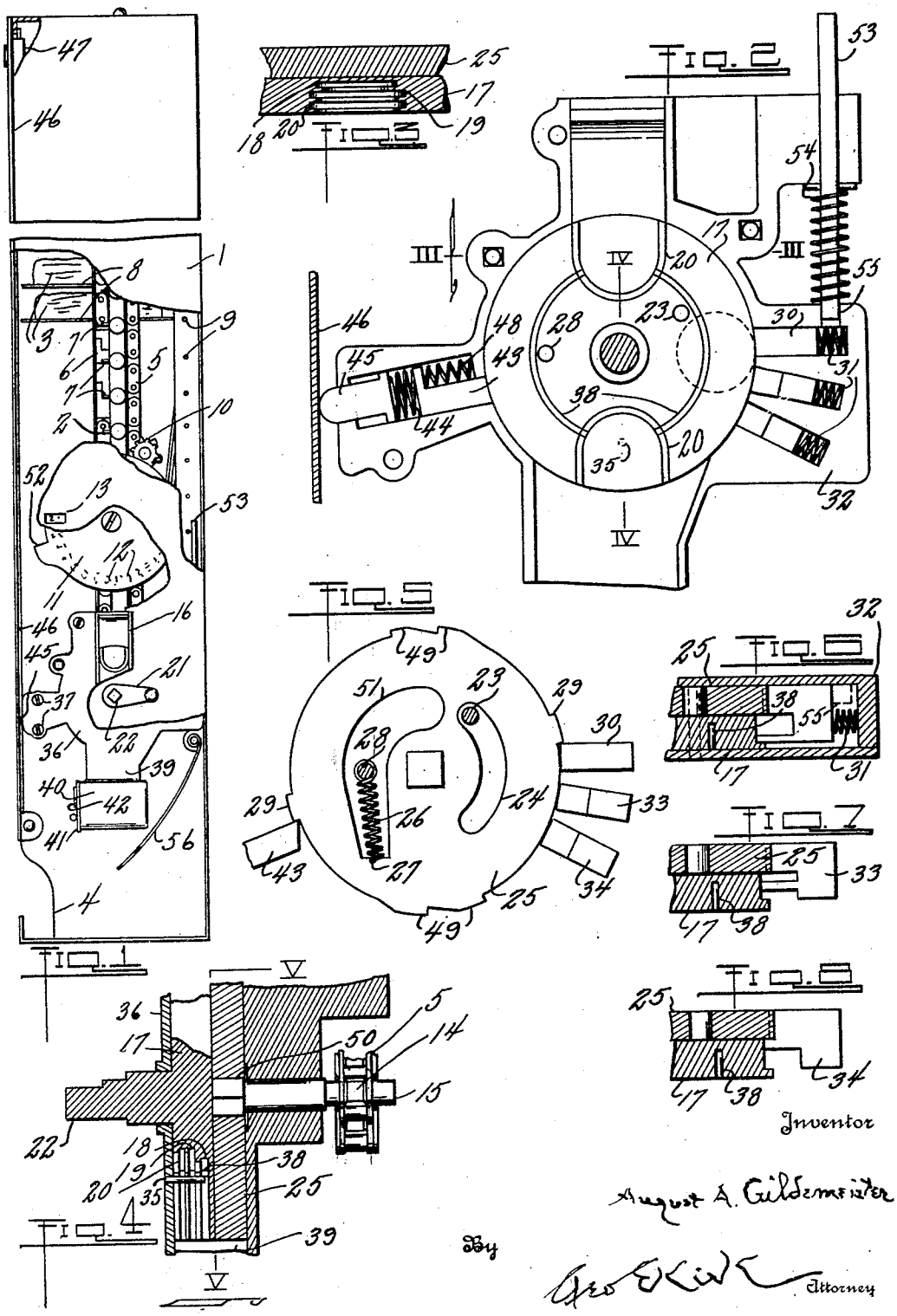
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CHECK CONTROL MECHANISM

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UNITED STATES PATENT OFFICE

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CHECK CONTROL MECHANISM

Original application filed June 12, 1929, Serial No. 370,280. Divided and this application filed June 30, 1930. Serial No. 464,806.

This invention relates to check or coin control mechanism, for dispensing magazines.

This invention has utility when incorporated in vending equipment, especially in coin control mechanism for operating the vending equipment.

Referring to the drawing:

Fig. 1 is a side elevation, parts being broken away, of an embodiment of the invention in a vending machine;

Fig. 2 is a front view of the coin control mechanism, the cover plate being removed;

Fig. 3 is a section on the line III—III, Fig. 2;

Fig. 4 is a section on the line IV—IV, Fig. 2;

Fig. 5 is a section on the line V—V, Fig. 4; and

Figs. 6, 7, 8 are fragmentary detail views respectively of the check released ratchets.

This application is a division of applicant's copending application for United States Letters Patent S. N. 370,280, filed June 12, 1929, for dispensing equipment.

Vending machine 1 has article discharging mechanism 2 for delivering a series of articles 3, one by one, to opening 4 of the vending machine 1. A suitable mechanism 2 is shown herein as comprising endless chain 5 having pawl 6 for successively engaging pins 7 to release shelves 8 so that such may swing downward from their respective fulcrums 9 to allow the article 3 to drop to the bottom of the machine 1, in a position accessible for withdrawal by one making the purchase.

Mechanism 10 is supplied to rotate disk 11 carrying notations 12 for indicating through window 13 the residual charge in the magazine. The movement of the chain 5 herein is effected by gear 14 mounted on shaft 15.

The invention herein relates more particularly to the coin control mechanism for imparting rotation to the shaft 15 and from this shaft 15 any suitable vending mechanism may be controlled.

The vending equipment 1 is provided with opening 16 in one side thereof through which checks or coins may be inserted into disk 17 having seats 18, 19, 20. In the instance wherein three coins of two different denominations are used, as herein, the smaller piece, such as a 10¢ silver coin may be placed in the seat 18, while two larger coins as 1¢ copper pieces may be placed in the seats 19, 20. With the checks or coins thus introduced, crank 21 may be operated clockwise and being keyed to shaft 22 rotates the shaft and consequently rotates the disk 17 with which the shaft 22 is an integral part. The disk 17 carries inwardly extending pin 23 to ride in slot 24 of companion disk 25 adjacent the disk 17. In this movement of the disk 17 there is resistance of spring 26 having end 27 anchored with the disk 25 and the opposite end engaged by pin 28 fast with the disk 17. This arc of clockwise movement of the crank 21 thus places the spring 26 under tension so that there is a tendency at the release of the crank 21 for bringing the seats 18, 19, 20, into registry at the opening 16 of the vending machine 1. As the spring resistant movement of the disk 17 is completed and the pin 23 abuts the terminus of the slot 24, the continued clockwise effort made at the crank 21 is resisted by disk 25 having tooth 29 engaging ratchet 30 projected by spring 31 in block 32 which acts as a guide for the ratchet 30 and also provides housing about the disks 17, 25. With a coin in the seat 18, the ratchet 30 is forced radially outward thereby to clear the tooth 29. With the coins or checks in the seats 19, 20, there is thrusting outward respectively of ratchets 33, 34, against their respective springs 31. The coins or checks in the respective seats 18, 19, 20, serve as cams in coacting with shoulders or ledges on the ratchets 30, 33, 34, to shift such successively sufficient radial distances to clear the tooth 29.

In the event any coin be omitted, the ratchet responding thereto would not be retracted and it would not be possible to shift the less than full quota group of coins past the ratchets. Of course absence of coins would also hold the disk 25 locked. However, with the coins of the denominations required, the holding ratchets 30, 33, 34, are thrust into retracted position to permit the shifting of the disk 25 and its tooth 29 clear of these ratchets. Pin 35, through cover plate 36 for the housing, is anchored by screws 37.

At this position of clearing of these ratchets 30, 33, 34 (Fig. 4), the pin 35 rides in way 38 in the disk 17 to engage the edges of the respective checks. There is thus insured ejection of the coins into chute 39 for reception by box 40 as a casting fast with the housing 36. The housing 36 is provided with lid 41 having lock 42 which may be released for obtaining access to the box 40 in removing the coins therefrom.

In the instance wherein the disks are shown as having two feed seats for checks and as herein disclosed, the teeth 29 are in duplicate remote from the forward holding ratchet groupings. There is thus a locating of rearward holding ratchet 43 (Fig. 5). This ratchet 43 has minor thrusting spring 44 compressed by plug 45 when door 46 of the device 1 is in closed position. This means that with the cabinet set up, this ratchet 43 is in position to engage tooth 29 against any rearward travel of the disk 31.

Lock 47 carried by the door 46 maintains the housing closed against unauthorized access thereto. With the door 46 swung to open position, ratchet spring 48 is effective to thrust the ratchet 43 into clearance position to be clear of its holding the disk 25 from rearward rotation. When the coins are ejected into the chute 39 the ratchet 43 holds the disk 25 against recover from the initial position. This is a safe-guarding against any tripping attempt for recovering the coins after operation has started. Such course of attack on the machine is rendered ineffective by teeth 49. These teeth 49 are controlled by the ratchet 43 when the ratchets 30, 33, 34, have been released by the coins.

The disk 25 has key connection 50 with the shaft 15 which carries the fixedly mounted sprocket 14. The coaction between the teeth 29 and the ratchet 43 insures a one-way rotation of the crank 21. However, when the device is to be recharged, an opening of the door 46 allows the spring 44 to clear the ratchet 43 so that the vending mechanism may be reset.

To operate the vending machine, place the amount of coin indicated in the proper seat or seats at the window 16. Operate the crank 21 clockwise against the resistance of spring 26. This effects transmission through the disk 25 as the checks move in clearing the locked position of this disk from the holding action of the successive ratchets 30, 33, 34. The continued movement brings about ejection of the coin or coins by the action of pin 35. This operation occurs while the reverse holding ratchet 43 has had the tooth 29 moved to travel clear therefrom. The disk 17 accordingly has successive travels of 180° between vending operations. The movement of the disk 25 as effected by the disk 17 therewith causes the disk 25 to operate any desirable vending mechanism to deposit an article adjacent the opening 4. Besides the way 24 in the disk 25 for the pin 23, there is major way 51 for the pin 28 and the spring 26.

As the articles contained in the vending machine are exhausted, projection 52 carried by the disk 11 abuts rod 53 carried by the block 32, forcing the rod 53 downward against the resistance of spring 54 to have rod terminus 55 extend to interfere with shifting of the ratchet 30. Thus when the machine is empty, the coins, even though of proper denominations, cannot pass the first ratchet and consequently the operator can not operate the machine nor will his coin be received by the machine.

Adjacent the bottom of the machine 1, chute 56 is provided to break the fall of the articles coming from the vending mechanism and to further direct such toward the opening 4 where they are easily accessible.

What is claimed and it is desired to secure by Letters Patent is:

1. Check controlled apparatus for a vending machine comprising a disk, independent forward and rearward holding ratchets for the disk, a check receiving member operable for effecting release of a forward holding ratchet in moving past such ratchet, a first bearing for supporting the disk, an independent aligned second bearing for the member on the opposite side of the disk and the member from the first bearing, and a throw-out for thereafter acting upon the check, said throw-out being mounted to extend from laterally of the first bearing toward the second bearing.

2. Check controlled apparatus for a vending machine comprising a disk, a plurality of forward holding ratchets and a rearward holding ratchet for the disk, and a multiple check receiving member operable for effecting release of the forward holding ratchets by means of coins positioned in said member.

3. Check controlled apparatus for a vending machine comprising a disk, independent forward and rearward holding ratchets for the disk, a check receiving member operable for effecting release of the forward holding ratchet in moving a check past such ratchet and a housing provided with a movable section operable to release said rearward holding ratchets.

4. Check controlled apparatus for a vending machine embodying holding means, a check controlled operator for releasing the holding means, a recover lock for the operator, a housing including a movable housing section openable for access thereinto, and a release for the recover lock operable on opening movement of the section.

5. Check controlled apparatus comprising a first disk for receiving a check, a first bearing therefor, a laterally adjacent second disk, an independent second bearing for the second disk, independent forward and rearward

holding means for one of the disks, attachable mounting means for the second bearing for assembling the second disk and the second bearing with the first disk and the first bearing and control means for the apparatus causing the second disk to be positively picked up by the first disk beyond check effected release movement of the first disk.

6. Check controlled apparatus comprising a first disk for receiving a check, a first bearing therefor, a laterally adjacent second disk, an independent second bearing for the second disk, independent forward and rearward holding means for one of the disks, attachable mounting means for the second bearing for assembling the second disk and the second bearing with the first disk and the first bearing, control means for the apparatus causing the second disk to be positively picked up by the first disk beyond check effected release movement of the first disk, and a retriever for positioning the first disk in check receiving position.

7. Check controlled apparatus comprising a first disk for receiving a check, a first bearing therefor, a laterally adjacent second disk, an independent second bearing for the second disk, independent forward and rearward holding means for one of the disks, attachable mounting means for the second bearing for assembling the second disk and the second bearing with the first disk and the first bearing, control means for the apparatus causing the second disk to be positively picked up by the first disk beyond check effected release movement of the first disk, and a tension helical spring for positioning the first disk in check receiving position, there being a clearance socket in the second disk for said spring.

8. Check controlled apparatus comprising a rotary disk device for receiving a plurality of coins of different sizes, a plurality of reciprocating ratchets for preventing the rotation of the disk device in a forward direction, an independent reciprocating ratchet to prevent the disk device from being rotated backwardly after the said plurality of ratchets have been released by the coins of different sizes, radial guide-ways for said ratchets arranged in the plane of the disk whereby the plurality of ratchets are successively released by the coins and independent springs urging the separate ratchets towards said disk device.

9. A check control comprising a rotary disk device for receiving a plurality of coins of different sizes, a plurality of reciprocating ratchets for locking said disk device, radial guide-ways for said ratchets arranged in the plane of said disk device whereby the ratchets are successively released by the coins, and spring means for urging the ratchets towards said disk device.

10. A check control for a vending machine embodying a multiple check receiving first disk provided with a pin, a second disk provided with a slot through which said pin extends, a series of ratchets for locking the second disk, said ratchets being successively shiftable by the checks in the first disk to allow rotation of the second disk, said pin upon further shifting of the second disk engaging the slot terminus to cause said second disk to rotate with the first disk, and vending mechanism operable by rotation of the second disk.

In witness whereof I affix my signature.

AUGUST A. GILDEMEISTER.