

G. BETTINI.
NICKLE IN THE SLOT MACHINE.

No. 497,906.

Patented May 23, 1893.

Fig. 1.

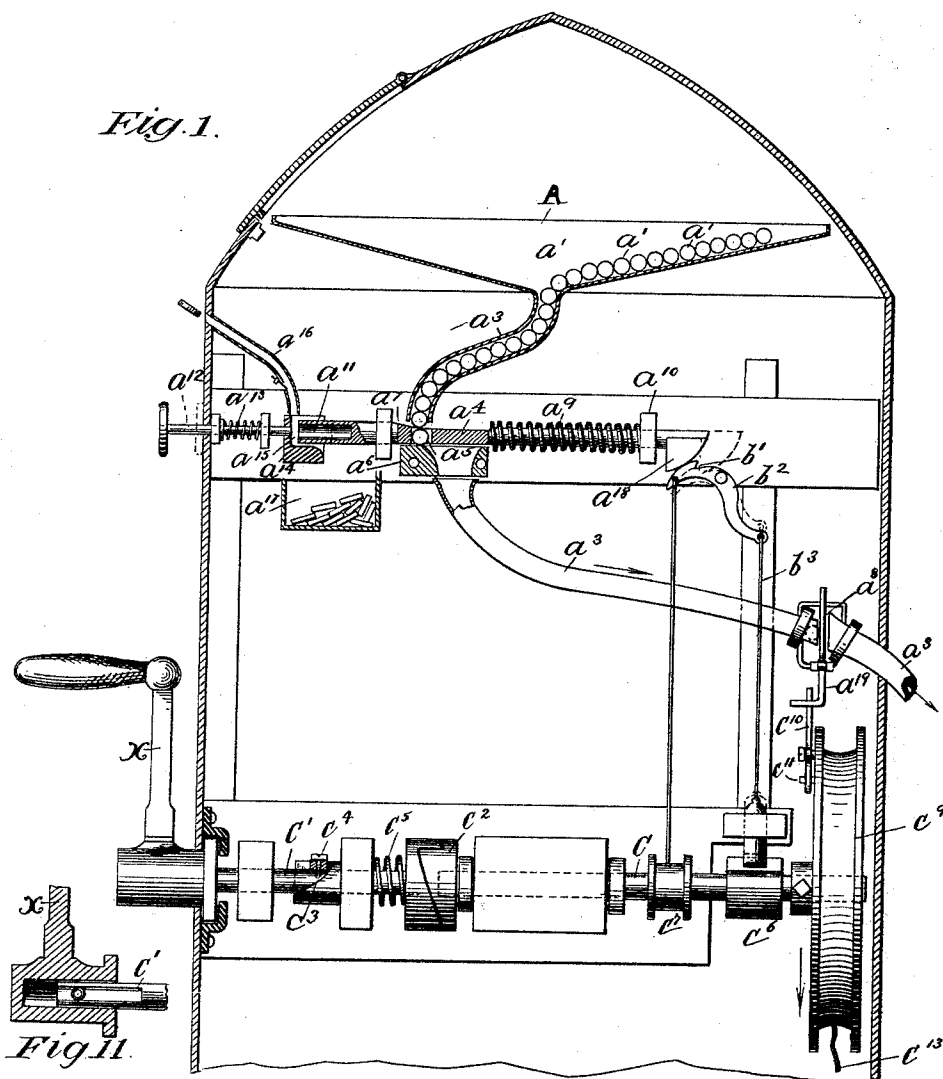


Fig. 11.

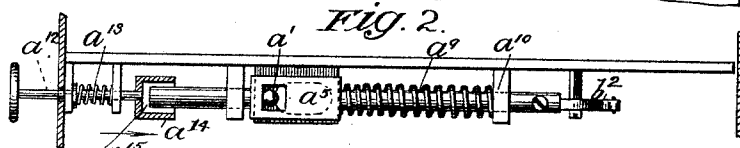


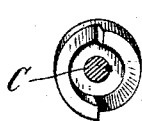
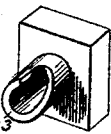
Fig. 12.

Fig. 13.

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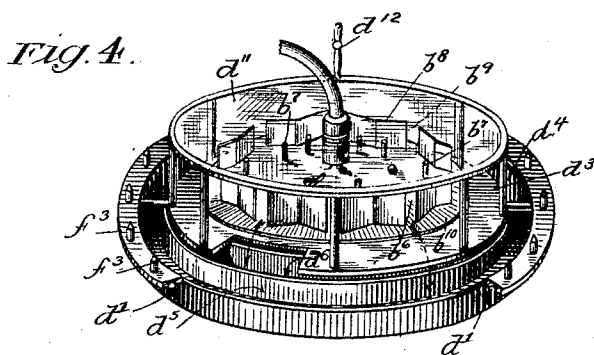
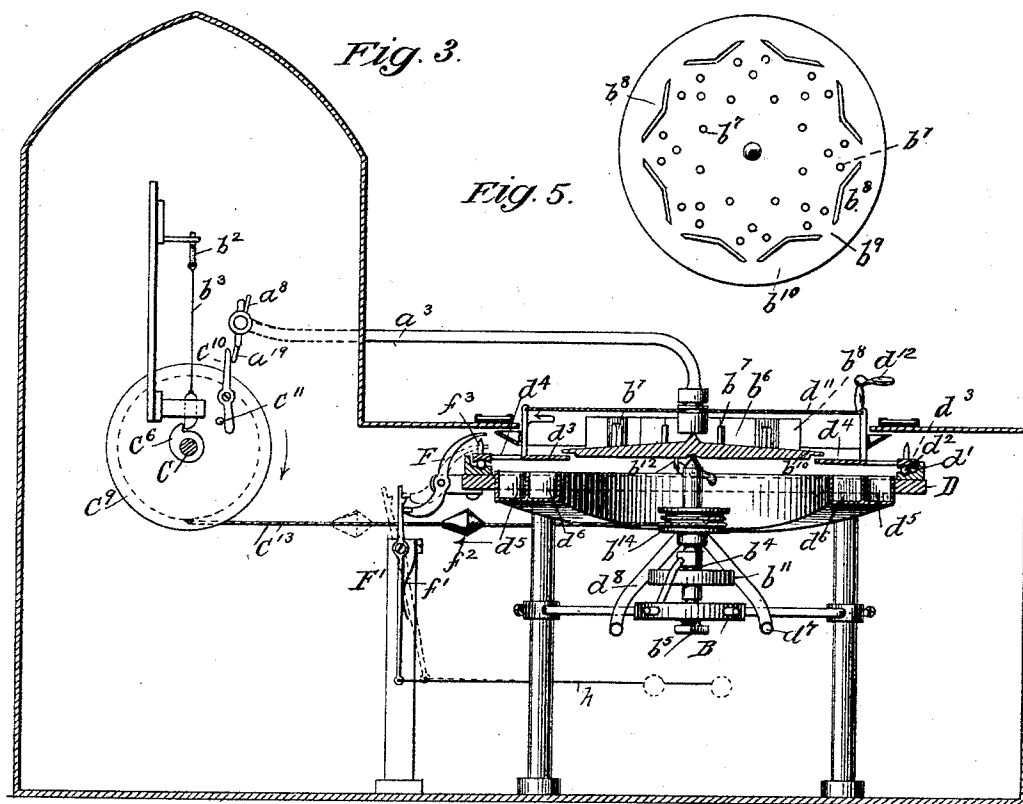
(No Model.)

4 Sheets—Sheet 2.

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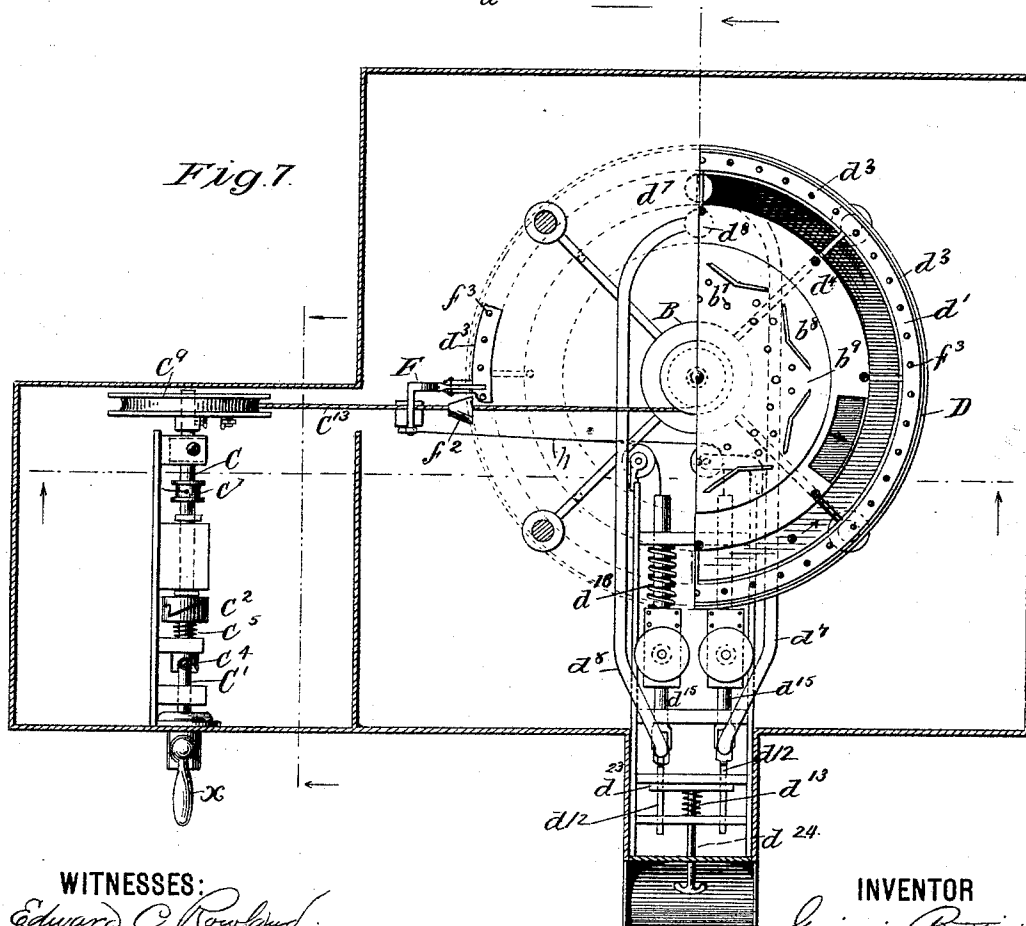
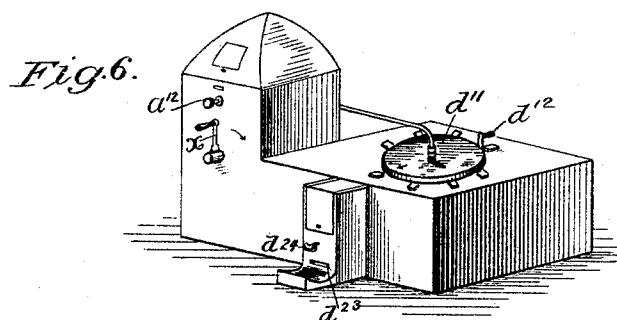
(No Model.)

4 Sheets—Sheet 3.

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4 Sheets—Sheet 4.

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Fig. 8.

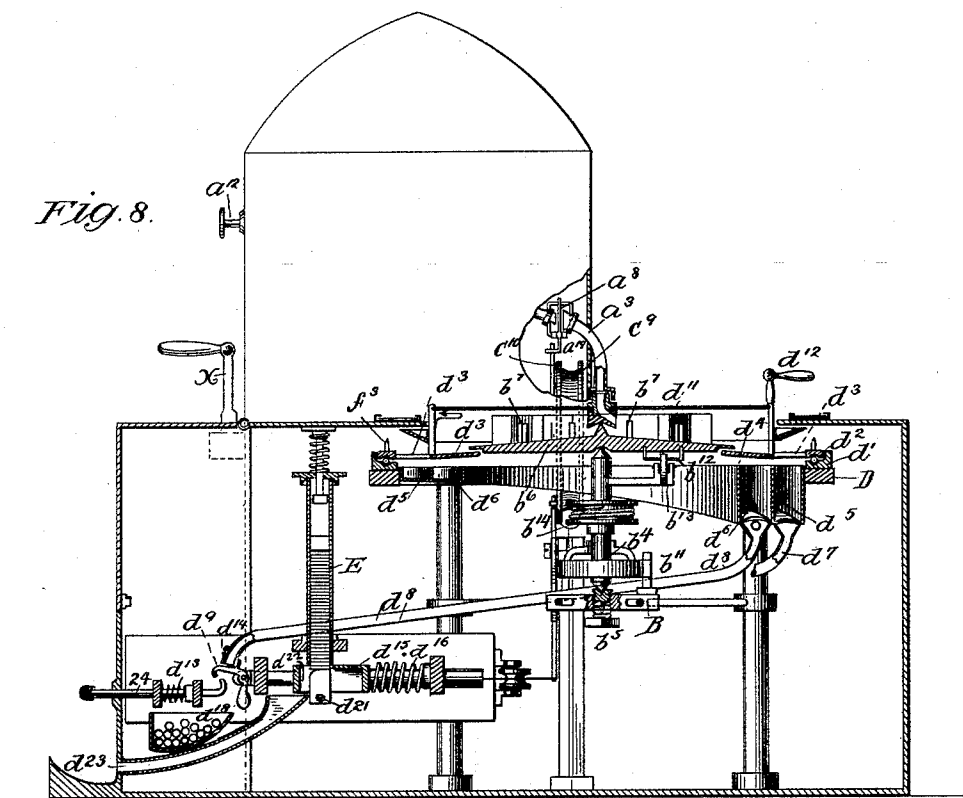
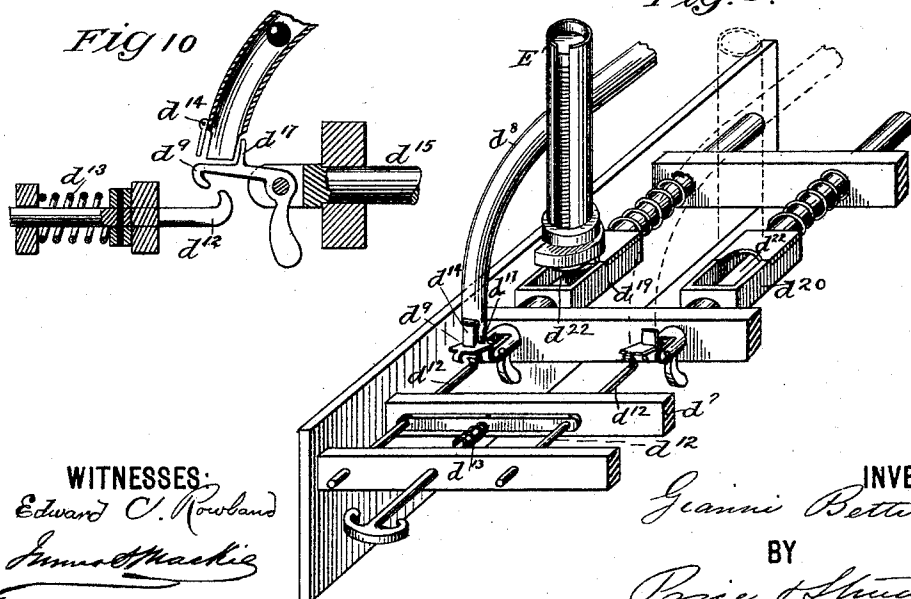


Fig. 9.

Fig. 10.



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UNITED STATES PATENT OFFICE.

GIANNI BETTINI, OF NEW YORK, N. Y.

NICKEL-IN-THE-SLOT MACHINE.

SPECIFICATION forming part of Letters Patent No. 497,906, dated May 23, 1893.

Application filed November 3, 1891. Serial No. 410,785. (No model.)

To all whom it may concern:

Be it known that I, GIANNI BETTINI, a subject of the King of Italy, at present residing in the city and State of New York, have invented a new and useful machine or apparatus which may be used for recreation and amusement in various ways, of which the following is a specification.

The subject matter of my invention pertains to the dropping of a ball upon a revolving table and the mechanisms are so arranged that the parts are normally non-operative until a nickel coin or check is dropped into a slot.

The class of machines to which my invention refers is usually known by the name of nickel-in-slot-machine.

The following is a full description and the accompanying drawings illustrate the invention, in which—

Figure 1, is an upright view partly in section of the upper part of the machine, showing the balls and their conduit as they approach the revolving table, with means for letting them out *serialim*, and the drum upon which the cord is wound to store power in the spring which revolves the table, and also showing the mechanism by which the apparatus is made operative by the insertion of a nickel, penny, check, or other device of proper form or size. Fig. 2, is a top view of the mechanism for the reception of the check, or nickel, and the ball retaining slot. Fig. 3, is a sectional view of the apparatus showing the conduit tube a^3 for the ball, and mechanism by which it is released; the revolving disk seated within a turning table, and the discharge tubes for the balls; and the mechanism to prevent the operation of the turning table by hand until the machine is properly prepared therefor. Fig. 4, is a perspective view of the turning table and the revolving disk within. Fig. 5, is a top view of the revolving table and its outlets for the escape of the ball. Fig. 6, is a perspective view of the apparatus when inclosed in its casing. Fig. 7, is a top view of the device partly broken away. Fig. 8, is a sectional view of the lower part of the machinery in which is shown the discharge tubes of the ball and mechanism by which they are delivered, also one of the check tubes. Fig. 9, is a perspective view of the check tubes and device for releasing

them. Fig. 10, is an enlarged sectional view of mechanism for delivering the balls. Figs. 11, 12 and 13, are views of details.

Upon suitable frame work, the operating devices of the machine are supported and arranged.

Viewing Fig. 1, a hopper or receptacle A, contains a series of balls a' , and a conduit tube a^3 for the balls. A bar a^4 , passes below the outlet of the tube; an enlargement of the bar at this point, permits of an opening therethrough, as at a^5 , in which one of the balls may drop and rest upon the projection a^6 , below the bar, while the ball is held within the walls of the opening in the bar. Immediately behind this opening the solid portion of the bar is somewhat inclined as at a^7 , and beyond and at the other side of this opening is the opening in the tube or conduit a^3 , enlarged or beveled at its top so as to receive the ball when it drops and allow it to fall down the tube and rest against the catch a^8 , from which it is released by devices which will hereinafter be described. It will be seen therefore, that when the ball is within the opening in the bar, as shown in Fig. 1, if the bar be pushed forward, the ball will drop into the mouth of the tube and the succeeding ball will be prevented from falling by the solid portion of the bar a^7 . It will also be seen, that when the bar is again restored to normal position, another ball will drop into the opening in the bar and be held in the same way as the one just described. If the opening in the bar be large enough, it may retain more than one ball. The spring a^9 , one end of which is in contact with a pin in the bar a^4 , and the other end in contact with a stationary projection as a^{10} , is the means which I have employed to restore the bar to normal position. In order therefore, to accomplish these movements, I have made arrangements by which this bar may be shoved forward by hand to be restored by the spring when the hand is released. But it is desired that this bar be non-operative until the device is properly prepared.

In the end of the bar a^4 , I have placed a socket a^{11} , so that the end of the spindle a^{12} , will pass therein freely. This latter spindle a^{12} , is operated by pressure upon the thumb button at its outer end, to give it a forward movement, and its return movement is imparted by the spring a^{13} , one end of which is

in contact with the stationary projection, and the other with a suitable collar on the spindle, so that in the drawings, as the device is shown in Fig. 1, the spindle a^{12} , may be thrust forward and retracted at pleasure without moving the bar a^4 , as the end of the spindle would play in the socket in the bar a^4 , without giving movement thereto. It will be readily seen that it makes no difference whether the spindles plays in a socket in the bar, or the bar has a movement within a collar on the spindle, the device would be non-operative in both cases until made operative by the insertion of an obstruction between the ends of the bar and spindle.

Just at the end of the spindle, I provide a stationary box a^{14} , having two sides and open at the top and bottom, as shown more clearly at a^{14} , Fig. 2; and so arranged that between the ends of the bar a^4 , and the spindle a^{12} , there is a space a^{15} , of sufficient size to admit a penny, nickle, check or other suitable device, and above this opening is a tube a^{16} , into which this check is dropped; when it reaches the bottom it constitutes a solid obstruction between the ends of the bar a^4 and the spindle a^{12} . The bar a^4 , may now be advanced by pressure upon the thumb button which moves forward the bar and check together until they pass the end of collar a^{14} . The thumb button is then released, and the bar a^4 , returns to its place, the check or penny drops into the box a^{17} , and the bar a^4 , remains caught and held by devices which I will now explain.

On the end of bar a^4 , is the hook or detent catch a^{18} . When the bar is pushed forward, this hook or catch drops into a notch b' , cut into one arm of the pivoted lever b^2 ; this pivoted lever has attached to the end of its arm b^2 , a rod b^3 , whose weight supplies the force to keep the notch b' , pressed into the hook a^{18} until released by other devices.

The foregoing description it will be seen contains the mechanism which delivers the ball to the obstruction a^8 , and drops the check or nickel into the box a^{17} , preparatory to the other operations of the machine.

Before describing the mechanism which releases the ball in the tube a^3 , at the point a^8 , I will describe that portion of the machine which receives the ball when it comes out of the tube. Upon a suitable support B, (Fig. 8,) is erected the spindle b^4 , whose upper and lower ends are formed into cone-shaped pivots; through the support B, a set screw b^5 , serves to adjust the spindle b^4 ; upon the top of this spindle is set the revolving table b^6 , the pointed end of the spindle entering a step in the center of the revolving table so that it may revolve easily thereon. The revolving table is supplied with pegs or pins b^7 , and a rim b^8 , having suitable openings b^9 , (see Fig. 5.) The table as shown is slightly convex upon its upper surface, so that the balls may roll down and through these openings b^9 , and off the edge of the table. Spiral spring b^{11} ,

with one end attached to the spindle b^4 , and the other end to a rigid part of the frame work, serves to revolve the spindle when the spring is either wound or unwound to store up its force. Projecting from the lower side of the table as shown in Fig. 8, is a loop of wire or other suitable material b^{12} , and projecting from the upper end of the spindle and revolving with it is an arm b^{13} ; to which is pivoted a lever arranged so as to fall when the spindle b^4 is turned by hand to store up the force of the spring b^{11} , and to remain rigid and turn the table when the spring re-acts; so that while the table is turned to store up force in the spring, the arm b^{13} may pass the loop b^{12} several times in its revolutions without affecting the table, but as soon as released and turned in the opposite direction, it will strike the loop b^{12} and revolve the table. The mechanism for accomplishing this purpose I will now describe.

Viewing Fig. 1, C is a shaft suitably journaled within the frame; C' is another shaft also properly journaled in the frame to be in line with the shaft C; when at rest the coupling c^2 , practically makes one continuous shaft of C and C'. The crank X with its handle, enables this shaft to be turned by hand. Affixed to a rigid support is the cam or eccentric c^3 , shown more clearly in Fig. 12, and surrounds the shaft C' like a sleeve. A roller or pin c^4 , (Figs. 1 and 7) is attached to the shaft; as the shaft is revolved by the crank, this pin comes in contact with the cam; the shaft C' is moved backward and away from the shaft C, but continues to revolve the latter until the coupling c^2 has separated; it is returned back again to its place by the spring c^5 . On the shaft C is an eccentric or cam c^6 , shown in side view in Fig. 3, into the notch of which the end of the weighted arm b^3 drops, and when in position, holds the shaft and prevents it from turning, but when the rod a^4 has been pushed forward as heretofore explained and the hook a^{18} is caught in the notch of the lever b^2 , the rod b^3 is lifted from the cam and leaves the shafts C and C' in condition to be turned by the crank X; on the shaft C, is also affixed a drum c^7 ; by turning crank X, the drum c^7 is revolved, winding thereon the rope or cord c^8 whose other end being attached to the inner arm of lever b^2 , disengages the hook a^{18} from the notch b' , and this allows the bar a^4 to be restored by its spring to its normal position as shown in Fig. 1, to receive another ball in the socket a^5 , and another check or nickel in front of the spindle a^{12} . The ball having, as already described, passed through the aperture is now resting at the obstruction a^8 and is ready to be released. On the outer end of the shaft C is mounted the drum pulley c^9 and revolution of this pulley serves the purpose of releasing the ball at the point a^8 and storing up power in the spring b^4 , as follows: Just where the tube a^3 is broken, I have placed a pivoted plate or rod a^{19} , the lower end of which is shaped into the form of a

bell crank as shown in Fig. 1. On one side of the drum pulley c^8 , I have placed the pivoted lever c^{10} so that it may strike against the bent arm of the rod or plate a^{19} . Behind the lower arm of the lever c^{10} , I have placed the stop c^{11} , so that when the drum pulley c^9 is revolved by the crank, the lever c^{10} , will touch against the bent arm a^{19} without affecting it, but when turned in the opposite direction will open the aperture closed by the plate a^{19} in tube a^3 , and allow the ball to pass out of the tube and fall upon the center of the revolving table b^6 . On the spindle b^4 is secured the drum b^{14} around which passes the rope or cord c^{13} whose other end is attached to the drum pulley c^9 and is wound thereon by turning the crank X, thus storing a power in the spring b^{11} . It will be seen from this arrangement that while the drum pulley c^9 is revolving to release the bar a^4 and to store up power in the spring b^{11} , the coupling c^2 is gradually parting until it separates the two shafts entirely. At this point the spring b^{11} begins to re-act, revolving the arm b^{13} which contacts with the loop b^{12} on the inner side of the revolving table and gives the revolving table a momentum. The ball drops upon the table and is kept thereon, roaming about among the pins, until the momentum of the table ceases, when it rolls out of one of the openings b^9 and off of the edge of the table b^{10} . At the same time the pin c^4 passes the extremity of cam c^3 when the spring c^5 forces the coupling c^2 back to its place, the weighted rod b^3 falls behind the projection on the cam c^6 and the machine is restored to normal position. It is clear therefore, that no ball can fall into the tube a^3 below the bar a^4 , nor can the bar a^4 be pushed forward, until a check or coin is dropped into the tube a^{16} , and it is also clear that the shafts C and C' are prevented from being turned until the bar a^4 is pushed forward, those shafts being locked by the weighted arm b^3 behind the projection on the cam c^6 .

Supported by the frame work of the machine is a circular frame D, (Figs. 3 and 8) provided with a groove d' within which are placed a number of balls d^2 . Upon these balls is placed the circular plate d^3 . The inner edge of this plate projects under the outer edge of the revolving table to receive the ball and direct its course outwardly. Near the outer edge of this plate are cut a number of openings d^4 , as many as may be desired, and on its inner edge is cut one or more openings, so that when a ball has rolled off of the revolving table, it will drop through one of the inner or outer openings in this plate. Beneath these openings is supported a frame having two circular grooves d^5 and d^6 , into one of which the ball drops when it rolls from the revolving table. The grooves are inclined downwardly and terminate at the bottom in openings, to which are attached the tubes d^7 and d^8 , into which the ball falls down until it is stopped by one of the weighted levers d^9 . One end of this lever d^9 is hooked and the

weight of the ball forces it down and over the hooked end of the bar d^{12} for a purpose which will be more fully explained.

Upon the circular plate d^4 is arranged a glass plate d^{11} supported by suitable posts, so that the whole device is in the form of a circular box supported upon the rollers d^3 , and is turned by the handle d^{12} ; an opening in the center of the glass plate admits the end of the tube a^3 , through which the balls pass to drop upon the revolving table. Upon the face of the glass plate may be put an arrow or index finger in such position that it stands directly over the inner opening (if there be but one) in the plate d^3 ; and upon the box and surrounding the glass plate, are placed a series of blocks which may be ornamented with different figures as desired; so that a party desiring to operate the device may select any one of the surrounding figures and turn the circular box until the index points to the figure of his choice. If the selection be a good one and the ball should respond, it will drop into the single inner opening and down into its corresponding tube; should it fail, it will drop through one of the outer openings and its tube in either case to be finally stopped by one of the weighted levers d^9 . Immediately below one hooked end of the weighted lever d^9 is the hooked end of a spindle d^{12} which may be pulled outwardly by a button on the end of the spindle and is returned to its place again by the spring d^{13} , and in the end of the tube immediately above the arm d^9 , is a door d^{14} hinged to open outwardly. The lever d^9 is pivoted to a shaft d^{15} which has a reciprocating movement impelled in one direction by a spring d^{16} and in the other when pulled by the spindle d^{12} . Upon the hooked arm of the lever d^9 is arranged an upward projection d^{17} and the pipe is cut away to allow this projection to contact with the rear edge of the ball, and when the lever d^9 is forced down, the ball resting thereon, the projection d^{17} will, when pulled, strike against the ball, open the door at d^{14} , allow the ball to escape and fall into the box d^{18} . It will thus be seen that the shaft d^{15} can only be pulled out when one of the balls has run through its course and has hooked the shaft d^{15} to the spindle d^{12} ; when the ball has dropped and the spindle is released, the parts return again to their original position and no movement of the spindle d^{12} will operate the shaft d^{15} . An enlarged view of this portion of the device is shown in Fig. 10. In connection with this device I have arranged two tubes E, E', into which are placed checks. In one of the check tubes the checks are of different character than in the other or in both tubes the checks may be mixed, and beneath each of the tubes is one of the shafts d^{15} provided each with a box as d^{19} and d^{20} into which the checks are dropped when one of the spindles d^{12} is caught and pulled by one of the shafts d^{15} . Fig. 9 will illustrate this. The checks in the tubes rest upon a

solid part of the box d^{21} . As the shaft d^{15} is pulled forward and the box with it, the rear edge of the box pulls off the lower check which drops through the opening d^{22} , and out through the pipe d^{23} . It is evident from this arrangement that no check can be extracted from either of the tubes until a ball passing down its tube has hooked one of the shafts d^{15} to its appropriate spindle.

10 An arrangement as shown in Fig. 9, may be made by which a sliding frame as b^{23} may be made to operate either of the checks in their proper tubes, or a ball in its appropriate tube with but one handle as d^{24} . It will be seen 15 by this arrangement that the frame when pulled by d^{24} will carry both of the spindles d^{12} , but only one of the balls and one of the checks as governed by the ball in the tube which has connected a shaft and spindle together. In addition to this arrangement, I have placed a device which will prevent the party operating the apparatus from discovering the course which the ball is about to take 20 as the momentum of the revolving table comes to an end and by turning a handle d^{12} , enable him to direct the ball into an inner opening which represents the highest denomination of check. A weighted or spring lever F, suitably pivoted to a portion of the frame is operated by a button f^2 secured to the cord c^{13} which passes around the drum c^9 . The upper end of this lever when the drum c^9 is turned drops between the pins f^3 secured to the circular plate d^3 , locks this wheel, and 25 prevents it from being turned by its crank; this lever is locked and held by a spring lever f' shown in Fig. 3, in two positions represented by dotted and full lines. The lower end of this lever has attached a cord h , (see 30 Figs. 3 and 7) which branches and passes around suitable pulleys and the ends of the branches are attached to the bars d^{15} ; the spring bar f' keeps the turning table locked until one of the bars d^{15} is pulled, releasing 35 the lock lever from lever F, and lever F from the pegs on the frame, and the table is free to be turned by its crank when the other parts of the apparatus are at normal position and ready to be operated.

50 It will be seen that the blocks around the top plate d^{11} , may be made to represent any kind of characters, historical or comical or they may be simply numbers or figures. The check to be dropped into the slot may be of 55 any material, form or size, the balls of any material or configuration adapted to roll off the tables.

The operation of the apparatus is as follows: A party takes hold of the crank of the 60 upper plate and turns the pointer to any of the figures on the surrounding blocks; he then drops a penny, dime, nickel or check of suitable form into the tube a^{16} , which falls between the ends of the spindle a^{12} , and the bar a^4 , and makes operative the bar a^4 by pushing the spindle a^{12} ; as it is pushed, the 65 lower ball in the upper tube drops into the

lower tube a^3 , and falls therethrough until stopped by the check rod or plate a^8 , while the other balls in the upper tube are retained 70 by the solid part of the bar a^7 ; the rod a^4 , when thus pushed, advances and operates the lever b^2 , to release the locking bar b^3 from the check or cam c^6 and holds it in this position making the shaft C operative by 75 turning the crank X; the spindle a^{12} is then released and is returned by its spring to starting point allowing the check, nickel or penny to drop in the box a^{17} . The bar a^4 does not return but is caught and held by the detent a^{18} and hook b' . The operator now turns the crank X, which performs several operations. It turns at first both shafts C and C', winds the cord on the drum c^7 , releases the bar a^4 , whose spring returns it to place allowing 85 another ball to be dropped into its opening and be retained therein for another operation. It winds the cord on the drum c^{13} , storing a force in the spring b^{11} ; it drops a pawl between the pegs of the turning table and 90 holds it locked until afterward released; it releases the ball held by the rod a^8 , and allows it to drop upon the revolving table and pursue its course through one of the tubes d^7 d^8 , and lock one of the bars d^{15} to the spindle d^{12} , in position to draw out a ball and check 95 by the same movement, and finally it separates the shafts C and C', allowing the revolving table to be turned by the reaction of its spring and receives the released ball while 100 revolving and returns the coupling c^2 to its normal position. The operator now pulls the spindle d^{12} , draws out a check and ball and releases the lever F from the pegs on the turning table. 105

The device may be applied to numberless uses. A parlor game for children may be played to reward a successful guess. One of the party turns the pointer to one of the figures of the surrounding blocks; one of the 110 checks in the tube may also contain the same figure. If such check be drawn, the drawer may be selected as queen or king of the game or a book, print or other reward may be given. It may also be used for charity. 115

The different hospitals may be represented by the checks and the nickel or penny given to the one corresponding with the check drawn out; the uses of the device may be multiplied. 120

What I claim is—

1. In a nickel-in-slot machine, a revolving table and driving mechanism therefor, in combination with a conducting tube for the passage of a ball whose outlet is over the table, means for retaining the ball in the tube, and 125 means for releasing the same normally non-operative until the table begins to revolve.

2. In a nickel-in-slot machine, a revolving table in combination with a tube for the passage of a series of balls, whose outlet is over 130 the table, and mechanism normally non-operative for delivering the balls as required, and means for receiving a check, or coin to convert the non-operative into an operative

mechanism to release a ball and drop it on the revolving table.

3. In a nickel-in-slot machine, a revolving table and a conduit tube for the passage of a series of balls, having an outlet over the table, and means for arresting the passage of the balls, in combination with a sliding bar or rod α^4 , normally non-operative and provided with an opening to retain one of the balls located within a break in the tube, a spindle for impelling the bar, a space between the ends of the bar and spindle for the insertion of a coin or check whereby the bar may be made operative by impelling the spindle, substantially as described.

4. In a nickel-in-slot machine, a conduit tube for a series of balls, means normally non-operative for cutting out and dropping the balls into the tube as required, means for preventing the other balls from falling while one is dropped, in combination with a revolving table to receive the dropped ball and means for arresting and holding the ball within the tube until the table begins to revolve.

5. In a nickel-in-slot machine, a revolving table and mechanism for driving the same, devices normally non-operative for storing the power in said driving mechanism, a tube for the passage of a ball to be dropped upon the table, and devices normally non-operative for releasing the ball to be dropped, in combination with means actuated by the insertion of a check or coin to make operative both the power-storing and ball-releasing devices.

6. In a nickel-in-slot machine, a revolving table and driving mechanism therefor, devices normally non-operative for storing force in the driving mechanism, in combination with means normally non-operative to make operative the force-storing devices and the driving mechanism for the table actuated by the insertion of a check or coin.

7. In a nickel-in-slot machine, a conduit tube for a series of balls and means normally non-operative for dropping the balls within the tube as required, in combination with a table and means normally non-operative for revolving the same, mechanism to render operative the releasing devices for the ball and the means for revolving the table, and means for catching and receiving the ball when it leaves the table.

8. In a nickel-in-slot machine, a shaft as C provided with locking devices and the weighted rod b^3 , in combination with a pivoted lever b^2 , a normally non-operative sliding shaft α^4 , acting upon a lever b^2 to release the locking device on shaft C, and means for making the shaft operative by dropping a check or coin in the slot.

9. In a nickel-in-slot machine, a revolving table operated by the stored force of a spring, means for storing the force in the spring operated by a shaft C, in combination with a shaft C' coupled in line with shaft C, means

for turning shaft C through a coupling c^2 , means for withdrawing the coupling to separate the shafts when C' is turned, whereby stored force is given to the spring and the revolving table operated in a reverse direction when the shafts are separated.

10. In a nickel-in-slot machine, a revolving table and means for delivering a ball thereon in combination with a turning table located beneath the revolving table in position to receive the ball therefrom and provided with a series of openings, and means for adjusting the turning table to bring its openings into any required position with relation to the revolving table.

11. In a nickel-in-slot machine, a revolving table and means for delivering a ball thereon, in combination with a turning table located beneath the revolving table and provided with a series of openings to receive the ball from the revolving table, means for adjusting the turning table to bring the openings in any required position and a stationary gutter beneath the openings to receive the balls passing therethrough.

12. In a nickel-in-slot machine, the pivoted hooked lever d^{17} arranged to close the opening in the tube d^8 and provided with a projection behind the tube, the tube d^8 cut away in the rear to provide a passage for the projection on the lever and a hinged door in front, in combination with a hooked sliding spindle d^{12} whereby a ball is withdrawn when the levers are hooked.

13. In a nickel-in-slot machine, a revolving table and means for delivering a ball thereon, a tube for receiving the ball from the table, in combination with a receptacle containing a series of checks, devices for delivering said checks as required, mechanism normally non-operative for actuating the delivery devices made operative by the passage of the ball through the tube.

14. In a nickel-in-slot machine, a receptacle for checks E, and means normally non-operative for drawing out the checks one at a time, in combination with a spring revolved table, normally non-operative until a force is stored in the spring, a receptacle containing a series of balls, and means normally non-operative for dropping the balls one at a time upon the revolving table, and made operative by dropping a check in a slot, whereby the ball is released and the power storing mechanism is unlocked, and means operated by the released ball to make operative the mechanism for drawing out a check from the receptacle.

Signed at New York city, in the county of New York and State of New York, this 23d day of October, A. D. 1891.

GIANNI BETTINI.

Witnesses:

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E. L. HEALY.