June 26, 1962 W. M. SIRKS 3,040,474

SOUND-PRODUCING TOY

Filed Dec. 4, 1958 2 Sheets-Sheet 1

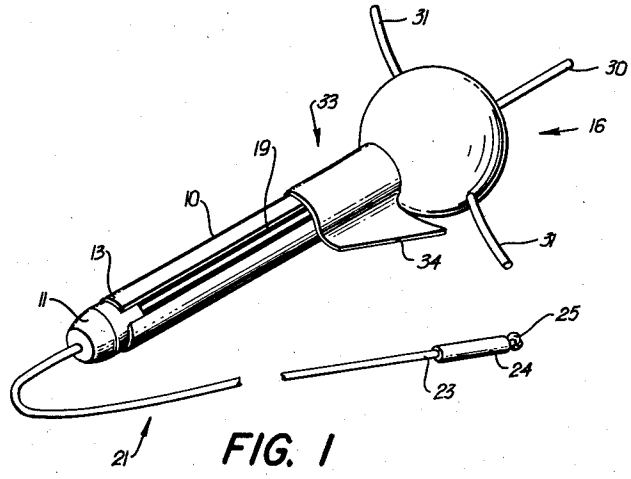


FIG. 1

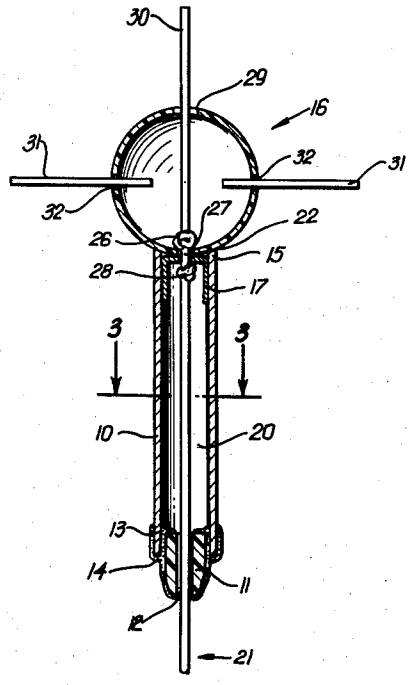


FIG. 2

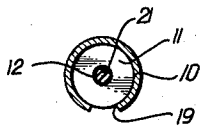


FIG. 3

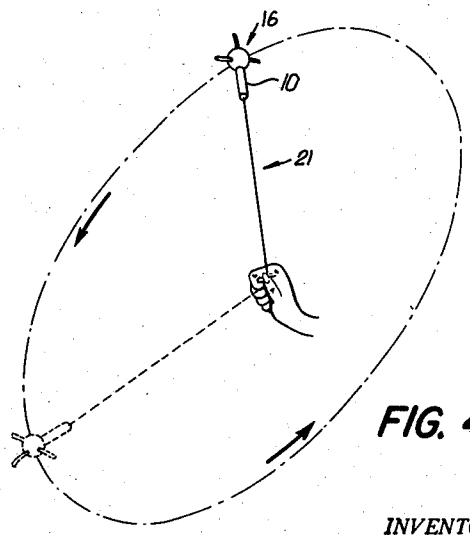


FIG. 4

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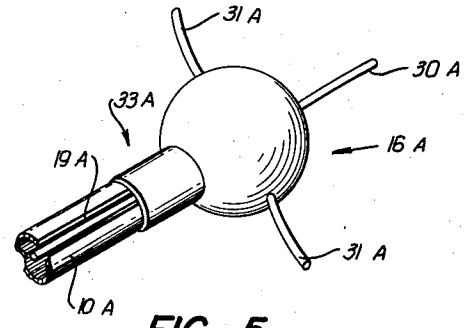


FIG. 5

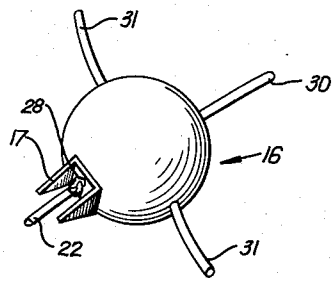


FIG. 6

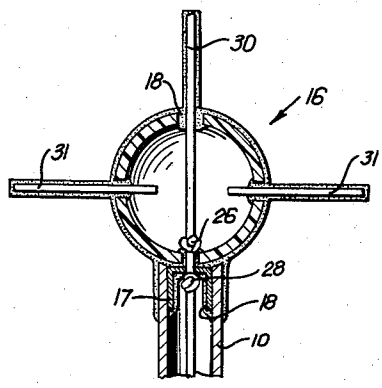


FIG. 7

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3,040,474

SOUND-PRODUCING TOY

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7 Claims. (Cl. 46—52)

Generally speaking, the present invention relates to the toy art and, more particularly, to a sound-producing toy carried at the end of a string or other tensile member and adapted to be swung by a child in a manner such that air, acting in a portion of the device which defines sound-producing aperture or slot means, will produce an intermittent or interrupted audible sound. In one specific form of the invention, the device may simulate a space vehicle, or the like, and the sound-producing slot means may be such as to produce an interrupted audible sound resembling the intermittent "beep, beep" signal received by radio from the first man-made earth satellites, commonly called "Sputniks."

It is an object of the present invention to provide an improved sound-producing toy adapted to be controllably whirled through ambient atmosphere to produce an intermittent audible sound; said toy being of exceedingly simple, cheap, and foolproof construction such as to be conductive to widespread use thereof.

It is a further object of the present invention to provide a novel sound-producing toy of the type set forth in the preceding object, which may effectively simulate in appearance and in the sound produced, a man-made earth satellite, or the like, whereby to increase the interest factor of the toy insofar as children are concerned.

Other and allied objects will be apparent to those skilled in the art after a careful study of the accompanying illustrations, the present specification, and the appended claims.

To facilitate understanding, reference will be made to the hereinbelow-described drawings, in which:

FIG. 1 is a perspective view of one illustrative embodiment of the sound-producing toy of the present invention wherein it is so constructed as to simulate in appearance a man-made space vehicle of the type commonly called a "Sputnik" and wherein the sound-producing element thereof is of a nature such as to produce an intermittent or interrupted audible sound during whirling motion of the entire device in a manner resembling the orbiting of a man-made space vehicle; said sound resembling the intermittent "beep, beep" signal received by radio from the first man-made earth satellites;

FIG. 2 is a longitudinal central sectional view through the embodiment of the invention illustrated in FIG. 1 with most of the length of the longitudinal tensile member broken away for space conservation purposes and showing the device before the final dipping of the upper end thereof as viewed in FIG. 2 into a sealing and adhesive liquid adapted to seal all of the holes in the hollow sphere and adapted to adhesively fasten same to the end of the sound-producing element;

FIG. 3 is a cross-sectional view taken in the direction of the arrows 3—3 in FIG. 2;

FIG. 4 is a reduced-scale perspective view illustrating the whirling operation of the device by the hand of a child, or the like, whereby the device will travel in a manner resembling the orbital motion of the first man-made earth satellite and will simultaneously emit intermittent audible sounds of the "beep, beep" type referred to hereinbefore;

FIG. 5 is a fragmentary partially-broken-away perspective view similar to the right end portion of FIG. 1 but illustrating a slight modification of the invention;

FIG. 6 is a perspective view of aspect similar to FIGS. 1 and 5, illustrating the hollow spherical ball, or "Sputnik"-resembling member, prior to adhesive-fastening with respect to the upper end (as viewed in FIG. 2) of the sound-producing element; and

FIG. 7 is a fragmentary sectional view similar to the upper portion of FIG. 2 but shows the apparatus after the hollow spherical ball has been effectively sealed and cemented to the end of the sound-producing element by dipping same into a rubber-base paint or the like.

It should be noted that the rubber base paint or other adhesive liquid, shown in exaggerated form at 14 in FIG. 2 and at 18 in FIG. 7, is not designated by said reference numerals 14 and 18 in any of the other figures, nor is said rubber base paint or adhesive liquid shown in any of said other figures in the greatly dimensionally exaggerated form shown in FIG. 2, even though it should be understood that said rubber base paint or adhesive liquid is actually present in certain of said other figures. Indeed, applicant has elected to indicate in said other figures, by the proper reference numerals, the underlying structural elements rather than said rubber base paint or adhesive liquid. This is done for reasons of drawing clarity and is thought to be completely clear in the light of the above explanation and the full and complete showing, in exaggerated form, of said rubber base paint or adhesive liquid at 14 in FIG. 2 and at 18 in FIG. 7.

The sound-producing toy of the present invention includes a hollow sound-producing element defining an interior chamber therein, said sound-producing element being provided with a portion defining sound-producing aperture means into said interior chamber. In the specific example illustrated, the hollow sound-producing element referred to above comprises a hollow longitudinal cylindrical element defining a hollow cylindrical chamber therein and consists of a longitudinal cylindrical section 10 of a metallic tube effectively closed at each end. In the specific example illustrated, said closing of each end of the longitudinal cylindrical section of metallic tube 10 is provided by a sealing enclosure plug 11, which is formed of elastomeric material and which is centrally longitudinally apertured as indicated at 12 and which is inserted into the open end 13 of the tube 10 and effectively cemented in said inserted relationship by means of a suitable adhesive material such as rubber base paint or the like, although not so limited; said adhesive rubber base paint being best shown in FIG. 2 at 14 with its thickness greatly exaggerated for drawing clarity.

In the specific example illustrated, the closing of the other open end 15 of the metallic tube 10 is accomplished by means of a closure member comprising a man-made satellite-simulating member taking the specific form of a hollow spherical ball 16 which is shown as being made of plastic, although it may be made of any suitable material, which carries an insert member 17, which may be made of cardboard, plastic, metal, or any other suitable material, projecting therefrom and adapted to be inserted into said end 15 of the tube 10 in the manner best seen in FIG. 2, after which said parts are effectively adhesively joined together by dipping the entire spherical satellite-simulating member 16 and the adjacent end 15 of the tube 10 in suitable adhesive liquid such as a rubber base paint or the like, as best shown in FIG. 7 at 18 with the thickness of said paint 18 greatly exaggerated for drawing clarity.

The hollow sound-producing element, which in the specific example illustrated takes the form of the longitudinal cylindrical element 10, includes a portion defining sound-producing aperture means, which takes the specific form of the longitudinal slot 19 extending along the entire length of the tube 10 at one side thereof. Indeed, in the specific embodiment of the invention illustrated, said

slot 19 is defined between opposed edges of the sheet of metallic material from which the tube 10 is formed. It will be noted that the sound-producing slot 19 extends from the exterior of the sound-producing element 10 into the hollow interior chamber 20 therein for sound-producing purposes to be described more fully hereinafter.

The sound-producing toy of the present invention also includes a longitudinal tensile means having a connection portion connected to the sound-producing element and having a manually graspable portion adaptable for use by a child in swinging said sound-producing element through ambient atmosphere in the general manner indicated in FIG. 4 whereby to cause rapid relative motion of the sound-producing element 10 and the sound-producing slot 19 with respect to ambient atmosphere whereby to cause the chamber 20 and the slot 19 to effectively produce and emit intermittent or interrupted audible sound as a result of such swinging or whirling movement thereof through ambient atmosphere. In the specific example illustrated, the longitudinal tensile means referred to above is indicated generally at 21, the connection portion thereof is indicated at 22, while the manually graspable portion is indicated at 23 and carries a handle or gripping sleeve 24 thereon abutting a knot 25. It will be noted that the longitudinal tensile means 21, in the specific example illustrated, takes the form of a flexible elastic longitudinal cord or string which rotatably extends through the longitudinal aperture 12 in the closure member 11 at the end of the tube 10 nearest to the free end 23 of said cord or string 21, and that the connection portion or end 22 of said cord or string 21 is effectively connected with respect to the closure member at the other end 15 of the tube 10, said closure member comprising the hollow spherical ball 16, which has positioned therein the knot 26 which is larger than the aperture 27 at the bottom of the spherical ball 16 which allows the connection portion 22 of the cord or string 21 to pass therethrough. In other words, the arrangement is such that the knot 26 cannot pass through the aperture 27. It should also be noted that another knot 28 is tied in the connection portion 22 of the cord or string 21 immediately below (as seen in FIG. 2) the point where it passes through the base part of the insertion member 17 carried by the spherical ball 16, thus providing an arrangement wherein the two knots 26 and 28 effectively and very positively connect the spherical ball 16 and the connection member 17 together. It should be noted that the assembly of the apparatus of the present invention is accomplished by first inserting the free end portion 23 of the string or cord 21 (prior to forming the knot 25 and mounting the sleeve 24 on said free end 23) downwardly through the hole 29 in the top of the spherical ball 16 and the aligned but smaller bottom hole 27, as viewed in FIG. 2, and through an aperture in the base portion of the insert member 17. Then the knot 26 is tied in the cord 21 and is of a size such that it can be drawn downwardly through the aperture 29 but will not pass through the aperture 27. Then the knot 28 is tied in the cord 21 on the lower side of the base portion of the insert member 17, as is clearly shown in FIG. 6 and also in FIG. 2. Then the insert portion 17 is inserted into the open end 15 of the tube 10 with the spherical ball 16 effectively acting as a closure for the end 15 of the tube 10, and the junction defined by the contact of the end 15 of the tube 10 and the adjacent portion of the spherical ball 16 and also the engagement of the insert member 17 with the corresponding interior portions of the tube 10, is effectively adhesively fastened together by dipping same into an adhesive liquid such as rubber base paint, or the like, as shown at 18 in FIG. 7, with its thickness exaggerated for drawing clarity. It should be noted that prior to this last described operation, the closure 11 at the other end 13 of the tube 10 had already been inserted therethrough and adhesively fastened thereto by the adhesive rubber base paint 14 in the manner referred to hereinbefore, and the free end 23 of the cord 21 had been passed longitudinally through the aperture 12 in said closure 11. It should also be noted that the connection portion 22 of the tensile member 21 has a projecting end 30 extending upwardly through the aperture 29, and that additional projecting members 31 are mounted in similar apertures 32, in a manner whereby the projections 30 and 31 simulate the appearance of antennae. The projecting elements 30 and 31 are effectively fastened in the positions shown in FIG. 2 when the entire spherical ball 16 is dipped in the rubber base paint 18, as mentioned hereinbefore, which fills the apertures 29 and 32 and effectively seals same while simultaneously firmly positioning each of the projecting members 30 and 31, as is cleraly shown in FIG. 7.

The apparatus just described can be operated by having a child grasp the handle sleeve 24 and swing the entire device in the general manner indicated by the directional rotative arrows in FIG. 4. This will cause the movement of the sound-producing slot means 19 and the connected chamber 20 through ambient atmosphere to intermittently fill and discharge air and produce an intermittent or interrupted audible sound. This sound may be modified as to frequency, type of interruptions, and pitch by adding to the sound-producing element 10 an external encircling means, such as that generally indicated at 33, which effectively reduces the overall open length of the sound-producing slot 19. In the specific example illustrated, the element 33 takes the form of a piece of flexible tape or the like adhesively fastened onto the tube 10 adjacent the end 15 thereof and having a small trailing portion 34 which has an effect upon the rotary motion and positioning of the sound-producing slot with respect to ambient atmosphere during swinging motion of the entire device as shown in FIG. 4 whereby to alter the interruption rate by stopping all sound at certain intervals by reason of the changed orientation of the sound-producing slot 19 with respect to the direction of swinging movement of the entire device as shown in FIG. 4.

The effective shortening of the slot 19 also alters the pitch of the emitted sound.

FIG. 5 illustrates in fragmentary form a very slight modification of the invention and similar portions will be indicated by the same reference numerals followed by the letter "A." In this modification, the encircling means 33A does not have a fluttering trailing edge similar to that shown at 34 in FIG. 1, and, therefore, no directional guiding effect during swinging movement of the device as shown in FIG. 4 occurs in this modification of the invention.

It should be understood that the mode of attachment of the satellite-simulating member 16 is such as to positively prevent it from becoming detached from the sound-producing element 10 during swinging movement of the device. However, it should also be noted that while the figures illustrate certain preferred forms of the invention, the satellite-simulating member 16 may be eliminated in certain forms thereof. This is also true of the encircling means 33 and 33A. It should also be noted that the mode of construction of the device may be modified substantially from the particular forms illustrated.

It should also be noted that the tensile means 21 may be elastic or may be of a non-elastic nature.

Numerous modifications and variations of the present invention will occur to those skilled in the art after a careful study hereof. All such, properly within the basic spirit and scope of the present invention are intended to be included and comprehended herein as fully as if specifically described, illustrated, and claimed herein.

The exact compositions, configurations, constructions, relative positionings, and cooperative relationships of the various component parts of the present invention are not critical, and can be modified substantially within the spirit of the present invention.

The embodiments of the present invention specifically described and illustrated herein are exemplary only, and are not intended to limit the scope of the present invention, which is to be interpreted in the light of the prior art and the appended claims only, with due consideration for the doctrine of equivalents.

I claim:

1. A sound-producing toy adapted to be whirled through ambient atmosphere by a child and to produce an intermittent audible sound as a result thereof, comprising: a hollow longitudinal sound-producing element defining a longitudinal hollow interior chamber therein, said sound-producing element consisting of a longitudinal cylindrical section of a tube substantially closed at each end; a member simulating a man-made satellite carried by said sound-producing element; said element being provided with a portion defining sound-producing longitudinal slot means into said hollow chamber along substantially the entire length thereof at one side thereof; and a flexible longitudinal tensile means having a connection porton substantially longitudinally alignedly connected to said sound-producing element whereby to mount said sound-producing element for rotation around a longitudinal axis coincident with said connection portion and said flexible longitudinal tensile means, with said flexible longitudinal tensile means also having a free manually graspable portion adapted for use by a child in swinging said sound-producing element transverse to its longitudinal direction through ambient atmosphere whereby to cause rapid relative motion of said ambient atmosphere with respect to said portion of said sound-producing element defining said sound-producing slot means and with respect to said hollow chamber for producing an intermittent audible sound.

2. A sound-producing toy adapted to be whirled through ambient atmosphere by a child and to produce an intermittent audible sound as a result thereof, comprising: a hollow longitudinal sound-producing element defining a longitudinal hollow interior chamber therein, said sound-producing element consisting of a longitudinal cylindrical section of a tube substantially closed at each end; a member simulating a man-made satellite carried by the outer end of said sound-producing element and defining a junction therewith; said element being provided with a portion defining sound-producing longitudinal slot means into said hollow chamber along substantially the entire length thereof at one side thereof; and a flexible longitudinal tensile member having a connection end connected to said sound-producing element adjacent one substantially closed end thereof and extending axially longitudinally through the center of said sound-producing element and rotatably out through the substantially closed other end thereof, and having a free manually graspable end adapted for use by a child in swinging said sound-producing element transverse to its longitudinal direction through ambient atmosphere whereby to cause rapid relative motion of said ambient atmosphere with respect to said portion of said sound-producing element defining said sound-producing longitudinal slot means and with respect to said hollow chamber for producing an intermittent audible sound.

3. A device of the character defined in claim 2, including external encircling means effectively reducing the overall open length of the portion of the sound-producing element defining the sound-producing slot positioned at one end thereof.

4. A device of the character defined in claim 3, wherein said encircling means is provided with an extension

comprising means modifying the effect of rapid relative movement of ambient atmosphere upon the sound-producing element during whirling motion thereof.

5. A sound-producing toy simulating in appearance a man-made earth satellite and adapted to be whirled in a manner simulating the path of travel of a man-made earth satellite in orbit and adapted to produce an intermittent audible sound as a result thereof simulating the intermittent audibly reproduced signal received by radio from the man-made earth satellites, comprising: a hollow longitudinal sound-producing element defining a longitudinal hollow interior chamber therein, said sound-producing element consisting of a longitudinal cylindrical section of a tube provided at one end with a longitudinally centrally apertured closure plug; a member simulating a man-made satellite carried by the other end of said sound-producing element and defining a junction therewith; said element being provided with a portion defining sound-producing longitudinal slot means into said hollow chamber along substantially the entire length thereof at one side thereof; and a flexible elastic longitudinal tensile member having a connection end effectively connected to said sound-producing element by means of a direct connection to said satellite-simulating member carried by said other end of said sound-producing element, said tensile member extending from said direct connection to said satellite-simulating member axially longitudinally through the center of said sound-producing element and rotatably out through the longitudinally centrally apertured closure plug at the opposite end of said sound-producing element, and having a free manually graspable end adapted for use by a child in swinging said sound-producing element transverse to its longitudinal direction and transverse to the longitudinal direction of said longitudinal slot means through ambient atmosphere whereby to cause rapid relative motion of said ambient atmosphere with respect to said portion of said sound-producing element defining said sound-producing longitudinal slot means and with respect to said hollow chamber for producing an intermittent audible sound.

6. A device of the character defined in claim 5, including external encircling means effectively reducing the overall open length of the portion of the sound-producing element defining the sound-producing slot positioned at one end thereof.

7. A device of the character defined in claim 6, wherein said encircling means is provided with an extension comprising means modifying the effect of rapid relative movement of ambient atmosphere upon the sound-producing element during whirling motion thereof.

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