Oct. 28, 1969 K. B. VAN WOERT, JR 3,474,562

TOY AMUSEMENT BANK

Filed Oct. 14, 1968

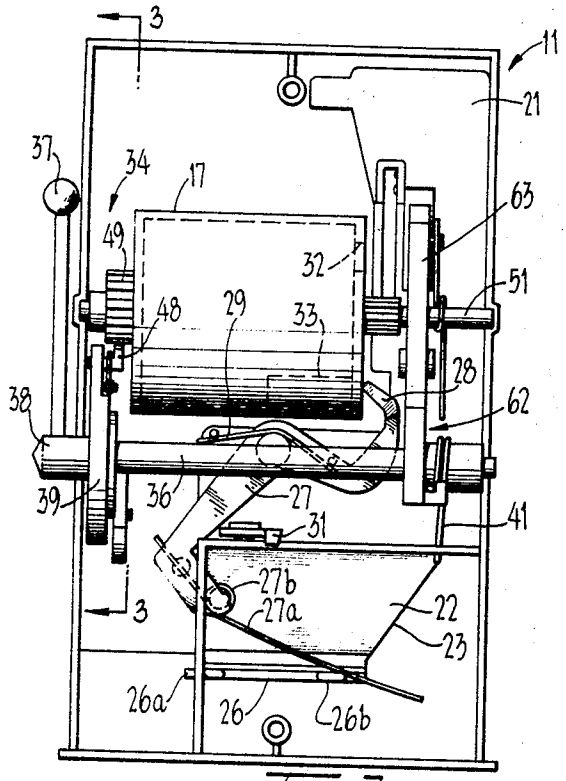

Fig. 2

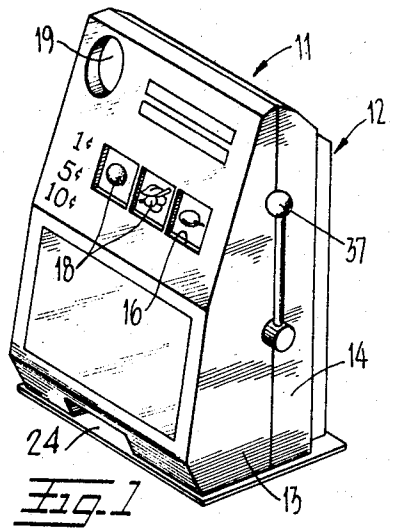

Fig. 1

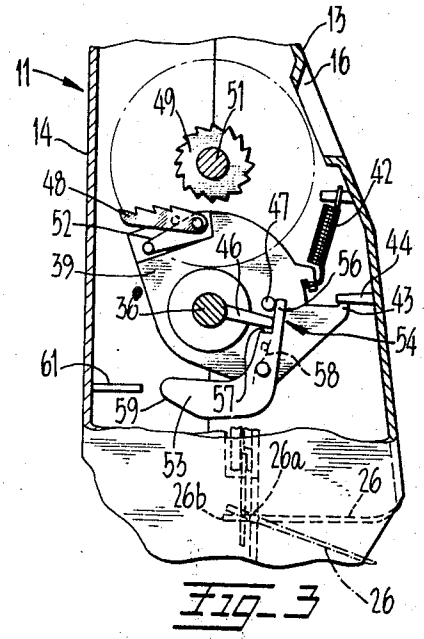

Fig. 3

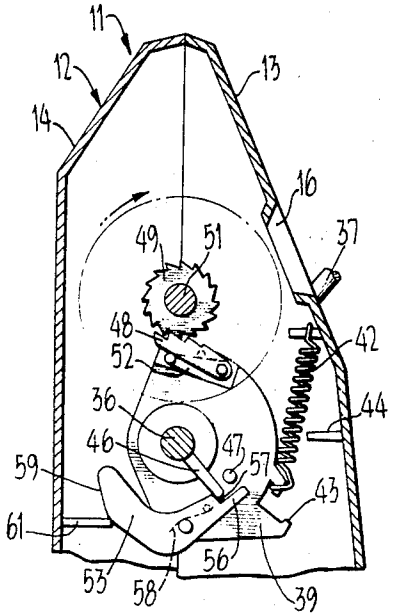

Fig. 4

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TOY AMUSEMENT BANK

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Continuation-in-part of application Ser. No. 543,185, Apr. 18, 1966. This application Oct. 14, 1968, Ser. No. 767,086

Int. Cl. A63h 33/00

U.S. Cl. 46—3 8 Claims

ABSTRACT OF THE DISCLOSURE

A toy amusement bank, in the form of a slot machine having a rotatable drum providing with symbol combinations along the cylindrical surface thereof is described and adapted to be rotated whenever a coin is deposited within a coin-receiving receptacle with which the bank is equipped. The bank can be set, selectively, either to retain each coin deposited therein or to eject accumulated coins at which latter setting the drum is caused to terminate rotation on a "jackpot" setting. The bank includes a rotatable drum, a handle-equipped drum actuator mechanism for rotating the drum whenever a coin is deposited within the coin receptacle, a closure element normally confining coins within a collection compartment to prevent their discharge from an opening therefor in the housing of the bank, operating structure controlling the position of the closure element which is conforming position thereof to an open position, and a manually operable control component determining the position of the operating structure and, therefore, the position of the closure element responsive thereto.

CROSS REFERENCE TO RELATED APPLICATION

This application is a continuation-in-part of copending patent application Ser. No. 543,185, filed Apr. 18, 1966 under the title "Toy Bank" and now Patent No. 3,406,976.

DISCLOSURE

This invention relates to a toy bank and, more particularly, a toy savings bank operative to amuse or entertain as coins are deposited therein.

As explained in the aforementioned copending patent application, Ser. No. 543,185, now Patent No. 3,406,976 toy banks have been provided heretofore in a variety of forms intended to encourage savings, and one such form is adapted to amuse or entertain whenever a coin is deposited therein. The savings bank of the present invention is an amusement device and takes the form of a slot machine having a symbol-equipped drum adapted to be rotated whenever a coin is deposited into the coin-receiving receptacle of the bank. The bank is provided with mechanism by means of which the coin-collection compartment thereof is made selectively operative either to accumulate the coins successively deposited therein or to discharge at least certain of the accumulated coins therefrom whenever the next successive coin is deposited within the receptacle and the drum rotated, such latter operation of the bank being analogous to a slot machine hitting a "jackpot" and upon such operation of the bank the rotatable drum thereof terminates its rotation on a "jackpot" setting.

An object, among others, of the present invention is in the provision of an improved toy amusement bank of the type disclosed in the aforementioned pending patent application, more particularly in this respect to provide an improved arrangement for maintaining coins within the collection compartment of the bank and to selectively

permit discharge of coins therefrom whenever operation of the bank is on the coin release or jackpot setting thereof; and also to provide improved mechanism for effecting rotation of the symbol-equipped drum of the bank following deposition of a coin within the bank's coin-receiving receptacle.

Additional objects and advantages of the invention, especially as concerns particular features and characteristics thereof, will become apparent as the specification proceeds with a detailed description of the embodiments of the invention, illustrated in the accompanying drawing, in which:

FIGURE 1 is a perspective view of a toy bank embodying the invention;

FIGURE 2 is an enlarged, rear view in elevation of the bank shown in FIGURE 1 with the rear casing section removed;

FIGURE 3 is a broken, vertical sectional view taken along the line 3–3 of FIGURE 2 showing the drum-actuating mechanism in itse inactive position; and

FIGURE 4 is a vertical sectional view similar to that of FIGURE 3 but showing the drum-actuating mechanism in an active position in which it is imparting rotation to the drum.

The toy savings bank illustrated in its entirety in FIGURE 1 is also an amusement device and takes the form of a lot machine having an arm or lever adapted to be angularly displaced to effect rotation of a symbol-equipped drum a coin is deposited in the coin-receiving receptacle of the bank. The bank is denoted generally by the numeral **11** and includes an upwardly extending housing **12** defining a chamber therewithin, such housing is formed in two sections, one of which is a front housing section or front plate **13** and the other a rear housing or back cover plate **14**. Each of the housing sections may be metal, plastic or the like, or they may be made of different materials if desired. The housing sections are releasably connected together in any suitable manner as by means of cap screws extending through the rear section **14** and into threaded openings provided therefor in the front section **13**.

The front section **13** is provided with a transversely elongated, rectangular viewing window **16** through which the cylindrical surface of a drum **17** is exposed and which drum is supported for rotation along an axis located at the mergence of the housing sections **13** and **14**. Various combinations of symbols **18** are provided on the cylindrical surface of the drum **17**, and the symbols are arranged in circumferentially spaced groups that are successively viewable through the window **16** as the drum rotates. The front section **13** is also provided with a circular coin-receiving receptacle **19** defining the entrance to a coin-delivery chute **21** located within the housing and mounted along the inner surface of the front housing section **13**. The chute **21** extends downwardly to a coin-collection compartment **22** having a coin-release chute **23** communicating with a recessed discharge opening **24** adjacent the lower end of the front housing section **13**.

Communication between the coin-collection compartment **22** and discharge opening **24** is selectively determined by the position of a closure element **26** supported for pivotal movement between a closed, generally horizontal position shown in FIGURE 2 (and in FIGURE 3 by broken lines) and a downwardly inclined position shown by dot-and-dash lines in FIGURE 3. In this respect the closure element **26** is provided with a transversely extending pivot pin **26***a* formed integrally therewith which supports the closure element for pivotal or swinging displacements between the open and closed positions thereof.

An operating structure in the form of a centrally pivoted crank **27** mounted upon the chute **21** for movement

about a horizontal axis controls the position of the closure element **26** through a spring **27***a* constrained upon the crank **27** (as indicated generally at **27***b*) and one end of which is adapted to bear downwardly upon a tab **26***b* projecting rearwardly beyond the pivot axis **26***a* of the closure element. The upper end of the crank arm **27** is provided with a hook **28** that is turned inwardly toward an end wall of the drum **17**; and the crank **27** is loaded as by means of a spring **29** that biases it in a counter-clockwise direction (as viewed in FIGURE 2) so as to urge the hook **28** toward engagement with the adjacent end wall of the drum.

However, a selector arm or control component **31** is supported for pivotal movement about a generally vertical axis between first and second or closed and open positions, and is held in any such position by a system of slots (not shown) in the rear housing section **14** and through which an end of the arm **31** extends. In the first position of the arm **31** (which is shown in FIGURE 2), it engages the crank **27** to displace it, and thereafter maintain it, against the biasing force of the spring **29** into the position shown in FIGURE 2, thereby preventing the hooked end **28** of the crank from engaging the adjacent end of the drum **17** with the result that the drum is free to rotate. This same position of the crank **27** causes the spring **27***a* to bear downwardly upon the tab **26***b* of the closure element **26** with sufficient force to maintain it in the upper closed position thereof in which any coins within the collection compartment **22** are confined therewithin by the closure element.

In the second position of the arm **31** in which it is swung toward the left as viewed in FIGURE 2, it becomes disengaged from the crank **27** thereby placing it entirely under the influence of the spring **29** which causes the crank to rotate in a counter-clockwise direction (as seen in FIGURE 2) except to the extent that such rotation is inhibited by engagement of the end portion **28** of the crank with the adjacent end wall of the drum **17**. The drum is hollow and is provided with a slot **32** in such adjacent end wall thereof at a position in which it can be brought into alignment with the hook **28** so as to enable the hook to be inserted thereinto. Accordingly, when the drum **17** is rotated, and assuming the crank **27** to be free of constraint from the arm **31**, the slot **32** comes into alignment with the hook **28** whereupon the hook enters the slot as a consequence of the biasing force of the spring **29**, thereby terminating rotation of the drum **17**. The drum **17** therefore has a predetermined position enforced thereon by the hook **28** when its stops rotating and, therefore, the symbols **18** then aligned with the window **16** can be selected so as to provide any desired combination as, for example, all "jackpots." It should be observed that when the crank **27** is permitted to rotate in such counter-clockwise direction by insertion of the hook **28** into the slot **32**, the force applied by the spring **27***a* to the tab **26***b* of the closure element **26** is relieved, thereby permitting the closure element to swing downwardly under the gravitational force of its own weight and the weight of any coins supported thereon, whereupon the coins are dumped into the discharge opening **24**.

After the bank has been opened in this manner by displacing the control component or arm **31** into the open or jackpot position thereof, it must be returned to its usual closed or "play" position in which the hooked end **28** of the crank **27** is withdrawn from the slot **32** in the drum **17** and the closure element **26** is returned to its closed position under the biasing force of the spring **27***a* imparted thereto. In such position of the arm **31**, coins will be retained within the collection compartment **22**, and although the position at which the drum **17** might terminate rotation then has no effect on operation of the bank, the drum is provided with a counterweight **33** therewithin to prevent it from stopping at a position wherein the jackpot combination of symbols **18** would appear in the window **16**.

To effect rotation of the drum **17**, drum-actuating mechanism **34** is provided. The actuating mechanism **34** includes a shaft **36** journalled for rotation along the mergence of the housing sections **13** and **14** below the drum **17** and substantially parallel to the axis of rotation thereof. One end of the shaft **36** extends through the side of the housing and is equipped exteriorly thereof with a handle **37**. The shaft **36** is enlarged to provide an integral hub **38** adjacent the handle **37** upon which a disc **39** is supported for rotation relative thereto. The shaft **36** is resiliently biased by a spring **41** in an angular direction in which the handle **37** is in a vertical position (i.e., counter-clockwise as the shaft is viewed in FIGURES 3 and 4.)

The disc **39** is resiliently biased by a spring **42** for rotation in the same angular direction, and a pin or abutment **43** projecting radially outwardly from the disc is engageable with a stop **44**, as shown in FIGURE 3, provided by the housing section **13** to determine the maximum angular position of the disc in a counter-clockwise direction (as viewed in this figure). A drive arm or pin **46** projecting radially outwardly from the hub **38** is engageable with a stop or abutment **47** projecting transversely from the plane of the disc **39**. The relative positions of the parts are such that when the abutment pin **43** is in engagement with the stop **44** and the arm **37** is not constrained, the spring **41** causes the drive pin **46** to engage the stop **47** whereupon the handle **37** is in the generally vertical or upright position illustrated in FIGURES 1 and 2. Accordingly, whenever the handle **37** is released after it is actuated to rotate the drum **17**, it is returned to its upright position.

Rotation of the drum **17** is effected by the actuating mechanism **37** through means of a pawl **48** pivotally mounted on the inner face of the disc **39** adjacent the periphery thereof. The pawl **48** is engageable with a ratchet wheel **49** affixed to the drum **17** so as to prevent relative rotation therebetween, and the drum is journalled for rotation upon a shaft **51** positioned along the lines of mergence of the housing sections **13** and **14** in parallel relation with the shaft **36**, as heretofore stated. The pawl **48** is loaded or biased by a spring **52** in a direction permitting the pawl to resiliently over ride the ratchet wheel whenever the handle **37** and disc **39** are rotated in a clockwise direction from the position shown in FIGURE 3 toward the position illustrated in FIGURE 4. However, upon rotation of the disc **39** in the opposite direction (as shown in FIGURE 4), the pawl **48** engages the ratchet wheel **49** to rotatably drive the drum **17**.

In this respect, a generally L-shaped latch cam **53** is pivotally mounted upon the disc **39** adjacent the lower end thereof, and the cam is provided with a notch **54** at one end defining a reduced end portion **56** terminating in a stop shoulder **57**. The cam **53** is biased by a spring **58** in a direction resiliently urging the cam in a counter-clockwise direction (as viewed in FIGURES 3 and 4) so as to cause the reduced end portion **56** thereof to abut the stop **47**. In this configuration, the drive pin **46** is aligned with the stop shoulder **57** and when the handle **37** is actuated or pulled downwardly so as to rotate the shaft **36** in a clockwise direction (as viewed in FIGURE 3), the drive pin **46** engages the shoulder **57** and thereby rotates the disc **39** in a clockwise direction because of its connection to the cam **53**. As heretofore explained, the pawl **48** over rides the ratchet wheel **49** when the various components are moved into the approximate configuration illustrated in FIGURE 4 from that of FIGURE 3.

The latch cam **53** is provided with a cam surface **59** extending beyond the periphery of the disc **39**, and such cam surface is adapted to engage a pin or abutment **61** projecting inwardly from the housing section **14**. Accordingly, as the disc **39** is displaced in a clockwise direction by actuation of the arm **37**, the cam **53** engages the pin **61** which is effective to angularly displace the cam in a clockwise direction (as viewed in FIGURE 4) until

the shoulder 57 is withdrawn from the drive pin 46, whereupon the disc 39 is freed for rotation in the opposite or counter-lockwise direction as a consequence of the biasing force of the spring 42 wholly independently of the shaft 36, arm 37 and drive pin 46. During such angular displacement of the disc 39 in the opposite direction, the pawl 48 engages the ratchet wheel 49 to effect rotation of the drum 17 as the disc returns to the drive-completed position thereof shown in FIGURE 3. The drum 17 being free to rotate, it continues to rotate until its momentum is naturally expended in the "play" or closed position of the bank or is abruptly terminated by insertion of the hook 28 into the drum slot 32 in the open or jackpot position of the bank.

For the purpose of preventing rotation of the shaft 36 (and therefore operation of the drum-actuating mechanism 34 and rotation of the drum 17) except when a coin is placed in the receptacle 19, a locking mechanism 62 of conventional design is operatively arranged with the shaft 36. Such locking mechanism includes a coin-sensing arm 63 having portions thereof projecting into the coin chute 21. Ordinarily, the arm 63 is in a position causing the shaft 36 to be locked against rotation wherefore the handle 37 cannot be pulled downwardly and the drum cannot be rotated. However, in response to a coin being placed in the receptacle 19, the portions of the arm 63 projecting into the chute are engaged by the coin which angularly displaces the arm to a position in which the shaft is released for rotation. Upon rotation of the shaft 36, the arm 63 is moved an additional increment in the angular direction wherein the projecting portions thereof are clear of the chute, thereby permitting the coin to drop downwardly therethrough and into the collection compartment 22.

In the over-all operation of the bank 11, assuming that the selector arm 31 is in the "play" or closed position thereof so that the hook 28 is remote from the adjacent wall of the drum 17 and the closure element 26 is maintained in its upper closed position, deposition of a coin in the receptacle 19 frees the shaft 36 for rotation so that when the handle 37 is then pulled downwardly, the drum-actuating mechanism 34 functions as heretofore described to rotate the drum 17. The deposited coin is therefore delivered to the collection compartment 22 and the drum 17 ultimately stops rotating at an angular position enforced thereon by the counterweight 33. When it is desired to withdraw money from the bank, the arm 31 is displaced into the open or jackpot position thereof thereby releasing the crank 27. Placement of a coin in the receptacle 19 enables the handle 37 to be pulled downwardly whereupon the drum 17 is rotated by operation of the drum-actuating mechanism 34 until the slot 32 is brought into alignment with the end 28 of the crank 27. Such alignment causes the end of the crank to enter the slot 32, thereby abruptly terminating rotation of the drum and causing the spring 27*a* to release the closure element 26, whereupon the contents of the collection compartment 22 are released and fall into the discharge opening 24.

While in the foregoing specification, an embodiment of the invention has been set forth in considerable detail for purposes of making a complete disclosure thereof, it will be apparent to those skilled in the art that numerous changes may be made in such details without departing from the spirit and principles of the invention.

I claim:

1. In a toy bank having a housing provided with both a coin infeed receptacle and coin discharge opening and also with a coin collection compartment in communication with each to receive coins from said receptacle and selectively release the same to said opening, a closure element pivotally supported within said housing for angular movement between a closed position in which coins are confined thereby within said collection compartment and an open position in which any coins within said collection compartment are released for passage therefrom to said discharge opening, operating structure movably mounted within said housing and including a spring member engageable with said closure element to bias the same into the closed position thereof, said operating structure being selectively movable between a first position in which said closure element is maintained in its closed position by the biasing force of said spring member and a second position in which said spring member is ineffective to maintain said closure element in the closed position thereof, spring means urging said operating structure toward such second position, a control component selectively movable from the exterior of the housing between a closed position confining said operating structure in the first position thereof and an open position releasing said operating structure for movement into its second position, a drum journalled for rotation within said housing, and manual actuating mechanism freed for rotating said drum whenever a coin is deposited within said receptacle, said drum including means arranged to cooperate with said operating structure so that said drum in one angular position thereof enables said operating structure to move into its second position whenever permitted by said control component being in the open position thereof.

2. The toy bank of claim 1 in which said actuating mechanism includes a disc supported within said housing for angular displacements between drive-completed and drive-initiating positions, spring means connected with said disc and resiliently biasing the same toward the drive-completed position thereof, a ratchet wheel secured to said drum so as to prevent relatively rotation therebetween, a pawl carried by said disc and being resiliently biased toward engagement with said ratchet wheel so as to over ride the same when said disc is displaced from the drive-completed to the drive-initiating position and to drivingly engage said ratchet wheel when said disc is displaced in the opposite direction so as to effect rotation of said drum, and a handle-equipped shaft journalled for rotation in said housing and provided with a drive pin cooperative with said disc to displace the same into such drive-initiating position from which it is returned to the drive-completed position under the resilient force of said spirng means connected therewith.

3. The toy bank of claim 2 in which said disc is equipped with a stop means resiliently biased into a drive position in which it is engaged by said drive pin to effect such displacement of said disc into the drive-initiating position thereof and which drive pin is disengaged from said stop means when displaced in excess of a predetermined angular distance so as to enable said disc to be returned to its drive-completed position independently of said drive pin and handle-equipped shaft.

4. The toy bank of claim 1 in which said closure element is equipped with a tab projecting therefrom on one side of the pivotal support therefor, and in which said spring member engages said tab in the first position of said operating structure and is substantially withdrawn therefrom in the second position of said operating structure to enable said closure element to pivot into the open position thereof in response to gravitational forces operative thereon as a consequence of its own weight location on the other side of such pivotal support and the weight of any coins within said collection compartment bearing thereagainst.

5. The toy bank of claim 1 in which said housing is provided with a viewing window through which said drum can be observed, and in which said drum is provided with a plurality of angularly spaced symbol groupings successively alignable with said window as the drum rotates, said drum having an end wall provided with an opening therein and said operating structure having a portion thereof insertable into such opening under the biasing force of the aforesaid spring means in one angular position of said drum whenever said control component is in the open position thereof to free said operating structure for movement into its second position.

6. The toy bank of claim 5 in which said closure element is equipped with a tab projecting therefrom on one side of the pivotal support therefor, and in which said spring member engages said tab in the first position of said operating structure and is substantially withdrawn therefrom in the second position of said operating structure to enable said closure element to pivot into the open position thereof in response to gravitational forces operative thereon as a consequence of its own weight located on the other side of such pivotal support and the weight of any coins within said collection compartment bearing thereagainst.

7. The toy bank of claim 6 in which said actuating mechanism includes a disc supported within said housing for angular displacements between drive-completed and drive-initiating positions, spring means connected with said disc and resiliently biasing the same toward the drive-completed position thereof, a ratchet wheel secured to said drum so as to prevent relatively rotation therebetween, a pawl carried by said disc and being resiliently biased toward engagement with said ratchet wheel so as to over ride the same when said disc is displaced from the drive-completed to the drive-initiating position and to drivingly engage said ratchet wheel when said disc is displaced in the opposite direction so as to effect rotation

of said drum, and a handle-equipped shaft journalled for rotation in said housing and provided with a drive pin cooperative with said disc to displace the same into such drive-initiating position from which it is returned to the drive-completed position under the resilient force of said spring means connected therewith.

8. The toy bank of claim 7 in which said disc is equipped with a stop means resiliently biased into a drive position in which it is engaged by said drive pin to effect such displacement of said disc into the drive-initiating position thereof and which drive pin is disengaged from said stop means when displaced in excess of a predetermined angular distance so as to enable said disc to be returned to its drive-completed position independently of said drive pin and handle-equipped shaft.

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