Nov. 1, 1938. A. BOLOGNINO ET AL 2,134,681

AUTOMATIC TICKET REGISTERING AND CHECKING MACHINE

Filed March 15, 1935 2 Sheets-Sheet 1

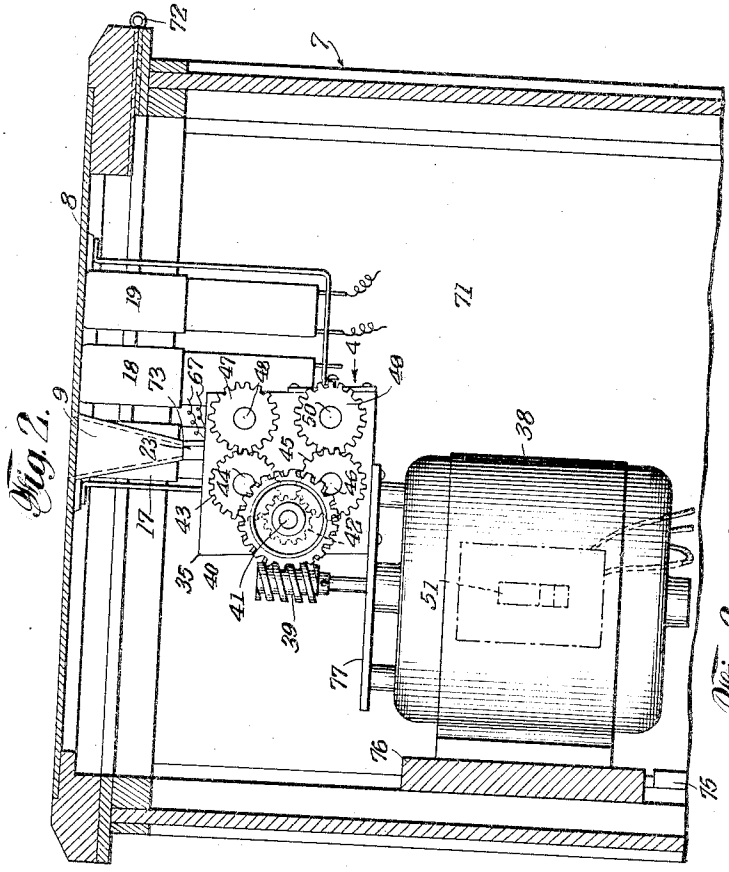


Fig. 2.

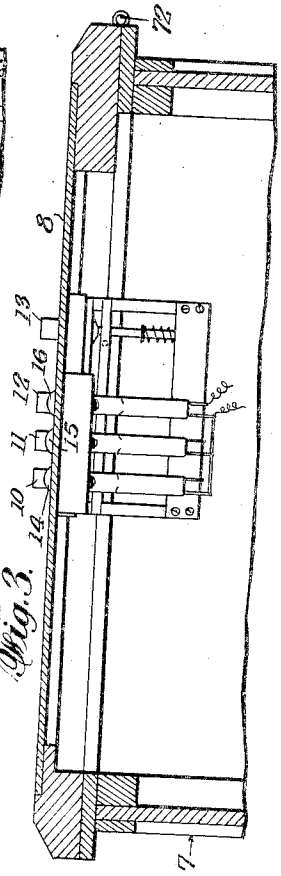


Fig. 3.

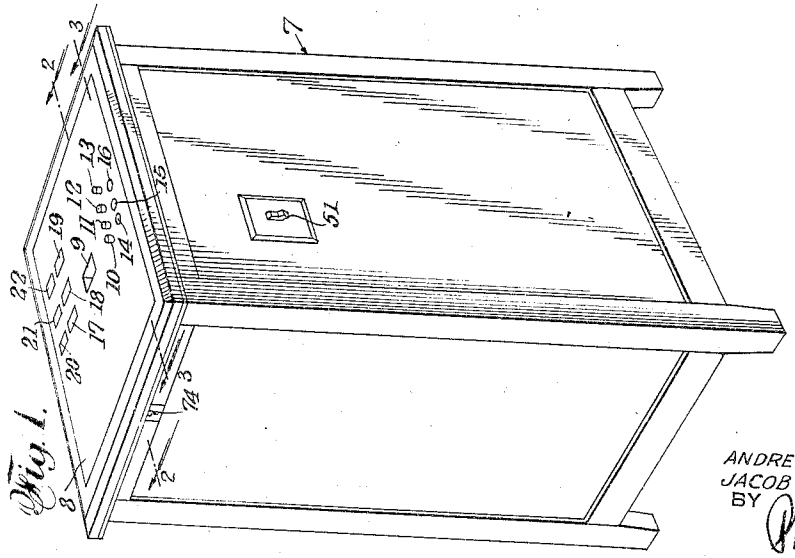


Fig. 1.

INVENTORS
ANDREW BOLOGNINO
JACOB JACKERSON
BY Philip S. McKean
ATTORNEY

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AUTOMATIC TICKET REGISTERING AND CHECKING MACHINE

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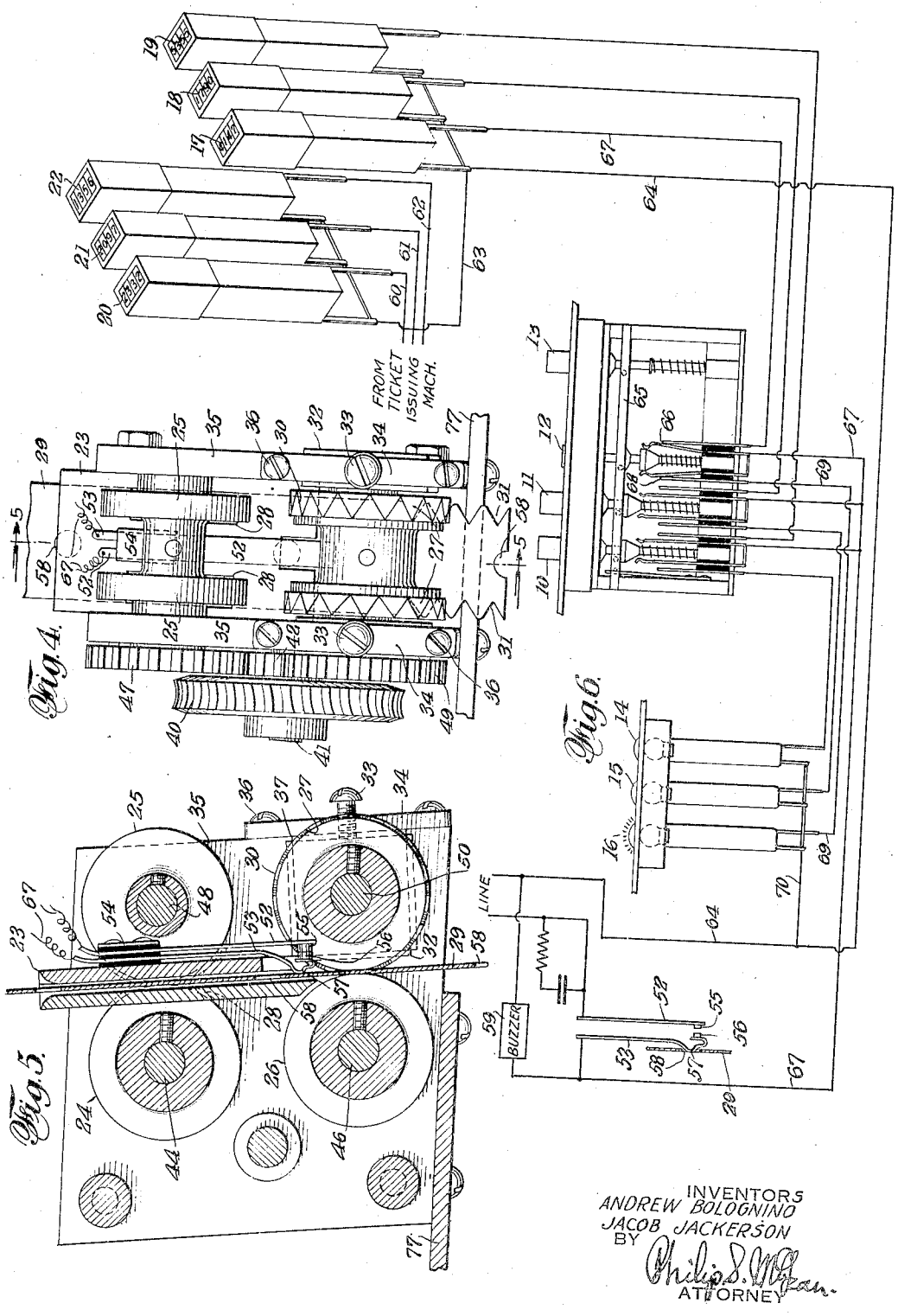


Fig. 4.

Fig. 5.

Fig. 6.

INVENTORS
ANDREW BOLOGNINO
JACOB JACKERSON
BY
Philip S. McGran.
ATTORNEY

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AUTOMATIC TICKET REGISTERING AND CHECKING MACHINE

Andrew Bolognino, New York, and Jacob Jackerson, Brooklyn, N. Y.

Application March 15, 1935, Serial No. 11,240

5 Claims. (Cl. 235—45)

The objects of this invention are to provide simple and practical apparatus for counting and canceling tickets either in strip or separated form; to provide for the classification and counting or registering of tickets of different value and the checking of tickets canceled as against those issued and to provide a suitable signal, indicator or indicators for the operation of the machine.

Other desirable objects and the novel features of construction, combinations and relations of parts are set forth or will appear hereinafter.

The drawings accompanying and forming part of the specification illustrate one of the present practical embodiments of the invention, but it will be appreciated that the structure may be modified and changed all within the true spirit and broad scope of the invention as hereinafter described and claimed.

Fig. 1 is a perspective view of the machine.

Fig. 2 is a broken enlarged vertical sectional view as on substantially the plane of line 2—2 of Fig. 1.

Fig. 3 is a similar view as on approximately the plane of line 3—3 of Fig. 1.

Fig. 4 is a partly broken view of the ticket feeding and canceling rolls viewed in the direction of arrow 4—4 of Fig. 2.

Fig. 5 is a broken vertical sectional view as on substantially the plane of line 5—5 of Fig. 4.

Fig. 6 is a schematic view illustrating the electrical connections.

The machine illustrated is of the cabinet type in which the mechanism is supported by and contained within a cabinet structure 7, which may be in the nature of a more or less ornamental stand, suitable to the surroundings.

This stand carries a flat top plate 8, having a chute or guideway 9, therein for tickets to be canceled, pushbuttons 10, 11, 12, for tickets of different denomination, a reset button 13, signal lights 14, 15, 16, associated with ticket buttons 10, 11, 12, a set of registers 17, 18, 19, for the canceled tickets and associated registers 20, 21, 22, for the issued tickets of corresponding value.

Tickets dropped in the mouth of the entrance chute 9, are directed thereby into a guideway 23, Fig. 5, which directs them between feed rolls 24, 25, and canceling rolls 26, 27. These rolls are shown in Fig. 4, as consisting of end heads or flanges connected by reduced hub portions, the end flanges of the upper feed rolls 24, 25, working through slots 28, in the guideway 23, to grip the edge portion of the ticket strip or tickets 29, and to thus feed them smoothly and evenly down between the end flanges of the canceling rolls 26, 27, at the foot of the guideway.

Cancelation may be effected in various ways, but in the present illustration the end flanges of the roll 27, are formed as zig-zag cutting edges 30, cooperating with smooth edges of the companion roll 26, to notch or serrate the edges of the tickets as at 31, Fig. 4.

The cutting roll 30 is shown as journalled in boxes 32, slidable toward and away from the backing roll 26 and secured in adjusted relation by screws 33. These screws are indicated as mounted in the straps 34, secured to the side plates 35, by screws 36, in position closing the open outer ends of the guideways 37, in which the journal blocks are mounted. Consequently, the removal of screws 36, enables detachment of the straps or bars 34, and then the removal of the cutting roll with its bearing blocks. In such removal and subsequent replacement of the roll, the adjustment of the backing up screws 33, need not be disturbed.

For driving the two sets of rolls, there is shown in Fig. 2, an electric motor 38, having a coarse double thread worm gear 39, in mesh with a worm gear 40, on shaft 41, journalled in the frame plates 35, and carrying a spur gear 42, meshing at opposite sides with a gear 43, on the shaft 44, of feed roll 24 and gear 45, on the shaft 46, of backing roll 26. The gear 44 meshes with a gear 47, on the feed roll shaft 48, and gear 45, meshes with gear 49, on the shaft 50, of the cutter roll 27. By this simple arrangement, the rolls are driven at proper speed in the paired relation shown. The motor is indicated as controlled by a suitable on and off switch 51, which may be mounted in convenient location on the side of the cabinet, Fig. 1.

The counting and registering of the tickets is accomplished in the illustration, by contact mechanism operable by the tickets and governing circuits controlled by the selector buttons 10, 11, 12. This contact mechanism is shown in Figs. 4, 5 and 6, as consisting of spring strips 52, 53, mounted in insulation 54, on the ticket guide 23, and carrying companion contacts 55, 56. These flexible contact strips extend longitudinally of the line of feed with their free ends downward in position between the upper and lower sets of rolls at a point where a ticket length will be held in the grip of both sets of rolls. The contact strip 53 is shown as having a bent portion 57, directed toward the line of ticket feed, so as to be deflected in a circuit closing direction by the solid portions of tickets fed between the rolls. This "feeler" portion 57, of the contact strip is of a size and

position to enter the openings **58**, usually provided between the individual tickets in a ticket strip, to thereby open circuit after the passage of each ticket or ticket length.

The intermediate hub structure of the rolls, as indicated in Fig. 4, provides ample space on the front of the ticket guide **23**, for the mounting of the contact strips in the intermediate position, where the feeler strip may cooperate with the central perforated portion of the ticket strip.

In addition to the signal lights **14**, **15**, **16**, there may be provided a buzzer **59**, or other aural or a visual signal or signals to show either locally or at some remote point, the cancelation of tickets handled by the machine.

As indicated in Fig. 6, connections **60**, **61**, **62**, from a ticket issuing machine, serve to operate the counters or registers **20**, **21**, **22**, as the tickets of different values are issued. These registers are indicated as having a common return **63**, which is a part of or continuation of the common return **64**, for the ticket canceling registers **17**, **18**, **19**, so that the two sets of registers are tied in together and operate in conjunction to enable the checking of tickets sold with tickets canceled.

Operation

At the start of business, the tickets issued counters **20**, **21**, **22**, may or may not be set to accord with the tickets canceled counters **17**, **18**, **19**. So long as the readings are known, any variations may be caught at the end of the days business.

As tickets are sold at the issuing machine, the counters **20**, **21**, **22**, will register these sales.

The operator who issues the tickets or a separate operator may control the canceling machine.

With the switch **51**, turned on and the motor **38**, running, the feed rolls and canceling rolls are turning over ready to take a ticket or ticket strip, the instant it is dropped in the opening **9**.

If all the selector buttons are up, as in Fig. 1, the button **10**, **11** or **12**, representing the value of the ticket, for example, the button **12**, Fig. 6 is pressed and the ticket or ticket strip dropped in the slot. The switch buttons are the self-locking type held when depressed by a locking slide **65**, Fig. 6, and remaining so until released by operation of one of the other switch buttons or by operation of the resetting button **13**.

Consequently, after setting the machine for one value of tickets, the machine will remain so set until a different value button or the release button is operated.

The depression of one of the ticket buttons such as the button **12**, in Fig. 6, engages contacts at **66**, to connect a ticket canceling register, such as **17**, in a circuit **67**, running to one side of the line through the ticket controlled contacts **55**, **56**, and completed to the other side of the line through the common return **64**.

The depressed button also acts to close contacts at **68**, from the ticket controlled side of the line **67**, through wiring **69**, to one of the indicator lights, **16**, in the immediate illustration and wiring **70**, to the common return **64**.

The buzzer **59**, or checking indicator or signal is connected across the line in parallel with the other instruments described by the ticket operated contacts **55**, **56**.

Consequently with the proper ticket button down, such as **12**, in the diagram, and tickets of that denomination dropped in the slot, the indicator light **16**, for that particular value ticket will show up, the counter **17** for such tickets will register each ticket as it passes through the contact mechanism and the buzzer or other device will signalize these operations, so that if desired, a person at a more remote point may count the tickets going through the machine.

As the last ticket passes down, the contacts separate, remaining in this open circuit relation in readiness for the next operation.

The tickets are held by the upper and lower sets of rolls sufficiently taut to insure proper closure of the circuit by the feeler **57**.

All tickets passing through the machine are positively canceled by serration of the edges or other mutilation by the canceling rolls. The cabinet forms a container for the canceled tickets. If desired, a removable box, basket, bag, or equivalent holder may be placed in the container to catch the canceled tickets, the cabinet having a door, such as **71**, at one side, enabling handy removal of the tickets.

The whole top of the machine may be hinged as indicated at **72**, Fig. 2, so that it may be thrown up and open to expose the entire interior. In this upwardly hinging action, the ticket receiving chute separates from the ticket guide **23** on the line **73**. To prevent tampering, the upwardly hinging top may be secured by a lock as indicated at **74**, Fig. 1, and similarly, the door **71**, may have a suitable lock **75**, Fig. 2.

The motor is shown as mounted on a side support **76**, within the casing and the feeding and canceling rolls are shown as mounted on a base plate **77**, directly attached to the head of the motor. The motor and ticket feeding and canceling mechanism, together with the wiring for the ticket contacts thus remain fixed and stationary in the casing when the top is raised for inspection or other purposes.

The operation of the sold and canceled ticket registers may be observed and checked side-by-side at any time and this, with the signal **59**, enables the sale and disposition of tickets to be readily checked whenever desired. The ticket issuing machine may be of any usual or special design and for that reason, the same has not been illustrated, it being sufficient for this case that it be understood that the connections **60**, **61**, **62**, from the ticket issuing machine will effect operation of the registers **20**, **21**, **22**, as tickets of those particular values are sold at the issuing machine. These registers being linked in with the circuit common to the canceled ticket registers and located in the side-by-side relation, enables accurate checking and comparison. The canceling rolls operate only on the edge portions of the tickets and accordingly the feed rolls engage only the edge portions. This leaves the intermediate part of the ticket strips containing the perforations entirely clear and tautly held for cooperation with the feeler-contact mechanism. The cooperating gears of the canceling rolls are sufficiently deep mesh to permit necessary relative adjustment of the rolls.

The machine illustrated is particularly designed for operating on admission tickets such as shown in Figures 5 and 6 which are printed in strip form and with centrally located perforations (**58**) between adjoining tickets. In passing through the canceling and receiving machine each such ticket or ticket length will be automatically canceled and will cause operation of the ticket register **17**, **18** or **19** of corresponding value, depending which of the ticket value switch buttons **10**, **11**, **12** is down. These registers or counters thus keep continuous account of tickets pre-

sented to the machine and, allowing for delay in presentation of tickets and the like, should substantially correspond with the running record made by the ticket issuing machine on the registers **20, 21, 22**. Thus, by comparing the figures on the two sets of oppositely located counters, it is possible to instantly check at all times to see that the tickets sold check with the tickets received.

What is claimed is:

1. In apparatus of the character disclosed, registers for tickets of different values, mechanism for canceling tickets of all values, switches for selecting the registers of different values, ticket controlled switch means associated with said canceling mechanism for effecting energization of ticket registers selected by said switches, said switches being of the self-locking type and releasable one by the operation of another, whereby the machine will remain set for one ticket value until a switch is operated for tickets of another value.

2. In apparatus of the character disclosed, registers for tickets of different values, mechanism for canceling tickets of all values, switches for selecting the registers of different values, ticket controlled switch means associated with said canceling mechanism for effecting energization of ticket registers selected by said switches and an indicator for each switch, said indicator showing irrespective of operation of the ticket actuated switch mechanism.

3. In apparatus as disclosed, a cabinet structure having a hinged top, associated ticket registers, selector buttons and indicators carried by said hinged top, said top having a ticket chute, motor driven canceling means mounted within the cabinet, independently of said top and having a ticket guide associated with the entrance chute when the top is closed and ticket actuated control mechanism for said ticket registers associated with the ticket guide of said canceling means and also mounted within the cabinet, independently of said hinged top.

4. An automatic ticket registering machine, comprising in combination with a ticket strip having a centrally arranged row of strip feeding perforations spaced a ticket length apart, a ticket guiding passage for receiving and positioning said ticket strip, means for feeding the ticket strip through said ticket guide and including canceling rolls having cutters positioned to operate on edge portions of the ticket strip and to leave the intermediate perforated section of the ticket strip intact, ticket register mechanism and a contact switch for controlling said ticket register mechanism and including a part positioned for cooperation with said intact perforated intermediate portion of the ticket strip.

5. An automatic ticket receiving machine, comprising in combination, a ticket receiving guide, motor driven feed rolls for feeding tickets entered in said ticket receiving guide, registers for tickets of different values, switch means for selecting the registers of different values, ticket controlled switch means adjoining said motor driven feed rolls for effecting energization of the particular ticket registers selected by said switch means and indicating means operated by said register selecting switch means for showing the particular value ticket register effective at the time.

ANDREW BOLOGNINO.
JACOB JACKERSON.