Dec. 25, 1956 H. H. RAYMOND 2,775,458

MAGNETICALLY INDEXED ROTATING CHANCE DEVICE

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FIG. 1

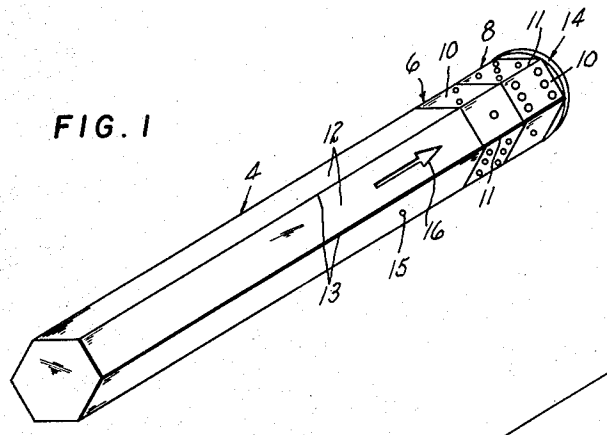


FIG. 2

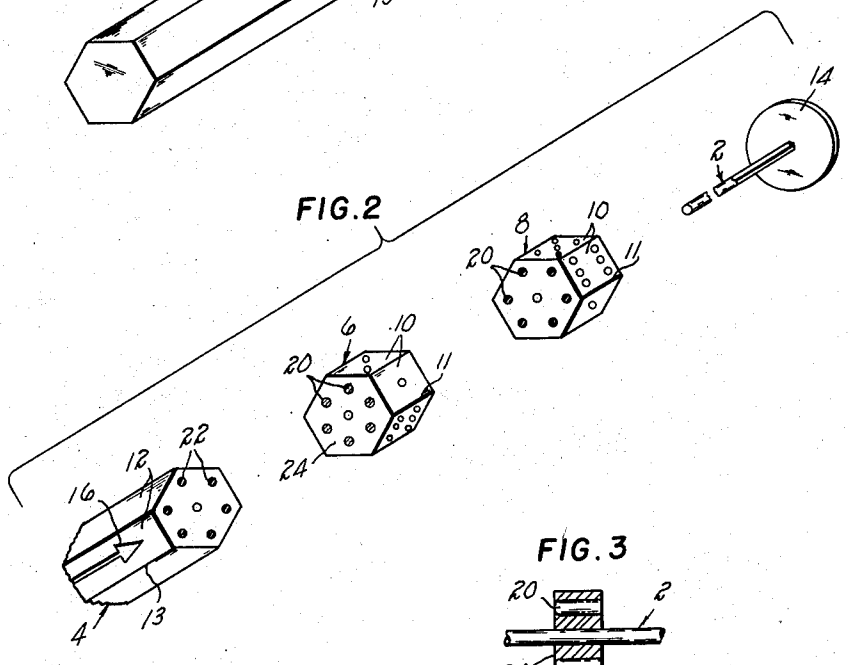


FIG. 3

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MAGNETICALLY INDEXED ROTATING CHANCE DEVICE

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4 Claims. (Cl. 273—143)

This invention relates to amusement devices for playing games based upon possible combinations of numerals, figures, or other characters.

An object of the invention is to provide an amusement device of the character described which is convenient and effective.

Another object is to provide an amusement device which is simple and compact in construction, durable, and adaptable to manufacture at low cost either in a portable form, or for use in a fixed installation.

Another object is to provide an amusement device which can easily be made light in weight and small in size, and is readily adapted to convenient carrying in a coat pocket, handbag, or the like.

Another object is to provide an amusement device of the character described which is readily adaptable for mounting on a convenient article of ordinary use, such as a pencil, lipstick, or the like.

Other objects will be in part obvious and in part pointed out more in detail hereinafter.

The invention accordingly consists in the features of construction, combination of elements and arrangement of parts which will be exemplified in the construction hereafter set forth and the scope of the application of which will be indicated in the appended claims.

In the drawings:

Fig. 1 is an outline perspective view of one form of an amusement device constructed in accordance with the present invention;

Fig. 2 is an exploded view of the movable parts of the device shown in Fig. 1, and the associated structure on which the movable parts are supported, and with reference to which they are oriented in use of the device; and

Fig. 3 is a sectional view of one of the movable parts of the device.

Referring to the drawings, an amusement device constructed in accordance with the present invention includes a shaft **2** which is mounted in a support member **4**. The support member may be an elongated handle, as shown in the drawing, adapted to be held in the hand of the user of the device. Such an elongated handle might be provided in the form of a convenient article of ordinary use, such as a pencil or lipstick. Alternatively it is within the contemplation of the invention that the support member may be a part of a fixed installation, such as a casing or enclosure within which the shaft may be contained. For convenience in depicting the invention in the drawing, however, the support member has been shown as a handle.

Supported for rotation on the shaft **2** is a plurality of discs **6**, **8**. The discs **6**, **8** are preferably provided with a plurality of flat sides or faces **10** on their peripheries, which faces intersect to form edges **11**. On each of these faces **10** is imprinted a character such as a number, figure, or the like, in accordance with the game to be played. By way of example, each of the two discs shown in the drawing is provided with six flat faces **10** on its periphery,

and the six faces are imprinted with the characters normally found on the faces of a cubic gaming die, so that the two discs together form a simulated pair of dice. Conveniently the support member **4**, if a handle, may be provided with flat sides **12** equal in number and width to the flat faces **10** of the discs **6**, **8**, and intersecting to form edges **13**. When the discs are properly rotatably positioned, the faces **10** of the discs **6**, **8** can thus be lined up in coplanar relation with the respective sides **12** of the support member **4**.

Of course it will be readily appreciated that other suitable indicia may be provided on the faces **10** of the discs **6**, **8**, such as numbers, representations of playing cards, and the like. Moreover the number of faces **10** provided on each disc, or on a handle, is a matter of choice, as is the number of discs rotatably supported on the shaft **2**.

The discs **6**, **8** are freely rotatable on shaft **2** and are prevented from slipping off the end thereof by a retainer member **14** fastened to the outer end of the shaft **2**. Shaft **2** is secured in support member **4** by a set screw **15**.

On the support member **4** adjacent the discs **6**, **8**, there is defined a reference point **16**, such as the arrow-shaped mark shown in Figure 1, relative to which the rotative position of each of the discs **6**, **8** is defined. If the support member is a casing or container, the reference point **16** may be defined by a window therein for viewing the characters on the discs.

It will be readily apparent that in using the amusement device, the rotatable discs **6**, **8** are twirled about the shaft **2** by any desired means. After being rotated, each of the rotatable discs continues to rotate until frictional forces overcome its inertia, and then it comes to rest. When the discs **6**, **8** have come to rest, the characters which are significant are those aligned with the reference point **16** on the support member **4**.

It is a particular feature of the present invention that the rotatable discs **6**, **8** and the support member **4** are provided with magnets embedded therein to control the alignment of the discs **6**, **8** relative to each other, and relative to the support member **4**, when the discs come to rest after being twirled or rotated on the shaft **2**. To this end there is embedded in each of the discs **6**, **8** a plurality of permanent bar magnets **20**, corresponding in number to the number of characters spaced along the periphery of the disc. These magnets **20** are longitudinally disposed, as shown in Figure 3, so that in each disc the magnet poles of one polarity are at one end, and the poles of opposite polarity are at the other end of the disc. The magnets **20** are equally angularly spaced about the periphery of each disc, on loci concentric with the shaft **2**. Adjacent discs **6**, **8** there is also embedded in, or supported on, the support member **4** a like number of permanent bar magnets **22**, similarly disposed longitudinally, and positioned, like the magnets **20** in the discs, in equally spaced relation on a locus concentric with the shaft **2**. Preferably the magnets in disc **6** are mounted slightly radially closer to shaft **2** than the magnets in disc **8** or in support **4**.

While the plurality of magnets in the discs **6**, **8** and in the support **4** are referred to as all of the permanent type, it should be understood that alternative embodiments, such as a single permanent magnet having multiple sets of poles, or a single permanent magnet together with several pieces of magnetizable material, may be employed in either disc or in the support. As a further alternative, one of the discs for example may have no magnets of the permanent type, but merely several pieces of magnetizable material deriving their magnetic polarization from permanent magnets in the adjacent disc or support. Though the magnets **20** and **22** will herein be referred to as a plurality of permanent bar magnets, it will be understood that any such alternative may be employed as de-

sired, so long as there is provided in each disc and in the support a plurality of permanent magnetic poles corresponding in number to the characters on the discs.

To insure proper alignment of the discs 6, 8 relative to one another and with the reference point 16 on support member 4 when discs 6, 8 come to rest, so that characters on the discs will be longitudinally aligned with each other and aligned for easy reading relative to the reference point 16, the magnets 20, 22 must be properly angularly positioned in the discs and support member. Moreover the proper positioning of the magnets 20 in the discs relative to the characters thereon, and the positioning of the magnets 22 in the support member relative to the reference point 16 thereon, is dependent upon the polarity relation of opposed poles of magnets 20 in adjacent ends of the discs, and upon the polarity relation of opposed poles of magnets 22 in the support member and those of magnets 20 in the end of the first disc adjacent thereto.

This positioning principle will now be explained with particular reference to Figure 2. The bar magnets 20 in the first disc 6 are positioned with their poles disposed, as shown in Figure 2, adjacent the centers of the character faces 10 of the disc, i. e., angularly aligned with radii from shaft 2 through the centers of the faces 10. The poles of the magnets 20 in the first disc 6 at the end 24 of the first disc adjacent support member 4 are preferably of the same polarity as the adjacent poles of the magnets 22 in the support member, and for the interaction of the magnetic fields to be such as to align flat faces 10 of first disc 6 with the flat sides 12 of the support member when first disc 6 comes to rest, the magnets 22 in support member 4 are disposed with their poles located not adjacent the centers of the sides 12 of the support member, but adjacent the edges 13 thereof, i. e., angularly aligned with radii from the axis of shaft 2 through the edges 13 of the sides 12. In this way, since like magnetic poles repel each other, as first disc 6 comes to rest, each pole in the end 24 of the first disc adjacent support member 4 will be positioned midway between a pair of poles in the end of support member 4, and the character faces 10 of first disc 6 will be perfectly aligned with the sides 12 of support member 4. Moreover the repelling forces between the magnets 20 in first disc 6 and magnets 22 in support 4 keep the disc 6 and the support 4 sufficiently separated to reduce friction between their adjacent ends to a minimum, and allow the disc 6 to be freely twirled on shaft 2.

The angular positions of the magnets 20 embedded in the second disc 8 relative to those in the first disc 6 will likewise be dependent upon the polarity of their ends adjacent the first disc relative to the polarity of the adjacent poles of the magnets 20 in the first disc 6. The two polarities are preferably the same, and the magnets 20 in the second disc should therefore be located at angular positions intermediate the corresponding positions of the magnets in first disc 6. This arrangement is shown in Figure 2, where the magnets in second disc 8 are located adjacent the edges 11 of faces 10, as opposed to the location of the magnets in the first disc 6 adjacent the centers of the faces 10 thereof. The magnetic repelling forces between magnets in the first and second disc thus keep the discs slightly separated, and insure their free rotation with minimum friction.

Of course it will be appreciated that the strength of the magnets 20, 22 is insufficient to appreciably impede the rotation of discs 6, 8 with respect to support member 4, yet the magnets are of sufficient strength to properly align the discs 6, 8 relative to support member 4 as the discs come to rest. If it is desired to supplement the aligning forces, additional magnets may be mounted in retainer 14 to cooperate with magnets in the disc 8 in the same way as the magnets 22 cooperate with the magnets 20 in disc 6. In this way the interaction of the magnets in the discs and support member provides the equivalent of a number of mechanical detents, and insures the proper

alignment of the faces 10 on the discs 6, 8 with each other and with the reference point 16 on support member 4 for easy reading as the game is played.

As many changes could be made in the above construction and many apparently widely different embodiments of this invention could be made without departing from the scope thereof, it is intended that all matter contained in the above description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.

It is also to be understood that the language used in the following claims is intended to cover all of the generic and specific features of the invention herein described and all statements of the scope of the invention which, as a matter of language, might be said to fall therebetween.

I claim as my invention:

1. An amusement device comprising a support having a shaft and a reference point, first and second discs rotatably mounted on the shaft in end-to-end relation and each having on its periphery equally spaced apart characters, each of said discs having a plurality of magnets corresponding in number to the characters and spaced at equal angles about said shaft, a like number of fixed magnets similarly positioned on said support, said magnets on said first disc being positioned in radial alignment with said characters and having poles adjacent said fixed magnets identical in polarity with the adjacent fixed magnet poles, said magnets on said second disc being positioned on radii midway between said characters and having poles adjacent said first disc identical in polarity with the adjacent poles of magnets in said first disc, whereby said discs are magnetically moved into a registration with the reference point when said discs come to rest after being rotated on said shaft.

2. An amusement device comprising a support member having a shaft, first and second rotatable members mounted on the shaft in coaxial end-to-end relationship, a plurality of magnetic poles of like polarity on the support member facing the adjacent end of the first rotatable member, a plurality of magnetic poles of like polarity on the second rotatable member facing the opposite end of the first rotatable member, two sets of magnetic poles on the first rotatable member with the poles of each set respectively being of like polarity and with the sets respectively facing and cooperating with the poles on the support member and second rotatable member to impede rotation thereof relative to said first rotatable member, a plurality of characters spaced about the periphery of said rotatable members, the characters on both rotatable members being disposed for alignment when said rotatable members are at rest relative to each other, and a reference point on the support member registering with the characters on the rotatable members when said rotatable members are at rest relative to the support.

3. An amusement device comprising a support having a shaft, first and second rotatable members mounted on the shaft in coaxial end-to-end relationship, a plurality of magnetic poles on the support and second member respectively spaced about the axis of said shaft and facing in opposite directions axially of said shaft toward opposite ends of said first member, the poles of the support being of like polarity, the poles of the second member being of like polarity, two sets of magnetic poles on the first member respectively facing the poles on the support and second member with the poles of each set being of a polarity the same as the respectively associated poles on the support and second member, a reference point on the support, and a plurality of characters spaced about the periphery of each of the rotatable members and disposed such that one of the characters on each of the rotatable members will be aligned with said reference point when both rotatable members are at rest relative to the support.

4. An amusement device comprising a support having a shaft, first and second rotatable members mounted on the shaft in coaxial end-to-end relationship with the first

member located next adjacent the support, a plurality of bar magnets on each of the rotatable members and on the support extending parallel to the shaft with the poles of the same polarity on the magnets of both the support and second member facing in the same direction and with the poles on the magnets of said first member facing the corresponding poles of like polarity on the support and second member, a reference point on the support, and a plurality of characters on the periphery of each of the rotatable members disposed with respect to the magnets thereon such that one of the characters on each of the rotatable members will be aligned with said reference point when both rotatable members are at rest relative to said support.

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