Jan. 27, 1953

H. B. TOOMBS ET AL

2,626,481

TOY RATTLE

Filed Sept. 9, 1950

Fig. 2

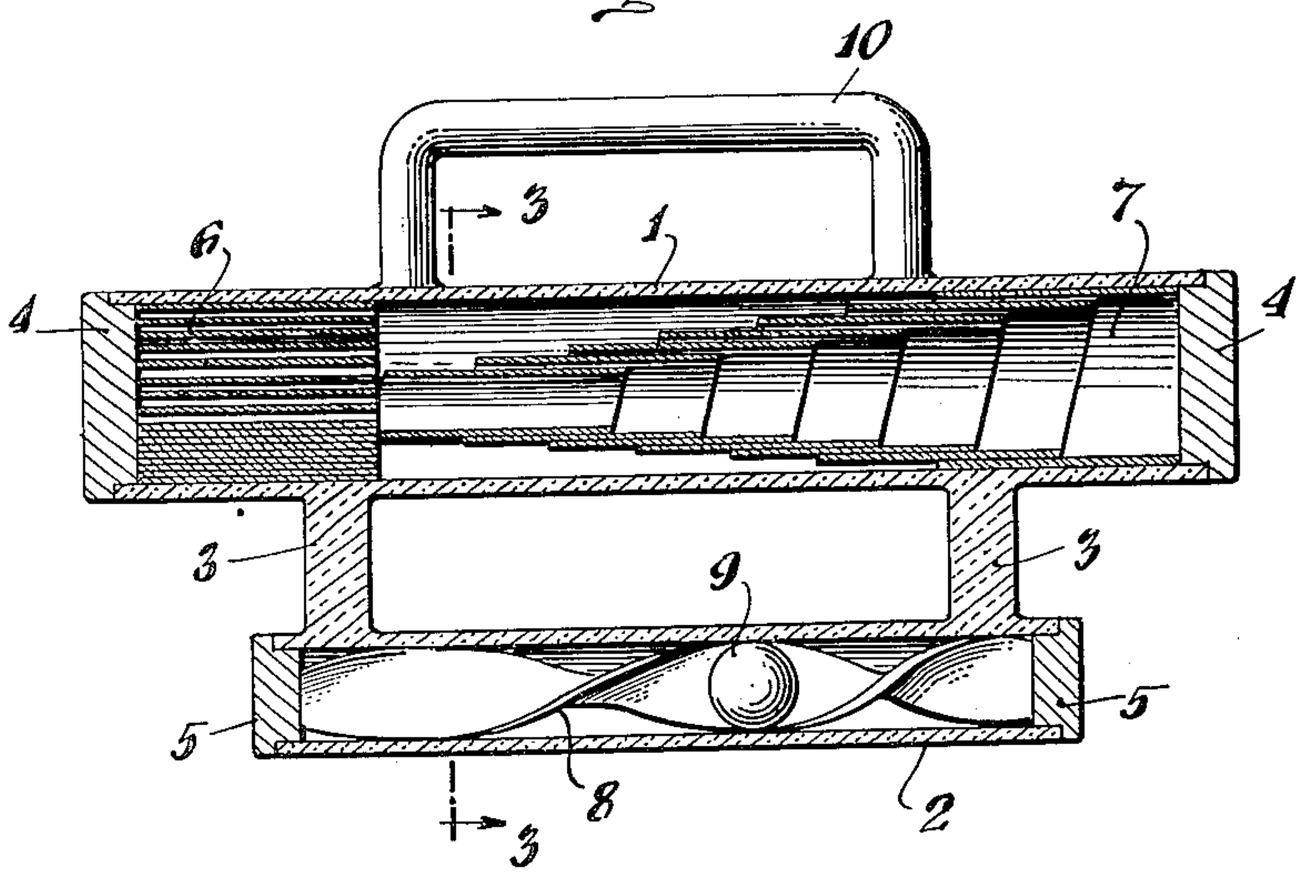


Fig. 1

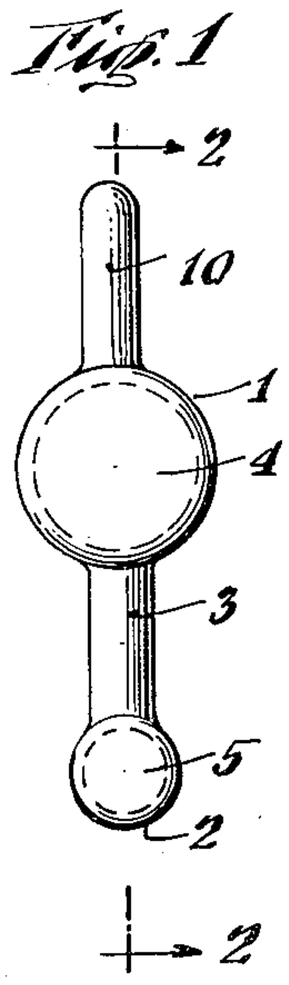


Fig. 3

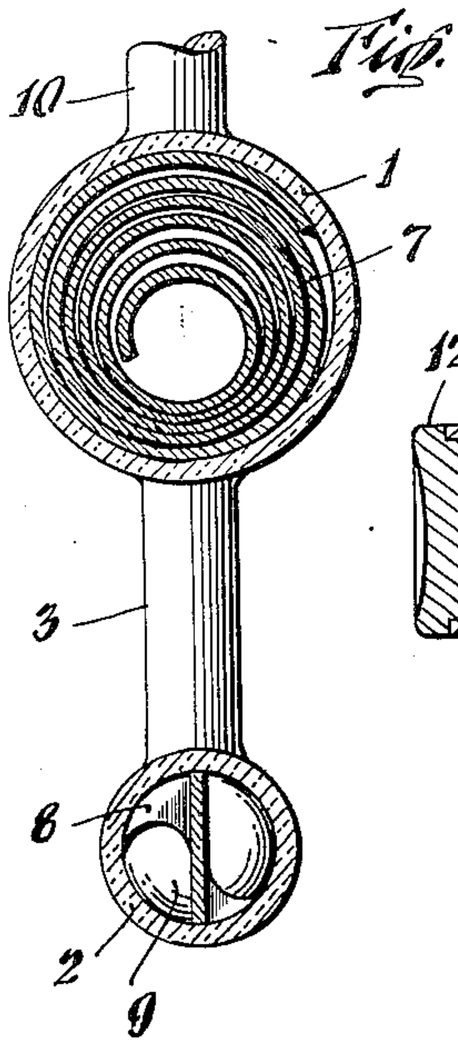
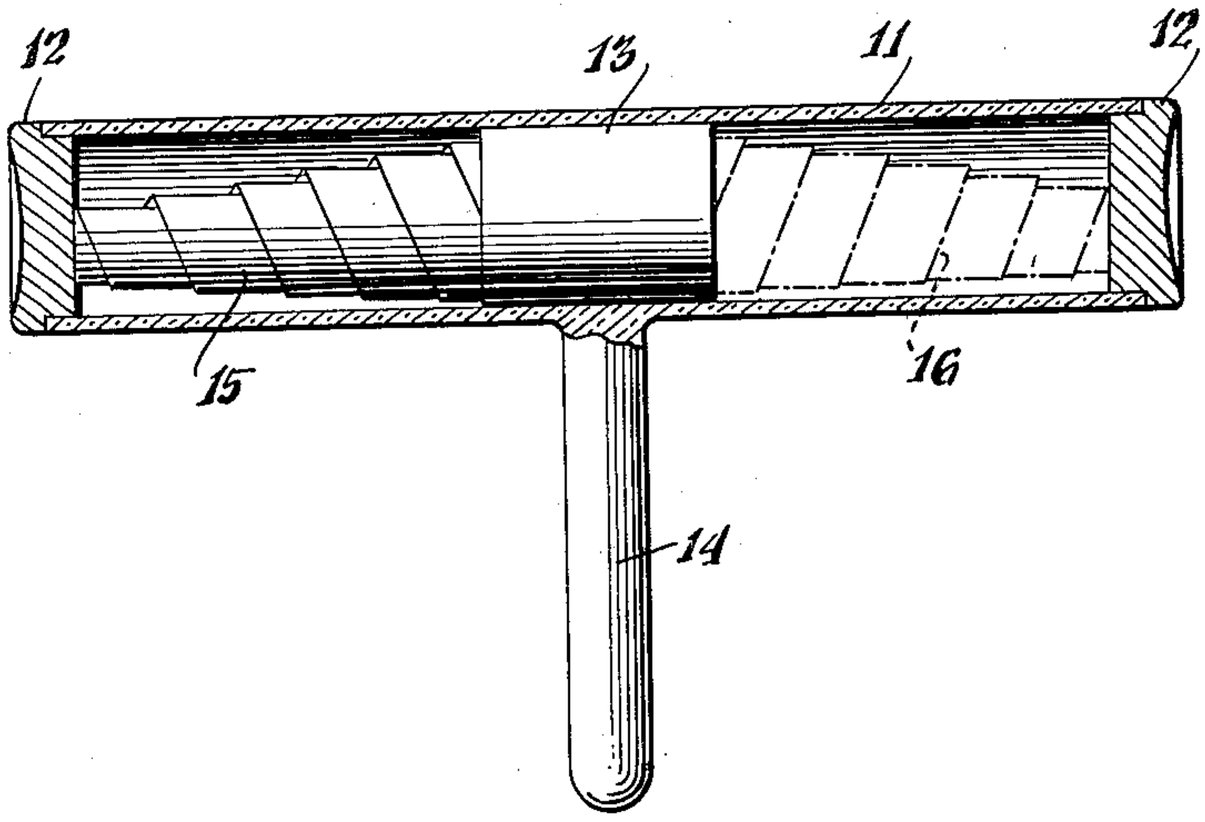


Fig. 4



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Patented Jan. 27, 1953

2,626,481

UNITED STATES PATENT OFFICE

2,626,481

TOY RATTLE

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Application September 9, 1950, Serial No. 183,968

7 Claims. (Cl. 46—193)

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This invention relates to a toy rattle and more particularly to one with means for producing visual and sound effects upon motion in an axial direction.

It is an object of this invention to provide a toy which is attractive and educational to a small child, and it is a further object of this invention to provide a toy which not only has the advantages of being a noise maker or rattle but which also displays various color effects.

It is a further object of this invention to provide a toy which is inexpensive to manufacture and which can be given to a child without fear that the child will harm either himself or furniture and the like.

With these and other objects in mind, reference is had to the accompanying drawings illustrating practical embodiments of the invention and in which:

Fig. 1 is an end view of the toy rattle;

Fig. 2 is a cross section taken on line 2—2 of Fig. 1;

Fig. 3 is a cross section taken on line 3—3 of Fig. 2; and

Fig. 4 is a cross sectional view of an alternative form of the invention.

Referring to Figs. 1 and 2, the preferred form of the invention is to have two cylinders 1 and 2 connected by struts 3. Cylinders 1 and 2 are preferably made of some transparent or translucent and non-frangible material. The cylinders may be colorless or of any desired color. The cylinders are closed at the ends by plugs 4 and 5. The plugs 4 and 5 may be transparent, translucent or opaque and of any desired color. The plugs 4 and 5 are held in place in their respective cylinders by frictional contact or by use of any suitable adhesive.

Mounted inside cylinder 1 are 2 coils 6 and 7. These coils may be made of paper or other suitable material. The material used should have sufficient resiliency so it will tend to retain its shape. Glassine paper composed of two or three laminated thicknesses has been found to be very satisfactory for this purpose. Paper coated with one of the many various plastics available will also prove satisfactory. The coils may be affixed to the interior of the cylinder by gluing the outer surface of the outer convolution of the coil to the interior surface of the cylinder. Preferably, one coil is glued at each end of the cylinder 1. Fig. 2 shows coils 6 and 7 mounted within the cylinders. Coil 6 is shown in its normal position; coil 7 in the extended position which will be later described. The coils should be composed

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of sufficient convolutions so as to enable them to be stretched to almost the entire length of the cylinder without movement of the outer convolution.

Cylinder 2 contains a spiral 8 extending almost the full length of the cylinder. This spiral is made of metal or any suitable plastic and preferably has about one full twist between its two ends. The spiral is mounted within the cylinder and may either be free to move therein or rigidly fixed either through adhesive or frictional contact with the inside surface of the cylinder. One or more small and colorful marbles, ball-bearings or some other balls 9 are placed within the cylinder 2. These balls should be small enough so that they may move freely between the spiral and the inside of the cylinder.

A handle such as at 10 may be attached to the toy rattle. In the drawing Fig. 2 it is shown attached to cylinder 1.

Fig. 3 shows the structure of Fig. 2 in section taken on line 3—3 of Fig. 2. In this figure, coil 7 is shown mounted in cylinder 1. It will be noted that the greater part of the outer convolution is in intimate contact with the inner surface of cylinder 1, having been thus secured by adhesive as previously described. Cylinder 2 is shown to contain spiral 8, the periphery of this spiral being in close contact with the inner surface of cylinder 2.

In operation, the rattle is held by the child and either shaken in a direction axial of the cylinders or tilted back and forth in such a manner as to vary the relative heights of coils 6 and 7 and of the ends of spiral 8. The axial shaking motion serves to throw one or the other of coils 6 and 7 toward and beyond the center of cylinder 1. Since, however, the outer convolutions of each of these coils are affixed to the cylinder, this motion results in the center convolutions only of the coil spiralling toward the center of the cylinder and beyond as is shown by coil 7 in Fig. 2. Fig. 2 shows coil 6 in its normal position and coil 7 extended. Tilting the cylinder such that coil 6 is below coil 7 will also produce this position. Tilting the cylinder 1 so that coil 7 is below coil 6 will result in coil 7 returning to its normal rest position and coil 6 being extended.

The movements of the rattle result in snapping noises which are interesting and attractive to children. This noise is caused by the impact of the inner convolution of whichever coil is extending with the coil which is at rest at the other end of the cylinder, thus in the position shown in Fig. 2 a noise would have resulted from

the impact of the inner convolution of coil 7 against closed coil 6.

If these coils are made of colorful material, the motion of the coils within the cylinder becomes more attractive to the child. An excellent and varying effect will be obtained if the material in each coil is striped or otherwise multicolored.

The same movements of the rattle which cause motion within cylinder 1 likewise cause the ball or balls 9 to move within cylinder 2. The motion of the ball is governed by the spiral 8 which causes the ball to follow the turns of the spiral as the ball travels from one end of cylinder 2 to the other. This motion of the ball causes a certain rattling noise which attracts children and also has a spiral movement which is both interesting to them and educational.

It will be noted that the above-described motions produce a spiralling effect in both components of the toy.

Fig. 4 shows a different mode of the same invention. Cylinder 11 in this figure is comparable to cylinder 1. This cylinder is closed by plugs 12. These plugs are of a different shape than plugs 4 but they may, however, be the same as plugs 4. They are secured to cylinder 11 either through frictional contact or use of a suitable adhesive. The concave surface on each of the plugs 12 enables one easily to hold the toy by placing his thumb on one plug and his forefinger on the other. Mounted within cylinder 11 is a single coil 13. This coil is similar to coils 6 and 7 and is made of the same materials. The outer convolution of this coil is secured to the inside surface of the cylinder 11 by use of an adhesive. A handle 14 may be secured to cylinder 11 at the center.

In operation this rattle is moved similarly to the rattle of Fig. 2; that is, the cylinder may be given motion back and forth along its axis or it may be tilted back and forth in such manner as to vary the relative heights of the ends of cylinder. 11. Either of these motions will cause the inner convolutions of coil 13 to spiral in either one axial direction or the other depending upon the motion imparted to it. 15 shows the coil 13 extending toward one end of the cylinder; dotted lines 16 show it extending in the opposite direction.

The motions of the coil 13 in the mode of Fig. 4 are colorful and attractive to children. In addition, the impact of the inner convolution of coil 13 against one or the other of plugs 12 produces a snapping noise enjoyed by the children.

It will be seen that the structures of both Figs. 2 and 4 produce a spiralling effect upon axial motion of the cylinders. In cylinders 1 and 11 the coils 6, 7 and 13, have their outer convolutions affixed to the cylinder, as has been previously described, and axial movement of the inner convolutions is accompanied by a spiralling illusion; this is especially so if the coils are made of striped material. In cylinder 2 there is, of course, an actually spiral motion produced by the movement of the ball.

Thus, among others, the objects of the invention, as aforementioned, are achieved. Obviously various changes in and rearrangements of the structure as herein disclosed may be made without departing from the spirit of the appended claims.

We claim:

1. In a toy of the character described, at least one transparent cylinder, plugs affixed at the end of said cylinder forming closures therefor, means within said cylinder producing combined spiral and axial inertial motion upon intermittent axial motion of the said cylinder whereby noise and varied visual effects result.

2. A toy rattle composed of a cylinder closed at each end, a handle attached thereto, at least one coil mounted therein, said coil having a plurality of convolutions of resilient material, the outer convolutions of said coil being affixed to the interior surface of said cylinder, the inner convolutions of said coil being free to move except as limited by the resiliency of the said material.

3. In a toy rattle, a transparent cylinder, a closure member at each end thereof, two coils composed of a plurality of convolutions of flexible, resilient material mounted within said cylinder, one of said coils at each end of said cylinder, and adhesive bonding the outer convolution of each coil to the cylinder.

4. In a toy rattle, a cylinder, a closure member at each end thereof, two coils secured within said cylinder one at each end thereof, said coils being composed of a plurality of convolutions of material which convolutions normally rest within one another but which flex in an axial direction during the application of axial forces thereto.

5. In a toy rattle, a cylinder, a handle attached thereto, a coil mounted in the center of said cylinder, said coil being composed of a plurality of convolutions of resilient material which causes the convolutions to rest normally within one another but which flex axially during the application of axial forces to the cylinder.

6. A toy including in combination a tubular transparent member, a spirally disposed assembly within the same, closures extending into the ends of said member for limiting axial movements of the assembly with respect to said member and means for securing at least part of said assembly against rotative movements with respect to said tubular transparent member.

7. A rattle including a tubular, transparent body, a spirally disposed assembly arranged within said body and having a portion secured against movement with respect thereto and means forming a part of said rattle whereby in response to reciprocatory movements of said body at least the illusion of spiral motion on the part of said assembly will be created.

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