

Nov. 26, 1935.

R. A. VOGEL ET AL

2,022,445

VENDING MACHINE

Filed May 22, 1933

2 Sheets-Sheet 1

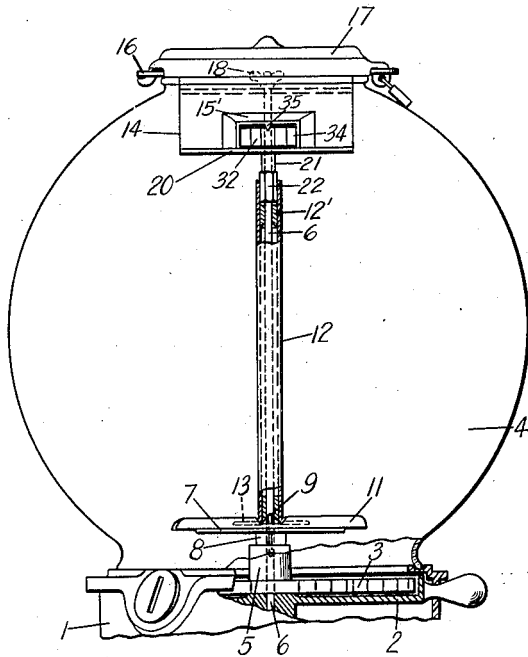


Fig. 1

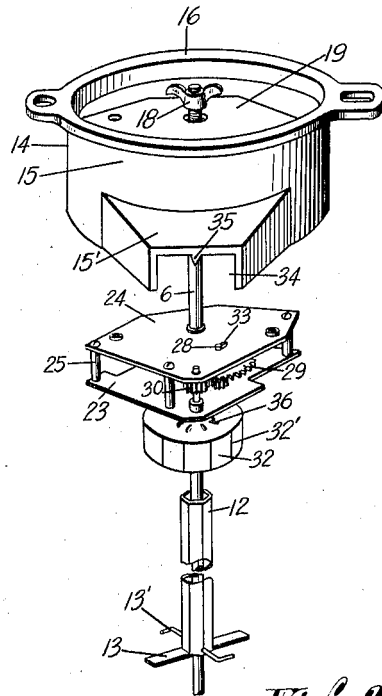


Fig. 2

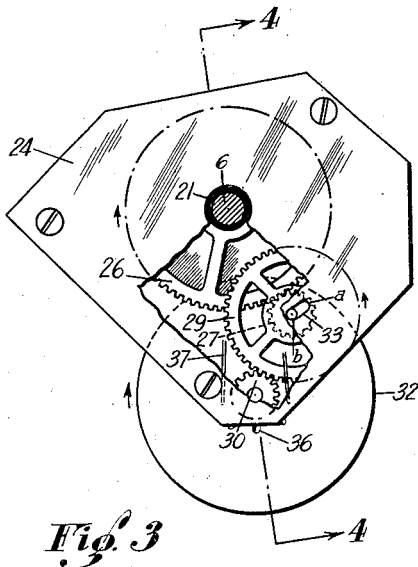


Fig. 3

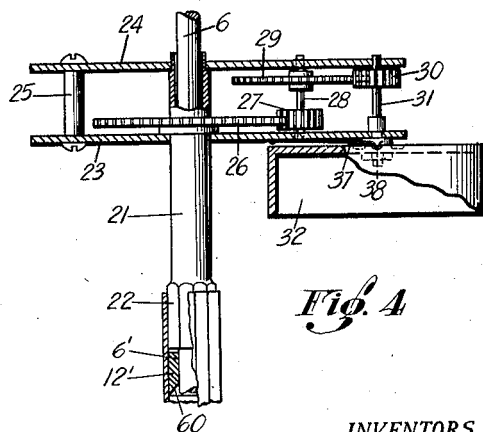


Fig. 4

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2 Sheets-Sheet 2

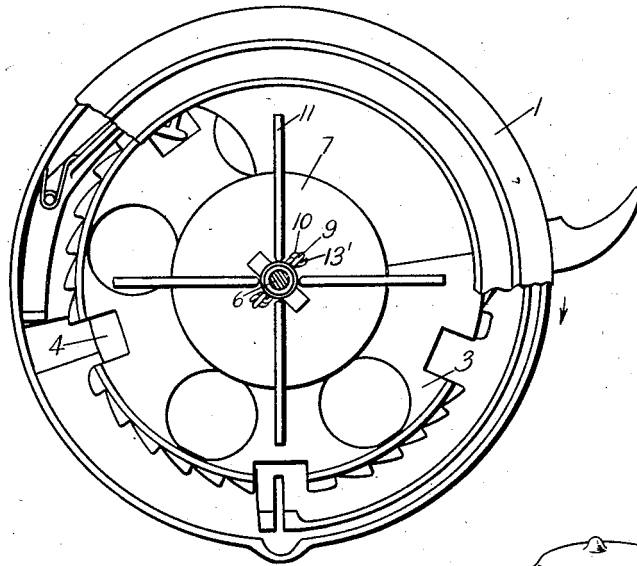


Fig. 5

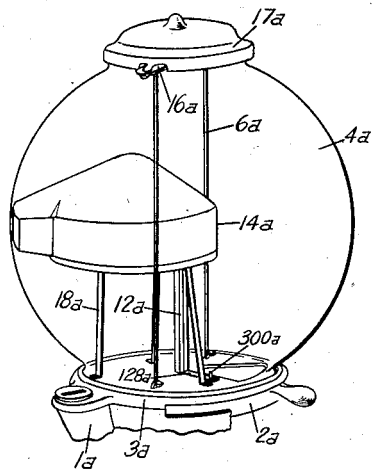


Fig. 7

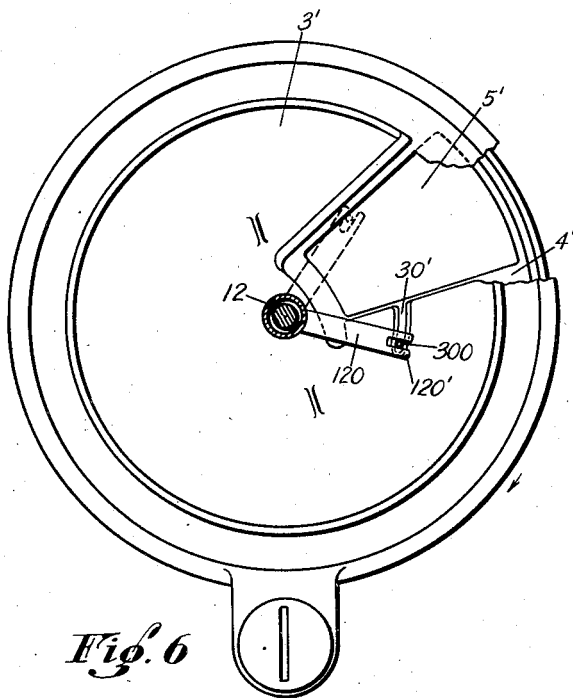


Fig. 6

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# UNITED STATES PATENT OFFICE

2,022,445

## VENDING MACHINE

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6 Claims. (Cl. 273—143)

Our invention relates to vending machines. It has to do, more particularly, with a coin-controlled vending machine having an amusement device associated therewith, such amusement device being adapted to serve as an added incentive for a person to operate such machine.

One of the objects of our invention is to provide an amusement device which may be readily applied to a vending machine adapted to vend articles when a proper coin is inserted, such amusement device being operable by operation of the vending machine and being adapted to serve as an added inducement for a person to operate the machine.

Another object of our invention is to provide an amusement device of such a type that it may be applied to vending machines with a minimum of difficulty and which serves as an attachment that may be easily applied to various types of vending machines now commonly in use.

Another object of our invention is to provide an amusement device which is adapted to be used on a vending machine and which is very simple in structure and inexpensive to manufacture.

Another object of our invention is to provide an amusement device which is adapted to be used with vending machines and which is of a very sturdy structure, will not readily become inoperative, and will very effectively withstand any shocks to which it might be subjected during the operation of the machine.

In its preferred form, our invention contemplates the provision of a vending machine having an amusement device associated therewith and mounted in such a position that it will be readily visible to a person operating the machine. This amusement device is adapted to be operated when a proper coin is inserted in the vending machine and an article or articles is vended therefrom.

This amusement device may take various forms but we preferably provide a device which is mounted in the upper end of the hopper and which embodies a drum or wheel member having various figures, designs, et cetera, which may be of various colors, produced thereon. Thus drum or wheel member is so mounted in a casing that only a portion of the drum or wheel having these colored figures or designs thereon is visible to the operator when the drum is stationary. This drum member is operatively connected to the operating mechanism of the vending machine so that when the machine is operated the drum member will be rotated. The amusement device

is of such a type that operation of the machine will cause the drum member to rotate at a high rate of speed and for a considerable length of time after the operation of the machine has ceased. During rotation of the drum member, the operator may attempt to guess which colored design or figure will finally be visible when the drum member comes to rest.

The preferred embodiment of our invention is shown in the accompanying drawings wherein similar characters of reference designate corresponding parts and wherein:

Figure 1 is a side elevation of a portion of a vending machine having an amusement device made in accordance with our invention associated therewith.

Figure 2 is a perspective view showing the amusement device, the various parts thereof being shown in spaced disassembled relation.

Figure 3 is a plan view partly cut away, of the operating mechanism of the amusement device shown in Figure 2.

Figure 4 is a section taken substantially on line 4—4 of Figure 3.

Figure 5 is a plan view of the operating mechanism of the vending machine shown in Figure 1 and illustrating how the lower end of the operating mechanism of the amusement device is connected thereto.

Figure 6 is a plan view partly broken away of the operating mechanism of a slightly different type of vending machine showing how the operating mechanism of the amusement device is connected thereto.

Figure 7 is a side elevation of a portion of a vending machine of a type similar to that shown in Figure 6 and showing how the amusement device may be mounted thereon.

With reference to the drawings, and particularly to Figures 1 and 5, we have shown a vending machine of a common type to which an amusement device made in accordance with our invention may be applied. This vending machine embodies a base member 1 having the operating mechanism of the vending machine disposed at the upper end thereof. This operating mechanism embodies a vender lever plate 2 which is rotatably mounted at the upper end of the base 1. A feeding plate 3 is disposed directly above the vender lever plate 2. When a proper coin is inserted in the machine and the vender lever plate 2 is rotated, the feeding plate 3 will be locked thereto by the coin and will rotate therewith. Rotation of the feeding plate 3 causes an

article to be vended from the machine in a well known manner.

The feeding plate 3 serves as a bottom for a commodity-receiving hopper 4 which is mounted on the upper end of the base 1. This hopper embodies a glass bowl having its lower end supported on the upper end of the base 1. The feeding plate 3 has a hub 5 formed thereon. A rod 6 passes upwardly through this hub and is used for maintaining the hopper in position on the machine, as will be later more fully explained. The vender lever plate 2 and the feeding plate 3 are rotatably mounted on this rod and rotation of these members will not cause rotation of the rod.

A plate member 7 is mounted above the upper end of the hub 5 and is provided with an opening through which the rod 6 freely passes. This plate 7 has a depending hub 8 which abuts the upper end of the hub 5. Cotter pins 9 are provided for fastening the plate 7 to the feeding plate 3 so that both of these plates will rotate together. These pins 9 have their lower ends disposed in openings in the upper end of the hub 5 and extend up through openings 10 formed in the plate 7 so that this plate will rotate with the plate 3.

The plate 7 has a plurality of radially extending fins 11 formed on the upper surface thereof. The plate 7 will support some of the articles disposed in the hopper 4 and this plate also serves as an agitator for the articles disposed therein. The structure described thus far is of a well known type of vending machine.

As previously stated, the amusement device which we have devised may be used as an attachment to various types of vending machines and may be readily applied thereto. With the type of machines shown in Figures 1 and 5, the rod 6 usually serves the purpose of maintaining the hopper on the base of the machine and maintaining a retaining ring to which a closure member is secured on the upper open end thereof. When our amusement device is applied to the machine, the rod 6 retains such functions but also serves as a means for mounting our amusement device on the machine.

Thus, in Figure 1, we have shown a hollow sleeve member 12 which fits over the rod 6. This hollow sleeve member has a plurality of radially extending lugs 13 formed on the extreme lower end thereof and a plurality of hooks 13' also disposed thereon. The lower end of the sleeve 12 rests on the upper surface of the plate 7 and the lugs 13 will be disposed between the inner ends of the fins 11 of the plate 7 and the hooks 13' may be passed through the loops of the cotter pins 9 as shown in Figure 5. Thus, when the plate 7 is rotated, the sleeve member 12 will also be rotated. If the plate 7 is not used, which may be desirable in some instances, the sleeve may be connected directly to the hub 5 of the vender lever plate 2.

In order to facilitate application of the amusement device to the vending machine, the sleeve 12 is provided with a heavier metal sleeve member 12' disposed therewithin adjacent the upper end thereof. This sleeve member 12' may be welded or soldered in position or secured in position in some other suitable manner. This sleeve member has a central opening 5' extending therethrough and through which the rod 6 is adapted to pass. The lower end of this opening is flared as indicated at 60. The lower end of the sleeve member 12 has a second sleeve member 12', ex-

actly like the one at the upper end, mounted in the lower end thereof. It will be readily apparent that when the sleeve member 12 is slipped down over the rod 6, the flared portions 60 of the sleeves 12' will guide the end of the rod through the openings therein. When the sleeve 12 is finally positioned on the rod 6, the sleeve members 12' will center the sleeve 12 with relation to the rod 6 and will always maintain it in a centered position relative thereto.

The amusement device 14 is adapted to be mounted in the upper end of the hopper 4 in a readily visible position. This amusement device 14 embodies a casing 15 which is adapted to contain the various parts thereof. This casing 15 may be formed integrally with a ring member 13 which serves as a means for mounting and locking a closure member 17 on the upper open end of the hopper 4 or may be formed separately and connected thereto. The casing 15 is of such a diameter that it will fit within the upper open end of the hopper and the ring 13 is of such a diameter that when the amusement device is inserted in the upper end of the hopper the ring will rest on the upper edge thereof. The rod 6 will pass through the casing 15 of the amusement device, as will be later more fully described, and a wing nut 18 is adapted to be threaded on the upper end thereof so that the amusement device and the retaining ring 16 will be held in a proper position.

The casing 15 of the amusement device has its upper end closed by a plate 19 and its lower end closed by a removable plate 20. The operating mechanism of the amusement device is disposed in this casing 15 and will now be described in detail.

As shown in Figure 4, this mechanism embodies a sleeve member 21 which fits around the rod 6 extending therethrough and which has a lower end 22 of angular cross-section. This lower end of the sleeve 21 fits within the correspondingly shaped upper end of the sleeve member 12 so that rotation of sleeve member 12 will cause rotation of the sleeve member 21. The upper sleeve member 12' in the sleeve member 12 is so disposed that when the lower portion of sleeve member 22 is inserted in the upper end of sleeve 12, the portion 21 and sleeve 12' will not contact with each other. The sleeve member 21 extends upwardly into the casing 15 and is rotatably supported in suitable bearings formed in a pair of spaced horizontally disposed plates 23 and 24 which support mechanism which will be hereinafter described. These plates 23 and 24 are secured together and are maintained in spaced relation by spacer members 25.

The sleeve 21 has a comparatively large gear wheel 26 keyed thereon and disposed directly above the plate member 23. This gear wheel 26 is adapted to mesh with a pinion 27 disposed adjacent the periphery thereof and at the right side of the center of the gear wheel 26. This pinion 27 is keyed on a vertically disposed pin 28 which is rotatably mounted in suitable bearing members in the plates 23 and 24 and at a point directly above the lower plate 23. Adjacent the upper end of the pin 28 and below the plate 24, a second gear wheel 29 somewhat smaller than the gear wheel 26 is keyed on this pin. This gear wheel 29 is adapted to mesh under certain conditions with a pinion 30 which is disposed adjacent the periphery of the gear wheel 29 and to the left of the center thereof, as shown in Figure 3. The center of the gear wheel 26 and the

center of pinion 30 are in alignment. The pinion 30 is keyed on the upper end of a pin 31 which is rotatably mounted in bearing members in the plates 23 and 24. This pin 31 extends downwardly below the plate 23 and has a drum or wheel member 32 keyed on the lower end thereof.

The pin 28 on which the pinion 27 and the gear wheel 29 are mounted, has its upper and lower ends disposed in short slot members 33 formed in the plates 23 and 24. As shown in Figure 3, these slot members extend outwardly away from the periphery of the gear wheel 26, from a point *a* to a point *b*. The pin 28 is mounted in this manner so that when the vender lever plate and the feeding plate are rotated in the direction of the arrow in Figure 5, this rotation is imparted to the gear wheel 26 through the medium of the sleeves 12 and 21. The drum member 32 will be rotated in a direction indicated by the arrow in Figure 3. However, upon rotation of the vender lever plate and the feeding plate in a reverse direction and consequently rotation of sleeve 12, sleeve 21 and gear wheel 26 in a reverse direction the drum member 32 will not be rotated in a reverse direction and will not be affected at all.

This is due to the fact that when the sleeve 21 is rotated in a clockwise direction and causes rotation of the gear wheel 26 in a clockwise direction, as indicated by the arrow in Figure 3, the gear wheel 26 which is in mesh with the pinion 27 tends to move such pinion along with it in the direction of rotation of this gear wheel. This will cause the pin 28 to move down into the ends *b* of the slots 33 and will cause the gear wheel 29 to mesh with the pinion 30. In other words, due to the arrangement of this mechanism, when the gear wheel 26 is rotated in the direction indicated by the arrow, the structure consisting of the gear wheel 29, pin 28 and pinion 27 is caused to tightly wedge between the periphery of the gear wheel 26 and the periphery of the pinion 30. However, upon rotation of the gear wheel 26 in a reverse direction, the pinion 27 will tend to move along in the direction of rotation of gear wheel 26 and consequently will force the pin 28 into the ends *a* of the slots 33. Consequently, the gear wheel 29 will move away from the pinion 30 and will not mesh therewith. In fact, the only time that the gear wheel 29 meshes with the pinion 30 is during the time that the sleeve 21 is turned in a clockwise direction. It is not necessary to employ springs to accomplish these movements.

Thus, when the vender lever plate and the feeding plate are rotated in a clockwise direction, the gear wheel 26 will rotate in a similar direction and will cause the gear wheel 29 to mesh with the pinion 30 and to rotate the drum or wheel member 32 in the direction indicated by the arrow in Figure 3. Due to the speed increasing gearing, only a slight movement of the vender lever plate and feeding plate will cause the drum member 32 to rotate at a high rate of speed. When rotation of the sleeve 21 and gear wheel 26 in a clockwise direction stops, the gear wheel 29 will immediately move out of meshing relation with the pinion 30. This is due to the fact that the pinion 30 will be rotating in such a direction as to cause the gear wheel 29 to move away therefrom and consequently cause the pin 28 to move into the end *a* of the slots 33 if the gear wheel 26 is not rotating in a clockwise direction and tending to force the gear wheel 29 into engagement with the pinion 30. Thus,

rotation of the drum or wheel member 32 may continue, even after the rotation of sleeves 12 and 21 and gear wheel 26 in a clockwise direction ceases. Also, as previously stated, when the sleeves 12 and 21 and consequently the gear wheel 26, are rotated in a counterclockwise direction this will throw the gear wheel 29 out of engagement with the pinion 30 and consequently will not effect rotation of the drum member 32 in a reverse direction. Thus, when the vender lever plate is moved in a clockwise direction to vend articles from the machine the drum member 32 will be rotated at a high rate of speed. However, upon rotation of the vender lever plate in a reverse direction this will not affect rotation of the drum member 32 even though the sleeve members 12 and 21 are rotated in a reverse direction.

Although we have described our amusement device as being operated by movement of the vender lever plate in a clockwise direction, or in other words, in a direction to cause vending of articles from the machine, it will be readily apparent that the mechanism may be so modified that movement of the vender lever plate in its return stroke to initial position, after vending of articles from the machine, will cause operation of the amusement device. If the machine operates in this manner, the mechanism will preferably be such as to preclude operation of the amusement device during the vending stroke of the vender lever plate.

The drum or wheel 32 may have any desired indications, figures, et cetera, of various colors or designs on the periphery thereof. For example, there may be a number of race horses illustrated thereon and each of these horses may be of a different color. The drum or wheel is preferably divided into a plurality of portions by the lines 32' (Figure 2).

The casing 15 of the amusement device is provided with an outwardly projecting extension 15' which is adapted to receive a portion of the drum or wheel member 32. A window 34 of a desired width is provided in the outer end of the extension 15' and an indicating point 35 may be mounted at the upper edge thereof. The extension 15' extends outwardly a considerable distance so that the outer end thereof will lie closely adjacent the inner surface of the glass bowl 4. This extension 15' will be disposed in such close relation to the inner surface of the glass bowl as to preclude entrance of articles between these members. Thus, the drum or wheel member 32 will always be readily visible and will be disposed close to the person operating the machine.

In order to prevent rotation of the drum member 32, for an undesirable length of time after operation of the machine, we provide a braking mechanism which will gradually bring it to a stop. This braking mechanism, as shown in Figure 2, embodies a plurality of radially extending grooves or slots 36 formed in the upper surface of the drum member 32. A spring 37, Figure 4, or a plurality of springs, are mounted on the lower surface of plate 23. This spring has a depending portion 38 at its outer end which is adapted to cooperate with the grooves 36. When the drum member 32 is rotated, the spring 37 will resiliently press against the upper surface thereof. This resilient pressure and the fact that the downwardly projecting portion 38 of the spring will be continually riding in and out of the grooves 36, will cause the drum member 32 to gradually come to a complete stop. In some cases, when the drum

member completely stops the portion 38 of the spring will lie in one of the grooves 36. In other cases, however, it may not project into any of the grooves but may merely contact with the upper flat surface of the drum member 32. The grooves 36 and the portion 38 of the spring 37 are so arranged that if an attempt is made to rotate the amusement device by shaking the machine and without operating it in the required way, the portion 38 will be projected into one of the grooves 34 and prevent further rotation of the drum. When the portion 38 lies in one of the slots 36, the indicator pointer 35 preferably points to a line 32' which divides the various sections of the drum.

In operation of the vending machine, a coin of proper denomination is inserted into the machine and the vender lever is operated to cause rotation of the vender lever plate 2 and the feeding plate 3 and an article will be vended from the machine. Operation of the machine in this manner will cause operation of the amusement device. The drum member 32 will be caused to rotate and the person operating the machine can attempt to guess to which of the colored horses or other figures the indicator 35 will point when rotation of the drum member 32 ceases.

In Figure 6, we have shown how the lower end of the sleeve 12 may be connected to the operating mechanism of a different type of vending machine. In this machine, a stationary plate 3' is mounted on the upper end of the base thereof, and serves as the bottom for the hopper (not shown). Below the stationary plate 3', a movable vender lever plate 4' is mounted. Openings 5' which may be brought into alignment are provided in both of these plates for discharging material from the machine. The discharge of material is accomplished by rotating the vender lever plate in a well known manner and rotation of this plate is controlled by suitable coin controlled mechanism (not shown).

The stationary plate 3' is provided with a slot 30' formed therein and extending from one side of the opening 5' formed therein. A pin 300 projects up through this slot 30' and is rigidly secured to the movable vender lever plate 4'. When our device is applied to a vending machine of this type, the lower end of sleeve 12 is provided with a radially projecting arm 120 having a bifurcated outer end 120' which is adapted to cooperate with the pin 300. It will be readily seen that when the plate 4' is rotated it causes the pin 300 to move along the slot 30'. This will in turn cause swinging of the arm 120 and consequently, rotation of sleeve 12 which will operate the amusement device.

In Figure 7, we have shown a vending machine similar to that shown in Figure 6. This embodies a base 1a having a top plate 3a mounted on the upper end thereof. Below this top plate 3a, a vender lever plate 2a is rotatably mounted in a suitable manner. This device is of such a type that when a coin is inserted into the machine the vender lever plate 2a may be rotated to cause vending of articles from the machine.

A commodity receiving hopper 4a is mounted on the upper end of the base 1a and is held in position thereon by a pair of rods 6a. These rods 6a have their upper ends connected to a retaining ring 16a which will be held in position on the upper edge of the hopper 4a. The retaining ring 16a is used for mounting a closure member 17a on the upper end of the hopper.

In this instance, instead of mounting the

amusement device in the upper portion of the hopper we mount the amusement device 14a on a tripod 18a which supports the device on the upper surface of the plate 3a and between the rods 6a. The amusement device 14a is preferably identical with that previously described and the outermost portion thereof is preferably disposed closely adjacent the inner surface of the glass bowl member 4a in order that the view of the drum member thereof will not be obstructed by articles in the hopper. The upper surface of the casing of the amusement device is preferably of inverted cone-shape so that the articles will not remain thereon. The amusement device is provided with a depending operating sleeve 12a as before which may be operatively connected to the movable vender lever plate by an arm 128a and a pin 300a secured to the plate 2a. Other suitable means might be used for operatively connecting the amusement device to the rotatable plate 2a.

It will be apparent from the above description that we have provided an amusement device which may be readily applied to a vending machine adapted to vend articles therefrom when a proper coin is inserted, such amusement device being operable by operation of the vending mechanism of the machine. This amusement device will serve as an additional inducement for a person to operate the vending machine. The amusement device is very simple in structure and may be readily applied to various types of vending machines now commonly in use. Furthermore, this amusement device is of a very sturdy structure and will readily withstand any shocks to which it might be subjected during operation of the machine.

In the claims appended hereto we specify that operation of the amusement device is caused by movement of the vending member in a direction to cause articles to be discharged from the machine and that on the return stroke of the vending member to its original position, the amusement device will not be operated. However, it will be apparent that we also intend to cover a device wherein the amusement device is operated by the return stroke of the vending member and is not affected by the vending stroke thereof.

Having thus described our invention, what we claim is:

1. An amusement device adapted to be used in combination with a vending machine, comprising a housing member adapted to contain the mechanism of said amusement device, said housing being mounted on a retaining ring which is adapted to be held on the upper open end of a hopper of a vending machine in order to retain said hopper in position, said amusement device including a rotatable member mounted in said housing and having various designs or configurations thereon, an operating member extending from said housing and adapted to be rotated in one direction to rotate said rotatable member in said housing, rotation of said operating member in an opposite direction being ineffective to cause rotation of said rotatable member in said housing.

2. An amusement device adapted to be used in combination with a vending machine, comprising a housing member adapted to contain the mechanism of said amusement device, said housing member being adapted to be disposed in an article-receiving hopper of a vending machine, said amusement device including a rotatable member mounted in said housing and having various designs or configurations thereon, an operating member extending from said housing

and adapted to be rotated in one direction to cause rotation of said rotatable member in said housing, rotation of said rotatable member in said housing being unaffected by rotation of said operating member in an opposite direction.

3. An amusement device for use in combination with a vending machine comprising a housing adapted to contain the mechanism of said amusement device, said amusement device including a rotatable drum member having a plurality of designs or configurations on the periphery thereof and being divided into several sections, an indicator adapted to cooperate with said rotatable member, an operating member extending from said housing and adapted to be rotated in one direction to cause rotation of said drum member, rotation of said drum member being unaffected by rotation of said operating member in an opposite direction, slight rotation of said operating member in the proper direction being adapted to cause rotation of said drum member at a high rate of speed and for a considerable length of time, and automatic braking mechanism adapted to bring said rotatable drum member gradually to a stop, said braking mechanism comprising a plurality of indentations formed in said drum member and a yieldable member adapted to move into and out of said indentations, said braking mechanism being of such a type that, if an attempt is made to rotate said drum member without rotation of said operating member in the proper direction, the drum member will be held in a position where said indicator will point to a position on said drum member where two of the said sections meet.

4. An amusement device for use in combination with a vending machine comprising a housing adapted to contain the mechanism of said amusement device, said amusement device including a rotatable drum member having a plurality of designs or configurations thereon, an operating member extending from said housing and adapted to be rotated in one direction to cause rotation of said drum member, rotation of said drum member being unaffected by rotation of said operating member in an opposite direction, slight rotation of said operating member in the proper direction being adapted to cause rotation of said drum member at a high rate of speed and for a considerable length of time.

erating member in an opposite direction, slight rotation of said operating member in the proper direction being adapted to cause rotation of said drum member at a high rate of speed and for a considerable length of time, and automatic braking mechanism adapted to bring said rotating drum member gradually to a stop, said braking mechanism comprising a plurality of indentations in said drum member and a yieldable member adapted to move in and out of said indentations.

5. An amusement device for use in combination with a vending machine comprising a housing adapted to contain the mechanism of said amusement device, said amusement device including a rotatable member having a plurality of designs or configurations thereon, an operating member extending from said housing and adapted to be rotated in one direction to cause rotation of said rotatable member, rotation of said rotatable member being unaffected by rotation of said operating member in an opposite direction, slight rotation of said operating member in the proper direction being adapted to cause rotation of said rotatable member at a high rate of speed and for a considerable length of time, even after rotation of said operating member ceases, and braking mechanism adapted to bring said rotating member gradually to a stop.

6. An amusement device for use in combination with a vending machine comprising a housing adapted to contain the mechanism of said amusement device, said amusement device including a rotatable member having a plurality of designs or configurations thereon, an operating member extending from said housing and adapted to be rotated in one direction to cause rotation of said drum member, rotation of said drum member being unaffected by rotation of said operating member in an opposite direction, slight rotation of said operating member in the proper direction being adapted to cause rotation of said drum member at a high rate of speed and for a considerable length of time.

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