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(54) **DEVICES THAT ARE THROWN OR LAUNCHED**

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CPC ***A63H 33/18*** (2013.01); ***A63H 27/005*** (2013.01); ***A63H 27/14*** (2013.01)

(57) **ABSTRACT**

The present invention is generally directed to a flying device and method for using, the flying device including: a fuselage, comprising a cavity therein with an opening at a rear of the fuselage configured to receive a launching device; a measuring device attached to the fuselage recording a number of rotations of the fuselage during flight: a first set of one or more fins attached to the fuselage at an angle to a longitudinal axis of the fuselage, configured to provide rotation to the fuselage when the device is thrown, launched, or otherwise impelled; such that the one or more fins rotate the device causing gyroscopic precession, thereby permitting the device to be thrown, launched, or otherwise impelled to stable flight at slower speeds with a flatter trajectory.

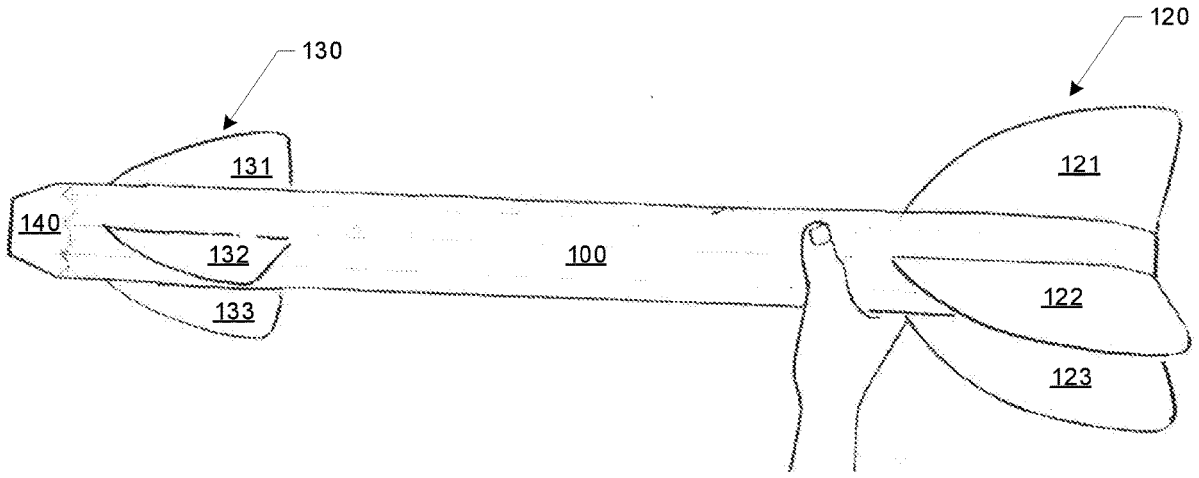


Figure 1

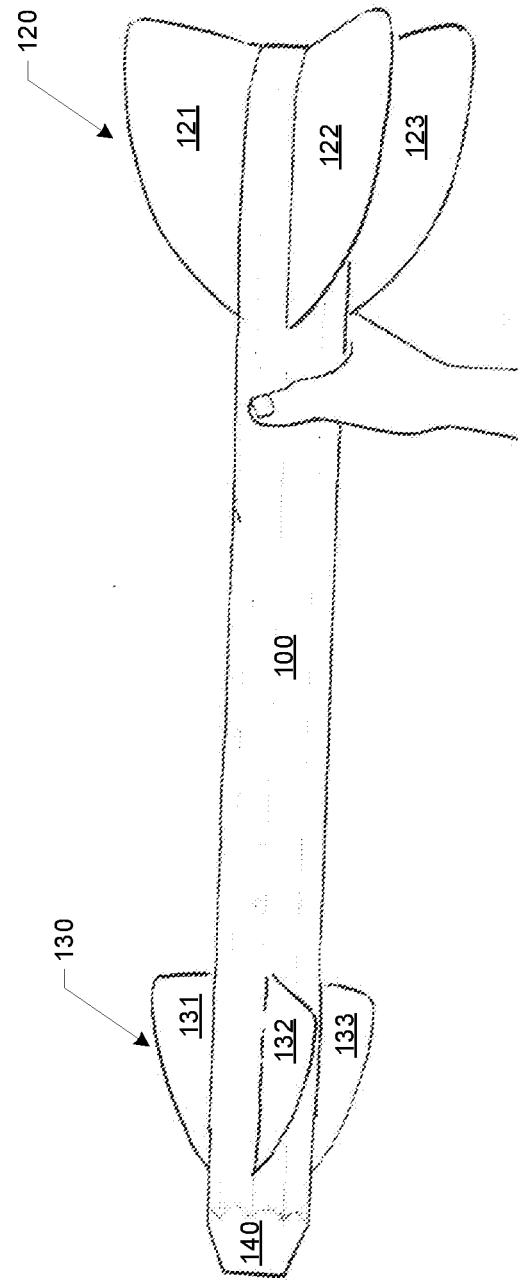


Figure 2

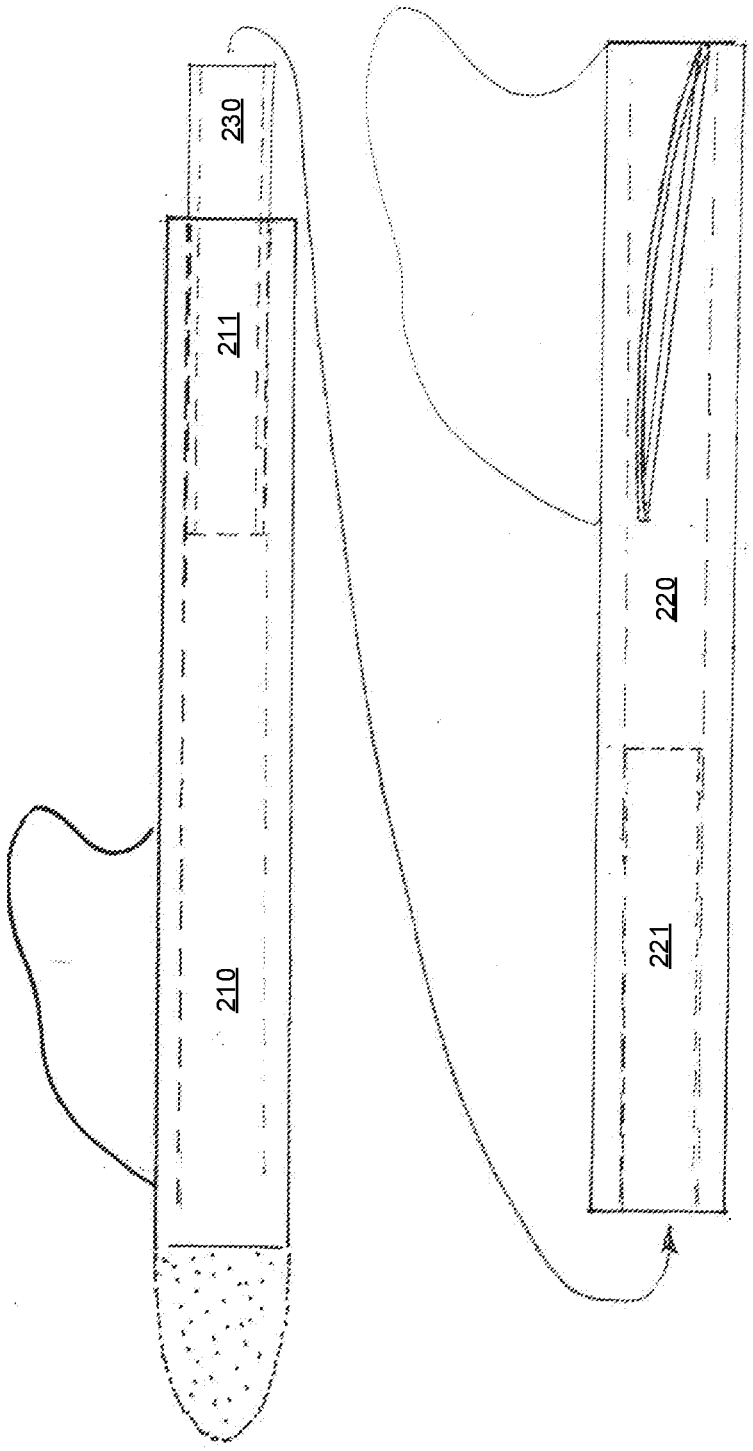


Figure 3

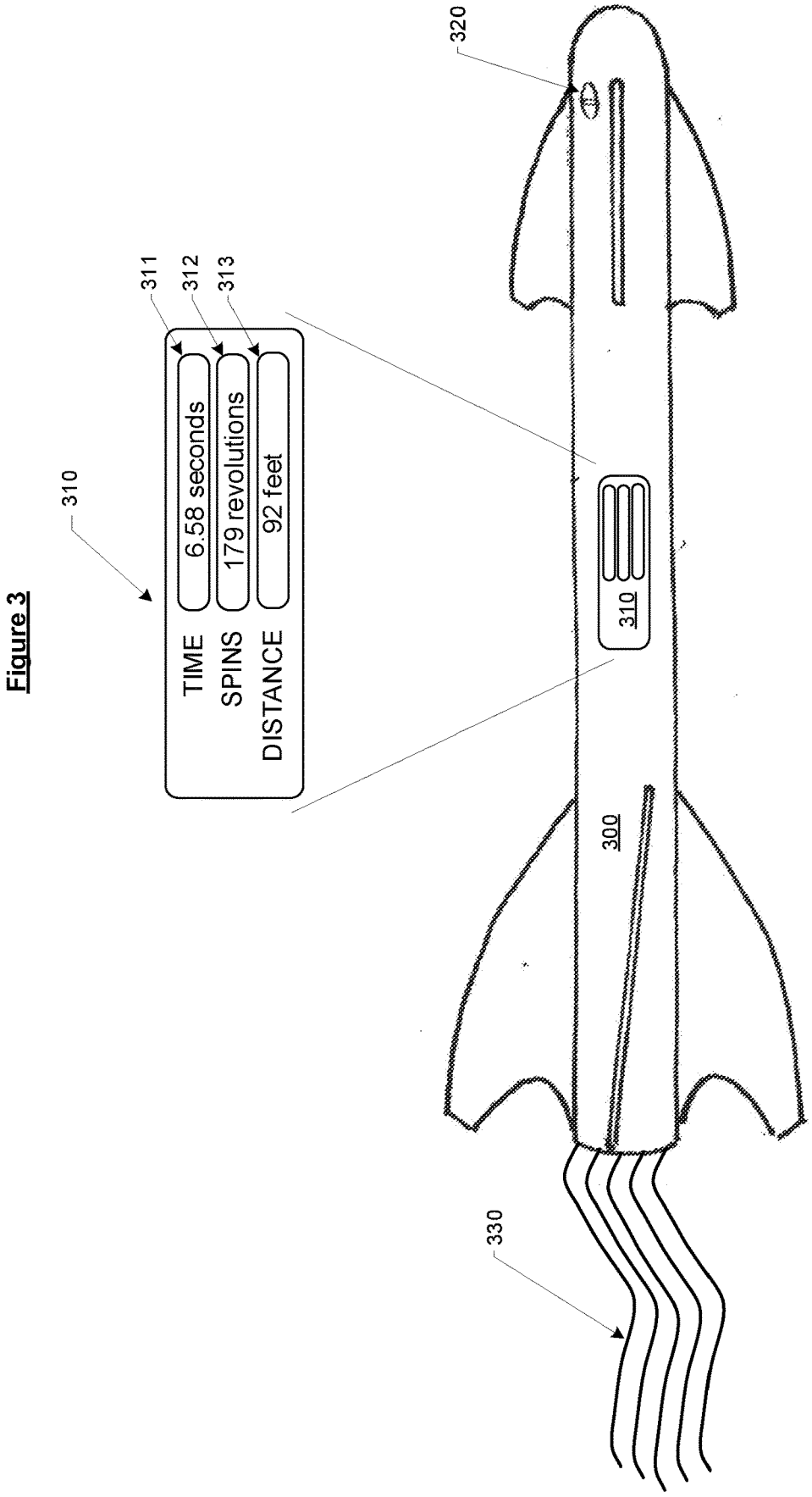

320
311
312
313
310
TIME
SPINS
DISTANCE
6.58 seconds
179 revolutions
92 feet
310
300
330

Figure 4

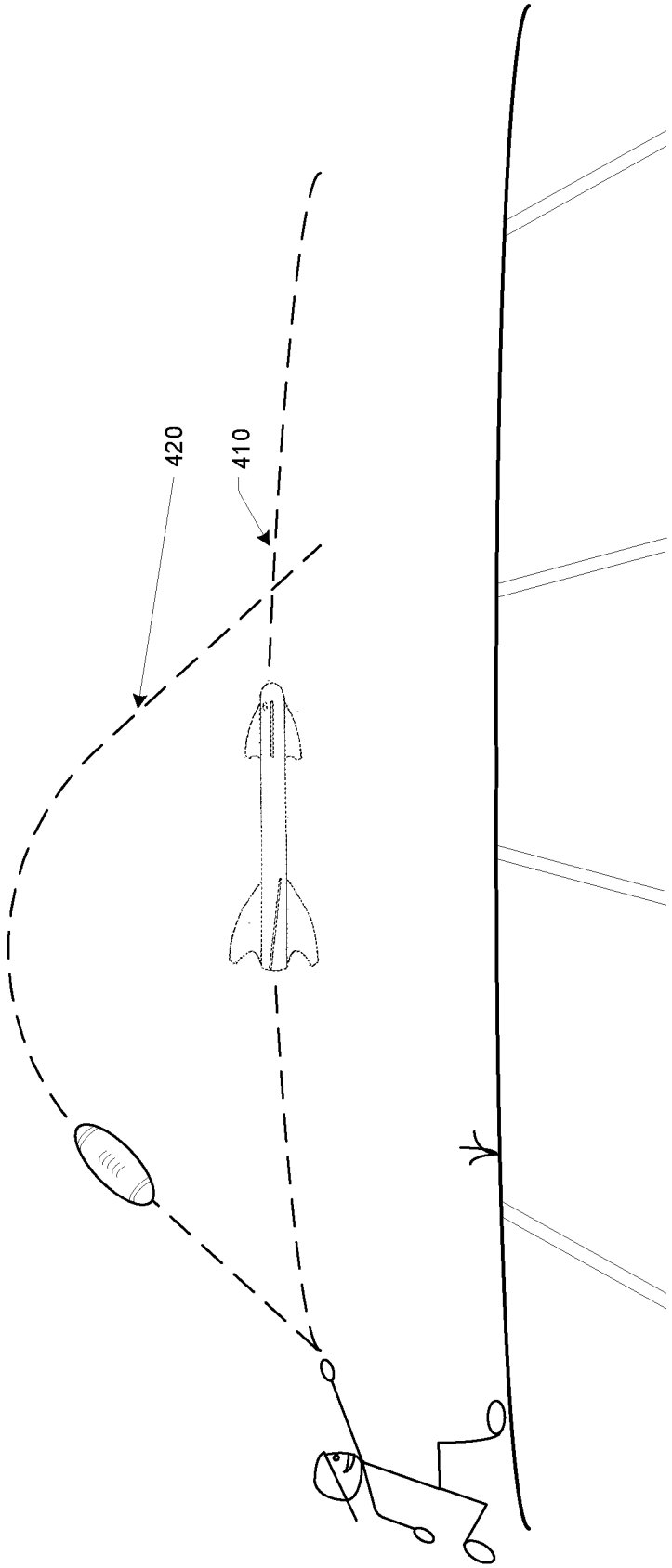


Figure 5B

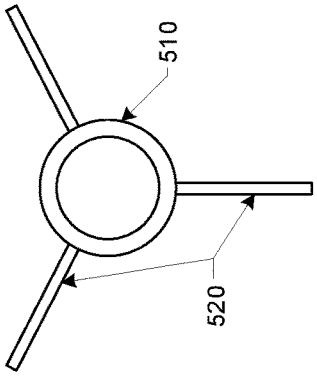


Figure 5A

FIGURE 6A

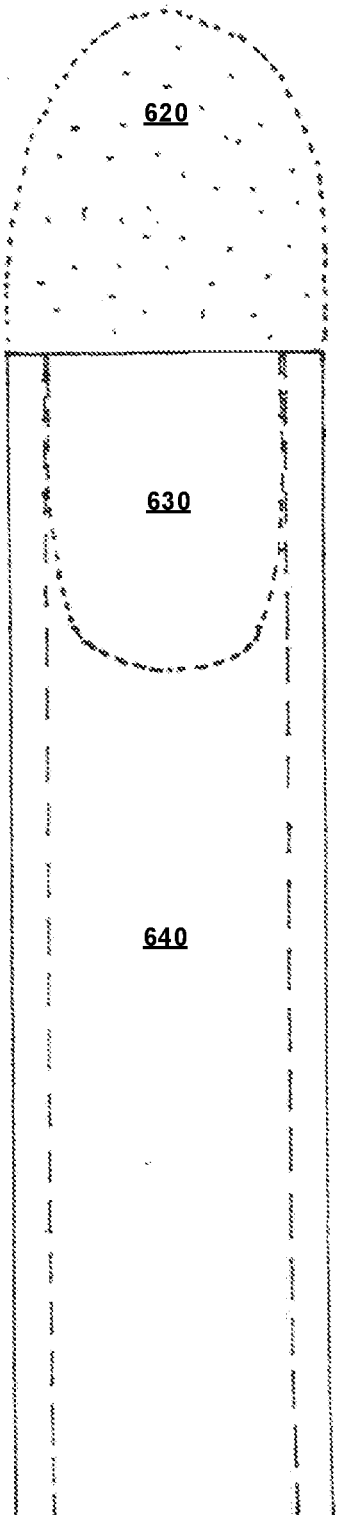


FIGURE 6A

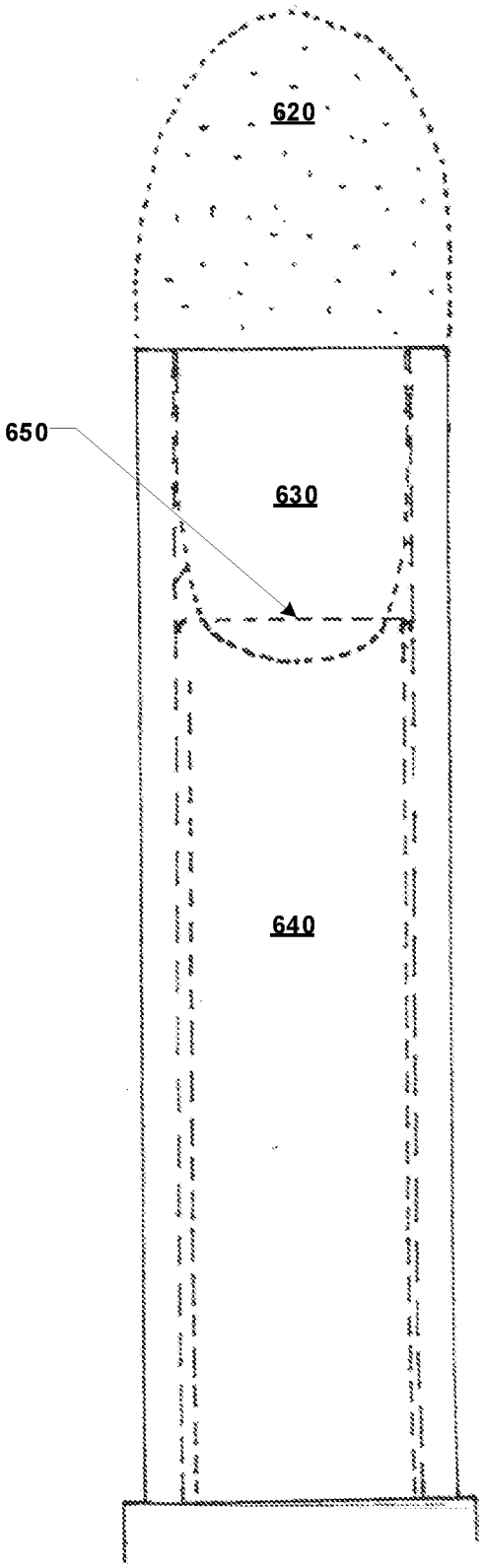
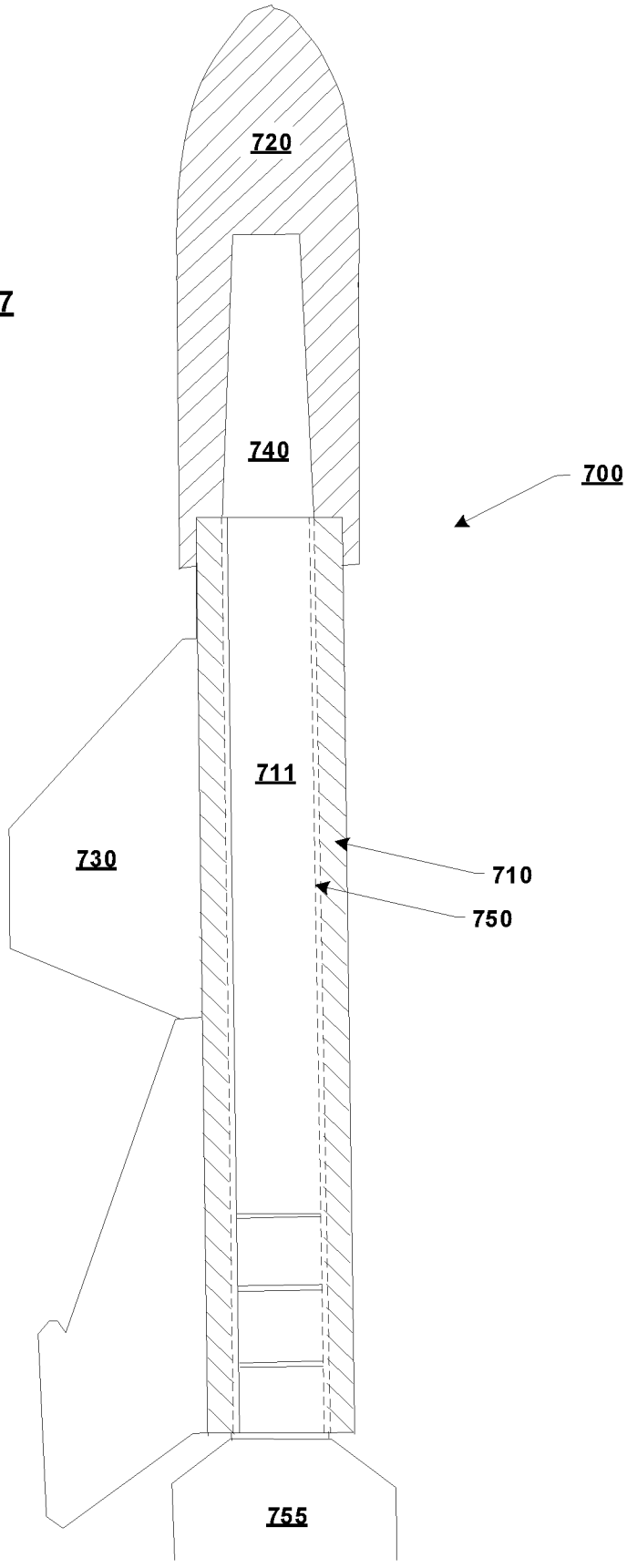


Figure 7



DEVICES THAT ARE THROWN OR LAUNCHED

RELATED APPLICATIONS

[0001] This application claims priority to U.S. Provisional Patent Application No. 62/920,431, filed 28 Apr. 2019, entitled "A Means for Improving the Performance and Adding Play Value to Toys that are Thrown or Projected," which is incorporated herein by reference in its entirety.

BACKGROUND

[0002] There are numerous toys and devices that may be projected by throwing or launching using compressed air, elastics or elastomeric devices, or springs. Some toys do not include wings or fins (such as balls), while other toys or devices include fins or wings to promote further or more accurate flight. However, such devices are typically propelled by launching the device in a parabolic trajectory. That is, such devices generally need to be launched at an upward angle to achieve distance. This may restrict the use of the device for target purposes, as the device must be launched at an angle above a target, allowing the device to angle down from the apex of the trajectory before hitting the target. Accordingly, it is desirable to provide a toy or device that may be thrown on a flatter trajectory or flight path.

[0003] In addition to the drawbacks noted above, existing such toys and devices are generally subject to pitch and yaw, causing instability of flight. Instable flight may reduce flight distance, and or may require faster velocities as compensation. Accordingly, it is desirable to provide a toy or device that may be thrown or launched in stable flight without excessive speed.

SUMMARY OF THE INVENTION

[0004] In accordance with some embodiments of the present invention, aspects may include a flying device comprising: a fuselage; a first set of one or more fins attached to the fuselage, the fins configured to provide rotation to the fuselage when the device is thrown, launched, or otherwise impelled; wherein the one or more fins rotate the device causing gyroscopic precession, thereby permitting the device to be thrown, launched, or otherwise impelled to stable flight at slower speeds with a flatter trajectory.

[0005] In accordance with some embodiments of the present invention, aspects may further include a second set of one or more fins, and wherein: the first set of one or more fins is disposed at the back of the fuselage; the second set of one or more fins is disposed at the front of the fuselage, nearer to a nose of the flying device.

[0006] In accordance with some embodiments of the present invention, aspects may further include a fuselage comprising a cavity with an opening at a rear of the fuselage: and a plug disposed within the cavity, the plug positioned at a front end of the fuselage, the plug configured to be inserted into a launching device.

[0007] In accordance with some embodiments of the present invention, aspects may further include a nose cone, disposed on a front of the fuselage, the nosecone comprising a tapered opening therein, the tapered opening configured to receive a launching device.

[0008] In accordance with some embodiments of the present invention, aspects may include a flying device comprising: a fuselage, comprising a cavity therein with an opening at a rear of the fuselage, the cavity configured to receive a launching device; a measuring device, the measuring device recording a number of rotations of the fuselage during flight, the measuring device attached or connected to the fuselage; a first set of one or more fins equiangularly attached to the fuselage at an angle to a longitudinal axis of the fuselage, the first set of one or more fins configured to provide rotation to the fuselage when the device is thrown, launched, or otherwise impelled: wherein the one or more fins rotate the device causing gyroscopic precession, thereby permitting the device to be thrown, launched, or otherwise impelled to stable flight at slower speeds with a flatter trajectory.

[0009] In accordance with some embodiments of the present invention, aspects may include a method of launching a flying device, the method utilizing a flying device and a launching device, the flying device including a fuselage with cavity therein with and an opening at a rear of the fuselage and a first set of one or more fins attached to the fuselage, the launching device including a launching tube, the method comprising: inserting launching tube into the opening at the rear of the fuselage and into the cavity; and launching or otherwise impelling the device off of the launching tube, such that the device rotates bout a longitudinal axis of the fuselage during flight causing gyroscopic precession to assist with stable flight at slower speeds and with a flatter trajectory.

[0010] These and other aspects will become apparent from the following description of the invention taken in conjunction with the following drawings, although variations and modifications may be affected without departing from the spirit and scope of the novel concepts of the invention

DESCRIPTION OF THE FIGURES

[0011] The present invention can be more fully understood by reading the following detailed description together with the accompanying drawings, in which like reference indicators are used to designate like elements. The accompanying figures depict certain illustrative embodiments and may aid in understanding the following detailed description. Before any embodiment of the invention is explained in detail, it is to be understood that the invention is not limited in its application to the details of construction and the arrangements of components set forth in the following description or illustrated in the drawings. The embodiments depicted are to be understood as exemplary and in no way limiting of the overall scope of the invention. Also, it is to be understood that the phraseology and terminology used herein is for the purpose of description and should not be regarded as limiting. The detailed description will make reference to the following figures, in which:

[0012] FIG. **1** illustrates an exemplary device in accordance with some embodiments of the present invention.

[0013] FIG. **2** illustrates an exemplary device in accordance with some embodiments of five present invention.

[0014] FIG. **3** illustrates an exemplary device with additional features, in accordance with some embodiments of the present invention.

[0015] FIG. **4** depicts exemplary flight paths of the device, as compared with typical projectile trajectories, in accordance with some embodiments of the present invention.

[0016] FIG. **5**A depicts exemplary wing designs of the device, in accordance with some embodiments of the present invention.

[0017] FIG. **5**B illustrates a cross section showing potential fin attachment angles, in accordance with some embodiments of the present invention.

[0018] FIG. **6**A illustrates a cross section of an exemplary device with a plug, in accordance with some embodiments of the present invention.

[0019] FIG. **6**B illustrates a cross section of an exemplary device with a plug, as engaged with a launching device, in accordance with some embodiments of the present invention.

[0020] FIG. **7** illustrates a cross-section of an exemplary device in accordance with some embodiments of the present invention.

[0021] Before any embodiment of the invention is explained in detail, it is to be understood that the present invention is not limited in its application to the details of construction and the arrangements of components set forth in the following description or illustrated in the drawings. The present invention is capable of other embodiments and of being practiced or being carried out in various ways. Also, it is to be understood that the phraseology and terminology used herein is for the purpose of description and should not be regarded as limiting.

DETAILED DESCRIPTION

[0022] The matters exemplified in this description are provided to assist in a comprehensive understanding of various exemplary embodiments disclosed with reference to the accompanying figures. Accordingly, those of ordinary skill in the art will recognize that various changes and modifications of the exemplary embodiments described herein can be made without departing from the spirit and scope of the claimed invention. Descriptions of well-known functions and constructions are omitted for clarity and conciseness. Moreover, as used herein, the singular may be interpreted in the plural, and alternately, any term in the plural may be interpreted to be in the singular.

[0023] In general, the present invention is directed to flying toys that achieve long flight distances and time of flight. More specifically, the present invention teaches flying toys that spin, thereby utilizing at least to some degree gyroscopic precession to increase stability of flight.

[0024] Devices in accordance with some embodiments of the present invention may be thrown, launched, or otherwise impelled with both a forward force and a rotational force. In accordance with some embodiments, a device may be thrown, launched, or otherwise impelled with a forward force and rotation may be imparted to the device through, for example, fins or other aerodynamic configurations. Fins may be angled with respect to the body or fuselage of the device, or may be bent or curved, at least in part. Aerodynamic configurations may include, but not be limited to, helical vanes, grooves, a twisted body or fuselage, etc.

[0025] Once thrown, launched, or otherwise impelled, the device may rotate or spin with an axis of rotation being aligned or substantially aligned with the direction of flight. At least in part due to this angular rotation of the device, a torque vector along the axis of rotation may be caused, which may assist the device to stay level during flight—or aligned with the device orientation when the force was applied. This may reduce the angle of a typical parabolic projectile path.

[0026] In accordance with some embodiments of the present invention, gyroscopic precession may cause increased stability. Stable orientation may result in a flatter trajectory of flight path, which may assist a user with easier aiming of the device. For example, a user may not have to account for as much parabolic flight, which may have otherwise required a user to aim above a target.

[0027] One impact of the configuration of devices in accordance with some embodiments of the present invention is the distance such devices will fly, often even with limited throwing, launching, or otherwise impelling force. Such increased distance may be achieved, at least in part, through the use of fins or wings, which may be disposed on the front and/or the back of the device. Note that wings may be comprised of a single integral component or may be comprised of multiple components or portions that may form the one or more fins or wings. In accordance with some embodiments of the present invention, the device may comprise three (3) or more fins or wings, which may be positioned substantially equiangularly around a body of a device.

[0028] Note that while it is discussed throughout that the wings or fins may be angled or curved to impart, or sustain, a rotational of the device, it is also considered and contemplated that if thrown, some users may be right-handed while some users may be left-handed. In general, a right-handed user may impart a clockwise rotation of the device (as seen from the back), while a left-handed user may impart a counterclockwise rotation of the device (as seen from the back). Accordingly, it is contemplated that the fins or wings of the device may be alterable or modifiable by a user to reflect the proper hand with which the user may throw the device.

[0029] For example, fins may be manufactured neutral (i.e., aligned with the axis of rotation and direction of flight), and a user may bend or contour the fins to reflect his or her preference. Alternatively, devices may be manufactured and sold as "right-handed" and "left-handed" models. In accordance with some embodiments of the present invention, the fins may be mounted on a pivot, such that a user may modify the direction of the fins. It is also contemplated that the direction of all fins may be modified together, for example by attaching each fin to a ring (or mounting each fin in a tray that may be attached to a ring), which may be rotated or adjusted by a user to change the angle of the fins. Such angle may be changed from entirely (for example, to accommodate left-handed and right-handed users), or may be modified slightly as a user determines what rate of spin is most appropriate for the particular use of the device. That is, a user may modify the spin to accommodate longer flight times, greater stability, accuracy, and/or other desired performance characteristics.

[0030] Increased distance may also be a result of gyroscopic precession, as discussed above, at least in part causing increased stability and orientation.

[0031] In addition, in accordance with some embodiments of the present invention, the rotational force may cause orientation of the axis of rotation to remain more constant or stable, even as the path traveled by the device changes. In this manner, a device that is thrown, launched, or otherwise impelled with an angled-up orientation (e.g., nose up) may stay angled up even as the trajectory of the device angles down as it descends from its peak. This more constant or stable orientation may make the device easier for a user to catch, as the device may "mush," or settle while in a nose up altitude.

[0032] In accordance with some embodiments of the present invention, devices may fly at a slower speed that expected for such a device to achieve similar flight distances. While speed of flight may be a function of the throwing, launching, or otherwise impelling force, it is also notable that due to the gyroscopic precession discussed above, the device may maintain an stable orientation, which may cause the device to mush at a reduced speed, rather than angle towards the ground and accelerate with gravity.

[0033] Due at least in part to the increased stability, longer flight distances, and slower flight speeds, it is notable that compared to other balls and toys, the device may have increased time in the air. This increased time aloft may also contribute to a user's experience. In addition to providing a user with a feeling of satisfaction at watching the device, it also allows a user to position himself or herself appropriately in order to attempt to catch the device. Unlike balls and other projectiles that move quickly, devices in accordance with some embodiments of the present invention may fly slower, thereby allowing for children and those learning to catch to safely and more successfully learn.

[0034] The discussion above notes that the device may be thrown, launched, or otherwise impelled. While it is fully contemplated that the devices may be thrown or tossed by hand by a user, it is also contemplated that the device may be launched in a manner assisted by an additional force. For example, and as discussed in greater detail below, a device may be launched using a spring, compressed air, compressed air and water, water, etc.

[0035] For example, in accordance with some embodiments of the present invention, a device may comprise a soft, light, substantially cylindrical fuselage which may be comprised of, in some embodiments, a firm foamed synthetic polymer composition material. The device may further comprise a hole, opening, or aperture in the rear of the device, which may be configured to receive a tube that may impart a blast of air when inserted.

[0036] Note that it is contemplated that air may be compressed in either the device, or in a launcher. For example, in accordance with some embodiments of the present invention, the device may comprise a plug that may be configured to snugly fit inside a launching tube. The plug may cause an interference fit inside the tube or launcher, with friction between the plug and the interior portion of the tube or launcher. Compressed air may then be exerted onto the plug, thereby imparting motion to the device. The compressed air may be achieved using a manual device, such as a pump or other device, as is known in the art. It is also contemplated that compressed air may be received from an external device such as a compressor, or may be released from a compressed storage container, such as but not limited to compressed air canister or cartridge.

[0037] In accordance with some embodiments of the present invention, the plug may be tapered, permitting the user to determine or select how much force will be required before the device is released from the tube (thereby impacting the speed, flight distance, and/or other performance characteristics of the device). In other words, the tighter the fit between the plug and the tube imparting compressed air, the greater the compressed air force before the device breaks away from the tube and moves through the air. In some embodiments, there may be an indicator to a user of how far the launching tube has been inserted onto the plug, so that a user can select the force desired for the desired application or use of the device.

[0038] Note that while the above portions discuss a plug, it is also contemplated that the opening in the device for the tube or launcher may also be tapered from a larger diameter or cross-sectional size to a smaller diameter or cross-sectional size. In this manner, no plug may be required and instead the tube may be pressed into the device, causing a friction fit around the exterior portion of the tube or launcher.

[0039] In accordance with some embodiments, rather than merely receiving the impact of compressed air, the device may be configured to receive and hold compressed air within the device. For example, the device may comprise a hollowed-out portion, which may in part receive a tube or nozzle from which air may be provided. The air may compress within the hollowed portion of the device. When the air pressure within the device is greater than the retention force between the device and the air source the device may push itself away from the source, and release the compressed air out the back of the device, thereby imparting a force and causing the device to move. In accordance with such embodiments, the device may be comprised of a resilient material to provide at least some degree of flex as higher pressure is received, and contraction when the pressure is exerted. In accordance with some embodiments, a device may further comprise a liner, such as an elastic pocket to receive the air. For example, a liner may be similar to a latex balloon that may receive the air pressure and contract upon release, causing the compressed air to be expelled out the back of the device.

[0040] Much like above, it is contemplated that the opening for receiving the air source may be tapered or otherwise configured so that a user may modify the amount of air received by the device, and/or the degree of compression. In other words, a user may decide to insert the tube deeper within the device, coupled with increased pressure, to cause a quick burst of force to be exerted on the device. However, a user may also decide to insert the tube shallower within the device, coupled with a lower pressure. In this circumstance, the device may have more volume of compressed air to release out of the back of the device, causing a longer duration of force (but possibly less of a peak force applied compared with the shorter, high pressure burst discussed above).

[0041] It is also contemplated that devices in accordance with some embodiments of the present invention may comprise means for both storing internal compressed air and receiving a blast of compressed air from a launcher or other external device. For example, a device may comprise both an internal flexible vessel and a plug. A user may insert a tube partially into the device and may provide air into the internal storage until fully compressed. The user may then insert the tube deeper into the device, engaging with a plug, walls of the cavity, or front of the device. The user may then provide a quick blast of air to push the device off of the launcher. Once free, in addition to the force exerted by the quick blast, the internal storage may retract, expelling the internal stored compressed air out the back of the device, thereby exerting at least some force on the device.

[0042] With either spring or compressed air launching, a user may have some degree of control over the force applied to the device based upon how far the launcher is inserted into

the device. Accordingly, it is contemplated that the launching device (air pump or spring gun) may include markings or labels corresponding to the expected force (exerted for example, by air pressure or spring force) exerted on the device.

[0043] Note that it is contemplated that in accordance with some embodiments a launching device may be inserted into the device, but not engaged with a plug, or the body of the device. This may prevent pressure from being sustained in the device during shipping or when devices are sitting on shelves or unused, thereby preserving resiliency of the device material, which may enhance flight. In addition, this may permit efficiencies in packaging, as the device may be packaged as one product (i.e., the device with a launcher at least partially inserted therein), thereby reducing both packaging and retail footprint.

[0044] Similar to the compressed air embodiments discussed above, it is contemplated by the present invention that a spring may also be used to launch or otherwise impel a device. In general, the device may be inserted into a spring-loaded device, or a spring-loaded device may be inserted into the device. Note that the force to launch or otherwise impel the device may be from release of a compressed spring, or in live alternative, from the release of an elongated spring. Note that in the case of releasing an elongated spring, alternative components such as elastic bands, bungees, and/or other elastomeric materials may be used in lieu of, or in addition to, a spring.

[0045] It is contemplated that the device may be merely held by a user and then released for flight, or that the device may engage with a catch or hook on a launching component so that the device is not impelled until released by a user, for example through the use of a trigger. Much as an internal cavity may be used to store compressed air as discussed above, in the case of a compressed spring, an internal cavity of the device may used for spring compression. In some embodiments of the present invention, the internal cavity may receive a spring attached to a launching device, and the degree with which the spring is compressed within the cavity may impact the flight speed and/or distance.

[0046] In some embodiments, a spring may be attached to the device inside the cavity, such that the spring may be compressed upon insertion of a launching component. In this embodiment, the cavity may dictate the size of the spring, as it may be configured to not extend from the cavity when the spring is in its uncompressed, resting state.

[0047] In accordance with some embodiments of the present invention, additional features may be provided to increase device performance or user satisfaction or enjoyment of the device. For example, in accordance with some embodiments of the present invention, a nose cone may be included on a device, which may be attached to the fuselage. In some embodiments, the nose cone may comprise a tapered hole or aperture approximately the same size as the fuselage and may taper in diameter to a point or near point (for example, rounded) near the front of the nose.

[0048] In accordance with some embodiments of the present invention, the device may comprise a measurement feature that may be attached or embedded into a device. It may be desirable in toys and devices that are designed to launch for distance or to play catch with other players to track certain aspects of the flight, such as but not limited to time aloft, revolutions, and/or distance. While playing catch with a partner, users may be encouraged to compete with each other's measurement data. In addition, aspects such as time aloft may be tracked in order for a user to optimize or tune a device for increased or desired performance. For example, a user may tune a device for optimal distance, while a different user may tune a device for maximum time aloft, even over a consistent distance (thereby indicating a slower speed, which may be easier to catch and/or more appropriate for younger users).

[0049] As discussed in greater detail below with regard to the figures, devices in accordance with some embodiments of the present invention may comprise large darts or javelin-like toys that may have substantially cylindrical fuselages comprised of a soft, resilient, light, firm foamed synthetic polymer composition material. Various shaped wings or fins may be attached, affixed, or even integrally formed at the front and/or rear of the fuselage. In some embodiments, such wings or fins may be made from a light, thin foam material, and may be configured, or configurable by a user, to provide rotation and/or lift to the device. For example, in accordance with some embodiments the wings or fins may be attached at approximately a five (5) degree angle to the long axis of the fuselage. The angle of the wings or fins may be changeable by a user or may be pre-configured.

[0050] Note that in accordance with some embodiments of the present invention, wings or fins may be positioned at the rear of the device, while, in accordance with other embodiments of the present invention wings or fins may be disposed at both the front and the rear of the device.

[0051] Wings or fins may be disposed evenly spaced around the fuselage (for example, three (3) fins may be located 120 degrees apart from each other; four (4) fins may be located ninety (90) degrees apart from each other), or may be configured unevenly (for example, three (3) fins may be positioned similar to a "T," with two (2) fins in a coplanar arrangement, and one (1) fin substantially perpendicular to the other two (2) fins.

[0052] It is contemplated that some embodiments of the present invention may comprise a firm "rod" as a fuselage (such as a dowel rod), which may be more resilient than other materials.

[0053] It is contemplated that some embodiments of the present invention may set forth a device with a fuselage comprising a tube, where air may flow through the inside of the fuselage during flight. Such airflow may increase the lift inflected upon the device, thereby potentially causing longer flight distances.

[0054] In addition, devices in accordance with some embodiments of the present invention may comprise additional components that may increase a user's enjoyment of the device. For example, additional components may add to the sensory experience of the device. Whistles may be attached to the device such that when thrown, launched, or otherwise impelled air travels through the whistles and makes a sound. Other sound devices may be used. Streamers, reflective tape, or other materials may be attached to the device, or may be trailed behind the device during flight.

[0055] It is also contemplated that devices in accordance with some embodiments of the present invention may be stylized for further user enjoyment or interest, or merely for aesthetic purposes. For example, a design of a device may have a "bugs" theme, where multiple devices are configured to reflect or appear as one or more insects. Super heroes, monster, planes, rockets, missiles, etc. may also be used, potentially by altering the wing or fin design.

[0056] In accordance with some embodiments of the present invention, the device may be packaged and/or sold in two (2) or more components. For example, in order to reduce the product footprint on a retail shelf, the fuselage may be split into two components, a front—comprising the nose of the device, and a back—comprising the rear of the device. These two components may be attached via any means as known in the art. For example, an internal component such as a tube could be inserted partially into the back of the front component and the front of the back component. Alternatively, short plastic screws or threads could be used to screw the front and back components together.

[0057] With reference to FIG. **1**, a device **100** in accordance with some embodiments of the present invention will now be discussed. Device **100** may comprise one or more fins **120** at the rear of the device **100**, and—in some embodiments—one or more fins **130** at the front of the device. Rear fins **121**, **122**, **123** may be spaced equiangularly about the body of the device **100** or may specifically be disposed in an asymmetrical configuration. It is contemplated that the rear fins **120** may be angled, or configurable by a user in order to induce, promote, or sustain rotations during flight. For example, in accordance with some embodiments the fins may be angled approximately five (5) degrees as compared with the longitudinal axis of the device **100**.

[0058] Similarly, front fins **130** may also be spaced equiangularly about the body of the device **100** or may specifically be disposed in an asymmetrical configuration. It is contemplated that the front fins **130** may also be angled, or configurable by a user in order to induce, promote, or sustain rotations during flight. For example, in accordance with some embodiments the fins may be angled approximately five (5) degrees as compared with the longitudinal axis of the device **100**.

[0059] Note that other design and or functional elements may be present. For example, the nose or from of device **140** may be contoured into an angled or rounded shape. This may be for aerodynamic advantage, or merely for aesthetic value.

[0060] With reference to FIG. **2**, a device **200** may comprise two (2) or more components **210**, **220** that may be attached via an attachment component **230**. The device **200** may have a front component **210** that may comprise an opening or aperture **211** in the back of the front component **210**. The rear component **220** may have an opening or aperture **221** in the front of the rear component **220**. The attachment component may comprise, for example, a rod or tube which can be in any shape and of any cross-sectional design, which may be inserted in to opening or aperture **211** and **221** to joint the front component and the rear component. In accordance with some embodiments, the attachment component **230** may include additional elements, such as threads, ribs, or other protrusions that may engage with sides of the front and rear components to retain the attachment component in place.

[0061] With reference to FIG. **3**, a device **300** may comprise additional features, such as but not limited to a measuring component **310**, one or more sound makers **320**, and/or one or more trailing ribbons or strips **330**. Measuring component **310** may record time aloft **311**, spins or rotations of the device **312**, and/or distance **313** traveled by the device. One or more sound makers **320** may be positioned to capture air flow and emit a sound, for example a whistle, as the device travels. Note that one or more sound makers **320** may be angled such that the faster the device rotates, the more air flow through the whistle and the louder the auditory feedback. Trailing ribbons or strips **330** may be configured to invoke an image of fire emitting from the back of the device—for example, through reflective strips colored in reds, oranges, and/or yellows. Alternatively, trailing ribbons or strips **330** may be of any design, and may be merely aesthetic, or may be utilized to catch and/or store the device **300**.

[0062] FIG. **4** illustrates the differences between the path of flight for devices in accordance with some embodiments of the present invention and typical projectile trajectories. It can be seen that the device has a much flatter flight path than a typical projectile.

[0063] FIGS. **5**A and **5**B illustrate different designs of a device, in accordance with some embodiments of the present invention. Device **500** may comprise a body **510**, and one or more wings **520**. Wing designs may vary. For example, wings may be configured to represent different insects. Wing **520**A may represent a bumble bee wing. Wing **520**B may represent a mosquito wing. Wing **520**C may represent a dragonfly wing. As shown in FIG. **5**B, each of these wings **520** may be attached substantially equiangularly on the fuselage. As shown in FIG. **5**A at reference numeral **511**, such wings may be attached angled with relation to the longitudinal axis of the body **510**.

[0064] FIGS. **6**A and **6**B illustrate the use of a plug for engagement with a launching device, in accordance with some embodiments of the present invention. Device **600** may comprise a body **610** with a cavity **640** therein. Device may further comprise a nose piece **630** and a plug **630**. Plug **630** may be disposed within the cavity **640**, positioned at the frontal end of the cavity. With reference to FIG. **6**B, a launching device **650** may comprise a tube that may be inserted into the cavity **640** of the device **600** and engage with the plug **630**. The plug **630** may be somewhat tapered such that the launching device may be inserted tightly or loosely on the plug, thereby requiring different forces for releasing the device and launching it.

[0065] With reference to FIG. **7**, a device **700** in accordance with some embodiments of the present invention will now be discussed. Device **700** may comprise a body **710** which may be comprise a cavity therein **711**. Device **700** may further comprise a nose cone **720** and one or more wings or fins **730**, which may be attached or affixed to the body **710**. Nose cone **720** may comprise a tapered opening **740**, configured to receive the end of a launching tube **750**. Launching tube **750** may be supported by base **755**. During use, launching tube **750** may be inserted into the cavity of the device **711**, until the tip of the launching tube engages with the tapered opening **740** in the nose cone **720**. The user may then determine how tightly to engage the device **700** with the launching tube **750** but pressing the launching tube deeper and more tightly into the tapered opening **740** for more force, or loosely for less force. It is also contemplated that labels or display material **760** may be present to inform a user of how deeply the launching tube is inserted, thereby providing a visual cue as to what force will be required for launching the device.

[0066] It will be understood that the specific embodiments of the present invention shown and described herein are exemplary only. Numerous variations, changes, substitutions and equivalents will now occur to those skilled in the art without departing from the spirit and scope of the

invention. Accordingly, it is intended that all subject matter described herein and shown in the accompanying drawings be regarded as illustrative only, and not in a limiting sense.

What is claimed is:

1. A flying device comprising:

a fuselage;

a first set of one or more fins attached to the fuselage, the fins configured to provide rotation to the fuselage when the device is thrown, launched, or otherwise impelled;

wherein the one or more fins rotate the device causing gyroscopic precession, thereby permitting the device to be thrown, launched, or otherwise impelled to stable flight at slower speeds with a flatter trajectory.

2. The flying device of claim **1**, wherein the first set of one or more fins are positioned equiangularly about the fuselage.

3. The flying device of claim **1**, wherein the first set of one or more fins are positioned asymmetrically about the fuselage.

4. The flying device of claim **1**, further comprising a second set of one or more fins, and wherein:

the first set of one or more fins is disposed at the back of the fuselage;

the second set of one or more fins is disposed at the front of the fuselage, nearer to a nose of the flying device.

5. The flying device of claim **1**, wherein the first set of one or more fins is angled approximately five (5) degrees away from a center longitudinal axis of the fuselage.

6. The flying device of claim **1**, wherein the first set of one or more fins is adjustable by a user to impart an angle to the fins compared to a center longitudinal axis of the fuselage.

7. The flying device of claim **1**, wherein the first set of one or more fins are attached to each other, such that an angle of the first set of one or more fins can be adjusted for each of the one or more fins at the same time.

8. The flying device of claim **1**, further comprising a whistle, disposed to receive air flow therethrough during flight.

9. The flying device of claim **1**, further comprising a measuring device, the measuring device recording a number of rotations of the fuselage during flight.

10. The flying device of claim **9**, wherein the measuring device further comprises a timer to record time of flight.

11. The flying device of claim **1**, wherein the fuselage is substantially tubular with an aperture extending longitudinal therethrough, and during use air flows through the aperture.

12. The flying device of claim **1**, wherein the fuselage comprises:

a cavity with an opening at a rear of the fuselage;

a plug disposed within the cavity, the plug positioned at a front end of the fuselage, the plug configured to be inserted into a launching device.

13. The flying device of claim **1**, wherein the device further comprises a nose cone, the nose cone being disposed on a front of the fuselage, the nosecone comprising a tapered opening therein, the tapered opening configured to receive a launching device.

14. A flying device comprising:

a fuselage, comprising a cavity therein with an opening at a rear of the fuselage, the cavity configured to receive a launching device;

a measuring device, the measuring device recording a number of rotations of the fuselage during flight, the measuring device attached or connected to the fuselage;

a first set of one or more fins equiangularly attached to the fuselage at an angle to a longitudinal axis of the fuselage, the first set of one or more fins configured to provide rotation to the fuselage when the device is thrown, launched, or otherwise impelled;

wherein the one or more fins rotate the device causing gyroscopic precession, thereby permitting the device to be thrown, launched, or otherwise impelled to stable flight at slower speeds with a flatter trajectory.

15. The flying device of claim **14**, further comprising a second set of one or more fins, and wherein:

the first set of one or more fins is disposed at the back of the fuselage;

the second set of one or more fins is disposed at the front of the fuselage, nearer to a nose of the flying device.

16. A method of launching a flying device, the method utilizing a flying device and a launching device, the flying device including a fuselage with cavity therein with and an opening at a rear of the fuselage and a first set of one or more fins attached to the fuselage, the launching device including a launching tube, the method comprising:

inserting launching tube into the opening at the rear of the fuselage and into the cavity; and

launching or otherwise impelling the device off of the launching tube, such that the device rotates about a longitudinal axis of the fuselage during flight causing gyroscopic precession to assist with stable flight at slower speeds and with a flatter trajectory.

17. The method of claim **16**, wherein the fuselage further comprises a plug disposed at a front of the cavity, the plug configured to be inserted into the launching tube, the method further comprising:

pushing the launching tube onto the plug, such that at least a portion of the plug enters the launching tube.

18. The method of claim **16**, wherein the fuselage further comprises a nose cone with a tapered opening disposed at a front of the cavity, the tapered opening configured to receive at least a portion of the launching tube, the method further comprising:

pushing the launching tube into the tapered opening, such that at least a portion of the launching tube enters the tapered opening.

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