

May 3, 1938.

H. D. BLACK ET AL  
TICKET ISSUING MACHINE

2,115,760

Filed Oct. 31, 1935

3 Sheets-Sheet 1

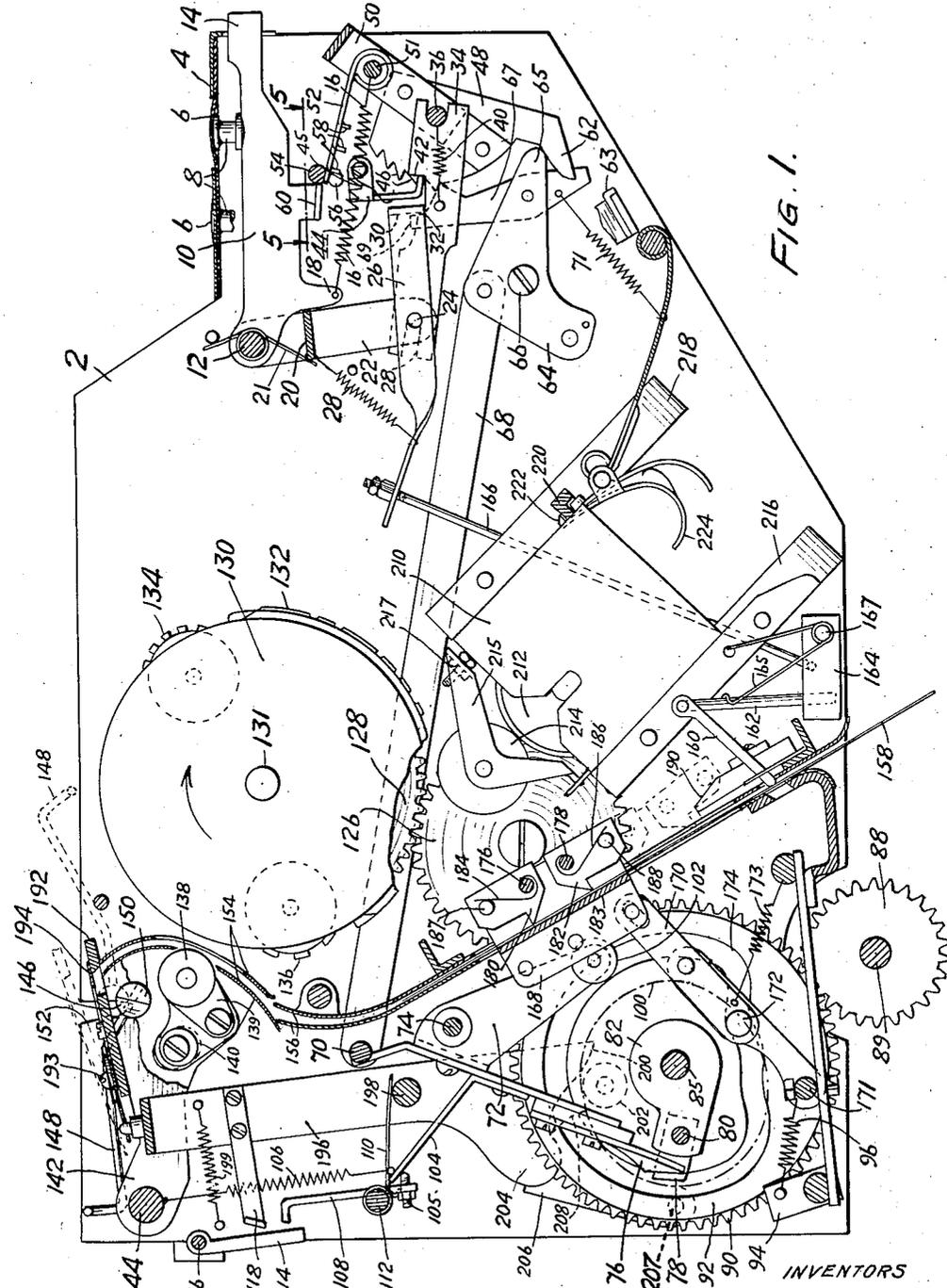


FIG. 1.

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3 Sheets-Sheet 2

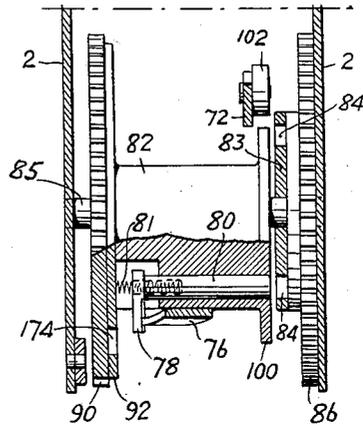
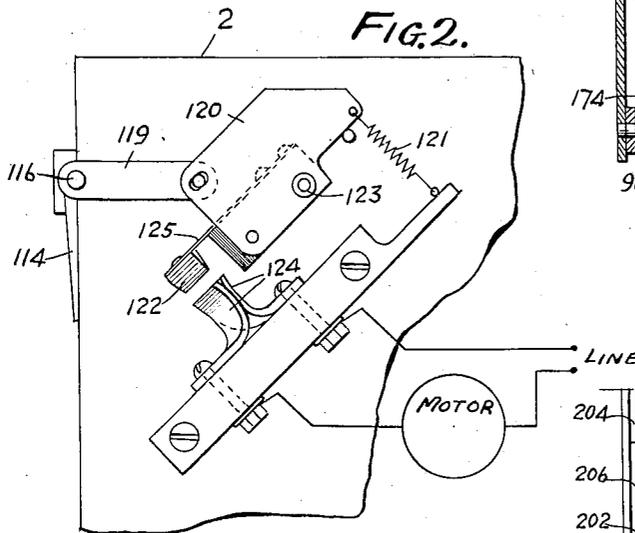
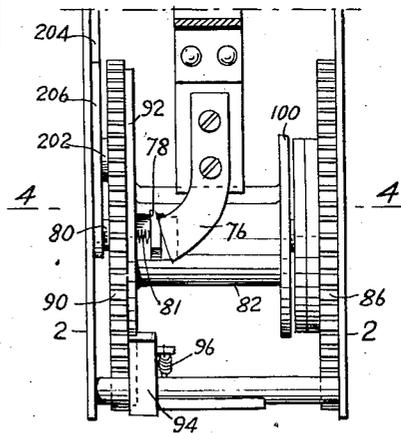
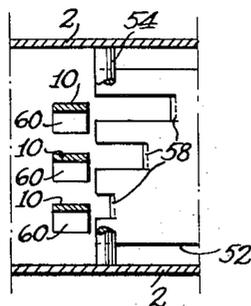


FIG. 5.



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3 Sheets-Sheet 3

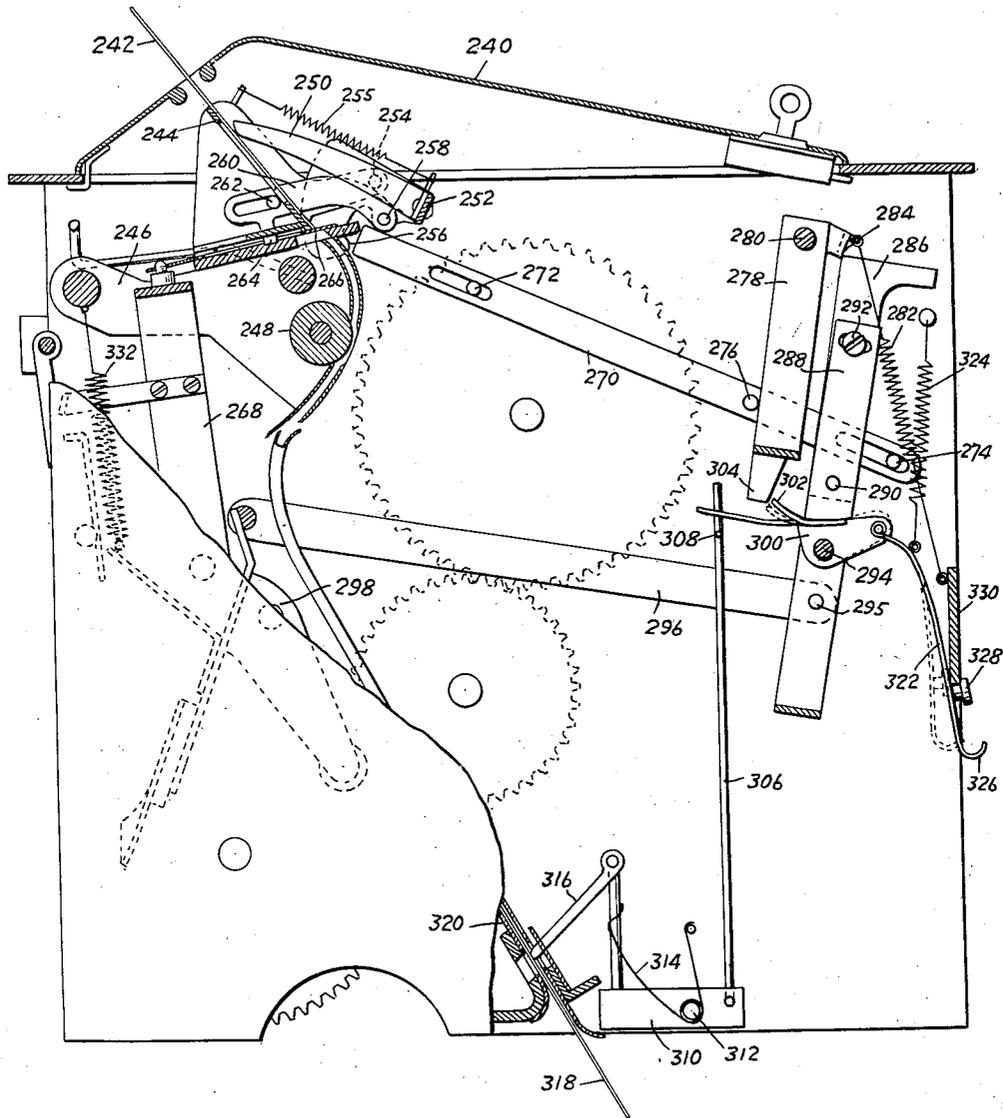


FIG. 6.

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# UNITED STATES PATENT OFFICE

2,115,760

## TICKET ISSUING MACHINE

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Application October 31, 1935, Serial No. 47,582

11 Claims. (Cl. 164—48)

This invention relates to ticket issuing ma-  
chines and more particularly to machines for is-  
suing tickets or checks for theatres, restaurants,  
amusements, railways, busses or the like. The  
invention is primarily directed to a type of mech-  
anism which, with slight modifications, is adapted  
for various uses, for example, in the issuance of  
preprinted tickets or the printing and issuing of  
tickets accomplished either by selective operation  
of keys or by automatic operation initiated by the  
removal of a ticket presented by a patron of, for  
example, a cafeteria.

One of the primary objects of the invention is  
the provision of a general type of mechanism  
which will form the basis for various types of ma-  
chines with relatively minor changes. From the  
standpoint of economical manufacture the ad-  
vantages of this are obvious, since a number of  
parts of the mechanism may be made in large  
quantities to enter into the construction of vari-  
ous types of machines.

It is another object of the present invention to  
provide an improved selecting means whereby  
various numbers of tickets or checks may be is-  
sued upon depression of selected keys. This  
mechanism is specifically tied up with the control  
of a clutch and is under the control of means for  
preventing its actuation if there is a failure of  
ticket stock.

A further object of the invention relates to the  
provision of an improved cutting mechanism hav-  
ing associated with it means for controlling a  
motor-energized switch.

Still another object of the invention is to pro-  
vide an improved means for aligning the proper  
portion of a ticket strip with a knife and also  
with a printing mechanism to insure printing of  
substantially an entire ticket so that no material  
is wasted, while avoiding the necessity for having  
a knife at the point where printing takes place.

Other objects of the invention particularly relat-  
ing to details of construction will be apparent  
from the following description read in conjunc-  
tion with the accompanying drawings, in which:

Fig. 1 is a vertical longitudinal section taken  
through a multiple ticket issuing unit illustrat-  
ing the principal elements of such unit;

Fig. 2 is a fragmentary elevation showing de-  
tails of the motor controlling switch;

Fig. 3 is a fragmentary vertical section showing  
details of the clutch;

Fig. 4 is a horizontal section taken on the  
plane indicated at 4—4 in Fig. 3;

Fig. 5 is a fragmentary sectional view taken  
on the plane indicated at 5—5 in Figure 1; and

Fig. 6 is a vertical section through a restaurant  
check type of machine showing particularly the  
modifications of a key operated machine neces-  
sary to transform the machine into this type.

Referring first to the key operated machine of  
Figs. 1 to 5, inclusive, there is illustrated only a  
single unit which, it will be understood, is re-  
ceivable within an outer casing which may con-  
tain a plurality of similar units designed to issue  
tickets of different denominations. A single mo-  
tor carried by the outer casing may be used to  
drive the several units through a transverse  
shaft, indicated at 89, carrying pinions 88, each  
of which is designed to drive the mechanism of a  
single unit. Such arrangement for the drive of a  
plurality of units by a single motor is well known  
and need not be described in detail.

Each of the units comprises a frame formed of  
side plates 2 and suitable connecting members.  
A transverse plate 4 is provided with a plurality  
of finger openings. A flexible diaphragm of rub-  
ber is secured to the under surface of the plate 4  
underlying the openings and has printed on its  
upper surface, so as to be visible through the  
openings, numbers indicative of the tickets which  
will be issued upon depression of the portions of  
the diaphragm aligned with the openings. Be-  
neath the diaphragm and in line with each of the  
openings is a key member 8 secured to an in-  
dividual key lever 10 journaled upon a transverse  
pin 12, the several key levers being properly  
spaced from each other by spacers (not shown).  
When the key levers are in their upper position,  
the keys are so arranged as to press the portions  
of the diaphragm 6 aligned with the openings  
slightly upwardly. If such portions of the di-  
aphragms are depressed, the corresponding key  
levers are rocked clockwise as viewed in Fig. 1.  
The forward ends 14 of the key levers are suit-  
ably guided in vertical slots formed in the down-  
turned forward edge of plate 4. Individual  
springs 16 normally urge the key levers toward  
upper position, these springs being attached to  
downwardly extending fingers 18.

Also journaled upon the pin 12 is a stirrup  
member 20, engageable by the fingers 18 of the  
key levers and normally urged in a counterclock-  
wise direction, as viewed in Fig. 1, by a spring  
21. The stirrup 20 is provided with a depending  
arm 22 to which is pivoted, through a pin 24, a  
member 26 provided with a turned end 30 en-  
gaging a step 32 formed on the upper edge of a  
link 34, which is guided at its forward end by a  
slot engageable with a shaft 36 and at its rear-  
ward end by a slot 28 engageable over the pin 24.

A spring 40 normally urges the link 34 in a forward direction into engagement with the shaft 36. A shoulder 42 on the link 34 engages a detent 44 normally urged in a counterclockwise direction by a spring 45 to engage its active end with one of a series of teeth 46 formed on a ratchet member 48 carried by the shaft 36. A yoke 50 carried by the ratchet member 48 is urged in a counterclockwise direction by one or more of the springs 16, to which reference has already been made. There is pivoted to this yoke at 51 a plate 52 guided between a transverse pin 54 and stud pins 56 secured to the side plates so that as the yoke 50 rocks a forward and rearward movement will be imparted to the guided plate 52. The plate 52 has formed thereon a plurality of downwardly extending projections 58 located in staggered relationship, each of which is designed to be engaged by a laterally extending portion 60 of a corresponding key lever. The plate 52 is slotted from its rearward end in line with each of the stop projections 58. Accordingly, if a key is depressed and the plate 52 thereby caused to move rearwardly as hereafter described, the lateral projection 60 of the depressed key will be located in the path of one of the stops 58, the vertical portion of the key lever carrying the lateral projection being located in the corresponding slot. On the other hand, the arrangement is such that the other slots will not permit the downward passage of the lateral projections 60 of the other key levers and consequently, while the depressed key lever will be held in such position, other key levers cannot be depressed to interfere with the operation.

The member 48 is provided with a finger 62 normally engaging the forwardly projecting portion 65 of a member 64 to prevent the member 64 from rocking clockwise about its pivot 66. A pawl 67, urged clockwise by a spring 71, is pivoted to the forwardly projecting portion 65 of the member 64. The turned end 30 of member 26 normally lies in front of the extension 69 of this pawl.

There is pivoted to the member 64 above its pivot 63 a link 68 extending toward the rear of the machine, where it is pivotally connected to a clutch control member 72 pivoted on a transverse pin 74 and provided with a clutch releasing element 76 in the form of a cam engageable with a head 78 secured to a clutch pin 80 slidable in a member 82 journaled upon a transverse pin 85. A spring 81 urges the pin toward the right, as indicated in Fig. 4, tending to cause its free end to enter one of a series of openings 84 in a disc 83 secured to a gear 86 which meshes with a corresponding one of the pinions 88 secured to the transverse motor-driven shaft 89 to which reference has previously been made. The hub 82 of the clutch arrangement is secured to a gear 90 and cam disc 92. The position of rest of the gear 90 and the driven clutch elements is determined by a detent 94 which is pulled by a spring 96 into a notch in the plate 92, as illustrated in Fig. 1.

A cam 100 is carried by hub 82 and is arranged to rock the clutch control member 72 at the proper times by engagement with a follower roller 102 carried by the latter. The clutch control member is provided with a switch controlling arm 104 designed to engage an adjustable screw 105 carried by a lever 108 secured to a transverse shaft 112 and urged in a counterclockwise direction by a spring 110. A spring 106 secured to the arm 104 normally urges the clutch control member clockwise about its pivot 74.

A shaft 116 extends across the rearward portions of all of a plurality of associated units and at the rear of each unit carries a depending arm 114 engageable by the upper end of the lever 108. This arm is also engageable by a rearwardly extending projection 118 carried by the knife-operating lever 196, which will be described in more detail hereafter. The shaft 116 at one side of the casing is arranged to control the switch mechanism through an arm 119 having a loose pin and slot connection with a member 120 pivoted at 123 to one of the units or the housing and urged in a clockwise direction by a spring 121. A conducting contact element 122 carried by a spring 125 is designed to be engaged with both of a plurality of spring contact members 124 whenever the shaft 116 is rocked clockwise. Connection is thus made to energize the driving motor when any one of the units is operated.

The gear 90 referred to above meshes with a gear 26 which in turn meshes with a gear 123 carried by a type drum 130 pivoted upon a transverse pin 131. The drum 130 is arranged to carry type indicated at 132 and also dating and numbering heads 134 and 136. The dating head may be manually changed, while the numbering head may be automatically changed by engagement with a fixed element during each rotation of the drum 130. Both of these are conventional in type and need not be further described.

A platen roller 138 is carried by brackets 139 arranged for fine adjustment by eccentric and strap elements, indicated at 140. The brackets 139 are pivoted to a carrier 142 and are adjustable in such fashion as to cause platen 138 to be movable radially toward and from the drum 130. The carrier 142 is pivoted upon the pin 144 and may be located in the active position shown by manipulation of a lever 148 secured to a pin 150 pivoted in the carrier and provided with non-circular ends receivable within circular lower ends of slots 152 formed in the upper edges of the side plates 2. The ends of the pin 150 will not pass through the upper portions of the slots 152 when the manipulating pin 148 is in the position shown, but may pass therethrough when the pin is moved to the dotted line position indicated in Fig. 1, whereupon the carrier 142, together with the platen and knife, may turn upwardly to afford access to the mechanism located therebelow. By such movement of the carrier, the connection between the knife and lever 196 is interrupted, to be restored when the carrier is returned to normal position.

Guides 154 are mounted on the carrier 142 and cooperate with guides 156 to receive a ticket strip 158 fed between the latter. The ticket strip is thus held under control to the point of severance by the knife 194, which will be later described.

When there is a ticket strip located in the lower end of the passage between the guides 156, a suitably guided pin 160 engages it and thereby holds upwardly a pin 162 and connected block 164, which are urged in a counterclockwise direction about a pivot 167 by a spring 165. A link 166 connects the block 164 with the rearward end of the link 26.

Feed of the ticket strip between the guides 156 is effected in a fashion similar to that described in our prior application Ser. No. 756,554, filed October 2, 1934. Improved ticket grippers, however, are provided. The mechanism just referred to comprises a slide 168 mounted to slide along the guides 156 and arranged to be moved by a lever 170 pivoted on a pin 171 and provided with

a follower 172 movable within a cam groove 174 in the disc 92 and held to avoid play by a spring 173. Properly timed reciprocatory movements are thus imparted to the slide 168. The slide is provided with transverse pins 176 and 178 on which are mounted gripper members 180 and 182 provided with gripping points, as shown, designed to press the ticket strip against a backing plate 183 carried on the slide below an elongated central opening formed in the guides 156. Springs 184 and 186 engage pins 187 and 188 to cause the members 180 and 182 to grip the ticket strip. A cam 190 located adjacent the lower portion of the guides is arranged to engage the pin 188 at proper times to disengage element 182 from the ticket strip. The operation of this mechanism will be described hereafter. There is provided means (not herein shown) for freeing both grippers to facilitate entry of a ticket strip through the guides, this means being similar to that of our prior application. The pointed grippers herein disclosed are more durable and reliable in operation than those shown in our prior application.

The movable knife 194 in the form of a flexible blade is held downwardly against a fixed blade 192 by means of adjustable screws 193 engageable with the edges of an upwardly arched portion thereof. The rear end of the flexible blade 194 is provided with an opening within which there engages a pin projecting upwardly from the knife-operating lever 196, which is pivoted at 198 and urged in a counterclockwise direction by a spring 199. The lower end of the knife-operating lever 196 is provided with a projection 200 engageable by a roller 202 secured to the gear 90. A finger 204 formed on the lever 196 is engageable within a socket in a lever 206 pivoted at 207 and provided with an end 208 also engageable by the roller 202. Counterclockwise rocking of the lever 206 will impart clockwise movement to the knife-operating lever so that the latter will impart to the knife a cutting stroke.

Inking of the type is effected by means of an inker generally indicated at 210 and comprising a removable frame within which is journaled an ink cylinder 212 against which there may be adjustably pressed an inking roller 214 carried by a bracket 215, adjustment of the position of which is controlled through the medium of a screw and nut arrangement indicated at 217. The cylinder 212 is arranged to carry a supply of ink on its interior and is provided with a soft facing through which the ink may exude. The amount of ink delivered to the roller 214 is determined by the pressure of the latter upon the cylinder. The inker unit is guided into position by tracks 216 and 218 and is latched in such position by engagement of a transverse member 220 by the turned end 222 of a latch 224 pivoted to the inker assembly and urged into latched position by a suitable spring. By pulling upon the member 224 with the finger, it may be disengaged from the transverse member 220 and the inker thereby removed from the machine.

The operation of the multiple ticket issuing machine heretofore described can be best understood by considering the events occurring in the issue of two tickets. The various figures illustrate the parts in their initial positions.

Depression of the key 3 corresponding to the issue of two tickets serves through the extension 18 of its key lever to rock the stirrup 20 and thereby move rearwardly the pin 24. Assuming that ticket stock 158 is between the guides 156,

the finger 160 will be raised and accordingly the end 30 of member 26 will be forwardly of the extension 69 of detent 67 and the shoulder 32 of the link 34. As the pin 24 moves rearwardly, it carries with it the member 26, the turned end 30 of which causes a rearward movement of the link 34. The step 42 of this link pushes the detent 44 free of the tooth 46 of ratchet 48 beneath which it was previously located. At the same time the detent 67 is pulled rearwardly out of the path of the teeth 46 and as a consequence the ratchet, together with the yoke 50, will snap counterclockwise under the action of spring 16.

The turned projection 60 on the depressed key lever will, in the meantime, have been located below the plate 52 and in the path of the projection 58, which corresponds to the issue of two tickets. In the present case, this projection will be the middle one. The plate 52 may, therefore, move rearwardly until projection 58, just mentioned, engages the turned end 60 lying below the plate. This corresponds to a movement of the ratchet corresponding to the angular spacing of two teeth. The plate 52 will now underlie the turned ends 60 of the other keys, there being three indicated in the present case, although it will be understood that any reasonable number may be incorporated in the machine. The other keys therefore cannot be depressed. The depressed key, on the other hand, is held downwardly.

As the ratchet 48 rotates counterclockwise, the member 64 is free to rotate clockwise and carries with it the pawl 67, the lower tail of which drops into engagement with the stop 63. The movement of the member 64 clockwise is effected through the link 68 by reason of the action of the spring 106 upon the clutch control member 72. The clutch controlling cam 76 moves rearwardly, freeing the head 78 of the pin 80. Limitation of motion of cam 76 occurs due to engagement of roller 102 with the periphery of cam 100. The pin 80 is forced to the right, as viewed in Figs. 3 and 4, ready to engage one of the openings 84 in the disc 83 secured to gear 86.

As the clutch controlling member 72 rocks clockwise, the member 103 is released and its spring 110 causes it to force the depending arm 114 rearwardly, producing a closure of the motor circuit through the electrical joining of contacts 124 by the wedge-shaped contact 122. The motor immediately starts to rotate, driving the shaft 89 and, through pinion 88, the gear 96. As soon as the pin 80 snaps into one of the holes 84, drive is established through the gear 90. The gears 86 on companion units will also be rotated by their pinions 88. However, they effect no action in their units inasmuch as the clutch pins remain retracted.

The upper end of the ticket strip will now be located at the cutting point. As the rotation starts, the roller 202 engages the follower end 200 of the knife-operating lever, withdrawing the movable blade, uncovering the ticket exit. At the same time the carriage 168 moves downwardly, pulling with it the ticket strip by reason of the action of the gripper 182. The gripper 182 is released from the ticket strip at the end of the downward motion of the slide owing to the action of the cam 190 upon the pin 188. As such release occurs, the upper end of the ticket strip is located at the position of the platen roller 138, and the first portion of the advancing type immediately thereafter engages the ticket, this comprising the numbering head 136. The type

now effects the movement of the ticket strip by frictional engagement therewith, and until the printing action is finished, the ticket strip is fed solely by the engagement of the type therewith, the feed being intermittent if type is not continuously engaging the strip. Since the gripper 182 is now released, and since the gripper 180 is so arranged by reason of its mounting that the ticket strip is free to move upwardly, this action takes place without hindrance from the gripper mechanism.

The roller 102 is now engaged by the cam 100 so that the clutch control member 72 is rocked counterclockwise. As the result of this action, the member 64 is rocked counterclockwise, raising the pawl 67, which engages one of the teeth 46, after clearing stop 63, to cause the ratchet 48 to have imparted thereto a single clockwise step. As the pawl 67 rises, it engages the turned end 30 of the member 26, pushing it upwardly to release the step 32 on the link 34. This action is not prevented by the rod 166 relative to which the left-hand end of the member 26 is free to move downwardly. As soon as the link 34 is released by the member 26, it is moved to the right under the action of spring 40, permitting the detent 44 to move below the tooth 46 which has been moved above it in the ratcheting process.

At the end of the first step the tail 62 of the ratchet 48 is not yet restored to its original position and consequently, as the roller 102 is permitted to fall by the cam 100, there is nothing to prevent the member 64 from rocking to its extreme clockwise position which it occupied immediately following the tripping. The pawl 67 is thus retracted, the ratchet being now held by the detent 44 and the turned end 30 of member 26 will now lie upon the upper edge of the link 34 rearward of the step 32. At the same time the cam 76, which was first moved forwardly, will again move rearwardly so as to permit the head 78 on the pin 80 to pass freely without being withdrawn from the hole 84 into which it projects.

As was noted above, the first event which occurred was the rocking of the knife lever 196 rearwardly. As this occurred, the projecting member 118 engaged the arm 114, serving to hold the switch closed even though withdrawal of member 108 occurred as the clutch control member 72 was rocked counterclockwise.

After the last type, in the present case 134, leaves engagement with the ticket strip, the carriage 168 again moves upwardly, advancing the ticket strip by the action of gripper 180 so as to bring the already printed portion above the cutting line and to align the portion of the strip which is to be cut with the knives. As soon as the gripper 168 reaches its uppermost position, the roller 202 engages the portion 208 of lever 206, rocking it and thereby causing the knife operating lever 196 to move clockwise, producing a cutting stroke of the knife to sever the printed ticket. It may be noted that in the meantime the cam 100 will have attained such position that the member 108 will again be released to hold the switch closed so that no opening of the motor circuit occurs.

The second cycle to issue the next ticket is now ready to occur. The carriage 168 again moves downwardly and the knife is retracted. Again the pawl 67 is moved upwardly imparting another step to the ratchet 48. Continuing to assume that two tickets are to be issued, the

ratchet 48 will now be moved to its initial position, bringing the tail 62 beneath the forward projection 65 of the member 64. The clutch control member 76 now moves forwardly but will be held forwardly because of the location of the tail 62. It is therefore in position to engage the head 78 and release the pin 80 from the hole in which it was previously engaged, thus breaking the connection between the driving gear 86 and the hub 82.

As the plate 52 is withdrawn from above the turned portion 60 of the depressed key lever, the lever rises, permitting the stirrup 22 to rotate under the action of its spring 21, with the result that the pin 24 will move the member 26 forwardly, permitting its turned end 30 to drop in front of the step 32 and extension 69 of the pawl. Before the completion of the cycle, the knife is again moved to sever the ticket strip following the location of the ticket strip by the gripper in proper position for severance. This time, however, as the knife lever 196 moves forwardly and the element 118 is withdrawn from arm 114, the arm 114 may swing counterclockwise, since the element 108 is now held out of engagement therewith due to the position of the clutch control member 72. The switch is thus opened and the motor deenergized. A slight overrun will cause the parts to assume their final position, the detent 94 snapping into the notch of plate 92 to hold the various parts against reverse movement.

During the above operations the ink roller 212 is rotated through the meshing of a gear connected therewith with the intermediate pinion 126 in the drive train.

The restaurant check machine illustrated in Fig. 6 closely resembles the multiple ticket issuing machine described above, except that there are provided means whereby removal of a ticket held in a position for presentation to a taker initiates operation of the mechanism to cause it to go through a single cycle. The clutch controlling means, switch mechanism, ticket strip feeding and printing means, and inking devices, are the same as shown in the machine previously described, and, in Fig. 6, only so much of these is shown as is necessary for an understanding of the different types of controlling elements.

The casing of the restaurant check machine is surmounted by a cover 240 provided with an opening through which a printed check projects, as indicated at 242, this check being pressed against a support 244 carried by a member 246 similar to 142 of the machine previously described and carrying a platen roller 248. The pressure holding the check in the position indicated is exerted by a finger 250 overlying an opening in the support 244 and secured to a member 252 pivoted to the supporting frame 246 at 254. A spring 255 urges the member 252 in a counterclockwise direction. Its motion is limited by the engagement of the finger 250 with the check, which is formed of paper of sufficient rigidity to maintain the finger 250 in its upper position. There is pivoted to the member 252 at 258 a link 260 suitably guided by a pin and slot connection 262 upon the supporting member 246. A downwardly extending lip 264 on the link 260 is arranged to be engaged and moved to the left, as viewed in Fig. 6, by a laterally projecting portion of the knife 266. This knife is operated, as in the previously described form, by a lever 268.

A member 270 is guided by slotted connections with pins 272 and 274 to travel in a straight line. Its upper end is engageable by a finger 256 formed on the member 252. A pin 276 on the member 270 is adapted to engage a lever 278 pivoted upon a pin 280 normally urged in a clockwise direction by a spring 282. The lever 278 is provided with a detent portion 284 engageable with an upper element 286 of a two-part lever, the upper element being pivoted to the lower element 288 at 290 and being adjustable relative thereto through the medium of a screw and slot connection indicated at 292. The lower portion 288 of the lever is pivoted upon a pin 294 and has pivotal connection at 295 with a link 296, which is in turn pivoted to the clutch controlling member 298 identical with 72 of the machine previously described.

Also pivoted upon the pin 294 is a controlling member 300 provided with a projecting portion 302 designed at proper times to engage the lower extension 304 of the lever 278. The controlling member 300 has a laterally extending portion through which there slides a rod 306 connected to a block 310 pivoted at 312 and urged in a counterclockwise direction by a spring 314 to bring a finger 316 into engagement with the check strip 318 extending into the guideway 320. A pin 308 on the rod 306 is adapted to engage and move clockwise the controlling member 300 when the check strip supply fails, resulting in the downward movement of the finger 316 through aligned openings in the guideway 320. There is pivoted to the right-hand end of the controlling member 300 a link 322 normally urged upwardly by a spring 324. The link 322 is provided with a turned end 326 engageable by the finger of an operator who may pull the link downwardly to engage a stud 328 thereon beneath a transverse member 330 carried by the frame. When this is done and the link is brought to the full line position indicated, the portion 302 of the controlling member 300 is brought upwardly into the path of the extension 304 of lever 278 with the result that the lever cannot be rocked in a counterclockwise direction and operation of the mechanism is prevented. This same action occurs if there is a failure of the check strip at the entrance to the guideway. In such case the finger 316 drops, causing the rod 306 to move upwardly and locate the element 300 in its full line position. At such time the stud 328 is forced below the transverse member 330 and snaps in front of it to the full line position under the action of spring 324. It may be remarked that both springs 324 and 282 are light ones which do not serve to interfere with motions imparted by the stronger springs 314 and 255, respectively.

In the operation of the restaurant check machine, assuming that the controlling elements are in the dotted line positions, the removal of a presented printed check 242 will result in dropping of the finger 250 through the support 244 and the forcing of the member 270 to the right under the action of the finger 256. This causes a counterclockwise movement of the lever 278, releasing its detent portion 284 from the upper end of the link 286—288 which, rocking counterclockwise under the action of spring 332 connected to the clutch-control member 298, permits the clutch control member to effect engagement of the clutch and closure of the operating switch. The machine is thus set into operation to pass through a cycle similar to that described in connection with the multiple ticket issuing

machine. As soon as the operation starts, the knife is retracted and by engagement with the link 260 causes the member 252 to be rocked clockwise, lifting the finger 250 out of the path of the advancing check strip. The rearward position of the knife is maintained until the end of the cycle and accordingly there is no interference by the finger 250 with the proper advance of the strip until the feed is ended. When the knife moves to cut the strip, the finger 250 is again permitted to drop against it. The knife, in its cutting movement, moves considerably beyond the final position of the extension 264 so that dropping of the finger may take place to initiate a new cycle when the presented check is removed.

Upon withdrawal of the finger 256 from the link 270, the lever 278 is permitted clockwise movement under the action of spring 282 as soon as the link 286—288 is moved clockwise by the action of a cam corresponding to 100 upon the clutch controlling member 298. When the clutch controlling member 298 is thereafter released, the upper end of the lever 286—288 will engage the detent portion 284 of lever 278 to prevent initiation of another cycle except by removal of a check.

The relative adjustability of the portions 286 and 288 of the composite lever provides for the attainment of a tripped condition for the apparatus serving to positively insure its operation without fail upon removal of a check.

It will be clear that numerous variations may be made in the specific embodiment of the invention without departing from its scope as defined in the following claims.

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

1. A ticket issuing machine comprising means for feeding a ticket strip to issue one or more tickets in a cycle of operation; a knife for severing individual tickets from the strip, said knife being in its strip-severing position at the beginning of a cycle; a motor; connections through which the motor may drive said strip feeding means and actuate the knife, said connections including a clutch; clutch controlling means; a switch controlling operation of the motor; means whereby said switch is closed by the clutch controlling means at the beginning of a cycle; means for moving the knife to its inactive position during the early part of the portion of the issuing operation for each ticket; means whereby the knife in such position is operative to maintain the switch closed; means for moving the clutch controlling means during the issue of each ticket to the position which it occupies in disengaging the clutch and in which it is inoperative to maintain the switch closed, said position being occupied during the issue of the tickets of a series preceding the last only when the knife is in its inactive position; and means for actuating the knife to cut the strip.

2. A ticket issuing machine comprising means for feeding a ticket strip to issue one or more tickets in a cycle of operation; a knife for severing individual tickets from the strip; knife actuating means; a motor; connections through which the motor may drive said strip feeding means and actuate the knife, said connections including a clutch; clutch controlling means; a switch controlling operation of the motor; means whereby the switch is closed by the knife actuating means when the knife is in inactive position; and means whereby the switch is closed by the clutch con-

trolling means when the latter is in clutch-engaging position; said last two means being alternately effective during a multiple ticket issuing cycle to maintain the switch continuously closed until the end of the cycle.

3. A ticket issuing machine comprising means for feeding a ticket strip to issue one or more tickets in a cycle of operation; means for severing tickets from the strip; a motor; connections through which the motor may drive said strip feeding and severing means, said connections including a clutch; clutch controlling means effective to disengage the clutch; means for oscillating the clutch controlling means during the issue of each ticket between the position which it occupies in disengaging the clutch and its inactive position; and means for holding the clutch controlling means in the former position after it assumes it during the issue of the last ticket of a series.

4. A ticket issuing machine comprising means for feeding a ticket strip to issue one or more tickets in a cycle of operation; means for severing tickets from the strip; a motor; connections through which the motor may drive said strip feeding and severing means, said connections including a clutch; clutch controlling means; means for oscillating the clutch controlling means during the issue of each ticket between the position which it occupies in disengaging the clutch and its inactive position; means for holding the clutch controlling means in the former position after it assumes it during the issue of the last ticket of a series; and means actuated by the clutch controlling means for rendering said holding means operative.

5. A ticket issuing machine comprising means for guiding a ticket strip; means for feeding the ticket strip; a knife for severing a ticket from the strip; means for actuating the knife; a carrier for the knife pivotally movable to a position to carry the knife away from the feeding means; and connections between the knife and its actuating means arranged to be interrupted when the carrier is moved to said position and restored when the carrier is returned to its normal position.

6. A ticket issuing machine comprising means for feeding a ticket strip to issue one or more tickets in a cycle of operation; driving means; and means for controlling actuation of the feeding means by the driving means, said controlling means comprising a ratchet member variably movable at the beginning of a cycle to predetermine the number of tickets to be issued, means for restoring the ratchet member step by step to its initial position, and means whereby the ratchet member in its initial position holds the restoring means in the position it assumes in moving the ratchet member to such initial position.

7. A ticket issuing machine comprising means for feeding a ticket strip to issue one or more tickets in a cycle of operation; driving means including a motor and a clutch located between the motor and the feeding means; and means for controlling actuation of the feeding means by the driving means, said controlling means

comprising clutch controlling means, a ratchet member variably movable at the beginning of a cycle to predetermine the number of tickets to be issued, means for restoring the ratchet member step by step to its initial position, said restoring means being connected to the clutch controlling means, and means whereby the ratchet member in its initial position holds the restoring means in the position it assumes in moving the ratchet member to such initial position and whereby the clutch controlling means is rendered effective to disengage the clutch.

8. A ticket issuing machine comprising means for feeding a ticket strip in a cycle of operation; driving means; means for controlling actuation of the feeding means by the driving means, said controlling means comprising a key, an element arranged to trip the machine into operation, and an interruptible connection between the key and element; and means effective upon exhaustion of the strip supply to interrupt said connection whereby manipulation of the key in normal fashion is rendered ineffective to start an operation.

9. A ticket issuing machine comprising means for feeding a ticket strip in a cycle of operation; driving means; severing means; means for holding a severed ticket in position for removal from the machine; means for controlling actuation of the feeding and severing means by the driving means, said controlling means including a finger resting on said severed ticket and tripped when the severed ticket is removed to initiate a cycle of operation; and means whereby movements imparted to the severing means effect movement of said finger out of the path of the advancing end of the strip.

10. A ticket issuing machine comprising means for feeding a ticket strip in a cycle of operation; driving means; severing means; means for holding a severed ticket in position for removal from the machine; means for controlling actuation of the feeding and severing means by the driving means, said controlling means including a finger resting on said severed ticket and tripped when the severed ticket is removed to initiate a cycle of operation; and means whereby the severing means moves said finger out of the path of the advancing end of the strip, and releases the finger to hold the end of the strip prior to a severing operation.

11. A ticket issuing machine comprising means for feeding a ticket strip in a cycle of operation; driving means; severing means; means for holding a severed ticket in position for removal from the machine; means for controlling actuation of the feeding and severing means by the driving means, said controlling means including a finger resting on said severed ticket and tripped when the severed ticket is removed to initiate a cycle of operation; means for preventing initiation of a cycle of operation in the absence of a ticket strip; and means for latching said preventing means in its active position after automatic location therein.

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