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 [21] Appl. No. **830,677**  
 [22] Filed **June 5, 1969**  
 [45] Patented **Oct. 12, 1971**  
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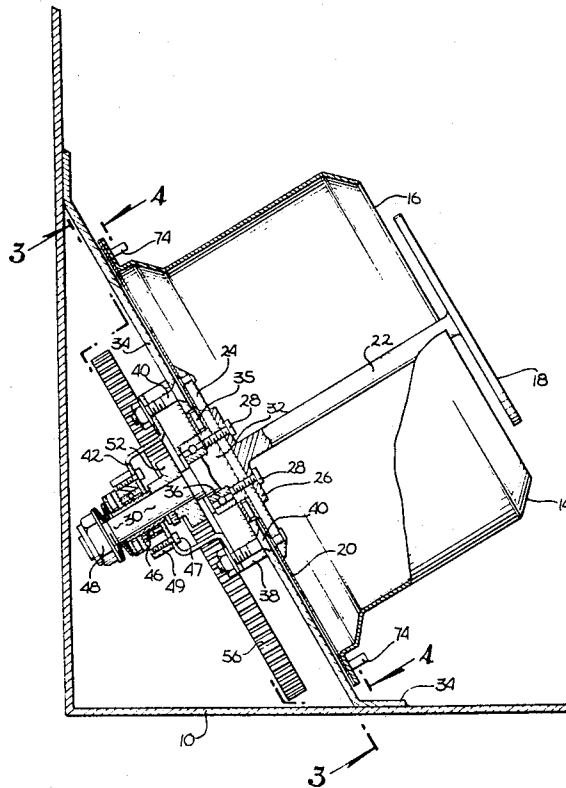
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[54] **COIN PAYOUT MECHANISM FOR AMUSEMENT DEVICE**  
 6 Claims, 8 Drawing Figs.

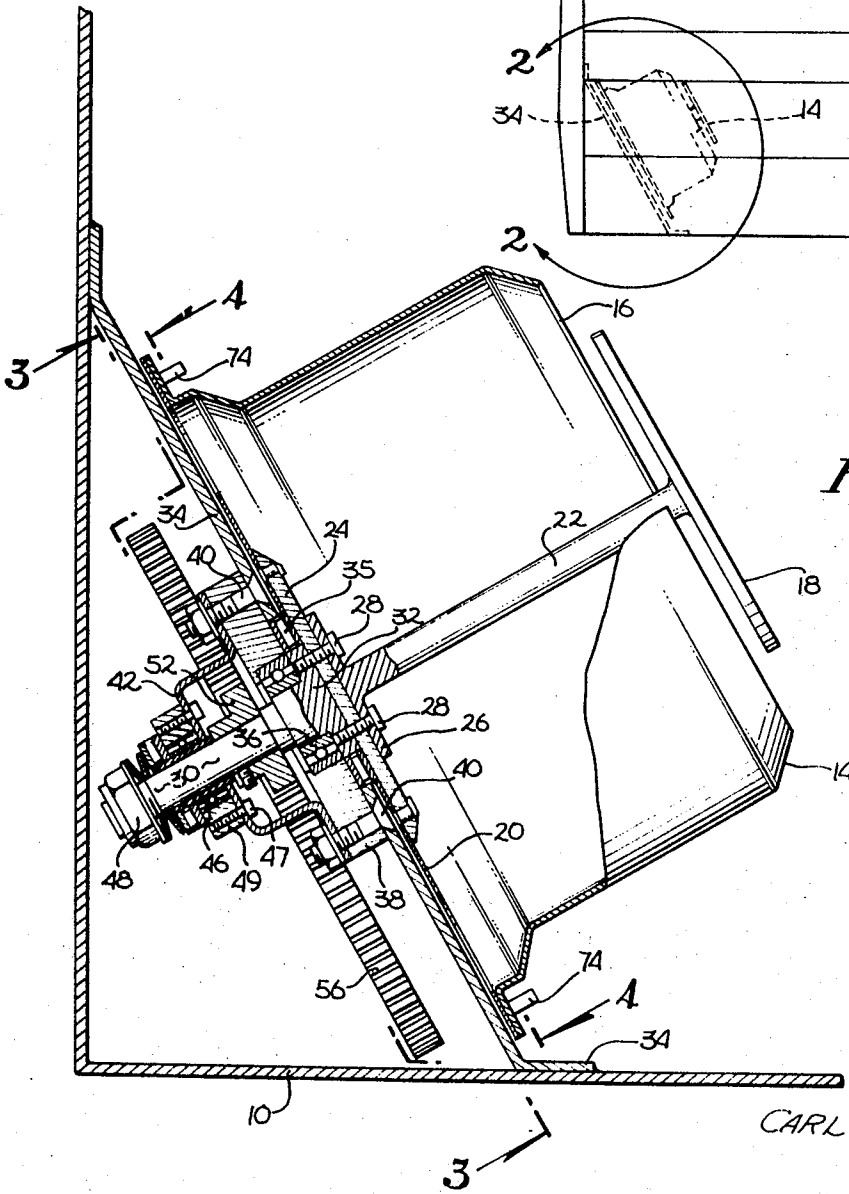
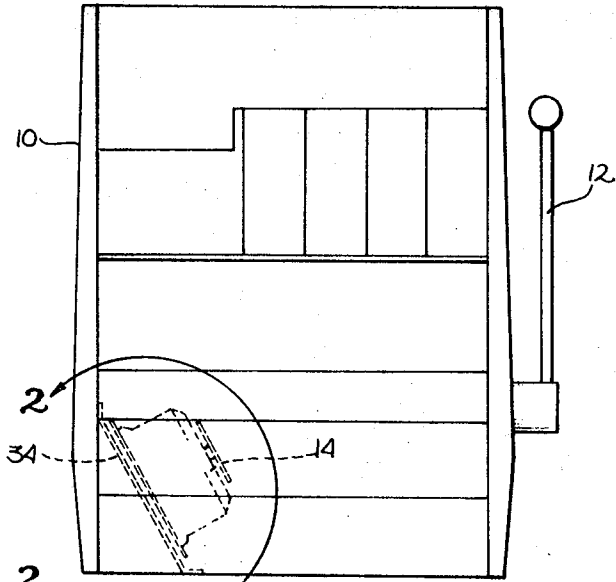
[52] U.S. Cl. .... **133/8,**  
 221/265  
 [51] Int. Cl. .... **G07d 9/00**  
 [50] Field of Search..... 221/82,  
 113, 265, 188, 189, 7; 133/4, 5, 8

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**ABSTRACT:** An amusement or gaming device is described which includes a payout device for paying out predetermined amounts of coins contained in a hopper within the gaming device. The payout mechanism includes a rotatably mounted coin pickup plate which is adapted to rotate with the hopper in relation to a support plate and includes a plurality of holes therein which is adapted to pick up or catch coins therein and slide them out a corresponding and matching hole in the support plate. The coins are then fed through an output chute and into a payout receptacle. Switching mechanism is provided to count the amount of coins paid out through the output chute.



*Fig. 1*

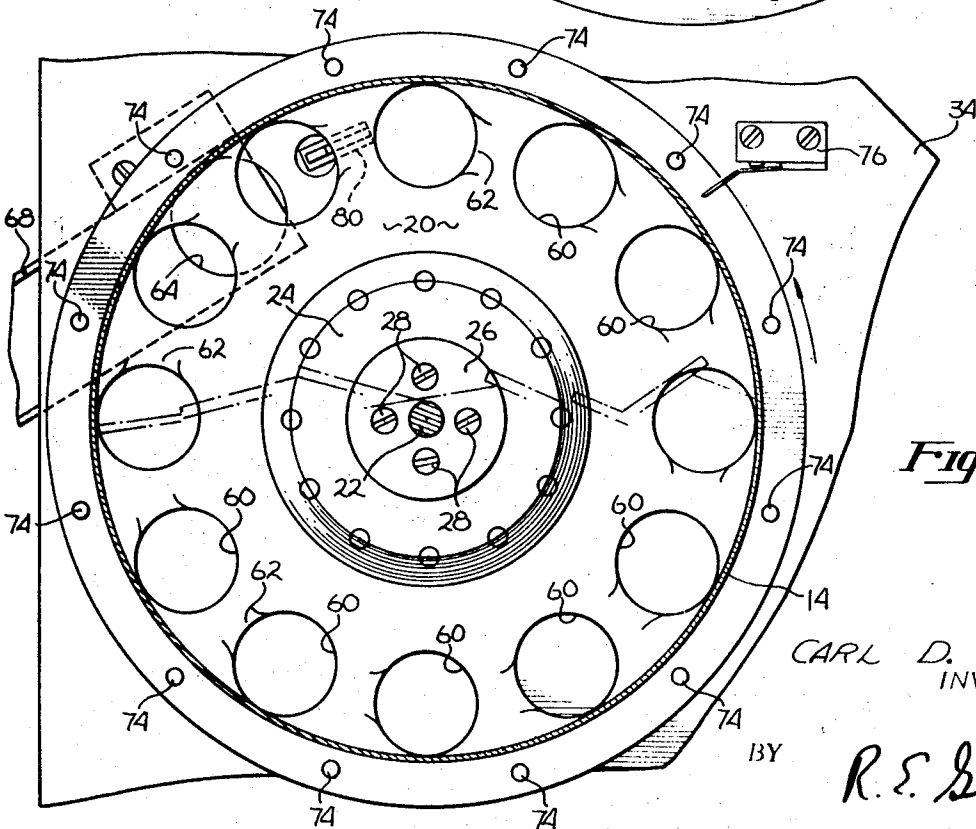
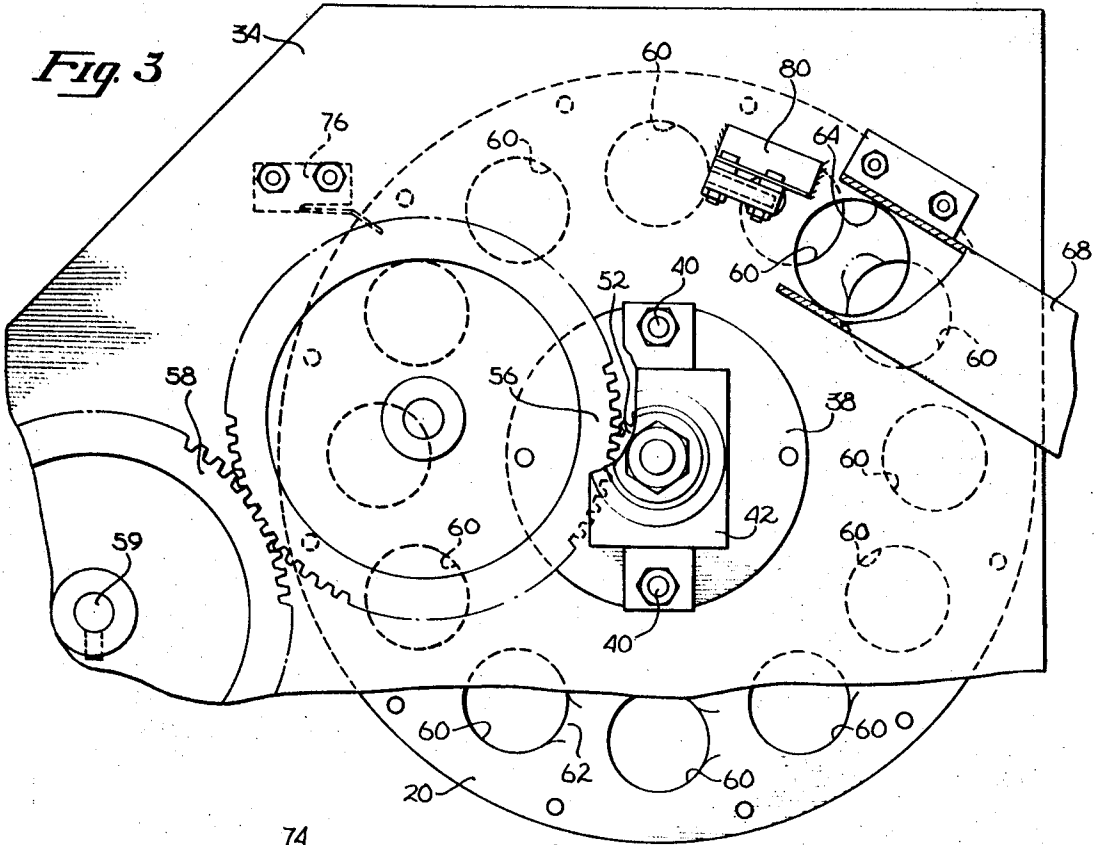


*Fig. 2*

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*Fig. 3*



*Fig. 4*

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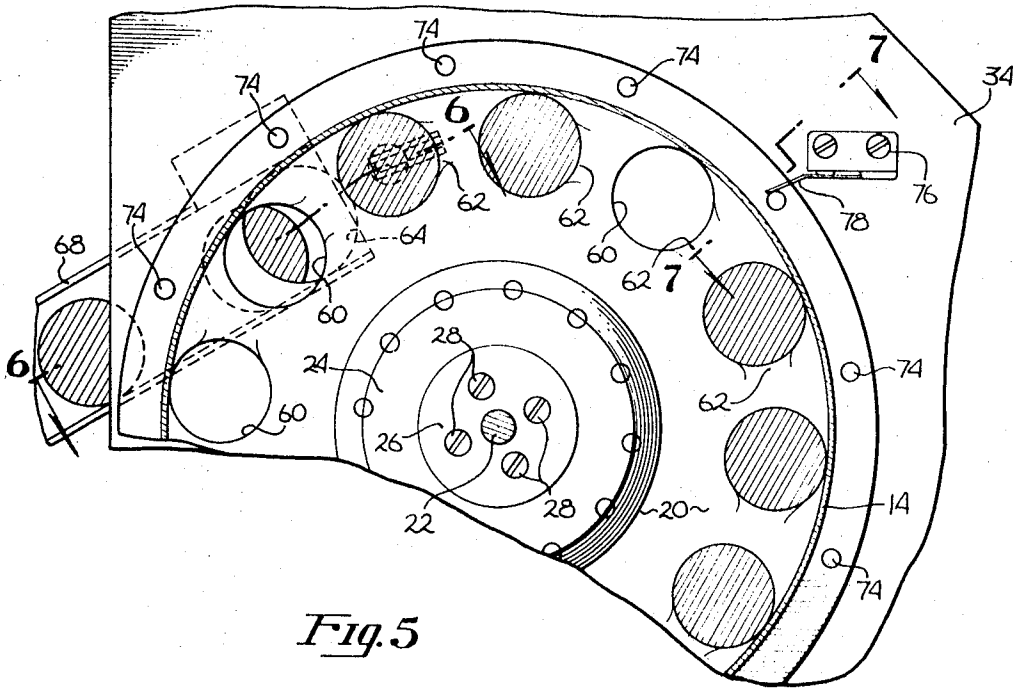


Fig. 5

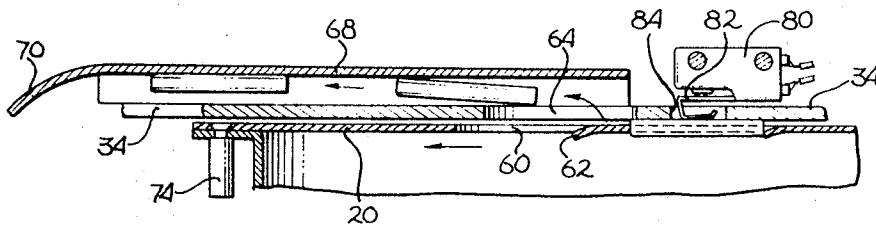


Fig. 6

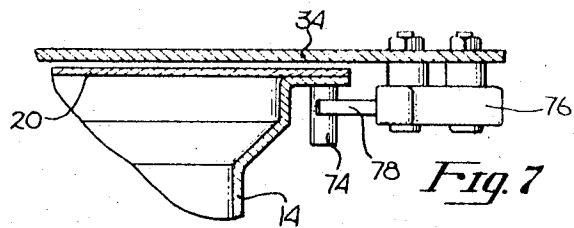


Fig. 7

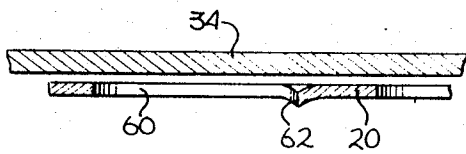


Fig. 8

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## COIN PAYOUT MECHANISM FOR AMUSEMENT DEVICE

## BACKGROUND OF THE INVENTION

## 1. Field of the Invention

This invention relates to amusement or gaming devices and more particularly to a novel and improved coin payout mechanism useful in the amusement or gaming device.

## 2. Description of the Prior Art

Heretofore, mechanical mechanisms were used in gaming devices, or the like, to provide for predetermined payout amounts. These prior art devices included individual coin tubes with integral slide mechanisms positioned along its length. After each payout command is received, the slide or combination of slides would activate dispensing a predetermined amount of coins.

Other prior art devices have heretofore included mechanical hoppers which included a flat plate which was adapted to rotate in the hopper. A lip or ledge was included around the periphery of the plate and a plurality of extending dowels protruded from the rotating plate. As the plate would rotate, it would try to scoop up the coins and suspend them on the lip or ledge thereof as the coins were agitated by the extending dowels. These coins were then paid out through a corresponding payout slot as the plate rotated.

These prior art methods have basic disadvantages, one of which being that they were time consuming and the gaming operations were slowed down. Further, these prior art devices required a considerable amount of maintenance because of their complex structure, especially in the type which uses the coin tube. The latter device which used the dowels and ledges suspending from a rotating plate required extra maintenance because of the continual jamming of the coins between the stationary hopper and the rotating plate.

## SUMMARY OF THE DISCLOSURE

The present invention comprises a support plate being mounted in the housing of a gaming device. A circular coin pickup plate is rotatably mounted with relation to the support plate and includes a plurality of coin-sized apertures around the peripheral edge. A hopper is provided and is mounted to the pickup plate and adapted to rotate therewith. The hopper is adapted to hold a number of coins therein. The support plate and hopper are mounted within the gaming device whereby the coins are against the pickup plate. A coin-sized payout hole is provided near the top of the support plate where the holes in the coin pickup plate will pass in communication therewith. A chute is positioned under the payout hole in the support plate and leads into the payout box.

Raised areas are provided in the aft direction of the coin pickup plate with relationship to the rotation thereof. These raised areas are adapted to pick up coins and place them in a flat position within the pickup plate. As the pickup plate rotates, the coins contained therein will drop through the payout hole in the support plate and down the chute into the coin box. A counting mechanism is included which automatically counts the number of coins that drop through the pickup slot. This number is electronically fed back to the drive mechanism. A preset count is provided by electronic circuitry which stops the rotation of the drive mechanism after a predetermined number of coins drop out the output chute.

A feature of the present invention is that while the pickup plate rotates within the coin, no obstacles, such as protrusions from the plate, exist to cause the coins to become jammed within the mechanisms.

A further feature is that the hopper is rotating with the pickup plate and therefore no parts move against each other for which the coins become lodged therebetween.

Thus, the device of this invention is simple and easy to manufacture and yet inexpensive to maintain. The maintenance rate is considerably decreased by the fact that no relatively moving parts are provided in the hopper.

## DESCRIPTION OF THE DRAWINGS

These and other features and advantages will become apparent to those skilled in the art when taken into consideration with the following detailed description, wherein like reference numerals indicate like and corresponding parts throughout the several views and wherein:

FIG. 1 is a side view of a gaming device which uses the hopper mechanism in accordance with this invention;

FIG. 2 is a partial section view of the hopper and payout mechanism in accordance with this invention;

FIG. 3 is a bottom view of the invention taken along the lines 3-3 of FIG. 2;

FIG. 4 is a top section view of the coin pickup plate taken along lines 4-4 of FIG. 2;

FIG. 5 is a further view of the view shown in FIG. 4 and illustrating the payout mechanism of this invention;

FIG. 6 is a view illustrating the payout slot mechanism and the payout hole from the coin pickup plate taken along the lines 6-6 of FIG. 5;

FIG. 7 is a view showing one of the switch mechanisms taken along the lines 7-7 of FIG. 5; and

FIG. 8 is a section view of the coin pickup protrusion of the pickup plate.

## DESCRIPTION OF THE PREFERRED EMBODIMENT

Turning now to FIG. 1, there is shown a gaming device 10 which includes operating handle 12. This type of gaming device is well known to those skilled in the art and is the type wherein a coin or chip, or the like, is provided with some numerical value. The coin is inserted into the machine and the handle 12 is pulled, which engages a motor, for example, which will start a plurality of reels rotating therein. As the reels rotate, certain indicia thereon will, when lined up, cause a different amount of coins to be dispensed to the operator. For example, if the indicia on the rotating reels are two cherries lined up in a row on the two left-hand reels, then five coins similar to the one inserted will be dispensed. If three oranges, ten coins are dispensed. If three bars, for example, are lined up on the reels, a jackpot is declared and 100 coins (typical) are dispensed to the operator.

Assuming the foregoing is well known to those skilled in the art, and in accordance with this invention, a rotating hopper 14, as shown in FIG. 2, receives the coins which are initially inserted into the machine. In this embodiment, the hopper 14 is shown as being cylindrical in shape and has an opening 16 on one end thereof, which allows access to the coins. A safety guard 18 covers the opening 16 to prevent a person from placing his hand into the hopper 14 and removing coins. The hopper 14 is secured to a coin pickup and payout plate 20. The guard 18 is then coupled by a shaft 22 directly to a pickup plate 20. The shaft 22 has a flange 26 on one end thereof. Flange 26 is directly mounted to a support plate 24 by bolts 28. A further shaft 30 has a flange 32 on one end thereof and also has threaded openings thereon to receive the bolts 28 to thereby secure the flange 26 to the flange 32. A support plate 34 is mounted to the inner housing of the gaming device 10 and to the plate 20 by bearings 35 to allow the rotary relationship therebetween. The support plate 34 is generally mounted within the gaming device 10 on about a 30° angle.

A bearing 36 rotatably mounts the shaft 30 to a support plate 38 which is bolted by bolts 40 to the support plate 34. A support bracket 42 is coupled to the mount plate 38 by being secured by the bolts 40 thereto, and has a bearing 46 mounted thereon. A nut 48 secures the bearing 46 to the shaft 30 and may have a bushing 50 therein to provide the necessary securing of the shaft 30 to the bearing 46. A bolt 47 secures the support bracket 42 to a bearing plate 49 which secures bearing 46 in place.

The shaft 30 is rotated by gearing arrangement comprising a gear 52 mounted to the shaft 30. An idler gear 56 engages the gear 52 and a drive gear 58 engages the idler gear 56. Suitable drive means (not shown) drives the shaft 59 which, in turn,

drives the gears 58, 56 and 52, causing rotation of the shaft 30 with the plate 20 and the hopper 14.

The plate 20 has a plurality of apertures 60 therein and spaced about the periphery of the plate 20 near the outer edge thereof. In the embodiment described, there are provided twelve such apertures 60. These apertures go completely through the plate 20. The plate 20 is so positioned as to be extremely close to the support plate 34. In the embodiment shown, the pickup plate 20 is adapted to rotate in a counterclockwise direction, as viewed in FIGS. 4 and 5. On the trailing edge of each of the apertures 60, when viewed in the counterclockwise rotation thereof is a protruding portion 62. This portion 62 may be provided by having the area near hole 60 bent in an upward and outward position relative to the plate 34.

The hopper 14 being filled with coins, rotates with the plate 20. This rotation agitates the coins therein. The coins then will be picked up by the front portion 62 of the aperture 60 and positioned into each of the apertures 60 and lay flat therein. As the plate 20 and housing 14 rotate, the coins are rotated with the plate 20 in their respective apertures 60. The support plate 34 has a single exit hole 64 therein. A chute 68 is securely mounted to the back side of the plate 34, and as the plate 20 rotates, the coins are dropped through the hole 60 by gravity force and fall through the hole 64 into the chute 68. The chute 68 may then have a coin collection box (not shown) near the end 70 thereof, and the coins will drop into this collection box.

In accordance with one feature of this invention, a counting mechanism is provided to count the number of coins which drop through the hole 64 and down the chute 68. It is desired that only a certain number of coins drop through this hole, depending upon the matching of the reels in the gaming device, as heretofore set forth. To implement this counting mechanism, a plurality of dowels 74 protrude from the outer peripheral edge of the housing 14 and the coin pickup plate 20, and outside of the hopper 14. There is provided a dowel 74 to match each of the apertures 60. Thus, in the embodiment described herein, there is provided twelve protruding dowels.

A microswitch 76 is mounted to the plate 34 and has its switch arm 78 extending into the path of the dowels 74. As the plate 20 and the hopper 14 rotate, a dowel extending from the hopper 14 engages the switch arm 78 of the microswitch 76. A second switch 80 is positioned near the payout slot 64. Its switch arm 82 is adapted to extend through a hole 84 in the plate 34 and slightly into the aperture 60 in the pickup plate 20. The switch arm 82 will be raised when engaging the plate 20 and released when dropping into one of the holes 60, providing there is not a coin in the aperture 60. If there is a coin in the aperture 60, as shown by the crosshatched area in FIG. 5, a signal will be provided by the switch 76. The circuitry provided with the switches 76 and 80 are such that if both switches are energized at the same time, it is indicative of the fact that a coin has dropped into the payout slot 64. On the other hand, if no coin is in the mechanism, (as shown in FIG. 5 in the area in hole 60 not crosshatched), no count is provided. Such circuitry is the type which might include, for example, an AND gate and thus the only time a count is provided is when both switches are energized simultaneously.

Thus, there has been provided by this invention a unique and novel gaming device, which includes a payout hopper, which is easy to maintain because of its simplicity in component parts. The simplicity of these parts is due to the novelty and unique arrangement of the invention. Such a unique arrangement includes, for example, the fact that no moving parts are provided inside of the coin hopper to cause the mechanisms therein to jam up as is the case when moving parts are present. The device provides a novel count-out system which counts the number of coins which drop out the

payout slot 64. If aperture 60 does not contain a coin and passes the payout slot 64, no count in fact will be provided because both the indexing count and the coin in fact count must be present at the same time.

Having thus described but one preferred embodiment of this invention, what is claimed is:

1. An apparatus for distributing a predeterminable amount of coins from a gaming device;
  - a support plate being positioned on an angle and having a coin opening substantially nearer the top thereof;
  - a circular coin pickup plate rotatably mounted to said support, said pickup plate having a plurality of coin-sized apertures spaced about the periphery of said pickup plate and being adapted to be in communication with the coin opening in said support plate the trailing walls of said apertures on said pickup plate having a raised portion thereon for aiding in the pickup of the coins; and
  - a hopper being mounted to said pickup plate and adapted to rotate therewith, said hopper being adapted to confine a plurality of coins therein.
2. An apparatus for distributing a predeterminable amount of coins from a gaming device including:
  - a support plate being positioned on an angle and having a coin opening substantially near the top thereof;
  - a circular coin pickup plate rotatably mounted to said support, said pickup plate having a plurality of coin-sized apertures spaced about the periphery of said pickup plate and being adapted to be in communication with the coin opening in said support plate;
  - a hopper being mounted to said pickup plate and adapted to rotate therewith, said hopper being adapted to confine a plurality of coins therein;
  - a plurality of dowels spaced about the peripheral edge of said pickup plate and corresponding to said plurality of apertures;
  - a first switch being mounted on said plate and having a switch arm protruding into the path of said plurality of dowels whereby each dowel of said plurality is adapted to trip the switch each time a dowel passes thereby; and
  - a second switch being mounted to said support and having a switch arm adapted to extend into and out of the apertures in said pickup plate.
3. The apparatus as defined in claim 2, whereby the trailing walls of said apertures on said pickup plate having a raised portion thereon.
4. The apparatus as defined in claim 2 and further including a coin chute positioned in communication with the coin opening in said support plate.
5. The apparatus as defined in claim 2 and further including:
  - a coin chute positioned in communication with the opening in said support plate; and
  - drive means for simultaneously rotating said pickup plate and said hopper.
6. An apparatus for distributing a predeterminable amount of coins from a gaming device:
  - a support plate being positioned on an angle having a coin opening substantially near the top thereof;
  - a circular coin pickup plate rotatably mounted to said support, said pickup plate having a plurality of coin-sized apertures spaced about the periphery of said pickup plate and being adapted to be in communication with the coin opening in said support plate, the trailing walls of said apertures on said pickup plate having a raised portion thereon;
  - a hopper being mounted to said pickup plate and adapted to rotate therewith, said hopper being adapted to confine a plurality of coins therein.