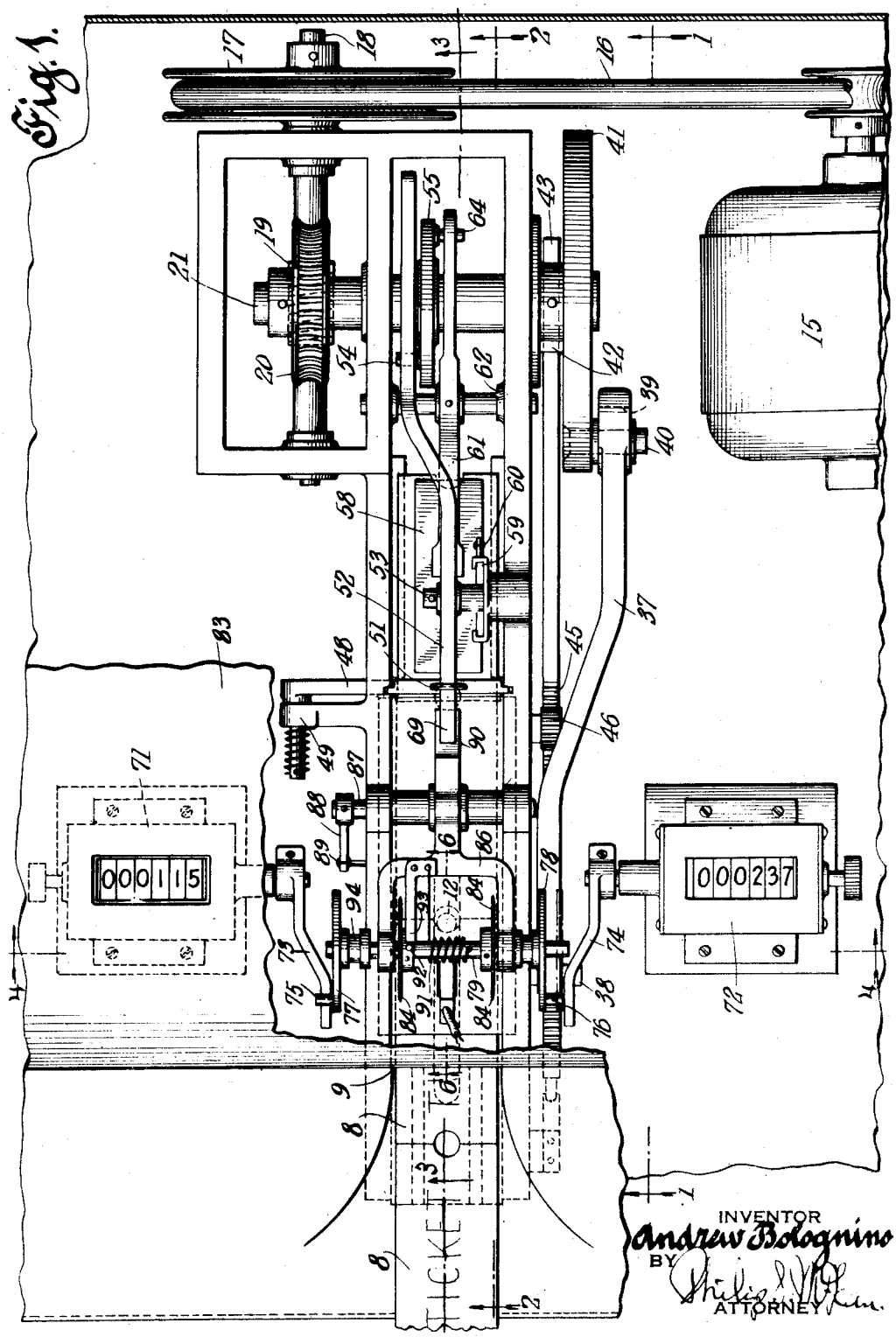
May 7, 1935. A. BOLOGNINO 2,000,159

TICKET MACHINE

Filed May 12, 1931 4 Sheets-Sheet 1

Fig. 1.



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TICKET MACHINE

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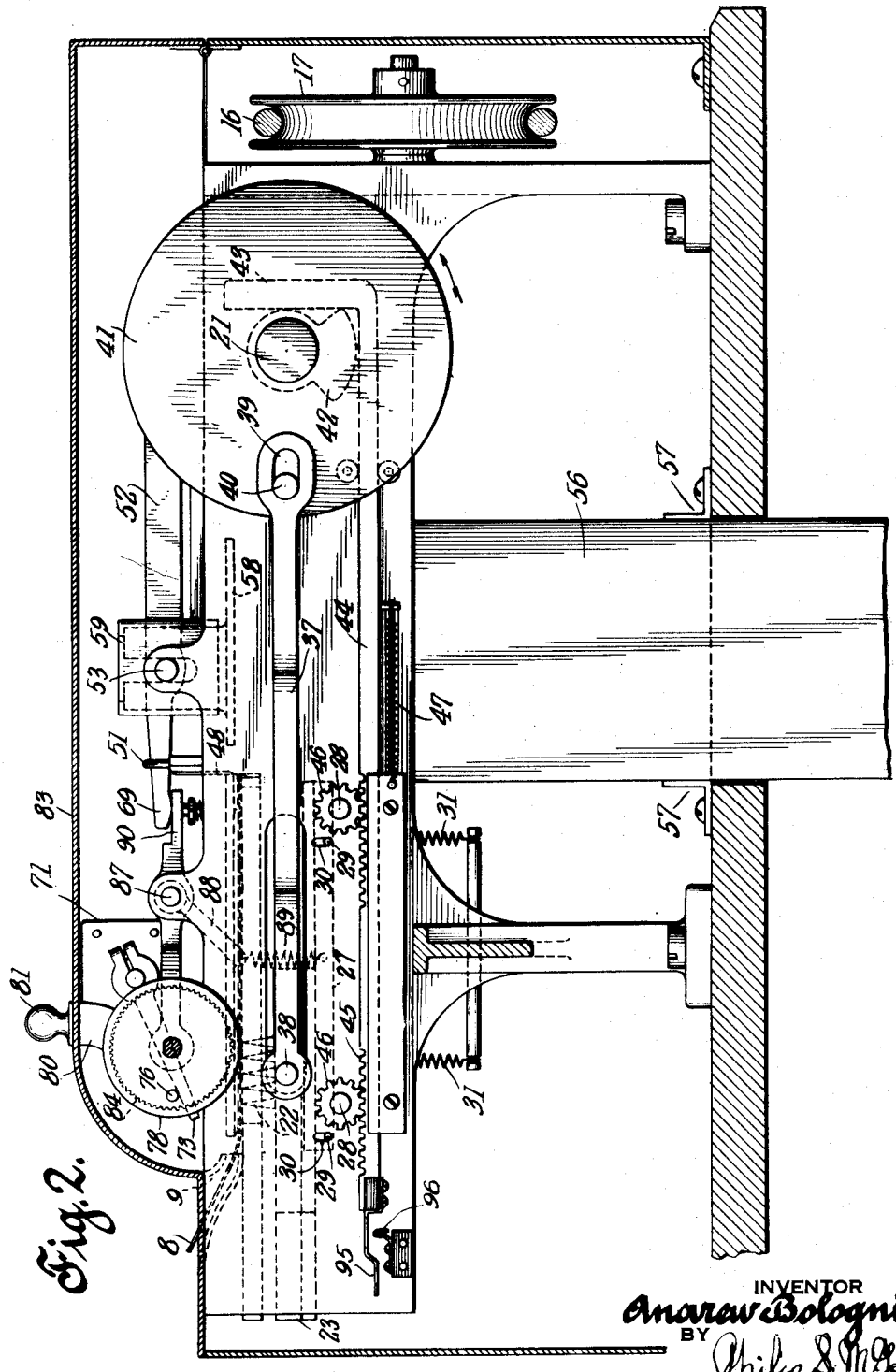

Fig. 2.

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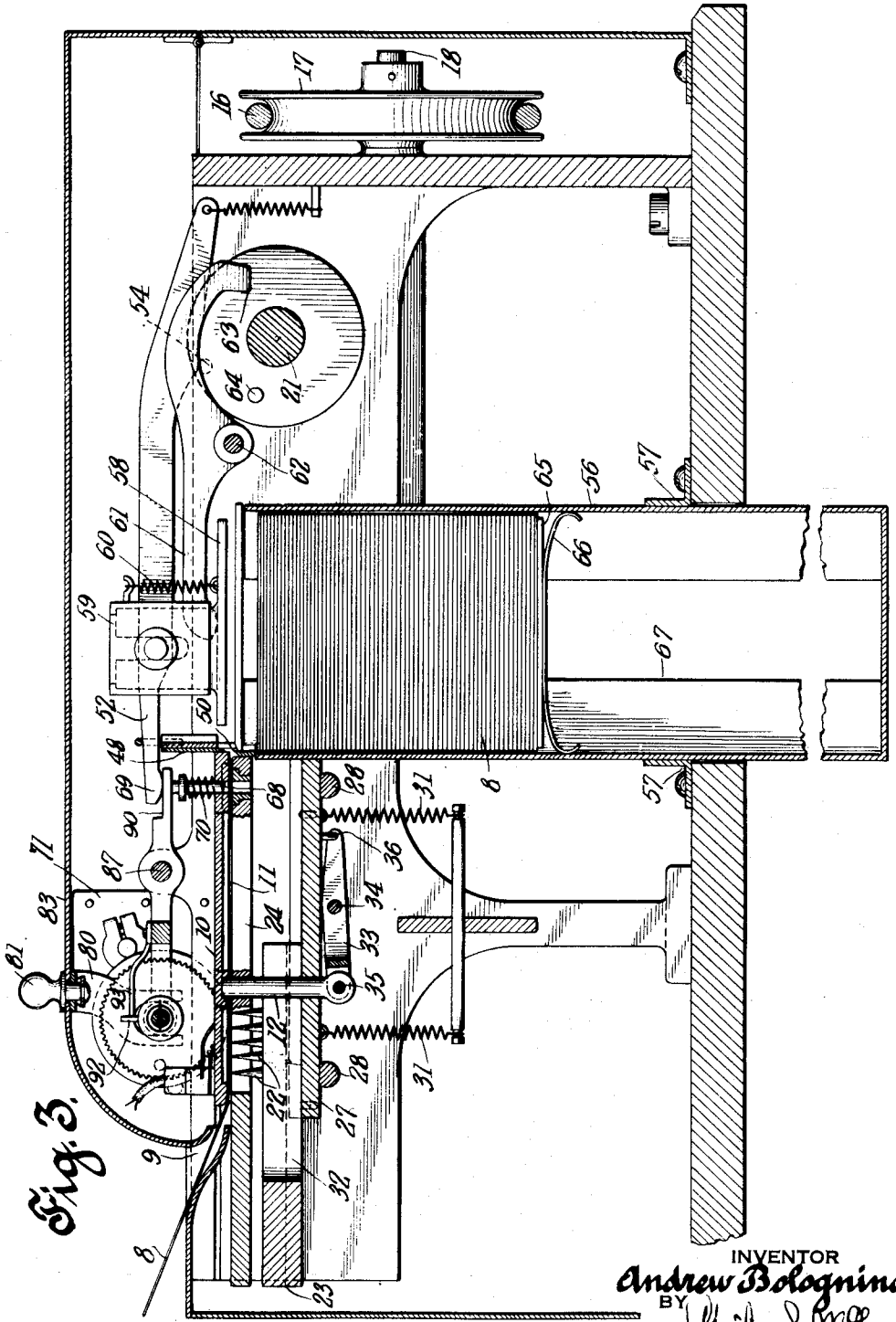

Fig. 3.

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TICKET MACHINE

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Fig. 4.

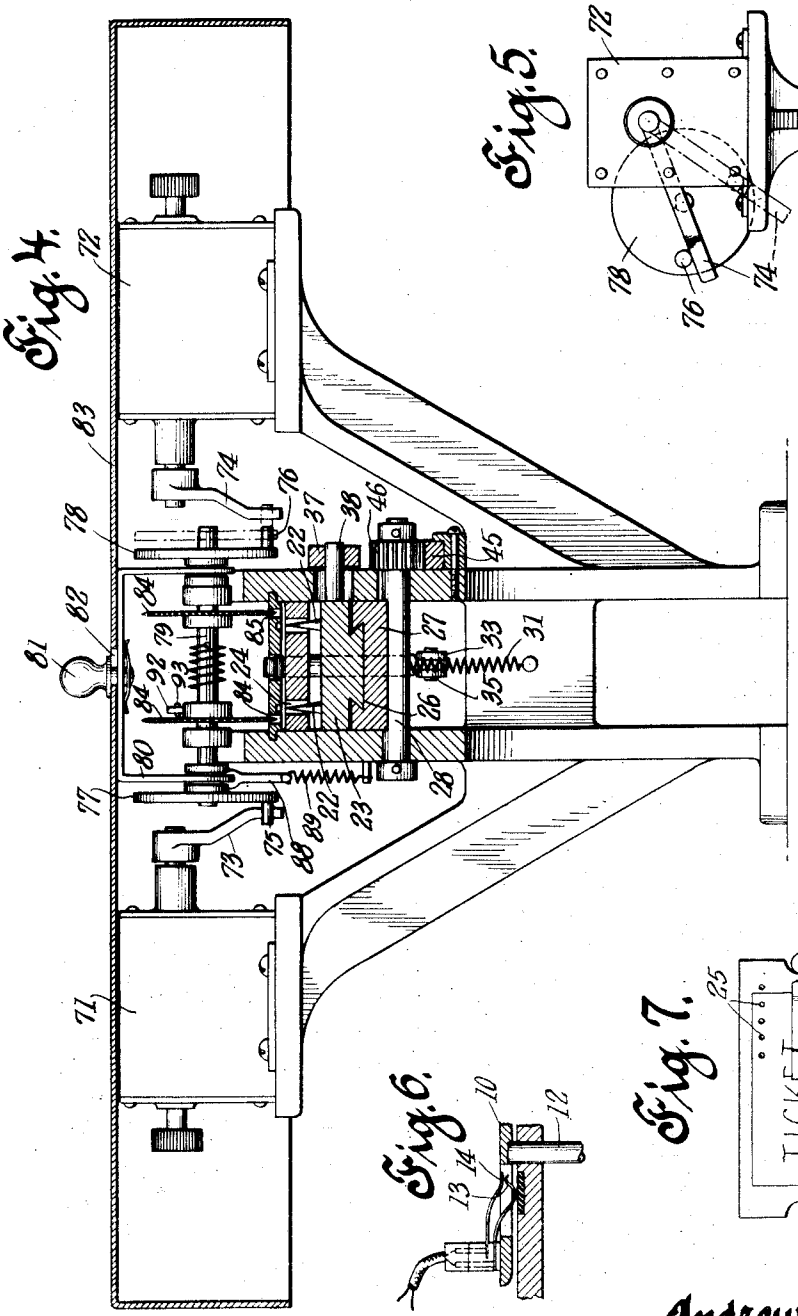


Fig. 5.

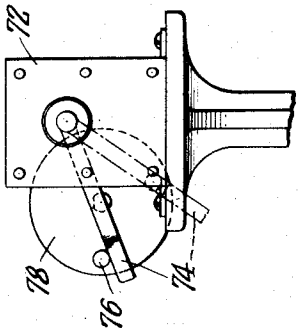
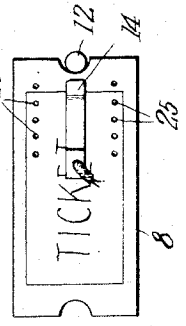


Fig. 6.

Fig. 7.



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UNITED STATES PATENT OFFICE

2,000,159

TICKET MACHINE

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Application May 12, 1931, Serial No. 536,890

9 Claims. (Cl. 164—42)

This invention relates to the handling of tickets, particularly admission tickets, such as used in motion picture theatres.

The objects of the invention are to provide simple, practical and reliable apparatus for taking the tickets, cancelling, counting and storing the same.

The attainment of the foregoing and other desirable objects is effected by the novel features of construction, combinations and relations of parts hereinafter described, claimed and illustrated in the accompanying drawings.

The embodiment of the invention shown in the drawings constitutes one commercial form, but it should be understood that the actual physical structure may be modified and changed as regards this particular disclosure without departure from the true spirit and broad scope of the invention.

Fig. 1 is a broken plan view of the machine chosen to illustrate the invention; Fig. 2 is a vertical sectional view taken on substantially the plane of line 2—2 of Fig. 1, with the main body of the machine appearing as in side elevation; Fig. 3 is a broken longitudinal sectional view as on line 3—3 of Fig. 1 through the mid-portion of the machine; Fig. 4 is a cross-sectional view of the machine as on line 4—4 of Fig. 1; Fig. 5 is a broken detail of one of the counters and the actuating disc for the same; Fig. 6 is a fragmentary sectional detail of the starting switch located in the receiving throat of the machine, this view being taken as on line 6—6 of Fig. 1; Fig. 7 is a plan view illustrating relation of the entering ticket to the stop gage and motor circuit controller.

Figs. 1, 2 and 3 show how the tickets which are designated 8, are inserted in the machine, either singly or in strip form, through a funnel-shaped guide throat 9, into a channel provided between a top plate 10 and bottom guide or support 11, against a retractable stop pin 12. As the leading edge of the ticket or ticket strip meets or approaches the stop pin 12, a circuit controller is actuated to automatically start the machine. This circuit controller is shown in detail in Fig. 6, as consisting of a bowed spring contact 13, designed to be lifted by the ticket into engagement with an overstanding spring contact 14, to close the circuit through the motor 15.

The motor 15 is shown connected to drive the machine through a belt 16, about a pulley 17, on a shaft 18, carrying a worm 19 in mesh with a worm gear 20, on a transverse shaft 21. The latter carries the cams and other machine elements for actuating the several parts of the machine.

The operation of the shaft 21 effects first a gripping engagement with the entered ticket or ticket strip and then an advancement into the machine equivalent to a ticket length.

The ticket gripper consists of two sets of prongs 22 projecting upward from a slide 23, through slots 24 in the bottom 11 of the ticket guide and arranged to pierce the ticket along its opposite edges as indicated at 25 in Fig. 7.

The gripper slide 23 has an undercut or dovetail sliding engagement 26 in a lifting and lowering support 27. The latter is shown as supported on oscillating cam shafts 28, which in the position illustrated in Figs. 3 and 4, with the plate 27 resting on the "flats" of the cam shafts, lowers the prongs out of the guide channel, said shafts when turned to bring the rounded portions of the same upward, serving to lift the supporting plate 27 and the prong plate slidingly mounted thereon. The lifting and lowering plate 27 is shown as guided by straight up and down movements by having projecting pins 29 on the edges of the same riding in slots 30 in the sides of the frame, Fig. 2, and springs 31 hold the plate firmly engaged with the rolling cam shafts.

The prong carrying member 23 is shown in Fig. 3 as longitudinally slotted at 32, to clear the gage pin 12 and the latter is shown as automatically retracted by a swinging lever 33, pivotally supported intermediate its ends at 34 and connected at one end at 35, with the lower end of the gage pin and at its opposite end at 36 with the rising and lowering support 27. It will be evident from Fig. 3, that upon the lifting movement of plate 27, the lever 33 will be rocked to lower the gage pin out of the way of the ticket entered in the guide channel. Thus with the piercing of the ticket by the grip pins, the gage or stop pins will be lowered to permit onward feeding movement of the ticket by the grip pins. The advancing motion of the ticket gripping pins is effected in the illustration by a link 37, connected at one end with a pin 38, projecting from one side of the sliding grip and slotted at its opposite end at 39, to engage a crank pin 40, on a crank disc 41, on the main shaft 21. The purpose of slot 39 is to allow lost motion, sufficient for operation of the lifting cam shafts 28, before the ticket advancing movement of the slide takes place. Fig. 2 shows this timed relation of the parts and the actuating means for

the cam shafts, consisting of the cam 42 on shaft 21, engaging a cam follower 43 on slide 44, which carries racks 45, in engagement with pinions 46 on the ends of shafts 28. This rack slide is shown as retracted by a spring 47.

Thus it will be seen, that with the direction of rotation indicated in Fig. 2, the cam 42 will operate to turn the lifting cam shafts 28 to force the prongs 22 into the ticket positioned against gage 12, before a link 37, through its lost motion connection at 39 operates to draw the prong carrying slide forward to advance the ticket further into the machine.

While the machine is suited to handling single tickets, it is specially equipped to take the tickets in strip form and to sever and stack the same in a magazine.

The strip severing mechanism is shown in Figs. 1, 2 and 3, as consisting of a cutter blade 48, pivotally mounted at 49, in position to cooperate with a stationary shear blade 50 at the end of the ticket guiding passage, and having a loop 51 receiving one end portion of lever 52, pivotally mounted at 53 and engaged at its opposite end by a pin or cam element 54, on one face of disc 55 on cam shaft 21.

The magazine which receives the severed tickets is illustrated in Figs. 2 and 3, as a vertical container 56, removably supported at 57, with its upper end in line with and constituting a horizontal open continuation of the ticket channel and beneath the ticket chopper, so as to directly receive the last-severed ticket. A packer 58, supported for vertical movement in a guide 59, is positioned above the open mouth of the magazine, at a point to deflect issuing tickets down into the magazine. This packer is shown as lifted by a spring 60 and as depressed after each severing action of the knife by one end of an overstanding lever 61, pivotally supported at 62 and having at its opposite end a cam portion 63, engaged by a pin or cam element 64 on the opposite face of the disc 55, carrying the cam pin 54.

From the description and illustration, it will be clear that as the knife chops off the tickets arriving over the end of the machine, the packer operates to force them down into the magazine, one on top of the other in a neat stack as indicated in Fig. 3. A receding support for the stack is shown in Fig. 3 in the form of a blade 65, guided and yieldingly supported in the magazine by a bowed spring 66 on the bottom of the blade having curled ends frictionally engaging the walls of the magazine. A slot 67 in one side of the magazine, enables the stacking operation to be observed and further enables the support or follower 65, to be readily shifted to the starting position. When the magazine is full, or at any other time, it may be removed upon loosening the fastenings at 57 and then be quickly emptied by engaging the spring follower through the slot 67 and sliding it in the direction to discharge the stack of tickets from the open end of the holder.

While the perforation of the tickets by the feeding prongs may be considered sufficient to constitute effective cancellation of the tickets, additional and more complete cancellation is effected in the present disclosure by a special cancelling punch shown at 68, in Fig. 3, over the ticket channel and actuated by the extended tip portion 69 of the cutter actuating lever 52. This punch is normally retracted out of the path of the tickets by spring 70. Thus, it will be seen, that as the first ticket in line is cut off and dropped into the magazine, the second ticket will be cancelled by punch 68.

The tickets are automatically counted in the machine illustrated, by the two counters designated 71 and 72 in Figs. 1 and 4, intended to register tickets of two different values and positioned at opposite sides of the machine with their actuating arms 73, 74, in position to be engaged respectively by pins 75, 76, on discs 77, 78, carried by an oscillating shaft 79. This shaft is transversely shiftable by a yoke 80, to selectively position the crank pins 75, 76, for operating one or the other of the counters, Fig. 4, such movement of the yoke being effected as by a button or handle 81, connected with the yoke 80 and operating through a slot 82 in the top or cover 83 of the machine.

The counter shaft 79 is operated by the tickets entered in the machine through the medium of the two spur wheels 84 on the shaft and adapted, upon lowering the shaft, to project down through slots 85 in the top of the ticket guide into engagement with the ticket strip. This downward ticket engaging movement is effected in the illustration by the mounting of shaft 79 in the arms of a yoke 86, carried by a rock shaft 87 and having an arm 88 at one end actuated on by a spring 89. The upward ticket disengaging movement is effected from the knife actuating lever 52, Figs. 1, 2, and 3, by providing the shaft carrying yoke 86, with a tail portion 90, interposed between the end 69 of the knife lever and the head of the cancelling punch 68. The cam lever 52 is thus made to serve the triple function of operating the ticket chopper, the cancelling punch and lifting the ticket counting shaft.

The ticket counting shaft 79 is returned back to an initial position, after each operation of the same, by a return spring 91, surrounding the shaft and connected to rotate the shaft backwardly, until a stop pin 92 thereon, engages a shoulder or stop lug 93, Figs. 1, 3 and 4.

It will be apparent, that the effect of the feed prongs, striking upward through the ticket and drawing the ticket into the machine, will be to force the ticket firmly up against the spur wheels 84 and to then rotate said wheels and consequently, the shaft on which they are mounted, and thereby to actuate one or the other of the two counters, depending upon which way the selector button 81 is shifted. In Fig. 1, the shifting yoke 80 is omitted to show more clearly the annular grooves 94 in the hubs of the crank discs 77, 78, engaged by the ends of the sliding yoke and this view also illustrates how these crank discs are slidingly keyed on the counter shaft 79 by making the ends of the shaft half-round and the bores of the discs to fit.

A bell or other signal may be provided and connected for operation at each counting and cancelling action of the machine. Contacts 95, 96, are shown in Fig. 2, carried by the rack bar 44 in the frame of the machine, which may be employed to control such a signal circuit or be used for safety or other purposes, for instance to stop the machine in the proper position to take the next ticket.

One special advantage of the machine is that the entire operation becomes automatic as soon as a ticket or ticket strip is entered in the machine. The leading edge of the ticket engages a stop or gage 12, being thereby positioned for proper operation in the machine and substan-

tially at the same moment, the ticket closes the motor controlling circuit, causing the grip prongs to come up through the ticket and advance it one ticket length into the machine. In this movement, which ever ticket counter is selected for actuation, is operated to register the ticket. On the next feed stroke, whether it be due to a second ticket attached to the first, or separate ticket entered in the machine, the first ticket passes over into the magazine being severed, if in strip form and is backed down on top of the stack in the magazine. Before passing over into the magazine, the first ticket is cancelled by the cancelling punch 70. Thus, all tickets stacked in the magazine are cancelled and counted, and the contents of this holder may therefore, be used at any time for checking purposes.

While the structure disclosed is a practical and commercial form of the invention, it will be understood that changes and modifications may be made to meet different requirements, all within the broad scope of the claims.

What is claimed is:

1. In a machine of the character disclosed, the combination of a ticket guide, a stop gage associated with said guide and positioned to positively stop a ticket inserted in said guide, ticket feeding means for engaging a ticket so inserted in the guide, a controller positioned for actuation by a ticket engaged with the stop gage and power actuated means governed by said controller for retracting the stop gage and operating the ticket feeding means.

2. In a ticket receiving machine, an actuating shaft provided with a ticket engaging member, ticket feeding means arranged to force a ticket being fed into driving engagement with said ticket engaging member on the shaft and means for automatically tripping the ticket engaging member from cooperative relation with said ticket feeding member when the latter has completed its ticket feeding movement.

3. In a machine of the character disclosed, in combination, a ticket guide, a raising and lowering support beneath the guide, a reciprocating ticket advancing slide on said raising and lowering support, a ticket receptacle positioned to receive tickets from the guide, power means for actuating said raising and lowering support and said reciprocating feed slide and a controller positioned for actuation by a ticket entered in the ticket guide and connected to automatically start said power means.

4. In a machine of the character disclosed, in combination, a ticket guide, a raising and lowering support beneath the guide, a reciprocating ticket advancing slide on said raising and lowering support, a ticket receptacle positioned to receive tickets from the guide, means for actuating said raising and lowering support and said reciprocating feed slide and a retractable stop gage for locating the tickets in the guide and connected for actuation by said raising and lowering support.

5. In a machine of the character disclosed, the combination of a guide channel, a lifting and lowering reciprocating feed member beneath said guide channel, a retractable positioning stop operating in the guide channel, a cancelling punch operating in the guide channel, a ticket chopper at the end of the guide channel and a ticket receptacle adjacent said ticket chopper.

6. In a machine of the character disclosed, the combination of a guide channel, a lifting and lowering reciprocating feed member beneath said guide channel, a retractable positioning stop operating in the guide channel, a cancelling punch operating in the guide channel, a ticket chopper at the end of the guide channel, a ticket receptacle adjacent said ticket chopper, power mechanism for actuating said means aforesaid in timed relation and a controller for said power means positioned for actuation by the ticket entered in the guide channel into engagement with said retractable positioning stop.

7. In a machine of the character disclosed, the combination of a guide channel, a lifting and lowering reciprocating feed member beneath said guide channel, a retractable positioning stop operating in the guide channel, a cancelling punch operating in the guide channel, a ticket chopper at the end of the guide channel, a ticket receptacle adjacent said ticket chopper, power mechanism for actuating said means aforesaid in timed relation, a controller for said power means positioned for actuation by the ticket entered in the guide channel into engagement with said retractable positioning stop, the power mechanism including a single shaft and means operated from said shaft for actuating the several instrumentalities aforesaid.

8. A machine for handling strip tickets, comprising in combination a guideway for the tickets, means for feeding tickets entered in said guideway, a cancelling device for acting on the tickets in the guideway, a knife at the end of the guideway for severing strip tickets in ticket lengths, a receptacle at the end of the guideway for receiving ticket lengths cut by the knife, a motor for driving the aforesaid mechanisms in timed relation and a switch for controlling said motor and positioned for actuation by tickets entered in the guideway.

9. A machine for handling strip tickets, comprising in combination a guideway for the tickets, means for feeding tickets entered in said guideway, a cancelling device for acting on the tickets in the guideway, a knife at the end of the guideway for severing strip tickets in ticket lengths, a receptacle at the end of the guideway for receiving ticket lengths cut by the knife, a motor for driving the aforesaid mechanisms in timed relation, a switch for controlling said motor and positioned for actuation by tickets entered in the guideway and switch means automatically operable to stop the machine in the proper position of the parts to take the next ticket.

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