United States Patent [19]

Holt

[11] **3,900,987**

[45] **Aug. 26, 1975**

[54] **AMUSEMENT DEVICE**

[76] Inventor: **Leslie W. Holt**, 820 14th Ave., Menlo Park, Calif. 94025

[22] Filed: **Oct. 20, 1972**

[21] Appl. No.: **291,143**

[52] **U.S. Cl.** ..... **46/74 D**; 273/106 B

[51] **Int. Cl.** **A63h 27/00**

[58] **Field of Search** ..... 46/74 D, 52, 63, 66; 273/106 B

[56] **References Cited**

UNITED STATES PATENTS

201,345	3/1878	Harrison	46/66
676,125	6/1901	Falardeau	46/63
1,051,966	2/1913	Money	46/63
1,094,006	4/1914	O'Reilly	46/179
3,523,387	8/1970	Smith	46/52
3,738,053	6/1973	Camarota	46/74 D

FOREIGN PATENTS OR APPLICATIONS

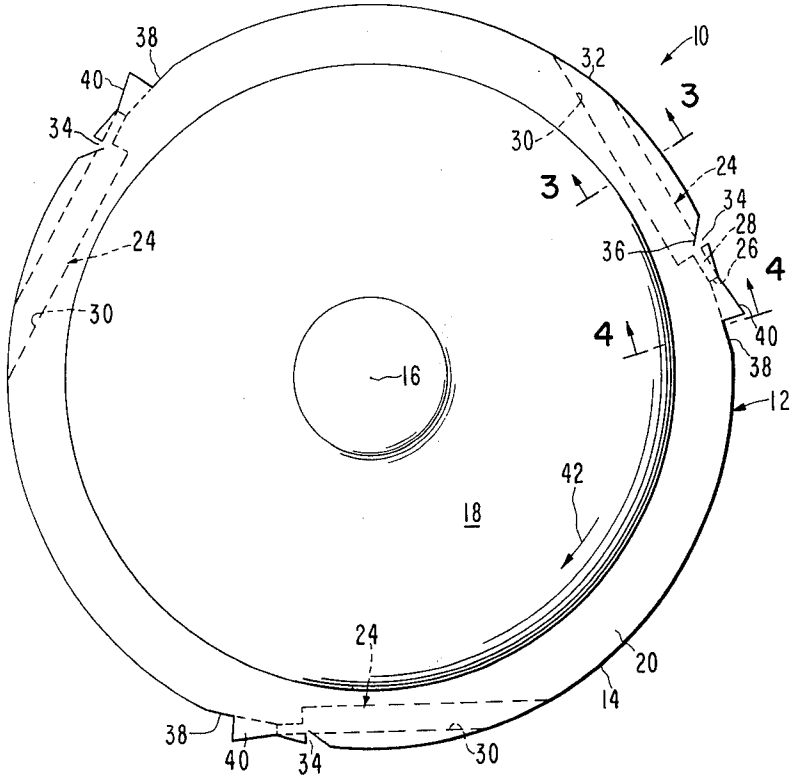
345,547	5/1921	Germany	46/66

Primary Examiner—Louis G. Mancene
Assistant Examiner—J. Q. Lever
Attorney, Agent, or Firm—Townsend and Townsend

[57] **ABSTRACT**

A device adapted to be thrown through the air and to spin about an axis through the device as it sails through the air. The device has a number of whistles on the outer periphery thereof for emitting a sound as it spins due to the air passing through the whistles because of the spinning action thereof. The whistles are symmetrically disposed on the device to provide dynamic balance therefor.

1 Claim, 4 Drawing Figures



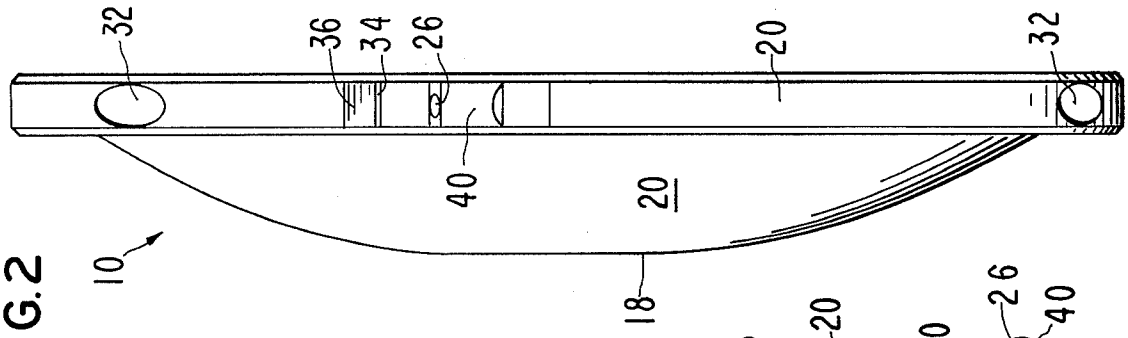


FIG. 2

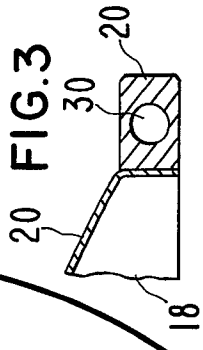


FIG. 3

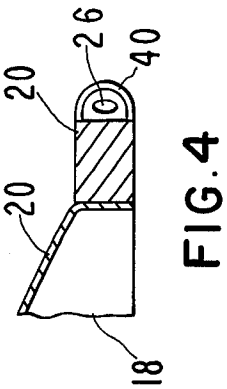


FIG. 4

FIG. 1

AMUSEMENT DEVICE

This invention relates to improvements adapted to be sailed through the air and, more particularly, to such a device having whistle structure thereon.

BACKGROUND OF THE INVENTION

Conventional amusement devices to be sailed through the air are generally circular and designed with aerodynamic principles in mind so that they can be thrown and caused to sail through the air with a spinning motion. Thus, they remain airborne for certain distances due to a lifting force exerted by the relative movement of air due to the spinning action. Such a device, after being thrown, eventually settles to the ground as the spinning action continues, thus providing amusement and delight to users of the device.

Such conventional devices are essentially noise-free as they sail through the air because of the desire to keep the structure thereof aerodynamically clean. If sound were to be emitted from such a device as it sails through the air and spins, it would add to the enjoyment of the use of the device.

SUMMARY OF THE INVENTION

This invention is directed to improvements in devices of the type described, wherein such a device has whistle structure mounted on it to cause a sound to be emitted therefrom as it sails through the air with the sound being generated as a function of the spinning action of the device. To this end, a dome-shaped or dish-shaped device has a circular body whose outer periphery is provided with a number of whistles thereon with the whistles being symmetrically disposed to provide dynamical balance for the body. This will permit it to remain in flight and to spin continuously until it falls to the ground. The spinning action of the device causes quiescent air adjacent to the spinning device to enter the whistles at the relative rotational speed of the device and to cause the sound to be generated with the sound being of sufficient amplitude to be heard by persons throwing the device back and forth to each other.

Each whistle has an air inlet opening, an air passage extending at least partially through it, and a lateral vent communicating with the passage and providing the exit from which the sound is emitted. The device can be formed with a continuous ring defining whistles being in the ring itself. In the alternative, the device can have a number of spaced bosses on the outer periphery of a dome-shaped or dish-shaped with each boss having a whistle therein responsive to the spinning action of the device. The dome or dish shape of the body can be of thin wall construction and the body has an interior depth sufficient to sustain the lift of the device as it sails through the air. The device can be of a one-piece construction and can be formed from a moldable, metallic, or other suitable material.

The primary object of this invention is to provide an amusement device of the type having a circular body adapted to be sailed with a spinning action through the air, wherein the device has a whistle structure on its outer periphery for emitting a sound as a function of the spinning action to thereby add to the users' enjoyment of the device.

Another object of this invention is to provide a device of the type described wherein the whistle structure thereof includes a number of spaced whistles mounted on the outer periphery of the device at locations providing aerodynamic balance therefor to permit it to spin continuously as it sails through the air and until it settles to the ground.

Other objects of this invention will become apparent as the following specification progresses, reference being had to the accompanying drawing for an illustration of the invention.

In the drawing:

FIG. 1 is a top plan view of the amusement device of this invention, showing three whistles on the outer periphery thereof;

FIG. 2 is an end elevational view of the device; and

FIGS. 3 and 4 are cross-sectional views taken along lines 3—3 and 4—4, respectively, of FIG. 1.

The amusement device of this invention is broadly denoted by the numeral **10** and includes a circular member **12** having an outer periphery **14** and adapted to be sailed through the air and, as it does, to spin about a central axis **16** (FIG. 1). Member **12** includes a central, dome-shaped body **18** and a ring **20** secure to body **18** and surrounding the open bottom **22** thereof. The ring is preferably integral with body **18** so that member **12** is of a one-piece construction. It can be formed of plastic, metal or other material permitting it to be sailed through the air in a manner such that the outer surface **23** of body **18**, which projects laterally from the plane of ring **20** as shown in FIG. **2**, is above the plane of ring **20**. Thus, member **12** can experience lift in accordance with known aerodynamic principles so that it will remain in the air for a certain distance after being thrown, such as **50** to **100** feet, depending on the initial velocity imparted to it and its initial height above the ground.

For purposes of illustration, ring **20** has a generally rectangular cross-section, as shown in FIG. **3**; however, it can have other cross-sections as well. The ring defines outer periphery **14** of member **12**.

Device **10** includes whistle structure on the outer periphery thereof for emitting a sound as the device sails through the air and spins about axis **16**. Such whistle structure includes three whistles **24** in ring **20** at symmetrically spaced location about axis **16**. The whistles are arranged so that number **12** is dynamically balanced.

Each whistle **24** has a air inlet opening **26** at the upstream end of a short fluid passage **28** which communicates with a relatively long fluid passage **30** having a downstream open end **32**. A vent **34** is provided in the outer face of ring **20** and communicates with fluid passage **30**. A vane **36** extends partially into the path of the airflow through passage **28**, shown in FIG. **1**. Thus, air entering inlet opening **26** flows through passage **28** and is divided by vane **36**, part of the air going out of vent **34** and part of the air flowing through passage **30**. This causes a whistling sound to be emitted with the pitch of the sound being controlled by the effective length of passage **30**.

An inclined surface **38** in the outer face of ring **20** cooperates with a curved air scoop **40** adjacent to each air inlet opening **26**, respectively, to direct air into the corresponding inlet opening **26** as number **12** spins about axis **16** in the direction of arrow **42** (FIG. **1**).

In operation, device **10** is thrown so that the plane of ring **20** remains substantially horizontal and with body **18** being above such plane. The device is given an initial spin in the direction of arrow **42** as it is thrown so

that the device will continue to spin about axis **16** as it sails through the air.

During the time in which the device is in the air and is spinning, air will be continuously scooped by air scoops **40** for movement toward respective air inlet openings **26.** The air will flow into the inlet openings, through passages **28** and toward passages **30.** As the air from each passage **28** enters the upstream end of the corresponding passage **30,** the airflow will be split, a portion of which will flow out of the adjacent vent **34** and a portion of which will flow through the corresponding passage **30.** This will cause a whistling sound to be emitted by each whistle **24,** and such whistling sound will continue so long as body **12** spins about axis **16** in the direction of arrow **42.**

While device **10** has been described with respect to the provision of ring **20,** it is possible to make the device without a continuous ring. For instance, whistles **24** can be mounted on the outer periphery of body **18** in any suitable manner provided the body is dynamically balanced. To this end, it is possible to mold into the outer periphery of body **18** a number of bosses which are circumferentially spaced apart and have the whistles formed therein.

In the claims:

I claim:

1. An amusement device to be sailed through the air with a spinning motion comprising: a hollow, circular, dome-shaped body provided with an open bottom, a central axis, and an outer periphery, said body adapted to be thrown with a spinning action through the air so that the body spins about said central axis and sails through the air; a number ofo elongated whistles mounted on said body at said outer periphery at symmetrically and circumferentially spaced locations thereon, each whistle having an air passage extending at least partially through the body and circumferentially of said outer periphery, and a vent extending inwardly from said outer periphery to said passage and communicating therewith, there being an inclined vane adjacent to each vent and extending into the corresponding passage, each whistle having an air inlet opening at least partially facing the direction of spin of the body, and an air scoop surrounding each air inlet opening, respectively, and projecting outwardly therefrom, whereby air will enter each air inlet opening as the body spins about said central axis and sails through the air to thereby cause a sound to be emitted by each whistle as a function of the spinning action thereof.

* * * * *