Jan. 22, 1963 F. FISCHL-BERNFI ETAL 3,074,206

AMUSEMENT DEVICE

Filed Nov. 20, 1959

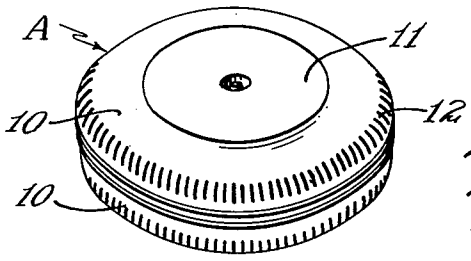


FIG. 1

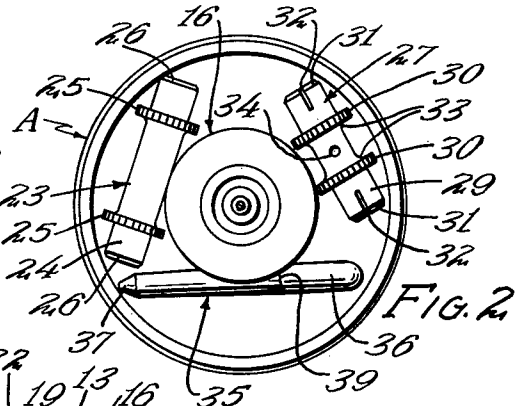


FIG. 2

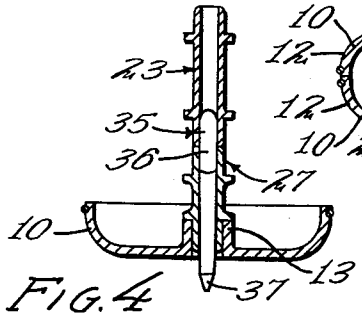


FIG. 4

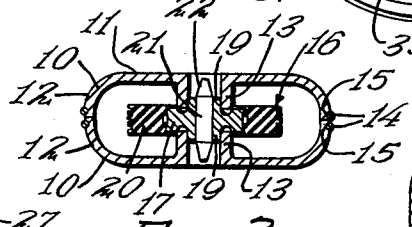


FIG. 3

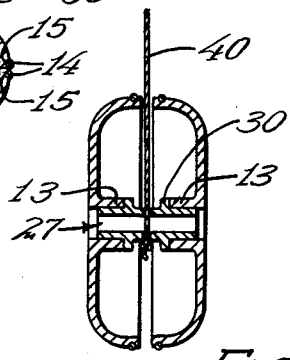


FIG. 5

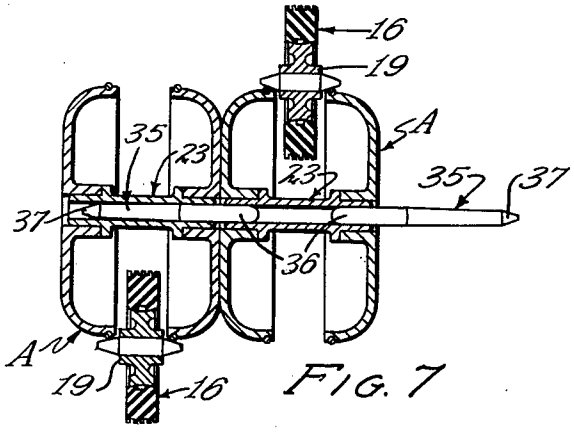


FIG. 7

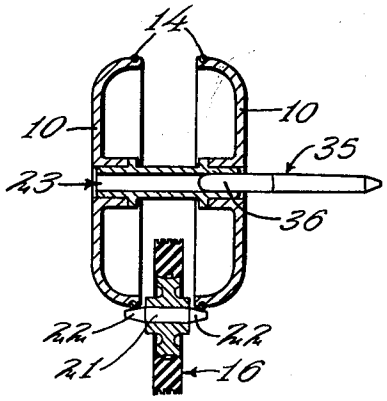


FIG. 6

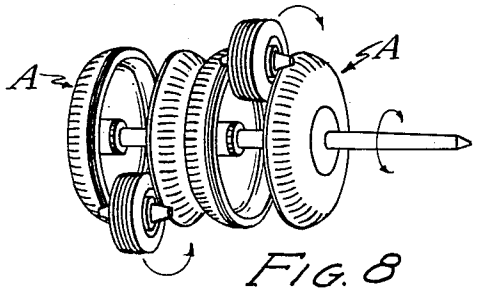


FIG. 8

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United States Patent Office

3,074,206
Patented Jan. 22, 1963

3,074,206

AMUSEMENT DEVICE

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Filed Nov. 20, 1959, Ser. No. 854,393
5 Claims. (Cl. 46—241)

The present invention relates to an improved amusement device and particularly to a device adapted to be held by the fingers and which, when manipulated with some measure of dexterity and skill, provides an interesting and diverting amusement device.

More specifically the object of the present invention is to provide a number of components which are adapted to be assembled in various ways to provide a range of different amusement articles while a further object of the invention is to provide a device of simple construction comprising a number of component parts, some of which are capable of forming a closed container for the remainder of the parts. A still further object is to arrange the device in such a way that a plurality of like devices can be joined to form a composite assembly of enhanced interest or amusement value.

In accordance with the present invention an amusement device is provided comprising a set of parts including a pair of disc-like members, spacer means adapted to hold said disc-like members in spaced relation and a traveler movable over the outer surfaces of both said disc-like members when held in spaced-apart relation, and retained against said surfaces by magnetic action while the device is in use so that it is adapted to roll in one or both directions around the outer periphery of the spaced discs as they are rotated by the fingers, the disc-like members being adapted to form an outer casing enclosing the component parts of the device when out of use.

The device permits a variety of effects to be obtained; the traveler can be caused to roll backwards and forwards or by a steady rotation of the device to remain fixed at one point or it may rise to the highest point of the disc and then travel downwardly from that point, all under the manipulative control of the user.

According to a further feature of the invention the disc-like members are of dished formation and the two of them are adapted to form a closed casing housing the various parts of the device when out of use. The traveler may be in the nature of a wheel having a permanent magnet as the axle. Conveniently it may have central opposed projecting cylindrical stem portions or stub shafts adapted to be engaged in central bosses in the two disc members, these parts serving to hold the two disc members in edge contact one with the other when the device is out of use and to form a connection between them thus providing a closed container, and the annular space surrounding the wheel may then serve to accommodate other components, such as one or more spacer tubes adapted to hold the disc members in spaced relation when in use.

The spacer tubes may be centrally bored to accommodate a pin which projects externally of the discs and provides a means whereby the device may be held in the fingers. This pin may also be accommodated in the annular space. A pin of this type may serve for the interconnection of two similar devices which are thus coupled one beside the other, providing an amusement

device of enhanced interest value and skill factor in that the user is called upon to control simultaneously two wheels or like freely moving elements held against the respective pairs of discs by magnetic action.

These and other objects and novel features of the present invention will be more clearly and fully set forth in the following specification and claims:

In the drawings forming a part of the specification:

FIGURE 1 is a perspective view of a complete toy unit in closed position.

FIGURE 2 is a top plan view of the toy illustrated in FIGURE 1 with the upper disc removed to show the component parts between the discs.

FIGURE 3 is a cross sectional view through the closed toy on a reduced scale.

FIGURE 4 is a cross sectional view through the toy when arranged for use as a spinning top.

FIGURE 5 is a sectional view of certain of the component parts when assembled for use as a toy generally known as a Yo-Yo.

FIGURE 6 is a cross sectional view through certain of the component parts when used as a magnetic wheel toy.

FIGURE 7 is a cross sectional view of two sets of component parts assembled to form a double wheel toy.

FIGURE 8 is a perspective view of the double wheel toy illustrated in FIGURE 7.

The toy is indicated in general by the letter A and includes a series of component parts which may be assembled together in various ways to provide a plurality of toys. In general, the toy A includes a pair of similar concave discs **10** including a generally flat central portion **11** and arcuate peripheral walls **12**. As indicated in the various cross sectional figures of the drawing, each of the discs **10** includes an integral sleeve **13** which projects inwardly from the concave surface of the disc portion **11**, axially of the peripheral wall **12**. The peripheral arcuate wall **12** of each disc is provided with a ring **14** encircling the wall near the free edge thereof. This ring **14** is made of magnetizable material and fits into a peripheral groove **15** in the exterior surface of the wall **12** or is held in place on the periphery of the wall in any other suitable manner.

Each toy A also includes as a component part a wheel which is indicated in general by the numeral **16**. Each wheel **16** preferably includes a plastic hub portion **17** having opposed bosses or stub shafts **19** projecting from opposite surfaces thereof or extending axially of the hub. The outer periphery of each hub **19** is of proper dimensions to frictionally fit into the end of one of the sleeves **13** of the disc **10**. Each wheel is also shown as having a peripheral ring **20** of rubber or other suitable material. The purpose of this arrangement is to provide the appearance of an automobile tire of miniature size. Obviously, the tire portion **20** could be integral with the hub portion **17** if it were preferred.

An axial spindle **21** extends through the hub portion **17** and projects from the ends of the stub shaft **19**. The spindle **21** is preferably provided with tapered surfaces **22**, the ends of the spindle being generally frusto conical in shape. The spindle **21** is magnetized so that the spindle is drawn toward the rings of magnetizable material **14** when the wheel **16** is properly related to these rings **14**. Alternatively, the spindle **21** may comprise a central

magnet having contacting pull pieces which project to form the frusto conical ends.

A third component part of the assembly comprises a spacer tube which is indicated in general by the numeral **23**. This spacer tube **23** preferably comprises a hollow plastic tube having an outer diameter which will frictionally engage in one of the sleeves **13**. A pair of peripheral flanges encircle the tubular body **24**, the flanges being identified by the numeral **25**. The flanges **25** are evenly spaced from the ends of the tube and are externally knurled so that they may be more readily assembled and disassembled. The ends of the tubular bodies are preferably beveled as indicated at **26** to simplify the insertion of the ends into the sleeves **13**.

The toy also includes a second spacer which is indicated in general by the numeral **27** and which is somewhat similar to the spacer **23** but is substantially shorter in length. The spacer **27** includes a tubular body **29** which is of proper exterior diameter to fit into the sleeves **13** with a frictional fit. A pair of peripheral flanges **30** encircle the tubular body **29** at points equally spaced from the ends of the tubes. The ends of the tubular body **29** are preferably beveled as indicated at **31** and are longitudinally slotted as indicated at **32** to permit a slight compression of the tube as the tube is inserted into the sleeve **13**.

The center portion of the tubular body **29** between the flanges **30** is provided with fillets **33** which act as a means of guiding a string or cord as it is wound on the central portion of the tubular body. An aperture **34** extends diametrically through the center of the tubular body at right angles to the axis thereof to serve as a means of anchoring the end of a cord to the spacer.

The toy also includes a pin **35** which tapers slightly from the relatively large diameter blunt end **36** to the opposite pointed end **37**. The large diameter end includes a substantially cylindrical end section extending to a point **39** from the blunt end, the remainder of the pin being of slightly smaller external diameter for a reason which will be later set forth.

The parts thus described are capable of a great many different assembly forms and different combinations of the elements described may form different types of toys. When the toy A is not in use, it appears as in FIGURE 1 of the drawings. As indicated in FIGURE 3 of the drawings, the wheel **16** form the means of attaching the two discs in edge abutting relation to form the closed container. In closing the container, it is only necessary to insert the stub shaft **19** on one side of the wheel into the inner end of the sleeve **13** of one of the discs **10**, insert the various component parts **23**, **27** and **35** into the container to encircle the wheel or to extend between the wheel and the disc, and then to insert the other or opposite stub shaft into the sleeve **13** of the second disc. The two discs are thus frictionally engaged and act as an enclosure for the remaining components.

In order to form a spinning top, the components are assembled as indicated in FIGURE 4. One of the discs **10** acts as the body of the top. The spacer **27** is inserted into the inner end of the sleeve **13** of this disc to project upwardly from the concave surface thereof. The large diameter end **36** is frictionally engaged in an end of the other spacer **23** and this assembly is then inserted downwardly through the spacer **27**. A portion of the large diameter end **36** of the pin frictionally engages in both spacers and holds the same connected with the pointed end **37** of the pins projecting below the convex surface of the disc pin.

When arranged in this manner, the spacers act as a spindle or axis which may be twisted between the fingers to cause the body to rotate. If desired, a cord may be inserted through the aperture **34** and wound about the central portion of the spacer **27** so that the top may be spun by loosely holding the upper spacer **23** while pulling on the cord to cause the device to spin.

Three of the component parts of the toy may be assembled together to form a toy similar to a Yo-Yo. One end of the spacer **27** is inserted into the sleeve **13** of each disc, a cord being attached to the central portion of the spindle, the cord being indicated by the numeral **40**. The spacer **27** is of such length that when the sleeves **13** are against the flanges **30**, the peripheral edges of the two discs will be spaced a short distance apart to guide the string.

When the toy is to be used as a magnetic wheel toy, the discs **10** are somewhat similarly assembled, employing the spacer **23** in place of the spacer **27**. As the distance between the peripheral flanges **25** of the spacer **23** is greater than the distance between the flanges **30** of the spacer **27**, the opposed peripheral edges of the disc **10** will be spaced a greater distance apart. This distance is slightly greater than the length of the hub portion **17** of the wheel **16**, including the stub shaft **19**, but is less than the length of the spindle **21** of the wheel. When the spindle **21** is positioned to bridge the space between the discs so that the tapered end **22** of the spindle are in contact with the rings **14** of magnetic material, the wheel **16** may roll in either direction within the gap between the disc. To facilitate the manipulation of the disc, the pin **35** is inserted with its large diameter end **36** frictionally engaged in one end of the spacer **23**.

A more complicated wheeled toy may be formed by combining two of the toys A in the manner illustrated in FIGURES 7 and 8 of the drawings. The component parts are assembled as indicated in FIGURE 6 of the drawings but with the pointed ends **37** of both of the pins **35** projecting in opposite directions from the same toy. The two units are assembled by threading the second unit over the pointed end of one of the pins so that the enlarged diameter end of this pin frictionally engages both of the units to hold them in side by side relation, as is indicated in FIGURES 7 and 8 of the drawings.

Thus it will be noted that we have produced a toy consisting of a number of component parts which can be assembled into various assembled relationships to produce toys of different types. The toy can be produced at a relatively low cost, is entertaining and amusing to persons of various ages. When not in use, all of the parts are attached and contained so that there is little likelyhood of loss of the various parts.

In accordance with the patent statutes, we have described the principles of construction and operation of our improvement in amusement device, and while we have endeavored to set forth the best embodiment thereof, we desire to have it understood that changes may be made within the scope of the following claims without departing from the spirit of our invention.

We claim:

1. A toy including a pair of hollow similar concave discs of non-magnetic material having peripheral rims terminating on planes normal to the axes of the discs, sleeves extending axially from the concave sides of said discs and terminating short of said planes, a member having opposed ends frictionally engaged in said sleeves, shoulder means on said member limiting the insertion of said member into said sleeves and holding said rims in parallel spaced relation, rings of magnetic material secured to said discs adjacent to said rims, a wheel of non-magnetic material, a hub projecting from opposite sides of said wheel, a shaft extending through said hub and projecting therefrom at both ends, said shaft being magnetized, said hub being slightly shorter than the distance between said rims and said shaft being longer than the distance between said rims, said shaft holding said wheel extending into the space between said rims by its magnetic attraction to said rings, and a handle projecting axially from one of said discs.

2. The structure of claim 1 and in which said hub is of substantially the same diameter as said ends of said member and the central portion of said wheel is of a thickness no greater than the distance between said sleeves when

said rims are in contact, whereby when said member is detached, the ends of said wheel hub may be inserted in said sleeves to hold the rims in contact to form a closed receptacle.

3. The structure of claim 1 and in which the ends of said shaft projecting from said hub are tapered toward the ends thereof.

4. The structure of claim 1 and in which said member is tubular, and said handle is frictionally engaged in said member.

5. The structure of claim 4 and including a second pair of discs connected by a second member in a manner similar to the discs previously described, a second wheel similarly supported between the second pair of discs, and connecting means frictionally engaged in the said members of said first and second pairs of discs and holding the discs axially aligned.

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