W. R. GRAHAM.

AMUSEMENT DEVICE.

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1,077,340. **Patented Nov. 4, 1913.**

Fig. 1.

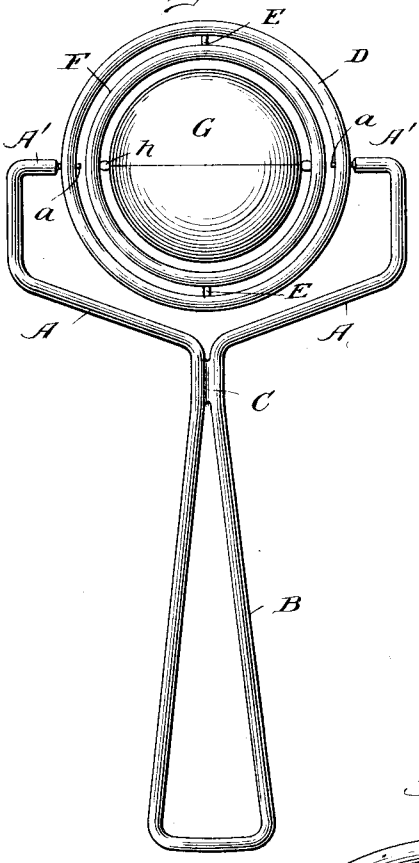


Fig. 3.

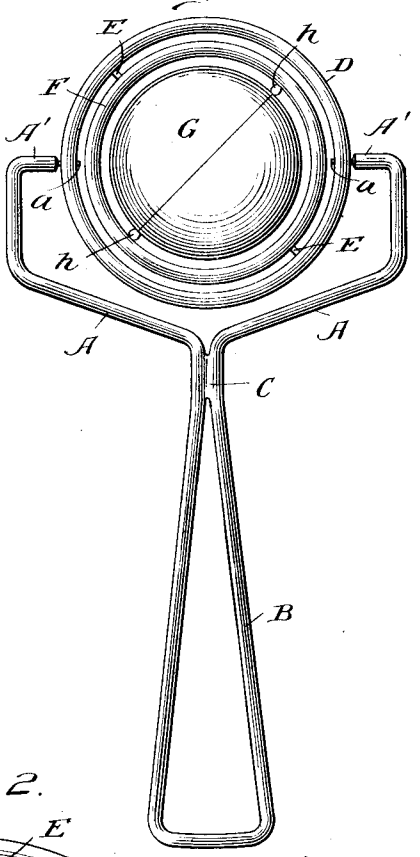
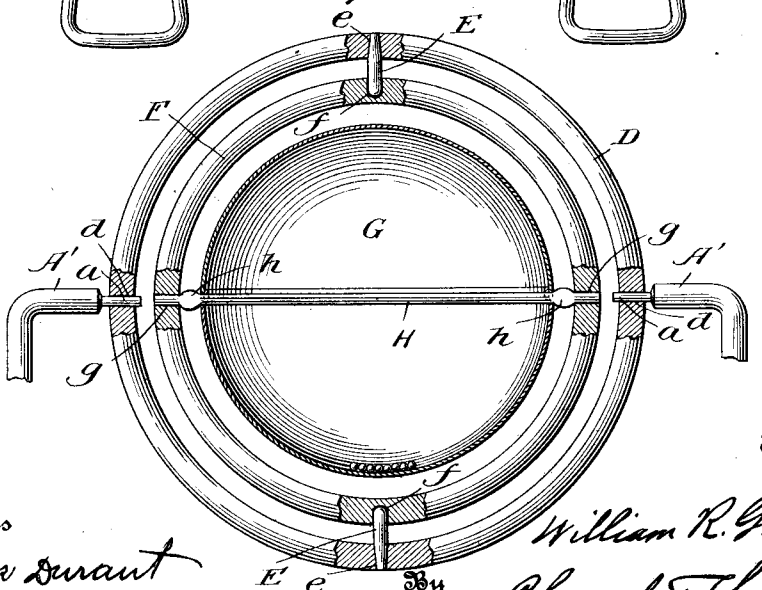


Fig. 2.



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UNITED STATES PATENT OFFICE.

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AMUSEMENT DEVICE.

1,077,340. Specification of Letters Patent. Patented Nov. 4, 1913.

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To all whom it may concern:

Be it known that I, WILLIAM R. GRAHAM, a citizen of the United States, and resident of Washington, in the District of Columbia, have invented certain new and useful Improvements in Amusement Devices; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this, specification, and to the figures and letters of reference marked thereon.

This invention relates to amusement devices and is designed with the object of providing an attractive and interesting device, particularly for the amusement of juveniles.

Primarily the device is one adapted to be held in the hand and embodying a plurality of rotary members journaled one within the other, and with their axes offset, but preferably all intersecting at a common center, whereby the rotary members may rotate simultaneously in different intersecting planes and in different directions.

Referring to the accompanying drawings,—Figure 1 is an elevation of an amusement device embodying the present invention; Fig. 2 is a detail view on an enlarged scale with parts broken away and in section to illustrate the construction of the pivotal connections between the several parts. Fig. 3 is an elevation illustrating a slightly modified arrangement of the pivots.

Like letters of reference in the figures indicate the same parts.

The frame of the device is conveniently and by preference formed of a single length of wire, the two end portions A constituting arms which diverge from each other and have their extremities A′ bent into a single line and directed each toward the other. As shown, the intermediate portion of the wire which constitutes the frame is formed into a handle B, although it is obvious that a handle of any ordinary construction may be applied to the intermediate portion of the frame, as is usual in many tools and implements adapted to be held in the hand of the user.

For imparting rigidity to the frame the portions of the wire at the bases of the diverging arms A are preferably connected together, as by solder or other fastening means at C.

The extreme ends of the arms A′, A′, are reduced in diameter so as to form pivots or journals *a* upon which there is mounted a ring D, which ring is of such diameter that it may freely revolve on the pivots without interference with the arms A or any fixed portion of the device which would interfere with its free rotation. The ring is conveniently formed of wire corresponding to the wire from which the frame is formed, said wire being provided with diametrically opposite openings or bearings *d*, for the reception of the journals *a*.

In addition to the bearings *d* the ring D is also provided with diametrically opposite seats for inwardly projecting studs or journal pins E, the location of said seats being usually at right angles to the bearings *d* before referred to, but they may be at any desired angle, for example, as shown in Fig. 3, where they are diagonally disposed with relation to the axis of the ring. In order that the pins may be held firmly without possibility of outward displacement, they are tapered as shown at *e* and seated firmly in the seats in the ring by a sufficient outward pressure to insure their retention.

A second ring or annular body F is journaled on the pins *e*, the bearings *f* in which the ends of the pins *e* seat being extended only part way through the ring F, whereby the pins are prevented from any possible accidental displacement by inward movement, and at the same time relatively loose bearings are provided which will permit the ring to rotate freely.

In the device as thus constructed it is obvious that the two annular bodies or rings D and F may rotate freely in intersecting planes, and in the same or opposite directions, and by mounting in the inner ring a suitable body which will be attractive in appearance, a child's interest in the device may be greatly increased. Conveniently, a simple sphere is journaled in the inner annular ring, F, such, for example, as the celluloid

ball G shown in the drawing, the axis of the ball being at an angle to the axis of the ring F, usually, as shown, at right angles to the axis of the ring. A cheap and convenient way of mounting the sphere is to form openings *g* through the ring F at diametrically opposite points and to pass a pivot or small wire H through the same and through the sphere, so as to extend across the ring, and after the wire is in place, portions of the same intermediate the ring and sides of the wall of the sphere are flattened or offset by lateral pressure, so as to form lateral enlargements *h*, which enlargements perform the dual function of retaining the pivot against longitudinal displacement in the ring, and of holding the sphere central within the ring, thereby preserving a practically uniform spacing between the sphere and ring, while permitting the parts to rotate freely and independently of each other.

The sphere or central body may form a rattle, for which purpose shot or other loose bodies may be located within it, as is usual in rattles for infantile amusement.

With a device constructed as hereinbefore described, it is found that a sudden rotary movement imparted to the handle will cause the concentric bodies to spin. The movements of the handle sometimes causes the bodies to spin in the same direction and at other times in opposite directions, the combined movements of the parts producing optical effects which are both interesting and amusing, thus making the device one which is exceedingly attractive and well calculated to retain interest in it for a long period.

It will be noted that in the form of apparatus illustrated in the drawings and which is the preferred form, the handle B is of greater effective dimension transversely in one direction than in the other and owing to this characteristic the handle, when held between the thumb and finger with the greatest dimension in the line of pressure, may be caused to snap into a position with the pressure in the general minor transverse axis, the result being that the movement is inaugurated and arrested suddenly. This result is very desirable in order to secure the effective spinning or rotation of the parts, and it can be best secured only when the handle is of irregular shape in cross section or has major and minor axes transversely of the handle, whereby the gripping pressure applied to the major axis will result in a sudden starting and stopping of the rotary movement.

Having thus described the invention, what I claim as new and desire to secure by Letters Patent of the United States, is:

1. In a toy adapted to be held in the hand, a handle having diverging arms provided with oppositely located inwardly directed pivots forming an axis at a wide angle from the major axis of the handle, an annular body journaled on said pivots at diametrically opposite points, and a second annular body journaled in said first mentioned annular body on peripheral pivots forming an axis disposed at an angle to the axis of the first mentioned body, whereby the bodies may be brought into coincident planes and are free to rotate on their own axes in intersecting planes.

2. In a device of the class described, a handle having divergent arms formed at their ends into oppositely disposed inwardly directed pivots of less diameter than the arms, a ring having bearings at diametrically opposite points in which said pivots are journaled, whereby the ring is permitted to rotate freely between the arms, a second ring located within the first mentioned ring and having pivot seats therein at diametrically opposite points, and outwardly tapered pivot pins mounted in the outer ring and extending into the seats in the inner ring, whereby both outward and inward displacement of the pivot pins is prevented and the inner ring is freely supported for rotation on its own axis independently of the outer ring.

3. In a device of the type described, a handle provided with oppositely disposed inwardly directed pivots, a ring having diametrically opposite bearings for the reception of said pivots, whereby the ring is journaled for free rotation on the handle, a second ring journaled in the first mentioned ring on an axis at an angle to the axis of said first mentioned ring, and a body journaled concentrically within the second ring on an axis at an angle to the axis of the second ring, substantially as described.

4. A device of the type described embodying a handle having oppositely located, inwardly directed pivots, a ring journaled for free rotation on said pivots, a second ring journaled within the first mentioned ring on an axis at an angle to the axis of the first mentioned ring, the pivot pins for said second mentioned ring being prevented from moving longitudinally by the respective rings, a body journaled within the inner ring, the pivot for said body being formed by a wire extending across the ring from side to side and having portions between the body and ring transversely enlarged to limit the longitudinal movement of the wire, and to limit the longitudinal movement of the body on the wire, whereby the latter is held central within the ring, but is free to rotate.

5. In a toy to be held in the hand, the combination with concentric members mounted on peripheral pivots forming axes

of a support on which said members are pivotally mounted, embodying a handle adapted to be gripped between the thumb and fingers, said handle having major and minor transverse axes whereby it is of greater dimension in one direction transversely than in the other and may be rotated by a transference of the gripping pressure from the major axis toward the minor axis, substantially as described.

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."