May 8, 1962 C. W. CASTLE ETAL 3,033,573

MAGNET PUZZLE GAME

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Fig. 1

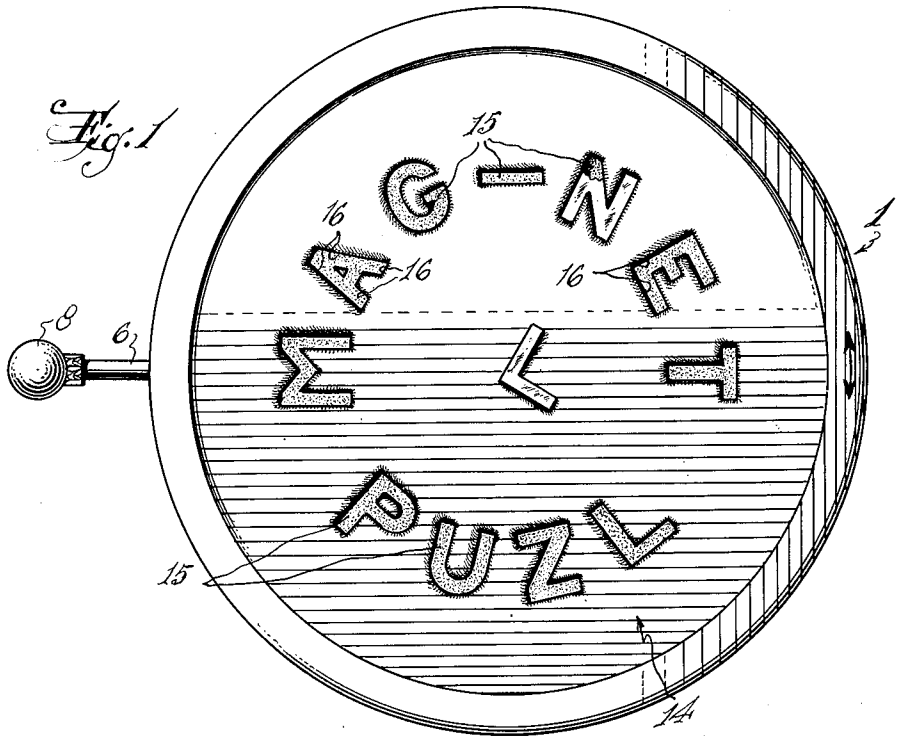
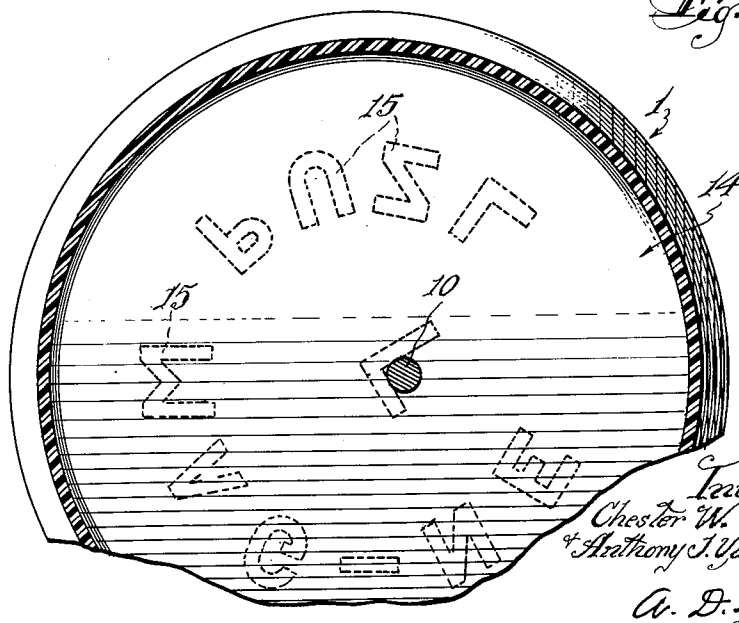


Fig. 4



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Fig. 2

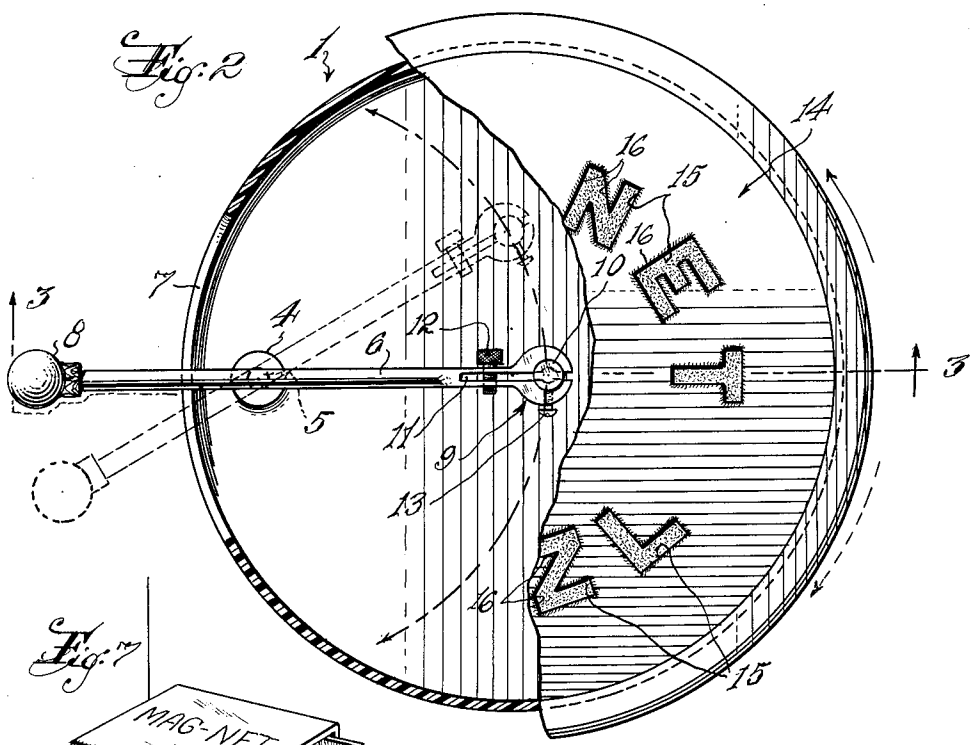


Fig. 7

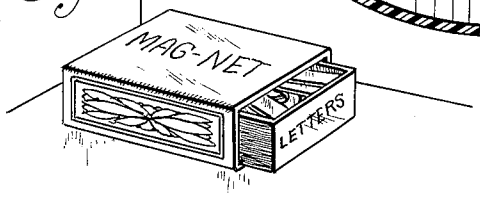
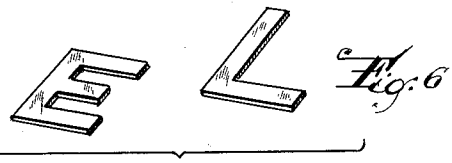


Fig. 6



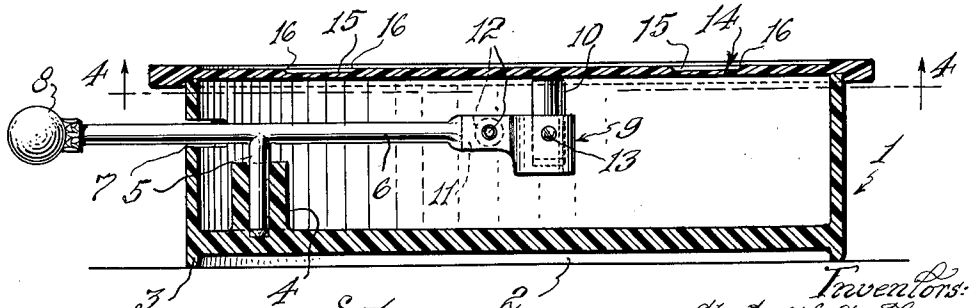


Fig. 3

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Fig. 9

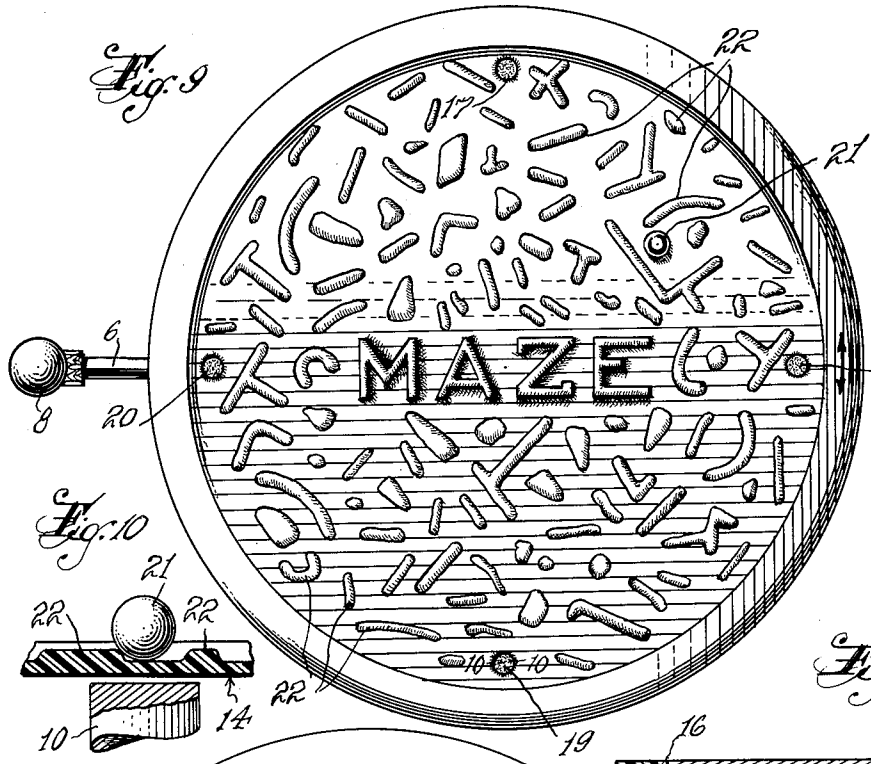


Fig. 10

Fig. 5

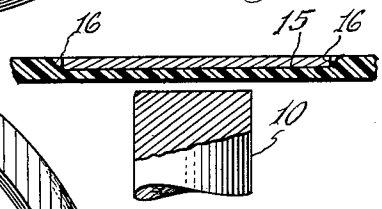




Fig. 8

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MAGNET PUZZLE GAME

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Fig. 11

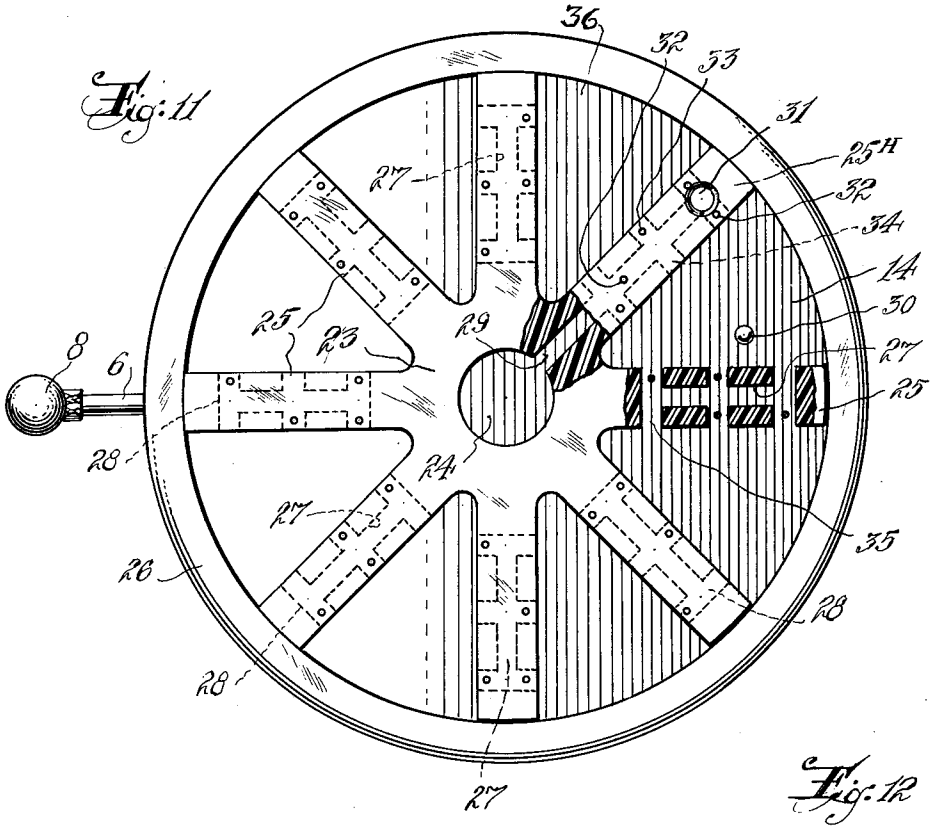
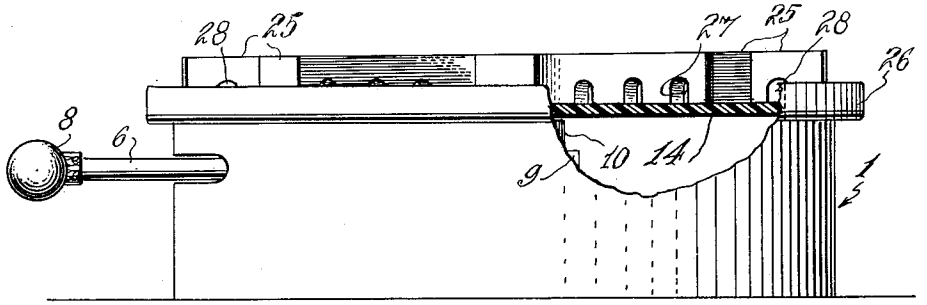


Fig. 12



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MAGNET PUZZLE GAME

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Filed Feb. 18, 1955, Ser. No. 489,045
12 Claims. (Cl. 273—153)

In our patent application Serial No. 446,515 filed July 29, 1954, now abandoned, for a Plural Game Structure we have shown and described certain types of games in which a plate for operating the game is pivoted in such a way as to be tiltable to move an object such as a marble in various directions on the plate. After our further study of game problems such as shown and described in the above mentioned application we have finally evolved a different arrangement and combination of parts wherein a magnet is utilized, in combination with means for moving the magnet along with the part of the structure within which the magnet is located.

Our invention is shown in the attached drawings wherein:

FIGURE 1 is a top plan view of one form of our new idea.

FIGURE 2 is a view similar to FIGURE 1 but with a portion of the top part of the structure being broken away to show one way of carrying the magnet.

FIGURE 3 is a view on the line 3—3 of FIGURE 2.

FIGURE 4 is a partial view on the line 4—4 of FIGURE 3.

FIGURE 5 is a view of the upper end of the magnet part in elevation and part in section, adjacent and beneath a sectional view through one of the letters, for example T, shown in FIGURE 1.

FIGURE 6 is a perspective view of the letters E and L shown in FIGURE 1.

FIGURE 7 is a perspective view of a container box for carrying the letters that are to be moved into the letter spaces shown in FIGURES 1, 2 and 8.

FIGURE 8 is a view similar to FIGURE 1 but showing a different arrangement of puzzle letters.

FIGURE 9 is a view showing the top part of the structure as illustrated in FIGURE 1 but with a different arrangement of characters or characteristics on the top of the box structure shown in FIGURE 3.

FIGURE 10 is a sectional view on the line 10—10 of FIGURE 9 with the magnet directly under the recess in which a game ball is positioned.

FIGURE 11 is a plan view of the top part of a different type of maze game as shown in FIGURE 9, the trick here being to move a ball of magnetic material through the various passageways into the central orifice as will be described.

FIGURE 12 is a side view of FIGURE 11 partly in elevation and partly in section.

In the various views wherein like numbers refer to corresponding parts, 1 is a container preferably circular in form and preferably having a circular recess 2 formed by a bottom integral support ring 3. This construction provides a small bearing surface and will allow the container or box like structure to set more firmly on the table with a minimum amount of rocking or tilting, and presents less space to scratch a table top. The inner part of the base has a standard 4 preferably integrally cast therewith. The standard 4 is hollow to receive a stud 5 preferably integral with an arm 6 which extends outwardly through a slot 7 in the rim of a box. The outer end of the arm 6 has a knob 8 fastened thereto. On the inner end of the arm 6 is a holder 9 to receive a magnet 10 preferably of a permanent magnet type. The holder 9 may have a slot 11 therein to provide two adjustable parts which can be adjusted by a screw 12 to

assist in holding the magnet 10 in position. Additional lock screw 13 may be provided to adjust the vertical position of the magnet 10 if necessary, whereby the clearance between the upper end of the magnet and the inner side of the top plate or cover 14 may be adjusted. The box and cover are made of suitable moulded plastic material. The cover 14 has an annular recess which fits around the upper part of the box 1 whereby the cover may be easily rotated on the top of the box for the purposes which will be directly described. On the top of the cover there is provided a plurality of recesses 15 to receive the separate letters such as E and L as shown in FIGURE 6 to spell out the words "MAG-NET PUZL" as set forth in FIGURE 1.

In operating this game one of the letters such as L is taken from the magnet box of FIGURE 7 and laid in some position such as shown in FIGURE 1 then by arcuately moving the magnet in the manner such as shown in FIGURE 2 and by moving the box cover arcuately around the rim of the box the latter L is moved and the puzzle or trick is to make it pass into the recess 15 in the word "PUZL." It is to be noted that the recesses 15 have their outer edges 16 slightly bevelled so that the letters can be moved into their proper position to make up the word "MAG-NET PUZL" or the words shown in FIGURE 8. It will be readily understood that it is quite a tricky job to make these two movements coactive to get the letters into their proper position on the top of the box cover.

In FIGURE 9 we have illustrated a maze arrangement somewhat like FIGURE 3 in our pending application to which reference has been made. In FIGURE 9 there are four starting points 17, 18, 19 and 20 in which the marble 21 is initially positioned, then as the magnet 10 and the cover top 14 are moved the marble or ball of magnetic material is moved through the spaces between the numerous raised portions collectively referred to as 22, until the marble 21 has been moved from the recess 17 into the recess 18 and so on around the circle back to 17, the one making this circle in the least time solves the puzzle and wins the prize.

In FIGURE 11 the outer surface of the cover is provided with a wheel-like structure having a central hub portion 23 with a hole 24 therethrough. Extending from the hub 23 is a plurality of arms or spokes 25, eight being shown equally spaced at 45° angles, although this angularity may be varied if desired. The arms 25 terminate against a slightly raised portion 26 of the cover 14 to prevent the ball from rolling off the cover as it is manipulated from one arm 25 to another. Each of the arms has a passageway 27 along its inner surface next to the cover. Also each of the arms 25 has a plurality of cross passages 28, three being indicated in each of the arms. These passageways 28 intercept the radially extending passageways 27 which is clearly shown in FIGURE 11. Only one of the arms 25 has an opening 29 into the centrally located hole 24. The trick in this structure is to take the ball 30 and drop it into the hole 31 that leads downwardly into the passageway 27 in this particular arm, then by operating the magnet 10 by the hand knob 8 and the cover 14 as in the other figures the ball 30 is moved along the passageway 27 and out through one of the cross passages 28 and on to the next arm following and then so on until the home arm 25H is reached where the ball 30 may be moved through the passage 29 into the centrally located hole 24.

To assist in the operation of this game some of the cross passages 28 may be blocked by pins 32, five such pins being shown in the start and home arm 25H.

It will be noted that in the arm 25H a stop pin 32 is provided in the passageway 27 at the location shown. Also a stop pin 33 is provided in the centrally located

cross passage 34. With this arrangement when the ball is dropped into the hole 31 it may be moved rather quickly to the outlet passage 34 into the space where it is now shown as the ball 30 but since stop pins are shown in the centrally located cross passage as well as in the inner cross passage the ball 30 is moved into the outer cross passage and into the centrally located passage 27, it can be moved down and out of the orifice 35 and so on around in various ways until the ball 30 comes back into the chamber portion 36 where it is moved into the inner cross passage and down into the slot 29 and the hole 24 which completes the game. It will be readily seen that the arrangement of the stop pins may be varied to suit the user but in any event applicants have found that while this is a really tricky game it is an interesting one.

From what has been said it will be seen that several changes may be made in the details without departing from the spirit of our invention and the scope of our appended claims.

Having thus described our invention, what we claim is:

1. A puzzle structure comprising a casing having a base with an upstanding rim, a cover rotatably positioned on the rim, the cover having predetermined characters on its exterior surface to receive a cooperative device of magnetic material, a permanent magnet movably mounted within the confines of said rim and cover by means having a part extending through a slot in the rim, said extending part being hand operated in cooperation with the movement of the cover to cause said cooperative device to move said predetermined characters as and for the purpose described.

2. A puzzle structure comprising a casing having a base with an upstanding rim, a cover rotatably positioned on the rim, the cover having designations on its exterior surface, the designations being formed by recesses in the top part of the cover, said recesses being adapted to receive corresponding movable designations of metallic material having suitable magnetic properties, a permanent magnet movable within the confines of said rim and cover by means extending through the rim, the magnet being positioned closely adjacent the inner surface of the cover so as to move the movable designations in cooperation with the movement of the cover to cause said movable designations to move into their corresponding recesses in the cover.

3. A puzzle structure as defined in claim 2 further characterized in that the magnet is adjustably carried in a holder, a rod for carrying the holder, a pivoted support for the rod so as to move the magnet on an arc of approximately 135°, said rim having an arcuately positioned slot to receive the rod end which has a hand knob at its free end.

4. A puzzle structure as defined in claim 2 further characterized in that said magnet movable means comprises a rod having an adjustable holder at one end to receive the magnet, the rod being pivoted within the casing near the rim which has a slot therein adjacent said pivot to receive the outer end of the rod and a hand knob on said outer end.

5. A puzzle structure comprising a casing having a base with an upstanding rim, a cover rotatably positioned on the rim, the cover having characters on its exterior surface at least some of which will receive a cooperative device of magnetic material, a permanent magnet movably mounted within the confines of said rim and cover closely adjacent the inner surface of the cover by means having a part extending through a slot in the rim, said extending part being hand operated in cooperation with the movement of the cover to cause said device to move to a selected character as and for the purpose described.

6. A puzzle structure comprising a casing having a base with an upstanding rim, a cover rotatably positioned on the rim, the cover having characters on its exterior surface at least some of which are obstructions while others will receive a cooperative device of magnetic material, a permanent magnet movably mounted within the confines of said rim closely adjacent the inner side of the cover by means having a part extending through a slot in the rim, said extending part being hand operated in cooperation with the movement of the cover to cause said device to move to a selected character as and for the purpose described.

7. A puzzle structure as set forth in claim 6 further defined in that said magnet mounting means is a rod having a seat at one end to receive and hold the magnet closely adjacent the inner surface of the cover, the rod being pivoted intermediate its ends on the base of the casing near the rim.

8. A puzzle structure as set forth in claim 6 further defined in that said magnet mounting means is a rod having a seat at one end to adjustably receive and hold the magnet in operative position, the base having an upwardly protruding hollow part near the rim, while the rod has a downwardly extending stud to fit into said hollow part to provide a pivotal mounting for the rod.

9. A puzzle structure comprising a casing having a base with an upstanding rim, a cover rotatably positioned on the rim, the cover having characters on its exterior surface some of which are of magnetic material while others are of non-magnetic material, a permanent magnet movably mounted within the confines of the rim but closely adjacent the inner side of the cover, said mounting means being a lever pivoted between its ends to the base at a point near the rim, the lever having a seat at one end to carry the magnet while the other end of the lever extends through a slot in the rim and has an operating knob at this end.

10. A game comprising a container having a base with an upturned rim, a cover rotatably fitting over the rim, the outer part of said cover having characters fixed thereon, a permanent magnet mounted on the base closely adjacent the inner surface of the cover for arcuate movement within the confines of the rim, and means operative on the outer surface of the cover adapted to be moved by the combined rotation of the cover and movement of the magnet to cause said means to cooperate with said characters in playing the game.

11. A game structure having a base with a plate rotatably mounted on and above the base, the plate having play characters fixed on its top surface, a permanent magnet mounted on the base closely adjacent the inner surface of the plate with means for shifting the position of the magnet and means operative on the outer surface of the plate adapted to be moved by the combined rotation of the plate and movement of the magnet to cause said means to cooperate with said characters in playing the game.

12. A game structure having a base with a plate rotatably on and above the base, a permanent magnet mounted on the base so one end of the magnet is closely adjacent the inner surface of said plate, the mounting for the magnet being such that the magnet may be moved into different positions under the plate, the plate having on its outer surface formations adapted to receive a member of magnetic material which is movable, by the cooperative movement of the plate and magnet, to a predetermined location on the plate as defined herein.

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