

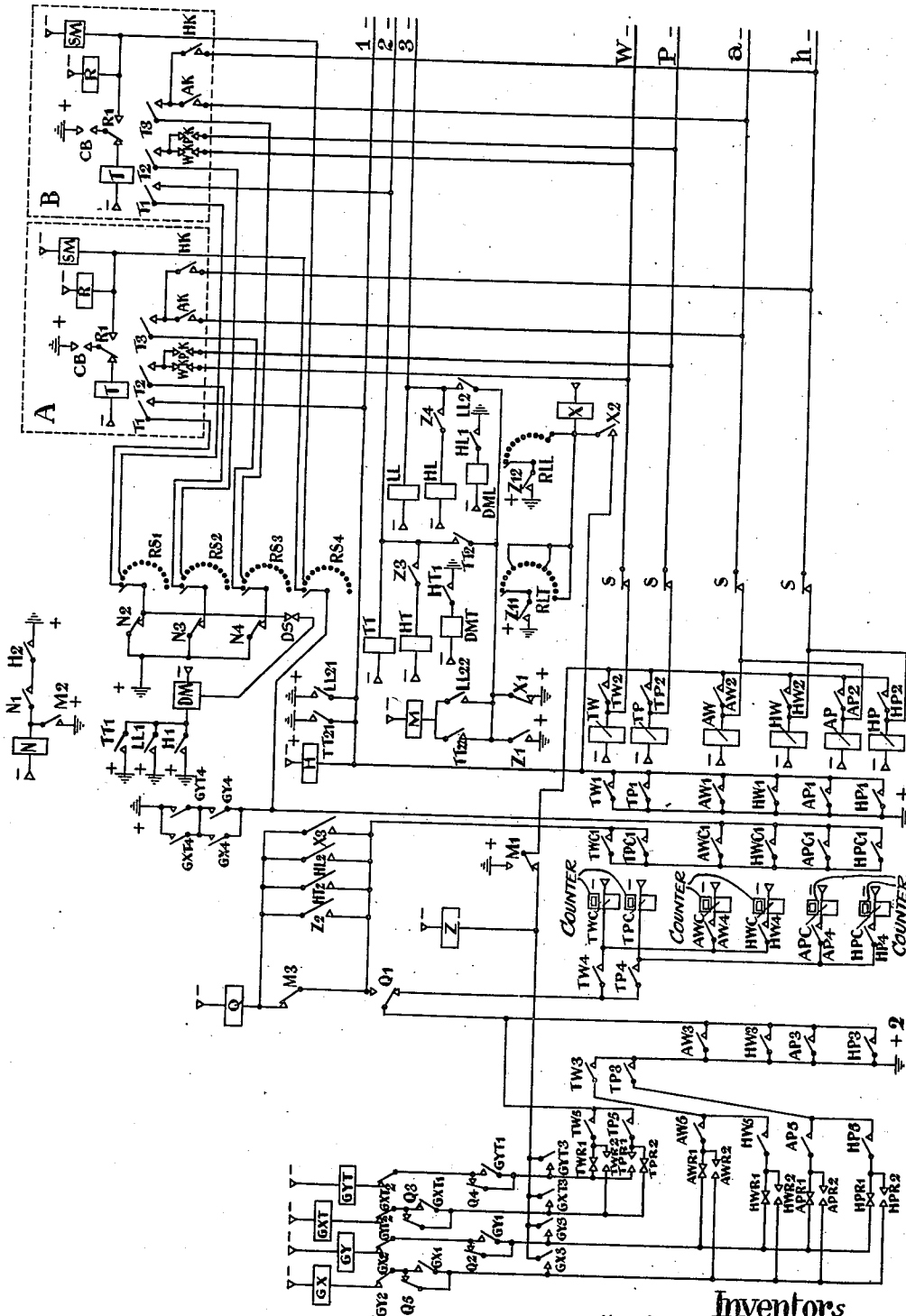
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TOTALIZATOR

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TOTALIZATOR

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This invention is for improvements in or relating to totalizators and more particularly to totalizators of the type in which tickets may be issued in respect of either a "win" or a "place" bet from each of a series of ticket issuing machines in respect of bets laid upon any one of a number of competitors and the registration of the bet is effected by electrically operated mechanism in a central control station under the control of a "win or place" selector switch in each ticket issuing machine.

With totalizators of this type various arrangements have been made in order to deal with "win" and "place" bets, and it has been usual to provide a selector switch in each ticket issuing machine operable to control the circuits of electro-magnetically actuated mechanism which connects a series of contacts corresponding to the number of competitors in respect of which tickets may be issued from the machine, to either "win" or "place" lines operatively connecting the ticket issuing machine with the registering mechanism at the central control station. Alternatively the "win" and "place" selector switch is arranged to control electro-magnetically operable "win" and "place" selector mechanism in a decoding mechanism associated with the machine at the central control station. With these arrangements it will be appreciated that it is either necessary to provide duplicate sets of competitor lines between each ticket issuing machine and the registering mechanism, or alternatively, "win" and "place" lines between each ticket issuing machine and the corresponding decoding mechanism at the central control station.

According to this invention there is provided a totalizator of the type described, wherein all the "win or place" selector switches are operable over one or the other of a pair of lines to complete the circuit of a selective switch, the operation of which determines the effective actuation of the "win" or the "place" registering mechanism associated with the competitor selected.

Other features of the invention will appear from the following description and will be more particularly defined in the appended claims.

In order that the invention may be fully understood reference is directed to the accompanying drawing which illustrates the circuit diagram of a totalizator constructed in accordance with the invention.

Referring to the drawing, two ticket issuing machines only are illustrated at A, B arranged respectively to issue denominations of ticket of two shillings and ten shillings corresponding to

bets of one and five units, but it is to be understood that the system illustrated is capable of operation by any desired number of ticket issuing machines. In the particular example illustrated the registering equipment is also arranged to accommodate machines issuing tickets of a denomination of one pound. Each ticket issuing machine is arranged to deliver tickets in respect of any one of a series of competitors upon the actuation, for example, of one of a corresponding series of keys each of which is arranged when actuated to close a pair of contacts. Two only of each series of contacts are indicated diagrammatically at AK and HK in the drawing. Generally it is to be observed that the letters A, H have been employed in this description and drawing as a prefix to the reference letters of elements identified with competitor keys or the like of the series with which the machines are provided, whilst the letters W, P have been similarly employed to indicate elements identified respectively with the win or place registering mechanism.

To facilitate the ready understanding of the method of operation of the circuits shown in the drawing the various relays and driving magnets employed have been designated by letters and the contacts which the said relays and magnets control have been designated by the same letters with the addition of identifying index numbers.

Each ticket issuing machine is provided with the following elements:—a starting magnet SM, the energization of which is essential to the initiation of a cycle of operation of the machine through the medium of any known release mechanism; relays R and T; a mechanically actuated contact breaker CB arranged to be closed upon the depression of any of the keys of the machine and to be opened automatically during the ensuing cycle of operation of the machine; and a two-way win or place selector switch WK, PK, operable by a manually actuated selector member.

The registering equipment comprises the following principal elements, the interconnection with one another and with the ticket issuing machines and the operation of which will be hereinafter described.

A main rotary line switch consisting of four banks of contacts RS1, RS2, RS3, RS4 each provided with a wiper arm, all of which latter are driven in unison by the usual form of driving magnet indicated at DM. Normally the wiper arms are continuously rotated step by step from

contact to contact by the driving magnet making and breaking its own circuit locally over contacts indicated diagrammatically at DS and in such a manner that the actual movement of the wiper is effected by a spring which moves the armature of the magnet when the same is de-energized, so that when the driving magnet is maintained energized each wiper arm is maintained in a stationary position on one of the contacts. This type of switch is well-known in the art, especially in connection with automatic telephone systems and is sometimes known as a self-driving uni-directional rotary line finder switch. The essential mechanism consists of one or more banks of contacts arranged in a semi-circle with a wiper arm appointed thereto which is rotated step by step by a pawl driven by the armature of the driving magnet, coacting with a ratchet wheel keyed to a spindle upon which the wiper arm is mounted. When a plurality of banks of contacts are provided they are arranged in alignment with one another and the wiper arms are all mounted on the same spindle.

For registering unitary bets of two shillings denomination the following relays and electromagnets are employed:—primary relays AW, HW, TW for win bets and AP, HP, TP for place bets; these relays being arranged to be responsive to impulses from the ticket issuing machines in a manner hereinafter described when tickets are issued; counter driving magnets AWC, HWC, TWC for competitor and total win counters and counter driving magnets APC, HPC, TPC for competitor and total place counters, the energization of these magnets being effected by contacts controlled by the primary relays above referred to; a relay H for holding the driving magnet DM of the rotary line switch energized whilst the operation of registering a bet is initiated; a pair of guard relays GX, GY associated with the competitor counters and a pair of guard relays GXT, GYT associated with the total or pool counters, these guard relays being employed to hold the primary relays energized until registration of a bet is ensured by actual movement of the registering counter; two separate contacts for each competitor and pool counter actuated mechanically from the counter spindle or the like as described for example in British patent specification No. 390,259, so that one contact is open whilst the other is closed, one controlling the circuit of the GX or GXT relay and the other the circuit of the GY or GYT relay and these contacts are designated by the addition of the letter R1 or R2 to the first two identifying letters of the counter in question, for example AWR1, AWR2, HWR1, TWR1 and so on; and a relay Q for de-energizing the counter magnets such as AWC, TWC when the armatures thereof have completed their first stroke and for finally restoring the registering equipment to normal condition so that the magnet DM becomes de-energized and the wiper arms of the rotary line switch step round to the next contacts and the said switch continues its normal operation.

The ticket issuing machines are connected to the circuit of the registering equipment comprising the above described elements in the following manner:—

The series of competitor contacts AK, HK of each ticket issuing machine are electrically connected respectively to one of a corresponding series of registering lines *a, h* which are common to all ticket issuing machines irrespective of the denomination of ticket which they are arranged

to issue. Each of the lines *a, h* is connected through a switch S to the winding of the primary relays associated with the same competitor as the registering line, for example the *a* line is connected to both the AW and AP relays and the line H is connected to the HW, HP relays.

The win and place selector contacts, WK, PK of each ticket issuing machine are electrically connected respectively to one of a pair of win and place lines W, P which are common to all ticket issuing machines irrespective of the denomination of the ticket which they are arranged to issue. The lines W, P are connected through switches S respectively to the primary relays TW and TP. One of a pair of contacts T1 (which together with the relay T constitute a circuit control device for the price control apparatus in the registering mechanism) of the ticket issuing machine A and all other ticket issuing machines arranged to issue tickets of two shillings denomination is connected to a "price" line *l* common to all such machines and which is connected to the winding of the relay H; the other of the pair of contacts T1 is connected to one of the contacts of the bank RS1 identified with the machine. Both the contacts WK, PK of a ticket issuing machine are connected through the contact T2 to one of the contacts of the bank RS2 identified with the machine. The contact T3 connects one of each pair of the series of contacts AK, HK in parallel to one of the contacts RS3 identified with the machine. The starting magnet SM of each ticket issuing machine is connected directly to one of the contacts of the bank RS4 identified with the machine.

The registration of a unitary bet of two shillings denomination by the issuance of a ticket, for example, from the machine A, is effected as follows:—

The depression of the selected competitor key of the ticket issuing machine closes the corresponding contact of the series AK to HK and automatically closes the contact breaker CB. It will be assumed, in order to give a specific example, that the AK contact is closed in conjunction with the WK contact in order to issue a win ticket of two shilling denomination for the competitor associated with the AK contact. The closing of the CB contact energizes the T relay which closes the contacts T1, T2, T3; this operation does not in itself effect the actuation of the ticket issuing machine to deliver a ticket. As soon as the wiper arms for the banks of contacts RS1, RS2, RS3, RS4 of the rotary line switch make contact with the appropriate contacts thereof associated with the ticket issuing machine A, the H relay is held energized over the contact T1 and the H relay holds the driving magnet DM of the rotary line switch energized over contact H1 so that the wiper arms of the rotary line switch remain stationary with the said arms connected to the contacts identified with the ticket issuing machine A. This causes a circuit to be established through the relay AW over the appropriate contact of the bank RS3, and contacts T3, AK. The relay AW closes a contact AW1 in a branch circuit of the H relay to ensure that the H relay is maintained energized independently of the circuit through the T1 contacts. The AW relay also closes contacts AW2 in a branch circuit of the AW relay and contacts AW3, AW5 for purposes hereinafter described, and in addition the AW relay closes contacts AW4 for the circuit of the driving magnet AWC of the appropriate competitor counter but the closure of the contacts

AW4 does not, in itself, energize the magnet AWC. It will be appreciated that simultaneously with the energization of the AW relay the AP relay is energized, effecting the closure of contacts AP1, AP2, AP3, AP4 and AP5. At the same time as the AW and AP relays are energized the TW relay is energized over the contacts RS2, T2, WK and results in the closure of contacts TW1, TW2, TW3, TW4 and TW5. The AWC magnet is thus energized over contacts AW4, TW4, Q1, AW3 to positive earth +2 whilst the TWC magnet is energized over contacts TW4, Q1, AW3. Each of the magnets AWC and TWC moves its armature and, for example, a pawl therewith to pick up a tooth on a ratchet wheel operatively connected respectively to a mechanical competitor and pool counter, for example in the manner described in the aforesaid British patent specification No. 390,259. At the same time the GY relay is energized over contacts TW3, AW5, AWR1, Q2 and GX2. The GY relay closes, amongst others, contacts GY3 which holds the branch locking circuit of the AW relay energized over contacts AWR1, AW5, TW3. The GYT relay is energized over contacts AW3, TW5, TWR1, Q4 and GXT2, and the said relay closes, amongst others, contact GYT3 to complete a branch locking circuit of the TW relay through contacts TW2, GYT3, TWR1, TW5, and AW3.

The energization of the GY and GYT relays closes contacts GY4 and GYT4, thus establishing a circuit through the RS4 contact to the starting magnet SM of the ticket issuing machine and also through the R relay. Thus, immediately the registration of the bet has been initiated, that is before the bet has actually been registered, the ticket issuing machine is set in operation to issue a ticket and the R relay actuates a pair of contacts R1 to de-energize the T relay and thus open contacts T1, T2, T3, resulting in the disconnection of the ticket issuing machine from the contacts RS1, RS2 and RS3. The AW and TW relays are, however, maintained energized over the aforesaid branch locking circuits and the H relay remains energized over contacts TW1 and AW1.

As the armature of the AWC magnet completes its first stroke to pick up a tooth of the ratchet wheel of the counter the armature closes a pair of contacts AWC1 which establishes a circuit through the Q relay over contacts M3 and the closed contacts GY4 and GYT4 and over a contact TWC1 which has been closed by the armature of the TWC magnet at the end of its first stroke in the manner described for example in the aforesaid British specification No. 390,259. It will be appreciated that it is thus impossible to energize the Q relay until both the TWC magnet and the AWC magnet have been energized and the armatures thereof moved the full distance of their first stroke.

The Q relay self-locks over the Q1 contacts which are operated thereby and over the AW3 contact, the actuation of the Q1 contact also breaking the circuits of the magnets AWC and TWC to enable the armatures thereof to effect their return stroke under the action of a yielding control, for example in the manner described in the aforesaid British patent specification No. 390,259, and thereby move the corresponding competitor counter and the win pool counter and effect the registration of the bet.

During the return stroke of the armatures of the TWC and AWC magnets, the contacts TWR1 and AWR1 in the circuits respectively of the re-

lays GYT and GY are mechanically broken as the counted spindle or the like is being moved, also in the manner disclosed in the aforesaid British specification No. 350,259, so that the relays GYT and GY are de-energized. This causes the opening of the contacts GYT4 and GY4 in the circuit of the Q relay and also the opening of the GYT3 and GY3 contacts which breaks the branch holding circuit of the AW and TW relays so that the said relays are de-energized and all contacts controlled thereby are opened. Thus the AW3 contacts in the circuit of the Q relay are opened to release the Q relay and the contacts AW1 and TW1 are opened to de-energize the H relay. The contact HI thereupon opens and permits the normal operation of the driving motor DM of the rotary line switch to be resumed.

During the registration of the unitary bet as described, the opening of the TWR1 and AWR1 contacts is accompanied by the closing of the TWR2 and AWR2 contacts, so that during the registration of the next bet the GX and GXT relays operate in lieu of the GY and GYT relays. The relays GX, GY are each arranged to control the circuit of the other through the medium of the contacts GX2, GY2, so that when either of them is energized the circuit of the other is opened and inadvertent energization thereof is rendered impossible. Similarly the relays GXT, GYT are each arranged to control the circuit of the other through the medium of contacts GXT2 and GYT2. This inter-relation between the GX and GY and the GXT and GYT relays is necessary to avoid the inadvertent actuation of the registering mechanism of another competitor through one of the counter operated contacts associated with the other competitor counter due to the fact that all the registering mechanisms of the different competitors are operatively associated in parallel with the GX and GY relays, and it would be impossible to ensure that the corresponding contacts of all the counters would be in the open or closed position together. As an additional precaution the Q relay is arranged when energized to break the circuits of all the guard relays at Q2, Q3, Q4 and Q5.

The opening of the GYT4 and GY4 contacts as above described also breaks the circuit of the starting magnet SM through the RS4 contact, this also resulting in the breaking of the circuit of the R relay which restores the contact R1 to normal position in the circuit of the T relay, the contact breaker CB in the circuit of the T relay being opened during the cycle of operation of the machine, as above described.

If a ticket is issued from the A ticket issuing machine in respect of a "place" bet the operation of the registering mechanism is effected in a similar manner to that above described with the exception that the PK contacts are closed in lieu of the WK contacts, so that the TP relay is energized in lieu of the TW relay. The TP relay closes the series of contacts TP1—TP5 thereof thus ensuring the energization of the TPC magnet for the total pool counter and by closing the TP4 contacts ensuring that the APC magnet of the place counter of the appropriate competitor is energized in lieu of the AWC magnet of the win counter, it being understood that one of the AP—HP relays is always energized at the same time as the corresponding one of the relays AW—HW, in accordance with the particular competitor key actuated in a ticket issuing machine in setting up a bet. The closure of contacts of any of the relays AW—HW or

AP—HP in the circuit of the corresponding magnet AWC—HWC or APC—HPC is, however, merely one of two essential actions which must occur before any of the said magnets can energize, the other essential action being the selective closure of either the contact TW4 or TP4 in accordance with which of the relays TW or TP is energized over the class line W or P. The relays AP—HP operate their contacts in precisely the same manner for the same purpose as the relays AW—HW but in respect of the registration of a "place" bet, and no repetition of the description of such operation is necessary.

To register bets of a value of five units in respect of ten shilling tickets issued for example by the ticket issuing machine B a price control apparatus in the registering equipment is brought into operation, which in effect holds the primary relays hereinbefore described which are energized upon the actuation of a ticket issuing machine, locked until the appropriate competitor and pool counters are actuated five times. The price control apparatus comprises the following:—

A rotary line switch RLT arranged to be operated step by step by a driving magnet DMT in a similar manner to the rotary line switch driven by the magnet DM above described, but the switch RLT being normally maintained inactive with the magnet DMT de-energized; a relay HT arranged when energized to close the circuit of the magnet DMT so that the switch RLT is operated step by step as above described; a controlling relay TT the winding of which is connected directly in the circuit of ten shilling "price line" indicated at 2 and to which one of the contacts T1 of the ticket issuing machine B is connected, the corresponding T1 contacts of all machines which issue tickets of ten shillings denomination being also connected to the price line 2 in parallel with one another; and relays Z, M, X and N the operation of which is described below.

Other than the connection of one of the T1 contacts to the price line 2 in lieu of the price line 1, the electrical connections of the ticket issuing machines for ten shilling tickets, such as the machine B, are the same as those above described with reference to the machine A for two shilling tickets.

Upon the actuation of the machine B to issue a ten shilling bet ticket for a win or a place on a competitor associated with the AK contacts, as soon as the wipers of the rotary line switch driven by the DM magnet reach the contacts of the banks RS1, RS2, RS3, RS4 allocated to the machine B a circuit is established over contact T1 and the bank contact RS1 through the relay TT which self-locks over contacts TT2 and X1. The relay TT also closes a locking circuit for the relay H over contacts TT21 and for the magnet DM over contacts TT1 and in addition completes the circuit of the relay M over contacts TT22. The initiating registering impulse from the machine B is conveyed over the registering line a to the AW relay and the actuation of the ticket issuing machine effected in the manner hereinbefore described but whilst the AW relay is still energized through its main circuit over the line a the relay M changes the earth connection of the locking circuit locally at M1 and also closes contacts M2 to energize the relay N and opens contacts M3 in the circuit of the Q relay. The relays TT, M and N are locked energized during the registering of the five units for

the bet effected by five successive energizations of the AWC counter magnet in the following manner:

Each time the guard relays close the contacts GX3 or GY3 and GXT3 or GYT3 the relay Z is energized so that the circuit of the relay Q is maintained over contacts Z2. The Z relay also closes contacts Z11, Z1, Z3 and Z4 energizing relay HT which closes contacts HT1 and energizes the driving magnet DMT of the rotary line switch RLT; the HT relay also closes the contact HT2 in the earth circuit of the Q relay. As soon as the AWC and TWC magnets are de-energized by the Q relay in the manner hereinbefore described and the armatures of the said magnets are released to add "one" to the respective counters, the contacts AWR1 and TWR1 are opened and the Z relay is de-energized so that the HT relay circuit is broken at Z3 and the consequential de-energization of the magnet DMT causes the rotary line switch RLT to step round one tooth or contact. The Q relay is released when the HT2 contacts open and the consequential release of all contacts controlled by the Q relay close the circuits of the AWC and TWC counter magnets and cause eventually a second unit to be added to the respective counters, the AW and TW relays being held energized over the local earth applied at M1. This operation is repeated four times and each time the rotary line switch RLT is stepped round one tooth. At the fourth step the wiper arm of the RLT switch prepares the circuit of the relay X so that when the Z relay energizes for the fifth time the X relay energizes over contacts Z11 and locks over contacts X2, TW1, AW1. The X relay opens contact X1 of the M relay which is still held over contact Z1 and contact X3 holds relay Q earthed; as the fifth unit is registered by the armatures of the AWC and TWC magnets and the relay Z is released as above described, contacts Z1 open and relays M and TT are released. The locking circuits of the AW and TW relays are thus broken at M1 and the H relay is released to de-energize the magnet DM and permit the main rotary line switch to step round to the contacts of the next ticket issuing machine.

The function of the relay N is to break the earths for the banks of contacts RS1, RS2, RS3 respectively at N2, N3, N4 and so safeguard against any possible actuation of any of the ticket issuing machines until all the units of a bet have been registered, the N relay being finally released at M2 and H2 upon the de-energization of the M and H relays at the completion of a bet registering operation.

For the registration of bets of ten units in respect of tickets of a denomination of one pound, a price control mechanism is employed which comprises a relay LL connected in the circuit of the price line 3 and a rotary line switch RLL driven by a magnet DML under the control of a relay HL. These elements LL, RLL, DML and HL correspond to the elements TT, RLT, DMT and HT above described and operate in conjunction with the relays Z, M, X and N in a similar manner to that described with reference to the registration of five unit bets with the exception that the rotary line switch RLL steps round nine teeth before the circuit of the X relay is prepared so that as the tenth unit is registered the consequent energization of the Z relay energizes the X relay, to complete the registering operation.

The appropriate contact T1 of all ticket issuing

machines of one pound denomination are connected in parallel to the price line 3.

It is to be understood that any other bets of a multi-unit denomination may be registered in a similar manner to that above described, it being only necessary to provide a "price line" in respect of such a denomination and a price control apparatus operatively connected by the said line to all circuit control devices comprising the contacts T' of the relay T of all the appropriate ticket issuing machines, the rotary line switch of the price control apparatus being arranged to step round the appropriate number of teeth before preparing the circuit of the X relay in the manner above described.

It is to be noted that more than one pair of contacts has been provided for completing the circuits or portions of the circuits of certain of the relays in the registering equipment so as to guard against faulty action of the equipment which might occur if a single pair of contacts were relied upon at the various points of the circuits.

The various rotary line switches of the registering equipment have only been illustrated diagrammatically but it is to be understood that they may consist of the known type of switch hereinbefore described in which one or more banks of fifty contacts are arranged in a semi-circle and are arranged to be traversed step by step by a rotating wiper arm extending in opposite directions of its spindle so that as soon as one arm leaves the contacts the other commences to wipe across them.

From the foregoing description it will thus be appreciated that in accordance with this invention, the "win" and "place" selection controlled by the selector key or like member in each ticket issuing machine is effected directly in the registering equipment at the central control station and that the wiring entailed comprises the "win" and "place" lines W, P extending from the registering equipment into close proximity with all the ticket issuing machines, the said lines being connected locally to the appropriate contacts WK or PK of the selector switch in each ticket issuing machine.

What we claim and desire to secure by Letters Patent of the United States is:—

1. In an electric totalizator the combination with a plurality of ticket issuing machines each provided with class bet selecting means operable to send an electric impulse selectively over any one of a plurality of class wires connected in common to all machines, of total class bet receiving relays one for each class and each directly connected in circuit in the corresponding class wire and responsive solely to an electric impulse sent over said wire, a plurality of competitor bet receiving relays for each class, circuit control means associated with the ticket issuing machines operable to initiate an impulse identified solely with a competitor upon which a bet is set up on the machine, circuit means whereby the corresponding competitor relays in all classes are energized in parallel by a competitor impulse so initiated, a separate electro-magnet for actuating a counter for each competitor in each class and the circuit of which is closed only by operating contacts of both the corresponding total class bet receiving relay and the corresponding competitor relay in that class connected in series with one another in the circuit of the respective competitor counter magnet, and means for assigning the ticket

issuing machines one at a time to send impulses over said class wires.

2. In an electric totalizator the combination with a plurality of ticket issuing machines each provided with class bet selecting means operable to send an electric impulse selectively over any one of a plurality of class wires connected in common to all machines, of total class bet receiving relays one for each class and each directly connected in circuit in the corresponding class wire and responsive solely to an electric impulse sent over said wire, an actuating electro-magnet for a counter for each competitor in each class, circuit control means associated with the ticket issuing machines operable to initiate an impulse identified solely with the competitor upon which a bet is set up on the machine, means including the total class bet receiving relays operable to result in the energization of the actuating magnet for the competitor counter in the appropriate class by a competitor impulse so initiated, and means for assigning the ticket issuing machines one at a time to send impulses over said class wires.

3. In an electric totalizator the combination with a plurality of ticket issuing machines each provided with class bet selecting means operable to send an electric impulse selectively over any one of a plurality of class wires connected in common to all machines, of total class bet receiving relays one for each class and each directly connected in circuit in the corresponding class wire and responsive solely to an electric impulse sent over said wire, a plurality of competitor bet receiving relays for each class, circuit control means associated with the ticket issuing machines operable to initiate an impulse identified solely with a competitor upon which a bet is set up on the machine, a series of competitor wires one for each competitor extending in common from all said ticket issuing machines to said competitor relays and adapted to cause the energization of the corresponding competitor relays in all classes by a competitor impulse so initiated, a separate magnet for actuating a counter for each competitor in each class and the circuit of which is closed only by operating contacts of both the corresponding total class bet receiving relay and the corresponding competitor relay in that class connected in series with one another in the circuit of the respective competitor counter magnet, and means for assigning the ticket issuing machines one at a time to send impulses over said class wires and said competitor wires.

4. In an electric totalizator the combination with a plurality of ticket issuing machines each provided with class bet selecting means operable to send an electric impulse selectively over any one of a plurality of class wires connected in common to all machines, of total class bet receiving relays one for each class and each directly connected in circuit in the corresponding class wire and responsive solely to an electric impulse sent over said wire, a plurality of competitor bet receiving relays for each class, circuit control means associated with the ticket issuing machines operable to initiate an impulse identified solely with a competitor upon which a bet is set up on the machine, circuit means whereby the corresponding competitor relays in all classes are energized in parallel by a competitor impulse so initiated, a separate electro-magnet for actuating a counter for each class and for each competitor in each class and the circuits of which are closed only by operating contacts of both the corresponding total

class bet receiving relay and the corresponding competitor relay in that class connected in series with one another in the circuits of the respective counter magnets, and means for assigning ticket issuing machines one at a time to send impulses over said class wires.

5 In an electric totalizator the combination with a plurality of ticket issuing machines each provided with class bet selecting means operable to send an electric impulse selectively over any 10 one of a plurality of class wires connected in common to all machines, of total class bet receiving relays one for each class and each directly connected in circuit in the corresponding class 15 wire and responsive solely to an electric impulse sent over said wire, an actuating electro-magnet

for a counter for each class, an actuating electro-magnet for a counter for each competitor in each class, circuit control means associated with the ticket issuing machines operable to initiate impulse identified solely with the competitor upon which a bet is set up on the machine, means controlled by the class relays to effect the energization of the corresponding class counter actuating magnet and of the competitor counter actuating magnet in the appropriate class by a competitor impulse so initiated, and means for assigning the ticket issuing machines one at a time to send impulses over said class wires.

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