Aug. 8, 1950 H. CAREW ET AL 2,517,532

DISPENSING MACHINE FOR PAPER CUPS AND THE LIKE

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FIG. 1.

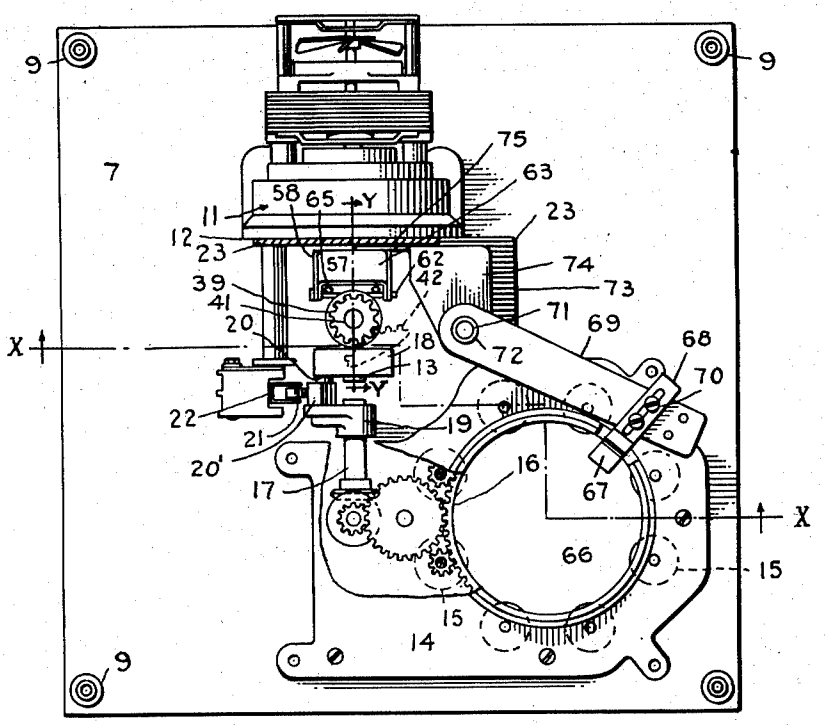
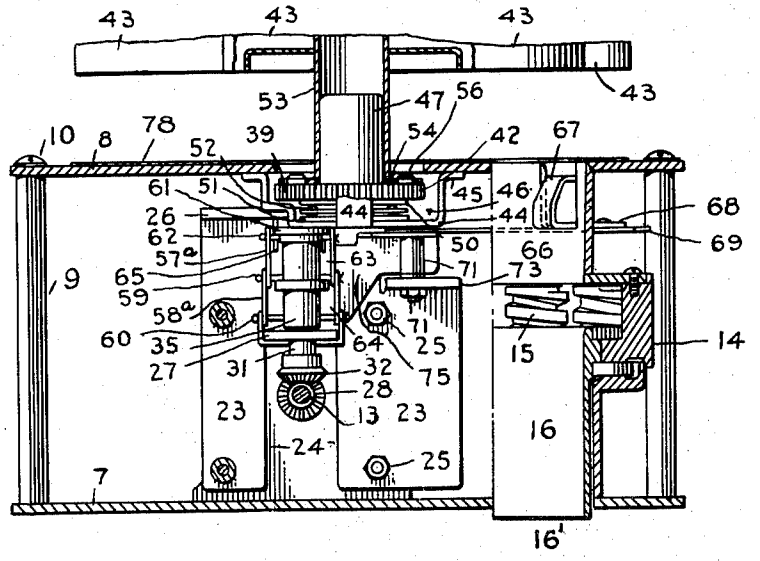


FIG. 2.



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DISPENSING MACHINE FOR PAPER CUPS AND THE LIKE

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FIG. 3.

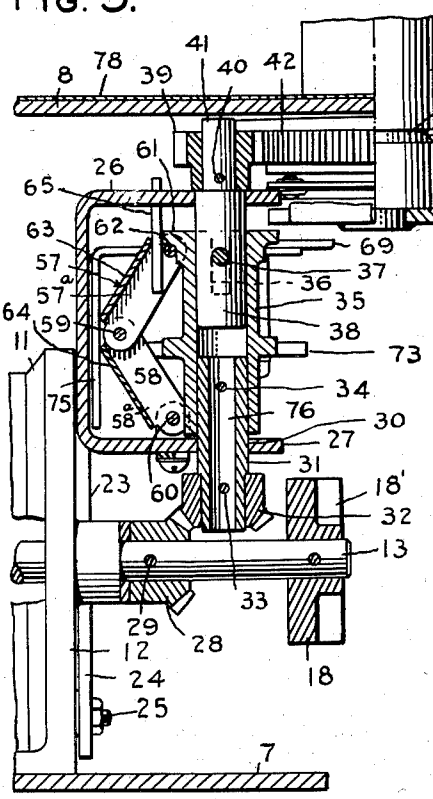


FIG. 4.

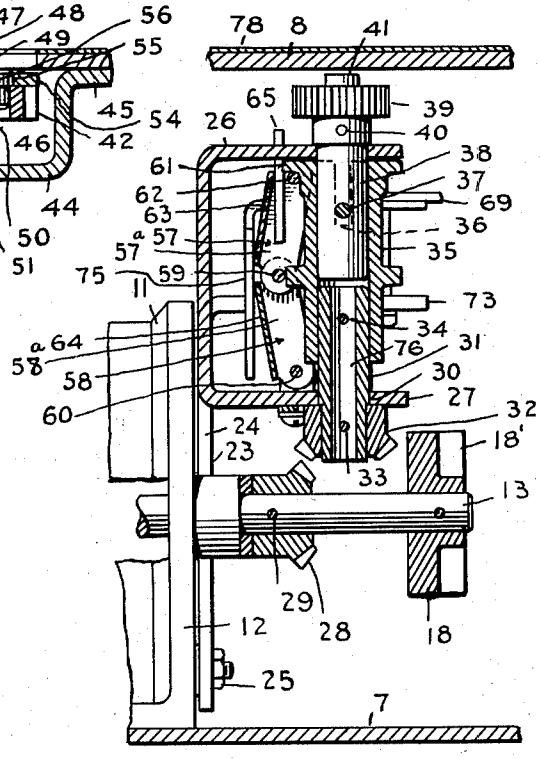


FIG. 5.

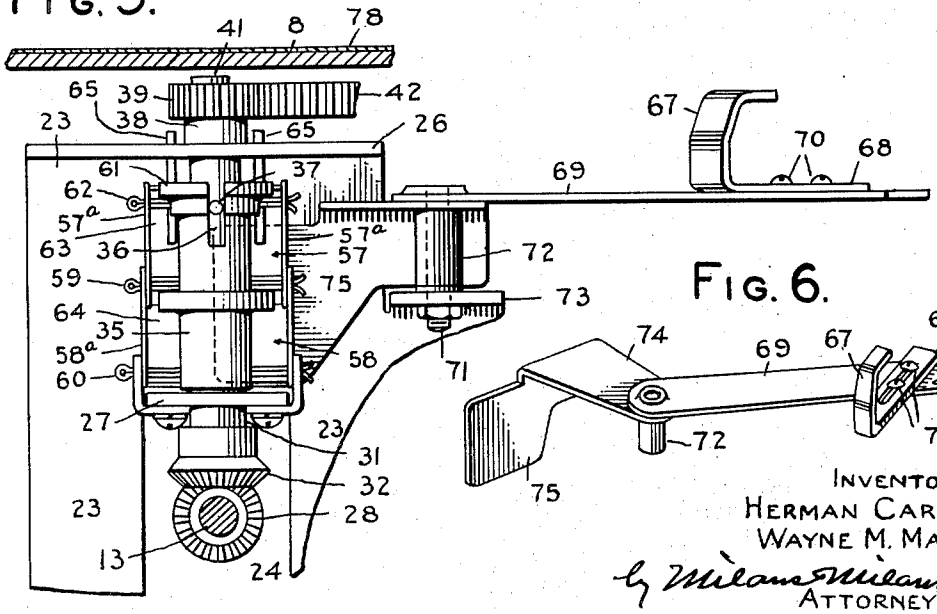


FIG. 6.

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DISPENSING MACHINE FOR PAPER CUPS AND THE LIKE

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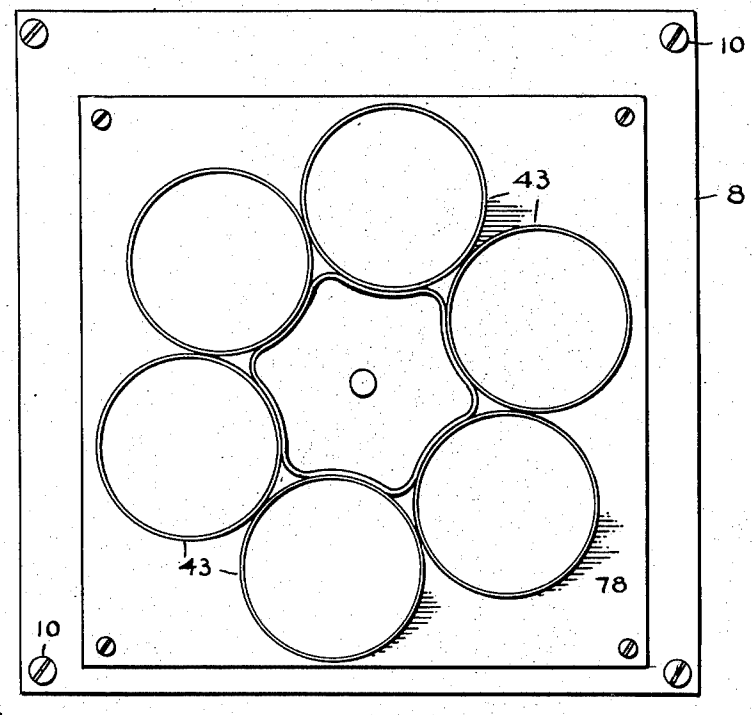


FIG. 7.

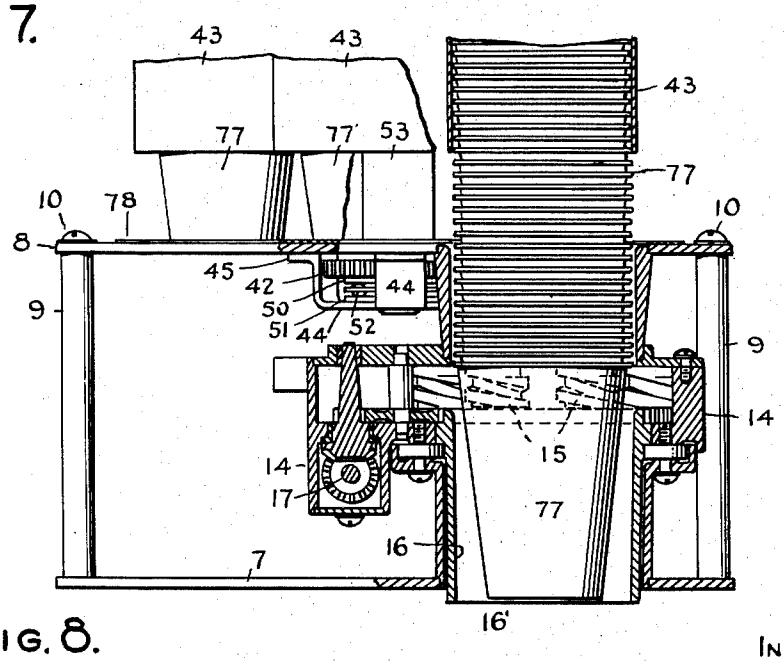


FIG. 8.

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Patented Aug. 8, 1950 2,517,532

UNITED STATES PATENT OFFICE

2,517,532

DISPENSING MACHINE FOR PAPER CUPS AND THE LIKE

Herman Carew and Wayne M. Mack, Easton, Pa., assignors to Dixie Cup Company, Easton, Pa., a corporation of Delaware

Application July 25, 1947, Serial No. 763,630

10 Claims. (Cl. 312—44)

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This invention relates to cup dispensing apparatus, capable of use in various fields, but primarily intended for use in conjunction with serving apparatus designed to furnish individual drinks, often in quick succession, requiring the presence of an abundant supply of cups and means to assuredly separate and deliver individual cups therefrom with no substantial delay, frequently desirable to meet the demand of assembled groups of customers, necessitating the presence of hundreds of cups in a machine.

It has been found that satisfactory operation of a drink-dispensing machine is curtailed by the loss of time consumed in the intervals between presentation for delivery of successive cups to the point desired—customarily the filling zone of a drink-dispensing machine—and in the supplanting of a particular stack of cups nearing depletion, or completely exhausted, by a fresh stack of cups to facilitate continued or uninterrupted operation of the machine.

An important feature of the cup phase of a machine to deliver beverages or the like is, of course, the automatic control of the cups.

Cup dispensing apparatus involving a multi-stacks carrier for cups and means for shifting the same, combined with cup delivering mechanism to coact with one of the stacks, has heretofore been suggested, but separate motors have been required to attain the desired functioning of different portions or phases of the operation of the apparatus.

An underlying object or characteristic of the present invention is the improvement of such recognized apparatus by eliminating the necessity for several motors and their appurtenant parts or devices, by providing an apparatus operative throughout the stacks shifting and cup feeding and dispensing phases, through the medium of a single motor, resulting in greater simplicity of mechanism and efficiency of operation, with corresponding saving of expense in building and assurance of perfect operation over long, substantially continuous use, minimizing any need for structural repair, adjustment, or replacement of mechanical elements of the combination.

In keeping with the above outlined objects of the invention, a preferred embodiment of the same comprises a simple, compact and strong mechanism, operating throughout from a single motor, including novel mechanism to effect instant shifting of the stacks of cups to successively locate a succeeding stack in dispensing position as a preceding stack becomes completely dispensed, or nears exhaustion, said means being inter-related with means controlled by the stack of cups being dispensed, and comprising substantially rigid intervening connecting or abutting members (devoid of resilient or spring elements) so as to obtain positive action as distinguished from haphazard or spring control.

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Said embodiment of the invention includes a motor drive means and constant mechanical connection devices for dispensing the cups from a given stack of nested cups (usually of paper), combined with means operative intermittently for actuating the cups-stacks carried to shift the cups-stacks as determined by the freeing of cups from said given stack.

An essential characteristic of the embodiment of the invention referred to resides in novel mechanism, controlled through the medium of the cups being dispensed, for obtaining and shifting positive coupling between the drive shaft from the motor and driven means of the stacks carrier; also the novel formation and arrangement of a contact controlling device over which the cups of a stack may ride downwardly, adapted to maintain a continued engagement with the cups, while being dispensed, and to swing in a horizontal plane into the zone of passage of the cups when freed from being held in normal position by such engagement, to complete the drive for the stacks carrier.

The invention also embraces such contact device, possessing adjustable characteristics.

In a companion application of the applicant Herman Carew, Serial No. 502,679, which matured as Patent No. 2,433,736, December 30, 1947, filed September 16, 1943, approved mechanism for feeding and delivering individual cups from a stack has been disclosed, and the details thereof need but general reference herein.

The preferred embodiment of the present invention, as hereinabove generally defined, is illustrated in the accompanying drawings forming part hereof and many novel features of detail and combinations of parts will be apparent from the specific description hereinafter contained, when read in connection with such drawings.

In the drawings:

Figure 1 is a top plan view of the machine, parts being broken away to permit inspection of underlying portions of the machine.

Figure 2 is a vertical section through the machine approximately from front to rear on a line represented at X—X, Figure 1.

Figure 3 is a vertical sectional view on the line

Y—Y of Figure 1, with the parts shown in one position, and Figure 4 is a similar sectional view illustrating the parts in another position.

Figure 5 is an enlarged elevation, from the front of Figure 2, parts being omitted to better show what we will term the constant contact member for a stack of cups.

Figure 6 is a perspective view of said contact member.

Figure 7 is a top view of one type of cup-stacks carrier.

Figure 8 is a vertical sectional view illustrating the arrangement of the cups carrier in the machine, with one of the stacks in registration with the cup separating and delivery station.

Referring more specifically to the drawings wherein like reference characters designate the same parts in the several views 7 represents the base plate of a frame, comprising said base plate, a top plate 8 and upright spacing or corner connections or posts 9, the whole being held together by fastening screws 10 passed through the upper plate 8 into engagement with the posts.

On the base 7, near one edge thereof, is mounted an electric motor 11, of suitable size and construction, the inner wall or end of the motor casing for confining the suitable reduction gears, etc.—not a part of the present invention—being indicated at 12. From the motor casing extends a horizontal drive shaft 13 which is the primary or main drive shaft, receiving its motion or drive from the motor. This drive shaft extends horizontally through the machine and to near the casing or box 14 containing the worms 15 for effecting feed of the cups into the tube 16, to be delivered at 16' to the point of use of such cups. The means for effecting rotation of the worms and associated parts—as stated, not a part of the present invention—comprises a stub shaft 17 passing out through the side of the box or casing 14 intended to be in approximate alignment with the main drive shaft 13. To accommodate for any misalignment (axially) of the two shafts 13 and 17, while affording a positive connection therebetween, so as to effect a rotative drive throughout the length of the combined shafts 13 and 17, they have offset or crank portions 18 and 19, the latter bearing a cross connection between the cranks 18 and 19, attached to the member 19, and having a radial movement or adjustment in a slotted side 18' of the crank 18, so that as the cranks are rotated they will effect an adjustment to compensate for any such misalignment of the shafts 13 and 17. On the cross connection 20 a cam 20' is provided for contacting a switch roller 21, on a resilient switch member 22 to break the operating circuit for the motor customarily made by suitable mechanism not shown, associated with a coin and slot device, to start the machine in operation.

The self-adjustable coupling above defined for allowing for any misalignment of the adjacent end portions of the operating shaft, constitutes the subject matter of the application of the present joint inventor Wayne M. Mack, Serial No. 633,478, filed December 7, 1945, and therefore will not be specifically claimed herein.

Secured to the end wall 12 of the gear casing 11, of the motor, is the vertical member 23 of a bracket, cut away at its central portion 24 (Figure 2) to bridge the drive shaft 13 and immediate parts associated with the latter, this bracket being secured to the wall 12 by screws and nuts 25, and having a right angle or horizontal flange 26, also a companion parallel flange 27 struck out from the plate 23 in providing the opening 24.

Below the flange 27, and on the drive shaft 13, extending parallel to said flange 27, is a beveled gear 28 pinned to the shaft, as at 29; and loosely projecting through an opening 30 in said flange 27 is a vertically slidable shaft 31 carrying a beveled gear 32, keyed to the shaft at 33, and disposed at right angles to the companion gear 28, whereby to mesh with the latter.

The upper end of the shaft 31 fits into and is pinned as at 34 to a sleeve 35, at the lower end of the latter, said sleeve, at its upper end having a slotted portion 36 through which passes a pin 37 on a stem 38, carrying a gear 39, pinned at 40, to a reduced extension 41 on the stem 38.

The effect of this arrangement is that a driving of the shaft 13 by the motor will turn the beveled gear 28 imparting motion to the companion beveled gear 32 to the shaft 31 and therefrom to the sleeve 35, stem 38 and gear 39, the result being the rotation of the gear 39, meshing with a toothed or gear ring 42, freely supported on the under surface of the top plate 8, and causing a rotation of the cup-stacks carrier 43 (Figures 2 and 7). It is noted that the top plate 8 has depending therefrom a supporting spider 44, attached through its flanges 45 by welding or its equivalent to the underside of the top plate 8. It is in the space 46 defined by the spider 44 that the gear ring 42 is mounted, said gear ring loosely encircling a stub axle 47, and fitting the peripheral groove 48 of which is a spring ring 49 overlapping the inner edge of the gear ring to prevent longitudinal movement of the latter on the stub shaft 47 while leaving it at all times free to rotate under the actuation of the gear 39.

The ring gear 42 bears on its bottom upon the ring 50 between which, and another similar ring 51, a ballbearing member 52 is interposed to insure easy rotation of the cup stacks carrier and cups, the weight of which latter is considerable, having in mind the multiplicity of stacks and the hundreds or more cups in the stacks.

The positive rotation of the stacks carrier 43 is accomplished through the medium of a cylindrical column 53 simply slipped over the upper edge of the stub axle 47, or on the other hand lifted off from said stem, when the whole superstructure is put in place or removed, the lower end of the cylindrical column 53 having an outwardly projecting surrounding flange 54—perforated as at 55—to rest upon the upper surface of the ring gear 42 when slipped downwardly over the pins 56 on the upper surface of said ring gear. Thereby, an efficient positive rotation of the stacks of cups and their carrier is imparted thereto by the ring gear 42, because of the interlocking of these elements together, although, as stated, they are readily separable for removal of the super-structure including column 53, cup containing tubes 43, etc.

Operatively associated with the gearing 28 and 32 and their related instrumentalities, are a toggle means and a constant cup-engaging or contacting member adapted, so long as cups are remaining in the stack being dispensed, to effect disconnection of the drive shaft from the driven shaft 31 for the ring gear 42 to prevent rotation of the cup stacks carrier. Specifically, this means consists of toggle members or links 57 and 58 pivoted together, at 59 (constituting the knee, so to speak, of the toggle) the member 58 being pivotally connected at 60 to the flange 27 of the

plate or bracket 23, and the other member, 57, pivotally associated, but not directly connected with the flange or head 61 of the sleeve 35, permitting said sleeve to rotate with said flange 61, bearing upon the pin 62 of the toggle member 57.

For stability, the members or links of the toggle are U-shaped in cross-section to provide side flanges 57a and 58a connected by bridge pieces or webs 63 and 64 (as shown in Figures 1 and 2). Between the upper end of the bridge piece 63 of the link 57 and the periphery of the flange 61, are stop pins 65 depending from the flange 26 of the plate or bracket 23, said stop pins confining the pivots 62 of the link 57 in close relation to the rounded groove 63, beneath the flange 61, but permitting the link 57 to swing towards and from the sleeve 35.

The toggle link 57—58 can never assume a fixed or dead center position because the stop pins 65 will prevent the inward movement of the toggle to an aligned position of the pivots 59, 60 and 62.

The relative positions of the parts, just described, when the stack carrier is not to be shifted—that is so long as the cups of a particular stack (Figure 8) being dispensed is ample—is clearly shown in Figure 4. Here, the operation of the motor, as through the medium of a suitable coin control (not shown) will effect the separation and delivery of single cups from the stack, one revolution of the motor shaft 13—17 being sufficient to that end, the circuit being controlled by the switch 21, operated by the cam 20'.

Here it is noted that the toggle has been straightened vertically so as to lift the sleeve 35, depending shaft 31 and beveled gear 32 to raise the latter away from meshing relationship with the companion drive gear 28 so that the gear 32 and associated parts, including the gear 39, will not be driven or rotated when a stack of cups has not been depleted to an extent defined by additional means to be pointed out.

When, however, the cups of the stack being dispensed has been depleted to the predetermined extent, and it becomes desirable to place a new stack in registering position with respect to the delivery opening 66 (Figure 1) and delivery worms 15, the parts are moved to the alternative position illustrated in Figure 3, where the drive from the common motor shaft 13 is effective through the driven shaft 31 and connected mechanism to shift the stacks carrier to present the new stack as stated. This is attained primarily through the said additional means comprising a constant cup contacting device interposed between the descending stack of cups being dispensed and the knee of the toggle 57—58 to control the shifting of the sleeve 35 and consequent position of the gear 32 carried thereby.

This contact device is represented at 67, Figures 1, 2, 5 and 6, in the form of a vertically disposed member of suitable width, and easy curvature upwardly and outwardly, adapted normally to enter into the path of movement of the descending cups and be in engagement with the outer surfaces thereof, conveniently the rim or lip at the mouth of the cups, under a light pressure that will not prevent the descent of the stack of cups sliding against the same.

The contact device 67 has a horizontal securing flange 68 overlying and fastened to the outer end of a lever 69, by a screw and slot adjustable means 70, enabling the positioning of the contact member longitudinally or transversely, or both, relative to the lever 69 to occupy a corresponding relationship with the stack of cups being dispensed, and to properly engage the cups of said stack as the latter descend.

The lever 69 is pivoted to swing in a horizontal plane by means of a pivot 71 passing through a hollow stem 72, resting on a ledge 73, bent outwardly from the bracket 23, the pin being secured to this ledge and the sleeve 72 being integral with the lever so as to be sleeved thereover and coincidently retained in position by the weight thereof for movement in a rotary direction.

The lever 69 has welded thereto, or formed integral therewith, an offset portion or extension 74 approaching the bracket 23 and terminating in a downwardly and outwardly extending flat plate-like terminal 75, occupying a position generally parallel to the bracket 23 and between the bracket and the toggle members 57 and 58. Thus in a simple, easily-maintained mechanism, the control means governed by the depleting stack of cups is attained, with a minimum number of strong parts of durable character, not susceptible to disarrangement, or impairment inherent in more delicate or hazardous elements as springs, liable to break or weaken and needing replacement or adjustment, from time to time.

The plate-like terminal 75 of the lever 69, is adapted to engage the knee of the toggle 57—58 when said terminal is moved by the lever from the outer position Figure 3 to the inner position Figure 4, it being observed that when the contact member 67, carried by the lever, is in engagement with the stack of cups, the contact end of the lever is held outwardly by the engagement of the cups therewith, which will cause the lever 69 to swing on its pivot, and move the terminal portion 75 thereof against the knee of the toggle to relatively straighten out the toggle, as before stated in connection with Figure 4.

Because of the anchorage of the lower member 58 of the toggle on the pivot 60 the action of the toggle will force the upper member 57 upwardly, correspondingly causing the pin 62 to engage the flange 61 of the sleeve 35, to elevate the sleeve and associated parts to disengage the gears 32 and 28. Thus, while cups remain in dispensing position in the machine, so as to press the lever 69 outwardly, there can be no operation of the turntable or stacks carrier 43. However, when the few final cups have passed below the contact member 67 (Figure 2), said contact member is no longer pressed outwardly by contact of the cups therewith, but will be moved inwardly a substantial distance within the area left vacant by the descended cups, the lever 69 correspondingly moving outwardly to the position shown in Figure 3, with the plate 75 of the lever against the face of the bracket 23. This movement is caused by the weight of the sleeve 35, the shaft 31 and gear 32 operating by gravity to descend and force the link members 57 and 58 to bend outwardly under the influence of the pin 62 and flange 61, forcibly pushing the knee of the toggle against the plate extension 75 of the lever 69, and engaging the gears 32 and 28, whereby to drive the ring gear 42 of the cups carrier through the companion gear 39.

Possibly, at times, there might be a tendency to create a vacuum between the stem 38 and shaft 31—if the latter be solid—that might be objectionable, and to avoid any such possibility the shaft 31 is a hollow shaft, as indicated at 76, so that there will always be an air passage from the lower end of said shaft therethrough and between the same and the end of the stem 38.

It will be appreciated that when the gear connection between the drive shaft 13 and driven shaft 31 is disrupted by the return movement, or raising of the sleeve 35 and associated parts, there will no longer exist any drive for the gear 39 and ring gear 42 of the stacks carrier. The latter, while free to be rotated, will normally remain practically stationary. Therefore, when any given stack is in substantial registration with the opening 66 or dispensing worms adjacent thereto, and the stack of cups may be a bit out of line or irregular, the stacks carrier may adjust itself or give, rotatively back-and-forth, as influenced by the stack, in keeping with such irregularity.

As is customary, the cups 77 of all of the stacks in the carrier 43 rest, with the bottom of the lowermost cup, on a smooth plate or finish 78 constituting the face of the top plate 8, upon which the stacks may ride in the movement of the stacks carrier until the immediate stack, to supplement the few remaining cups of the stack being dispensed, moves off the plate at the dispensing station as represented in Figure 8.

From the foregoing disclosure of the construction and operation of the one embodiment of the invention, it will be appreciated that we secure, without needless interruption and delay, the dispensing of cups from the successive stacks contained in the machine until all of the cups of all of the stacks are exhausted, all that is necessary is to successively initiate the operation of the electric drive motor by some well-known or suitable coin control, and the apparatus will, ever throughout the drive connections from the motor with the cup dispensing means, actuate the latter, and as requirement for supplementing the cups at the dispensing station arises, the supply means will be automatically actuated from the same motor without interruption or interference of the constant driving instrumentalities beween the motor and the cup dispensing means.

In this way the dispensing of a cup and the supplemental supply of a new stack at the dispensing station may be contemporaneously performed, or simultaneously obtained, without interference of the two functioning phases of the machine with each other, that is, carried on during one cycle of operation of the machine, as defined by the starting of the machine, as by the coin control, and the stopping of the machine in the rotation of the drive shaft by the switch control 20' and 21.

While we have herein disclosed the preferred embodiment of the invention, it will be understood that said invention may be embodied in other forms embraced within the scope of the hereto appended claims.

We claim:

1. In a machine having a carrier for a plurality of stacks of nested cups adapted to successively present the stacks in registration with means for feeding and dispensing single cups from the bottom of a stack: the combination with a motor drive and means operatively associated therewith for moving the carrier to supplant a stack being dispensed by a fresh stack, comprising a driven rack on the carrier, a member formed and arranged to constantly engage the cups of the stack being dispensed and be freed therefrom from movement when said stack has been depleted to a given extent, said member being carried by a lever pivoted intermediate of the ends thereof for effecting such movement, a toggle lever arranged to contact the inner end of said lever to move the lever when said member is freed from engagement with the cups, and a shiftable member engaged by the toggle lever having cooperatively associated gearing meshed with the driven rack on the carrier and arranged to effect the drive when said toggle lever is in one position but to free the carrier from the drive when said toggle lever is in an opposite position.

2. In a machine having a carrier for a plurality of stacks for registration with means for feeding and dispensing single cups from the bottom of a stack: the combination with a motor drive and means operatively associated therewith for moving the carrier to supplant a stack being dispensed by a fresh stack, comprising a correlated driven device on the carrier, a member formed and arranged to constantly engage the cups of the stack being dispensed and be freed therefrom for movement when said stack has been depleted to a given extent, said member being carried by a pivoted lever for effecting such movement, a toggle lever arranged to contact said lever to move the lever when said member is freed from engagement with the cups, and a shiftable member engaged by the toggle lever having cooperatively associated gearing meshed with the driven device on the carrier and arranged to effect the drive when said toggle lever is in one position but to free the carrier from the drive when said toggle lever is in an opposite position.

3. In a machine having a carrier for a plurality of stacks for registration with means for feeding and dispensing single cups from the bottom of a stack: the combination with a motor drive and means operatively associated therewith for moving the carrier to supplant a stack being dispensed by a fresh stack, comprising a correlated driven device on the carrier, a member formed and arranged to constantly engage the cups of the stack being dispensed and be freed therefrom for movement when said stack has been depleted to a given extent, said member being carried by a pivoted lever for effecting such movement, a toggle lever arranged to contact said lever to move the lever when said member is freed from engagement with the cups, said toggle lever having its knee in riding contact with said lever when said member is free from engagement with the cups, and a shiftable member engaged by the toggle lever having cooperatively associated gearing with the driven device on the carrier, and adapted to engage the motor drive when the toggle lever is in one position but to free the carrier when said toggle lever is in an opposite position.

4. In a machine having a carrier for a plurality of stacks for registration with means for feeding and dispensing single cups from the bottom of a stack: the combination with a motor drive and means operatively associated therewith for moving the carrier to supplant a stack being dispensed by a fresh stack, comprising a correlated driven device on the carrier, a member formed and arranged to constantly engage the cups of the stack being dispensed and be freed therefrom for movement when said stack has been depleted to a given extent, said member being carried by a pivoted lever for effecting such movement, a toggle lever arranged to contact said lever to move the lever when said member is freed from engagement with the cups, and a shiftable member engaged by the toggle lever having cooperatively associated gearing meshed with the driven device on the carrier and arranged to effect the drive when said toggle lever is in one position but to free the carrier from the drive when said toggle lever is in an opposite position,

the toggle lever and cup-engaging member being so formed and related to the shiftable member and gearing carried thereby so that the weight of the latter will force the cup engaging member into its freed position after the passage of cups thereby to said given extent, to effect the drive of the carrier, and subsequent engagement of cups with the cup-engaging member will cause the lever to force the toggle lever inwardly, raise the shiftable member and separate the gearing to discontinue the drive for the carrier.

5. In a machine having a carrier for a plurality of stacks of nested cups adapted to successively present the stacks in registration with means for feeding and dispensing single cups from the bottom of a stack, a driven means on the carrier, and a motor drive: the combination therewith of means for effecting movement of the carrier to supplant a stack being dispensed by a fresh stack when the former has been depleted to a predetermined extent, comprising a member formed and arranged to engage the stack of cups being dispensed and to be freed for movement when said stack is depleted to said extent, said member being carried by a pivoted lever, and means cooperatively related to the lever formed and arranged to be shifted by its own weight to effect the drive when the cup engaging means is freed, and to be elevated against the force of gravity by the engagement of cups with said lever to discontinue the drive.

6. In a cup dispensing machine of the character described, dispensing mechanism for delivering individual cups from a stack, a carrier for a plurality of supplemental stacks of cups, means for intermittently actuating the carrier to present a fresh stack of cups as a preceding stack nears depletion by the dispensing means, means governed by the cups of the immediate stack being dispensed for controlling the said last-mentioned means, and a common motor for actuating both the cup dispensing means and the stacks shifting means, having a motor driven shaft and shiftable gear connections whereby the cup dispensing means and the stacks-carrier may be actuated during a single cycle of movement of the machine defined by one complete revolution of the motor driven shaft.

7. In a machine having a carrier for a plurality of stacks of nested cups adapted to successively present the stacks in registration with means for feeding and dispensing single cups from the bottom of a stack, a driven device on the carrier, and driving mechanism: the combination therewith of means to engage the device for moving the carrier to supplant a stack being dispensed by a fresh stack when the former has been depleted to a pretermined extent, comprising a member formed and arranged to constantly engage the outside of the cups being dispensed and be freed for movement when said stack has been depleted to said extent, said member being carried by a lever, and means cooperatively related to one end of said lever including a cam lever, a rotatable sleeve movable thereby, and adjustable gearing adapted to be engaged with the driving mechanism and also with the driven device on the carrier to actuate the carrier in keeping with the adjustment of said gearing.

8. In a cup dispensing machine of the character described, a dispensing mechanism for delivering individual cups from a stack of cups, a carrier for a plurality of supplemental stacks of cups, means for intermittently actuating the carrier to present a fresh stack of cups as a preceding stack nears depletion by the dispensing means, and a lever operated by the cups of the immediate stack being dispensed associated with the carrier-actuating means, said carrier-actuating means including a rotating drive shaft, and a driven shaft having rotating gear connections with said carrier and said drive shaft, one of the said gears being movable to disconnect the drive to the carrier, said cup operated lever controlling the movements of the movable gear.

9. In a cup dispensing machine of the character described, a dispensing mechanism for delivering individual cups from a stack of cups, a carrier for a plurality of supplemental stacks of cups, means for intermittently actuating the carrier to present a fresh stack of cups as the preceding stack nears depletion by the dispensing means, and a lever operated by the cups of the immediate stack being dispensed associated with the carrier-actuating means, said carrier-actuating means comprising a rotating drive shaft, a two-part driven shaft having rotary gear connections with said carrier and drive shaft, one part of the driven shaft being movable relative to the other part to disconnect the drive to the carrier, a sleeve on the movable part slidable on the other part, and link means adjacent said driven shaft engaging the said slidable sleeve to move the sleeve in one direction and permit movement in the opposite direction, said cup operated lever engaging the link means to control the movements of said slidable sleeve.

10. In a cup dispensing machine of the character described, a dispensing mechanism for delivering individual cups from a stack of cups, a carrier for a plurality of supplemental stacks of cups, means for intermittently actuating the carrier to present a fresh stack of cups as the preceding stack nears depletion by the dispensing means, and a lever operated by the cups of the immediate stack being dispensed associated with the carrier-actuating means, said carrier-actuating means comprising a rotating drive shaft, a two-part driven shaft having rotary gear connections with said carrier and drive shaft, one part of the driven shaft being movable relative to the other part to disconnect the drive to the carrier, a sleeve on the movable part slidable on the other part, and toggle links adjacent said driven shaft, one of said links being pivoted to a fixed support and the other link engaging the said slidable sleeve to move said sleeve in one direction and permit movement in the opposite direction, said cup operated lever engaging the toggle links to control the movements of said slidable sleeve.

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WAYNE M. MACK.

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