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SPINNER TOY WITH SPARKING DEVICE

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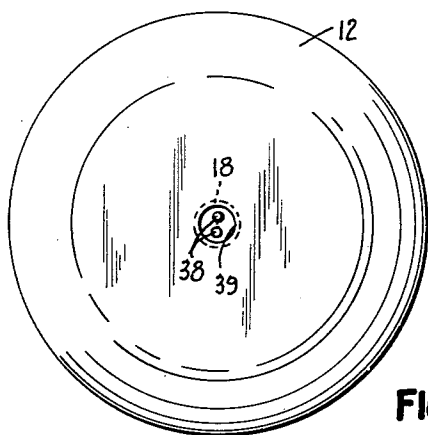
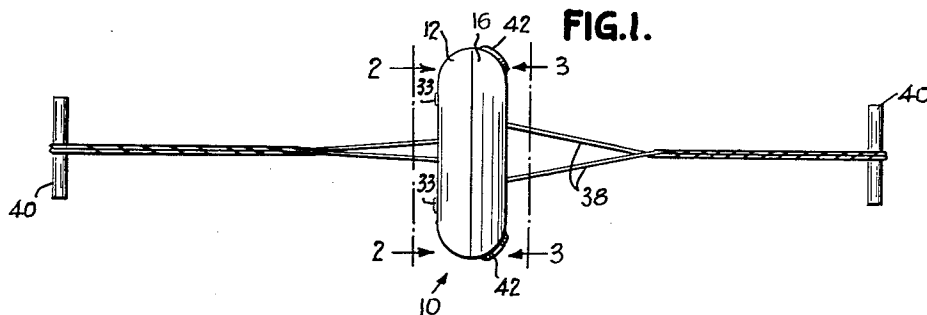


FIG. 2.

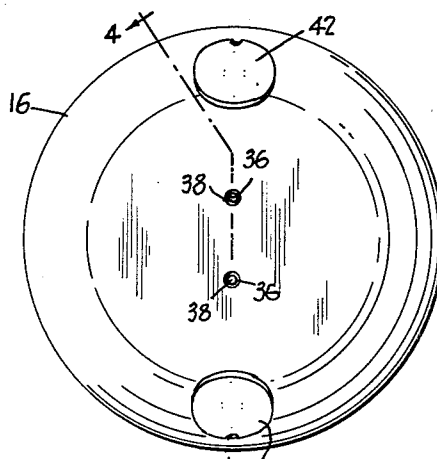


FIG. 3.

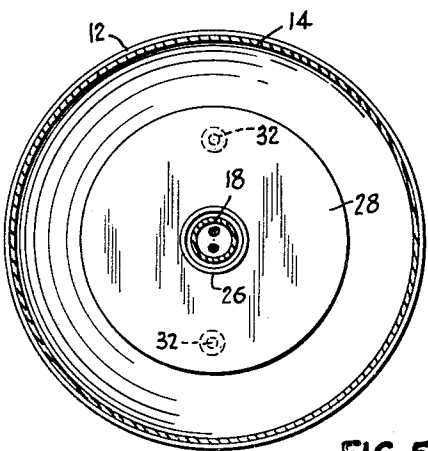


FIG. 5.

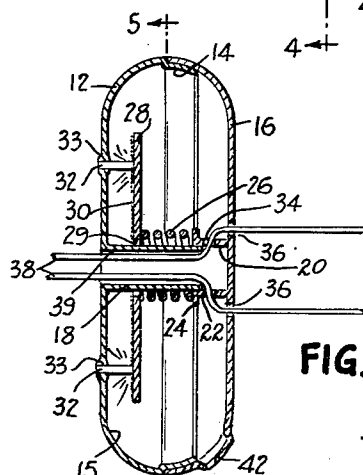


FIG. 4.

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SPINNER TOY WITH SPARKING DEVICE

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This invention relates to toys and, more particularly, to a whirling or spinning type toy.

Spinning type toys have always been a source of entertainment to children, especially manually operated spinning devices having audible or visible signal features which increase the novelty of the toy. It is, therefore, an object of the present invention to provide the manually operated whirling toy having completely self-contained signal elements which are responsive to the rotation of the toy.

Another object of the present invention is to provide a whirling toy having a main body portion that is completely enclosed, within which a sparkler device is supported for emitting sparks within the housing that are visible from the exterior of the housing, so as to prevent accidental injury to persons operating or observing the operation of the toy.

Still another object of the present invention is to provide a whirling type sparkler toy of the type described having a completely self-contained clutch assembly for actuating the sparkler device only during a change in the direction of rotation of the main body of the toy, and for only short periods of time, so as to prolong the useful life of the toy and to increase its novelty attraction.

An additional object of the present invention is to provide a self-contained and illuminated whirling toy of the above type which is operated by means of a pair of twisted flexible cable elements which continuously rotate the main body member in alternately opposite directions, so that during the transition from rotation in one direction to another, the sparkler device supported therewithin will produce a visible sparkling effect that may be observed from all sides of the toy.

All of the foregoing and still further objects and advantages of this invention will become apparent from a study of the following specification, taken in connection with the accompanying drawing, wherein:

FIG. 1 is a front plan view of a whirling toy made in accordance with the present invention.

FIG. 2 is a transverse cross-sectional view taken along line 2-2 of FIG. 1.

FIG. 3 is a transverse cross-sectional view taken along line 3-3 of FIG. 1.

FIG. 4 is a transverse cross-sectional view taken along line 4-4 of FIG. 3.

FIG. 5 is a transverse cross-sectional view taken along line 5-5 of FIG. 4.

Referring now to the drawing, and more particularly to FIGS. 1 and 4 thereof, a whirling toy 10 made in accordance with the present invention is shown to include a main body member having a hollow base 12 with an inwardly recessed marginal portion 14 that is frictionally received within the opening defining portions of a similar cover member 16, both of which elements when secured together in the manner illustrated, define an interior compartment 15. At least one and preferably both of the base and cover members 12, 16 are constructed from a light transmitting material, such as molded plastic material, for purposes hereinafter described.

An inwardly projecting hollow post member 18 integral with the base 12 has an innermost extremity that is slidably received within the socket 20 of a sleeve 22 which is integral with the cover member 16. Thus, both the post

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18 and sleeve 22 define a central shaft which is coaxial with the axis of rotation of the main body member.

The innermost extremity of the sleeve 22 is provided with a radially outwardly extending flange 24 that forms an abutment for one end of a compression coil spring 26 which encircles the post 18 and is seated at its opposite end against the facing side of a circular disc 28. This disc 28 has an enlarged central opening 29 which loosely rotatably receives the post 18 therethrough so as to be freely rotatably mounted upon the post 18 for movement relative thereto and to allow for slight angling movement of the disc upon the post. The side of the disc 28 opposite the side in abutment with the compression coil spring 26, is coated with a friction material 30 for reaction with flint segments 32 extending inwardly of and secured to the base member 12, such as by cement 33. It will thus be recognized that relative rotation between the main body member and the disc 28 produces a rubbing action between the friction surface 30 and the flint segments 32, thus producing a sparkling effect of a well known type. The sparks emanating therefrom, that is from this source of illumination, are thus clearly visible outwardly through the light transmitting base and cover members 12, 16.

The sleeve 22 is provided with a pair of diametrically oppositely opening bores 34 through which a pair of flexible cables 38 are extended. One end of the flexible cables 38 extend outwardly through a longitudinal bore 39 in the post 18, while the opposite ends of the flexible cable 38 extend outwardly through a pair of diametrically oppositely arranged openings 36 in the cover member 16. A pair of handles 40 are secured, one at each end of the flexible cables 38, for manual manipulation in the manner hereinafter described.

It will now be recognized that by grasping the handles 40 in both hands, and spinning the main body member with respect thereto, that the cables 38 will become twisted. Thus, by exerting an outward pull upon the handles 40, the twisted cables 38 are urged toward an initial untwisted position, thus effecting rotation of the main body member about its longitudinal axis of rotation. The compression coil spring 26 acts as a friction clutch by exerting sufficient pressure upon the disc 28 to normally cause it to frictionally engage with the flint segments 32 sufficiently to prevent relative rotation between the disc 28 and the main body member during rotation in the same direction. However, as soon as the direction of rotation of the main body member is reversed, the disc 28 acts as a fly wheel to continue rotation temporarily in the same direction until its inertia is overcome, thus causing the friction surface 30 thereof to rub against the flint segments 32 carried by the cover member 12, to produce a series of sparks. This burst of sparks is of short duration, however, because of the frictional action between the friction surface 30 and the flint segments 32, which coaction is increased by the coil spring 26, thus quickly causing the fly wheel disc 28 to reverse its direction of rotation and rotate with the main body member until the direction of rotation of the main body member is again reversed by a subsequent pulling upon the handles 40.

During rotation of the main body member, a pair of diametrically oppositely disposed projections 42 integral with the cover member 16 produce a whistling sound which further adds to the attractiveness and novelty of the toy. Since the entire main body member is completely enclosed, it is impossible for any of the sparks of small fragments of the flint segments 32 and friction surface 30 to strike or contact the operator or observers. This is an important safety feature which does not detract from the novelty of the toy since all of the sparks are clearly visible through the light transmitting material

of the main body member. The flexible cables 38 may be conveniently constructed from any type of twine, plastic, or wire material which is sufficiently flexible to provide for the continuous twisting and untwisting of the cable in use.

While this invention has been described with particular reference to the construction shown in the drawing, it is to be understood that such is not to be construed as imparting limitations upon the invention, which is best defined by the claims appended hereto.

Having thus described our invention, what we claim as new and desire to be secured by Letters Patent is:

1. An amusement device comprising, in combination, a main body member, drive means for effecting rotation of said main body member in alternately opposite direction, signal means carried by said main body member, and clutch means responsive to changes in the direction of rotation of said main body member to actuate said signal means during the reversal of the direction of rotation of said main body member, said main body member comprising a hollow housing, a shaft assembly extending axially through said hollow housing, and said signal means being rotatably supported upon said shaft within said housing, said hollow housing comprising wall portions of light transmitting construction, and said signal means comprising a source of illumination visible through said wall portions of said housing, said drive means comprising a plurality of lengths of flexible cable extending through said shaft, all of said lengths of flexible cable intermediate the opposite ends thereof, being drivingly connected to portions of said housing and being radially spaced outwardly from the longitudinal axis of said housing, a pair of handles each secured to the opposite longitudinal extremity of said lengths of cable, whereby said rotation of said main body member in one direction relative to said handles effects a twisting of said lengths of

said flexible cable in said one direction, and a pull upon said twisted lengths of flexible cable by outward movement of said handles in opposite directions effects rotation of said main body member in an opposite direction to untwist said cable from said one direction and to twist said cable in an opposite direction upon continued rotation of said main body member in said opposite direction, said source of illumination comprising a fly wheel rotatably carried upon said shaft having a friction surface on one side, and a plurality of flint segments carried by said main body member within said hollow housing in facing engagement with said friction surface, said clutch means comprising a spring acting between said main body member and said fly wheel yieldably urging said friction surface of said fly wheel into contact with said flint segments, said spring yieldably securing said fly wheel upon said shaft in rotation with said main body member and allowing continued rotation of said fly wheel relative to said flint segments in one direction momentarily in response to reversal of the direction of rotation of said main body member.

2. An amusement device as set forth in claim 1 wherein said spring means comprises a compression coil spring encircling said shaft, one end of said compression coil spring being seated against said housing, and the opposite extremity of said compression coil spring being seated in abutment with the side of said fly wheel opposite said friction surface.

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