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(71) Applicant: **Proindumar S.L.**
28037 Madrid (ES)

(72) Inventor: **Franco Munoz, Jesús**
E-28037, Madrid (ES)

(74) Representative: **ABG Patentes, S.L.**
Avenida de Burgos 16D
Edificio Euromor
28036 Madrid (ES)

(54) Drawing mechanism with a variable regulation device for regulating the probabilities of winning

(57) The invention relates to a drawing mechanism with a variable regulation device for regulating the probabilities of winning. The mechanism, intended to be associated to two or more entertainment machines, all of them forming a type of game table or counter, is formed from a drum, in which a predetermined number of balls are arranged, which drum can be transparent or like a cage, for allowing in any case the player or players in question to see the balls contained therein, provided with fixing means for fixing it to the mentioned game table, with a horizontal rotating shaft arranged inside the drum and in which a drive mechanism is arranged which allows rotating the drum in either direction. Said drum equally has a protrusion in the shape of a protruding turret located on a plane of symmetry perpendicular to the rotating shaft, and with suitable dimensions for allowing the passage and housing therein of at least one of the balls. The balls never abandon the assembly formed by the drum and the turret.

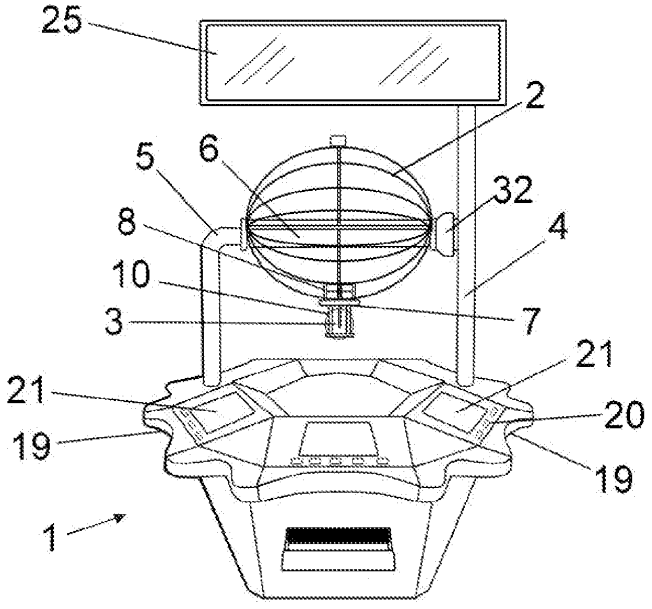

FIG. 1

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Description

Object of the Invention

[0001] The present invention relates to a drawing mechanism, specifically a mechanical-electronic device intended to be associated to one or more gaming machines with similar or different characteristics for the purpose of forming an additional game for the same.

[0002] The object of the invention is to provide a drawing mechanism which allows varying, by means of regulation provided for such purpose, the probability of winning, all according to reducing or increasing the value of the prizes.

Background of the Invention

[0003] Drawing mechanisms for gaming machines, such as in the case of the known casino roulettes, in which the number of probabilities of winning is fixed and cannot be varied are known. This brings with it a drawback which fundamentally focuses on the fact that when it is necessary to increase the value of the prize corresponding to the winning, in order to balance said increase without modifying the value of the bet, it is necessary that the probabilities of winning by the player are reduced.

[0004] However in order to achieve this objective it is necessary to physically modify the drawing mechanism, the total replacement of said mechanism for another mechanism specifically designed according to the probabilities of winning required in the plays being necessary in some cases, with the consequent economic cost which that involves.

[0005] Although there are entertainment machines which allow automatically modifying the probabilities of winning in a certain game, it relates to purely electronic games, i.e., said modifications are carried out as a result of programming software, selecting between different options. The problem which these types of machines have is that the user, in this case the player, has to trust the "randomness" of the game process, which is controlled as has been previously said by a certain programming software, said player not being able to check for himself, as occurs in the "physical" game mechanisms, that said randomness is completely real.

Description of the Invention

[0006] The drawing mechanism with a variable regulation device for regulating the probabilities of winning proposed by the invention fully and satisfactorily solves the drawbacks previously set forth in the different mentioned aspects.

[0007] Said mechanism is formed by a drum-shaped receptacle, ball container and mixer, provided with a device with the capacity of randomly reading and identifying each and every one of the balls contained therein. It is for that reason that the mechanism and device are able to:

- Randomly choose and set aside one ball from among a group of balls enclosed in a drum.
- Identify and read the chosen ball.
- Return the ball set aside again to the grouped set of all balls.
- Send orders for rotating in both directions to the drum for mixing the balls contained therein, or set aside one of the balls for its display and reading, as the case may be.

[0008] This and other objectives of the invention are achieved by means of a mechanism according to claim 1. The particular embodiments of the mechanism object of the invention are defined in dependent claims the 2 to 11.

[0009] More specifically, the proposed mechanism, intended to be associated to two or more entertainment machines, all of them forming a type game table or counter, is formed from a drum, in which a predetermined number of balls are arranged, which drum could be transparent or like a cage, for allowing in any case the player or players in question to see the balls contained therein, provided with fixing means for fixing it to the mentioned game table with a horizontal rotating shaft arranged inside the drum and in which a motorized drive mechanism is arranged which allows rotating the drum in either direction.

[0010] Said drum equally has a protrusion in the shape of a protruding turret located on a plane of symmetry perpendicular to the rotating shaft, and with suitable dimensions for allowing the passage and housing therein of at least one of the balls.

[0011] Said turret includes in its base a mechanism for opening and closing the access of the balls to the same turret for the purpose of allowing the entrance or exit of the balls; said mechanism consists of a pivoting blade, balanced such that the rotation of the drum in one direction makes the blade pivot, closing through one of its ends the entrance of balls to the turret , whereas the rotation in the opposite direction of the drum equally causes a pivoting of the blade in the opposite direction, such that the end thereof preventing the entrance of the balls clears the passage of the ball to the inside of the turret.

[0012] Nevertheless the mentioned turret could be oversized in length for optionally allowing the entrance of two balls.

[0013] Said balls will have their outer surface printed with the corresponding number or illustration, being equally provided with an inner circuit for identification by means of an electronic reader associated to the control circuit of the support of the entire drawing mechanism assembly.

[0014] Thus, and by means of the mentioned electronic reader, the mechanism of the invention, as has been previously mentioned, can be associated to an assembly of two or more betting terminals provided with means for

managing charges and payments, as well as managing the development and display of the results of the plays in the form of drawings.

[0015] According to the essential features of the invention, when the probabilities of winning the bets are to be varied, it will only be necessary, as the case may be, to reduce or increase the number of balls housed within the drum, and introduce the data relating to the new number of balls into the electronic part of the device, a process which is carried out is an extremely simple manner, by means of accessing the inside of the drum for the purpose of ordering the new number of balls, an operation which is carried out with the opening of the drum, operating on the corresponding mechanism provided in the assembly for such purpose; having as complement to the previous operation, the access to the test program and the actuation of the controls which allow setting the type of the desired game. Once this operation is carried out, the device is completely automatically in charge of compensating the new order of probabilities of winning.

[0016] The control circuit or CPU of the device will thus be electrically associated: to the mechanism for rotating the drum, controlling both its rotation/stopping and its position; to the means for identifying the balls; as well as to the rest of the conventional electronic elements taking part in the drawings; transmitting said data to the assembly of machines to which the drawing mechanism is associated, machines in which each of them will have its corresponding means for executing its own games and which eventually and particularly will be able, independently or simultaneously at the will of the player, to access the information and use the data of the result of the drawings carried out by means of the mechanism to make bets, whereby the player of each machine can bet what he or she thinks suitable, regardless of the rest of the players.

[0017] An extremely versatile mechanism is thus achieved which can be implanted in association with different types of machines, and which allows changing the probabilities of winning in the drawing carried out by the same in an extremely quick and simple manner without needing to modify the structure of the assembly.

Description of the Drawings

[0018] To complement the description being made and for the purpose of aiding to better understand the features of the invention according to a preferred practical embodiment thereof, a set of drawings is attached as an integral part of said description, in which the following has been shown with an illustrative and non-limiting character:

Figure 1 shows a schematic perspective view of a drawing mechanism with a variable regulation device for regulating the probabilities of winning carried out according to the object of the invention and associated to a game table for several players.

Figure 2 shows an elevational side view of a detail of the drum taking part in the device of previous figure.

Figures 3 and 4 show respective elevational side views of details of the mechanism in charge of allowing/preventing the movement of a ball to the inside of the turret in different positions for the same.

Figure 5 finally shows a schematic depiction of the different electronic components taking part in the invention.

Preferred Embodiment of the Invention

[0019] List of reference numbers used in the figures.-

1.- multi-position game table
2.- drum-shaped ball mixer and container mechanism
3.- numbered ball with visual and electronic identification
4.- support for the drawing mechanism anchored to the game table
5.- support for the drawing mechanism anchored to the game table
6.- drum shaft with a built-in motor
7.- support for the pivoting lever shaft for access of balls to the turret
8.- mechanism for opening and closing the passage of the ball to the inside of the turret
9.- space/path for conveying a ball to the inside of the turret
10.- drum projection or turret
11.- distal end of the turret
12.- motor for rotating the drum
13.- electronic control for reading the balls
14.- CPU unit of the device
15.- pivoting blade for access of balls to the turret
16.- pivoting blade shaft
17.- arm for supporting the pivoting blade
18.- arm for closing the pivoting blade
19, 19' 19" 19'''.- gaming machines connected to the mechanism and device
20.- controls in gaming machines for accessing the data of the drawing mechanism
21.- screens of images of the development of the game in each connected machine
22.- common intercommunication line between the machines and CPU of the mechanism
23.- RGB signal generated in the CPU for generating images on the machine screens
24.- controlled lighting elements according to the development of the plays
25.- information panel
26.- common alphanumeric panel for the drawing results
27.- audio signal for each of the interconnected machines
28.- control means for activating the device with the

existence of credits in the machines
29.- betting permission signal for those taking part in the drawing
30.- CPU information to the machines of the number of balls taking part in each drawing
31.- push-button for fixing regulations
32.- control for rotating and stopping motor for rotating the drum
33.- push-button for accessing the regulation test
34.- central audio signal for the entire common system

[0020] In view of the indicated figures, and especially Figures 1 and 2, it can be observed how the drawing mechanism proposed by the invention, which in the chosen practical embodiment in Figure 1 is integrated into a game table (1) but could equally be associated to different types of entertainment machines and for a different number of machines and players without affecting the essence of the invention, is formed from a spherical drum (2) which in the example of the figures is carried out as a type of cage which allows seeing the balls (3) housed therein, but which could equally be carried out as a sphere of plastic material or any other transparent material.

[0021] Said drum (2) is fixed to the game table (1) from a pair of vertical arms (4), or any type of raised platform which allows supporting a horizontal rotating shaft (6) at the desired height, carried out as a cylinder inside which an electric motor (12) and the corresponding mechanism associated thereto are arranged in order to allow carrying out the rotation of said drum (2) in either direction, as well as an electro-optical sensor (32) as a controller and detector of the position of the drum (2) and which, acting on a spur located in the shaft/motor, sends the necessary data to the CPU so that the orders corresponding to the motor (12) on starting, breaking and rotation direction can be sent.

[0022] Said drum (2) has a protrusion in the shape of a turret (10) provided on the plane of symmetry perpendicular to the rotating shaft (6) thereof, said turret (10) forms an integral part with the outer structure of the drum (2) and is sized such that it allows housing a ball at its distal end (11) when the circumstance of the game requires it.

[0023] The balls (3) will have an identification printed on their outer surface so the players can see said information, whereas they will internally have an identification circuit for being identified by means of an external electronic reader (13) associated to a control circuit or CPU (14) through which it is connected with the different machines taking part in the game table, which circuit will be further described below.

[0024] The mentioned turret (10) is provided with a mechanism (8) which allows controlling the entrance of the balls (3) to its inside as well as the exit thereof for joining the rest of the balls in the drum (2) depending on the rotation direction thereof, such that rotating the drum in one direction provided that the turret does not house a ball (3) inside, allows the passage of a ball of those contained in the drum, after which it maintains said ball inside preventing its exit, whereas if the rotation of the drum (2) occurs in the opposite direction, the turret allows the exit of the ball contained therein, preventing the entrance of a new ball.

[0025] Therefore the mechanism (8) for controlling the entrance and exit of the balls to and from the turret (10) has a blade (15) pivoting on a shaft (16), with suitable dimensions and shape so that it is balanced such that by turning the turret (10) in one rotation direction of the drum (2), an end (17) thereof pivots due to gravity, closing at its other end (18) the access to any ball (3), whereas when a rotation of the drum in the opposite direction occurs, the pivoting of the blade (15) equally occurs in the opposite direction, allowing the exit of the ball (3) from the turret (10), and preventing the entrance thereto of a new ball through its lower end (17), as can be observed in Figures 3 and 4. Likewise, the mechanism (8) has side supports (7) for the shaft (16) of the pivoting blade (15).

[0026] The turret (10) can optionally have a longer length for housing a second ball therein, equally preventing the entrance of more balls for the purpose of providing a second prize or larger prize corresponding to two results in a single drawing.

[0027] Thus, and as has been previously mentioned, by varying the number of balls (3) housed in the drum (2) and entering in the CPU of the variable regulation device, through its test program, the data corresponding to the new number of balls, the probabilities of winning in the drawings can be varied in a quick and simple manner without having to modify the structural features of the device.

[0028] The CPU (14) will be equally in charge of controlling the power supply of decorative lighting elements (24) provided in an information panel (25) located next to the drum (2), and on which an alphanumeric panel (26) is contained with the data which is considered of interest in the plays; it will likewise be in charge of generating audio signals (27) and (34) for information of the game in the terminals and in the central unit, giving betting permission (29) to the terminals which wish to take part in the drawing and supplying them before each play with information of the number of balls (30) taking part in each drawing, as well as validating by means of the control (28) the activation of the device by means of the existence of credits in the machines.

[0029] Said CPU (14) will similarly be associated to a control circuit (32) for controlling the position of the turret (10), having a push-button control (33) for accessing the regulation/validation test for regulating/validating the balls in the game, as well as an auxiliary push-button control (31) for fixing the adjustable variations.

Claims

1. A drawing mechanism with a variable regulation device for regulating the probabilities of winning, which is intended to be interconnected with a group of machines provided with means for executing their own games; **characterized in that** it comprises a drum (2), in which a predetermined number of balls are arranged, provided with rotation means (12) electrically controlled through a control circuit or CPU (14) with internal programming software; the drum (2) provided with a protrusion in the shape of a protruding turret (10) located on the plane of symmetry perpendicular to the rotating shaft (6) thereof, and having suitable dimensions for allowing the passage and housing therein of at least one ball, said turret (10) provided with a mechanism for allowing/preventing the access/exit of one of the balls (3) in play, visually identifiable balls (3) the total number of which can be varied in order to modify the probabilities of winning and provided with an internal circuit for their identification by means of an electronic reader (13) associated to the CPU (14) through which information and different signals are supplied to the betting terminals (19, 19', 19" ...) in relation to the drawing which occurs in said mechanism, it having been provided that the mechanism incorporates access means (33) for accessing the software of the CPU (14) in order to fix the parameters corresponding to the total number of balls contained inside the drum.

2. The drawing mechanism with a variable regulation device for regulating the probabilities of winning according to claim 1, **characterized in that** the mechanism (8) which allows controlling the entrance and exit of the balls (3) in the turret (10) as well as the exit thereof towards the drum (2) according to the rotation direction thereof, is carried out as a blade (15) located next to an opening (9) for the passage of the balls (3), in which it is provided pivoting on a shaft (16), with suitable dimensions and shape so that it is balanced such that by turning the turret (10) in one rotation direction of the drum (2), an end (17) thereof pivots due to gravity, closing at its other end (18) the access to any ball (3), whereas when a rotation of the drum in the opposite direction occurs, the pivoting of the blade (15) equally occurs in the opposite direction, allowing the exit of the ball (3) from the turret (10), and preventing the entrance thereto of a new ball through its lower end (17).

3. The drawing mechanism with a variable regulation device for regulating the probabilities of winning according to the previous claims, **characterized in that** the turret (10) is an extension of the major circumference of the actual drum (2) forming an inseparable part of the structure thereof and carried out as an element like a cylindrical cage, dimensionally suitable for housing at least one ball (3) therein.

4. The drawing mechanism with a variable regulation device for regulating the probabilities of winning according to claims 1 and 2, **characterized in that** the turret (10) has sufficient height so as to house two balls (3) therein.

5. The drawing mechanism with a variable regulation device for regulating the probabilities of winning according to claims 1 and 2, **characterized in that** the turret (10) has a structural configuration which allows visually identifying the ball (3) contained therein.

6. The drawing mechanism with a variable regulation device for regulating the probabilities of winning according to claim 1, **characterized in that** the drum (2) is indistinctly carried out as a spherical shell of transparent material or as a type of cage with an identical configuration, in the inner rotating shaft (6) of which having a cylindrical configuration the rotation means (12) of the drum are arranged.

7. The drawing mechanism with a variable regulation device for regulating the probabilities of winning according to claim 1, **characterized in that** the drum (2), the information panel (25), and all the rest of the mechanical-electronic elements contained in said panel (25) are duly fixed or placed together or on the assembly of the machines or betting terminals.

8. The drawing mechanism with a variable regulation device for regulating the probabilities of winning according to claim 1, **characterized in that** the CPU (14) communicates with the different machines or betting terminals (19, 19', 19" ...) through a common intercommunication line (22), including an RGB image generator the signal (23) of which is equally sent to the betting terminals in order to supply the necessary data to the display screens of the game (21).

9. The drawing mechanism with a variable regulation device for regulating the probabilities of winning according to claim 1, **characterized in that** the CPU (14) incorporates a data output for the supply to the decorative lighting elements (24) arranged in an information panel (25) located next to the drum (2), and on which an alphanumeric panel (26) is contained with data considered of interest in the plays, as well as audio signals (34) for game information in the information panel (25), giving betting permission (29) to the terminals that wish to take part in the drawing and supplying them before each play with information of the number of balls (30) taking part in each drawing, as well as validating by means of the control (28) the activation of the device by means of the existence of credits in the machines.

10. The drawing mechanism with a variable regulation device for regulating the probabilities of winning according to claim 1, **characterized in that** the CPU (14) is associated to a control circuit (32) for controlling the position of the turret (10) in its orbit of travel.

11. The drawing mechanism with a variable regulation device for regulating the probabilities of winning according to claim 1, **characterized in that** it incorporates a push-button control (33) for accessing the regulation/validation test for regulating/validating the balls in the game, as well as an auxiliary push-button control (31) for fixing the adjustable variations.

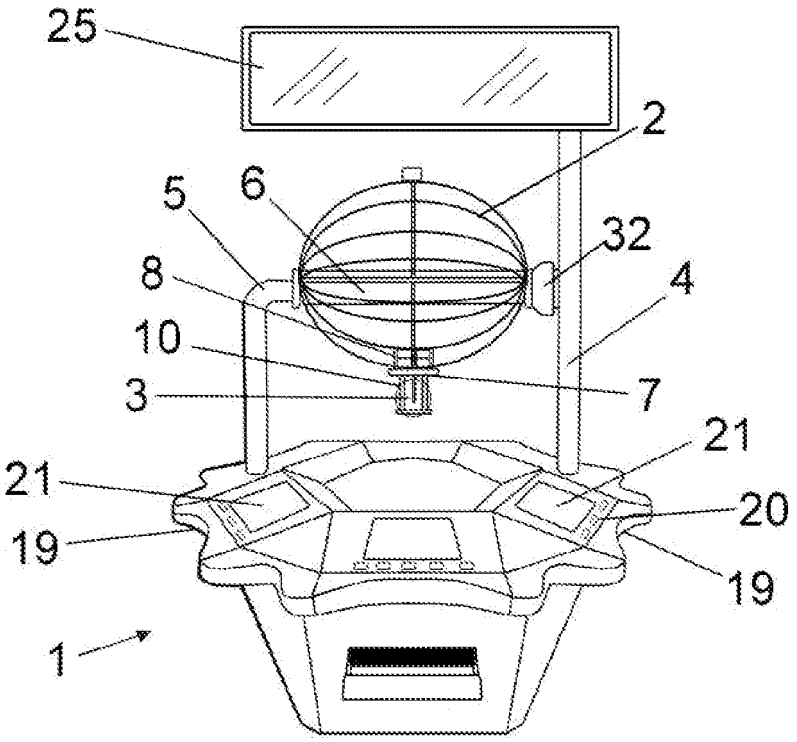

FIG. 1

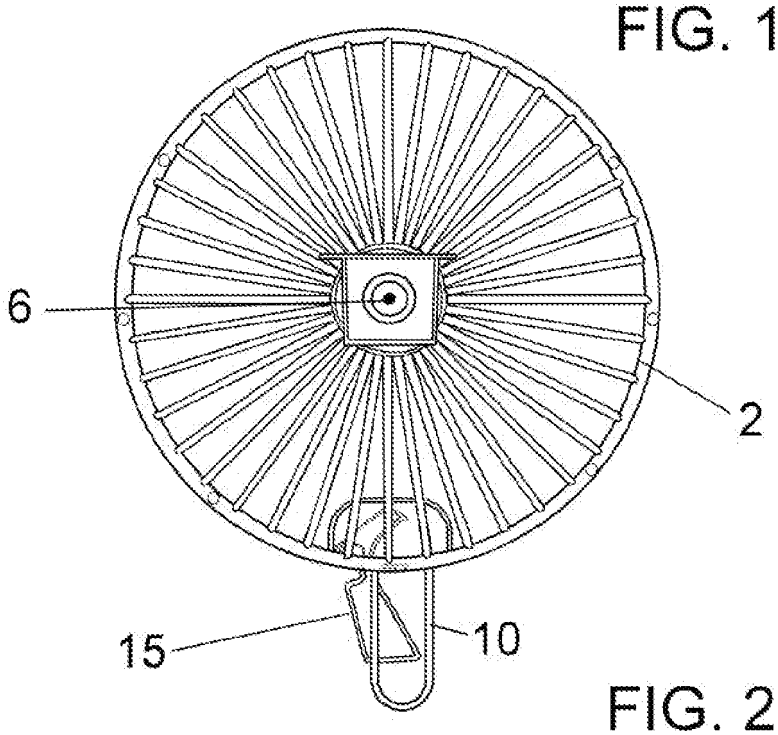

FIG. 2

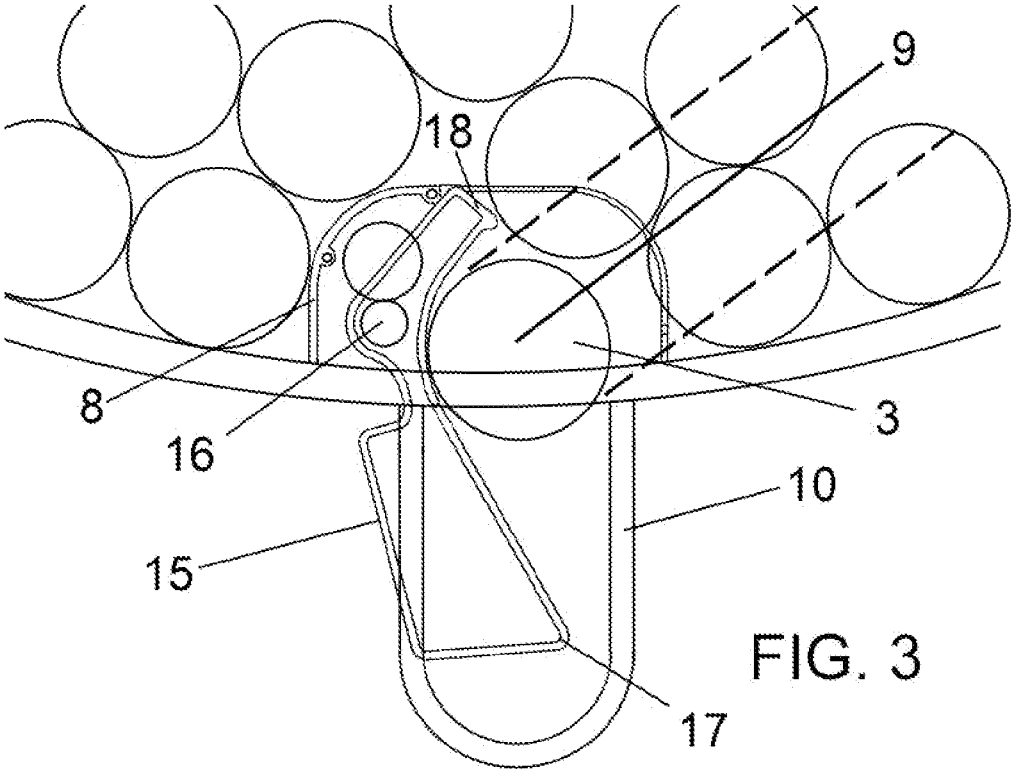

FIG. 3

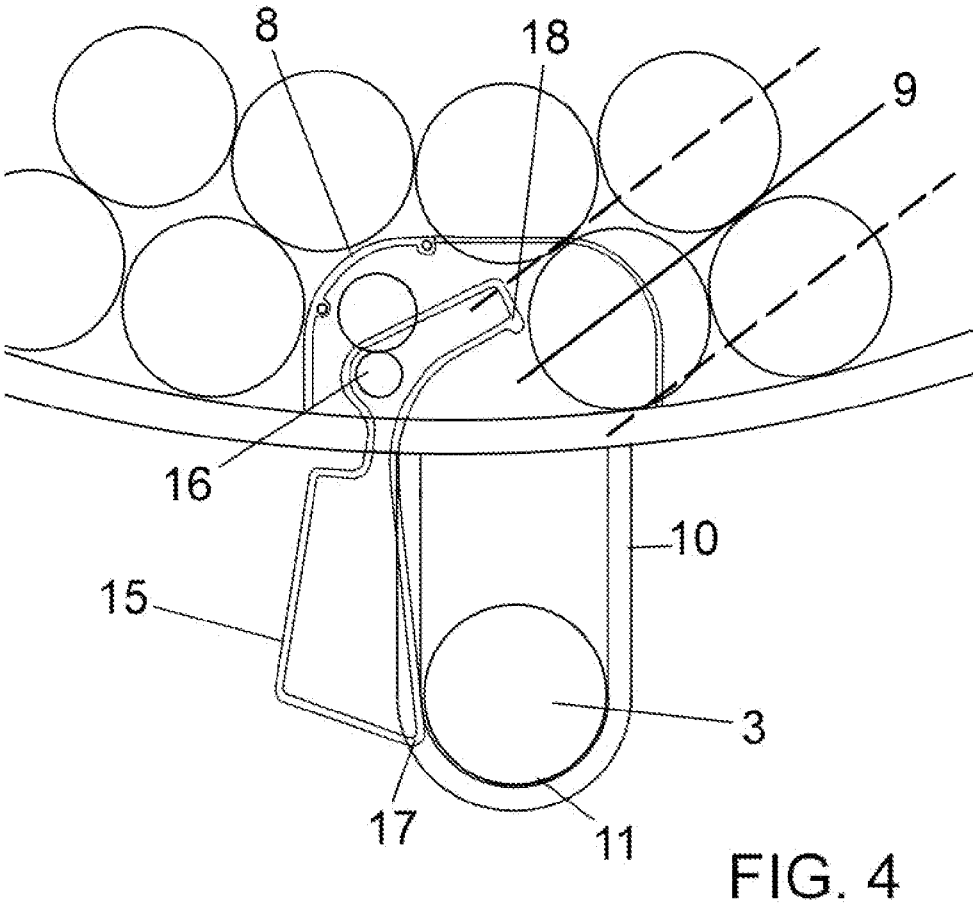

FIG. 4

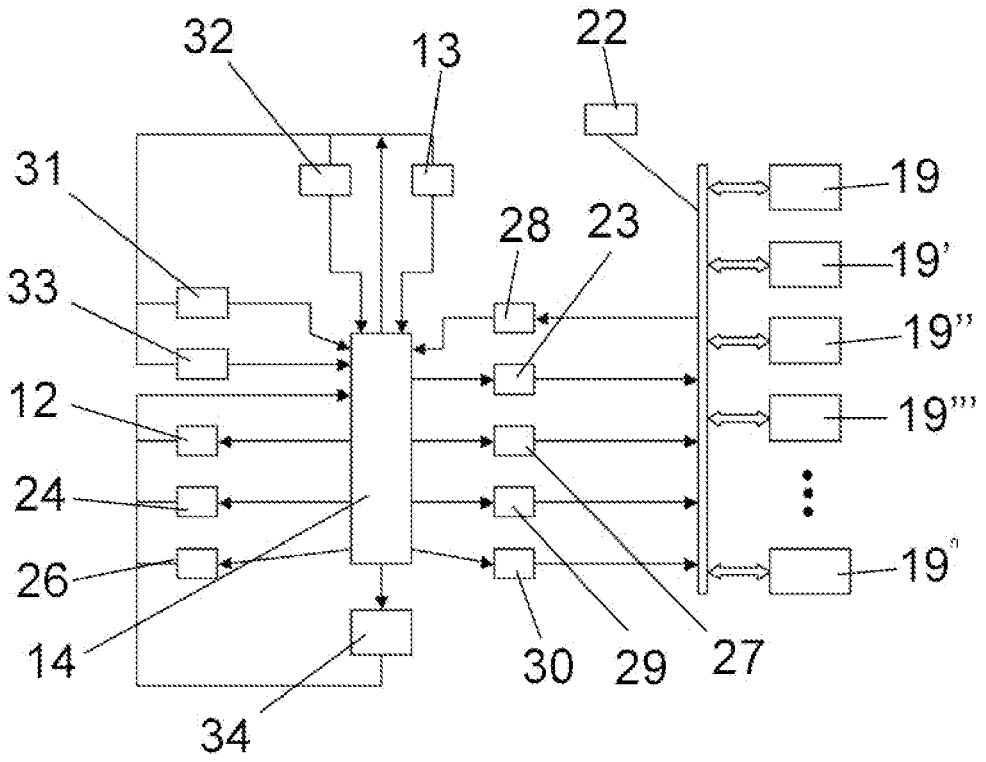

FIG. 5