available to the operator of the machine are only the keys which are manipulated to effect the issuance of the tickets. By opening a suitably located cover plate access may be had, by the theater manager or other authorized person, to the mechanism which is to be adjusted to effect the issuance of tickets of different denominations. As a matter of fact, this adjustment may be allowably made by the ticket seller who, by reason of interlocks, will still be prevented from issuing unregistered tickets or tickets which could be registered as of a less valuable denomination.

In many of its aspects the present machine is quite similar to that illustrated in my patent 2,176,966, dated October 24, 1939, which discloses a unit of the conventional type adapted to issue tickets from a single strip of one denomination. As will be apparent hereafter certain changes in the controlling mechanism have been made which constitute part of the present invention. In addition, the present mechanism differs from that of said patent in the major feature of issuing tickets of various denominations as indicated above.

As in the case of the machine of said patent the power drive for the unit is effected through a motor driven shaft 2 carrying individual pinions for the various units in the machine casing. The shaft extends across such casing so as to be capable of driving selectively a number of units associated side by side. Each unit is individually capable of closing the switch for energizing the driving motor to rotate the shaft 2. Each, however, has its individual clutch mechanism so as not to be affected when another unit of the group is in operation. In order to provide drive for the unit disclosed, a gear 6 is provided, a part of the periphery of which is cut away as indicated in Figure 1. The gear 6 is secured to a shaft 8 which carries various cams for effecting operation of the unit.

A gear segment 10 designed to bridge the gap in the gear 6 is pivoted to the gear 6 at 12 and is urged in a counterclockwise direction, as viewed in Figure 1, by a strong spring 14. When the unit is idle, a condition consistently illustrated in all of the figures, the ear 16 of the segment 10 abuts a lug 18 carried by a rearwardly extending arm 20 of a multiple armed lever pivoted on a transverse pin 24. This lug 18 holds the segment 10 clockwise against the action of spring 14 so as to maintain it out of mesh with the corresponding pinion 4. The clockwise position of the segment 10 is limited by engagement with one side of a hole therein of a pin 24 carried by the gear 6. When release of the segment occurs its counterclockwise movement relative to the gear 6 is limited by contact of its ear 16 with an end of a slot 26 in the gear. Backward movement of the gear 6 under the action of spring 14 is prevented in a fashion hereafter described to avoid any possibility of a floating condition which would cause chattering engagement of the pinion 4 with the segment 10.

A second arm 28 of the lever 22 is provided at its outer end with a notch 30 in which engages a latch 32 urged counterclockwise, as viewed in Figure 1, about its pivot 34 by a spring 36 which reacts between it and a lever 38 pivoted on a pin 40 and provided with an arm 42 arranged to cooperate with a pin 44 carried by the arm 28 for a purpose hereafter described.

A third arm 46 of the lever 22 extends forwardly and is arranged to be operated by the keys and, in turn, to operate a plate 48 secured to a pivot pin 50 journaled in the side plates of the unit. The arm 46 desirably engages a leaf spring 52 carried by the plate 48 to provide a yielding connection. The plate will be recognized as having its counterpart in said Patent 2,176,966 and like the corresponding plate of the patent is provided with a laterally extending ear 56 arranged to overlap the corresponding plate of an adjacent unit, the plate 48 being, in turn, overlapped by the ear of a plate in the unit on the other side. The extreme right hand unit, however, is adapted to have its ear overlap a pin indicated at 54 in Figure 2 which is pulled upwardly by a spring 58 and adapted on downward movement to close the controlling switch for the motor of the machine. In this fashion if a number of units are assembled side by side the depression of an arm 46 of any one of them will rock downwardly all of the plates between the unit and the switch so as to energize the motor.

A fourth arm 60, see Fig. 2, of the lever 22 is arranged to be operated by a cam on the shaft 8 as hereafter described.

Overlying the arm 46 of the unit is a plate 62 which, as illustrated in Figure 5, is pivoted to a part of the frame through the medium of ears 64. This plate underlies the lower ends of a series of key plungers 66 which carry individual keys 68 arranged to project through suitable openings in conventional fashion in a top plate of the machine housing. The key plungers are mounted to slide between guide plates indicated at 70 and through holes in a suitable supporting plate and are provided with openings 72 which are arranged to receive lugs 74 on a series of levers 76, one of which corresponds to each key. These levers are pivoted upon a longitudinally extending pin 78 and are urged in counterclockwise direction as viewed in Figure 5 by individual springs 80. Each lever 76 has a left hand extension 82 arranged to be projected through a corresponding individual opening 84 in a plate 86 which, in conjunction with a side plate of the machine frame, provides a channel 88 for the guidance of a movable member hereafter described.

Mounted on the transverse pin 24 in addition to the lever 22 is a lever 90 provided with two arms 92 and 94 and urged in the counterclockwise direction as viewed in Figure 2 by a spring 96. The arm 92 is arranged to be acted upon in the operation of the machine by a cam 98. When the machine is in its rest position the arm 92 is engaged behind the cam 98 and so prevents clockwise rotation of the cam and clockwise rotation of the gear 6 which would otherwise occur under the action of the spring 14 as mentioned above. Thus there is prevented a floating condition of the gear segment 10.

The other arm 94 of the lever 90 is arranged to cooperate with the tail portion 95 of the plate 48 in a fashion hereafter described.

A cam or eccentric 100 carried by the shaft 8 is located in an elongated opening 102 of a lever 104 pivoted at 106 so as to effect during drive of the shaft 8 a positive oscillation of the lever 104 in both directions. A link 108 pivoted to the upper end of the lever 104 connects it at 110 with a rack bar 112 provided with teeth 114. This bar 112 carries an anti-friction roller 116 which bears upon the upper edge of a lever 118 pivoted at 119 and urged in a counterclockwise direction as viewed in Figure 2 by a spring 120. An ear 122 on the lever 118 overlies the upper edge of the rack bar 112 and it will be evident that this arrangement in effect provides for sliding movement of the rack bar along the lever 118 while the rack bar is constrained to partake of angular movements of the lever 118 about its pivotal mounting. The forward end of the rack bar is beveled as indicated at 124 and is arranged to move in the channel 88 to cooperate with a selected one of the extensions 82 of the levers 76.

The rack 114 is adapted to cooperate with pinion 126 mounted on a pin 128 and carrying a gear 129 which meshes with a pinion 130 carried by a shaft 135. This same shaft carries a member 132 provided with depressions 134 in its periphery within which engages the free end 136 of the lever 118, the depressions 134 corresponding in number to the pins on each of the pin wheels later referred to. Also corresponding in number to these pins are arms 138, see Fig. 3, formed on a hub 137 also secured to the shaft 135.

Two collars 140 and 142 secured to the shaft 135 are provided with splines 144 and 146 engageable with slots in collars 148 and 150 which latter collars are thereby constrained to rotate with the shaft 135 but are slidable axially therealong. The collars 148 and 150 are provided with holes 152 and 154 providing clutching elements.

Pin wheels 156, 158 and 160 are loosely mounted on the shaft 135 being maintained in properly spaced relationship by the collars 140 and 142, the hub 137 and an end collar 161. These pin wheels carry axially extending sets of pins 162, 164 and 166 corresponding in number to the holes in the collars 148 and 150. These pins are adapted to be engaged in the holes for the purpose of selectively clutching the pin wheels to the shaft 135. The pins 162 thus cooperate with the holes 152 in the collar 148. Pins 164 and 166 similarly cooperate with the holes 154 in the collar 150, this last collar being double acting as compared with the single acting collar 148. In order to control the selective clutching of the pin wheels to the shaft 135, the collars 148 and 150 are provided with respective circumferential grooves 168 and 170 within which engage the bifurcated ends of levers 172 and 174 pivoted at 176 and 178 to a transverse member of the frame. The lower ends of these levers are engaged within cam grooves 180 and 182 of a drum 184 secured to a shaft provided with a driving gear 278 which will be referred to later. The drum 184 carries three pins, 186, 188 and 190, equally spaced circumferentially about the drum which are arranged to cooperate with the forward ends of levers 192 pivoted on a transverse pin 194 and urged in counterclockwise direction as viewed in Figure 1 by individual springs 196. The rearmost ends of these levers 192 are provided with openings 198 adapted to embrace the ticket strip driving pins of the several pin wheels 156, 158 and 160. They form part of a locking means described hereafter in connection with the operation of the machine.

Also constituting a part of a locking means is a

lever 200 pivoted at 202 to the frame and provided with a cam following roller 206 arranged to cooperate with a cam 208 by which the lever 200 may be rocked clockwise as viewed in Figure 1 against the action of a spring 204. The upper end of the lever 200 cooperates with the arms 138 heretofore mentioned.

The pinion 130 heretofore referred to meshes with a gear 210 which, through a train 212, 214 and 216, imparts rotation to gear 218 which has, besides its external teeth, internal teeth 220. This last gear is carried by a plate pivoted upon a fixed pin in the frame.

An arm 222 pivoted to the frame at 224 has an opening 226 receiving a tooth 228 on the lever 38 referred to above. By reason of this connection the spring 36 tends to rock the lever 222 upwardly though it may be depressed manually against the action of this spring. Pivoted to the lever 222 at 230 is a counter assembly comprising two plates 231 and 233 between which are mounted counters 232, 234 and 236. These counters are of conventional character provided with actuating shafts to which are secured small pinions 238, 240 and 242. As indicated by the pitch lines of these pinions in Figure 2 their arrangement is such that when the lever 222 is in its uppermost position only one of them is in mesh with the internal gear 220. The plate 231 of the counter assembly is provided with notches 244, 246 and 248 spaced to correspond to the counter actuating pinions. The notches are arranged to embrace selectively a lug 250 formed on one of the side plates of the frame. This arrangement is such that only by correspondence to predetermined positions of the counter assembly in which the lug 250 is received by one of the notches in the plate 231 may the plate 222 occupy its uppermost position with one of the counter actuating pinions meshing with the internal gear 220. Furthermore, only when the lever 22 is in such position will the lever 38 be in a position to cause its extension 42 to clear the pin 44. An interlocking action accordingly results. If the lever 222 is sufficiently depressed to cause any of the pinions 238, 240 or 242 to be out of mesh with the internal gear or to permit the counter assembly from being rotated, the extension 42 will prevent the pin 44 from moving forwardly and thus will effect locking of the unit as described more fully hereafter. On the other hand, if the pin 44 has moved forwardly as it will during operation of the unit it will be located beneath the extension 42 and will so prevent the lever 222 from being rocked downwardly. Under such circumstances not only will one of the counters be in position to be driven but rotation of the counter assembly will be prevented by the lug 250.

Pivoted to the plate 231 are three latches 252 acted upon by tension springs 254. Each of these latches is provided with a toothed arm adapted to engage between the teeth of one of the counter driving pinions. Another arm of each of the latches is arranged to engage a lug 256 carried by the side plate of the machine and having an action which will be evident from Figure 7. In the case of the pinions which are at any time out of engagement with the internal gear 220, the corresponding latches will be moved by their springs to engage the pinions and lock them against rotation. The same is also true for all of the pinions whenever the lever 222 is rocked downwardly. However, when the lever 222 occupies its uppermost position with one of the pinions in mesh with the internal gear the corre-

sponding latch will then engage the lug 256 and will be forced by it out of engagement with its pinion so that the pinion is free to be driven. It will be evident, therefore, that this arrangement prevents any possible accidental displacement of the counters which are never free for actuation except when in condition to be driven by the internal gear.

The counter assembly carries a gear 258 which through a pinion 260 mounted on the lever 222 is arranged to drive a pinion 262 carrying a member 263, the pinion and the member being pivoted on a pin secured to the forward end of lever 222. The member 263 is provided with three faces flanged to engage removable cards 264, 266 and 268. These cards are adapted to be visible through an opening in the cover plate of the machine which may be covered by glass to prevent tampering with the counter arrangement. The cards inserted in the member 263 may carry price designations corresponding to the three types of tickets handled by the unit, the arrangement being such that when the unit is so adjusted as to issue any particular type of ticket that type will be visibly indicated by the member 263. At this same time the corresponding counter will be in operative position, the gearing being such that a proper relationship between the active counter and the inactive exists.

In order to secure a definite relationship between the active counter and the mechanism for issuing the corresponding ticket a connection is provided between the counter assembly and the cam drum 184. This comprises a pin 270 carried by the counter assembly engageable in a slot in the end of an arm 272 secured to a shaft which carries a gear 274 which is, through an intermediate gear 276, arranged to drive a gear 278 secured to the shaft 280 of the drum 184. The arrangement is such that a third of a revolution of the counter assembly will produce a corresponding third of a revolution of the drum 184. The cams 180 and 182 are so shaped that for each such third of a revolution of the drum a particular pin wheel is clutched to the shaft 135. The pin and slot connection with the arm 272 is provided to permit the upward and downward movements of the lever 222 without interfering with the connections just described.

The ticket strips from which tickets are to be issued are led through a passage 282 between guide plates 284 and 286. The former of these extends up past the pin wheels and is there slotted at 283 to permit the passage of the pins. The upper portion of the guideway in this region is provided with a pivoted cover member 290 in the form of a plurality of bars between which the pins of the pin wheel may project. As indicated in Figure 6 the ticket strips A, B and C are led to the pin wheels in overlapping relationship to conserve transverse space. It is only necessary that the central regions containing the openings in the strips adapted to be engaged by the pin wheels be free of other strips. Thus it will be seen that the transverse space taken by the assembly may be substantially less than three times the width of a single ticket strip if, as is consistently described herein, the unit is arranged to issue tickets from three strips. It will, of course, be evident that the unit may be readily arranged by further addition of pin wheels and by corresponding additions of other elements and changes in gear ratios to issue tickets from a larger number of strips, for example, from four or five strips or even more.

At the upper end of the guideway there is located the fixed knife 292 with which cooperates the movable knife 294 guided to slide horizontally and actuated through its engagement with levers 296 pivoted at 298 to lever 300 and urged downwardly by springs 302. The lower end of the lever 300 is connected by a link 304 to the upper end of a lever 306 pivoted on the pin 202 and provided with a cam following roller 308 adapted to be acted upon by a cam 310 carried by the shaft 8. A lower tail portion 312 of the lever 306 is arranged to be engageable by a pin 314 carried by the yoke 104 for the positive retraction of the knife at the end of a cycle of operation.

The operation of the unit will not be described. As indicated above the unit is through any particular period so adjusted as to issue tickets of a single denomination. To effect this adjustment, an authorized party by unlocking the cover plate of the machine, will gain access to the counter assembly and by pressing down the lever 222 will free the counter assembly for rotation. This may be accomplished simply by grasping, for example, the member 263 rotating it until the proper denomination appears in upper position and until upon its release the lever 222 will snap upwardly under the action of spring 36 to cause one of the slots in the plate 231 to embrace the lug 250. When this adjustment is achieved not only is the proper counter brought into driving engagement with the gear 220 but at the same time the drum 184 will have been rotated to cause a particular one of the ticket feeding pin wheels to be clutched to the shaft 135. At the same time the corresponding pin of the group 186, 188 and 190 will be brought to a position to engage the forward end of the corresponding lever 192 to rock it rearwardly and thereby release the particular wheel which is clutched to the driving shaft 135. The other two pin wheels remain locked by the action of their levers 192 so that they cannot accidentally rotate either to release the strips which they hold or to permit the strips to be withdrawn without recording of the withdrawal. In the machine as illustrated the central pin wheel 188 is arranged to be driven. The counter corresponding to this pin wheel is in operative position, the other counters being locked by their latches 252, and the corresponding denomination is exhibited by the member 263. It will be evident from the foregoing that the adjustment to issue another type of ticket is extremely simple, involving no more than a rotation of the counter and indicating assembly.

The cycle of operation is initiated by depression of one of the keys. The depression of a key effects a number of immediate actions. First, by engagement of a corresponding ear 74 one of the levers 76 is rocked to project its extension 82 across the channel 88. The arrangement of the openings 72 and the ears 74 is such that as the key moves downwardly and the lever 76 is rocked the upper end of the opening 72 passes the extremity of the ear 74 with the result that the ear thereafter engages the portion of the key plunger above the opening so that the lever 76 is rigidly held against reverse rotation and the extension 82 forms a positive unyielding abutment.

As the key moves downwardly the plate 62 is rocked and, in turn, rocks counterclockwise the lever 22 as viewed in Figure 1. If the counter assembly has been properly adjusted the pin 44 may now move below the extension 42 of the lever 48 and thus the counter assembly is locked in its upper position insuring positive drive of the

pinion of the active counter. This also prevents any possibility of adjustment of the counter assembly or a release of the active counter during operation of the unit.

The latch 32 drops under the action of the spring 36 behind the arm 28 in engagement with its surface 35 to provide a yielding prevention of return of the lever 22 until a forcible return action is effected as described hereafter. The downward movement of the lever 32 is limited by engagement of pin 33 with the lower edge of an opening in the frame. The cam 98 in the latter part of a preceding cycle will have cleared the arm 60 of the lever 22 and permits the rocking action just described. As the lever 22 rocks, the ear 18 clears the lug 16 on the gear segment 10 with the result that the segment moves under the action of the spring 14 to a position forming a continuation of the periphery of the gear, meshing with the pinion 4 then taking place.

The rocking of the arm 46 of the lever 22 presses downwardly the plate 48. This effects either directly or through intermediate plates the closure of the switch controlling the driving motor which thereupon starts rotating the shaft 2 and driving the shaft 8 together with the cams 98, 100, 208 and 310 which it carries.

The first action occurring on rotation of the shaft 8 is that of cam 208 on the follower 206 carried by the lever 200. This rocks the lever 200 rearwardly out of engagement with the arm 138 previously engaged thereby so that so far as this restraint is concerned the pin wheel would be free to rotate. However, the pin wheel is prevented at this time positively from rotation in either direction by engagement of the end 136 of lever 118 in one of the notches 134 in the member 132.

The next action occurring on rotation of the shaft is the forward oscillation of the yoke 104 by the eccentric or cam 100, this yoke having been heretofore in its rearmost position. As rocking occurs the rack bar 114 is driven forward while out of mesh with the pinion 126 until its forward bevelled end 124 engages the projected extension 82 which lies across the channel 88. When engagement of the end 124 with the extension 82 occurs this end 124 is cammed upwardly so that the rack bar and the lever 118 are rocked as a unit clockwise about the pivot 119. As this rocking occurs the end 136 of the lever 118 is first released from the notch 134 in which it was engaged so that the shaft 135 and the pin wheel are now free to be rotated. The rack is then immediately meshed with the pinion 126 so that during further forward motion of the rack this pinion is driven.

The fashion in which control of the number of tickets to be issued in a cycle is effected will now be clear. A stroke of fixed length is imparted to the rack 112, 114 in each cycle of operation of the machine. The period of the latter part of the stroke in which driving of the pinion 126 occurs, however, depends upon how soon meshing of the rack with the pinion is effected. If, for example, the number 5 key is depressed the rearmost of the levers 76 will have been rocked and consequently meshing occurs almost immediately in the stroke of the rack 114. In such case the completion of the stroke will rotate the pinion 126 sufficiently far to effect the issuance of five tickets. On the other hand, if the number 1 key is depressed which corresponds to the foremost of the levers 76 the meshing of the rack with the pinion is delayed until the forward stroke of the rack is almost completed with the result that the pinion is driven only through the last part of the stroke and through an angular amount sufficing only to issue a single ticket. The other keys correspondingly time the instant of meshing so that corresponding numbers of tickets will be issued.

As the pinion 126 is driven it drives through gears 129 and 130, the shaft 135 and by reason of the clutching of one of the pin wheels thereto the corresponding pin wheel will be driven to advance the corresponding ticket strip between the stationary and movable knives. At the same time through the intermediate gearing 210 to 218 the internal gear 220 rotates to a corresponding degree the active counter operating pinion so as to advance the counter to indicate the number of tickets issued.

Just prior to the completion of the forward stroke of the rack the cam 208 will clear the following roller 206 permitting the lever 200 to be rocked forwardly under the action of spring 204 to locate its end in the path of one of the arms 138 to serve to arrest positively the advance of the shaft 135 in a definite position corresponding to proper alignment of the ticket strip with the line of action of the knives to secure a properly defined cut across the ticket strip, which cut is generally effected directly through the center of one of the holes in the strip.

Also, just about the time the rack reaches the forward end of its stroke the cam 98 will engage lever 92 to rock it clockwise as viewed in Figure 2, bringing the end 94 beneath the tail 95 of the plate 48 so as to maintain the plate in lowered position to hold the switch closed despite the immediately following release by the lever 46. Substantially immediately the cam 98 acts upon the arm 60 of the lever 22, rocking this lever clockwise as viewed in Figures 1 and 2. As this action by the cam 98 occurs sufficient force is applied to cause the arm 28 to cam the latch lever 32 out of its previous retaining position so that it will again rise and enter the seat 30 in the upper end of lever 28. The upward rocking of the arm 46 forces upwardly the plate 62 and through it raises the depressed key. As the key rises the opening 72 is again presented to the ear 74 of the previously actuated lever 76 and consequently this lever rocks counterclockwise clearing the channel 88. The result of this is that the rack 114 and the lever 118 as a unit will be rocked counterclockwise about the pivot 119 by the spring 120. The result is that the rack is taken out of mesh with the pinion 126 and the end 136 of the lever 118 drops into one of the notches 134 of the member 132 thus locking the shaft 135 against rotation in either direction, and holding the pin wheel in a definite position. It may be noted that the reason for the presence of the lever 200 was to arrest the pin wheel slightly prior to the positive arresting action just described, effected by the end 136 of lever 118. It is to be noted that the foregoing cam action of 98 may occur through a substantial angular movement of the shaft 8 without there occurring, however, any substantial rearward movement of the rack 114 since the eccentric 100 will, at this time, be in its forward dead center position.

The rocking of the lever 22 will also bring lug 18 into the path of the ear 16 of the gear segment 10.

As rotation of the shaft 8 continues the rack 114 returns rearwardly out of mesh with the pinion 126 to be ultimately restored to its initial

position. During this rearward movement of the rack, the cam 310 acts upon the follower roller 308 to rock the lever 306 rearwardly and through the link connection 304 and lever 300 the movable knife is forced forwardly to sever the ticket strip. As the rearmost position of the yoke 104 is approached the pin 314 engages the tail 312 of the lever 306 rocking the lever after release by the cam 310 in a counterclockwise direction to effect retraction of the knife 294 in order to clear again the outlet slot.

Finally the ear 16 of the gear segment 10 engages the lug 18 and is thereby retarded so that the gear segment 10 is swung inwardly out of mesh with the pinion 4 and the shaft 8 is thus brought to rest in its initial position. Immediately prior to this the cam 98 will clear the arm 92 which is thereby permitted to be swung by spring 96 to release the end 94 from tail 95 of the plate 48 permitting this plate to swing upwardly and thereby open the motor switch. At the same time the lever 92 moves behind cam 98 to prevent any retrograde movement of the shaft 8. While the shaft 2 may, by reason of inertia of the motor, continue to spin, it will be evident that the parts of the unit are brought definitely to their initial positions, this being the case even if another unit of the group is simultaneously being actuated.

While the unit is adapted primarily to handle a plurality of strips as described, it will be evident that the operating mechanism is equally adapted to units of the type arranged to handle only a single ticket strip.

It may be pointed out that the locking of a unit to prevent its operation may be very simply effected merely by depressing lever 222 and turning the counter assembly to a position in which none of the notches in the plate 231 will line up with the lug 250. Under such conditions the lever 222 is held down with the extension 42 of lever 38 in the path of the pin 44 to prevent operation of the unit. The unit is, therefore, incapable of being operated unless the cover plate of the machine is unlocked and lifted to permit access to the counter mechanism. It is frequently desirable thus to lock a unit when, for example, the strip or strips located therein are not to be issued.

It will be clear that numerous changes may be made in details of the mechanism 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 advancing a plurality of ticket strips in a single unit, a cycle controlling mechanism common to the advancing means for said plurality of ticket strips, and means for selectively providing control by the cycle controlling mechanism of the means for advancing the ticket strips so as to effect the selective issue of tickets from the several strips.

2. A ticket issuing machine comprising means for advancing a plurality of ticket strips in a single unit, a cycle controlling mechanism common to the advancing means for said plurality of ticket strips and containing a single set of keys for effecting the selective issue of one or more tickets in a cycle of operation of the machine, and means for selectively providing control by the cycle controlling mechanism of the means for advancing the ticket strips so as to effect the selective issue of tickets from the several strips in varying numbers.

3. A ticket issuing machine comprising means for advancing a plurality of ticket strips in a single unit, a cycle controlling mechanism common to the advancing means for said plurality of ticket strips, means for selectively providing control by the cycle controlling mechanism of the means for advancing the ticket strips so as to effect the selective issue of tickets from the several strips, and a single severing mechanism for cutting issued tickets from all of said strips.

4. A ticket issuing machine comprising means for advancing a plurality of ticket strips in a single unit, a cycle controlling mechanism common to the advancing means for said plurality of ticket strips and containing a single set of keys for effecting the selective issue of one or more tickets in a cycle of operation of the machine, means for selectively providing control by the cycle controlling mechanism of the means for advancing the ticket strips so as to effect the selective issue of tickets from the several strips in varying numbers, and a single severing mechanism for cutting issued tickets from all of said strips.

5. A ticket issuing machine comprising means for advancing a plurality of ticket strips in a single unit, a cycle controlling mechanism common to the advancing means for said plurality of ticket strips, means for selectively providing control by the cycle controlling mechanism of the means for advancing the ticket strips so as to effect the selective issue of tickets from the several strips in a single unit, and means for individually indicating the number of tickets issued from the several strips.

6. A ticket issuing machine comprising means for advancing a plurality of ticket strips, a cycle controlling mechanism common to the advancing means for said plurality of ticket strips and containing a single set of keys for effecting the selective issue of one or more tickets in a cycle of operation of the machine, means for selectively providing control by the cycle controlling mechanism of the means for advancing the ticket strips so as to effect the selective issue of tickets from the several strips in varying numbers, and means for individually indicating the number of tickets issued from the several strips.

7. A ticket issuing machine comprising means for advancing a plurality of ticket strips in overlapping relationship, and means for selectively controlling the advancing means to effect the selective issue of tickets from the several strips.

8. A ticket issuing machine comprising means for advancing a plurality of ticket strips in overlapping relationship, and means for selectively controlling the advancing means to effect the selective issue of tickets from the several strips in varying numbers.

9. A ticket issuing machine comprising means for advancing a plurality of ticket strips in overlapping relationship, means for selectively controlling the advancing means to effect the selective issue of tickets from the several strips, and a single set of controlling keys for determining the number of tickets to be issued irrespective of the strip from which issue occurs.

10. A ticket issuing machine comprising means for advancing a plurality of ticket strips in overlapping relationship, and means for selectively issuing tickets from said strips.

11. A ticket issuing machine comprising means for advancing a plurality of ticket strips in over-

lapping relationship, and means for selectively issuing tickets from said strips in a predetermined number in each operation.

12. A ticket issuing machine comprising means for advancing a plurality of ticket strips in a single unit, a cycle controlling mechanism common to the advancing means for said plurality of ticket strips, means for selectively providing control by the cycle controlling mechanism of the means for advancing the ticket strips so as to effect the selective issue of tickets from the several strips, said advancing means comprising individual feeding devices for the strips, and means for locking the feeding devices for the other strip or strips when issue of tickets from any strip occurs.

13. A ticket issuing machine comprising means for advancing a plurality of ticket strips in overlapping relationship, means for selectively issuing tickets from said strips, and means for separately indicating the number of tickets issued from said strips.

14. A ticket issuing machine comprising means for advancing a plurality of ticket strips in overlapping relationship, means for selectively issuing tickets from said strips in a predetermined number in each operation, and means for separately indicating the numbers of tickets issued from said strips.

15. A ticket issuing machine comprising means for advancing a ticket strip, means for issuing selectively different numbers of tickets from the strip in a single cycle of operation, and a plurality of indicating devices preselectively rendered operable to indicate the number of tickets issued.

16. A ticket issuing machine comprising means for advancing a ticket strip, means for issuing selectively different numbers of tickets from the strip in a single cycle of operation, means for indicating the number of tickets issued, said indicating means being capable of connection to or

disconnection from said issuing means, and means for preventing operation of the issuing means by disconnection of the indicating means.

17. A ticket issuing machine comprising means for advancing a ticket strip, means for issuing selectively different numbers of tickets from the strip in a single cycle of operation, a plurality of indicating devices selectively rendered operable to indicate the number of tickets issued, and means for locking any indicating devices when in disabled condition.

18. A ticket issuing machine comprising a cycle controlling mechanism including a single set of keys for effecting the selective issue of one or more tickets in a cycle of operation of the machine, a plurality of means for advancing ticket strips, and means for selectively controlling said advancing means by said cycle controlling mechanism so as to effect the selective issue of tickets from the several strips in varying numbers.

19. A ticket issuing machine comprising a cycle controlling mechanism including at least one key for controlling a single cycle of operation of the machine, a plurality of means for advancing ticket strips, and means for selectively controlling said advancing means by said cycle controlling mechanism so as to effect the selective issue of tickets from the several strips.

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