June 19, 1962 A. A. MAZZADRA 3,039,228

SPINNING TOY

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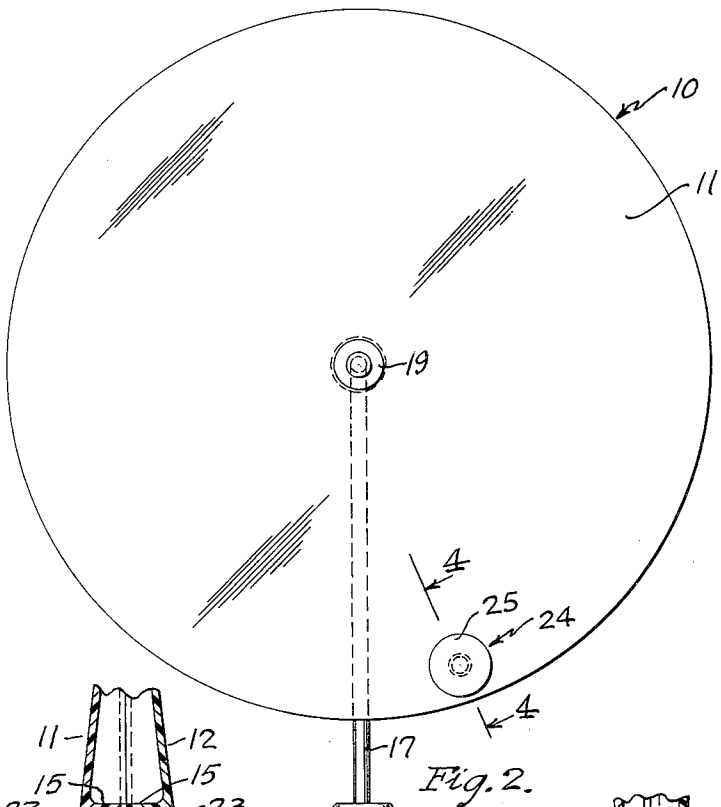


Fig. 2.

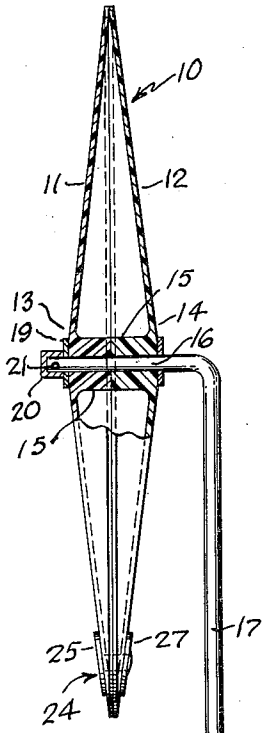


Fig. 3.

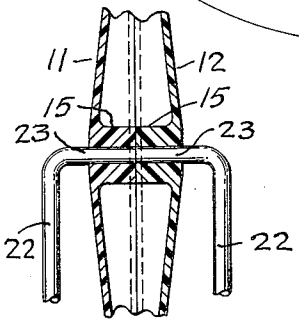


Fig. 5.

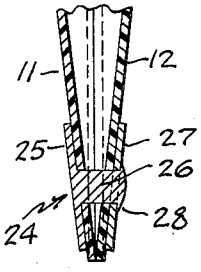


Fig. 4.

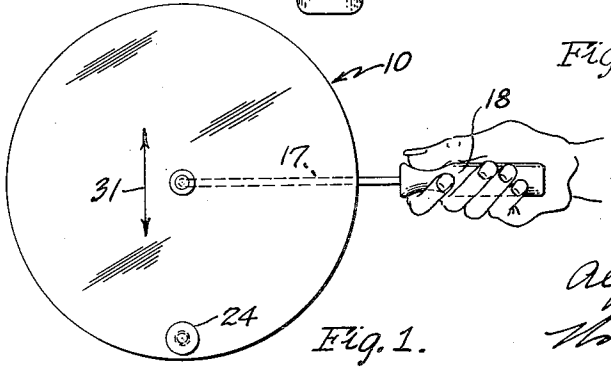


Fig. 1.

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SPINNING TOY

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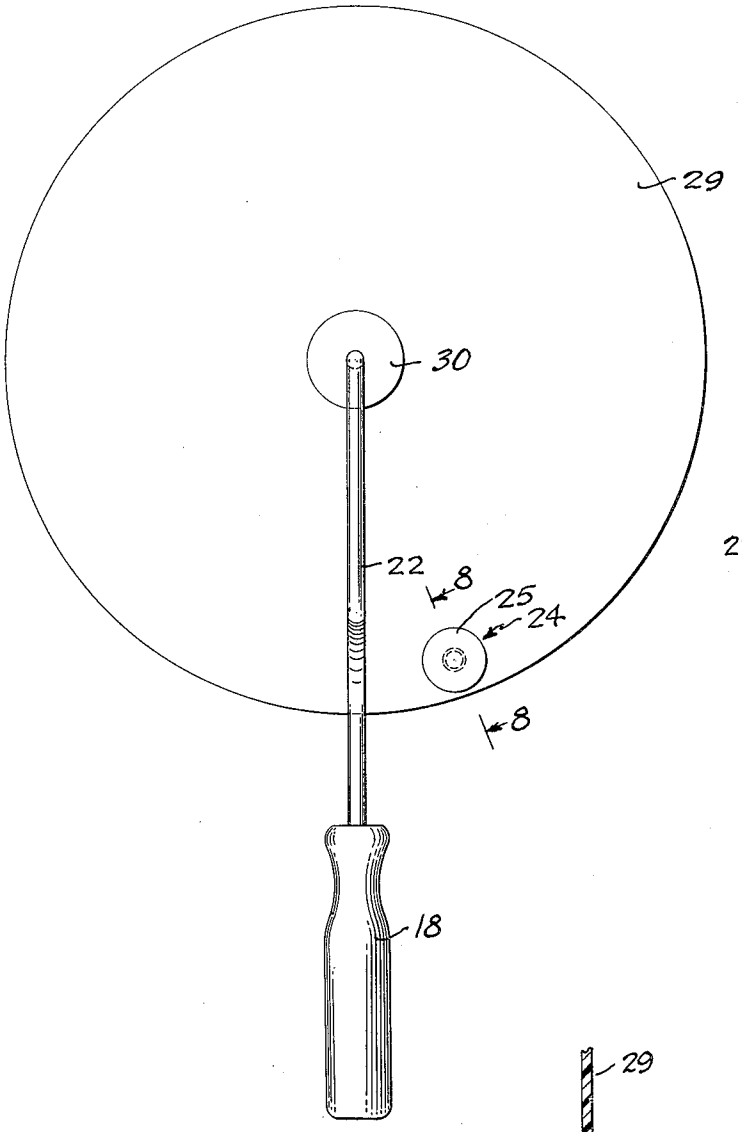


Fig. 6.

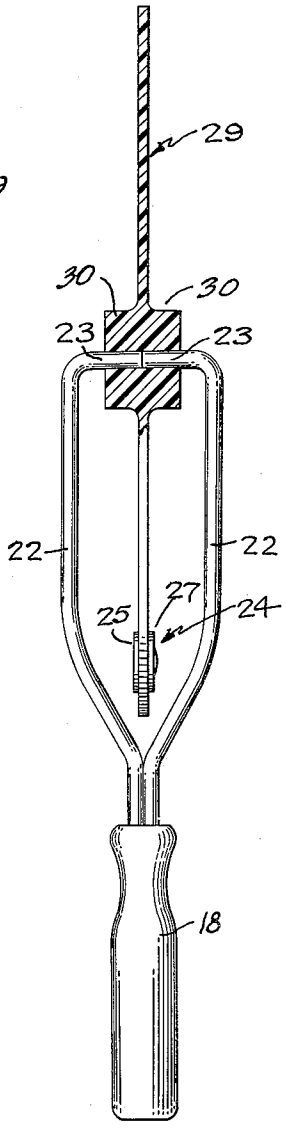


Fig. 7.

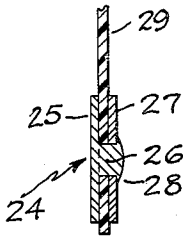


Fig. 8.

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SPINNING TOY

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5 Claims. (Cl. 46—47)

This invention relates to a spinning toy, and has for an object to provide an improved form of device in which there is a spinning disk mounted to rotate on a handle provided with a hand grip, and in which the disk is provided with an unbalancing weight whereby back and forth motions imparted to the disk by means of the handle will cause rotating action of the disk.

Another object is to provide a toy of this type which will have an appeal to a child, as it requires a certain amount of skill and practice to operate it and cause the disk to rotate.

With the foregoing and other objects in view, I have devised the construction illustrated in the accompanying drawing forming a part of this specification. It is, however, to be understood the invention is not limited to the specific details of construction and arrangement shown, but may embody various changes and modifications within the scope of the invention.

In this drawing:

FIG. 1 is a side view of the toy on a reduced scale illustrating one position in which it may be operated;

FIG. 2 is a side view of the toy on a larger scale;

FIG. 3 is a partial side view and partial section looking from the right of FIG. 2;

FIG. 4 is a detailed section substantially on line 4—4 of FIG. 2;

FIG. 5 is a section of the center portion showing a modified means of mounting the disk;

FIG. 6 is a side view of a modified form of the device;

FIG. 7 is a partial edge view and partial section looking from the right of FIG. 6, and

FIG. 8 is a detailed section substantially on line 8—8 of FIG. 6.

Referring first to the form of the device shown in FIGS. 1 to 5, the toy comprises a disk **10** formed in two sections **11** and **12** placed side by side with their peripheries connected by any suitable means, such, for example, as a suitable adhesive. These two disk sections are somewhat dished on their opposed sides so that their central portions **13** and **14** are axially spaced from each other. Spacing elements may be provided between them, which could be separate elements, but preferably they are bosses **15** molded in one piece with the sections **11** and **12**. These sections could be of any suitable material having the required stiffness, such, for example, as sheet metal, heavy cardboard, or similar material, but they are preferably molded from a suitable plastic material, in which case the bosses **15** can be molded in one piece with the portions **11** and **12** and provide bearings for running on a suitable spindle support **16**. As these bosses separate the center portions of the sections **11** and **12**, as shown in FIG. 3, and the peripheral edges are side by side and secured together, this means that the radial section of the disk is tapered from the center to the outer edge or periphery, thus increasing the strength and stiffness of the disk.

The spindle **16** on which the disk is mounted to rotate may be provided as part of a handle including a rod **17** projecting from one end of a hand grip **18**, and the spindle **16** formed by bending its outer free end laterally, as shown in FIG. 3. The disk may be secured to rotate on this spindle by suitable washers **19** on the opposite sides thereof and secured by a cap **20** over the end of the spindle and fastened thereto by any suitable means, such, for example, as a transverse pin **21**, or if

preferred, the handle for the disk, instead of comprising a single rod **17** projecting from the end of the hand grip, may comprise two rods **22** on opposite sides of the disk with their outer ends bent laterally and inwardly toward each other in alignment, as shown at **23**, and inserted in the bearings formed at the center of the disk, such for example as the bosses **15**. Mounted in the disk at a suitable distance from its axis to have an unbalancing effect is an unbalancing weight **24**. It is preferably secured adjacent the outer rim or periphery of the disk so as to secure a maximum leverage or unbalancing effect. It may comprise any suitable form, but a satisfactory form is shown comprising a plate **25** at one side of the disk **10** provided with a stem **26** passing through the disk **10** and an opening in a similar plate or washer **27** on the opposite side, and headed over as indicated at **28** to secure the two together and mount them in the disk **10**.

A modified form of the device is shown in FIGS. 6 to 8, in which the disk **29**, instead of being formed of two sections, as shown in FIG. 3, is formed as a single flat disk, and the bearing at the center, although it could be of separate members, if the disk **29** is molded from a suitable plastic material, which is the preferred form, may be provided by bosses **30** molded integrally with the plate on opposite sides thereof at its center. The means for mounting this disk on the handle including the hand grip **18**, may be either the single rod construction **16**, **17** of FIGS. 2 and 3, or it could be the double rod construction **22**, **23** of FIG. 5. An unbalancing weight **24** is secured to this disk adjacent its periphery, the same as in the form of FIGS. 1 to 4.

FIG. 1 indicates one position in which the device may be used, but other positions are readily adapted for use of the device, depending on the desired use or effect and ingenuity of the child using the device. Thus in the arrangement of FIG. 1, the disk is held in an upright position or substantially vertical plane with the hand grip extending horizontally, and the hand grip in one hand of the user. Then by swinging the disk up and down, as indicated by the double arrow **31**, and in certain timed relation to rotary movement of the disk, depending on the position of the unbalancing weight **24** with relation to the axis of rotation, the disk may be caused to rotate, and the speed will depend upon the speed of the up and down movement, but as the operation requires a certain movement of the device in coordination with the unbalancing weight and its relation to the axis of rotation, skill is required to secure the proper operation, as well as practice to obtain and continue the spinning movement of the disk. However, it is not confined to use in the position shown in FIG. 1, as if the handle is in an upright position the back and forth motion of the disk may be horizontal, or numerous other positions may be used, it being merely necessary to shift the disk back and forth in the plane of the disk, and with certain synchronous action with respect to the position of the unbalancing weight and its angular relation to the path of the back and forth movement of the axis of rotation.

The surfaces of the disk could be decorated in any way desired to secure different effects by rotation of the disk, including different designs and use of different colors in the designs. In use, this device has been very attractive to children because of various possibilities and effects capable of attainment by use of the device in different positions, as well as the fact that it requires a certain skill which first must be obtained before the device can be properly operated.

Having thus set forth the nature of my invention, I claim:

1. A spinning toy comprising a disk, a handle includ-

ing a hand grip and a rod extending from one end thereof provided with a pivotal bearing at its outer end, said disk provided with a central bearing mounted to rotate the disk freely on said pivotal bearing, and an unbalancing weight mounted in a fixed position on the disk spaced radially outwardly from its central bearing, said weight by being fixed and spaced from the axis of rotation of the disk providing an unbalancing weight for the disk to thus provide a sole means of causing rotation of the disk about said bearing by up and down movement thereof in the plane of the disk free of other support or operating means than the handle.

2. A spinning toy including a disk comprising two circular members side by side and secured together at their peripheries, said members being somewhat dished on their opposed sides so they are laterally spaced from their centers toward their edges, said disk provided with a supporting bearing at its center on which it is rotatable, a handle including a hand grip, a rod extending from one end of the handle and provided with a spindle at its free end in the bearing on which the disk is free to rotate, and an unbalancing weight mounted in a fixed position on the disk spaced outwardly from its central bearing, said weight by being fixed and spaced from the axis of rotation of the disk providing an unbalancing weight for the disk to thus provide a sole means of causing rotation of the disk about said bearing by up and down movement thereof in the plane of the disk free of other support or operating means than the handle.

3. A spinning toy including a disk comprising two circular members side by side and secured together at their peripheries, said members provided with central laterally extending bosses on their opposed sides forming a bearing for the disk on which it is rotatable and separating the centers of said members so their outer surfaces are inclined in opposite directions to their peripheries, an unbalancing weight secured to the disk in a fixed position adjacent its outer edge to rotate with the disk about its axis, a handle including a hand grip, and a support for the disk including a rod extending from one end of the hand grip and provided with a lateral spindle at its free end in the bearing in the disk on which the disk is free to rotate, said weight by being fixed and spaced from the axis of rotation of the disk providing an unbalancing weight for the disk to thus provide a sole means of causing rotation of the disk about said bearing by up and down movement thereof in the plane of the disk free of other support or operating means than the handle.

4. A spinning toy comprising a disk provided with a central boss providing a bearing on which it may rotate, an unbalancing weight mounted in a fixed position on the disk adjacent its outer edge and rotatable with the disk about its axis, a handle including a hand grip, and a support for the disk including rods extending from one end of the hand grip and having laterally extending aligned end portions in said bearing providing a spindle on which the disk is free to rotate about its center axis, said weight by being fixed and spaced from the axis of rotation of the disk providing an unbalancing weight for the disk to thus provide a sole means of causing rotation of the disk about said bearing by up and down movement thereof in the plane of the disk free of other support or operating means than the handle.

5. A spinning toy comprising a substantially flat disk of molded plastic provided with a central boss providing an elongated bearing, an unbalancing weight secured to the disk in a fixed position adjacent its outer edge, a handle including a hand grip, and a support for the disk comprising a pair of rods projecting from one end of the hand grip and provided with laterally extending aligned portions at their outer ends extending into the bearing on the disk from the opposite ends thereof and providing a spindle in said bearing on which the disk is free to rotate, said weight by being fixed and spaced from the axis of rotation of the disk providing an unbalancing weight for the disk to thus provide a sole means of causing rotation of the disk about said bearing by up and down movement thereof in the plane of the disk free of other support or operating means than the handle.

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