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(54) **GLOW IN THE DARK CONFETTI LAUNCHING DEVICE**

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(57) **ABSTRACT**

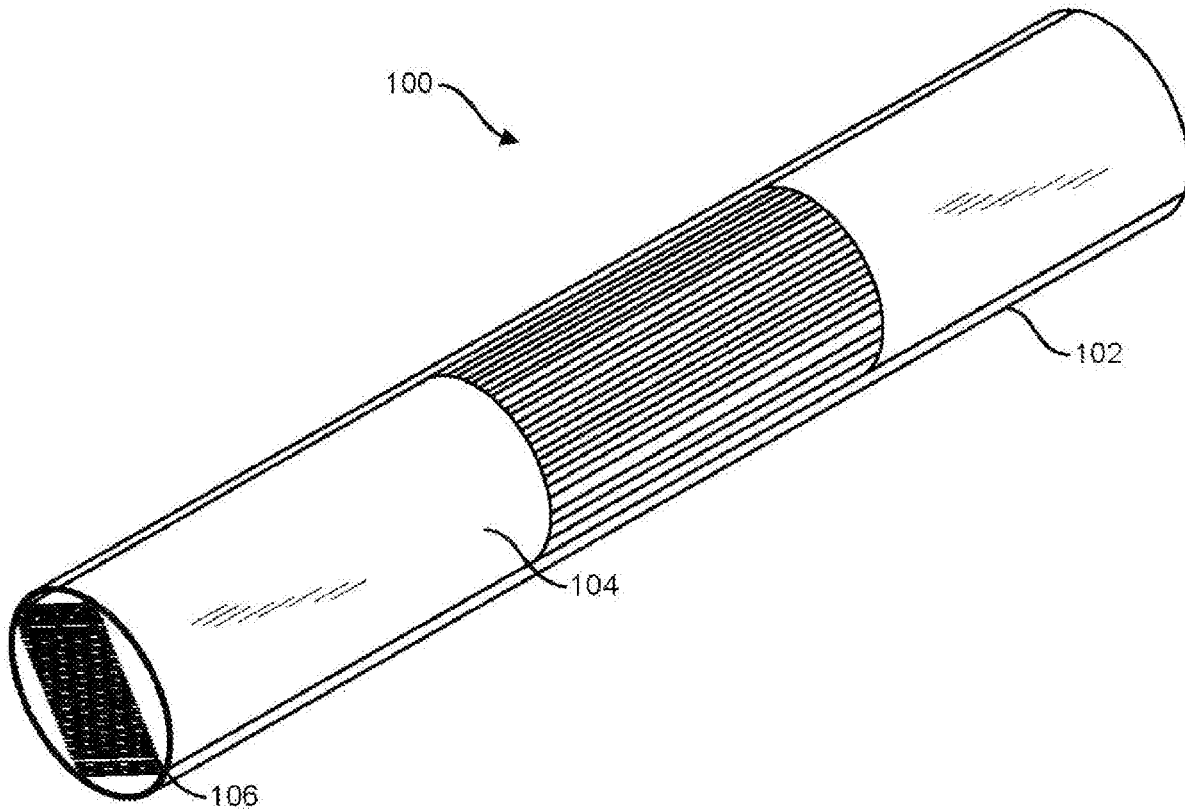
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A handheld neon glow in the dark confetti launching device may be described. The neon glow in the dark confetti launching device may be capable of glowing in the dark when used under black light, thereby providing a glowing neon effect. The confetti neon glow in the dark launching device may be configured with a glowing material circumferentially and internally to provide a glowing sensation while using it dispersing neon glow in the dark confetti into the air.

Related U.S. Application Data

(63) Continuation of application No. 16/659,510, filed on Oct. 21, 2019.

(60) Provisional application No. 62/748,259, filed on Oct. 19, 2018.



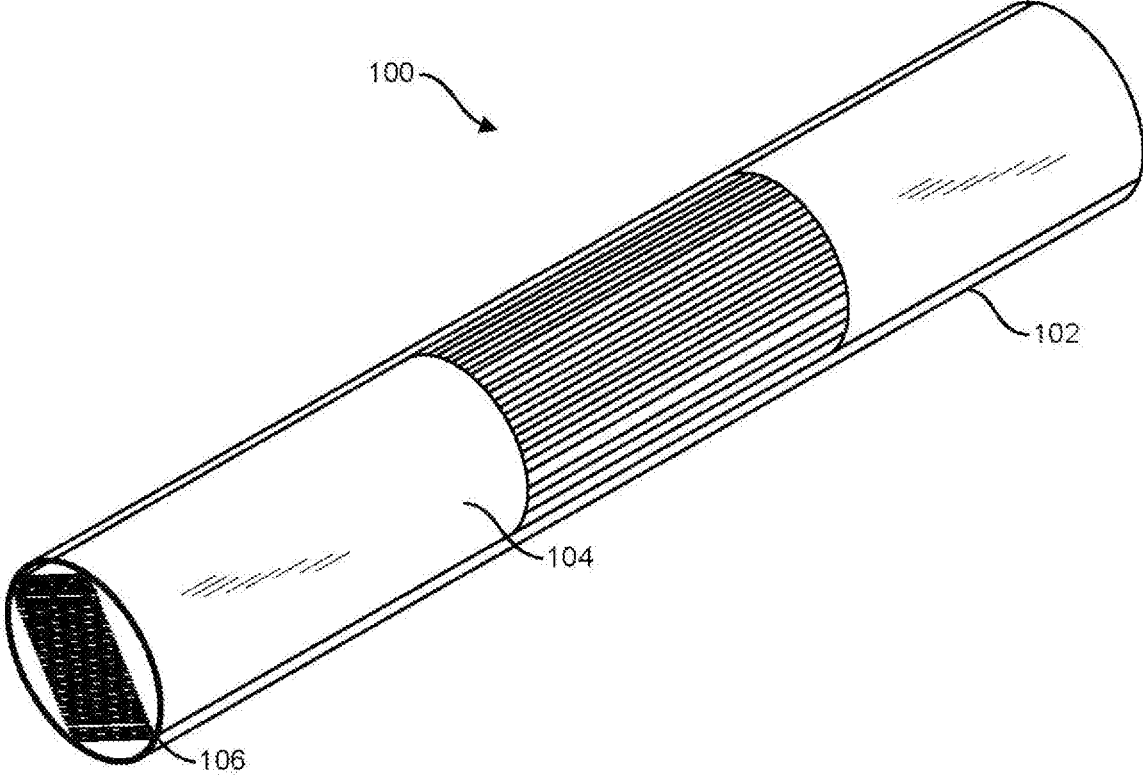


FIG. 1

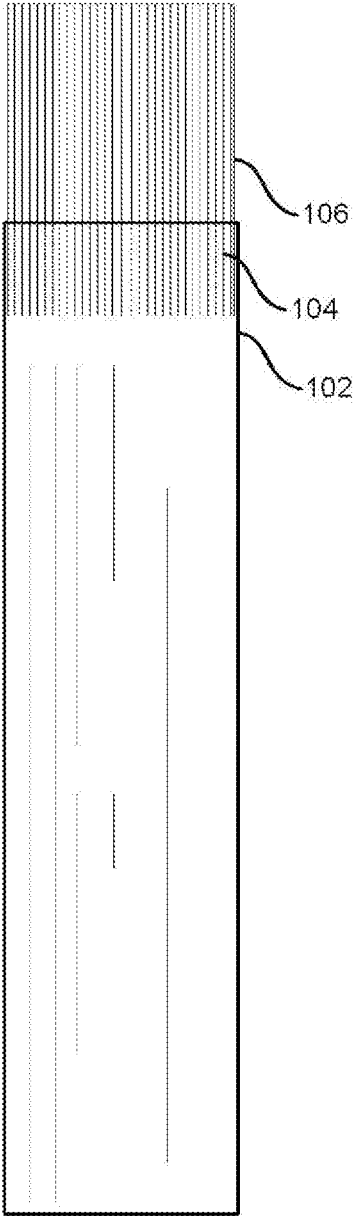


FIG. 2A

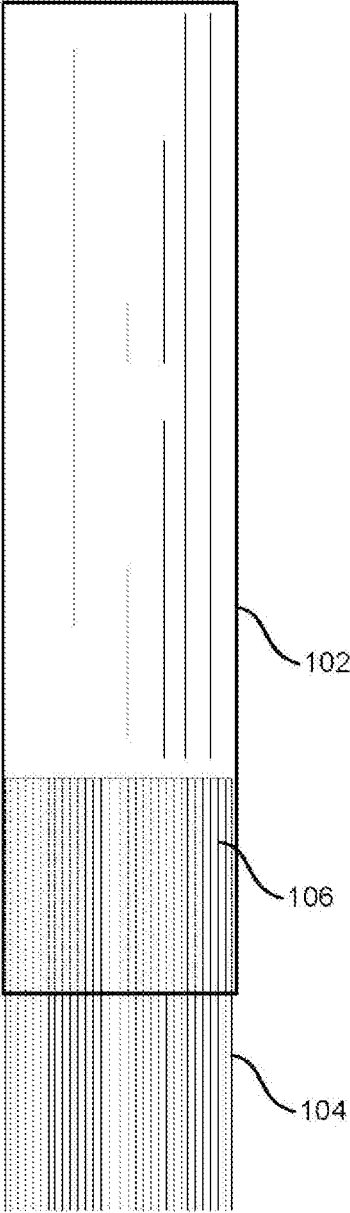


FIG. 2B

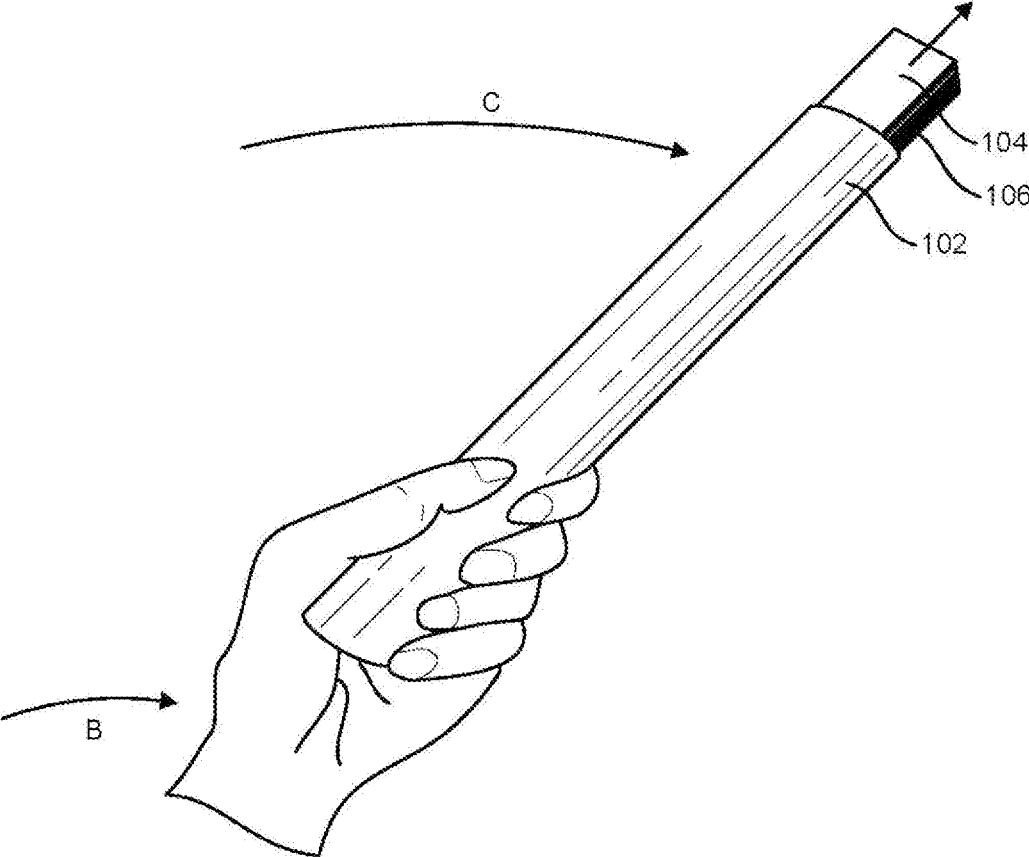


FIG. 3A

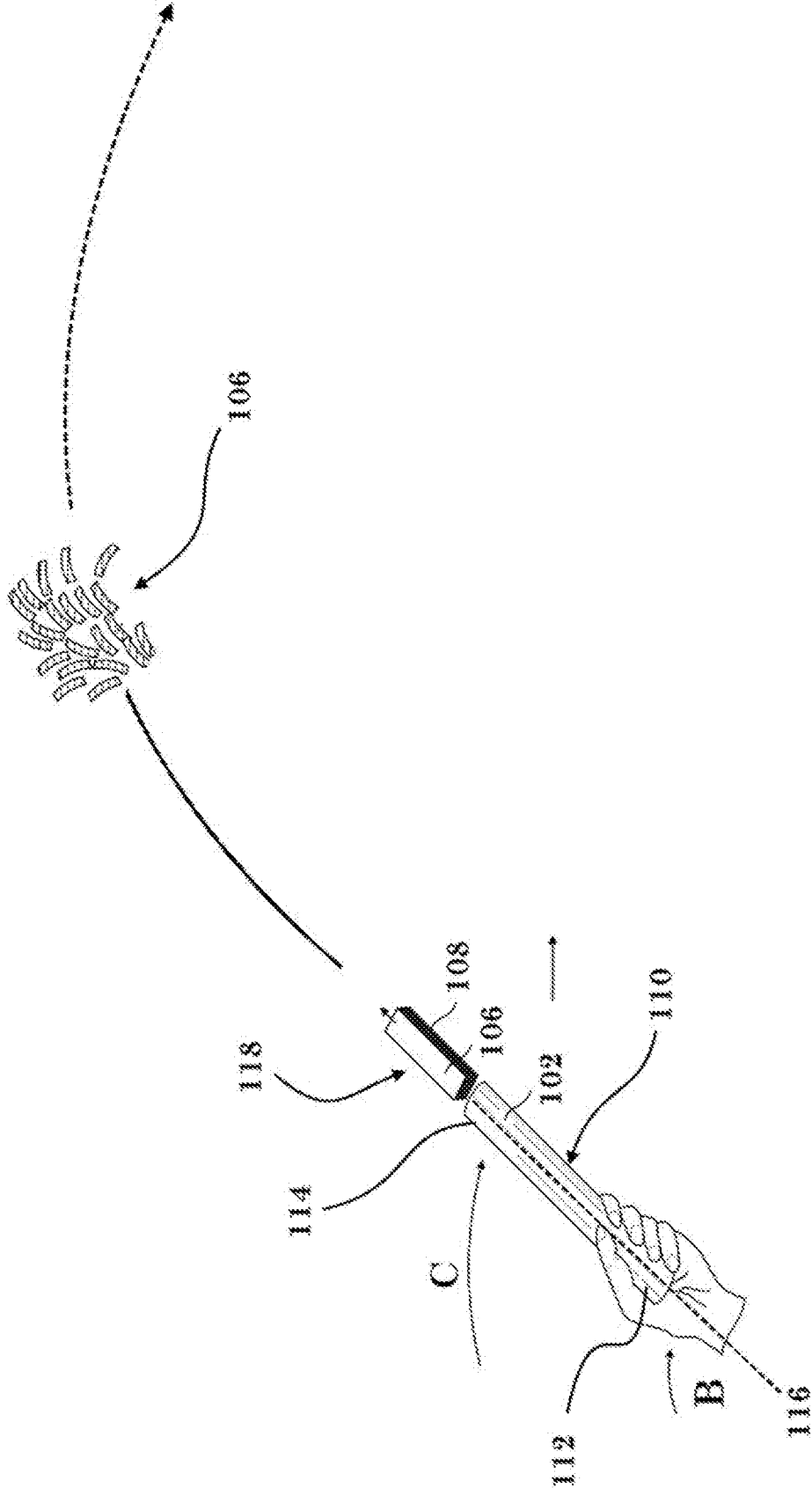


Fig. 3b

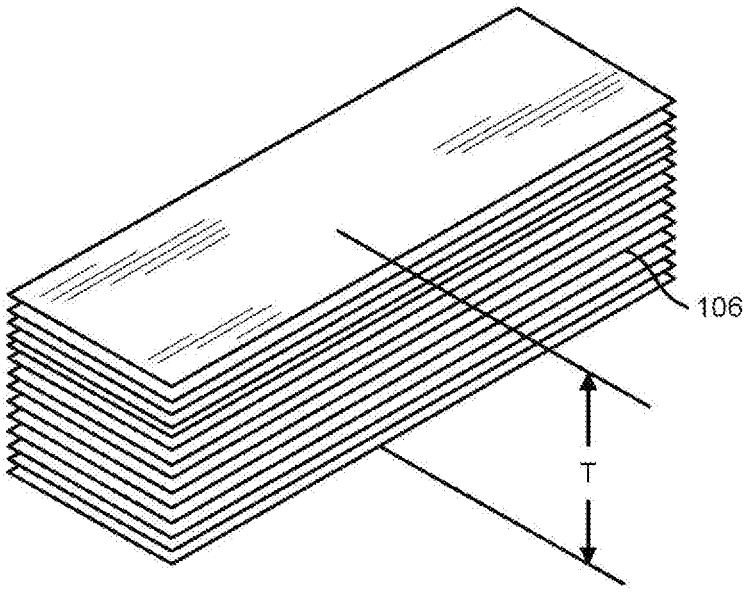


FIG. 4A

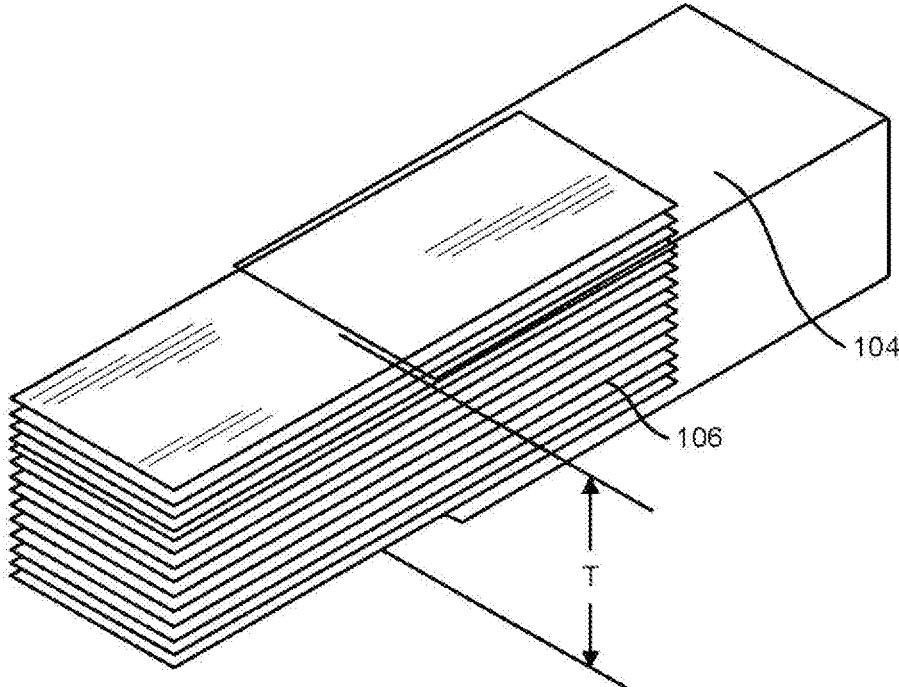


FIG. 4B

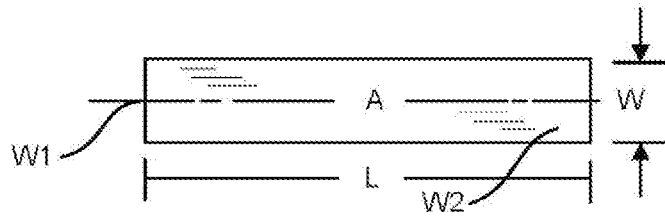


FIG. 5A

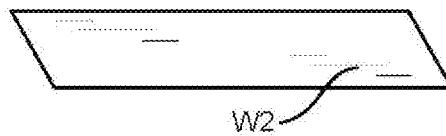


FIG. 5B

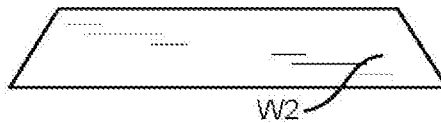


FIG. 5C

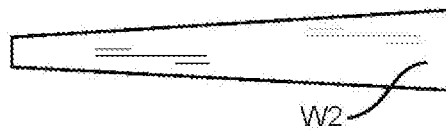


FIG. 5D

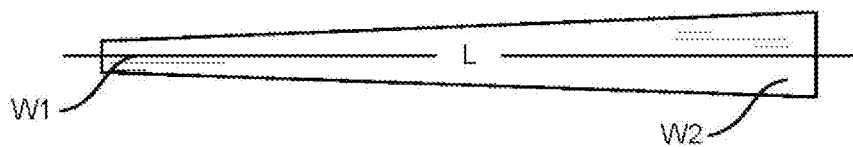


FIG. 5E

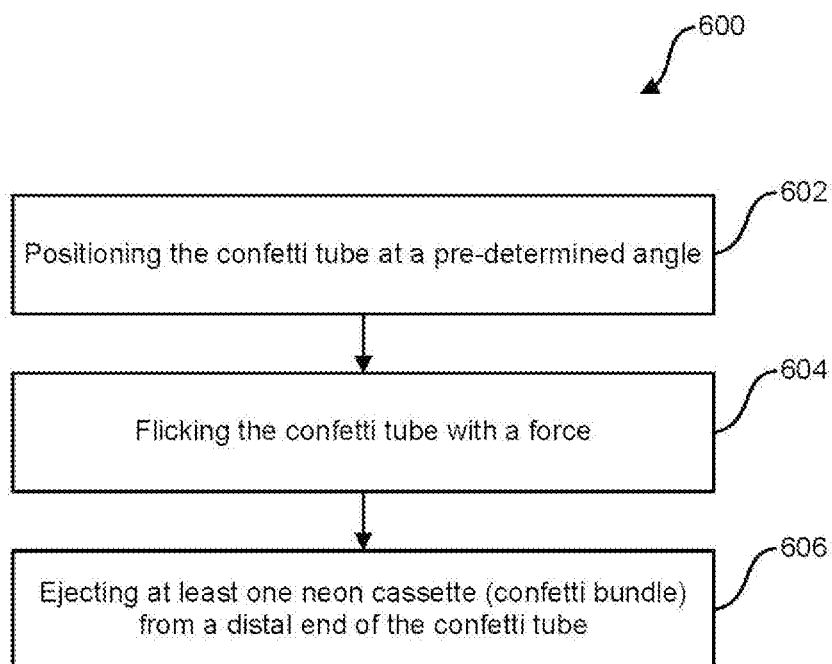


FIG. 6

GLOW IN THE DARK CONFETTI LAUNCHING DEVICE

FIELD OF INVENTION

[0001] The present invention relates to festive implements, particularly a handheld neon glow in the dark confetti launching device for launching neon glow in the dark confetti pieces when used under black light in the air. More specifically, the present invention may be a neon “glow in the dark tube” filled with neon “glow in the dark” confetti launching device that may be capable of dispersing neon glow in the dark confetti into the air while using a black light to make the neon confetti and the neon tube glow in the dark.

BACKGROUND

[0002] Many conventional launching devices, known in the art, including ‘cannons,’ etc., are used by people during the festive season to blast confetti in the air. From the devices using blowers with compressed AIR, these cannons and launchers use a variety of triggers to eject confetti into the air. In addition to the triggers, these devices are usually expensive and bulky with sharp edges. Furthermore, the usage of compressed air and other fuels increases the risk level for accidents.

[0003] Some conventional devices, including and as described in U.S. Pat. Nos. 1,153,207 and 1,491,809 assigned to ‘Samuel Eisenberg’ and ‘Macchia Camillo’ respectively disclose funnel-shaped confetti launching devices. Each of these devices requires the user to blow in the funnel in order to release the confetti from their housing enclosed within. Although the devices are relatively simpler than other confetti launchers as described above, expelling confetti to greater height requires a user to deploy a large amount of force through breathing. Such blowing renders these devices uncomfortable to use due to these limitations.

[0004] Another similar technique is disclosed in J.P Patent No. 3190529 assigned to Hojin Sasa, which discloses a container filled with confetti that can be operated manually. The user holds the container holding multiple winding tapes are stored.

[0005] Traditionally, a product disclosed in U.S. Patent Application 20080274663 assigned to Linda Dial disclosing pieces of confetti or a collection of pieces of confetti. The pieces of confetti include a material that is shiny or reflects light that is luminescent or phosphorescent or that glows in the dark to provide additional visual effects. Though the pieces of confetti glow in the dark, the application is limited to just pieces of confetti, and no launcher is included.

[0006] A few products, such as Pink Neon Confetti Cannon of Wedding Sparklers Outlet and Neon Confetti of Studio Pep, disclose neon confetti. Although these products may include the feature of glow in the dark confetti, they do not provide flicking confetti in an easy manner, which also looks beautiful when the confetti is ejected from the cannon. Also, the confetti may be randomly stuffed inside the tube, and these tubes always require a cap for keeping the confetti inside the cannon.

[0007] The confetti devices in the market are not easily operated. They do not have a functionality of glowing in the dark, and thus, are nor suitable for use during low light conditions such as night parties. And the confetti launching devices that include neon color confetti do not include the confetti in a cassette form or in an organized manner.

Instead, such devices are stuffed with confetti, and they require a cap to hold the confetti inside the tube.

[0008] To overcome the drawbacks of awkward prior art confetti launching devices and to increase the market for confetti devices, there is a need for a “hand flick” neon glow in the dark tube with neon glow in the dark confetti inside the launching device. The technology disclosed in This document overcomes these limitations as it is easy to use, and both the tube and the confetti can glow in the dark.

[0009] It may be apparent now that numerous methods and systems are developed in the prior art that are adequate for various purposes. Furthermore, even though these inventions may be suitable for the specific purposes to which they address, accordingly, they would not be suitable for the purposes of the present invention as heretofore described. Thus, there is a need for an easy to use “hand-flick” neon glow in the dark confetti tube filled with neon glow in the dark confetti that glows under black light.

SUMMARY

[0010] The present invention solves the problem posed by the prior art by presenting a simpler, non-mechanical design for a neon glow in the dark confetti launcher. A neon glow in the dark launching device of the present invention includes a hollow neon glow in the dark tube filled with bundles of individual neon glow in the dark confetti pieces. The neon glow in the dark confetti bundles may be partially wrapped around by an outer layer, or wrapper, that loosely holds the bundle of individual confetti pieces in place. Such a wrapper holds the neon glow in the dark confetti together until it is dispersed into the air. The partial wrapping of the neon glow in the dark confetti bundles causes the bundles to burst open into a celebration of color and light when the bundles reach, or are near, the apex of their trajectory. Such an arrangement, in its entirety, forms a neon glow in the dark confetti bundle that may be loaded into a hollow neon glow in the dark tube. Both the neon glow in the dark hollow tube and the neon glow in the dark confetti bundles are manufactured using bright neon glow in the dark color palettes. For this document, a “neon tube” is a “glow in the dark tube,” where at least a portion of its outer surface defines a fluorescent quality. Similarly, a “neon confetti bundle” is a “neon glow in the dark confetti bundle” comprising a plurality of confetti pieces defining a fluorescent quality. Individual “glow in the dark confetti pieces” may be referred to as “neon confetti” or “neon confetti pieces.” The fluorescent quality may be achieved by fluorescent paint (black-light paint) that glows in the presence of a blacklight in low light conditions. Luminous paint or luminescent paint may also be used.

[0011] The hollow neon glow in the dark tube of the launching device defines two opposing ends—the proximal end where users grip the at least partially hollow tube, and the opposing/opposite end, called the distal end, where one loads the neon glow in the dark confetti bundles into the at least partially hollow tube and where the confetti bundles exit the hollow neon glow in the dark tube when the user activates the launching device with the “flick of the wrist.”

[0012] One object of the present invention may be to present a neon glow in the dark confetti launcher that may be simple and safe to be used by any person irrespective of the skill and age. Unlike other launchers that use triggering catalysts like compressed Co2 or igniting material, the launching device of the present invention uses a simple

non-mechanical solution to eject the neon glow in the dark confetti. Such a configuration makes the neon glow in the dark launching device safer by lowering the risk of accidents and lower fire hazard risks.

[0013] Another object of the present invention may be to provide an easy to handle design while adding portability to the neon glow in the dark confetti launching devices. The neon glow in the dark launching device of the present invention may be in the form of the at least partially hollow neon glow in the dark tube that may be lightweight and easy to carry around. It can be 6", 9", 14" or 18" in length.

[0014] Still another object of the present invention may be to arrange the loose neon glow in the dark confetti into neat stacks like a bundle of individual neon glow in the dark confetti pieces. Such bundles allow packing of more confetti per unit area (approximately 850 pieces of neon glow in the dark confetti in the 6" tube, 2,860 pieces of neon glow in the dark confetti in the 9" tube, 1,920 pieces of neon glow in the dark confetti in the 14" tube and 4,000 pieces of glow in the dark confetti in the 18" glow in the dark tube). Such a precise manufacturing process minimizes the possibility that the confetti will fall out of the tube while not being too tight in the tube, allowing the confetti bundles to disperse into the air easily with the "flick of the wrist." The proprietary manufacturing specifications of each of the bundle of individual stacks of neon glow in the dark confetti also prevents clumping of confetti inside the hollow neon glow in the dark tube.

[0015] A further object of the present invention may be to avoid mixing or slippage of the neon glow in the dark confetti pieces by holding them together in a bundle of individual neon glow in the dark confetti bundles having layers within. The confetti bundle stacks may be held in place by a relatively longer strip of material of the neon glow in the dark confetti, partially covering the stack. The partially wrapping of each stack method of manufacturing allows the stacks of the neon glow in the dark confetti to go higher into the air.

[0016] Another object of the present invention may be to allow filling of the neon glow in the dark tube with various stacks of neon glow in the dark confetti, thereby inserting hundreds of individual neon glow in the dark confetti pieces that inside the tube. The neon glow in the dark confetti glow under a black light making the neon glow in the dark launching device and the neon glow in the dark confetti both visible and attractive to the user in low light conditions.

[0017] Yet another object of the present invention includes a confetti launcher of the present invention constructed with a pre-specified color pertaining to a specific party or a religious/national celebration if requested.

[0018] These and other objects and advantages will become apparent from the following description of several illustrative embodiments of the invention, as shown in the following illustrative drawings.

[0019] Other objectives and aspects of the invention will become apparent from the following detailed description, taken in conjunction with the accompanying drawings, which illustrate, by way of example, the features in accordance with embodiments of the invention.

[0020] Embodiments of the present invention may employ any or all of the exemplary aspects above. Those skilled in the art will further appreciate the above-noted features and advantages of the invention together with other important aspects thereof upon reading the detailed description that

follows in conjunction with the drawings, which illustrate, by way of example, not limitation, the features in accordance with embodiments of the invention. The summary is not intended to limit the scope of the invention, which may be defined solely by the claims attached hereto.

BRIEF DESCRIPTION OF THE DRAWINGS

[0021] Embodiments of the invention are described with reference to the following drawings, wherein:

[0022] FIG. 1. Illustrates a neon glow in the dark confetti launching device;

[0023] FIG. 2a illustrates a cross-sectional view of the neon glow in the dark confetti launching device from a distal end;

[0024] FIG. 2b illustrates a cross-sectional view of the neon glow in the dark confetti launching device from a proximal end;

[0025] FIG. 3a illustrates ejection of a neon glow in the dark confetti from the neon glow in the dark confetti launching device while in use;

[0026] FIG. 3b illustrates ejection of neon glow in the dark confetti from the bundles of the neon glow in the dark confetti launching device while in use;

[0027] FIG. 4a illustrates a neon glow in the dark bundle of confetti within the neon glow in the dark confetti launching device;

[0028] FIG. 4b illustrates a cross-sectional view of a bundle of the neon glow in the dark confetti.

[0029] FIG. 5a-5e illustrates types of neon glow in the dark confetti shapes and dimensions; and

[0030] FIG. 6 illustrates a method of using the neon glow in the dark confetti launching system.

DETAILED DESCRIPTION OF THE DRAWINGS

[0031] The present invention relates to festive implementations, particularly a neon glow in the dark launching device for emitting neon glow in the dark confetti into the air. The launching device may be a hollow neon glow in the dark stick filled with fluorescent neon glow in the dark confetti inside it. The neon glow in the dark confetti and the hollow neon glow in the dark stick are both preferably manufactured in eye-catching neon glow in the dark colors. The invention provides a safe and easy to use neon glow in the dark confetti launching device for all age groups. For this document, a "hollow tube" means "at least partially hollow tube," and a "hollow stick" means "at least partially hollow stick" unless expressly stated otherwise. The "hollow tube" may define shapes such as a walking cane and a magician's wand. Further, "neon-color" broadly applies to a wide range of fluorescent or ultra-bright colors. It should be appreciated that there is a fluorescent or ultra-bright version of almost every primary and secondary color. Further, at least part of the hollow tube/stick described herein may be at least partially translucent or transparent.

[0032] For one embodiment, a hollow neon glow in the dark tube may be filled with bundles of stacked confetti pieces, which are partially wrapped with a relatively longer strip of tissue or PVC film confetti material or any other suitable material known in the art. With a simple "flick of the wrist," such neon glow in the dark confetti bundles are ejected out of the hollow neon glow in the dark tube when the user moves her arm and wrist quickly. The relatively longer strip of material acts as an outer layer and holds the

confetti pieces together. The bundles of confetti are partially wrapped with a relatively longer confetti piece to facilitate easy dispersion of confetti pieces when the neon glow in the dark launching device is activated. The manufacturer specifications for a launching device may specify a predefined weight range (+/-5%) and size range (+/-5%) for the neon glow in the dark confetti bundles. Such specifications are selected to minimize the possibility that the bundles of neon glow in the dark confetti are too tight and/or too loose inside of the neon glow in the dark tube.

[0033] FIG. 1 illustrates one exemplary embodiment of a neon glow in the dark launching device **100** of the present invention. The launching device may be in the shape of a hollow neon glow in the dark tube **102** with two ends. A proximal end may be in proximity with the user, and an opposing distal end may be opposite to the proximal end. The proximal end may be at least partially blocked to prevent confetti bundles from passing through the proximal end. Alternatively, the proximal end may be smaller in diameter compared to the distal end so that the confetti bundles are too big to pass through the proximal end. For one embodiment of the present invention, the hollow neon glow in the dark tube **102** may be made of any suitable lightweight material such as corrugated cardboard, paperboard, and the like and may be wrapped with a neon-colored glow in the dark film. In other embodiments, the hollow neon glow in the dark tube **102** may be made from other materials such as aluminum, steel, and plastics. Moreover, a hollow neon glow in the dark tube **102** may be wrapped using bright and neon-colored paper or plastic material. In an alternate embodiment, the hollow neon glow in the dark tube may be made of a neon color using coating or spraying techniques on the material of the hollow neon glow in the dark tube **102**.

[0034] The hollow neon glow in the dark tube **102** defines a cavity in which multiple partially wrapped bundles of neon glow in the dark confetti are stacked on top of each other in a row. In one embodiment, the longitudinal axis of the hollow neon glow in the dark tube and the neon glow in the dark bundles of confetti may be aligned together. The neon glow in the dark bundles of confetti may be arranged inside the hollow neon glow in the dark tube such that the layers of individual neon glow in the dark confetti are parallel to the longitudinal axis of the hollow neon glow in the dark tube. In an alternate embodiment, the layering in each bundle of individual neon glow in the dark confetti can be positioned at different angles to the longitudinal axis of the hollow neon glow in the dark tube so that each bundle of glow in the dark confetti remains substantially intact prior to triggering of the neon glow in the dark launching device **100**. The neon glow in the dark bundles may comprise an outer layer **104** wrapped around a bundle of individual glow in the dark confetti **106**. The outer layer **104** may be a strip of material that is relatively longer than the confetti **106** so that it may at least partially wrap around and hold the confetti **106** together. The outer layer **104** and the neon glow in the dark confetti **106** can be formed either of the same material or different materials. For one embodiment, the confetti **106** and the outer layer **104** both are formed of light, delicate material such as Crepe paper, craft paper, tissue paper, PVC film or metallic film, and the like.

[0035] For one embodiment, the bundle of individual neon glow in the dark confetti forms a cuboid. The bundles of individual neon glow in the dark confetti **106** may comprise

confetti **106** of the same color, or they may be assorted colors. Similarly, the hollow glow in the dark tube **102** and the bundle of individual neon glow in the dark confetti **106** may have the same neon glow in the dark colors or different neon glow in the dark colors. Notably, as noted above, neon glow in the dark colors are an extremely bright (ultra-bright) version of primary or secondary colors that exhibit luminescence when used under black light.

[0036] As noted previously, the bundle of individual glow in the dark confetti **106** may be at least partially surrounded by the outer layer **104**. Such an outer layer may define a u-shape. The outer layer **104** loosely holds the individual neon glow in the dark confetti **106** and may cover three consecutive faces of the cuboid. The size of the bundles of neon glow in the dark confetti required for a particular hollow tube design may be determined and specified so that such bundles do not fall out of either end of the hollow tube under gravity. Such confetti bundle dimensions would then be used in a precise manufacturing process. The predetermined confetti bundles sizes define a confetti bundle size and shape that trap the confetti bundle inside the hollow tube **102** by friction between an inner surface of the hollow neon glow in the dark tube **102** and a surface of the bundle of neon glow in the dark confetti.

[0037] In an alternate embodiment, a plug, such as a disc or piece of foam, defining an outer diameter similar to the internal diameter of the hollow neon glow in the dark tube **102** may be used at either end of the hollow neon glow in the dark tube **102**. The plug acts as a stopper for the neon glow in the dark confetti bundles inside the tube. The plug may be made up of lightweight materials such as cardboard, foam, paperboard, and the like. The diameter of the inner volume of the hollow neon glow in the dark tube may be about 1.5 cm or higher depending on the amount of neon glow in the dark confetti a user wishes to deploy into the air using the launching device **100**.

[0038] For one embodiment, the diameter of the hollow neon glow in the dark tube ranges from about 1.5 cm to about 2.3 cm, and the length of tube **102** ranges from about 6 to about 18 inches, which surprisingly, is the size most suitable for handling and use by non-professionals. Measurements for the various parts of the invention are +/-10%, and "about" means +/-10% unless expressly stated otherwise.

[0039] It will be appreciated that the length of the hollow neon glow in the dark tube **102** may be any desired length including 6 inches, 9 inches, 14 inches, and 18 inches, and the diameter of the hollow neon glow in the dark tube may be one of a 0.921-inch, 0.740-inch, 0.910 inch, and 2 inches, respectively. The neon glow in the dark hollow tube **102** may comprise a "skin" (wrapper/cover) configured to cover at least part of the exterior portion of the hollow glow in the dark tube **102**. Such skin may be a predefined skin design and may be user-selectable. For one embodiment, the skin design may be a custom design defined by a user during the ordering process via software provide for such purpose. Such allows for a custom skin design tailor-made for a particular event.

[0040] The neon glow in the dark launching device **100** may be triggered in any number of ways by generating an unbalance in the forces between the confetti bundle inside a launching device **100** and the launching device **100**, which causes the confetti bundle to accelerate. Generating a centrifugal force is one example. For example, by holding (in

either hand) a neon glow in the dark hollow tube (at either end), filled with neon glow in the dark confetti **102**, with the arm straight up into the air (12:00 position), then moving the forearm or arm to the 3:00 position, and then returning the forearm or arm to the 12:00 position, quickly, while flicking the wrist at the same time, the bundles of neon glow in the dark confetti are exposed to an unbalanced force relative to the launching device **100** causing the bundle to accelerate in the direction of the distal end causing the confetti bundles to be projected out the distal end of the launching device **100** and into the air. Stated differently, the movement dislodges the bundles of neon glow in the dark confetti, which are ejected out from the distal end of the neon glow in the dark launching device. As the bundles of neon glow in the dark confetti exit the confinement of the hollow glow in the dark tube, the outer layer begins to separate from the bundle of individual neon glow in the dark confetti pieces until the separation allows the bundle to burst open, creating a starburst of color and light. Ideally, the starburst occurs at a predefined speed, which should occur at or near the apex of the trajectory for the confetti bundles.

[0041] FIGS. **2a** and **2b** illustrate a cross-sectional view of the two ends of the hollow neon glow in the dark tube **102** of the present invention. As mentioned, the outer layer **104** may hold the bundles of individual neon glow in the dark confetti **106** loosely along a plurality of faces. Notably, a first cuboid may have a surface adjacent to and in contact with a surface of a second cuboid. Such a second cuboid may have a second face that may be disposed opposite the first face, where such second face is in contact with the face of a third cuboid. The cuboids may be directed towards an opening at either of the ends of the hollow glow in the dark tube **102**.

[0042] FIG. **2a** illustrates the cross-sectional view of the distal end of the neon glow in the dark hollow tube **102** of the launching device **100**. The stacked neon glow in the dark confetti bundles may be visible from the distal end of the hollow tube **102**, especially the second face of the cuboid as shown in FIG. **2a**. For one embodiment of the present invention, the second face of the neon glow in the dark (confetti) bundles (cuboid) is visible from the distal end and may be covered by the outer layer **104**. One of ordinary skill in the art will appreciate that the confetti bundles may define any suitable three-dimensional shape, including cylinders and spheres. Further, bundles of different shapes may be loaded into the launching device **100** and used at the same time.

[0043] One or more neon glow in the dark confetti plugs (discs or pieces of foam) may also be used for the construction of the neon glow in the dark launcher of the present invention. The disc may be configured to be placed inside the inner volume of the hollow tube **102**, near one of the ends. Depending on the end design, the disc or foam pieces may be visible from the cross-sectional opening of either the proximal end, or the distal end, or both the ends of the hollow neon glow in the dark tube **102**.

[0044] Alternatively, multiple discs or pieces of foam can be placed in the inner volume of the neon glow in the dark tube at regular intervals creating segments inside the hollow tube **102**. These segments may contain separate neon glow in the dark confetti bundles. The discs or pieces of foam are held in place temporarily due to interaction between rough surfaces of the disc or foam edges in the inner surface of the hollow neon glow in the dark tube **102**. Multiple segments

allow a user to better control the ejection of the neon glow in the dark confetti pieces from the hollow glow in the dark tube **102**. Instead of the contents being dispensed all at once, each disc or piece of foam is suitably sized so that they move slower through the tube **102** than and unimpeded neon glow in the dark bundle of confetti pieces **106**. Such a configuration allows for the creation of multiple events of neon glow in the dark confetti **106** launchings by the same device without reloading.

[0045] FIG. **2b** illustrates the cross-sectional view of the proximal end of the hollow neon glow in the dark tube **102**. In a preferred embodiment, the proximal end of the neon glow in the dark confetti launcher **100** may be configured to be gripped by a user. The proximal end of the launching **100** device is the end closer to the user's body. For times where discs or pieces of foam are not used, the contents of the hollow neon glow in the dark tube **102** may be exposed to the outside at the proximal end. In juxtaposition to the distal end of the hollow neon glow in the dark tube **102**, the proximal end of the neon glow in the dark launching device does not have neon glow in the dark confetti pieces **106** occluded by the outer layer **104**. Instead, each layer of the bundles of individual neon glow in the dark confetti **106** within the neon glow in the dark bundle that may be farthest from the center of the tube may be visible from the proximal end.

[0046] After gripping either end (depending on the configuration) of the neon glow in the dark tube **102** by hand, the user should extend their arm upward above her head to the 12:00 position. The user may then bring her forearm back to the 3:00 position and return the arm to the 12:00 position, quickly, while flicking the wrist at the same time, causing the neon glow in the dark confetti to flutter, fly and/or float out of the neon glow in the dark tube (depending on the confetti configuration). That said, for the confetti bundles that are wrapped as described above, the confetti bundles should fly along their disbursement trajectory and not burst apart until they reach a predetermined speed, which should occur near the apex of their trajectory. For one embodiment, the confetti bundles burst apart approximately 15 feet from the launcher device **100**. FIGS. **3a** and **3b** illustrate a method of operating the neon glow in the dark launching device **100** of the present invention. The neon glow in the dark launching device **100** may be operated manually by a user to release the neon-colored glow in the dark confetti pieces **106** that the launching device **100**, as shown in FIG. **3a**. The proximal end may be used for holding the hollow neon glow in the dark tube **102** by the user and 'flicked' by hand.

[0047] As noted above, the sudden movement of the arm creates a centrifugal force (acceleration) that ejects the neon glow in the dark confetti bundles from the launching device **100** where they burst open in the air to release the neon glow in the dark confetti **106** pieces. The neon glow in the dark launching device **100** should be moved with sufficient speed in order to generate the force needed to eject the neon glow in the dark confetti bundles out of the hollow neon glow in the dark tube **102**. It may be necessary that the user move/flick their wrist or forearm in an arcuate movement to create centrifugal forces that act on the contents of the hollow neon glow in the dark tube **102** and empties the cavity inside. One of ordinary skill in the art will appreciate that when the hollow neon glow in the dark tube **102** is moved along a curved path, the longer the hollow neon glow

in the dark tube **102** the faster the distal end moves relative to the proximal end and the more centrifugal forces and associated acceleration generated.

[0048] The design of the neon glow in the dark launching device **100** may be simple and easy to use by users of any age group or skill. The neon glow in the dark launching device **100** does not use chemical fuels such as compressed gases like CO₂ to explode the neon glow in the dark confetti **106** in the air. The current design minimizes risks, which should result in fewer accidents when using such devices. Although a typical neon glow in the dark launching device **100** may use paper neon glow in the dark confetti **106**, other materials may also be used, such as Mylar, PVC plastic FILM, metal foil, other metallic material and the like. Furthermore, the device of the present invention may be made of lightweight material, which may be easy to carry and provides for more portability compared to other confetti launchers known in the art.

[0049] Referring now more particularly to FIG. 3B, a handheld confetti launching system **100** defining a glow in the dark quality, is presented. The launching system **100** comprises an at least partially hollow tube **102** defining an elongated body **110** having an outer surface, an inner surface, a first end **112** and an opposing second end **114** with a central axis **116** running along the center of the elongated body **110**. At least a portion of the outer surface of the elongated body **110** defines a glow in the dark quality. As noted above, the “glow in the dark quality” may be a fluorescent quality achieved using fluorescent paint (blacklight paint) that glows in the presence of a blacklight in low light conditions. Luminous paint or luminescent paint may also be used. Further, as noted above, the term “neon-color” for “backlight paint” broadly applies to a wide range of fluorescent or ultra-bright colors. The elongated body **110**, or a portion of the elongated body, may define an at least partially translucent or transparent quality. The launching system **100** further comprises at least one confetti bundle **118** comprising a plurality of confetti pieces **106**. The confetti bundle **118** may be positioned within the hollow tube **102** along the central axis **116**. At least a majority of the plurality of confetti pieces **106** define a glow in the dark quality. At least one of the first end or the second end may be configured to be held in a user’s hand. As depicted in FIG. 3B, the first end **112** is being held in a user’s hand.

[0050] The hollow tube **102** of the launching system **100** is configured to receive a plurality of confetti bundles **118** disposed along the central axis **116** in either a stacked or unstacked configuration. At least one confetti bundle **118**, (comprising one bundle or a stacked pair of confetti bundles **118**), is suitably sized so that at least part of at least one outer surface defined by said at least one confetti bundle **118** engages with a portion of the inner surface defined by the hollow tube **102** to create friction therebetween that holds said at least one confetti bundle inside said hollow tube **102** while under the force of gravity. For such a configuration, the force of gravity alone will not be enough to eject the confetti bundles **118** out of the hollow tube **102**. Thus, no end cap is required to hold the confetti bundles **118** inside the hollow tube **102**. However, by rotating the second end **114** about the first end **112**, a centrifugal force is created that is large enough to eject the confetti bundle **118** out of the second end **114** of the elongated body **110** as depicted in FIG. 3B. The ejected confetti bundle **118** travels along its trajectory until it bursts open a predefined distance from the

second end **114**. The predefined distance desired can be established using various bundle designs and bundle wrapper configurations that may define various aerodynamic features. Ideally, the confetti bundle **118** will burst open near the apex of its trajectory.

[0051] The neon glow in the dark confetti pieces and the outer layer **104** should be made of the lightest and most delicate material possible (such as tissue paper or a PVC neon glow in the dark film) so that a “flick of the wrist” of the user’s hand may be enough to dislodge such material from the hollow neon glow tube **102**. It is noted that gravity acts on all things equally, which means all things fall at the same rate assuming no forces other than gravity. However, when the “thing” is confetti, and the environment is open-air, lighter confetti floats more, and thus, falls slower than heavier confetti. If the confetti material is too heavy, the confetti **106** will simply plummet to the ground quickly without creating visually striking displays of movement to appeal to an audience. Yet light materials are difficult to project through the air. Thus, for one embodiment, the confetti wrapper used to form a confetti bundle, as described above, should be materially heavier than the individual confetti pieces. For example, a bundle wrapper may be twice the weight of all the individual confetti pieces making up a bundle. Such allows the confetti bundle to be projected further from the launching device **100** before bursting open while still providing for a longer-lasting confetti visual experience.

[0052] The neon glow in the dark launching device **100** of the present invention may also use predetermined colors for the hollow neon glow in the dark tube **102** and the neon glow in the dark confetti **106** filled inside. The color of the hollow neon glow in the dark tube **102** and the neon glow in the dark confetti may be of the same neon glow in the dark color or the color of the hollow neon glow in the dark tube **102**, and the neon glow in the dark confetti **106** may be different. Alternatively, the hollow neon glow in the dark tube **102** may be made with a single predetermined neon glow in the dark color, and the neon glow in the dark confetti **106** filled inside may be made with multiple pre-selected colors. Such pre-selected neon glow in the dark colors are picked according to a specific festivity, with the neon glow in the dark launching device being used exclusively for that celebration. The examples include all black light functions, including dances, bingo parties, nightclubs and bars, and blacklight school parties.

[0053] FIG. 4a illustrates a typical neon glow in the dark confetti bundle used in the present invention, particularly the bundle of individual neon glow in the dark confetti pieces **106**. Such a particular neon glow in the dark confetti bundles are partially wrapped, as depicted in FIG. 4B, covering two opposing bundle faces. It may be preferable to manufacture such a neon glow in the dark confetti bundle as a partially wrapped right-angle rectangle as shown in the FIG. 4 A. Alternatively, the confetti may define a triangle shape (or any suitable shape), and when making it a triangle, it may be partially wrapped when manufacturing.

[0054] FIG. 4b illustrates a transverse view of a neon glow in the dark bundle exhibiting individual layers and the outer layer **104**. The individual neon glow in the dark confetti pieces **106** used in making the neon glow in the dark bundles can either be all of the same neon glow in the dark color or two or more neon glow in the dark colors. By alternating stacks within the bundle or one bundle consisting of an

assortment of multiple neon glow in the dark colors, individual neon glow in the dark confetti pieces **106** may be arranged in recurrent patterns. The bundle of individual glow in the dark confetti pieces **106**, typically used in the neon glow in the dark launching device **100** of the present invention, may contain between 850 to 4,000 rectangular tissue or PVC neon glow in the dark paper cuttings or about thirty-two 10 feet to 12 feet×0.75 inch PVC neon glow in the dark streamers.

[0055] The number of neon glow in the dark confetti pieces **106** may vary according to the length and cross-sectional area of the hollow neon glow in the dark tube **102** used in the construction of the launching device **100**. It may be preferable to manufacture the hollow neon glow in the dark tube **102** and the bundle of individual neon glow in the dark confetti pieces **106** in neon glow in the dark colors, as these colors are bolder and more attention seeking. Unlike other party novelties, the launching neon glow in the dark device **100** of the present invention can be used in a dark space which has neon glow in the dark black light lighting since the neon glow in the dark confetti pieces **106** need the neon glow in the blacklight, so the neon glow in the dark confetti bundles are visible to the audience. As is well known, neon glow in the dark colors will “glow in the dark” under black-lighting.

[0056] The shape of the neon glow in the dark confetti **106** also plays on the role of proper segregation in air and rate of descent and movement through the air. In one embodiment of the present invention, the individual neon glow in the dark confetti pieces **106** are manufactured as rectangular strips. Other shapes that can be employed are diamonds, squares, trapezoids and triangles, and the like. However, narrow trapezoids descend at a faster rate with more vertical movements than the other shapes that show staggered horizontal movements during descent. The narrow or tapering edge of the shape leads the other edge during downward movement accelerating the descent than other shapes. The triangular-shaped neon glow in the dark confetti spiral downward and act as a whirlybird.

[0057] A typical rectangular shape, on the other hand, provides a fluttery movement until landing on the ground. The shape also supports signature staggered “fluttery” movement of the piece **106** when propelled in the air. Such movements provide more appeal to owe created by the launching device **100**. In one embodiment, confetti manufacturing methods known in the art can be used for the launching device **100**, such as die-cutting various shapes as hearts, rose petals, stars, and apple leaves, and so on. Ideally, the hollow tube **102** would be at least two inches in diameter or width to lunch such shapes.

[0058] Further in FIG. **5a-e**, each piece of neon glow in the dark confetti in the bundles may have any suitable shape such as, but not limited to, elongated rectangular shape, as shown in FIGS. **5a-5e**. The particular shape of the pieces of neon glow in the dark confetti **106** may vary from the right-angle rectangle shown in FIG. **5a**. In FIGS. **5b-5e**, each piece may include a neon glow in the dark triangular shape. Each piece may be cut from a lightweight material such as fire-proof, biodegradable tissue paper, flameproof mylar, or flameproof PVC film or the like and may be preferably made out of neon glow in the dark material which glows under black light. Each piece of confetti **106** has a length L and width W, and a longitudinal axis A. The pieces may have a

length of about one-half inches to about seven inches and have a width of about one-fourth inch to about seven-eighths.

[0059] For maximum fluttering effect when falling, it has been discovered that, surprisingly, the Length/width (L/W) ratio should be in the order of 1.75 to 10.0, or 2.5 to 7.0 depending upon the type of falling motion desired as will be more fully described hereinafter. Such four-sided pieces are referred to herein as elongated rectangular 1 inch shapes.

[0060] The shapes illustrated in FIGS. **5a-5d** do not fall to the ground with either a side or end leading in the direction of fall. Instead, such elongated rectangular piece of neon glow in the dark confetti **106**, having L/W ratios in the order of 2.5 to 7.0, fall with their longitudinal axis A substantially parallel to the ground; i.e., substantially horizontally, while each piece rotates about its axis A. Due to the rotating or fluttering action, the pieces fall relatively slowly, and with a horizontal component of movement such that each has a relatively long “hang” time while it flutters to the ground. The term “substantially parallel” means within +/-10 degrees of being parallel.

[0061] FIG. **5e** illustrates a piece of elongated rectangular confetti **106** that has an entirely different falling motion than that of described with respect to FIGS. **5a-5d**. The neon glow in the dark confetti piece **106** may be in the form of an elongated triangle having a length in the order of 3 to 4.5 inches and an L/W ratio in the order of 7 to 10. The L/W ratio may be determined with respect to the wider end. Such configuration forms a relatively longer and relatively narrower truncated triangle than that shown in FIG. **5d**. For example, the width of the end may be in the order of one-sixteenth of an inch to one-fourth of an inch. When such a piece falls through the air, it falls with the narrow end leading in the direction of fall with the piece rotating about axis A which extends vertically instead of horizontally. The width W1 may be narrower than the width W2. Since such a piece falls in the vertical orientation, the ends tend to flutter laterally relative to the mid-portion such that the motion may be that of a corkscrew twirling to the ground.

[0062] In addition to fluttering vertically instead of horizontally, neon glow in the dark confetti pieces **106**, in the shape described with respect to FIG. **5e**, fall faster than those described with respect to FIGS. **5a-5d**. Thus, when both types of elongated tetragonal shapes are released in the air together, there may be the unique visual effect of some pieces fluttering horizontally and falling relatively slowly while others twirl vertically and fall more rapidly through the mass of more slowly falling pieces.

[0063] FIG. **6** illustrates a method of using a neon glow in the dark confetti tube **600** with multiple neon glow in the dark confetti bundles arranged internally. The method includes the positioning of the neon glow in the dark confetti tube at a predetermined angle from a proximal end of the confetti tube **602**. Once the user is holding the neon glow in the dark confetti tube at a particular position, the user starts flicking the confetti tube with a force **604**. The force may be based on the predetermined angle **606**. The user creates an arcuate path for ejecting at least one neon glow in the dark confetti bundle from a distal end of the neon glow in the dark confetti tube into the air.

[0064] While the various embodiments of the present invention have been described above, it should be understood that they have been presented by way of example only and not of limitation. Likewise, the figure may depict an example architectural or other configuration for the inven-

tion, which may be done to aid in understanding the features and functionality that can be included in the invention. The invention may be not restricted to the illustrated example architectures or configurations, but the desired features can be implemented using a variety of alternative architecture and configurations.

[0065] Although the invention may be described above in terms of various exemplary embodiments and implementations, it should be understood that the various features, aspects, and functionality described in one or more of the individual embodiments are not limited in their applicability to the particular embodiment with which they are described, but instead can be applied, alone or in various combinations, to one or more of the other embodiments of the invention, whether or not such embodiments are described and whether or not such features are presented as being a part of a described embodiment. Thus, the breadth and scope of the present invention should not be limited by any of the above-described exemplary embodiments.

[0066] As used herein, the terms “first,” “second,” and “third” may be used interchangeably to distinguish one component from another and are not intended to signify the location or importance of the individual components. The term “axial” refers to a direction parallel to the direction of rotation of an object; the term “radial” refers to a direction extending away from the center of an object or normal to the “axial” direction, and the term “circumferential” refers to a direction extending around the circumference or perimeter of an object.

[0067] As used in the claims, the definite article “said” identifies required elements that define the scope of embodiments of the claimed invention, whereas the definite article “the” merely identifies environmental elements that provide context for embodiments of the claimed invention that are not intended to be a limitation of any claim.

[0068] In this document, unless otherwise stated, the phrase “at least one of A, B, and C” or “one of A, B, and C” means there is at least one of A, or at least one of B, or at least one of C or any combination thereof. Such does not mean one of A, and one of B, and one of C.

[0069] The presence of broadening words and phrases such as “one or more,” “at least,” “but not limited to” or other like phrases in some instances shall not be read to mean that the narrower case may be intended or required in instances where such broadening phrases may be absent.

1. A handheld confetti launching system defining a glow in the dark quality, said confetti launching system comprising:

an at least partially hollow tube defining an elongated body having an outer surface, an inner surface, a first end and an opposing second end with a central axis running along the center of the elongated body, wherein at least a portion of the outer surface of the elongated body defines a glow in the dark quality;

at least one confetti bundle comprising a plurality of confetti pieces wherein said confetti bundle is positioned within said hollow tube along the central axis, and wherein at least a majority of said plurality of confetti pieces define a glow in the dark quality and wherein at least one of the first end or the second end is configured for being held in a user's hand;

wherein said at least one confetti bundle is suitably sized so that said at least one confetti bundle is ejected out of

the second end of the elongated body by a force created by rotating the second end about the first end; and wherein said at least one confetti bundle is configured to burst open a predefined burst distance from said second end once ejected out of the second end.

2. The confetti launching system of claim **1**, wherein the length of the said elongated body is between about 6 inches and about 18 inches inclusive and said predefined burst distance is at least 10 feet.

3. The confetti launching system as in claim **2**, wherein the length of said at least one confetti bundle is between about 3 inches to 17 inches long.

4. The confetti launching system of claim **1**, wherein the length of said elongated body is between about 6 inches and about 3 feet.

5. The confetti launching system of claim **1**, wherein said hollow tube defines the general shape of a dancer's cane or a magician's wand.

6. The confetti launching system of claim **1**, wherein said glow in the dark quality is a fluorescent paint that glows in the presence of a blacklight.

7. The confetti launching system of claim **1**, wherein at least one of said plurality of confetti pieces define one of a rectangular shape, heart, rose petal, star, or apple leaves.

8. The confetti launching system of claim **7**, wherein said at least one of said plurality of confetti pieces define a rectangular shape defining a width to length ratio of about 1.75 to 10.0.

9. The confetti launching system of claim **1**, wherein said hollow tube is about 18 inches long and wherein said at least one of said plurality of confetti pieces define a PVC streamer made from a PVC film that is between about 10 feet 12 feet long by about three-fourths of an inch wide.

10. The confetti launching system of claim **1**, wherein at least one of said plurality of confetti pieces define a multi-colored piece that is configured to glow in the dark in the presence of a dark light.

11. The confetti launching system of claim **1**, wherein at least one of said at least one confetti bundle comprises a confetti wrapper that at least partially wraps around said plurality of confetti pieces wherein said confetti wrapper is configured to prevent said plurality of confetti pieces from bursting open for a predefined distance from said second end after being ejected out of said second end.

12. The confetti launching system as in claim **11**, wherein the weight of said wrapper is about 1.25 times the weight of said plurality of confetti pieces.

13. The confetti launching system as in claim **1**, wherein said plurality of confetti bundles are stacked adjacent to each other along the central axis of the elongated body.

14. The confetti launching system as in claim **13**, wherein the stacked confetti bundles comprise layers of elongated rectangular confetti, and wherein the layers of elongated rectangular confetti of adjacent bundles are oriented at an angle with respect to each other.

15. The confetti launching system as in claim **1**, wherein each of said plurality of confetti bundles define a frictional association with at least part of the inner surface of the elongated body.

16. The confetti launching system as in claim **1**, wherein the internal diameter of said hollow tube is between about seven-eighths of an inch to about two inches.

17. The confetti launching system as in claim **16**, wherein at least one of said plurality of confetti pieces defines a

rectangular shape having a width of about one-half inch to about three-fourths of an inch.

18. A method of launching confetti bundles of flow in the dark confetti upwardly into the air to form an aerial display comprising:

- (i) positioning the Neon Glow In The Dark confetti tube a predetermined angle from a proximal end of the Neon Glow In The Dark confetti tube;
- (ii) flicking the Neon Glow In The Dark confetti tube with a force, wherein the force may be based on the predetermined angle;
- (iii) ejecting at least one Neon Glow In The Dark confetti bundle from a distal end of the Neon Glow In The Dark confetti tube, wherein the Neon Glow In The Dark confetti bundle may be ejected along an arcuate path into air.

19. The method of claim **15** wherein the number of pieces of the Neon Glow In The Dark confetti comprising said at least one bundle may be sufficient to cause said at least one bundle to extend across the interior diameter of said hollow Neon Glow In The Dark tube and frictionally engage the interior walls of said tube with a predetermined amount of friction sufficient to prevent said at least one bundle from falling out of the tube under the force of gravity when said open tube end may be pointed downwardly.

20. An aerial display Neon Glow In The Dark confetti device comprising:

- (a) an elongated hollow Neon Glow In The Dark tube having a first and a second open ends, wherein the length of the hollow Neon Glow In The Dark tube may be in the order of 6" to 3 feet;
- (b) a plurality of Neon Glow In The Dark confetti, wherein each of the plurality of the Neon Glow In The Dark confetti are rectangular in shape, further wherein, pieces of the plurality of Neon Glow In The Dark confetti holds the ability to glow in dark under black light;
- (c) the plurality of the Neon Glow In The Dark confetti are stacked to form one or more bundles with an outer layer

partially enclosing the plurality of the Neon Glow In The Dark confetti which may be stacked, wherein the outer layer may be a piece of the Neon Glow In The Dark confetti which may be of the greater length of that of the plurality of the Neon Glow In The Dark partially wrapped confetti.

21. A new use for an elongated hollow Neon Glow In The Dark tube comprising the steps of:

- (a) cutting a large plurality of pieces of confetti from lightweight material, said pieces of confetti having elongated, rectangular or triangular shapes and are Neon Glow In The Dark confetti under black light.
- (b) inserting a large plurality of said elongated, rectangular or triangular shaped pieces of Neon Glow In The Dark confetti into said elongated hollow Neon Glow In The Dark tube with the elongated length of said pieces aligned parallel to each other and to the elongated length of said Neon Glow In The Dark tube to form an aligned stack of Neon Glow In The Dark confetti extending across the diameter of said Neon Glow In The Dark tube as an intact bundle,
- (c) holding said elongated Neon Glow In The Dark tube adjacent one end and moving said Neon Glow In The Dark tube rapidly in an arcuate path with the forearm and wrist with sufficient speed to eject said bundle of pieces of rectangular-shaped Neon Glow In The Dark confetti from said Neon Glow In The Dark tube and into the air.

22. A large plurality of identical pieces of the Neon Glow In The Dark confetti, the plurality of pieces being stacked in the bundle, and the bundle being disposed within the hollow Neon Glow In The Dark tube, the plurality of pieces of Neon Glow In The Dark confetti being sufficient for the bundle to extend across the diameter of the hollow Neon Glow In The Dark tube in frictional contact with the hollow Neon Glow In The Dark tube, and the lengths of the pieces being parallel to each other and to the elongated length of the hollow Neon Glow In The Dark tube.

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