Sept. 16, 1947. H. P. SILVERMAN 2,427,628

SELECTIVE DISPENSER FOR PHONOGRAPH RECORDS

Filed May 2, 1946 2 Sheets-Sheet 1

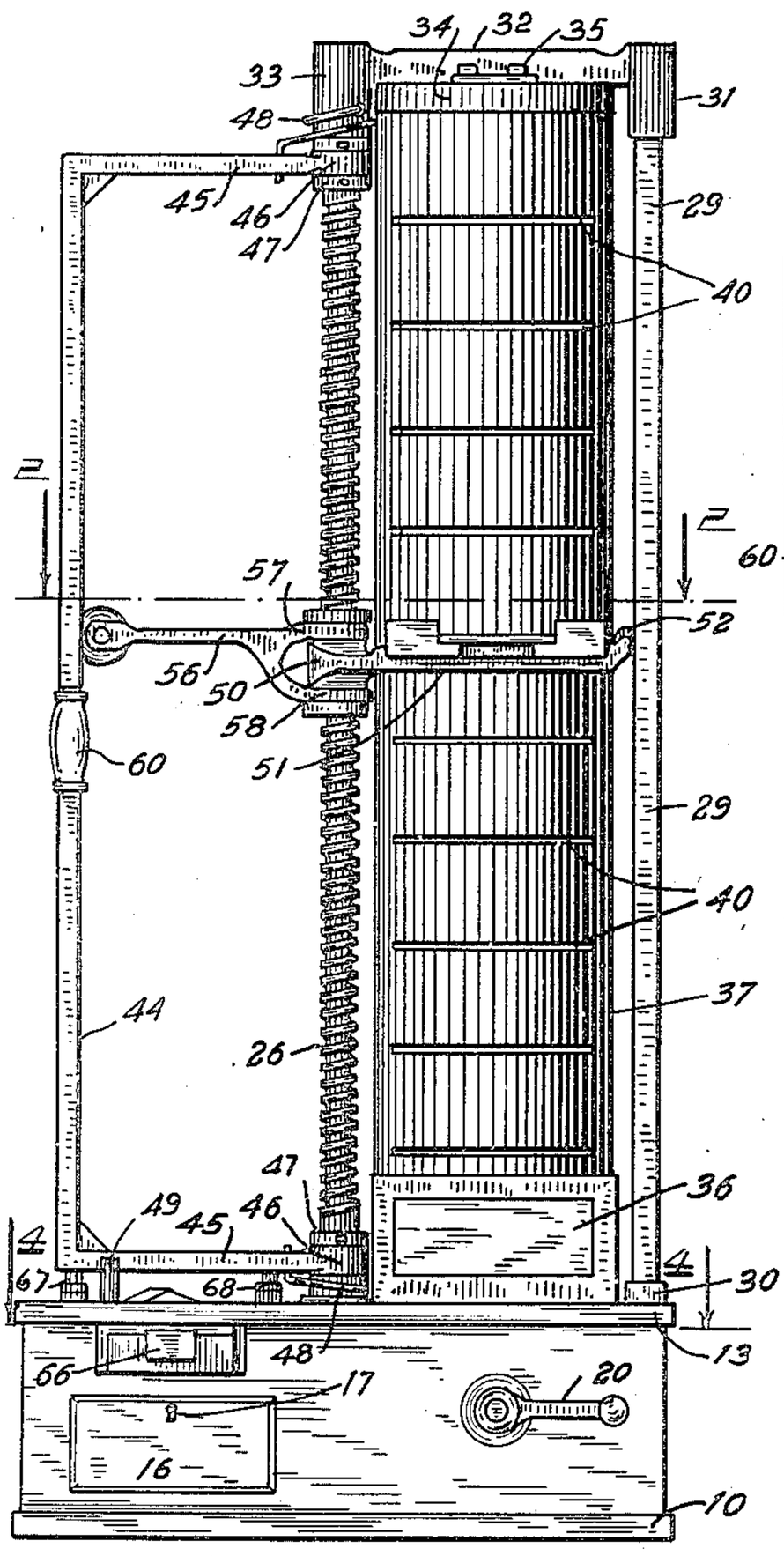

Fig. 1.

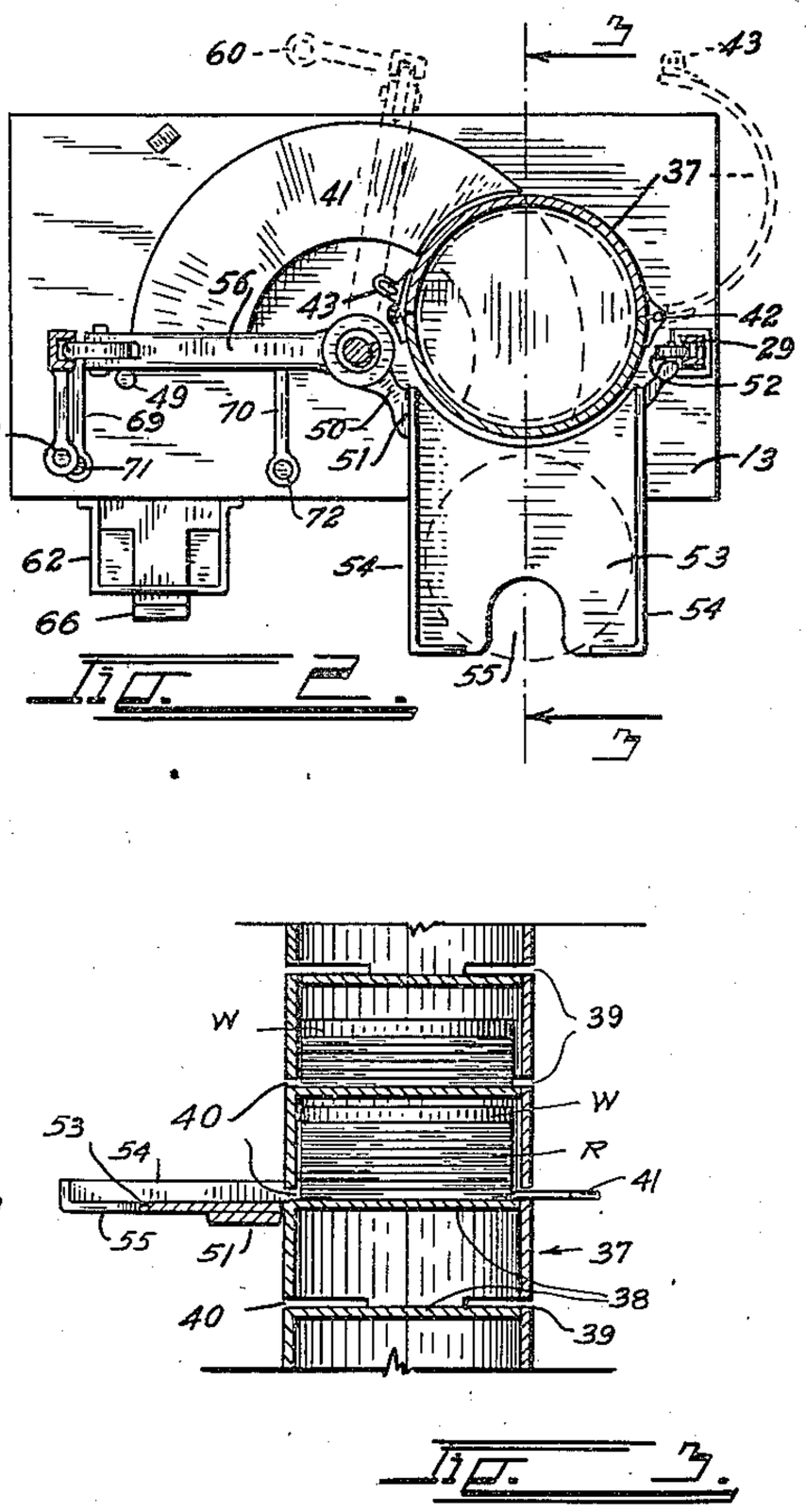

Fig. 2.

Fig. 3.

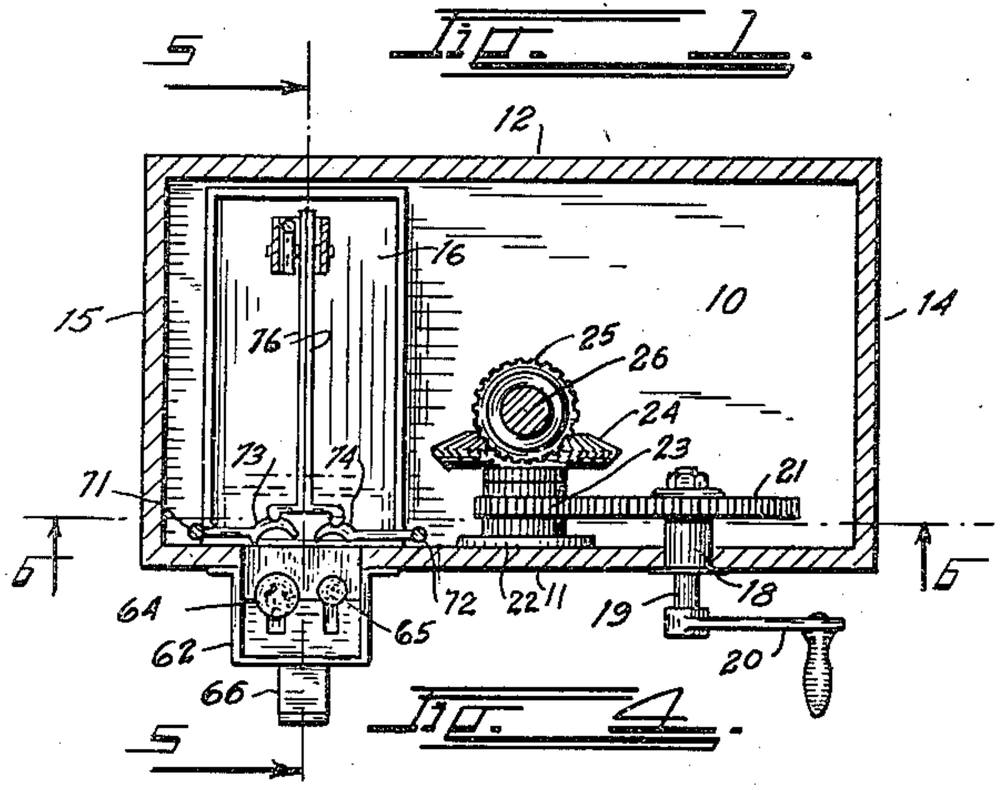

Fig. 4.

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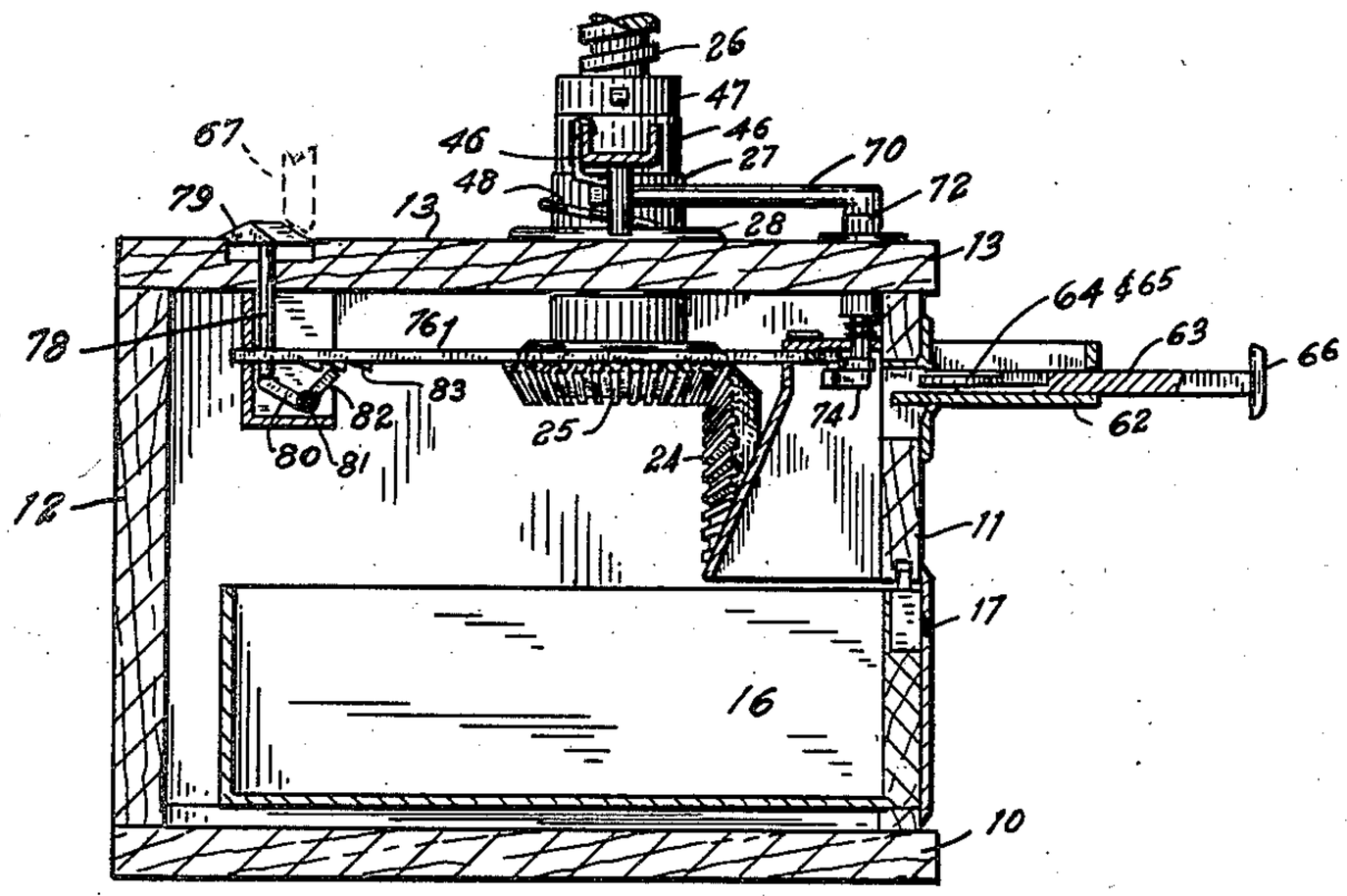

Fig. 5.

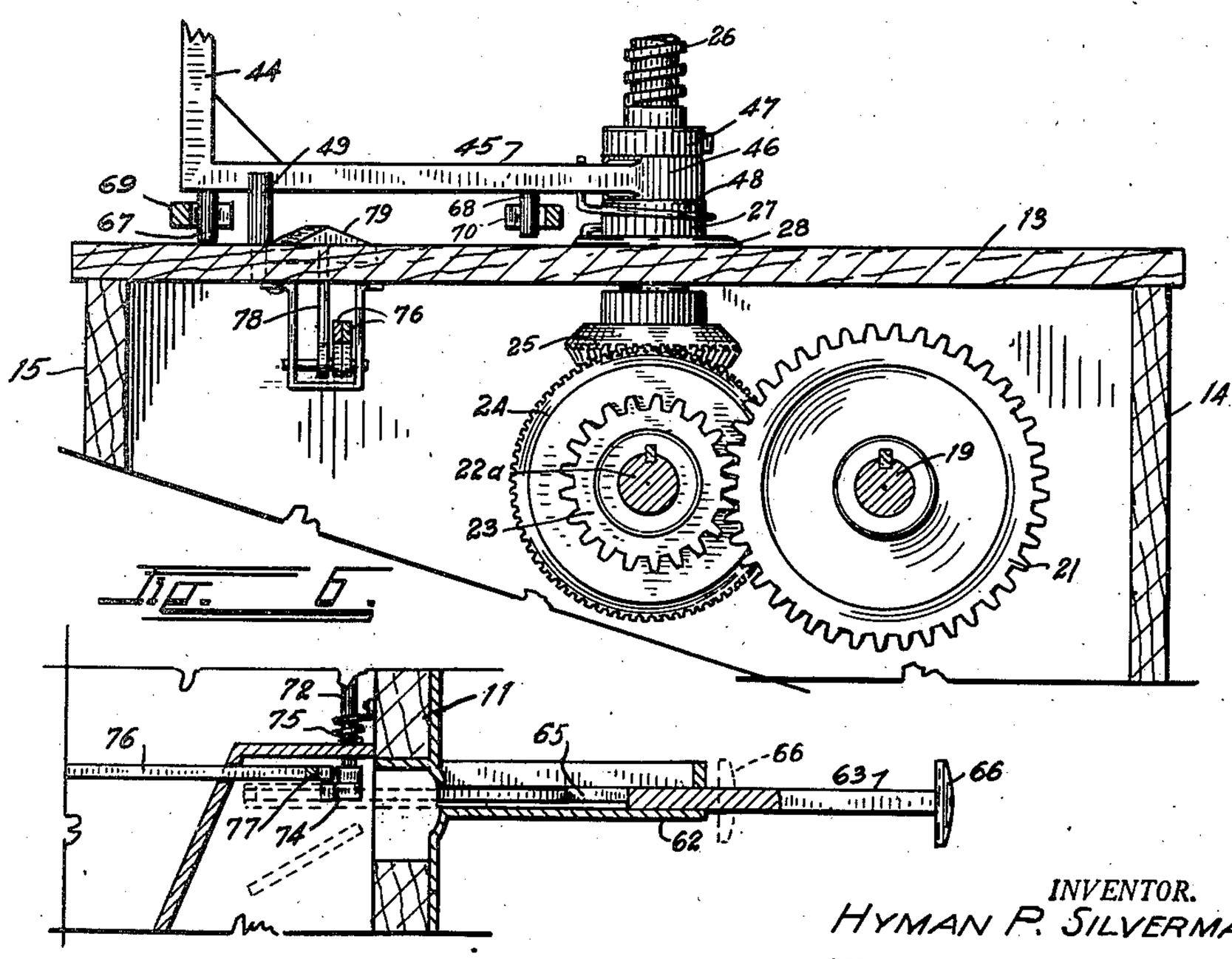

Fig. 6.

Fig. 7.

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SELECTIVE DISPENSER FOR PHONOGRAPH RECORDS

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Application May 2, 1946, Serial No. 666,740

9 Claims. (Cl. 312—66)

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This invention relates to improvements in coin controlled vending machines and has reference more particularly to a machine for vending phonograph records.

It is the object of this invention to produce a simple and substantial coin controlled vending machine for use in stores of different kinds and by means of which a customer can select his records and by depositing the proper amount of money in the machine he can operate it to deliver the selected record.

A further object of the invention is to produce a machine of the class described which shall have very few parts, all of which are of simple construction, so as to reduce the original cost of manufacture.

A further object of the invention is to produce a machine that shall have a highly ornamental appearance.

A further object of the invention is to produce a machine in which the record storing reservoir shall have provision for many specifically different records and in which each compartment shall have space for a considerable number of records.

A further object of the invention is to produce a machine of the class described in which, when a record is exhausted, the machine will automatically become inoperative for that particular record compartment and will display a signal indicating that the records in that compartment are exhausted.

The above and any other objects that may become apparent as this description proceeds are attained by means of a construction and an arrangement of parts that will now be described in detail and for this purpose reference will be had to the accompanying drawings in which the invention has been illustrated, and in which:

Figure 1 is a front elevation of the machine, showing the parts in normal inoperative position;

Figure 2 is a section taken on line 2—2, Figure 1 and shows by means of broken lines the positions of the movable parts at the time a record is dispensed;

Figure 3 is a section taken on line 3—3, Figure 2;

Figure 4 is a section taken on line 4—4, Figure 1;

Figure 5 is a section taken on line 5—5, Figure 4;

Figure 6 is a section taken on line 6—6, Figure 4; and

Figure 7 is a fragmentary section similar to

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that shown in Figure 5 showing some of the parts thereof to a somewhat enlarged scale.

In the drawing reference numeral 10 designates the base of the machine which also serves as the base for the cash receiving compartment. The cash compartment comprises base 10, a front wall 11, a rear wall 12, a top 13 and ends 14 and 15. A cash drawer 16 is slidable through an opening in wall 11 and is secured in position by means of a lock 17. A bearing 18 is secured to the front wall 11 and carries a shaft 19 that is provided on its outer end with a crank 20 and to the inner end of which a spur gear 21 is secured. Bearing 22 is secured to the inner surface of wall 11 and is provided with a rotatable shaft 22*a*, shown in Figure 6, on which is rotatably mounted a spur pinion 23. Connected with the spur pinion is a bevel gear 24 that is in operative engagement with a bevel pinion 25 secured to the lower end of threaded shaft 26. Shaft 26 is provided with a collar 27 that forms a thrust bearing with the plate 28 as shown more particularly in Figure 6. Pinion 25 is keyed to shaft 26 and therefore, whenever the train of gears just described is rotated by means of crank 20, the threaded shaft 26 will be rotated. Secured to the upper surface of top 13 is a vertically extending guide channel 29 whose lower end is secured in casting 30. The upper end of channel 29 is secured in a downwardly extending part 31 on one end of frame member 32 whose other end is provided with a bearing 33, corresponding in appearance to part 31. A circular cover 34 is secured to the under surface of the end frame by means of bolts 35. Supported on the top 13 is an envelope storage box 36. This box has a drawer whose front end is shown in Figure 1. Since the construction of the box is conventional, it has not been illustrated in detail.

Supported on the top of the envelope box is a cylindrical record reservoir that has been designated in its entirety by reference numeral 37. This reservoir is separated into a number of compartments by transverse partitions 38, as shown in Figure 3. Directly above each partition are slots 39 and 40. Slots 40 are the ones that are shown in the elevation in Figure 1 and extend substantially 180 degrees as they must be of sufficient size to let the largest diameter record pass outwardly from the reservoir. Slots 39 are in the rear side of the reservoir and are of a size and so positioned that the arcuate pusher plate 41 can enter in a manner which will be hereinafter more fully described. The reservoir is made in two parts, the front part being stationary and

the rear part, which has been designated by reference numeral 37*a*, is hinged at 42 and can be moved to the broken line position shown in Figure 2. The parts are provided with overlapping lugs or ears 43 for the reception of a padlock by means of which they are locked in closed position to prevent them from being opened by unauthorized persons. In each compartment is located a number of records R and a weight W, which is at least twice as thick as any record and is thicker than the width of the slots 40 so that it will not pass outwardly through the slots. The purpose of this weight will hereinafter be more fully described.

Pivoted to the threaded shaft 26 at the upper and lower ends thereof, is a frame comprising a vertical guide channel 44, whose upper and lower ends are provided with inwardly extending arms 45 that terminate in bearings 46 through which the tubular shaft extends. Collars 47 hold the bearings 46 in position. Springs 48 are secured to arms 45 and tensioned so that they will exert a force tending to move the guide frame in a counter clockwise direction when viewed as in Figure 2. One or more stops 49 extend upwardly from the top 13 and limit the rotation of the guide frame in response to the action of the springs.

Threadedly connected with shaft 26 is a nut 50 which is formed at the end of an arched supporting arm 51 that extends half way around the record reservoir and terminates in a roller 52 that moves in the channel of guide 29. Carried by arm 51 is a pan 53 that is provided on opposite sides with upwardly extending flanges 54 and whose front end is notched as shown at 55. Arm 56 has its inner end forked so as to provide two spaced parts 57 and 58 that have openings for the reception of the cylindrical ends 59 of nut 50. At least one of parts 57 or 58 may be split so as to faciiltate the assembly; however, this has not been shown. Secured to the rear side of arm 56, when viewed as in Figure 1, is an arcuate pusher plate 41 of such a width that it will enter slots 39. The parts are so adjusted that when the upper surface of pan 53 is in the plane of the upper surface of a partition 38, pusher plate 41 will be in position to enter the corresponding slots 39, as shown in Figure 3. When the parts are in the position shown in Figure 3, the prospective purchaser grasps handle 60 and rotates the guide frame, in a clockwise manner, to the position indicated by broken lines in Figure 2. The pusher plate will then enter through slots 39, engage the edge of a record and push the same out through slot 40, depositing it, in the broken line position, on top of the pan 53 as shown in Figure 2. When handle 60 is released, springs 48 will automatically return the guide frame to the position shown in Figure 1 where it rests against stop 49. In the spaces indicated by reference numeral 61 labels can be secured on which are printed the names of the records in that particular compartment.

The operator, after having looked over the labels to determine what records are offered for sale, decides on a particular record and grasps crank 20, which he rotates in a direction to bring the pan and the pusher plate in alignment with the slots at the lower end of the compartment containing the desired record. It is then necessary to release the guide frame comprising the members 44 and 45 and this is effected by means of a coin controlled lock which will now be described.

From the drawing and more particularly from Figures 4 and 5, it will be observed that a metal guide 62 is secured to the outer surface of wall 11 and carries a plunger 63 that is provided with depressions 64 and 65 for the reception of coins; for example, the depression 64 may be of a size to receive a half a dollar and depression 65 of the proper size to receive a quarter of a dollar. After the coins are in place, as shown in Figure 4, pressure is applied to the end 66 for the purpose of moving the slide inwardly from the full line position shown in Figure 7 to the dotted line shown in that figure. The lower transverse arm 45 of the guide frame is provided with two downwardly extending latch pins 67 and 68, shown most clearly in Figure 6. Two detents or latching pawl arms 69 and 70 are secured to upper ends of short shafts 71 and 72, respectively, and secured to the lower ends of these shafts are short arms 73 and 74, respectively, which are located in the plane of the coins and have their ends provided with concave portions into which the edges of the coins extend when the slide is moved inwardly. Springs 75 are connected with the shafts 71 and 72 in such a way as to move the ends of the latching detents inwardly when viewed as in Figure 2. When the latching frame is in the position shown in Figure 2, the hooked ends of the detent arms engage the latching pins, in a manner shown in Figures 5 and 6, and prevent the guide frame from being turned to discharge a record. As above mentioned, when plunger 66 is moved inwardly, it turns the latching pawl arms 69 and 70 outwardly when viewed as in Figure 2, thereby releasing the guide frame. The operator can now grasp handle 60 and turn the guide frame in a clockwise direction whereupon the pusher arm 45 will engage the lowermost record, discharging it into the pan. Since the coins are held between the plunger and the arms 73 and 74 by the pressure exerted by spring 75, some means must be provided for releasing the coins because otherwise the same pair of coins could be used for obtaining more records. For the purpose of releasing the coins before the record has been fully moved out of the reservoir, a release mechanism has been provided which will now be described.

Two rods 76 are mounted side by side as shown in Figure 4. From Figures 5 and 7, it will be seen that the ends of rods 76, to the right, are connected by means of pins 77 with the arms 73 and 74, and therefore if the rods 76 are moved towards the left, they will release the pressure on the coins which will then drop into box 16. The operation of rod 76 is effected in the following manner. A plunger 78 is provided at its upper end with a spherical or wedge-shaped head 79 and the lower end rests on the arm 80 of a ball crank that is pivoted at 81 and whose other arm 82 extends upwardly into engagement with the under surface of rods 76. The latter are provided on their under surfaces with ratchet teeth 83 and when plunger 78 is moved downwardly, rods 76 will be moved towards the left by the action of the bell crank lever. The downwardly projecting pin 67 of the guide frame is positioned so that it will push the plunger 78 downwardly when the frame is moved towards the broken line position, shown in Figure 2, and therefore as soon as the guide frame reaches a position in which pin 67 engages the upper end of the head 79, the coins will be released. After a record has been discharged or dispensed, the purchaser merely removes the same from the

pan 53 and opens drawer 36, taking from this an envelope into which he puts the record. When all the records in any compartment have been dispensed, the weight W will then rest on the partition that forms the bottom of the compartment. This weight is thicker than the width of the slot 40 and is painted white so that on inspection it can be seen that all of the records have been dispensed from that compartment. If a purchaser inadvertently inserts his money while the parts are adjusted to a position in which all of the records have been sold, he will not be able to operate the guide frame because the pusher plate 41 will engage the peripheral surface of the weight, preventing the parts from moving sufficiently to release the coins. When this occurs he can readjust the parts so as to dispense another record from a different compartment or he may advise the attendant, who either gives him the record he desires, from the stock, or returns his money.

Although it has not been shown in the drawing, it is the intention to conceal the guide frame behind a mirror so as to give the parts a pleasing and ornamental effect. The parts can be readily and accurately adjusted by means of a crank, to any desired position.

When records are to be inserted or removed, the hinged back 37*a* is unlocked and moved to the full line position shown in Figure 2. Although a coin controlled lock mechanism has been shown, it is to be understood that any suitable coin controlled lock may be substituted for the one shown. Since records are so priced that it usually requires more than one coin to pay for them when silver coins are used, the coin controlled lock must be designed to operate with two coins instead of with a single coin. There are records of different sizes, usually ten and twelve-inch records, and since this machine is designed for use in connection with twelve-inch records, it will also function with records of ten-inch diameter.

Having described the invention, what is claimed as new is:

1. A coin controlled record vending machine, comprising, in combination, a vertically elongated record reservoir separated into a plurality of compartments by transverse partitions, slots in the reservoir wall, at the front and at the back, with their lower edges in the planes of the upper surfaces of the partitions, means comprising a pusher plate mounted for movement into and out of the slots at the rear of the reservoir, for pushing a record out through the corresponding slot of the front, a pan positioned on the front side in position to receive a record as it is forced through the slot, means interconnecting the pusher plate and the pan to retain them at all times in a predetermined relative vertical position, manually operable means for moving the pusher plate and pan vertically to any selected compartment, means for latching the pusher plate in a position entirely outside of the reservoir, and a coin controlled mechanism for releasing the latch to permit the pusher plate to enter one of the rear slots and push a record out through the front slot.

2. A coin controlled record vending machine, comprising, in combination, a vertically elongated record reservoir separated into a plurality of compartments by transverse partitions, slots in the reservoir wall, at the front and at the back, with their lower edges in the planes of the upper surfaces of the partitions, means comprising a pusher plate mounted for movement into and out of the slots at the rear of the reservoir, for pushing a record out through the corresponding slot at the front, a pan positioned on the front side in position to receive a record as it is forced through the slot, means interconnecting the pusher plate and the pan to retain them at all times in a predetermined relative vertical position, manually operable means, comprising a threaded shaft positioned adjacent the reservoir, a nut on the shaft, operatively connected with the pusher plate and the pan, for vertical movement when the shaft is rotated, manually operable means for turning the shaft to move the pusher plate and pan into operative position with respect to any one compartment, means for latching the pusher plate in a position in which it is wholly outside of the reservoir; and a coin controlled mechanism for releasing the latch to permit the pusher plate to be moved into the reservoir and force a record out onto the pan.

3. A coin controlled record vending machine comprising, in combination, a base, a vertically elongated reservoir supported thereon, a plurality of transverse partitions dividing the reservoir into compartments, the wall of the reservoir having a slot at the front and another at the back positioned with their lower edges in the plane of the upper surface of the corresponding partition, a threaded shaft positioned adjacent the outer surface of the reservoir, in parallel axial relation thereto, the shaft being mounted for rotation, a nut on the threaded shaft, means resisting forces tending to rotate the nut, manually operable means for turning the shaft to move the nut vertically, a pan positioned at the front of the reservoir and rigidly connected with the nut, an arcuate pusher plate pivoted to the nut for rotation about the axis thereof, a latching mechanism associated with the pusher arm to hold it in a position wholly outside of the reservoir while it is adjusted vertically, and a coin controlled mechanism for releasing the latch.

4. A coin controlled record vending machine comprising, a reservoir having a plurality of vertically positioned compartments separated by partitions, the reservoir having slots at the front and back whose lower edges are substantially in the plane of the upper surface of the corresponding partition, pusher arm mounted for pivotal movement about an axis positioned outside of the reservoir and substantially parallel therewith, the pusher arm being curved about the axis of pivotation and adapted to enter a slot at the rear of the reservoir to push a record through a slot at the front, a receiving pan at the front of the reservoir in position to receive a record, manually operable means for adjusting the position of the pusher arm and the platform to any desired compartment, means for latching the pusher arm against accidental movement about its pivotal connection, and a coin controlled lock mechanism for releasing said latching means, to permit the arm to move a record onto the pan.

5. A coin controlled record vending machine comprising, a base, a record reservoir supported on the base and extending vertically therefrom, the reservoir being divided into a plurality of compartments by transverse partitions, slots at the front and in the rear of the reservoir with their lower edges in the planes of the partitions, a guide member extending vertically on one side of the reservoir, a threaded shaft extending vertically on the outside of the reservoir and substantially parallel with the axis of the latter, a

frame pivoted about the axis of the shaft, a nut mounted on the threaded shaft, an arm extending from the nut partially enclosing the reservoir, the free end of the arm having a sliding connection with the guide member, an arm pivotally connected with the nut, the free end of the arm having a sliding connection with the frame, an arcuate pusher plate secured to the last mentioned arm adapted to enter a slot at the back of the reservoir, a pan secured to the first mentioned arm, means for rotating the threaded shaft to move the pusher arm and pan upwardly, to effect an adjustment with any of the vertically spaced slots, means for normally latching the frame and pusher arm in inoperative position, and a coin controlled mechanism for releasing the latch to permit the pusher arm to dispense a record, and resilient means for normally moving the pusher arm and frame to normally latched position.

6. A machine in accordance with claim 1 in which the reservoir comprises two sections movable about a vertical pivot from closed to open position whereby access may be had to the interior for inserting records into the compartments.

7. A machine in accordance with claim 1 in which each compartment contains a weight of the same shape as the cross section of the reservoir and thicker than the width of the front slot, said weight closing the rear slot to the entrance of the pusher arm when the last record has been dispensed.

8. A coin controlled vending machine, comprising, in combination, an elongated reservoir having an interior cross sectional area of a size and shape to receive a record positioned with its plane perpendicular to the axis of the reservoir,

a plurality of partitions separating the interior of the reservoir into a plurality of compartments, the wall of each compartment having one slot of sufficient length and width to permit a record to pass, and a smaller slot opposite the first slot, one edge of each slot being in the plane of the adjacent surface of the partition, means for keeping the record nearest the partition in engagement with the partition surface, means comprising a pusher plate positioned to enter the smaller slot and push a record out through the larger slot, means for latching the pusher plate in a position where it is wholly outside of the reservoir, manually operable means for moving the pusher plate into operative position relative to any of the smaller slots, coin controlled means for releasing the latch, and a handle operatively associated with the pusher plate to move it into and out of the smaller slot to dispense a record.

9. A coin controlled record vending machine, comprising, in combination, a record reservoir having a record compartment provided at its lower end with a record supporting partition, the wall of the reservoir having two slots, one at the front and the other at the back, means comprising a pusher plate for entering the slot at the rear to engage the edge of a record resting on the partition, to move it outwardly through the slot at the front, means for supporting the pusher plate, means for latching the pusher plate in a position in which it is wholly outside of the reservoir and a coin controlled mechanism for releasing the latch whereby the pusher plate may be inserted in the slot to engage and move a record outwardly through the front slot.

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