Oct. 11, 1955 M. KOSAR 2,720,336

GOLF BALL DISPENSING APPARATUS

Filed March 24, 1950 2 Sheets-Sheet 1

FIG. 1

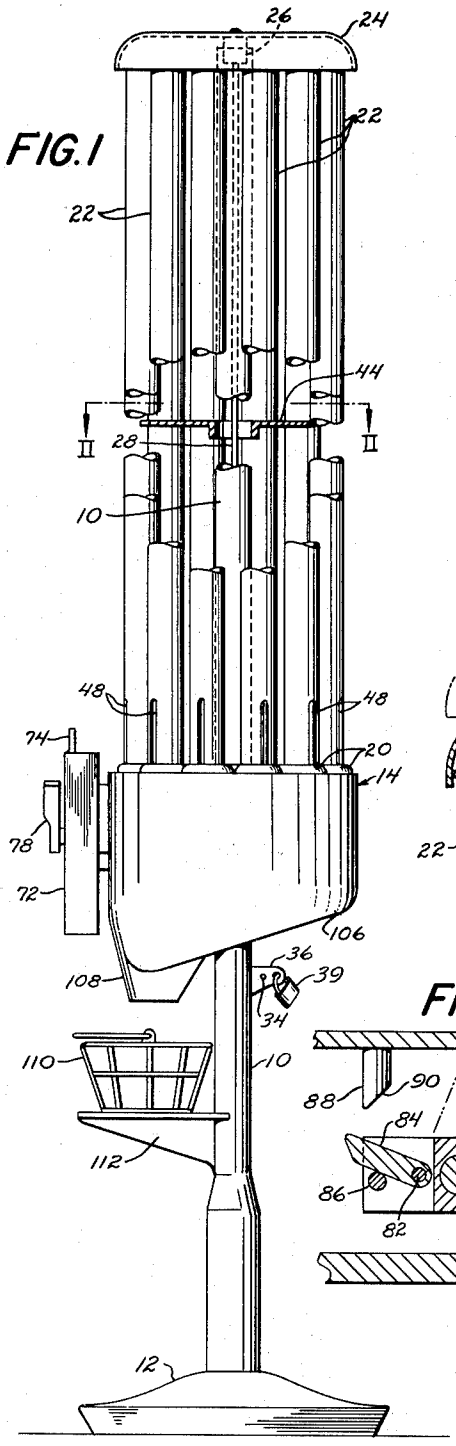


FIG. 2

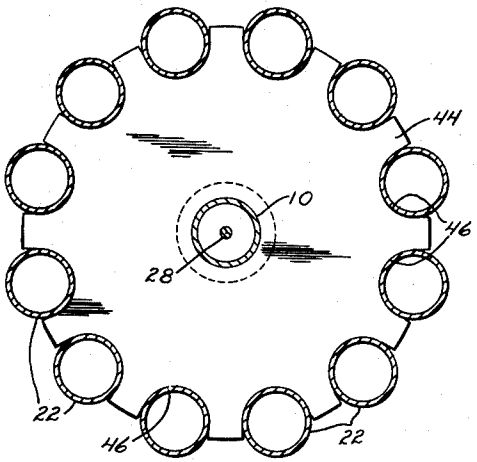


FIG. 3

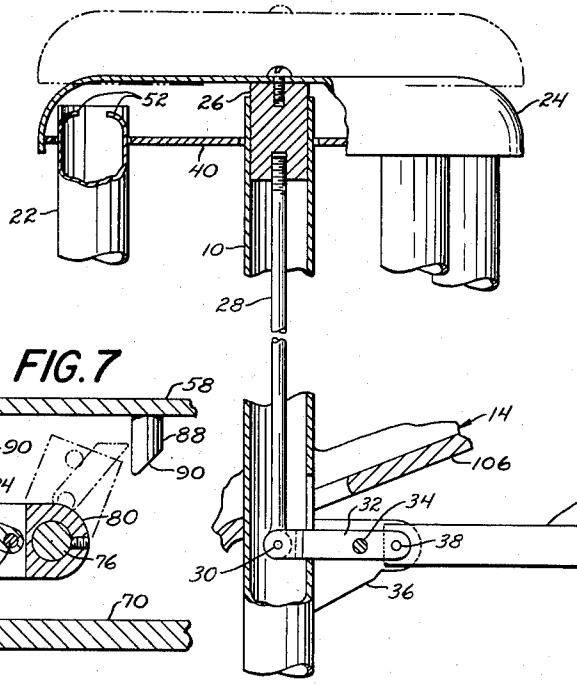


FIG. 7

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GOLF BALL DISPENSING APPARATUS

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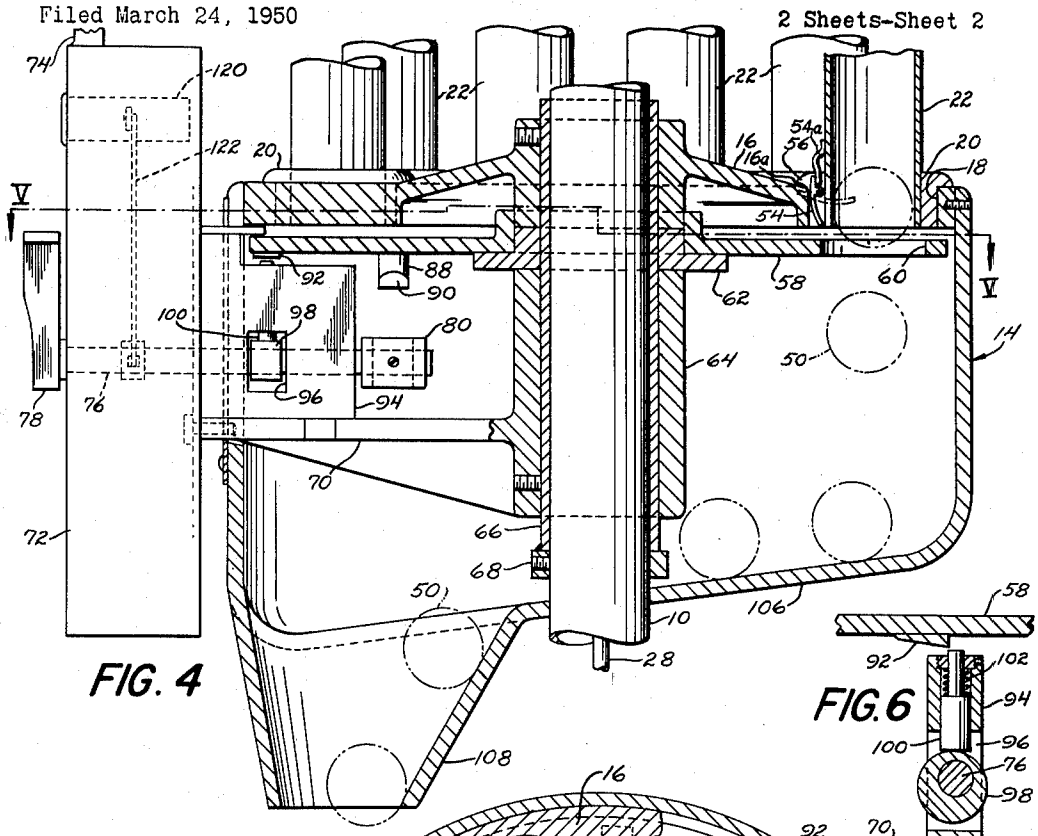


FIG. 4

FIG. 6

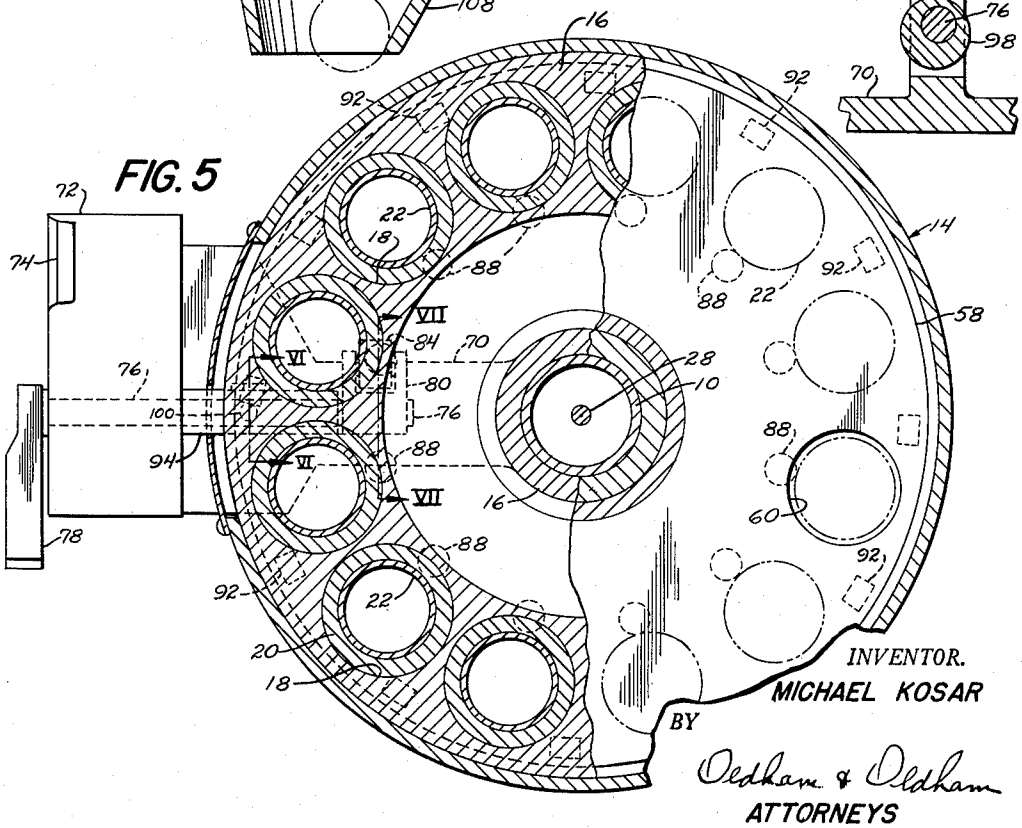


FIG. 5

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GOLF BALL DISPENSING APPARATUS

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10 Claims. (Cl. 221—91)

This invention relates to apparatus for dispensing golf balls, and, more particularly, is concerned with apparatus of this type for use in conjunction with golf driving ranges or practice tees.

Heretofore it has been the usual practice, in the operation of a golf driving range, for a customer to purchase a basket or bucket of balls at a central office, and then the customer will walk down along the various driving tees until he has found a tee which is not being used and is to his liking. Then he will proceed to drive the golf balls from the driving tee, using any or all clubs which he has brought along with him or which he has rented from the driving range office. Many times when his first bucket of balls has been used up, the customer will want to drive additional balls and he must then walk back to the centrally positioned office and buy another bucket, which proceeding may take considerable time, especially if the driving range attendant is busy with other customers. In addition, it is difficult for the driving range manager or owner to provide any accurate check on the number of buckets of golf balls which have been sold at the driving range, and in the absence of the owner or manager, various opportunities exist for the attendant to sell buckets of balls and pocket the money received therefrom without properly accounting for the same. Additionally, the buckets of golf balls are often not very attractive and tend to clutter up the central office, particularly in anticipation of heavy rush periods.

It has been proposed heretofore to vend various items such as marbles or round, ball-shaped chewing gum from automatic or semi-automatic mechanisms, but so far as I have been able to determine, no apparatus is available on the market today which will automatically or semi-automatically vend golf balls in driving range quantities. Known mechanisms for vending products of the indicated type are usually concerned with the dispensing of a single item, and the mechanisms are not readily adapted, either in principle or construction, to the simultaneous vending or a considerable plurality of round objects, such as golf balls.

It is the general object of my invention to avoid and overcome the foregoing and other difficulties of and objections to known practices and equipment by the provision of a coin-controlled customer-operated dispensing apparatus adapted to quickly and substantially automatically deliver to a customer a bucket of golf balls for use at a driving range.

Another object of my invention is the provision of improved, relatively inexpensive, but sturdy and long-lived and substantially fool-proof apparatus which will deliver to a customer a considerable plurality of golf balls upon his operation of the apparatus by or with the assistance of a suitable coin.

Another object of my invention is to provide apparatus of the character described which is readily refilled with golf balls, and with the balls being visible to the customer.

Another object of my invention is to provide apparatus of comparatively small size and weight and of semi-portable and entirely self-contained character whereby the apparatus can be positioned at spaced points along the tees of a driving range to facilitate and encourage the purchasing of additional balls in a minimum of time and with a minimum of effort.

The foregoing objects of my invention and other objects which will become apparent as the description proceeds, are achieved by the provision of an apparatus including a plurality of tubes, each tube being adapted to removably receive a selected number of golf balls, for example, twenty-five. The tubes are removably associated with a casing, and usually extend upwardly therefrom in circumferentially spaced relation around the casing, and with a head being mounted for movement to and from the casing and to and from engagement with the upper ends of the tubes to lock or release the tubes with respect to the casing. Associated with the casing is a rotary member having an opening which is adapted to be brought in turn into alignment with the bottom of each tube, the arcuate movement of the rotary member being coin-controlled or released, and with associated stop means for insuring the alignment of the rotary means opening with each tube. When the opening in the rotary member is brought into alignment with a particular tube, the golf balls carried in the tube are free to move out of the tube through the opening and out of the casing into a basket positioned beneath the casing. The coin control means has appropriate counter mechanism associated therewith whereby an accurate record is kept of the number of golf ball sales.

Having reference to the accompanying drawings,

Fig. 1 is a side elevation, partially broken away, of a typical apparatus incorporating the principles of my invention;

Fig. 2 is a horizontal cross-sectional view, on an enlarged scale, and taken substantially on line II—II of Fig. 1;

Fig. 3 is an enlarged fragmentary view, partially in section, of the upper portion of the apparatus of Fig. 1;

Fig. 4 is a fragmentary vertical cross-sectional view, on an enlarged scale, of the casing portion of the apparatus;

Fig. 5 is a horizontal cross-sectional view, on the same scale as Fig. 4, and taken substantially on line V—V of Fig. 4;

Fig. 6 is a vertical cross-sectional view of the locking and aligning means of the invention, and is taken substantially on line VI—VI of Fig. 5; and

Fig. 7 is an enlarged fragmentary cross-sectional view taken substantially on line VII—VII of Fig. 5 and illustrating details of the indexing mechanism.

The embodiment of my invention illustrated in the drawings includes a vertically positioned post **10** which is suitably supported, as by a base or pedestal **12**. Positioned on the post **10** at about waist height to the average customer is a casing **14** of hollow, substantially cylindrical shape. The top **16** of the casing **14** is formed with a plurality of circumferentially spaced openings **18** (see Fig. 4), each of which is adapted to removably receive a collar **20** formed on or secured to the lower end of a tube **22**. The tubes **22** extend upwardly in the manner best seen in Figures 1 and 3 and are adapted to be releasably engaged by a head **24** secured to a plug **26** which is slidably received in the upper end of the post **10**. The plug **26** and its associated head **24** are adapted to be moved up or down by a rod **28** secured to the plug, the lower end of the rod being pivotally secured at **30** to a lever **32** which is pivoted at **34** to a bracket **36** carried on the post **10**. Both the lever **32** and the bracket **36** are provided with aligned apertures **38** so that an ordinary padlock **39** can be inserted through these apertures to lock the lever **32** and the head **24** in the full line position shown in Fig. 3 of the drawings. At this

time, the upper ends of the tubes **22** are gripped by appropriate circular openings in a plate **40** carried by the downwardly flanged periphery of the head **24**. When it is desired to release the tubes **22** from the head **24**, the padlock **39** is removed from the holes **38** and a pipe or other member **42** having a flattened or socket end fitting over the lever **32** is slid over the lever so that the lever can be tilted about its pivot **34** to raise rod **28**, plug **26**, and head **24** up to the dotted line position shown in Fig. 3, thereby releasing the upper ends of the tubes **22** so that any or all of the tubes can be removed from association with the casing **14**.

The positioning and alignment of the tubes **22** in the association described is facilitated by means of a positioning plate **44** (see Figures 1 and 2) carried by the post **10** substantially midway between the casing **14** and the head **24**. The plate **44** is provided with a plurality of circumferentially spaced semi-circular openings **46**, each one of which is adapted to receive and position one of the tubes **22**.

Each tube **22** is most conveniently made from aluminum and is formed with a slot **48** so that balls, such as golf balls **50**, can be contained in stacked relation in the tube and are visible through the slot. Of course, it may be possible to make the tubes **22** from clear plastic to add further sales appeal to the apparatus. In any event, the upper ends of the tubes **22** are closed, as by bent-over flanges **52**, best seen in Fig. 3. The lower end of each tube **22** is provided with a finger **54** pivotally mounted in a slot **56** formed in the collar **20**. These fingers **54** have their lower ends normally urged radially inward through the slots **56** by springs **54***a* secured to the tubes **22** and forcing the upper ends of the fingers radially outward. Each finger is pivotally mounted to a collar **20** by a hinge pin **54***b*. Normally the finger **54** moves to or is positioned at the dotted line showing in Fig. 4 so as to close the lower end of the tube **22** when the tube is out of the casing **14** and a series of balls are contained in the tube. However, when the tube **22** is positioned in the hole **18** in the casing **14**, then the upper end of the finger **54** strikes a shoulder **16***a* at the side of the hole **18** in the casing top **16** and is moved to the full-line position of Fig. 4 so that the balls contained in the tube are free to drop downwardly from the tube under the control of a circular plate **58** mounted in the casing **14** immediately below the top **16** of the casing. The balls **50** in a given tube **22** can only drop into the casing **14** with the tube **22** in position on casing **14** when a circular hole **60** in the plate **58** is in alignment with the particular tube.

More particularly, the circular plate **58** is rotatably carried on a flange **62** formed in association with a bracket **64** fastened to a length **66** of tubing which in turn is secured as at **68** to the post **10**. The bracket **64** includes a stationary arm **70** which extends out through one side of the casing **14** to support a substantially conventional coin control box **72**. The coin control box **72** includes a coin-receiving slot **74** and is of the type so that when a coin, for example a quarter, is accepted, then a shaft **76** in the coin box can be moved through a control arc by a control lever **78** on the front of the coin box. The shaft **76**, as best seen in Figures 4, 5, and 7, has secured to its end inside the casing **14** an arm **80** to which is pivotally fastened, as at **82**, a dog **84**. As best shown in Fig. 5, the dog **84** is mounted pivotally in the manner described in a bifurcated portion of the arm **80**. As shown in Fig. 7, the dog **84** normally rests down against a stop **86** so that when the shaft **76** is rotated in a clockwise direction as seen in Fig. 7, through an arc slightly greater than ninety degrees, the dog will engage with a post **88** in its path on the bottom of the circular plate **58** to move the plate **58** and opening **60** in the plate into alignment with the next tube **22** carried by the casing **14**. This action is achieved in the movement of the arm **80** and dog **84** from the full line position shown in Figure 7 to the chain-dotted line position shown. In the return counter-clockwise movement of the shaft **76**, arm **80** and dog **84** (as occasioned by spring mechanism associated with the shaft **76** inside the coin control box **72** and normally urging the shaft **76** to rotate in a counter-clockwise direction as seen in Fig. 7), the dog **84** will strike against the side of the following post **88**, or against an inclined side **90** formed on the post with the dog **84** tilting about its pivot **82** freely and away from the stop **86** to allow the counter-clockwise return movement of the shaft **76**, arm **80**, and dog **84** without rotation of plate **58** to the full-line position of Fig. 7. It will be understood that a plurality of the posts **88** are provided in circumferentially spaced position around the plate **58**. Fig. 5 illustrates the positioning of the posts **88** circumferentially of the plate **58**. In the fully returned full line position of arm **80**, dog **84** will drop to the full-line position shown in Fig. 7 under gravitational force and inertia of the return rotation of shaft **76**.

Mechanism is provided in association with the plate **58** and the shaft **76** for insuring the proper alignment of the opening **60** with each tube **22** in turn, and this mechanism, as best seen in Fig. 6, includes a series of stops **92** spaced circumferentially of the circular plate **58** near the outer periphery thereof, as again shown in Fig. 5. Mounted on the stationary arm **70** is a narrow, upstanding bearing block **94** having a window **96** therein through which extends the shaft **76**, the shaft mounting an eccentric **98** in the window which engages with a plunger **100** normally urged downwardly against the eccentric **98** by a compression spring **102**. The plunger **100** normally engages with the low point of the eccentric **98** so that the plunger does not prevent movement of the circular plate **58** under the action of the arm **80** and dog **84** until such time as the stop **92** has moved past the plunger **100**. However, when this has occurred, the plunger is beginning to ride up on the higher point of the eccentric **98** so that the plunger **100** is engaged by the next circumferentially spaced stop **92** when the arm **80** and dog **84** are in the chain-dotted line position shown in Fig. 7 to thereby prevent the circular plate **58** from moving too far, and in order to insure alignment of the opening **60** in the circular plate **58** with the bottom of the next tube **22**.

When the opening **60** in the plate **58** is brought into alignment with the next tube **22**, the balls **50** therein fall into the casing **14**. The bottom **106** of the casing is formed on an incline and terminates in a funnel shape discharge opening **108** positioned above a basket or bucket **110** which may be carried on a bracket **112** fastened to the post **10**.

In the operation of the apparatus, it will be understood that the head **24** is raised by the operation of lever **32** so that a plurality of the tubes **22**, each with a full complement of balls, can be positioned with the lower ends of the tubes in the casing **14**, whereupon the head **24** is lowered and locked in place to secure the tubes in position. Then a customer wishing to buy, say, a quarter's worth of golf balls, will deposit a quarter in the coin control **72** which permits the lever **78** to be moved slightly greater than ninety degrees. The movement of the lever **78** rocks the shaft **76** to cause the dog **84** to engage with a post **88** to advance the circular plate **58** to bring the opening **60** in alignment with the bottom of a tube **22**. The rotating of the shaft **76** through an arc of slightly greater than ninety degrees also causes the eccentric **98** on the shaft to raise the plunger **100** upwardly so that a stop **92** engages with the plunger to insure accurate alignment of the opening **60** with the tube **22**. At this time, the balls **50** fall out of the tube **22**, flow through the casing **14**, out the discharge opening **108** into the basket **110** which the customer will then take to the driving tee. The spring associated with the shaft **76** in the coin control mechanism **72** will then return the shaft **76** and operating lever **78** to the original position and the apparatus will be ready for the next vending operation. A counter mechanism **120** is usually associated with the vending mechanism **72** and is tied in by a link **122** to shaft **76** so

that each sale of golf balls can be appropriately recorded. When all of the balls are sold from the tubes **22**, a new set of tubes will be placed in the apparatus, or the tubes in the apparatus will be refilled with golf balls.

In reloading the apparatus with new golf ball filled tubes, in order to prevent the golf balls from falling out of the tube which is placed in the opening **18** in the top of the casing which is last in alignment with the opening **60** of the rotary plate **58**, the operator reaches his finger in through the hole **18** and moves the circular opening **60** and the plate **58** an inch or so in either direction so that the opening **60** is no longer in alignment with the hole **18**. This movement is made possible because the spring-positioned plunger **100** is out of the way. The repositioning of the plate **58** does not prevent the arm **80** and dog **84** from engaging with the post **88** and bringing the opening **60** into alignment with the tube **22** when the coin mechanism **72**, lever **78**, and shaft **76** are next operated.

From the foregoing, it will be recognized that the various objects of my invention have been achieved by the provision of self-contained, durable and long-lived apparatus of relatively inexpensive and easily operated and maintained character, and which is readily serviced to replenish the supply of golf balls. An apparatus embodying the invention can be positioned at spaced points along a line of driving tees and will greatly improve golf ball sales to customers. Stealing of the golf balls or of money for a golf ball sale is substantially eliminated, and the apparatus is attractive and adds sales appeal to the driving range.

While in accord with the patent statutes I have specifically illustrated and described one best known embodiment of my invention, it is to be particularly understood that I am not to be limited thereto or thereby, but that the scope of my invention is defined in the appended claims.

I claim:

1. Apparatus for dispensing simultaneously a plurality of golf balls or the like including a hollow casing, a plurality of tubes directed upwardly from the casing and removable therefrom to facilitate filling of the tubes, each tube being adapted to contain a plurality of golf balls for delivery to said casing of all the balls in a tube upon single operation of a coin controlled release mechanism, a discharge chute on said casing, each tube having a latch for retaining the balls therein when the tube is removed from the casing, means on said casing engageable with said latch when said tube is mounted on said casing for engaging said latch to permit release of the balls, means releasably locking the tubes in the casing, a plate rotatably associated with the casing and having an opening adapted to be aligned in turn with each tube carried by the casing, coin released lever means for moving the opening in the plate into alignment with the next tube and including a dog pivotally carried by a shaft controlled by the lever means, a plurality of posts secured to said plate, said dog engaging a post to advance said plate, and stop means for insuring the alignment of the opening with the tube.

2. Apparatus for dispensing golf balls and the like including a hollow casing, a head, a post positioning the head on the casing, means extending through the post for mounting the head for movement to and from the casing, means for positively effecting said movement a plurality of tubes adapted to be removably gripped between the head and casing, each tube adapted to contain a plurality of golf balls, means for locking the head in the tube-gripping position, control means associated with the casing and extending therefrom to vary the relation of the tubes and casing for connecting the inside of the casing in turn with each tube, coin controlled means for releasing and locking said control means and a discharge spout connected to the inside of the casing for delivering the balls from inside the casing to a bucket positioned below the casing.

3. Apparatus for dispensing golf balls and the like including a hollow casing, a head, a post positioning the head on the casing, means extending through the post for mounting the head for movement to and from the casing, means for positively effecting said movement, a plurality of tubes adapted to be removably gripped between the head and casing, each tube adapted to contain a plurality of golf balls, means for locking the head in tube-gripping position, and controllable means associated with the casing for varying its action and connecting the inside of the casing in turn with each tube, said controllable means including a coin-release mechanism.

4. Golf ball dispensing apparatus comprising a dispensing base member, said base member having a discharge chute, a top member, a support column extending between said base and top members, a plurality of golf ball receiving tubes carried by said base member and secured thereagainst by said top member, said top member being longitudinally adjustably carried by said support column, and means carried by a lower portion of the apparatus and connected to said top member for moving said top member upwardly and releasing said golf ball receiving tubes.

5. Golf ball dispensing apparatus comprising a base member having a dispensing chute, a top member, a tubular support column extending between said base and top members, a plurality of golf ball receiving tubes removably carried by said base member and secured thereagainst by said top member, means slidably connecting said top member to said support column, and link and lever means carried by said support column and connected to said top member for moving said top member to and from engagement with said golf ball receiving tubes.

6. Apparatus for dispensing golf balls from a tube including a vertical post, a hollow substantially cylindrical casing secured to the post, the bottom of the casing slanting into a funnel discharge opening and the top thereof having circumferentially spaced openings therethrough, pivotal finger means for normally obstructing the lower end of a golf ball receiving and positioning tube received in the apparatus, a head slidably mounted on the upper end of the post, means associated with the top of casing for moving the finger means out of the way when the lower end of a said tube is inserted in the casing opening, said means including a shoulder adjacent each of said openings for deflecting said finger means, means operating through the post for moving the head downwardly to engage the upper end of one of said tubes when positioned by the apparatus and lock it in place in the casing openings, a circular plate rotatably mounted on said post inside the casing below the openings in the casing top and having a passage therethrough adapted to be aligned selectively with said openings of the casing, coin released lever means for moving the plate through an arc to bring the passage through the plate into alignment in turn with each opening through the casing top to allow golf balls in a said tube to flow through the funnel discharge opening, and means controlled by the lever means for stopping the arcuate movement of the plate when the plate is in opening aligning position.

7. Apparatus for dispensing golf balls including a vertical post, a hollow substantially cylindrical casing secured to the post, the bottom of the casing slanting into a funnel discharge opening and the top thereof having circumferentially spaced openings therethrough for receiving a plurality of removable tubes for mounting vertically in said openings, a column of golf balls being adapted to be stored in each tube, a head slidably mounted on the upper end of the post, means operating through the post for moving the head downwardly to engage the upper ends of any tubes positioned in the apparatus and lock them in place in the casing openings, a circular plate rotatably mounted on post inside the casing below the openings in the casing top and having a passage therethrough adapted to be aligned selectively

with said openings of the casing, coin released lever means for moving the plate through an arc to bring said passage through the plate into alignment in turn with each opening through the casing top to allow golf balls in any said tubes engaged with the apparatus to flow through the funnel discharge opening, and means controlled by the lever means for stopping the arcuate movement of the plate when in opening aligning position.

8. Apparatus for dispensing golf balls including a vertical post, a hollow substantially cylindrical casing secured to the post, the bottom of the casing slanting into a funnel discharge opening and the top thereof having circumferentially spaced openings therethrough, the apparatus being adapted to position a plurality of removable tubes each receiving a column of golf balls therein, a head slidably mounted on the upper end of the post, means for moving the head downwardly to engage the upper ends of any tubes positioned by the apparatus and lock them in place in the casing openings, a circular plate rotatably mounted inside the casing below the openings in the casing top and having a passage therethrough adapted to be aligned selectively with said openings of the casing, coin control means for moving the plate through an arc to bring said passage through the plate into alignment in turn with each opening through the casing top to allow the golf balls from a said tube in the apparatus to flow through the funnel discharge opening.

9. Apparatus for dispensing golf balls including a vertical post, a hollow substantially cylindrical casing secured to the post, the bottom of the casing slanting into a funnel discharge opening and the top thereof having circumferentially spaced openings therethrough, a plurality of removable tubes individually engaging said openings and extending upwardly from a column of golf balls being adapted to be stored in each tube, a head slidably mounted on the upper end of the post for engaging said tubes to secure them in the apparatus, means for moving the head downwardly to engage the upper ends of said tubes and lock them in place in the casing openings, a circular plate rotatably mounted inside the casing below the openings in the casing top and having only one passage therethrough adapted to be aligned selectively with any one of said openings of the casing, coin released lever means for moving the plate through an arc to bring said passage through the plate into alignment in turn with each opening through the casing top

to allow the golf balls from each said tube to flow through the funnel discharge opening, and means controlled by the lever means for stopping the arcuate movement of the plate when in opening aligning position.

10. Apparatus for dispensing golf balls including a vertical post, a hollow substantially cylindrical casing secured to the post, the bottom of the casing slanting into a funnel discharge opening and the top thereof having circumferentially spaced openings therethrough, a plurality of removable tubes for mounting vertically in said openings and extending upwardly therefrom, pivotal finger means carried by said tubes and normally obstructing the lower end of the tube, a column of golf balls being adapted to be stored in each tube, a head slidably mounted on the upper end of the post and having tube engaging apertures therein, means associated with the top of said casing for moving the finger means out of the way when the lower end of the tube is inserted in the casing opening, means operating through the post for moving the head downwardly to engage the upper ends of the said tubes and lock them in place in the casing openings, a plate rotatably mounted on said post inside the casing below the openings in the casing top and having a passage therethrough adapted to be aligned selectively with said openings of the casing, coin released lever means for moving the plate through an arc to bring, the passage through the plate into alignment in turn with each opening through the casing top to allow the golf balls from each tube to flow through the funnel discharge opening, and means controlled by the lever means for stopping the arcuate movement of the plate when the plate is in opening aligning position.

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