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2,611,994

JET TOY

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Fig. 1

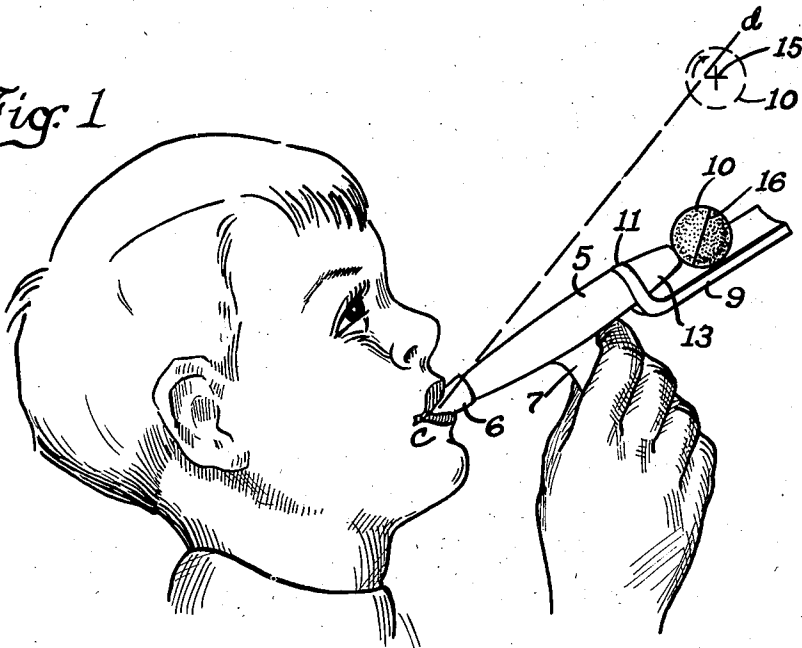


Fig. 2

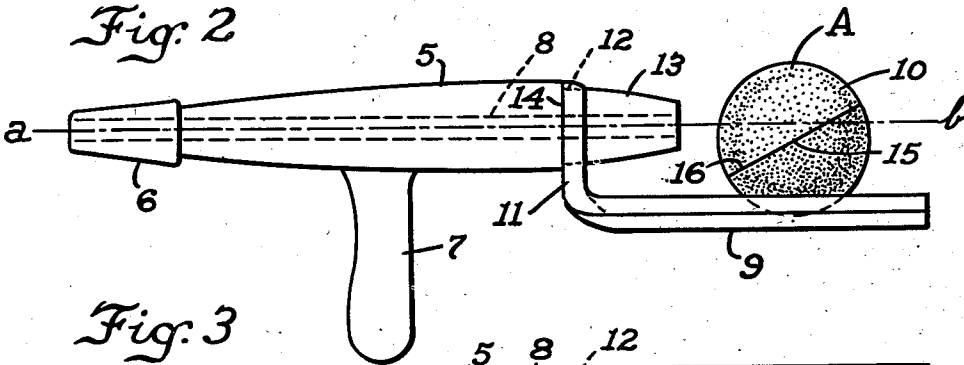
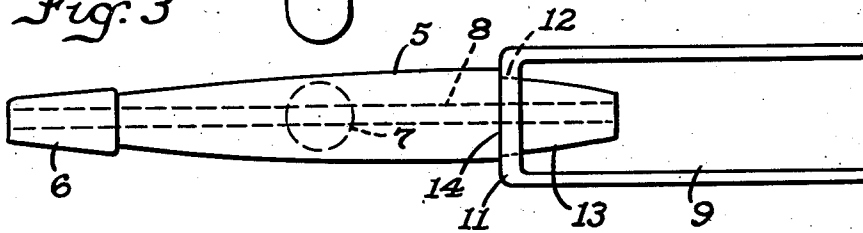


Fig. 3



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UNITED STATES PATENT OFFICE

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JET TOY

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1 Claim. (Cl. 46-44)

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This invention relates to a new and improved jet toy.

The principal object of my invention is to provide a toy consisting of a nozzle designed to be held in the mouth and blown through and having a suitable ball support extending from its discharge end, on which a light ball of appropriate diameter can be held preliminary to the operation of blowing through the nozzle to project the ball out into space and keep it suspended there according to the Bernoulli effect i. e. by the updraft of air that is being entrained with the jet of air discharged from the nozzle over the upper half of the ball, the jet, in other words, producing a partial vacuum above the ball which is more or less relieved by the uprush of air from below the ball, thus keeping the ball suspended in mid-air, the ball meanwhile being caused to spin as a result of the action of the air jet passing over its surface, thereby adding greatly to the interest of the performer as well as onlookers as the ball spins while bobbing up and down in mid-air as long as the person continues to blow, the ball eventually coming to rest again on the aforesaid support, so that the procedure can be repeated over and over again. The successful operation of the toy requires some practice and skill, and concentration as well, and aside from being entertaining is both healthful and educational.

The invention is illustrated in the accompanying drawing, in which—

Fig. 1 is a view illustrating the operation of a toy made in accordance with my invention;

Fig. 2 is a side view of the toy on a larger scale, and

Fig. 3 is a top view of the toy.

The same reference numerals are applied to corresponding parts in these views.

Referring to the drawings, the reference numeral 5 designates a straight tube or nozzle having a mouthpiece 6 on one end, and preferably provided with a downwardly projecting handle 7 intermediate its ends, a longitudinally extending bore 8 being provided in the nozzle for the discharge of air on a line *a—b* (Fig. 2) parallel to and spaced upwardly a predetermined distance from an elongated trough-shaped support 9 provided on the front end of the nozzle for a ball 10 of cork or any other suitable light weight material. The support 9 has an upwardly projecting rear end portion 11, in which a hole 12 is suitably provided to receive with a press fit the tapered front end portion 13 of the nozzle. An annular shoulder 14 is defined on the nozzle at

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the inner end of the tapered front end portion 13, and the portion 11 of the support 9 has abutment with this shoulder so as to locate the support accurately in relation to the nozzle. The center of the ball 10 is indicated at 15 in Fig. 2 and is appreciably below the level of the tube axis represented by line *a—b*. This relationship is, of course, established by offsetting the trough 9 which is parallel to the tube axis laterally from that axis, the distance from the axis of the tube to the lowermost part of the trough being slightly greater than half the diameter of the ball. Hence, when the child blows through the nozzle, the air jet forces the ball off the support 9, and, assuming the child has elevated the nozzle so that the jet is approximately at the angle of the line *c—d* (Fig. 1), the ball 10 will be projected out into space clear of the support 9 and kept suspended there by the updraft of air that is being entrained with the jet of air discharged from the nozzle over the upper half portion of the ball, as indicated in dotted lines in Fig. 1, the jet, in other words, producing a partial vacuum above the ball which is more or less relieved by the uprush of air from below the ball, thus keeping the ball suspended in mid-air. The outer end of the support trough 9 is unobstructed, so as not to interfere with movement of the ball as it clears its support, and the length of the trough is greater than the ball diameter, thus providing a positive supporting action for the ball during the initial phase of its projection prior to leaving the trough, which is very desirable since it enables the user to gain control over the combined spinning and forward motion of the ball during this critical portion of its projection. The ball while so suspended in mid-air is caused to spin as a result of the action of the air jet passing over its top surface, thereby adding greatly to the interest of the performer as well as onlookers as the ball spins while bobbing up and down in mid-air as long as the child continues to blow, the ball eventually coming to rest again on the support, so that the procedure can be repeated over and over again. The ball may have one-half colored blue and the other half colored yellow, for example, the line 16 being the dividing line between the differently colored halves, and obviously with such coloring, or any other desired coloring, the child will see the ball apparently change color as it is caused to spin rapidly, thus further adding to the interest of the toy and making it educational as well. The operation of the toy requires practice, skill, and concentration, and is both healthful and educational. A

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smooth surfaced ball will behave one way and one that has a slightly roughened surface behaves differently under the action of the air jet, so that a child need not grow tired of the toy if he has several different kinds of balls to use with it. Light Celluloid balls, similar to but smaller than Ping-pong balls, can be used, and such balls can be coated with flock to give the desired surface characteristics, as indicated by the patch of flocking at A in Fig. 2. Certain flock materials also give a tinsel effect and that adds greatly to the interest of the present toy, because the child is attracted by the glitter of the ball as it is spun rapidly in mid-air, particularly when there is special light played upon the ball. Certain luminescent flock materials may also be used to coat the balls. The toy performs most smoothly when the ball is truly spherical, but slightly ovoid-shaped balls may also be used for different playing characteristics, and spherical balls formed with numerous small facets thereon it is believed will perform substantially the same as smooth surfaced spheres but would add interest to the play by reason of the reflection of light from the many small plain surfaces.

It is believed the foregoing description conveys a good understanding of the objects and advantages of my invention. The appended claim has been drawn to cover all legitimate modifications and adaptations.

I claim:

A toy consisting of a ball and a projector therefor, said projector consisting of a straight

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tube having a mouthpiece at one end and an elongated, integral, arcuate ball-supporting-trough at its other end, said trough forming an extension of said tube parallel to the tube axis but being displaced therefrom laterally, the distance from the axis of said tube to the lowermost part of said trough being slightly greater than one-half the diameter of said ball whereby to enable the user to impart a spinning motion to said ball while still on said trough, the outer end of said trough being unobstructed and the length of said trough being greater than the ball diameter, whereby to enable the user to gain control over the ball during the initial phase of its projection prior to leaving said trough.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
612,622	Windrath	Oct. 18, 1898
834,707	Bradshaw et al.	Oct. 30, 1906
994,887	Sweet	June 18, 1911
1,009,063	Gilchrist	Nov. 21, 1911
1,545,794	Quinn	July 14, 1925
2,055,498	Jacobs	Sept. 29, 1936
2,074,363	Burke	Mar. 23, 1937
2,118,609	Klug	May 24, 1938
2,119,133	Hogan	May 31, 1938