A recreational toy launching assembly and method for launching a toy are provided. The launching assembly includes a wing member slidably disposed along a structure which is employed for launching a toy. The wing member is coupled to an elastic member that is engaged to the structure. The method for launching a toy includes sliding a wing member in an initial direction along a structural portion of a launching assembly which is coupled to a toy; and releasing the wing member, causing the wing member to travel in a direction opposed to or opposite the initial direction and the toy to launch in the initial direction.
TOY LAUNCHER AND METHOD

RELATED PATENT APPLICATIONS

FIELD OF THE INVENTION
[0002] Embodiments of the present invention are related to an assembly for launching a toy. More specifically, embodiments of the present invention provide an assembly and method for launching or propelling a toy in a desired direction.

[0003] BACKGROUND OF THE INVENTION
[0004] There are a number of toy launchers available for recreational purposes, such as the following by way of example only: (a) the toys sold under the trade mark Sky Blaster sold by Office Playground Inc.; (b) the toy launchers sold by Mattel, Inc; and (c) the rocket launchers sold by Toystore Inc. However, none combine the features of: a wing member protruding from slots along the outer side of a tubular launcher and coupled to an elastic member.

SUMMARY OF EMBODIMENTS OF THE INVENTION
[0005] Embodiments of the present invention provide a method for launching a recreational toy. The method comprises sliding a wing member in an initial direction along a structural portion of a launching assembly which is coupled to a toy; and releasing the wing member, causing the wing member to travel in a direction opposite to or opposite the initial direction and the toy to launch in the initial direction.

[0006] Embodiments of the present invention also provide a recreational toy comprising, a toy assembly having a launching assembly including a wing member slidably disposed along a structural portion of the toy assembly.

[0007] Embodiments of the present invention further provide a toy launching assembly comprising a wing member slidably disposed along a structure and coupled to an elastic member which is engaged to the structure.

[0008] These provisions, together with the various ancillary provisions and features which will become apparent to those skilled in the art as the following description proceeds, are attained by the methods and assemblies of the present invention.

BRIEF DESCRIPTION OF THE DRAWINGS
[0009] FIG. 1 is a side elevational view of an embodiment of the invention wherein the launching assembly is in a non-loaded or non-cocked position.
[0010] FIG. 2 is a partial side elevational view of an embodiment of the invention wherein the launching assembly is in a loaded or cocked position for launching a toy.
[0011] FIG. 3 is a rear elevational view of the embodiment of the tubular launcher illustrated in FIG. 5.
[0012] FIG. 4 is a partial side elevational view of an embodiment of the wing member protruding from slots along the outer side of a tubular launcher and coupled to a rubber or elastic member.
[0013] FIG. 5 is a partial side elevational view of an embodiment of the tubular launcher having an end of the rubber or elastic member coupled to the back of the tubular launcher.
[0014] FIG. 6 is a front elevational view of the embodiment of the tubular launcher illustrated in FIG. 5.
[0015] FIG. 7 is a partial side elevation view of a vehicle having a slot where through the wing member of the launching assembly protrudes for being engaged by a hand of a user.
[0016] FIG. 8 is a partial horizontal view of the vehicle in FIG. 7 taken in direction of the arrows and along the plane of line 8-8.
[0017] FIG. 9 is a side elevation view of a fish having a slot where through the wing member of the launching assembly protrudes for being engaged by a hand of a user and for propelling the fish under water.
[0018] FIG. 10 is a partial horizontal view of the fish in FIG. 9 taken in direction of the arrows and along the plane of line 10-10.
[0019] FIG. 11 is a side elevation view of an embodiment of the launching assembly secured to an end of a football which is to be propelled.
[0020] FIG. 12 is the view of FIG. 11 having a hand engaged to the wing member.
[0021] FIG. 13 is the view of FIG. 12 after the wing member has been pushed to bend around the generally conical outside surface of an end of the football.
[0022] FIG. 14 is the view of FIG. 13 after the hand has been engaged to the football and the bent wing member.

DETAILED DESCRIPTION OF THE EMBODIMENTS OF THE INVENTION
[0023] In the description herein, numerous specific details are provided, such as examples of components and/or methods, to provide a thorough understanding of the embodiments of the present invention. One skilled in the relevant art will recognize, however, that an embodiment of the invention may be practiced without one or more of the specific details, or with other apparatus, systems, assemblies, methods, components, materials, parts, and/or like. In other instances, well-known structures, materials, or operations are not specifically shown or described in detail to avoid obscuring aspects of the embodiments of the present invention.

[0024] Referring in detail now to the drawings, wherein similar parts of the invention are identified by like reference numerals, there is seen a launching assembly 8 including a tubular member 10 having a pair of opposed slots 14 and 18 and ends 16 and 20. Slidably disposed in the opposed slots 14 and 18 is a wing member 22. The wing member 22 is coupled to an elastic member 26 (e.g. a rubber member, a spring member, etc), as best shown in FIG. 4, and has a pair of opposed wing sections 22a and 22b which protrude away from the pair of slots 18 and 14, respectively. The elastic member 26 may be coupled to the wing member 22 in any suitable manner, such as by way of example only and as best shown in FIGS. 4 and 6, an end of the elastic member coupled to a wall member 54 that is secured to the structure of the wing member 22 and/or clamps 40, 42 and 44 engaging the elastic member 26 and holding the elastic member 26 steadfastly against a planar surface of the wing member 22. The wing member 22 (and its associated wing sections 22a and 22b) is capable of sliding, or being slid, along and within the slots 14 and 18. The elastic member 26 is coupled to end 20 of the tubular member 10, as best shown in FIGS. 1, 2 and 5.
In an embodiment of the invention, any suitable object may be coupled to end 16. In FIGS. 1 and 2 there is seen a ball member 30 secured to the end 16. Thus, the tubular member 10 is merely representative of any suitable toy (or any other object), such as a car 70 (see FIGS. 7-8), a fish 60 (see FIGS. 9-10), or a football 66 (see FIGS. 11-14). Obviously, the car 70 would be propelled on a surface, the fish 60 underwater, and the football 66 through the air. The propelling of the football 66 may be accompanied by the football 66 being thrown.

In another embodiment of the invention, the tube 10 may be disposed inside the toy, such as illustrated in FIGS. 8 and 10. In this embodiment of the invention, the wing member 22 (i.e., wings sections 22a and 22b) passes through opposed slots in the toy (e.g., in the fish 60 or in the car 70) and through opposed slots 14 and 18 in the tube 10 wherein the elastic member 26 is disposed, as illustrated in FIGS. 1-6. Thus, there are at least two embodiments which employ the principles of the present invention, one with the toy functioning as the tube (i.e., tubular member 10), i.e., the elastic member 26 is disposed inside the toy with the wing member 22 coupled to the elastic member and extending out opposed slots in the toy; and the other with the tubular member 10 disposed inside the toy, as illustrated in FIGS. 8 and 10. In the latter embodiment and as indicated, the wing sections 22a and 22b not only extend through the opposed slots 14 and 18, but also through opposed respective slots in the toy such as to be exposed on the outside of the toy. It is to be understood that the spirit and scope of embodiments of the present invention includes the use of only one wing section, as opposed to two wing sections 22a and 22b, to produce the propelling force for launching the toy. If only one wing section is employed, then only one slot in the tubular member 10 and/or in the toy would be needed.

The launching assembly 8 basically comprises two positions, a non-cocked or unloaded position, as illustrated in FIG. 1, and a cocked or loaded position, as illustrated in FIG. 2. In the non-cocked or unloaded position the elastic member 26 is in a relaxed, non-taut state and the wing member 22 is positioned in proximity to end 20 as best shown in FIG. 1. To cock or load the launching assembly 8 for launching or propelling the tubular member 10 in direction of arrow A, the wing member 22 is initially moved in direction of arrow A (see FIG. 2) and towards end 16. The wing member 22 may be moved along slots 14 and 18 in direction of arrow A and toward end 16 by any suitable means, such as any part of a hand (e.g. hand 80 in FIGS. 12-14) of the user.

In the cocked or loaded position illustrated in FIG. 2, a hand of the user grasps or engages the tubular member 10 such as to generally be disposed around the cylindrical outside surface of the tubular member 10. Generally simultaneously with the outside surface of the tubular member 10 being grasped or engaged by the hand of the user, the forepart of the hand is in contact with, or is engaged to, the wing member 22 (i.e., the opposed wing sections 22a and 22b). In this position as illustrated in FIG. 2, the wing member 22 is biased or forced against the forepart of the hand with a force that is dictated or produced by the tautness, elasticity, or pull force of the elastic member 26.

When the hand quickly releases its grasped position or disengages from around the outside surface of the tubular member 10, the wing member 22 starts traveling in direction of arrow B. The force or speed that the wing member 22 travels away from end 16 and towards end 20 depends on the elasticity (ability or speed to return to an original position). When and as wing member 22 starts traveling (and sliding along opposed slots 14 and 18) in direction of arrow B and towards end 20, the tubular member 10 moves in the opposite direction, in direction of arrow A. The preceding described procedure is the basic principle for launching the tubular member 10 and/or the toy (i.e., a toy coupled to or supporting the tubular member 10).

In another embodiment of the invention, after the hand releases its grasped position on the tubular member 10 and/or the toy, a portion of the hand (e.g., the fingers) contacts part of the wing member 22 (e.g., the edge part of wing sections 22a and 22b) to cause the wing member 22 to remain momentarily fixed or stationary; thus, the wing member is prevented from immediately sliding along opposed slots 14 and 18 of the tubular member 10. When the wing member 22 is momentarily prevented from sliding (i.e., toward end 20), the elastic member 26 commences to collapse and pull the end 20 of the tubular member 10 toward the momentarily stationed wing member 22. For this embodiment of the invention, end 20 begins to travel in direction of arrow A towards the stationary wing member 22 at a higher speed and more forcefully than when the elastic member 26 commences to collapsed generally simultaneously with the releasing of the wing member 22 for sliding along opposed slots 14 and 18 in the tubular member 10. The movement of end 20 toward the momentarily stationary wing member 20 at a higher speed (or more forcefully) enables the toy to be launched or propelled in direction of arrow A at a distance farther than when the elastic member 26 commences to collapse simultaneously when the wing member 22 begins its movement toward end 20. Thus, end 20, which is coupled to an end of the elastic member 26, will travel faster towards the momentarily stationary wing member 22 than when the wing member 22 does remain stationary momentarily; i.e., if the wing member 22 and the end 20 started sliding toward each other generally at the same time. If the elastic member 26 starts collapsing simultaneously with the wing member 22 being released from engagement with a part of the hand, the toy would not be launched as far as when the wing member 22 remained stationary for a fixed period of time, which could be from 0.05 to 2 seconds depending on the length of the tubular member 10, as well as the length of the elastic member 26 and slots 14 and 18.

Referring now to FIGS. 11-14, there is seen an embodiment of the invention for launching the football 66. A football assembly is shown in FIG. 11 as having the tubular member 10 coupled to an end of the football 66. The holding hand 80 is the trigger for releasing and propelling the football 66. In an embodiment of the invention, the procedure for launching the football 66 comprises: (a) initially holding the football assembly in both hands as illustrated in FIG. 12; (b) subsequently as shown in FIG. 13, the wing member 22 is pushed or slid by hand 80 towards the associated end of the football 66 until, or such that, hand 80 bends the wing member 22 around the end of the football 66 while the other hand is engaged to the football 66 (see FIG. 13); (c) grasping the football 66 with hand 80 such that the football 66 is in a football-throwing posture while hand 80 maintains the wing member 22 in a bent position around the end of the football 66 (see FIG. 14), and (d) launching the football 66.

Launching of the football 66 may include hand 80 releasing its grasped of the football 66, causing the wing member 22 to initially start becoming bent by structurally
proceed into the configuration shown in FIGS. 11 and 12. The wing member 22 begins to travel towards the opposed end of the tubular member 10, causing the football 66 to be launched in accordance with the principles previously described. Launching of the football 66 may also include the embodiment of the invention where a portion of the hand 80 momentarily remains in contact with the wing member 22, such that as the wing member 22 is in the process of becoming unbent and/or after the wing member 22 has the structurally configuration in represented in FIGS. 11 and 12. Launching of the football 66 preferably further comprises throwing the football 66 (i.e., the football assembly illustrated in FIG. 14) simultaneously with performing or conducting one or more of the foregoing procedures.

[0033] Practices of embodiments of the present invention provide a built-in toy launching system, which works as one unit. The holding hand becomes the trigger during releasing of the toy. The toy launcher for embodiments of the present invention may be used for and/or in combination with any suitable toy, such as by way of example only: airplanes, cars, arrows, fish, submarine, boats, jet-skis, rockets, torpedoes, birds. The toy launcher may also be used for and/or in combination with any suitable device or assembly related to a sport activity, such as javelins, pole sprints, and arch arrows. In an embodiment of the present invention, the propelling or launching assembly may employ any suitable propelling or launching force, such as, by way of example only, a rubber or elastic member, or a spring member.

[0034] The rubber or elastic member includes a sliding wing member attached thereto. The wing member may have various shapes, such as oval, circular, rectangular, or square. The rubber or elastic member is disposed within a launcher (e.g., a tubular launcher) which may possess various shapes in vertical cross section, such as oval, circular, rectangular, or square. The launcher may have one or more (e.g., four) slots or openings through which the wing member may protrude.

[0035] The spirit and scope of embodiments of the present invention is not to be limited to any specific toy or to any sport related activity. When ever “toy” is stated herein or in the claims, it is to comprise, by way of example only, a conventional toy, a device or assembly used in a sport, or any other suitable object or device employed for any suitable purpose.

[0036] Reference throughout this specification to “one embodiment”, “an embodiment”, or “a specific embodiment” means that a particular feature, structure, or characteristic described in connection with the embodiment is included in at least one embodiment of the present invention and not necessarily in all its embodiments. Therefore, the respective appearances of the phrases “in one embodiment”, “in an embodiment”, or “in a specific embodiment” in various places throughout this specification are not necessarily referring to the same embodiment. Furthermore, the particular features, structures, or characteristics of any specific embodiment of the present invention may be combined in any suitable manner with one or more other embodiments. It is to be understood that other variations and modifications of the embodiments of the present invention described and illustrated herein are possible in light of the teachings herein and are to be considered as part of the spirit and scope of the present invention.

[0037] Additionally, any arrows in the drawings/figures should be considered only as exemplary, and not limiting, unless otherwise specifically noted. Furthermore, the term “or” as used herein is generally intended to mean “and/or” unless otherwise indicated. Combinations of components or steps will also be considered as being noted, where terminology is foreseen as rendering the ability to separate or combine is unclear.

[0038] As used in the description herein and throughout the claims that follow, “a”, “an”, and “the” includes plural references unless the context clearly dictates otherwise. Also, as used in the description herein and throughout the claims that follow, the meaning of “in” includes “in” and “on” unless the context clearly dictates otherwise.

[0039] The foregoing description of illustrated embodiments of the present invention, including what is described in the Abstract, is not intended to be exhaustive or to limit the invention to the precise forms disclosed herein. While specific embodiments of, and examples for, the invention are described herein for illustrative purposes only, various equivalent modifications are possible within the spirit and scope of the present invention, as those skilled in the relevant art will recognize and appreciate. As indicated, these modifications may be made to the present invention in light of the foregoing description of the illustrated embodiments of the present invention and are to be included within the spirit and scope of the present invention.

[0040] Therefore, while the present invention has been described herein with reference to the particular embodiments thereof, a latitude of modification, various changes and substitutions are intended in the foregoing disclosures, and it will be appreciated that in some instances some features of the embodiments of the invention will be employed without the corresponding use of other features without departing from the scope and spirit of the invention as set forth. Therefore, many modifications may be made to adapt a particular situation or material to the essential scope and spirit of the present invention. It is intended that the invention not be limited to the particular terms used in following claims and/or to the particular embodiment disclosed as the best mode contemplated for carrying out this invention, but that the invention will include any and all embodiments and equivalents falling within the scope of the appended claims.

What is claimed is:

1. A method for launching a toy comprising:
   (a) sliding a wing member in a direction along a structural portion of a launching assembly which is coupled to a toy; and
   (b) releasing the wing member, causing the wing member to travel in a direction opposite the direction in step (a), and causing the toy to launch in the direction in step (a).

2. The method of claim 1 wherein said wing member travels along a slot in the toy.

3. The method of claim 1 wherein said wing member travels along a slot in a tubular member.

4. The method of claim 3 wherein said tubular member is disposed within said toy, and said wing member travels along the slot in the toy and the slot in the tubular member.

5. The method of claim 1 additionally comprising contacting the wing member after said releasing step to prevent said wing member from immediately traveling in the direction opposite to the direction in step (a).

6. The method of claim 2 additionally comprising contacting the wing member after said releasing step to prevent said wing member from immediately traveling in the direction opposite to the direction in step (a).

7. The method of claim 3 additionally comprising contacting the wing member after said releasing step to prevent said
wing member from immediately traveling in the direction opposite to the direction in step (a).

8. The method of claim 2 additionally comprising collapsing an elastic member that is coupled to the toy and to the wing member.

9. The method of claim 3 additionally comprising collapsing an elastic member that is coupled to the tubular member and to the wing member.

10. The method of claim 1 wherein said toy is disposed in a liquid.

11. The method of claim 1 additionally comprising bending the wing member against a structural portion of the toy.

12. A toy assembly comprising a launching assembly including a wing member slidably disposed along a structural portion of the toy assembly, and having an elastic member.

13. The toy assembly of claim 12 wherein said structural portion of the toy assembly comprises a slot.

14. The toy assembly of claim 12 wherein said toy assembly comprises a toy having said elastic member coupled thereto.

15. The toy assembly of claim 12 wherein said toy assembly comprises a tubular member having said elastic member coupled to said wing member and to an end of the tubular member.

16. The toy assembly of claim 12 wherein said toy assembly comprises a toy, a slot disposed in said toy, a tubular member disposed in said toy, and a slot disposed in said tubular member, said slot in said toy and said slot in said tubular member are aligned with each other.

17. A toy launching assembly comprising a wing member slidably disposed along a structure and coupled to an elastic member which is engaged to the structure.

18. The toy launching assembly of claim 17 wherein said structure comprises a tubular member having a slot where through said wing member extends.

19. The toy launching assembly of claim 17 wherein said structure comprises a toy having a slot where through said wing member extends.

* * * * *