June 14, 1949. J. M. MOON 2,472,916

ELECTROMAGNETIC CHECKER BOARD

Filed Oct. 8, 1945

2 Sheets-Sheet 1

Fig. 1.

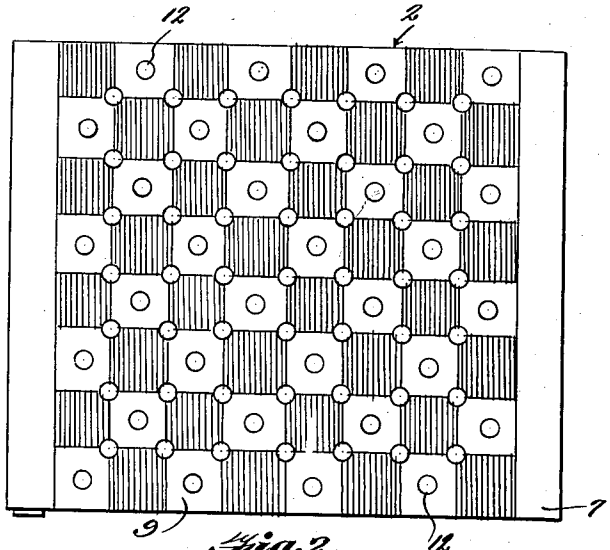


Fig. 2.

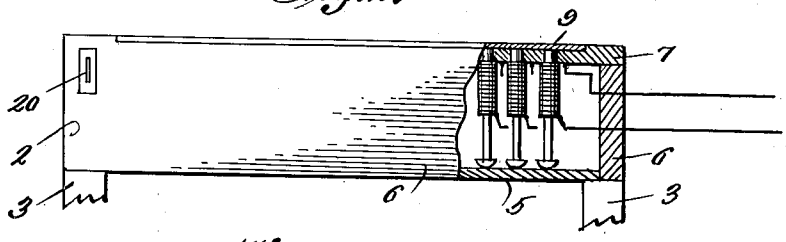
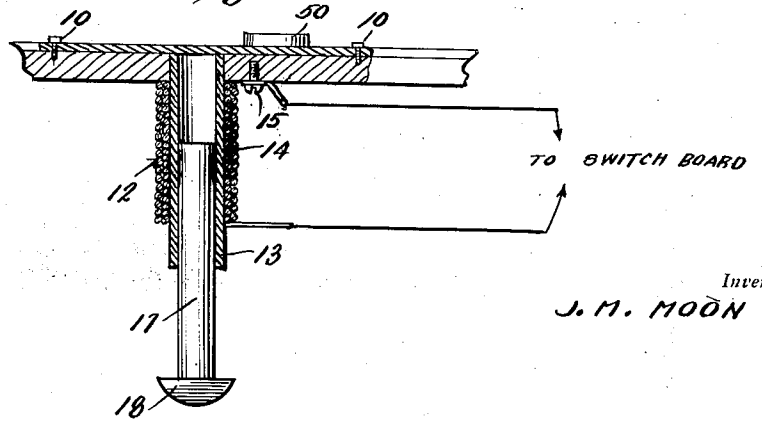


Fig. 3.



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June 14, 1949. J. M. MOON 2,472,916

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Filed Oct. 8, 1945 2 Sheets-Sheet 2

Fig. 4.

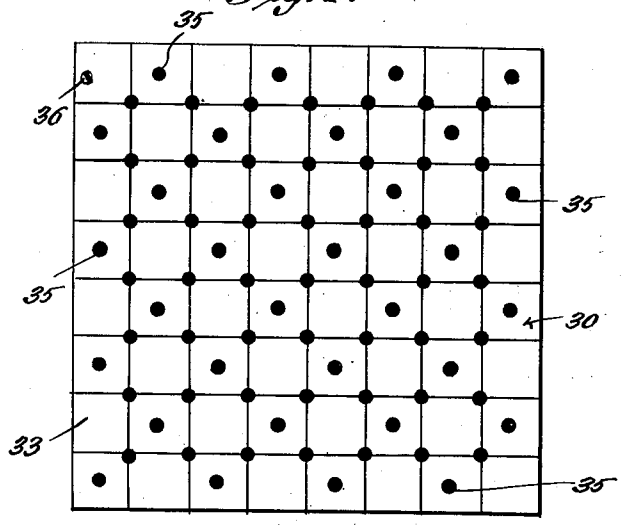


Fig. 5.

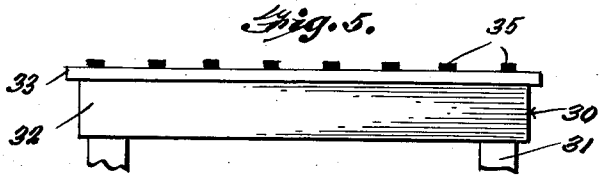


Fig. 6.

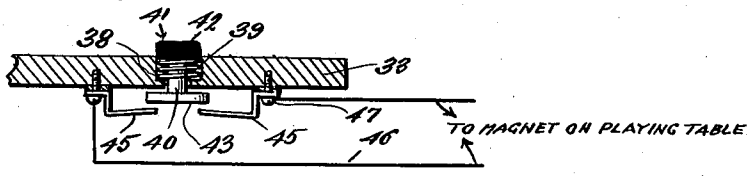


Fig. 7.

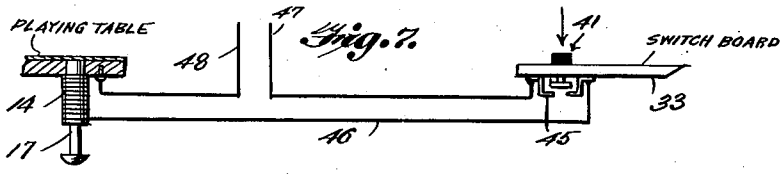
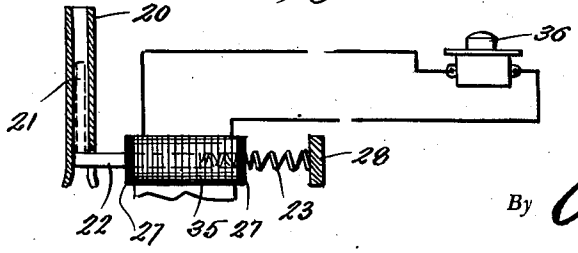


Fig. 8.



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UNITED STATES PATENT OFFICE

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ELECTROMAGNETIC CHECKERBOARD

James M. Moon, Graham, N. C.

Application October 8, 1945, Serial No. 620,895

3 Claims. (Cl. 273—136)

1

This present invention relates to game devices particularly of the type on which checkers may be played and the primary object of the invention is the provision of a device of the character described subject to remote control.

Another object of the invention is the provision of a device of the class described in which the checkers are moved by electro magnets controlled by switches.

With these and other objects in view the invention resides in the novelty of construction, combination and arrangement of parts specifically hereinafter described and claimed in the appended claims.

The description should be read in connection with the accompanying drawing illustrating a preferred embodiment of my invention and in which—

Figure 1 is a top plan view of the playing table forming part of the preferred embodiment of my invention;

Figure 2 is a side view partly broken away of the table;

Figure 3 is an enlarged longitudinal diametral section of an electro-magnet and of the portion of the table on which the magnet is mounted;

Figure 4 is a top plan view of the switch board;

Figure 5 is a side view of the switch board;

Figure 6 is a vertical detail view of a switch;

Figure 7 is a wiring diagram including portions of the game board and switch board;

Figure 8 is a detail section of the coin slot and parts associated therewith and controlling the slot.

In the drawing in which like characters of reference designate like or similar parts, numeral 2 denotes in general a checker table including four legs 3 supporting a box-like upper part. The same comprises a bottom 5, four side walls 6, both of a suitable material, a top plate 7 of aluminum providing on its top surface a recess for a thinner plate 9 of aluminum or glass. The last named plate is divided into sixty-four squares being alternately painted with contrasting colors. The thin plate may be secured to the thicker plate by fasteners 10 (Fig. 3).

At each point of intersection of the lines bounding the squares and at each center of a light colored square is an electro-magnet generally indicated by 12 and including a copper tube 13 screwed in a cylindrical opening in the thick top plate and surrounded by a solenoid 14 the upper end of which is connected to a binding post 15 supported by and electrically connected to the table top. The electro-magnet further includes

2

an iron plunger 17 having a beaded lower end 18 normally, i. e. when no current is flowing in the coil, on the bottom wall 5 of the table top (Fig. 3).

One of the side walls of the same has a coin slot 20 for a coin 21 which after its insertion in the downwardly extending slot hits the partition 22 of an iron plunger urged by a brass spring 23 to coin blocking position, but retractable from such position by a coil 25 surrounding the plunger when current flows in the coil.

Coil supports 27 which are apertured for the plunger and spring hold the coil and part 28 functions as a spring abutment. One wall of the coin slot is of glass so that the operator of the table can observe the coin after it is inserted in the slot. After retraction of the partition the coin falls into a coin box (not shown). Current flows in the coil 25 when the switch 36 is closed.

A switch board generally indicated by 30 has the form of a table including legs 31 and a top supported thereby and comprising side wall 32 and a top plate 33 of aluminum. The top surface of this plate is divided into sixty-four squares and carries a plurality of solenoid switches 35, one for each solenoid of the checker table and also including a switch 36 controlling the solenoid associated with the coin slot.

Each switch except the last mentioned switch is in a location corresponding to the location of one of the solenoids on the checker-board. The switch 36 controlling the coin slot is in a square corresponding to one of the checker-board without a solenoid. Each switch is mounted in an opening 38 the upper portion of which is enlarged for a coil spring 39 surrounding the reduced stem 40 of a switch plunger 41 which also includes a button portion 42 and lower contact portion 43. The spring bears against the lower surface of the button and the bottom of the enlarged part of the opening 38 and raises the contact portion to a position in which the same is above either of two spaced fixed contacts 45 secured to the lower surface of the switch-board top. One of these contacts takes the form of a binding post so that a conductor 46 may be connected thereto the other end of which is connected to the lower end of one of the solenoids on the checker-board. The other fixed contact of each switch is connected to the table top of the switch-board and thereby to one side 47 of a source of current such as a common wall connection (Fig. 7).

The other side 48 of the wall connection is electrically connected to the thicker top plate of the checker board.

The circuit controlling the coin slot illustrated in Fig. 8 is connected to the source of current in a manner similar to the manner in which the other electro-magnetic solenoid circuits are connected.

A playing piece or checker **50** of iron or tin is moved from one light-colored square of the board to the other by actuating first the switch at the intersection at which the two corresponding squares on the switch-board adjoin and then the switch in the center of the second square is closed.

An ale crown may be used as a checker, but a thin tin disc functions better.

Obviously, the purpose in also having the magnetic unit underlying the intersecting portions of the lines of the playing surface, is so that game piece can be progressively moved from one square to the other. If it were not for these intermediate magnetic units at the intersections, much longer and stronger magnetic units would be necessary.

While I have hereinbefore described the specific details of the preferred embodiment of my invention and illustrated the same in the accompanying drawing, I desire it to be understood that this disclosure is a mere example, not a limitation of my invention and that changes or modifications may be resorted to without departure from the spirit and scope of the invention as defined by the subjoined claims.

What I claim as new and desire to protect by Letters Patent of the United States is as follows:

1. In a game apparatus including a playing surface divided into a plurality of squares, a magnetic unit located under each of the squares and including a vertically extending coil adapted to be optionally energized and a vertical slidable core movable to a raised position in the coil when the latter is energized to a position immediately under the playing surface for attracting the game piece on the surface to a position over the magnetic unit.

2. In a game apparatus including a playing surface divided into a plurality of squares, a magnetic unit located under each of the squares and including a vertically extending coil adapted to be optionally energized and a vertical slidable core movable to a raised position in the coil when the latter is energized to a position immediately under the playing surface for attracting the game piece on the surface to a position over the magnetic unit, each magnetic unit including a tube on which the coil is wound and in which the core is slidable, a board underlying the playing surface and having openings therein underlying the squares, the upper ends of the tubes being snugly disposed and secured within a said opening.

3. In a game apparatus including a playing surface divided into a plurality of squares, a magnetic unit located under each of the squares and including a vertically extending coil adapted to be optionally energized and a vertical slidable core movable to a raised position in the coil when the latter is energized to a position immediately under the playing surface for attracting the game piece on the surface to a position over the magnetic unit, each magnetic unit including a tube on which the coil is wound and in which the core is slidable, a board underlying the playing surface and having openings therein underlying the squares, the upper ends of the tubes being snugly disposed and secured within said opening, and a bottom plate underlying the said magnetic unit, upon which the cores rest when the corresponding coils are deenergized.

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