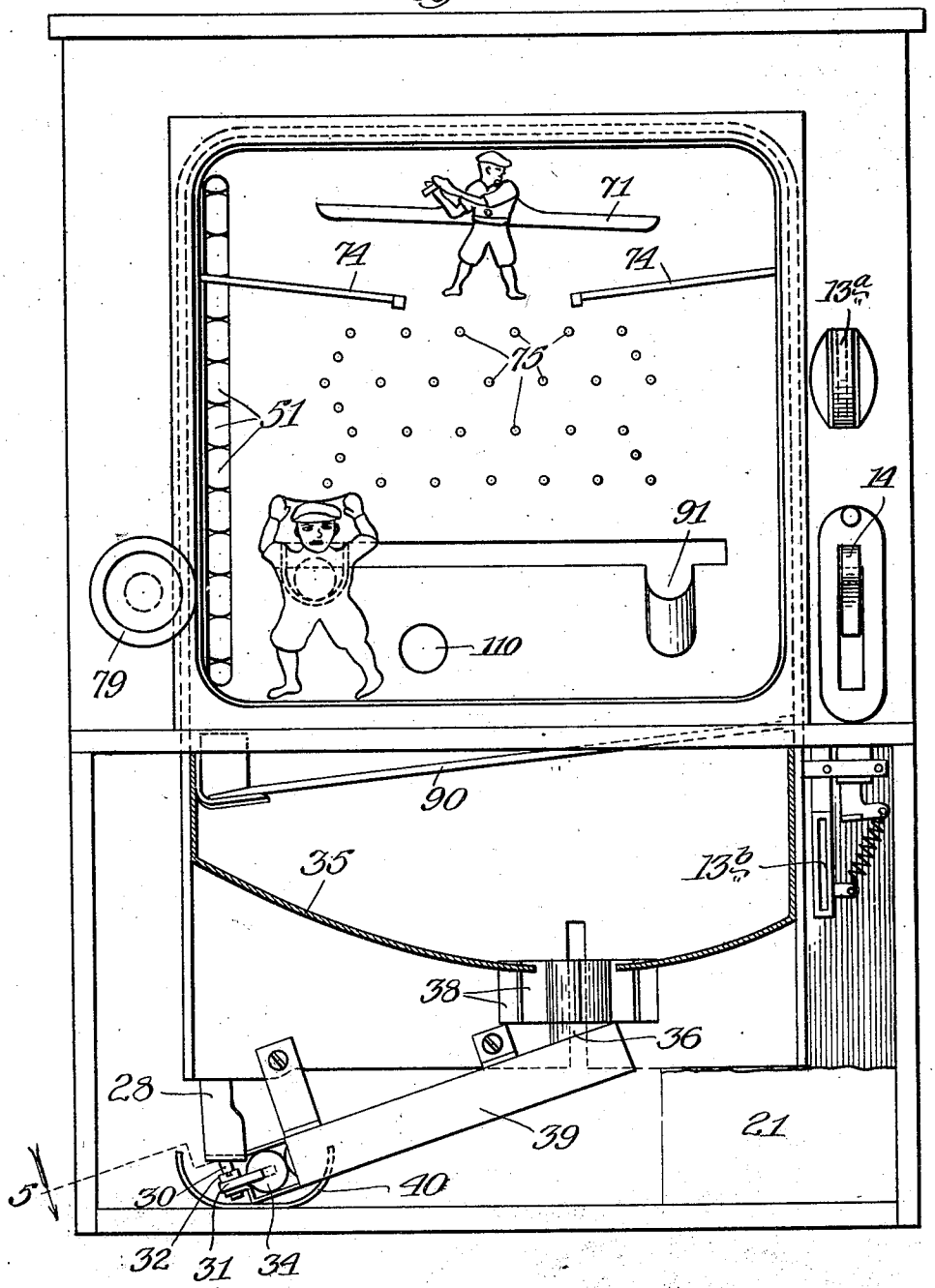
Jan. 29, 1929. 1,700,541

F. L. MILLS

COMBINED VENDING MACHINE AND GAME

Original Filed Aug. 30, 1926 3 Sheets-Sheet 1

Fig. 1.



Inventor:
Fred L. Mills,
By Dyer, Holloway, Tibbott & Wiles,
Attys.

Jan. 29, 1929. 1,700,541

F. L. MILLS

COMBINED VENDING MACHINE AND GAME

Original Filed Aug. 30, 1926 3 Sheets-Sheet 2

Fig. 2.

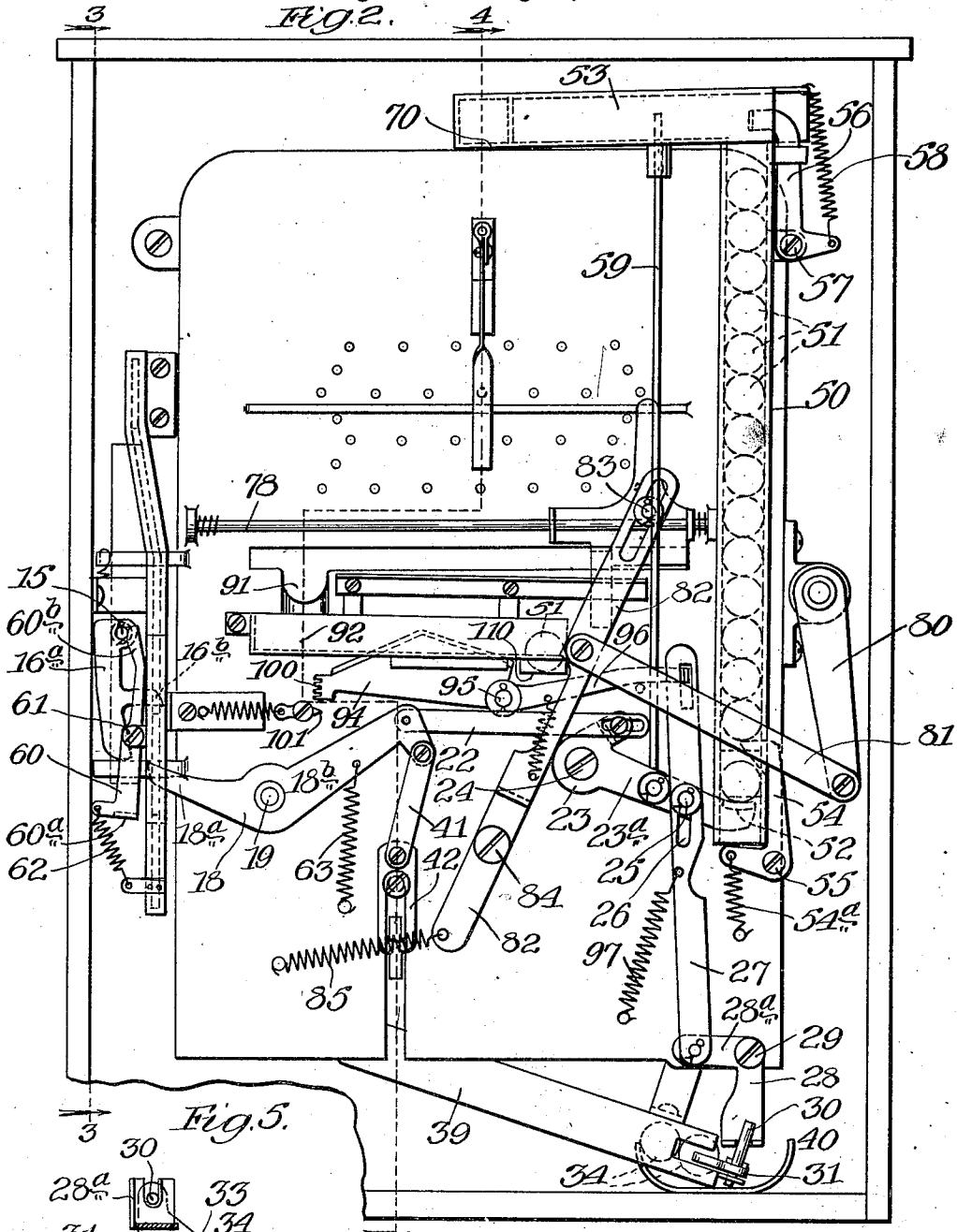
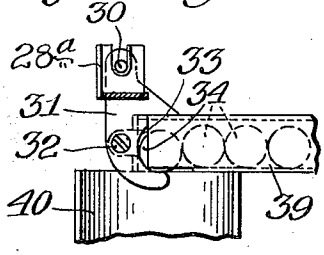


Fig. 5.



Inventor:
Fred L. Mills,
By Dyrenforth Lee, Chritton & Wilkinson
Attys.

Jan. 29, 1929. 1,700,541

F. L. MILLS

COMBINED VENDING MACHINE AND GAME

Original Filed Aug. 30, 1926 3 Sheets-Sheet 3

Fig. 3.

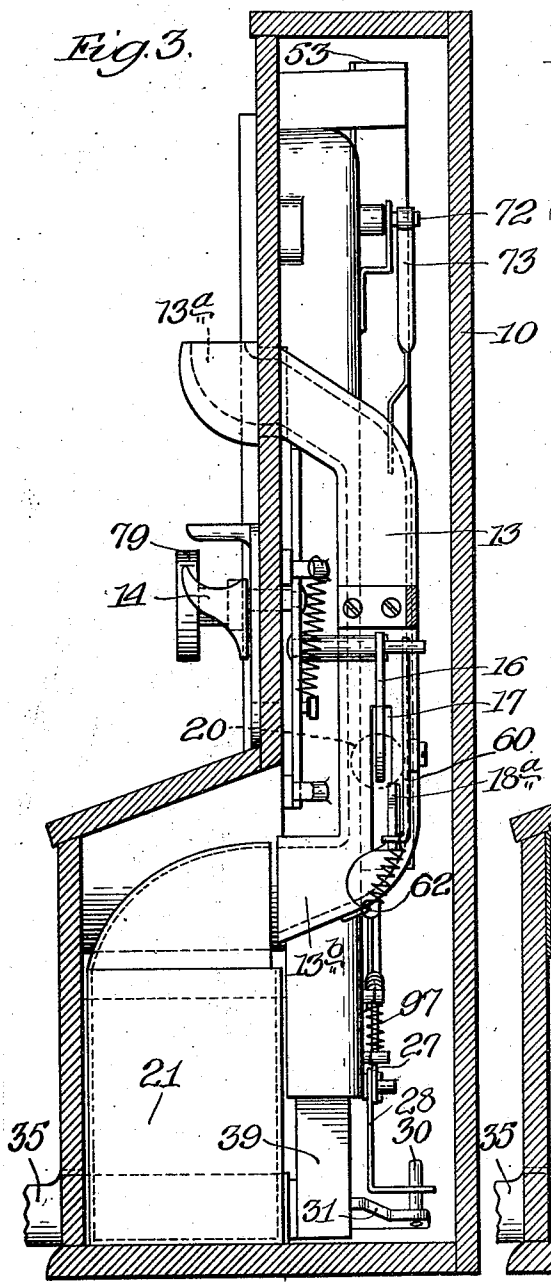
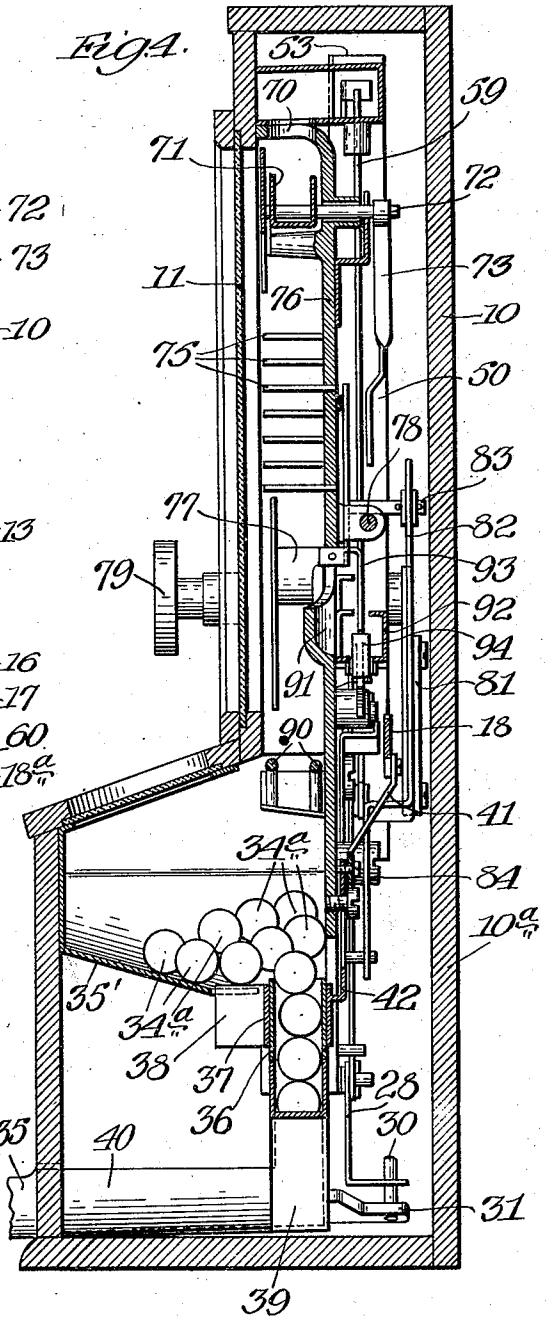


Fig. 4.



Inventor:
Fred L. Mills,
By Dyrenforth, Lee, Christy & Wiles
Attys.

Patented Jan. 29, 1929. 1,700,541

UNITED STATES PATENT OFFICE.

FRED L. MILLS, OF CHICAGO, ILLINOIS, ASSIGNOR TO MILLS NOVELTY COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

COMBINED VENDING MACHINE AND GAME.

Original application filed August 30, 1926, Serial No. 132,506. Divided and this application filed May 31, 1927. Serial No. 195,384.

This invention relates to improvements in a combined vending machine and game and more especially to such a vending machine adapted for supplying small articles such as, for example, candy and the like.

The invention is embodied in a machine of this kind adapted to vend a single article for each coin, check, or slug inserted, and in connection therewith, through the game apparatus, give the operator an opportunity, by the exercise of skill, to obtain an additional article.

In connection with the vending apparatus, means are also provided for agitating the articles in the hopper at each operation of the machine, thus insuring at all times a proper supply to the delivery chute.

Means are also provided for delaying the action of the game apparatus in order to give the operator an opportunity to prepare himself for the display of skill necessary to obtain an extra article.

The present application constitutes a division of my pending application Serial No. 132,506, filed August 30th, 1926.

For the purpose of illustrating my invention, I have shown herein a machine adapted to be operated by coins and supplied with balls of candy to be vended.

In that form of device shown in the accompanying drawings, Fig. 1 is a view in front elevation of a combined vending machine and game, Fig. 2 is a similar view in rear elevation, Fig. 3 is a vertical sectional view taken as indicated by the line 3 of Fig. 2. Fig. 4 is a vertical sectional view taken as indicated by the line 4 of Fig. 2, and Fig. 5 is a view taken as indicated by the line 5 of Fig. 1.

As shown in the drawings, the device is housed in a suitable case 10 made of wood or other suitable material, and preferably provided with a glass panel front 11. The lower part of the case 10 is preferably widened as indicated by 10^a, and the upper surface in front is preferably provided with a glass panel or window 12 in order to give a view into the hopper containing the articles to be vended.

It is believed that a preliminary general description of the construction and operation of the device will assist in making the disclosure. A suitable coin, for example, one cent, is inserted in the coin slot. A coin pusher is then depressed whereupon the machine delivers one of the articles being vended, for example, a candy ball. When the coin pusher is raised, a steel ball is released at the top of the device behind the glass panel 11. This ball tumbles downwardly in an uncertain path between stationary pins. Arranged below these pins is a transversely movable cup operable by a knob on the outside of the device. Through the exercise of skill, it is possible for the operator to move this cup to catch the steel ball. In the event the operator succeeds in catching the steel ball in the cup, the cup is then moved to the end of its stroke whereupon upon being moved back, through suitable apparatus, an extra candy ball is delivered. In order to increase the picturesque effect, the steel ball is delivered at the top from behind a small figure representing a baseball batter, and the cup is mounted on the rear side of a small figure representing a baseball player about to catch a ball.

I will first describe the vending apparatus. 13 indicates the coin slot, and 13^a the opening at the upper end where the coin is inserted. 14 indicates a vertically slidable coin pusher carrying a backwardly projecting pin 15 having pivotally mounted thereon the swinging latch 16 provided with an arm 16^a projecting through a slot 17 in the lower end of the coin slot. The upper edge of the end of the arm 16^a is slanted or beveled as indicated by 16^b, so that a coin falling downward in the coin slot engaging this bevel will swing the latch 16 out of the way and allow the coin to pass to its position below the arm 16^a.

18 indicates a bell-crank lever for operating the mechanism pivoted at 19 and having one end 18^a also projecting through the slot 17 under its lower end. 20 indicates a coin in the position it occupies after having been dropped in the slot and before the coin pusher is depressed. It will be seen that the coin has passed the arm 16^a on the latch 16 and is resting on top of the arm 18^a of the bell-

crank 18. When in this position, it serves as a connector between the coin pusher and the arm 18[a] so that when the coin pusher is depressed, it will depress the coin to also push down the arm 18[a] until the arm 18[a] gets to a position low enough so that the coin can pass it and drop out of the lower end 13[b] of the coin slot and into the coin box 21.

The movement of the bell-crank 18, as above described, operates the vending apparatus in the following manner. The inner end of the crank 18, as indicated by 18[b], has attached thereto a link 22, which in turn is connected to one of the arms of another bell-crank 23 pivoted at 24. The arm 23[a] of the bell-crank 23 is provided with a pin 25 projecting through a slot 26 in the vertically slidable rod 27 which has its lower end pivoted to the arm 28[a] of the bell-crank 28 pivoted at 29. The other arm 28[b] of the bell-crank 28 is provided with a slot embracing the pin 30 in the article feeder 31. As shown in Fig. 5, the article feeder is pivoted at 32 and cut away at 33 in order to form an opening to embrace one of the candy balls 34. Each time the article feeder is rotated, one of the candy balls is permitted to roll out into the tray 35. It will be seen that with a coin in place as a connector between the arms 16[a] and 18[a], downward movement of the coin pusher will rock the bell-crank 18 to pull the connecting bar 22 to rock the bell-crank 23 to lift the rod 27 to move the bell-crank 28, which will in turn swing the article feeder 31.

I will now describe more in detail the agitator. The candy balls, as indicated by 34[a], are contained in a hopper 35′, the bottom of which preferably is tapered toward the round outlet tube 36. Vertically slidable on the tube 36 is a collar 37 containing radially arranged wings 38 adapted to move up into the hopper through slots in the bottom thereof when the collar 37 is moved upwardly. Such upward movement of the collar 37 and the wings 38 serves to agitate the candy balls in the hopper causing one or more of them to roll toward the lowest part thereof and into the tube 36. The bottom of the tube 36 leads into the slanting magazine 39 which carries at its lower end the feeder 31 above described. From the feeder 31 a delivery chute 40 is provided to direct the delivered candy balls into the tray 35. Each time that the machine is operated, the agitator is moved by means of the link 41 connected to the arm 18[b] at its upper end and at its lower end to the arm 42, which in turn is connected to the collar 37. The agitation of the candy balls in the hopper will insure at all times a proper supply to the magazine 39, thus keeping this magazine filled and insuring at all times a supply to the feeder 31.

I will now describe more in detail the game mechanism. At one side of the machine is a vertical tube 50 filled with a row of balls 51. For example, these balls may be of steel and all of the same size and weight; or, if desired, they may be made of other suitable substances, and may be of different colors and weights. Also, if desired, these balls may vary in size to a certain extent. Variations in the size or weight of these balls will cause more uncertainty and irregularity in the downward falling of the ball through the pins 75, to be described more in detail hereinafter. Also, variations in the color of the balls may be made use of as desired in connection with the operation of the device. For example, the catching of a ball of a certain color can, by previous agreement of the owner of the machine, entitle the operator to an additional reward or compensation. For the purpose of illustration, I have assumed herein that the balls are made of steel and consequently have so referred to them hereinafter. The extreme end of the arm 23[a] of the bell-crank 23 is provided with a finger 52 projecting into the ball tube 50 below the last ball. Upward movement of the finger 52 is adapted to raise the column of balls and enough balls are provided so that when the column is thus raised, the ball at the top will leave the tube and enter the slanting runway 53. 54 indicates a latch pivoted at 55 adapted to permit a ball lifted upwardly by the finger 52 to pass, but preventing it from dropping back. The spring 54[a] urges this latch to its normal position. At the upper end of the ball tube, another latch 56 pivoted at 57 and operated by a spiral spring 58, as shown, serves to start a ball into the runway 53 when pressed out of the top of the cup.

59 indicates a vertically movable wire having lower end connected to the arm 23[a], as shown, and its upper end adapted to project up into the runway 53 when the arm 23[a] is raised. By means of this construction, when the arm 23[a] is raised to lift the finger 52 upwardly a ball is expelled from the top of the tube 50 and enters the runway 53, but is prevented from passing the upper end of the wire 59 as long as this wire remains raised. This wire is kept raised until the coin pusher is raised in the following manner. 60 indicates a latch pivoted at 61, the lower end of which is yieldingly pulled to the right (as viewed in Fig. 2) by the spiral spring 62. Upon downward movement of the coin pusher with the coin in place above the arm 18[a], the extreme end of the arm 18[a] is engaged by the lower end 60[a] of the latch 60, and thus held in this position until the coin pusher is raised. When the coin pusher is raised, the pin 15 thereon engages the upper end 60[b] of the latch 60, which is suitably slanted as shown, thus rocking the latch 60 to disengage the end 60[a] from the arm 18[a] whereupon the spiral spring 63 returns the bell-crank to its original position. This movement again lowers the wire 59 thus permitting the ball to pass down-

wardly along the runway 53 and escape through the opening 70 at the top of the machine. Arranged below the opening 70 is a balanced trough 71 open at both ends and carried by the pin 72 mounted in suitable bearings. The rear end of the pin 72 carries a pendulum 73 in order to retard the rocking movement of the trough 71. Upon the steel ball entering the trough 71, it will roll toward one end or the other, depending upon chance, and thence fall into one of the slanting guides 74 from which it will drop onto the pins 75 mounted in the front side of the board 76. The fall of the steel ball will be obstructed more or less by the pins 75 causing it to travel downwardly between said pins in an uncertain path.

Arranged below the pins 75 is a horizontally slidable cup 77 mounted on the slide wire 78 and operable from the front of the machine by the knob 79 through the lever 80 and link 81 which in turn is connected to the lever 82 having its upper end connected to the pin 83 on the back of the cup. The lever 82 is pivoted at 84 and is normally held in the position shown in Fig. 2 by means of the spiral spring 85.

In the event the steel ball falling downwardly through the pins 75 is not caught in the cup 77, the same falls onto the track 90, which is slanting and it rolls downwardly on this track and again enters the ball tube at the bottom below the latch 54 and on top of the finger 52.

The track 90 is in front of the board 76 and consists of two slanting rods (see Figs. 1 and 4). Opposite the lower end of this track there is a door or opening through the board 76 permitting the ball to leave the lower end of the track, pass through the door or opening in the board 76, and emerge into the ball tube 50 below the latch 54 and on top of the finger 52.

Through skillful manipulation by means of the knob 79, however, it is possible to move the cup 77 so that it will catch the steel ball 51 and if this is accomplished, the cup is moved over to the left (as viewed in Fig. 2) whereupon the ball rolls out of the cup through the opening 91 and into the trough 92. The cup 77 on its rear side carries a depending arm 93 projecting into the trough 92 through a slot on the upper side. After the steel ball has fallen from the cup into the trough 92, the arm 93 will be on the left side thereof (as viewed in Fig. 2) so that movement of the cup again to the right (as viewed in Fig. 2) will force the ball along the trough 92. This movement causes a delivering of another article in the following manner. Projecting upwardly into the trough 92 is the cam-shaped upper edge of the lever 94 pivoted at 95 and provided with an arm 96 having its end interlocked with the upper end of the rod 27. Movement of the ball 51 to the right as pressed by the arm 93 will cause the same to enter the bevel or cam-shaped upper edge of the lever 94—thus rocking the same and lifting the bar 27 to feed another article as above described. The spiral spring 97 operates to return the feeder to its original position when released.

The left end of the lever 94 is provided with a series of teeth 100 adapted to be engaged by the pivoted pawl 101 controlled by the spring 102 so that, movement of the lever 94 being commenced in one direction, the same must be moved the full length of its stroke before being permitted to return.

In the event the ball is caught by the cup and operated to deliver another article, upon passing the lever 94, the ball upon reaching the right hand end (as viewed in Fig. 2) of the trough 92 rolls backwardly through the hole 110—whence it drops onto the track 90 and rolls back into the bottom of the ball tube 50. The front side of the ball tube is provided with a slot in order to give a view of the balls therein.

While I have shown and described certain embodiments of my invention, it is to be understood that it is capable of many modifications. Changes, therefore, in the construction and arrangement may be made without departing from the spirit and scope of the invention as disclosed in the appended claims, in which it is my intention to claim all novelty inherent in my invention as broadly as possible in view of the prior art.

What I claim as new, and desire to secure by Letters Patent, is:

1. In mechanism of the character set forth. a hopper provided at its bottom with an outlet; an agitator associated with the outlet of said hopper; an inclined magazine extending from said outlet; and an ejector controlling the discharges of articles from said magazine, said ejector comprising an oscillatory article feeder provided with a recess adapted to accommodate the lowermost article in the magazine.

2. In mechanism of the character set forth: a hopper provided at its bottom with an outlet; an outlet tube leading downwardly from the outlet in the bottom of the hopper; an inclined magazine extending from the bottom of said outlet tube; an ejector controlling the passage of articles from said magazine; and an agitator associated with the outlet of said hopper, said agitator including a vertically slidable collar mounted on the outlet tube.

3. In mechanism of the character set forth: a hopper provided at its bottom with an outlet; an outlet tube leading downwardly from the outlet in the bottom of the hopper; an inclined magazine extending from the bottom of said outlet tube; an ejector controlling the passage of articles from said magazine; and an agitator associated with the outlet of said

hopper, said agitator including a vertically slidable collar mounted on the outlet tube and agitating members carried by said tube.

4. In mechanism of the character set forth: a hopper provided at its bottom with an outlet; an outlet tube leading downwardly from the outlet in the bottom of the hopper; an inclined magazine extending from the bottom of said outlet tube; an ejector controlling the passage of articles from said magazine; and an agitator associated with the outlet of said hopper, said agitator including a vertically slidable collar mounted on the outlet tube and radially mounted agitating members carried by said tube.

FRED L. MILLS.