Aug. 17, 1937. W. E. MARQUART 2,090,612

TICKET PRINTING AND ISSUING MACHINE

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Fig. 1.

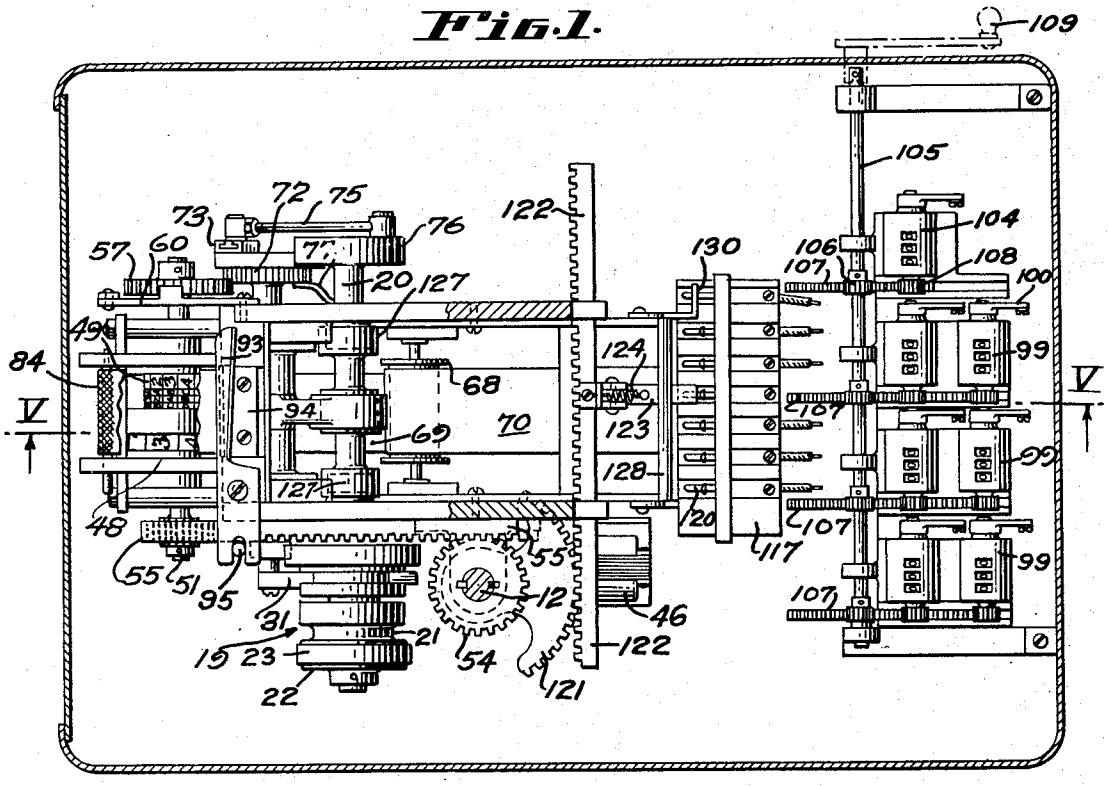


Fig. 2.

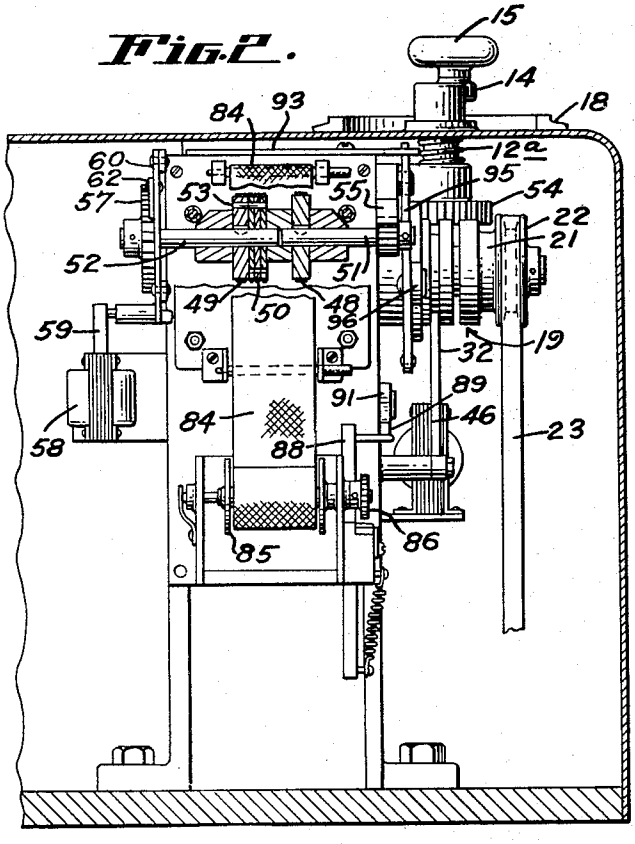
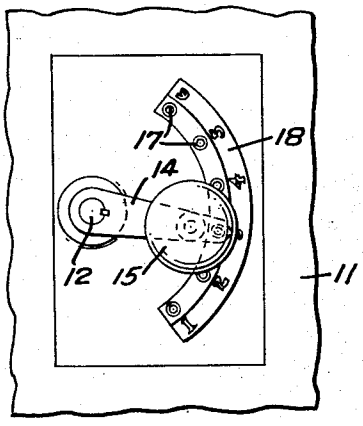


Fig. 3.



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Fig.4.

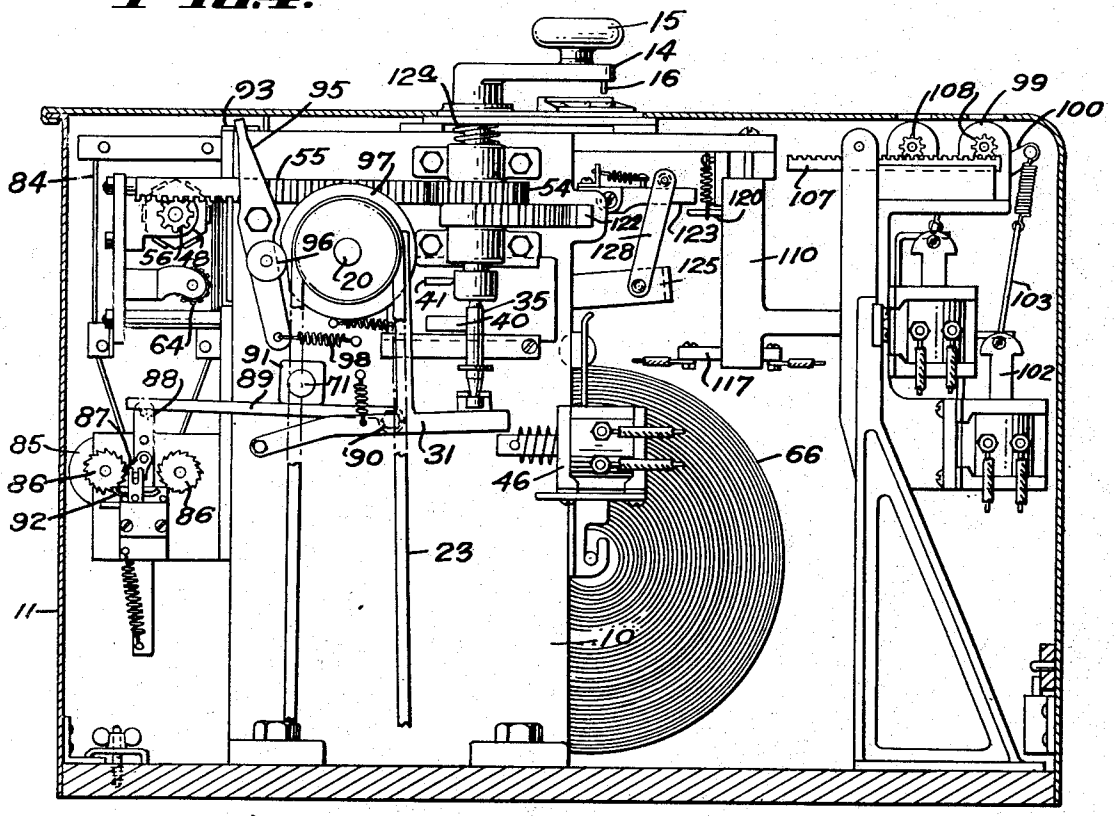
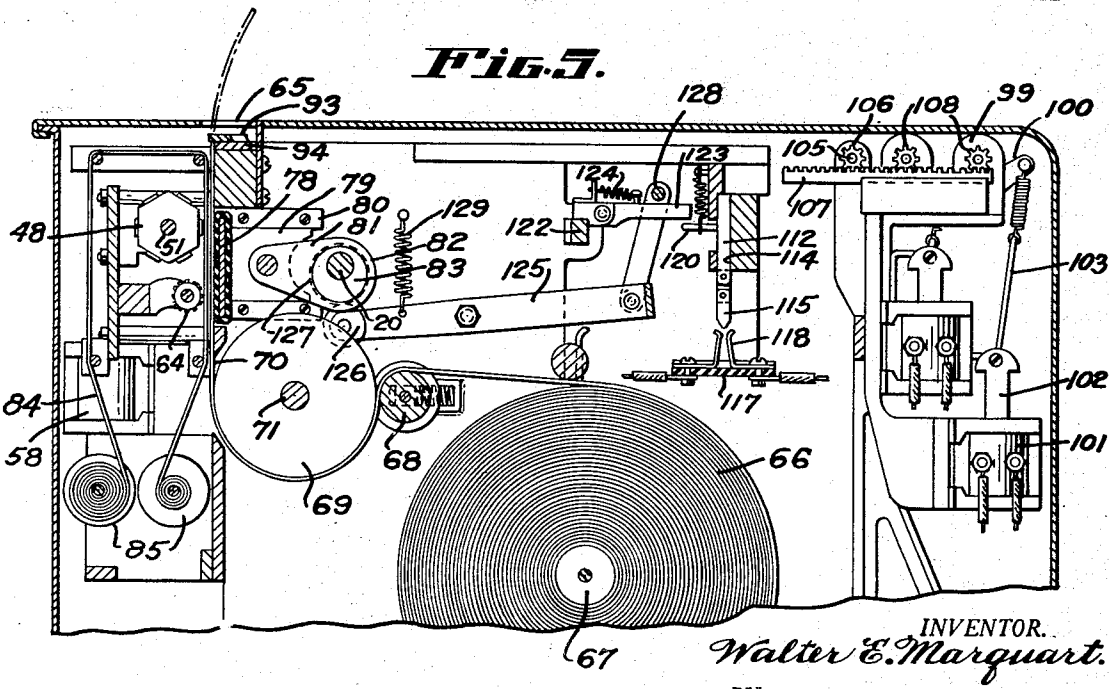


Fig.5.



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TICKET PRINTING AND ISSUING MACHINE

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Fig. 6.

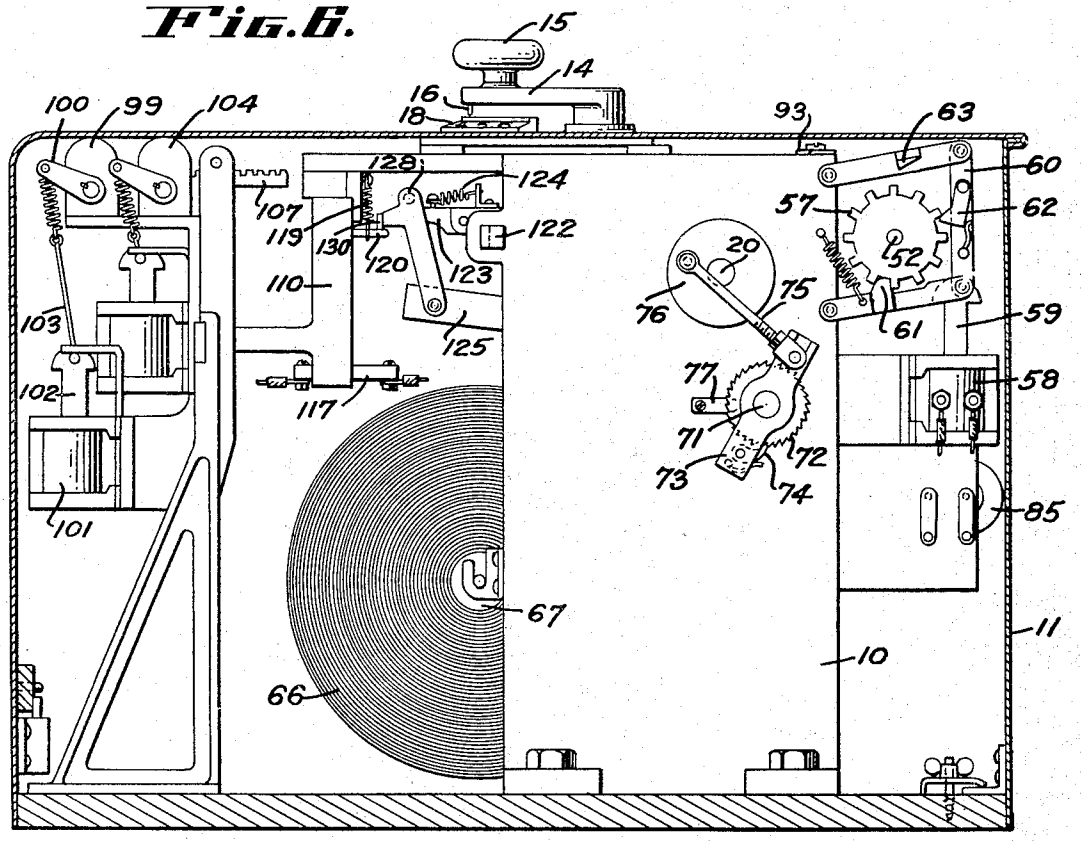


Fig. 7.

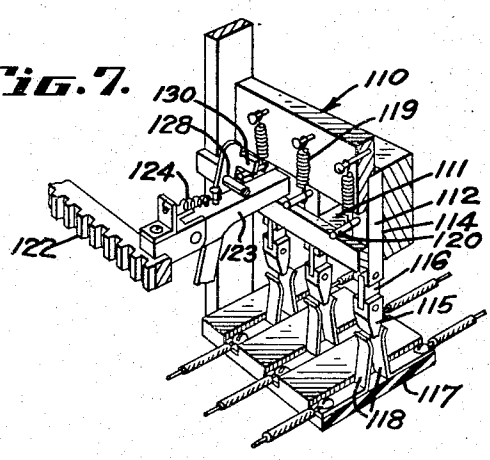
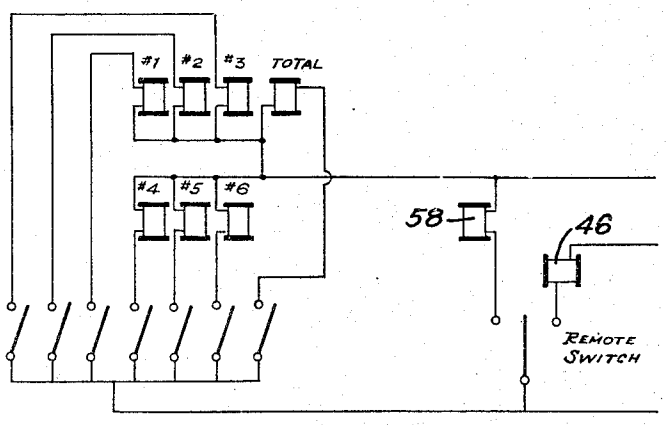


Fig. 8.



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TICKET PRINTING AND ISSUING MACHINE

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Fig. 9.

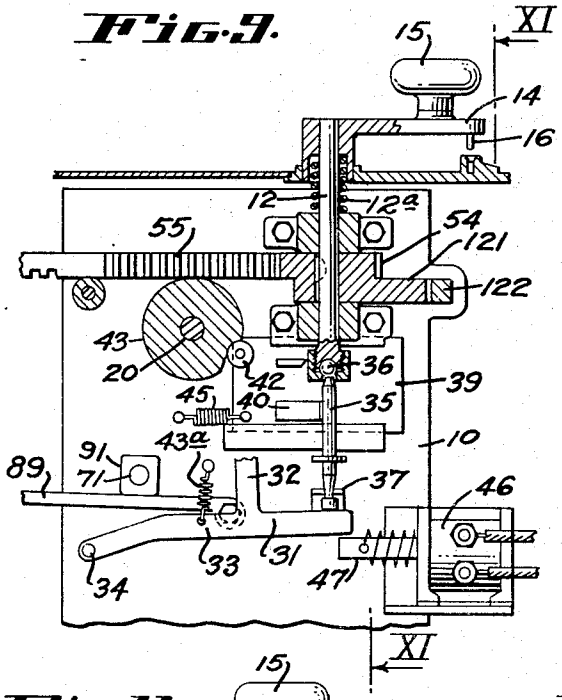


Fig. 10.

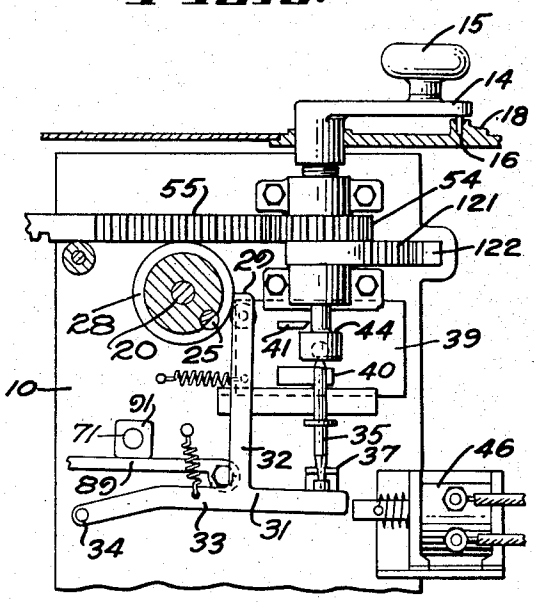


Fig. 11.

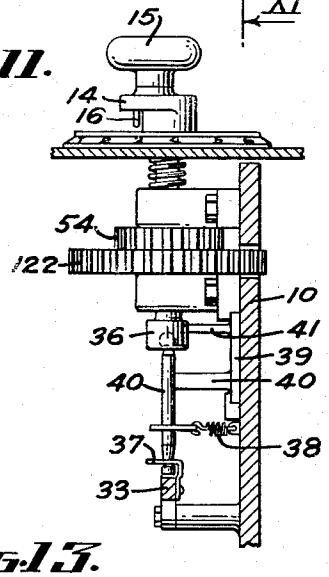


Fig. 12.

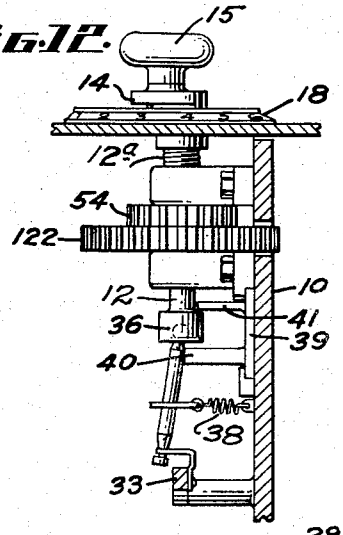


Fig. 13.

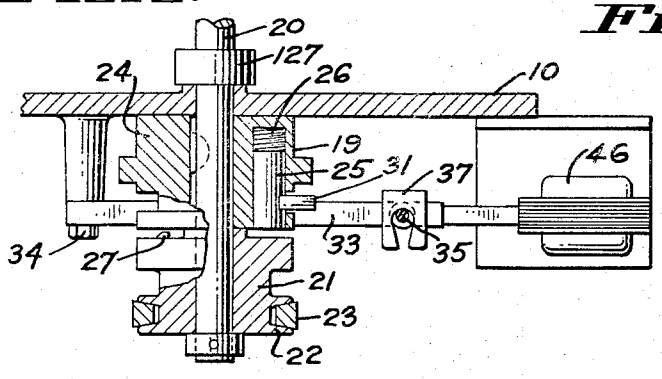
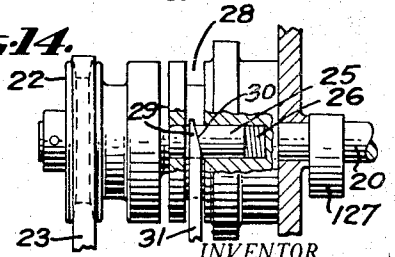


Fig. 14.



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UNITED STATES PATENT OFFICE

2,090,612

TICKET PRINTING AND ISSUING MACHINE

Walter E. Marquart, San Leandro, Calif.

Application February 9, 1937, Serial No. 124,831

12 Claims. (Cl. 101—66)

This invention relates to ticket printing and issuing machines of the character such as employed at race tracks for printing and issuing tickets on the different entries at the time of purchase.

It is the principal object of my present invention to provide a generally improved and simplified machine of the character referred to which is comparatively inexpensive to construct and maintain and will not become out of order, and which is efficient in operation in that tickets will not be incorrectly issued and cannot be inadvertently or fraudulently issued.

In practicing my invention I provide a comparatively simple machine capable of printing and issuing a ticket on each cycle of operation. A counting mechanism is included in the machine and operates to separately register the number of tickets issued on each entry. The machine is provided with a selective mechanism to enable the operator to simultaneously select and place in printing position the number of the entry to be printed on the ticket and to select the corresponding counter for registering the issuance of a ticket on that particular entry. The operator may then place the machine in operation to print the ticket, issue the same and register the issuance of the ticket on the selected counter. The machine also includes a race printing mechanism for printing the number of the race on each ticket, which printing mechanism is capable of being set from a point remote from the machine and out of the particular operator's control, so that the number of the race can never incorrectly, inadvertently or fraudulently be printed on a ticket. The machine is so constructed that the selector mechanism can be operated only during the inoperative period of the machine, and, further, the machine automatically discontinues operation after each cycle to prevent inadvertent issuance of tickets.

One form which the invention may assume is exemplified in the following description and illustrated by way of example in the accompanying drawings, in which:

Fig. 1 is a plan view of the operating mechanism of the machine showing the casing in plan section.

Fig. 2 is a fragmentary view in transverse section showing the operating mechanism partly in rear elevation and partly in section.

Fig. 3 is a fragmentary view in plan of the machine showing the selector lever and the selector dial.

Fig. 4 is a view in section through the casing showing the operating mechanism of the machine in side elevation.

Fig. 5 is a longitudinal sectional view through the machine taken on line V—V of Fig. 1.

Fig. 6 is a view in longitudinal section through the casing showing the operating mechanism thereof in side elevation, the side of the operating mechanism illustrated being that opposite that illustrated in Fig. 4.

Fig. 7 is a fragmentary view in perspective showing the selector switch mechanism for operating the counting mechanism of the machine.

Fig. 8 is a wiring diagram showing the electrical connection between the various electromagnets utilized in operating certain of the mechanisms of the machine.

Fig. 9 is a fragmentary view in longitudinal section of the mechanism of the machine disclosing the construction of the selector shaft and its connection with its associated mechanism, disclosing the parts in starting position.

Fig. 10 is a similar view showing the parts in operating position.

Fig. 11 is a fragmentary transverse sectional view taken on line XI—XI of Fig. 9, showing the parts in starting position.

Fig. 12 is a view similar to Fig. 11, showing the parts in operating position.

Fig. 13 is a plan sectional view through the clutch on the main drive shaft of the machine.

Fig. 14 is a side elevation of the clutch mechanism with parts thereof broken away to disclose its construction.

Referring more particularly to the accompanying drawings, the machine there disclosed comprises a main frame 10 on which the operating mechanism is mounted, which operating mechanism is enclosed by a casing 11 which may be of any suitable construction and design and which may be secured to the main frame either by a lock or any other suitable means.

The machine here disclosed is for the purpose of issuing tickets on races, and its main characteristics are to enable the machine operator to select the entry by means of a selector lever and by operation of the lever place the machine in operation so that the same will print and issue a ticket having imprinted thereon the number of the entry, the date of issuance, the number of the race and other suitable code indicia. By mere manipulation of the selector lever the operator may select any one of the entries. The machine also includes a counting mechanism separately showing the number of tickets issued on

each entry and also the total number of tickets issued by the machine.

Referring to the drawings, particularly Figs. 3 and 9 to 14, inclusive, it will be seen that arranged vertically and suitably journalled in the main frame is a selector shaft 12. The upper end of this shaft projects through the top of the casing 11 and is fitted with a selector lever 14 capable of oscillation in a horizontal plane. This selector lever 14 is fitted at its free end with an upwardly projecting knob 15 by means of which it may be grasped and operated to impart turning movement and downward axial movement to the selector shaft 12. At the underside of the outer end of the selector lever 14 is a selector pin 16 capable of engaging any one of a plurality of selector sockets 17 formed in the selector dial 18. It will be noticed that the selector sockets 17 are formed on a line struck arcuately from the center of the selector shaft 12 and are spaced equal distances apart.

The sockets 17 each represents an entry in a race. When the selector lever 14 is moved to place the selector pin 16 in register with a selector socket 17, the selector lever 14 may be depressed to move the selector shaft 12 axially downward to place the machine in operation. It accomplishes this by rendering effective a clutch 19 on a main drive shaft 20 arranged horizontally and transversely of the frame and journalled therein.

The clutch mechanism 19 includes a driving clutch member 21 rotatably mounted on the main drive shaft 20, which clutch member 21 is formed with a V-pulley 22 constantly driven by a V-belt 23, or otherwise, from an electric motor (not shown). Keyed on the main drive shaft 20 is a driven clutch member 24. This latter together with the driving clutch member 21 constitute the conventional type of clutch employed on punch presses and in various other capacities. The driven clutch member 24 is fitted with an axially reciprocable and eccentrically located clutch pin 25. A spring 26 normally tends to press this clutch pin 25 toward the driving clutch member 21 so as to engage a fixed clutch abutment 27 thereon and thereby form a driving engagement between the clutch members 21 and 24.

The driven clutch member 24 is formed with a circumferential groove 28 which the clutch pin 25 intersects. The latter is slotted as at 29, which slot registers with the circumferential groove 28 when the clutch pin 25 is out of engaging position. When in this latter position, the cam end 30 of a clutch trip lever 31 nests in the circumferential groove 28 and engages the slot 29 and holds the pin 25 in disengaged position. When the trip lever 31 is momentarily swung out of the groove 28 and slot 29, the clutch pin 25 is projected to an engaging position and a drive is transmitted from the driving clutch member 21 to the driven clutch member 24 and to the main drive shaft 12. As soon as the pin 25 is projected to engaging position, the trip lever 31, as will be described, again positions itself in the circumferential groove 28, and as the driven clutch member 24 completes one complete revolution, the cam end 30 of the trip lever 31 engages the slot 29 and withdraws the clutch pin 25 from engaging position, thus stopping the drive of the main drive shaft 20 at one complete revolution.

The cam end 30 of the trip lever 31 is formed on a vertically projecting portion 32 which projects from a horizontal portion 33 of the trip lever 31. This horizontal portion 33 of the trip lever 31 is pivoted as at 34 to the frame. The forward end of the trip lever 31 projects beneath the selector shaft 12 in vertical alignment therewith, as illustrated most clearly in Figs. 9 and 10.

To operate the clutch trip lever, I have suspended a trip pin 35 from the lower end of the selector shaft 12. This trip pin 35 is connected to the selector shaft 12 by a universal joint 36. The lower end of the trip pin 35 engages a bifurcated guide 37 fastened to the free end of the trip lever 31 so that the lower end of the trip pin may be moved laterally relative to the trip lever in one direction. The trip pin, however, is normally held in a position in vertical alignment with the trip lever 31 by means of a spring 38 (see Figs. 11 and 12). It is obvious that by this means, axial downward movement of the selector shaft 12 will be accompanied by swinging movement of the trip lever 31 in a direction disengaging the cam end 30 from the slot 29 in the clutch pin 25, thereby rendering the clutch effective. It should be stated that one complete revolution of the main drive shaft 20 is effective in printing and issuing a complete ticket.

In order to release the trip lever 31 promptly and thereby stop the operation of the machine after each complete operation, and to prevent operation of the selector lever 14 during each operation, I provide a reciprocable slide 39. This slide is reciprocably mounted on the frame in suitable guides for reciprocation longitudinally thereof, as shown most clearly in Figs. 9 to 12, inclusive. The slide 39 includes a fixed cam 40 and a keeper 41. The slide 39 is also fitted with a cam roller 42 engaging a cam 43 fixed on the main drive shaft 20.

When the selector lever 14 is depressed to impart downward movement to the selector shaft 12, the trip pin 35 engages the trip lever 31 and moves the same downwardly to cause engagement of the clutch mechanism 19 and impart a drive to the main drive shaft 20. Immediately, the cam 43, through the cam roller 42, moves the slide 39 forwardly of the machine so that the cam 40 will engage the trip pin 35 and move its lower end out of engagement with the trip lever 31, as shown in Fig. 12. This moving of the trip pin 35 laterally out of engagement with the trip lever 31 releases the trip lever 31 so that its cam end 30 will disengage the clutch mechanism 19 at the completion of one revolution of the main drive shaft 20. It is seen that a spring 43a constantly tends to so operate the trip lever 31.

Simultaneously with the disengagement of the trip pin 35 with the trip lever 31, the keeper 41 is moved to a position to engage the annular shoulder 44 on the selector shaft 12 to prevent upward movement thereof and consequent disengagement of the selector pin 16 with the selected selector socket 17. This prevents the selector lever 14 from being operated during the operation of the machine.

As the machine completes its cycle of operation, the cam 43 through the roller 42 permits the slide 39 to be returned to starting position by means of a spring 45 as illustrated in Fig. 9.

It has been found necessary and desirable that some means be provided to latch the machine against operation during any particular interval, as, for example, from the time a race is started until its completion. It is also desirable that this latching may be accomplished from a remote point, as, for example, from the judges' stand. For this purpose I have provided an electromagnet 46, the armature 47 of which, when the

magnet is de-energized, projects to a position beneath the trip lever 31 and prevents the same from being depressed sufficiently to render the clutch mechanism 19 effective. When the electromagnet 46 is energized, however, the armature 47 is withdrawn from an obstructing position so that the machine may be operated. The circuit of the electromagnet 46 may be controlled by a switch located at the machine, or at any point remote therefrom as is manifest from the wiring diagram shown in Fig. 8.

It should be stated here that swinging movement of the selector lever 14 operates a printing wheel to select the number thereon corresponding with the number of the selector socket with which the selector pin 16 is in register. This is accomplished through the medium of the following described mechanism. At the rear of the machine is positioned an entry printing wheel 48 (see Figs. 1 and 2), a race printing wheel 49 and code printing wheels 50. These wheels are all mounted on a pair of aligned shafts 51 and 52 suitably journalled in the frame. The entry printing wheel 48 is keyed on the shaft 51, while the race printing wheel 49 is keyed on the shaft 52. The code printing wheels 50 are revolubly mounted on the latter shaft but detachably connected to the race printing wheel 49 by means of a pin 53. By removing the pin 53 the code wheels may be revolved relative to each other and to the race printing wheel 49 so that each day, or at the end of any period of time, the code combination may be changed so as to avoid forgery with respect to tickets.

The circumferential surface of the entry printing wheel 48 is formed with printing type and a separate number is provided for each entry, which numbers correspond with the selector socket numbers on the selector dial. The printing type numbers on the entry wheel may be selectively placed in printing position. For this purpose they are operatively connected with the selector shaft 12 so that turning movement of this shaft will operate the entry printing wheel so that when the selector pin 16 is in register with a selected socket 17 representing the entry, the printing type number on the entry printing wheel will correspond with the number of the selected socket and present the same number in printing position.

To accomplish this a gear 54 is feathered on the selector shaft 12 and is in mesh with a rack 55 which in turn meshes with a pinion 56 secured on the shaft 51. Thus, swinging movement of the selector lever 14 will be converted into endwise movement of the rack 55 and turning movement of the shaft 51 for setting the entry printing wheel.

The circumferential face of the race printing wheel is also formed with printing type numbers and provides a number for each race. This wheel is turned after each race so that the number of the succeeding race may be presented in printing position. This setting of the race printing wheel 49 is accomplished independently of the operation of the machine through the medium of a toothed wheel 57 (see Fig. 6) and its associate mechanism.

An electromagnet 58 is provided for operating the toothed wheel 57 an amount necessary to move the race wheel 49 sufficiently to present the succeeding number thereon in printing position. The armature 59 of the electromagnet 58 is connected with links 60 providing a holding pawl 61 to hold the wheel from turning after setting, a pawl 62 for imparting turning movement to the wheel 57 for changing the setting of the race printing wheel, and a pawl 63 for stopping turning movement of the wheel 57 at the proper time to insure exact setting of the race printing wheel. The timing and operation of the pawls is obvious from Fig. 6.

The circuit of the electromagnet for operating the race wheel may be positioned at a point remote from the machine, say at the judges' stand, so that immediately following each race, the judges may set the race wheel for the succeeding race.

The code printing wheels 50, as previously described, operate with the race wheel so that each race number has a different code or other indicia to be printed on the ticket with it.

Below the entry, race and code printing wheels are changeable date printing wheels 64, which may be manually changed so as to print the proper date of issuance on the tickets.

The tickets are printed on a strip of material, which is usually heavy paper, and after printing, the ticket is projected through a ticket issuing slot 65 in the top of the casing 11. The strip material is stored in a roll 66 mounted on a spool 67 removably and rotatably supported on the frame as illustrated in Fig. 4. From the storage roll 66, the strip material is led over an idler roll 68, thence around a feed roll 69 and then vertically upwardly closely adjacent to the printing faces of the printing wheels. The idler roll 68 is preferably spring-pressed into firm contact with the feed roller 69 so that when the latter is driven, the strip will be fed an exact distance, or a distance equal to the length of the ultimately issued ticket. The strip is indicated by the numeral 70.

To drive the feed roller 69, it is fixed on a shaft 71 rotatably supported by the frame. A ratchet wheel 72 (see Fig. 6) is fixed on the shaft 71. A pawl carrying lever 73 is rotatably mounted on the shaft 71 adjacent the ratchet wheel 72. At one end the lever 73 carries a spring-pressed pawl 74 to engage the teeth of the ratchet wheel 72. At its opposite end the lever 73 is pivotally and slidably connected to one end of a connecting rod 75. The other end of this connecting rod is connected to a crank 76 secured on the main drive shaft 20.

The first half revolution of the main drive shaft, when the machine is placed in operation, will operate the crank 76 in a direction causing it to swing the lever 73 in a direction in which the pawl 74 is ineffective in imparting rotation to the ratchet wheel 72, but during the second half of the revolution of the crank 76, the lever 73 will be swung in the opposite direction, in which direction the pawl 74 will be effective in turning the ratchet wheel an amount sufficient to turn the feed roller 69 the exact amount necessary to feed the strip 70 a distance equal to the length of the ultimately issued ticket. It is during the first half of the revolution of the main drive shaft 20 that the ticket is printed so that as soon as the ticket is printed, the strip is fed to project the ticket upwardly through the ticket issuing slot 65 as just described.

A friction brake 77 is provided for the ratchet wheel 72 to insure proper operation thereof and to hold the feed roller shaft 71 stationary during the intervals of its inactivity.

For effecting the printing of the ticket, I provide a platen 78 for cooperation with the printing wheels. This platen is mounted on a crosshead 79 reciprocably disposed in a crosshead guide 80 on the frame for reciprocation in a horizontal plane toward and away from the printing

surfaces of the printing wheels. The platen is, of course, disposed on the side of the strip 70 opposite the printing wheels.

To operate the platen 78, the crosshead 79 is connected with a connecting rod 81 having an eccentric strap 82 embracing an eccentric 83 on the main drive shaft 20. When the latter revolves one revolution from starting position, the first half of the revolution moves the platen toward the printing wheels to effect the imprinting, and the second half of the revolution withdraws it to starting position.

An ink ribbon 84 is provided and is wound on two ribbon rollers 85 and is led from one upwardly between the strip 70 and the printing wheels and thence around idler rollers or guides to the other ribbon roller 85. The ribbon 84 is advanced typewriter ribbon fashion after each printing operation. This is accomplished by fitting each roller 85 with a ratchet wheel 86 capable of cooperation with a double-acting pawl 87 carried by a link 88 suspended from the free end of a pivotal lever 89. The lever 89 is pivoted to the frame as at 90 and is oscillated by a cam 91 mounted on the feed roller shaft 71 so that subsequent to each printing operation the ribbon 84 will be advanced one step. The ribbon may move in either direction, depending upon which ratchet 86 the pawl is placed for cooperation. Means 92 are provided to engage the ratchet wheels 86 being operated to prevent retrograding thereof or inadvertent feeding of the ribbon.

After the ticket has been properly imprinted and projected through the ticket issuing slot 65, it is severed from the strip. To accomplish this I provide a pivotal severing blade 93 pivoted for oscillation in a vertical plane over a fixed shear plate 94 secured on the frame. During the inoperative period of the machine the pivotal blade 93 overlies the upper end of the strip 70 and acts as a closure for the ticket discharge opening 65. As soon as the machine commences operation the pivotal blade is swung to unobstruct the upward movement of the printed ticket and uncover the opening 65. This is accomplished by connecting one end of the blade to the upper end of a blade operating lever 95. This lever is pivoted intermediate its ends to the frame and its lower end is fitted with a cam roller 96 engaging a cam 97 secured on the main drive shaft 20. When the machine commences its cycle of operation, the cam 97 immediately moves the lever in a direction positioning the blade to unobstruct the upward movement of the strip 70 and to uncover the ticket issuing slot 65. Just as the machine completes its cycle of operation and the ticket is printed and projected through the opening 65, the cam 97 permits a spring 98 to return the blade 93 to its normal or starting position, during which operation it shears the printed ticket from the strip.

The machine is also equipped with a counting mechanism for registering the number of tickets issued on each entry, a separate counter being provided for each entry. These counters are indicated by the numeral 99 in the drawings and are conventional in design. Each counter is provided with a crank arm 100 which is connected with the shaft of the counter so as to operate the same when the crank arm is swung in one direction. By moving the outer end of this arm 100 through the proper arc, the counter is operated to register one unit.

To operate the counters 99, the operating arm of each thereof is provided with a separate electromagnet 101, the armature 102 of which is connected by means of a connection 103 to the arm 100 as illustrated in Figs. 1 and 5. When the magnet is energized, the armature 102 thereof operates the operating arm 100 of the counter and thereby operates the counter, causing it to register one unit.

The counting mechanism also includes a totalizing counter 104 (see Fig. 1) which registers the sum of the totals registered on the individual entry counters 99. This counter is operated by an electromagnet in the same manner as described in connection with the counters 99 except that each time any one of the separate entry counters is operated, the totalizing counter 104 is operated.

To reset the counters to zero, I have provided a transverse shaft 105 rotatably supported by the main frame. On this shaft are pinions 106 which mesh with reciprocable racks 107. These racks 107 also mesh with pinions 108 on the shafts of the separate entry counters and the shaft of the totalizing counter 104. By turning the transverse shaft 105, it is obvious that the racks will be operated in a direction to operate all of the counters and thereby reset the same to zero. To turn the shaft 105, I have illustrated a removable crank 109, but it is obvious that other means, such as a key controlled mechanism, may be employed for this purpose if desired.

It is necessary that when the selector mechanism, including the selector lever 14, is operated to present the proper entry number on the entry printing wheel 48 into printing position, that it also select a proper entry counter 99 for operation so that all tickets printed on the same entry will be registered in one counter. In this manner the operator can determine from reading the counters the total number of tickets issued on the individual entries and the entire total of tickets issued on all the entries on the totalizing counter 104. To accomplish this I have provided a selector switch mechanism, the detail construction of which is most clearly illustrated in Fig. 7. Referring to this view and to Fig. 1, it will be seen that arranged transversely of the main frame and supported thereby is a switch frame 110. This frame is formed with a plurality of vertical guideways 111, which are evenly spaced apart transversely of the switch frame 110. A guideway is provided for each entry so that a separate switch will be provided for each entry counter.

Each switch consists of a vertically reciprocable switch member 112 mounted in one of the guideways 111. Each switch member consists of a guide portion 114 slidably mounted in its guideway and a contact point 115 suspended from the lower end of the guide portion by means of a link 116 of dielectric material. The link is pivotally connected to both the guide portion 114 and to the contact point 115. Secured on a fixed transverse member 117 of dielectric material disposed below the switch members 112 is a set of contacts 118, one contact 118 being provided for each switch member 112. Each switch member and its cooperating contact 118 constitutes a separate switch and is electrically associated with but one entry counter 99.

When the contact point 115 of the selected switch is in contact with the contact 118, a circuit is closed through the selected counter and the same is operated. The switches are normally held open by the provision of a tension spring 119 which is connected with the frame 110 and

with the guide portion 114. Each switch member 112 is provided with a horizontally projecting pin 120 by means of which the switches may be selectively closed. It is obvious from Fig. 7 that by depressing the pin 120 of any one of the switch members 112, that the contact point 115 thereof will engage its associated contact 116 and thereby close a circuit through the electromagnet of the selected counter and operate the latter.

To selectively operate the switches and thereby selectively operate the proper counter 99, the selector shaft 12 is provided with a segmental gear 121, which gear is in mesh with a transversely and horizontally arranged rack 122 slidably supported by the frame. This rack carries a depressible finger 123 so pivotally connected with the rack that it may be depressed to operate a selected switch. A spring 124 normally holds the finger 123 in upraised position.

It is thus seen that when the selector lever 14 is placed in register with the selected socket 17, that it first sets the entry printing wheel to present the number of the selected entry into printing position. At the same time the rack 122 is operated so that the finger 123 will be placed in register with the pin 120 of the proper switch so as to register on the proper counter that a ticket has been printed and issued on the selected entry.

The minute that the machine commences operating, the finger 123 is depressed to close the selected switch and register the issuance of a ticket on that entry on the proper counter. This is accomplished by providing a pair of levers 125 arranged one at each side of the frame and pivoted thereto as illustrated in Figs. 1 and 5. At one end each of these levers is fitted with a cam roller 126 which engages similar cams 127 fixed on the drive shaft 20. At their forward ends the levers are connected to the legs of a bail 128 overlying the finger 123 so that when the forward ends of the levers 125 move downwardly, the bail 128 will depress the finger 123 an amount sufficient to close the selected switch.

The cam followers or rollers 126 are held in contact with the cams 127 by means of springs 129, so that upon the completion of the operation of the machine, the bail 128 raises together with the finger 123 so as to permit opening of the selected switch.

The bail 128 is fitted with a separate operating member 130 which engages the pin 120 for the switch in the circuit of the electromagnet of the totalizing counter 104 so that regardless of which other switches are operated, the switch of the electro-magnet of the totalizing counter 104 will be operated each time the machine is operated.

The electrical circuit by means of which the various operating solenoids are connected is shown in Fig. 8 and is believed self-explanatory.

In operation of the device, it is first necessary that the race wheel be properly positioned and that the code wheels have been adjusted to print the proper code numbers, and that the date printing wheels have been set for the proper date. The casing of the machine is then placed over it and it is ready for operation. Assuming that it is desired to issue a ticket on a selected entry, for example, entry #3, the selector lever 14 is swung so that the selector pin 16 is in register with the socket 17 labeled #3. The movement of the selector lever 14 and consequent turning of the selector shaft 12 simultaneously places the proper entry number on the entry printing wheel 48 in printing position through the medium of the gear 54, the rack 55 and the pinion 56. Likewise, it places the switch operating finger 123 in alignment with the pin 120 of the proper switch through the medium of the segment 121 and the rack 122. Assuming that the remote switch is closed, energizing the solenoid to unlatch the trip lever 31, the selector lever 14 may then be depressed to move the selector shaft 12 axially downwardly.

It should be stated here that the segment 121 and the gear 54 are feathered on the shaft 12 so that the latter can move endwise relative to the segment and gear, and also that a spring 12a is provided for the shaft 12 which normally tends to maintain it in its uppermost position.

When the shaft 12 moves downwardly, the lower end of the trip pin 35 engages the trip lever 31 and trips the clutch 19 so that the latter may engage and a drive be imparted to the shaft 20. Immediately that this shaft commences to operate, the cam 43 will move the slide 39 to cause engagement of the cam 40 with the trip pin 35 to throw it out of engagement with the trip lever 31, and simultaneously the keeper 41 will be placed in an engaging position relative to the shoulder 44 to prevent upward movement of the shaft and thereby prevent the selector lever from being operated during the operation of the machine.

As soon as the trip lever 31 is released from the trip pin 35, the trip lever is free to operate and disengage the clutch as previously described so as to discontinue the operation of the machine after one complete revolution of the main drive shaft 20.

Simultaneously with this operation, the cam 97 will operate the lever 95 to move the knife blade 93 to an unobstructing position relative to the ticket discharge opening 65. Also, at the same time the cams 127 will actuate the levers 125 so as to cause lowering of the bail 128 and close the selected switch by engagement with the proper pin 120. Immediately that this switch is closed, the electromagnet of the selected counter will be energized, operating that counter and causing it to register. During this period the eccentric 83 will be revolved, moving the platen toward the printing rollers and causing the same to properly print the ticket. After the main drive shaft has completed one-half of one revolution, the feed roller shaft 71 will be turned to operate the feed roller 69 an amount necessary to project the proper amount of ticket through the ticket issuing opening 65. Just as the main drive shaft completes its complete revolution, the cam 97 will permit the lever 95 to swing in a direction causing the knife blade 93 to sever the ticket and at the same time the cam 43 will permit withdrawal of the slide 39 so that the cam 40 will disengage from the trip pin 35, and the keeper 41 will disengage from the shoulder 44, thus releasing the selector shaft and enabling its spring 12a to move it upwardly for a successive operation. During the revolution of the main drive shaft 20, the cams 127 will permit the bail 128 to rise, through the levers 125, permitting the switch which had been closed to open.

It is seen that subsequent to each race, the judges may operate from a remote point the remote switch illustrated in Fig. 8 to advance the race wheel so that the number of the succeeding race on the race wheel will be presented in printing position. If this switch is at a remote point, the particular operator of the machine will have no control over the presenting of the race num-

bers and thus prevent any possible fraud. Likewise, just prior to the commencement of each race, the judges may open the remote switch so as to prevent the machine from being operated. It is seen that when this switch is opened, the trip lever 31 is latched against operation, and as this switch is in a remote point and may be operated only by the judges, the individual operator of the machine may not issue a ticket on the race that has commenced.

From the foregoing it is obvious that I have provided a simple, compact and efficient machine for this purpose, which machine may be so controlled as to eliminate all frauds, and which machine will be foolproof in operation and entirely self-contained.

While I have shown the preferred form of my invention, it is to be understood that various changes may be made in its construction by those skilled in the art without departing from the spirit of the invention as defined in the appended claims.

Having thus described my invention, what I claim and desire to secure by Letters Patent is:

1. A machine of the character described including a selectively adjustable printing wheel, a platen for cooperation therewith, a mechanism for feeding ticket material to said printing wheel and platen, a main drive shaft operatively connected to the platen and feeding mechanism to operate the same in synchronism during each cycle of operation of said shaft, a control shaft rotatable about its axis and reciprocable along said axis, means responsive to rotation of said control shaft adjusting said printing wheel and means responsive to reciprocation of said control shaft to initiate the cycle of said main shaft.

2. A machine of the character described including a selectively adjustable printing wheel, a platen for cooperation therewith, a mechanism for feeding ticket material to said printing wheel and platen, a main drive shaft operatively connected to the platen and feeding mechanism to operate the same in synchronism during each cycle of operation of said shaft, a control shaft rotatable about its axis and reciprocable along said axis, means responsive to rotation of said control shaft adjusting said printing wheel, means responsive to reciprocation of said control shaft to initiate the cycle of the main shaft and locking means restricting said control shaft against reciprocation after a cycle has been initiated.

3. A machine of the character described including a selectively adjustable printing wheel, a platen for cooperation therewith, a mechanism for feeding ticket material to said printing wheel and platen, a main drive shaft operatively connected to the platen and feeding mechanism to operate the same in synchronism during each cycle of operation of said shaft, a control shaft rotatable about its axis and reciprocable along said axis, means responsive to rotation of said control shaft adjusting said printing wheel, an articulated pin carried by said control shaft and normally aligned therewith transmitting reciprocatory movement to initiate a cycle of said main shaft and means for misaligning said pin with respect to said control shaft after a cycle has been initiated.

4. A machine of the character described including a selectively adjustable printing wheel, a platen for cooperation therewith, a mechanism for feeding ticket material to said printing wheel and platen, a main drive shaft operatively connected to the platen and feeding mechanism to operate the same in synchronism during each cycle of operation of said shaft, a control shaft rotatable about its axis and reciprocable along said axis, means responsive to rotation of said control shaft adjusting said printing wheel, means responsive to reciprocation of said control shaft to initiate the cycle of said main shaft and remotely operable means projectable into the axial path of said control shaft to prevent initiation of a cycle.

5. A machine of the character described including a selectively adjustable printing wheel, a platen for cooperation therewith, a mechanism for feeding ticket material to said printing wheel and platen, a main drive shaft operatively connected to the platen and feeding mechanism to operate the same in synchronism during each cycle of operation of said shaft, a shaft rotatable for selectively adjusting said printing wheel and movable axially for controlling the operation of said drive shaft to initiate a cycle and locking means operated upon the initiation of a cycle engaging said controlling shaft and maintaining it in depressed position during said cycle.

6. A machine of the character described including a selectively adjustable printing wheel, a platen for cooperation therewith, a mechanism for feeding ticket material to said printing wheel and platen, a main drive shaft operatively connected to the platen and feeding mechanism to operate the same in synchronism during each cycle of operation of said shaft, means for selectively adjusting said printing wheel, a shaft for controlling the operation of said drive shaft depressible to initiate a cycle, a pin carried by said controlling shaft and normally aligned therewith, an element in the normal path of said pin for transmitting cycle initiating movements and means operated after initiation of a cycle to deflect said pin from its normal position.

7. A machine of the character described including a selectively adjustable printing wheel, a platen for cooperaton therewith, a mechanism for feeding ticket material to said printing wheel and platen, a main drive shaft operatively connected to the platen and feeding mechanism to operate the same in synchronism during each cycle of operation of said shaft, a driving mechanism for said shaft, a normally disengaged clutch for connecting said shaft to its driving mechanism, a control shaft rotatable for selectively adjusting said printing wheel and movable axially to effect engagement of said clutch to initiate a cycle, and locking means moved by said main shaft upon initiation of a cycle into engagement with said control shaft to inhibit movement thereof for the duration of the cycle.

8. A machine of the character described including a selectively adjustable printing wheel, a platen for cooperation therewith, a mechanism for feeding ticket material to said printing wheel and platen, a main drive shaft operatively connected to the platen and feeding mechanism to operate the same in synchronism during each cycle of operation of said shaft, a driving mechanism for said shaft, a normally disengaged clutch for connecting said shaft to its driving mechanism, a control shaft movable to effect engagement of said clutch to initiate a cycle, an articulated pin normally aligned with said control shaft for transmitting movements to said clutch, and deflecting means operated from said main shaft after initiation of a cycle to shift said pin

from its aligned position to render said control shaft temporarily inoperative.

9. A machine of the character described including a selectively adjustable printing wheel, a platen for cooperation therewith, a mechanism for feeding ticket material to said printing wheel and platen, a main drive shaft operatively connected to the platen and feeding mechanism to operate the same in synchronism during each cycle of operation of said shaft, a driving mechanism for said shaft, a normally disengaged clutch for connecting said shaft to its driving mechanism, a control shaft rotatable for selectively adjusting said printing wheel and movable to effect engagement of said clutch to initiate a cycle, and locking means moved by said main shaft upon initiation of a cycle into engagement with said control shaft to inhibit movement thereof for the duration of the cycle, said locking means projecting from a slidable plate cam driven by said main shaft.

10. A machine of the character described including a selectively adjustable printing wheel, a platen for cooperation therewith, a mechanism for feeding ticket material to said printing wheel and platen, a main drive shaft operatively connected to the platen and feeding mechanism to operate the same in synchronism during each cycle of operation of said shaft, a driving mechanism for said shaft, a normally disengaged clutch for connecting said shaft to its driving mechanism, a control shaft movable to effect engagement of said clutch to initiate a cycle, an articulated pin normally aligned with said control shaft for transmitting movements to said clutch, and deflecting means operated from said main shaft after initiation of a cycle to shift said pin from its aligned position to render said control shaft temporarily inoperative, said deflecting means projecting from a slidable plate cam driven by said main shaft.

11. A machine of the character described including a selectively adjustable printing wheel, a platen for cooperation therewith, a mechanism for feeding ticket material to said printing wheel and platen, a main drive shaft operatively connected to the platen and feeding mechanism to operate the same in synchronism during each cycle of operation of said shaft, a shaft rotatable about its axis for selectively adjusting said printing wheel and reciprocable along said axis for controlling the operation of said drive shaft to initiate a cycle of operation and remotely operable electromagnetic means for imposing a projection into the path of said controlling shaft to prevent depression thereof.

12. A machine of the character described including a selectively adjustable printing wheel, a platen for cooperation therewith, a mechanism for feeding ticket material to said printing wheel and platen, a main drive shaft operatively connected to the platen and feeding mechanism to operate the same in synchronism during each cycle of operation of said shaft, a control shaft rotatable about its axis and reciprocable along said axis, means responsive to rotation of said control shaft adjusting said printing wheel, a second printing wheel cooperating with said platen rotatable independently of the first and adjustable about its axis independently thereof, an articulated pin carried by said control shaft and normally aligned therewith transmitting reciprocatory movement to initiate a cycle of said main shaft and means for misaligning said pin with respect to said control shaft after a cycle has been initiated.

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