

[54] **TICKET DISPENSER**

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[22] Filed: **April 23, 1971**

[21] Appl. No.: **136,968**

[52] U.S. Cl. **226/76, 226/157, 226/127**

[51] Int. Cl. **B65h 17/22**

[58] Field of Search. **226/76, 157, 127, 128, 129, 226/134**

[56] **References Cited**

UNITED STATES PATENTS

3,572,569 3/1971 Cimijotti **226/157**

2,622,873 12/1952 Wenneche **226/157**

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[57] **ABSTRACT**

The present invention relates to a ticket dispenser in which a strip of tickets having recesses every ticket length between one ticket and another engages in projections on a ticket feeding wheel, which is advanced by a ratchet. The ratchet has both a fixed pawl and a moving pawl and both pawls are cam controlled so that the fixed pawl is free to advance when the moving pawl is restrained against advancing and the moving pawl is free to advance when the fixed pawl is restrained against advancing.

3 Claims, 7 Drawing Figures

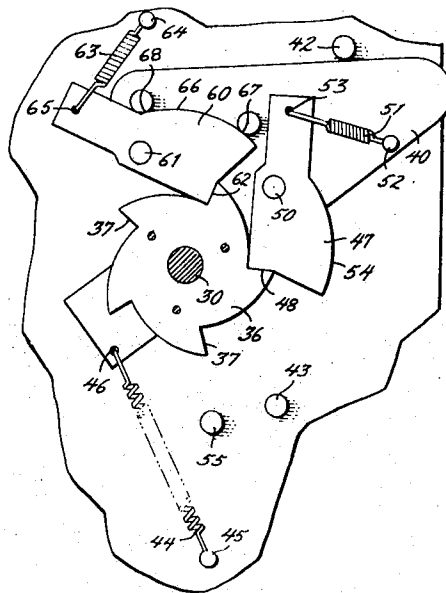


Fig. 2.

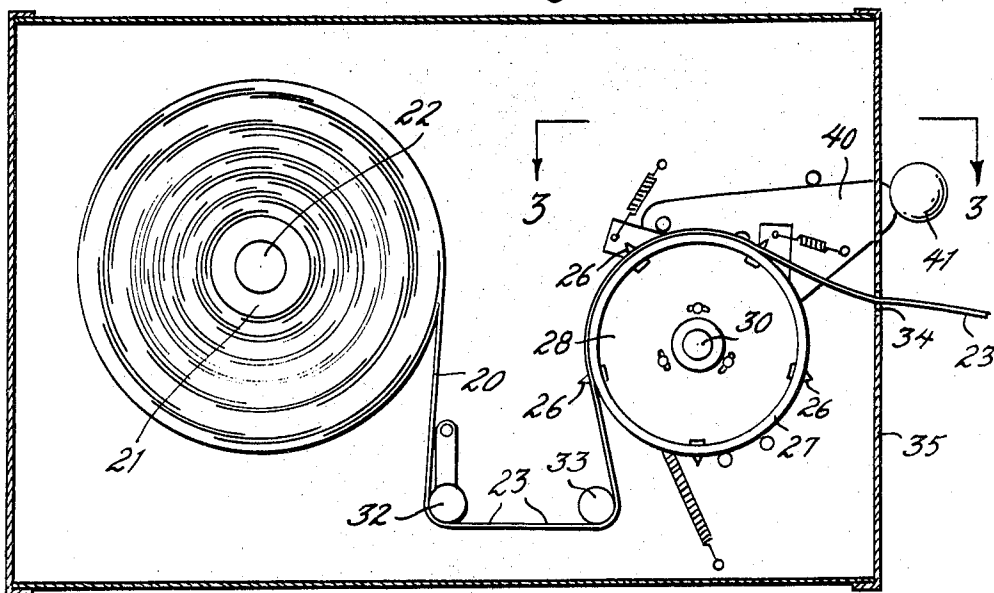
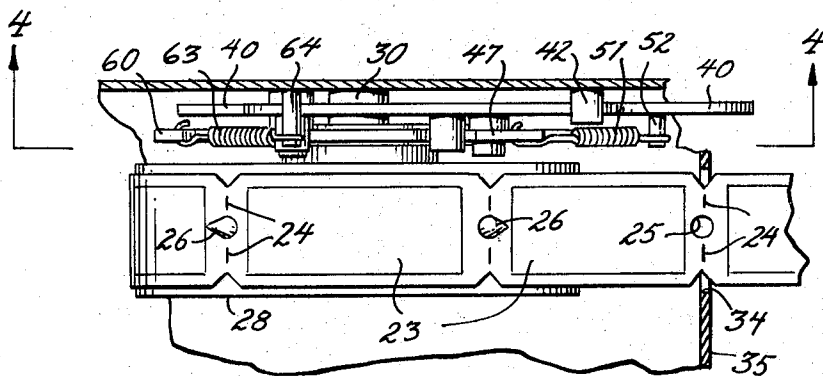


Fig. 3.

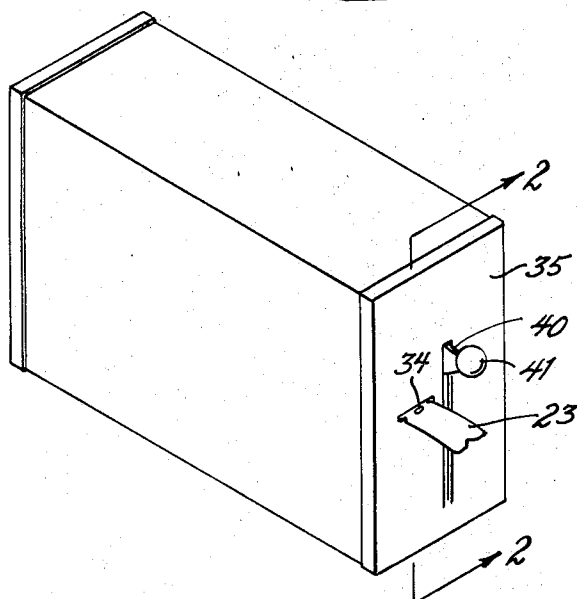


Fig. 1.

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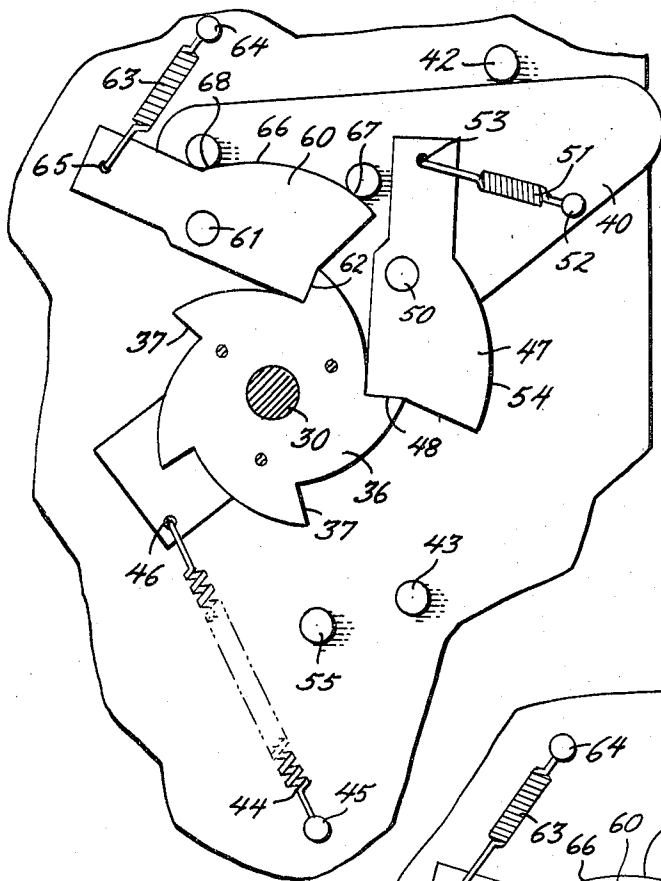
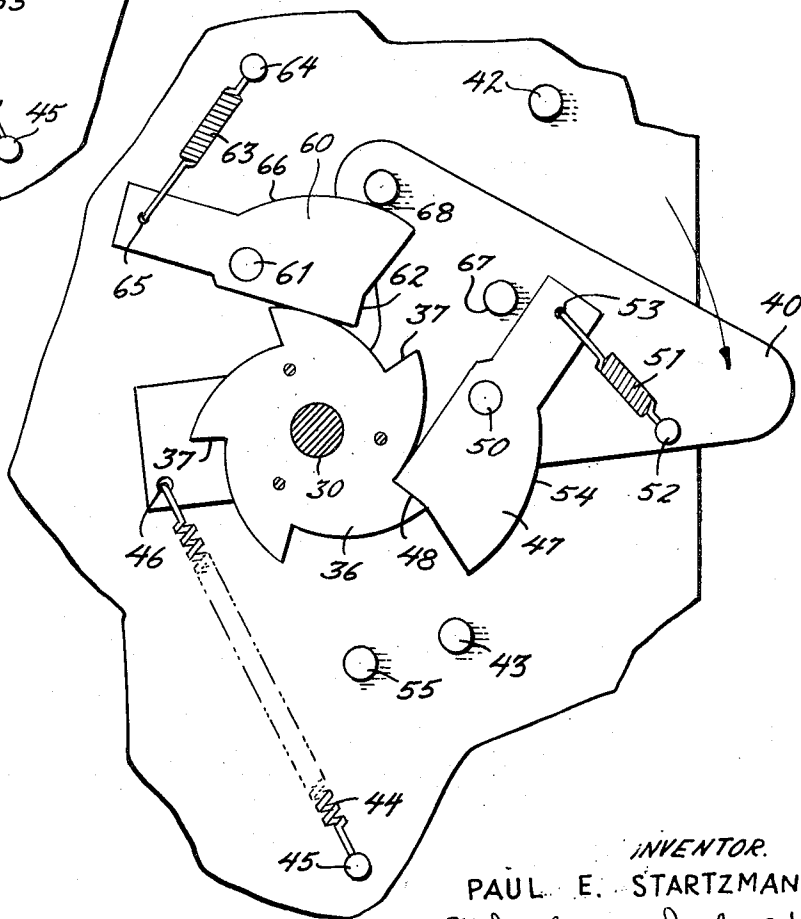


Fig. 4.

Fig. 5.



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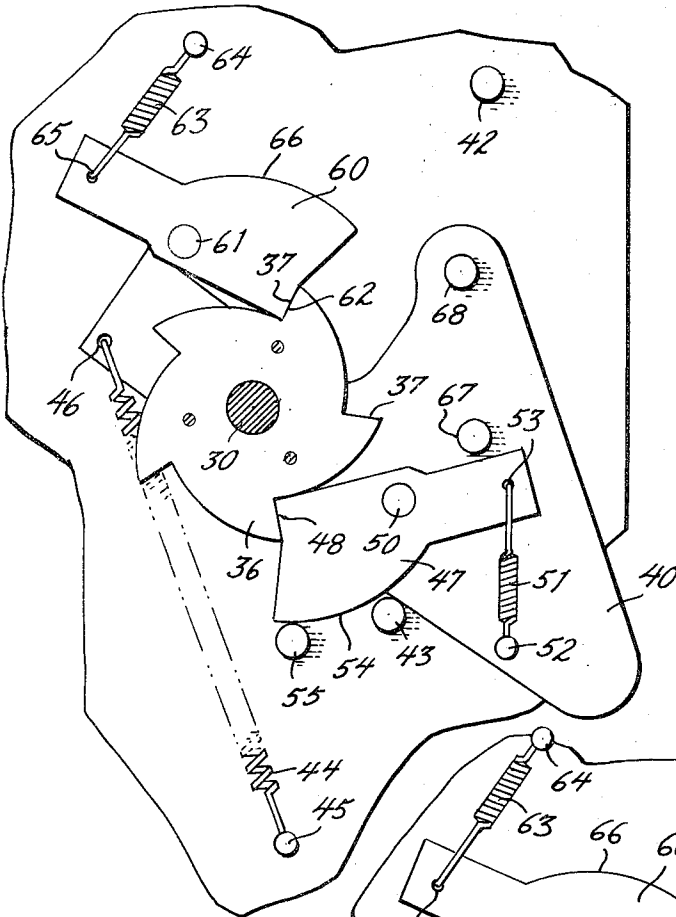


Fig. 6.

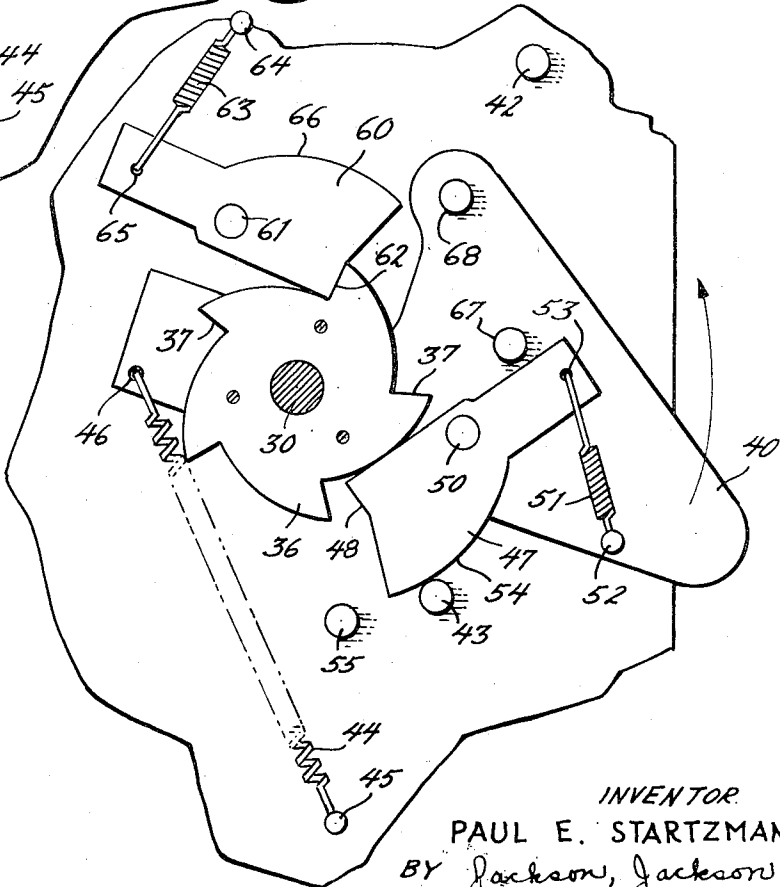


Fig. 7.

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TICKET DISPENSER

DISCLOSURE OF INVENTION

The present invention relates to a ticket dispenser for strip tickets.

In the prior art, simple mechanisms for engaging recesses in strips of tickets between the individual tickets are vulnerable because a user, pulling on a ticket at a certain time in the cycle of dispensing has been able to extract a strip of several tickets.

The present invention dispenses strip tickets in a way that will assure that this cannot happen by locking the respective pawl which permits the advance of the strip of tickets so that one is locked when the other is free and the other is locked when the one is free.

In the drawings I have chosen to show one embodiment in which the invention may appear, selecting the form shown from the standpoints of convenience in illustration, satisfactory operation and clear demonstration of the principles involved.

FIG. 1 is a perspective of the outside of the ticket dispenser of the invention showing a ticket being dispensed.

FIG. 2 is an enlarged section of FIG. 1 on the line 2—2 showing the strip of tickets, and the ticket dispensing wheel.

FIG. 3 is a section on the line 3—3 of FIG. 2.

FIGS. 4, 5 and 6 are various views of the ratchet and pawl corresponding to a section on the line 4—4.

FIG. 4 shows the operating lever fully retracted.

FIG. 5 shows an intermediate position in advance of the operating lever.

FIG. 6 shows the operating lever fully advanced.

FIG. 7 shows an intermediate position in the retraction of the operating lever.

A strip of tickets 20 is wound on a reel 21 which rotates on a pivot 22 supporting the tickets on the frame. Each ticket 23 is separated from the rest by perforations 24 by which it can be torn off, and a recess 25 which engages in feeding pins 26 on the rim 27 of a feeding wheel 28 which is centrally pivotally mounted on a shaft 30 pivoted on the frame. The strip of tickets 20 passes over a tension device 32, a guide roll 33 and then over the rim 27 of the feed wheel in engagement with its projections 26 to a slit 34 in a frame 35. The ticket dispensed comes out of the slit 34 and is received by the user. A ratchet 36 has ratchet teeth 37 and is centrally pivotally mounted on the shaft 30, either integral with or connected physically to the feed wheel 28.

Actuating lever 40 is freely pivoted on the shaft 30 and has an actuating handle which is grasped by the hand to operate the dispenser, it being contemplated that it will usually be handled by the members of the public as a customer preference ticket dispenser. The actuating lever operates between limiting positions, for example determined by pin 42 for retraction and pin 43 for advance and is biased towards retraction, preferably by helical tension spring 44 mounted at one end on spring abutment 45 on the frame and at the other end in an opening 46 on the actuating lever.

A moving pawl 47 has a pawl tooth 48 and is pivoted suitably intermediate its ends at 50 on the actuating lever. The moving pawl 47 is biased toward engagement with the ratchet suitably by helical tension spring 51 which is mounted at one end on a spring abutment 52 on the actuating lever and at the other end is engaged in opening 53 on the end of the moving pawl 47 remote from the pawl tooth 48. The moving pawl 47 has at its radial outer edge a curved follower surface 54 which when the actuating lever is advanced, engages cam pins 43 and 55 mounted on the frame and cannot leave the ratchet to advance one tooth of the ratchet. On the other hand when the operating lever is retracted, the moving pawl 47 is free to advance one tooth of the ratchet and thus to correspondingly advance the ticket feeding wheel.

Pivoted on the frame and fixed in circumferential position is a fixed pawl 60 pivoted on a fixed pivot 61 on the frame having a ratchet engaging tooth 62. It is biased toward engagement with ratchet by helical tension spring 63 which engages

at one end spring abutment 64 on the frame and at the other end engages in opening 65 which is at the rear end of the fixed pawl with respect to advance of the ratchet.

On the radial outside surface of fixed pawl 60 is curved cam follower surface 66 and when the actuating lever is retracted, it is engaged by cam surfaces 67 and 68 which prevent it from advancing one tooth with respect to the ratchet. At this time, however, the moving pawl 47 is free to advance. When the actuating lever is in forward or advanced position, the cams 67 and 68 leave the follower surface 66 on the fixed pawl 60, and therefore it is free to advance, although in that position the moving pawl is restrained against advancing by cams 43 and 55.

In operation of the device according to the invention, starting with the operating lever retracted, when the operating lever is advanced, the moving pawl pushes the ratchet forward and the fixed pawl as permitted by its follower surface and the cams on the ratchet moves radially outward. Before the operating lever moves fully forward, the fixed pawl follower surface ceases to be restrained by the cams on the operating lever and when that happens, the fixed pawl changes its position to engage the next tooth of the ratchet. When the moving pawl and the operating lever are fully forward, the moving pawl is held in engagement with its ratchet tooth by its follower surface and the fixed cams, the operating lever is then released by the operator and it retracts but the ticket feeding wheel and the ratchet are stationary because the ratchet is held by the fixed pawl. As the operating lever moves backward, the follower surface on the movable pawl loses contact with the fixed means and before it is fully retracted, the movable pawl engages in the next tooth of the ratchet.

Accordingly, on the forward stroke the ticket feed wheel is advanced under the control of the movable pawl and on the retracted stroke it is held against feeding tickets by the fixed pawl.

In view of my invention and disclosure, variations and modifications to meet individual whim or particular need will doubtless become evident to others skilled in the art, to obtain all or part of the benefits of my invention without copying the structure shown, and I therefore claim all such insofar as they fall within the reasonable spirit and scope of my claims.

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

1. In a ticket dispenser, a ticket feeding wheel having a rim and projections on the rim which engage cooperating recesses between tickets in a strip, means for guiding a strip of tickets over the circumference of the wheel with engagement of their recesses in the projections on the rim of the wheel, a central shaft on which the wheel is pivoted, a ratchet having teeth interconnected with the wheel and pivoted on the shaft, an actuating lever pivoted on the shaft, a moving pawl engaging the ratchet and pivoted on the actuating lever, spring means biasing the moving pawl toward the ratchet, a fixed pawl engaging the ratchet and pivoted on a fixed pivot, spring means biasing the fixed pawl toward the ratchet, cam means on the actuating lever, follower means on the fixed pawl engaging the cam means on the actuating lever and locking the fixed pawl against advance when the actuating lever is retracted but permitting the fixed pawl to advance when the cam means on the actuating lever releases the follower means on the fixed pawl, fixed cam means adjacent a forward position of the actuating lever, and follower means on the moving pawl which engages the fixed cam means and prevents the moving pawl from advancing when the fixed pawl is free to advance, while permitting the moving pawl to advance when the fixed pawl is restrained by the cam means on the actuating lever.

2. A dispenser of claim 1, in combination with spring means for biasing the actuating lever toward retraction.

3. A dispenser of claim 1, in which the cam means on the actuating lever consists of pins, the follower on the fixed pawl consists of an arcuate surface, the fixed cam means consist of pins, and the follower on the moving pawl consists of an arcuate surface.