

S. N. JOHNSON.
GAME APPARATUS.

Patented Mar. 7, 1893.

Fig. 1.

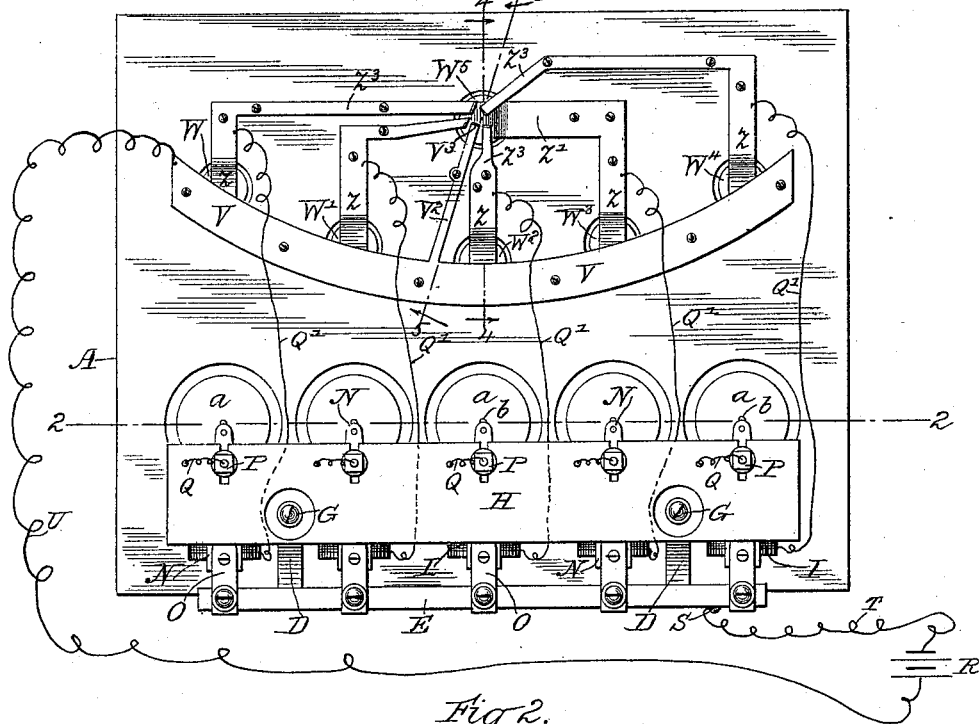


Fig 2.

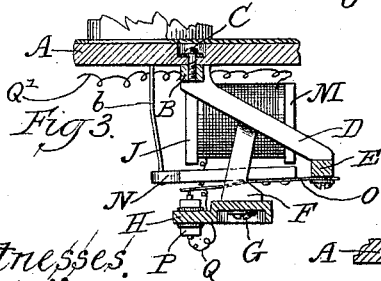
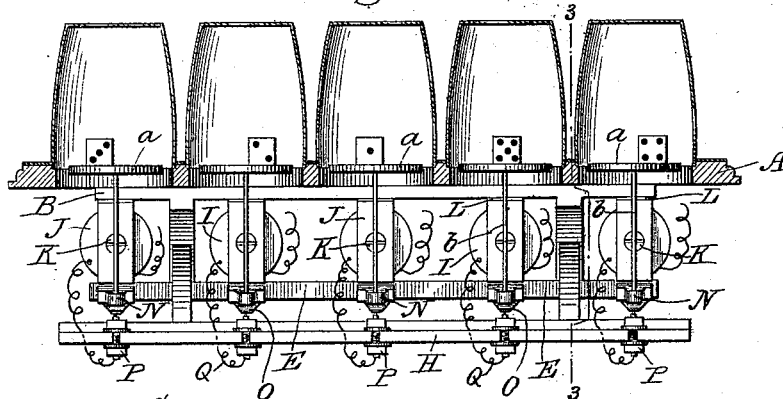


Fig 4.

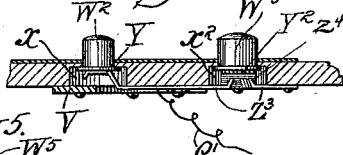
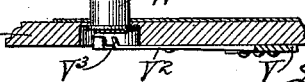



Fig 5.



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UNITED STATES PATENT OFFICE.

SIDNEY N. JOHNSON, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE MARION MANUFACTURING COMPANY, OF SAME PLACE.

GAME APPARATUS.

SPECIFICATION forming part of Letters Patent No. 492,961, dated March 7, 1893.

Application filed April 19, 1892. Serial No. 429,731. (No model.)

To all whom it may concern:

Be it known that I, SIDNEY N. JOHNSON, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Game Apparatus, of which the following is a full, clear, and exact specification.

My invention relates to game apparatus in which the manipulation or actuation of the game device is accomplished by means of electricity and the invention is designed as an improvement on the apparatus described and claimed in my application for United States Letters-Patent, Serial No. 407,687, filed October 5, 1891, and the present improvements relate more particularly to the means for closing the circuits and to the manner of supporting, arranging and constructing the electric buzzers.

In my former invention, I employed a number of batteries or cells, or a cell for each of the buzzers, and the circuits were simultaneously closed through the buzzers, by moving a series of floating contacts at once against the contacts carried by the individual buttons. This arrangement, however, while capable of accomplishing the desired result, is found objectionable in that it is too intricate and complicated for practical purposes and requires too much exertion or force to close all the circuits simultaneously, it often being the case that the frame carrying the floating contacts fails to move uniformly and consequently closes some of the circuits in advance of the others and requires further and extreme pressure to close the balance.

The prime object of my present invention, therefore, is to greatly improve and simplify the mechanism for closing the circuits, whereby the buzzers or electrical devices will be more responsive to the movement of the contact buttons or keys.

With these ends in view, my invention consists in certain features of novelty in the construction, combination and arrangement of parts, by which the said objects and certain other objects of minor importance hereinafter described, are attained, as fully explained with reference to the accompanying drawings

and more particularly pointed out in the claims.

In the said drawings—Figure 1, is a bottom plan view of the board which constitutes the top of the box or casing, not shown, showing my improvements applied thereto. Fig. 2, is a transverse section of the same, taken on the line 2—2, Fig. 1. Fig. 3, is a detail sectional view taken on the line 3—3, Fig. 2. Fig. 4, is a detail sectional view taken on the line 4—4, Fig. 1, and Fig. 5, is a detail sectional view taken on the line 5—5, Fig. 1.

Like signs of reference indicate like parts throughout the several views.

In my former invention, the buzzers or electro magnets and the circuit closing mechanism, were secured to the bottom of the casing, but in my present invention, I secure to the top A of the box or casing, a frame composed preferably of cast iron or other suitable metal, and which consists of a horizontal bar B arranged in contact with the under side of the top A and secured thereto by means of screws C, which pass downward through such top and are threaded in the bar B, the heads of such screws being countersunk in the top A, as shown in Fig. 3; projecting downwardly and rearwardly from the bar B, near each end thereof, is an arm D, at the lower ends of which arms is formed another horizontal bar E, and projecting downwardly from the arms D are short arms F, to the ends of which is secured, by means of screws or rivets G, a wooden or other non-conducting bar, H.

Each of the electro magnets, I, is provided at one end with a bar J, preferably composed of soft iron and secured to the core of the magnet by any suitable means, as a screw K, and these bars J are secured at their upper ends in any convenient manner, to the horizontal bar B, the bars J, B, being magnetically insulated from each other, by means of brass or bronze washers L, as shown in Fig. 2. Thus, the bars J firmly support the magnets I and at the same time constitute one of the pole pieces for each magnet, the other pole piece for each magnet being formed by a downwardly projecting core M, as shown in Fig. 3. The armatures N for the magnets are secured to the under side of the bar E, by means of

suitable springs O, and the back stops or contacts P, against which said springs impinge, for making and breaking the circuit through the magnets, are suitably mounted in the bar H and may be of any desired form, they being, of course, connected to one terminal Q of each helix, in the ordinary manner.

One pole of the battery R, which may be a single cell or any other form of electrical generator, is connected to the bar E at any convenient point, as S, by means of a conductor T. The other pole of the battery R is connected by means of a conductor U to a contact bar V, suitably secured to the under side of the top A. This contact bar V, is preferably curved, as shown, so as to conform to the curvature of the series of individual push buttons W, W', W², W³, W⁴, and its edge may partly underlie the sockets X in which said push buttons work.

Each of the push buttons is provided with a flange Y on its under side, which limits its upward movement, by coming in contact with the upper side of the socket X, and to the under side of each of these flanges, is secured a flat spring Z, which is suitably secured to the under side of the top A and forms a yielding support for the button, so that when any one of the buttons W, W', &c., is depressed, the spring Z secured to the button, will be forced into contact with the upper side of the contact plate V, and as these springs Z are connected respectively with the other terminals Q' of the magnet helices, it will be understood that the circuit will be closed through the spring Z, which is depressed, and helix, to which it is connected; thus causing the vibration of the armature and the consequent agitation of one of the dice supporting disks, a, which latter are supported on the armatures respectively, by means of arms b.

In order that the contact plate V may lie flat against the under side of the top A, without danger of accidental contact with the springs Z, such springs are bent upward into the sockets X, as more clearly shown in Fig. 4, and the extreme end of each of the springs Z is turned downward slightly, in order to produce better electrical connection with such plate V, as will be understood. Thus it will be seen that any one or any number of the dice supporting disks, a, may be agitated by depressing the button or buttons of the series W, W', &c., that correspond with the particular disk or disks; and in order that all of such disks may be operated simultaneously by the movement of a single button, I provide an independent button W⁵, as in my former invention, which, however, like the other buttons W, W', &c., in my present invention, is supported in a socket X² by means of the blade spring Z', in the manner before described, such springs Z', if desired, being a continuation of one of the springs Z of the individual push buttons, the button W⁵, like those before described, being provided with a flange Y², for limiting its upward movement.

Each of the springs Z is provided with an extension Z³, which extensions are preferably composed of spring metal and formed integrally with the springs Z and the ends of which extensions preferably terminate in up-turned contact points Z⁴, as more clearly shown in Fig. 4, which are so arranged as to be normally out of contact with the spring Z', but capable of being brought into contact with such spring by the depression of the button W⁵; thus establishing electrical communication between all of the terminals Q'. In order that the current may now pass from the bar V into these terminals Q' simultaneously, I provide such bar V with a supplemental contact plate V², which is suitably secured to the under side of the top A and is in normal contact with the bar V, but like the extensions Z³, being normally out of contact with the spring Z', and also like the springs Z, being preferably provided with an up-turned contact point V³, so arranged as to be impinged by the spring Z', when the latter is depressed by means of the button W⁵, thus simultaneously establishing communication between all of the terminals Q' and the contact bar V, and thereby causing a simultaneous agitation of all the disks a. With an apparatus thus constructed, it will be seen that the circuit closing mechanism is simple and effective, and that it requires no more exertion to close the circuit through all of the buzzers simultaneously than it does through any one of them, it only being necessary in either instance to overcome the inertia of the simple spring Z or Z'; and it will be seen furthermore, that all of the mechanism is attached to the top A of the box, and may be removed bodily with such top.

Having thus described my invention, what I claim as new therein, and desire to secure by Letters Patent, is—

1. The combination with a source of electrical energy and the board A; of springs secured to said board and connected to said source of electrical energy, push buttons mounted upon said springs respectively, a common contact plate connected to said source of electrical energy and arranged to be impinged by said springs, and an individual circuit closer, said springs and common contact plate having extensions or springs leading to a common center under said individual circuit closer and adapted to be impinged thereby, substantially as set forth.

2. In a game apparatus, the combination with a source of electrical energy and a series of electric buzzers connected with said source of electrical energy; of a corresponding series of buttons or circuit closers connected respectively with said buzzers, a common contact plate connected to said source of energy and being arranged to be impinged by said circuit closers, an individual button or circuit closer, and contact springs or extensions leading from the respective circuit closers of said series of circuit closers and from said common contact plate and being

arranged to be impinged by said individual circuit closer, substantially as set forth.

3. The combination of the board A having series of sockets X formed in the under side thereof, a series of push buttons arranged in 5 said sockets respectively, springs secured to the under side of said board and being bent upwardly into said sockets and supporting said push buttons, a common contact plate 10 secured to the under side of said board and underlying said springs so as to be impinged thereby, the socket X² formed in the under side of said board, the individual circuit closer or push button W⁵, arranged in said socket 15 X², extensions or contact plates leading from said springs and from said common contact plate and underlying said circuit closer W⁵, and a source of electrical energy connected with said springs respectively and with said

common contact plate, substantially as set forth. 20

4. In a game apparatus, the combination of the board A; a frame secured to the under side of said board and consisting of the horizontal bars B, E and H, and the arms D, F, 25 connecting said bars together, the magnets secured to said bar B and magnetically insulated therefrom, the armatures secured to said bar E, dice supporting disks carried by said armatures, the contact points P mounted 30 in said bar H and a source of electrical energy connected to said bar E and to one terminal of each helix of the magnets, substantially as set forth.

SIDNEY N. JOHNSON.

Witnesses:

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