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(54) **INTERACTIVE AIR CANNON SYSTEM**

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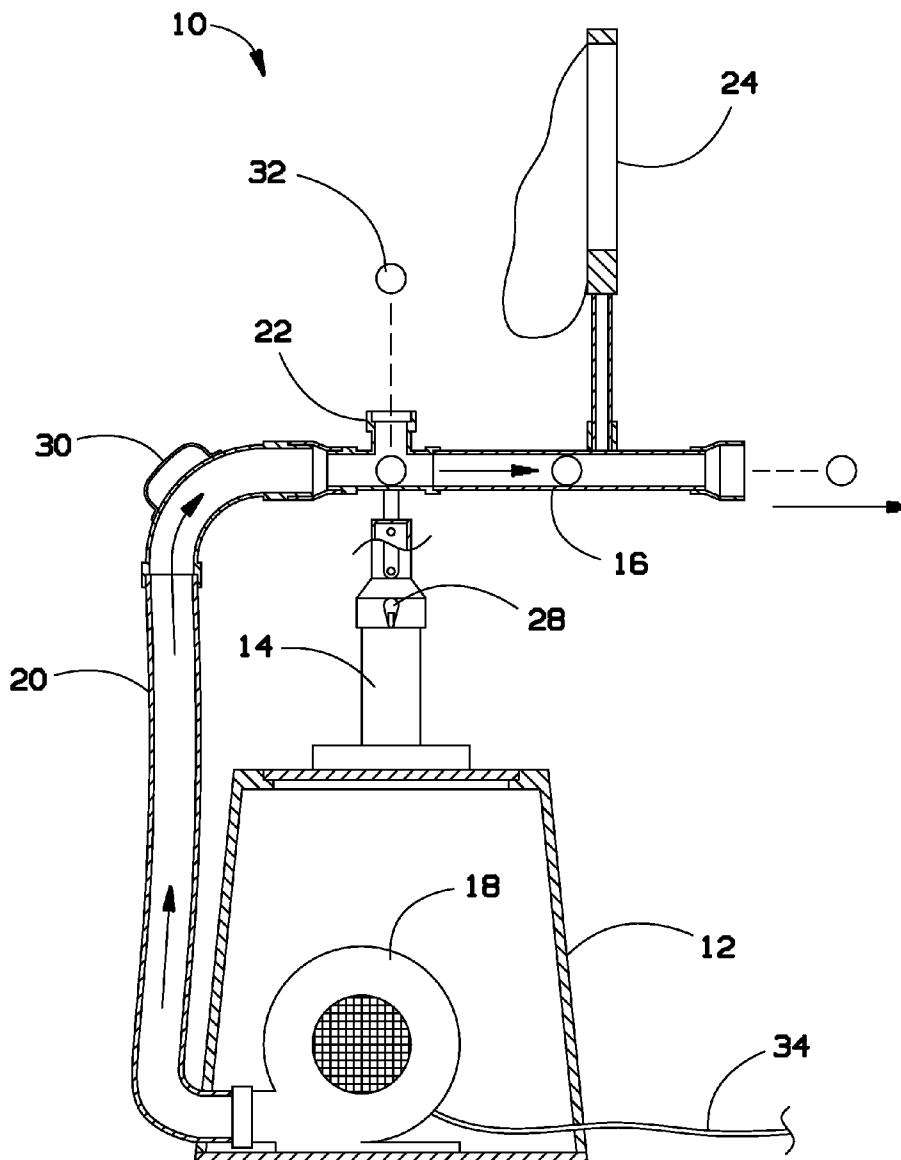
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(57) **ABSTRACT**

Related U.S. Application Data

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An air cannon system may include a cannon barrel and a blower that creates forced air flow through the cannon barrel for propelling projectiles out of the cannon barrel.



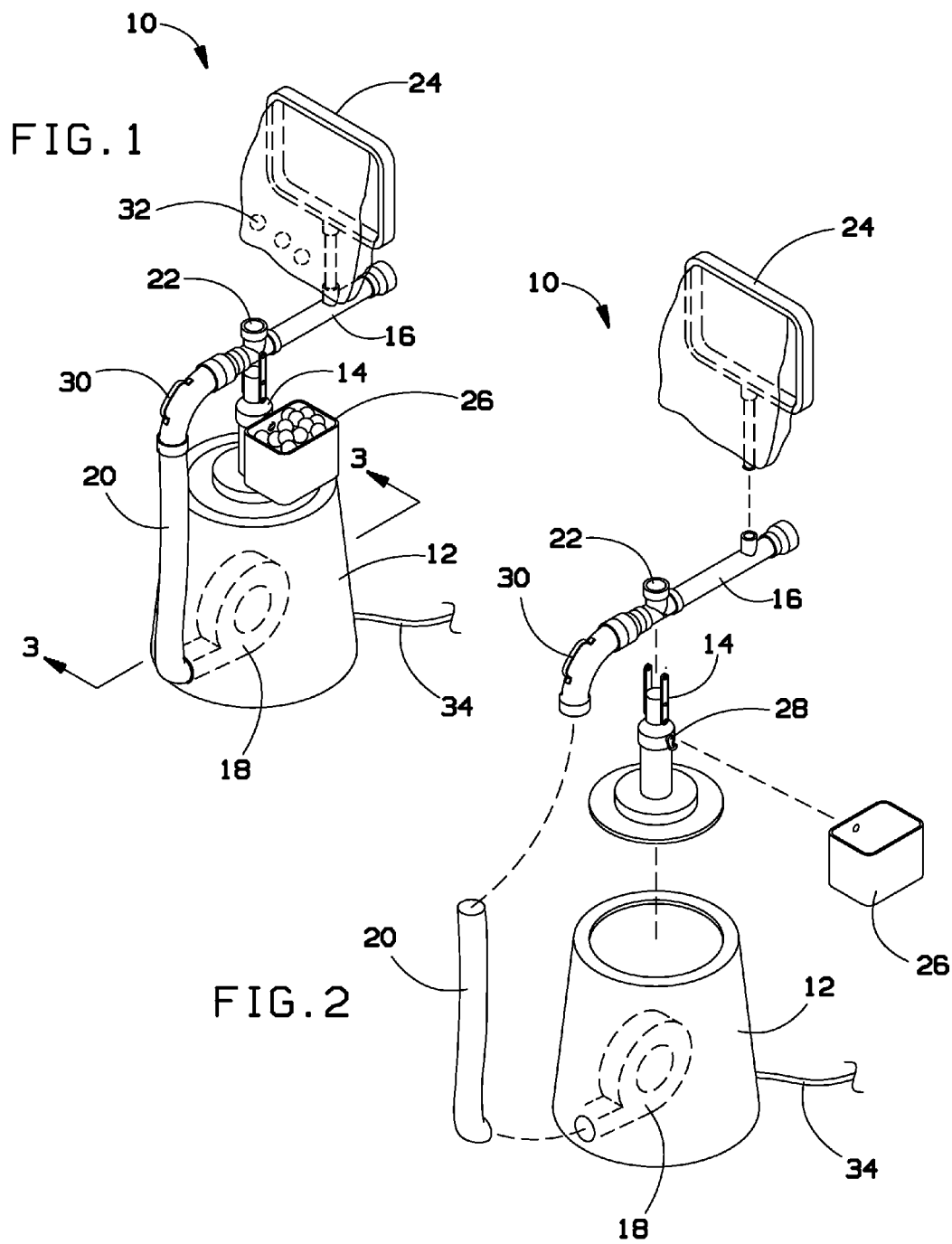
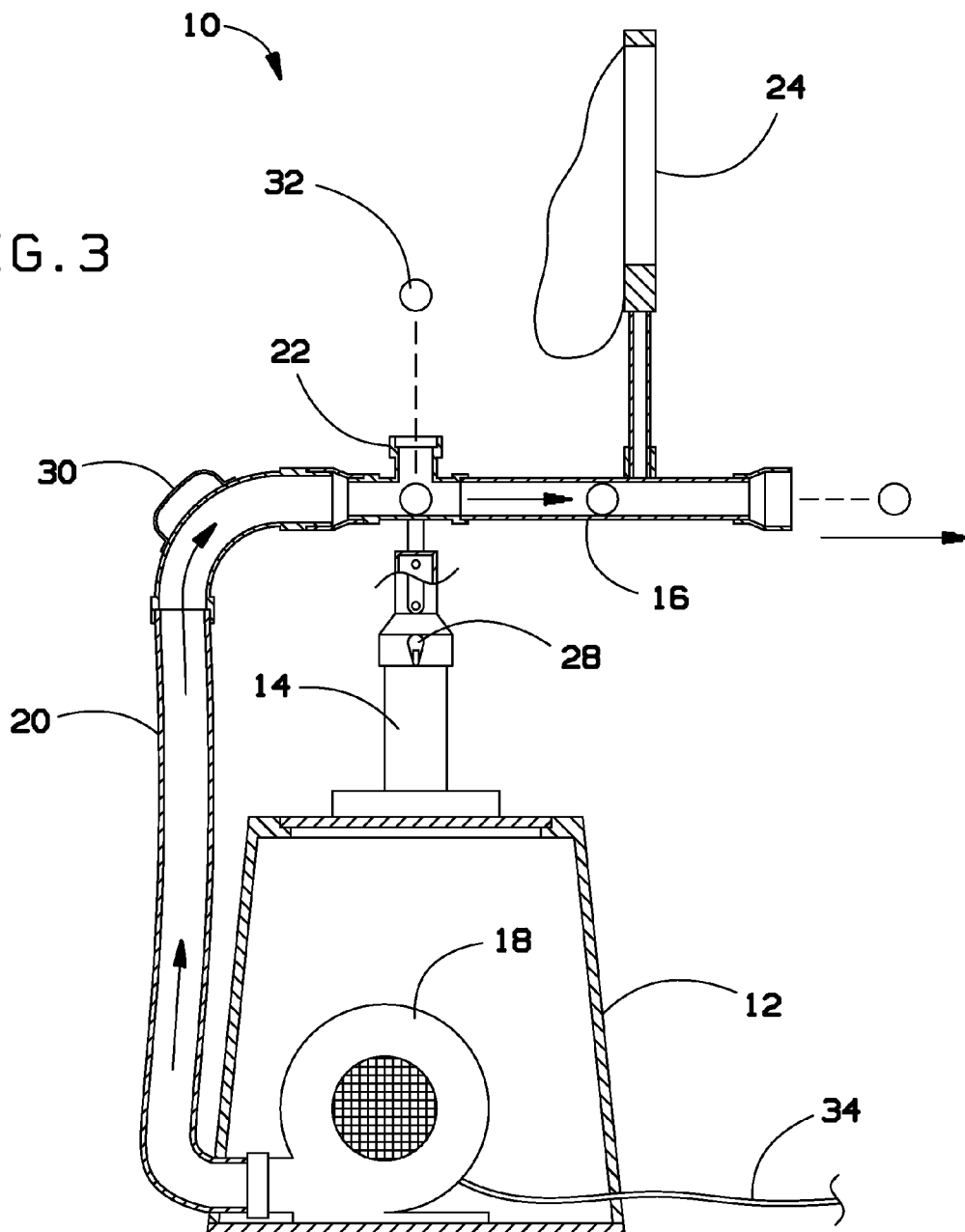
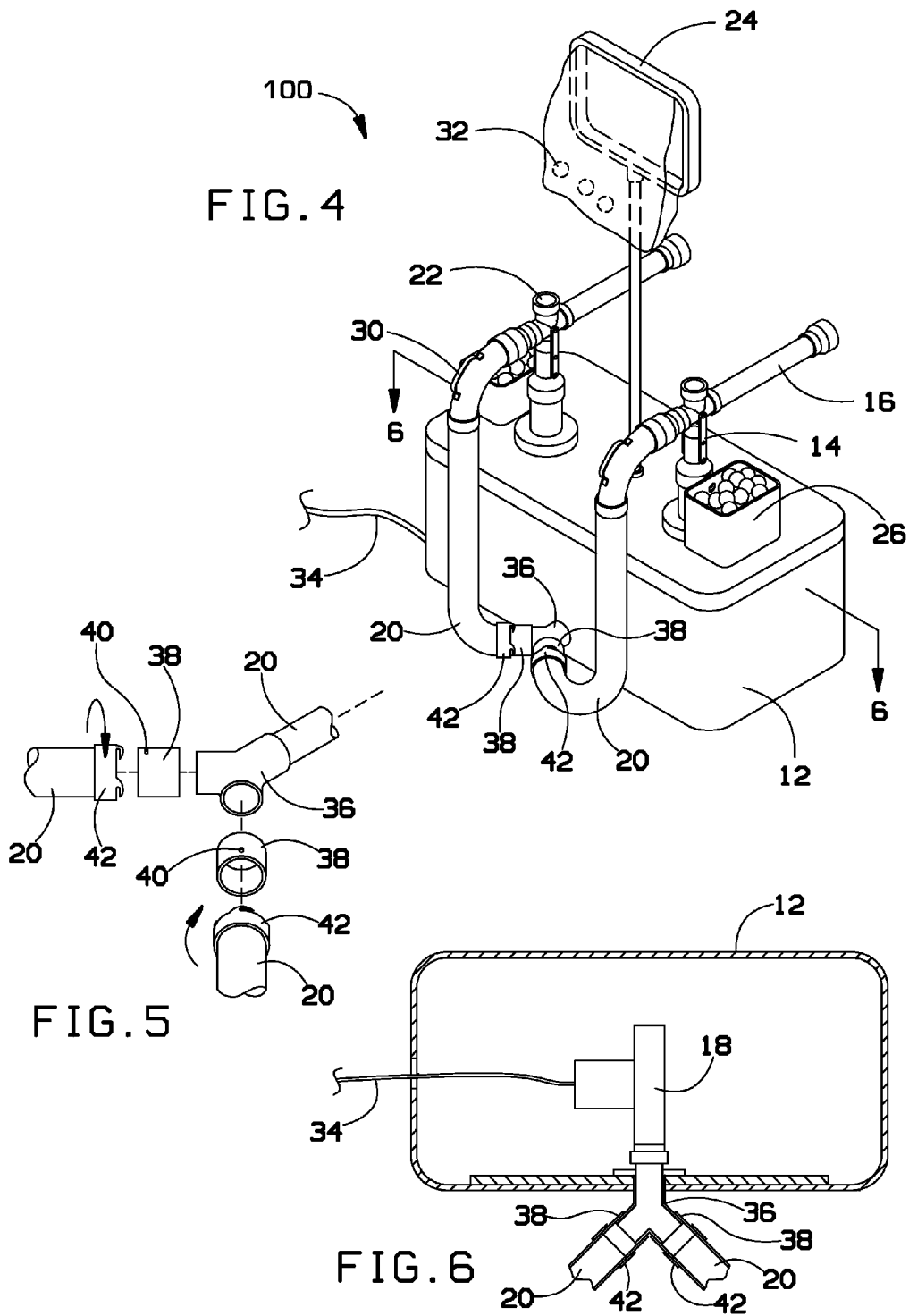


FIG. 3





INTERACTIVE AIR CANNON SYSTEM

RELATED APPLICATIONS

[0001] This application claims the benefit of priority to U.S. provisional patent application No. 61/255,628 filed Oct. 29, 2009, and incorporated herein by reference.

BACKGROUND OF THE INVENTION

[0002] The present invention generally relates to an amusement device, and more particularly relates to an air cannon device for launching projectiles.

SUMMARY OF THE INVENTION

[0003] In one aspect of the present invention, an air cannon system may comprise a cannon barrel; and a blower that creates forced air flow through the cannon barrel for propelling projectiles out of the cannon barrel.

[0004] In another aspect of the present invention, a method for propelling a projectile from an air cannon system may comprise accepting the projectile into a cannon barrel; creating forced air flow from a blower; feeding the forced air flow from the blower to a cannon barrel; and propelling the projectile out of the cannon barrel using the forced air flow.

[0005] These and other features, aspects and advantages of the present invention will become better understood with reference to the following drawings, description and claims.

BRIEF DESCRIPTION OF THE DRAWINGS

[0006] FIG. 1 shows a perspective view of an air cannon system in accordance with an embodiment of the present invention;

[0007] FIG. 2 shows an exploded perspective view of the air cannon system of FIG. 1;

[0008] FIG. 3 shows a section view of the air cannon system of FIG. 1 taken along line 3-3 in FIG. 1;

[0009] FIG. 4 shows a perspective view of an air cannon system in accordance with an alternate embodiment of the present invention;

[0010] FIG. 5 shows an exploded perspective view of the air cannon system of FIG. 4; and

[0011] FIG. 6 shows a section view of the air cannon system of FIG. 4 taken along line 6-6 in FIG. 4.

DETAILED DESCRIPTION OF THE INVENTION

[0012] The following detailed description is of the best currently contemplated modes of carrying out exemplary embodiments of the invention. The description is not to be taken in a limiting sense, but is made merely for the purpose of illustrating the general principles of the invention, since the scope of the invention is best defined by the appended claims.

[0013] Various inventive features are described below that can each be used independently of one another or in combination with other features.

[0014] Broadly, embodiments of the present invention generally provide an interactive air cannon system that may be used for family entertainment. The cannon system may have an inner blower that creates a continuous high volume air flow through a barrel that allows the cannon system to fire and launch a soft foam NERF™-like ball in the air up to 30 feet across a room. Multiple players and entire families may each use the cannon system to fire foam balls across each other into targets to score points for hitting certain targets.

[0015] The air cannon system may use a high volume continuous air flow blower that does not substantially compress air to create air flow instead of using a compressor, thereby creating a less expensive and lighter weight system. Further, the air cannon system may include a feeding mechanism that allows balls to be fed rapidly into the system and fired rapidly out of the system without the need for electronic triggers.

[0016] Referring now to FIG. 1-3, an interactive air cannon system 10 may use a blower 18, such as a high volume continuous air flow blower, to create continuous high volume airflow to launch balls 32 or any other suitable projectile from a cannon barrel 16.

[0017] The cannon barrel 16 may be supported by a vertical stand 14 on top of a base 12 so that the cannon barrel 16 is extended above the base 12. The base 12 may be a wide, self-supporting platform that allows the cannon system 10 to be well balanced. The base 12 may enclose the blower 18 within its body, and the blower 18 may be connected to the cannon barrel 16 via an air hose 20. The air hose 20 may extend out from the base 12 and connects to the cannon barrel 16 via a cannon barrel handle 30. The blower 18 may be powered by 110-Volt electricity via an AC power cord 34 to blow air through the air hose 20 and to the cannon barrel 16.

[0018] The cannon barrel 16 may also have a feed tube 22 attached to it which may have an opening for dropping the balls 32 into the cannon barrel 16, so that the balls 32 may be propelled by blown air from the blower 18 out of the cannon barrel 16. Extra balls 32 may be stored in ball basket 26 that is attached to the cannon system via ball basket hanger 28.

[0019] In use, a user may drop a ball 32, which may be foam balls about 1.5-inches in diameter, through the feed tube 22. The feed tube 22 may have a rapid loading capability that allows a user to rapidly fire multiple balls 32. Blown air from the blower 18 may be fed through air hose 20 to the cannon barrel 16, and that blown air may propel the ball 32 through the cannon barrel 16 and launch the ball 32 out of the cannon barrel 16 up to a distance of about 30 feet. The blower 18 may create continuous high volume airflow through the air hose 20 and cannon barrel 16. The ball 32 may be aimed at a target 24 of a second cannon system 10, or any other targets and/or objects, and points values may be awarded with a successful hit of a specified target and/or object. The cannon system 10 may further allow the balls 32 to be rapid fired in quick succession without the need to press any electrical triggers.

[0020] In one embodiment, the cannon system 10 may be constructed from 2" or 3" polyvinyl chloride (PVC) pipes, metal hinges, 3" flex hose, nuts and bolts, an aluminum handle, a plastic container as a ball swivel PVC base, an 18-gallon tote container, and ½" medium-density fiberboard (MDF) boards. The components of the cannon system 10 may be constructed out of lightweight plastic that decreases manufacturing and shipping costs, and increases durability of the cannon system 10.

[0021] Because the cannon system 10 may be constructed out of lightweight materials, there may be no need to bolt the cannon system 10 to a floor. Further, because the cannon system 10 may include blower 18, the cannon system 10 may not require a high-powered compressor or electric triggers for launching balls 32, thus enabling the cannon system 10 to allow the rapid firing of balls 32 as well as enabling the cannon system 10 to be powered by 110V electricity instead of 480V 3-phase electricity.

[0022] With reference to FIGS. 4-6, in an alternate embodiment of the present invention, the cannon system 100 may

provide a pair of cannon barrels **16** that may be powered by a blower **18**. The blower **18** may power the pair of cannon barrels **16** via an Y adapter **36** that may connect to a pair of air hoses **20** via a pair of couplers **38**, so that each air hose **20** may connect and feed air from the blower **18** to one of the pair of cannon barrels **16**, thereby directing air from the blower **18** to both cannon barrels **16**. Each of the air hoses **20** may have a coupling lock that may allow the air hose **20** to twist onto the coupler **38** and lock onto a coupler lock button **40** on the coupler **38**.

[0023] It should be understood, of course, that the foregoing relates to exemplary embodiments of the invention and that modifications may be made without departing from the spirit and scope of the invention as set forth in the following claims.

We claim:

1. An air cannon system comprising:
a cannon barrel; and
a blower that creates forced air flow through the cannon barrel for propelling projectiles out of the cannon barrel.
2. The air cannon system of claim 1, further comprising:
a feed tube connected to the cannon barrel for feeding projectiles into the cannon barrel.
3. The air cannon system of claim 1, further comprising:
a support base;
wherein the cannon barrel is situated on top of the support base; and
wherein the blower is situated within the support base.
4. The air cannon system of claim 1, wherein the blower is a high volume continuous air flow blower.

5. The air cannon system of claim 1, further comprising:
a second cannon barrel;
wherein the blower creates forced air through the second cannon barrel for propelling projectiles out of the second cannon barrel.
6. The air cannon system of claim 5, further comprising:
an Y adapter that directs air created by the blower to the cannon barrel and the second cannon barrel.
7. A method for propelling a projectile from an air cannon system, the method comprising:
accepting the projectile into a cannon barrel;
creating forced air flow from a blower;
feeding the forced air flow from the blower to a cannon barrel; and
propelling the projectile out of the cannon barrel using the forced air flow.
8. The method of claim 7, wherein the accepting further comprises:
accepting the projectile into a feed tube attached to the cannon barrel.
9. The method of claim 7, wherein the propelling further comprises:
launching the projectile up to about 30 feet out of the cannon barrel.
10. The method of claim 8, further comprising:
rapidly accepting multiple projectiles into the feed tube;
and
rapidly firing the multiple projectiles out of the cannon barrel.

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