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2,282,764

TOY CATAPULT AND PROJECTILE

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Fig. 1.

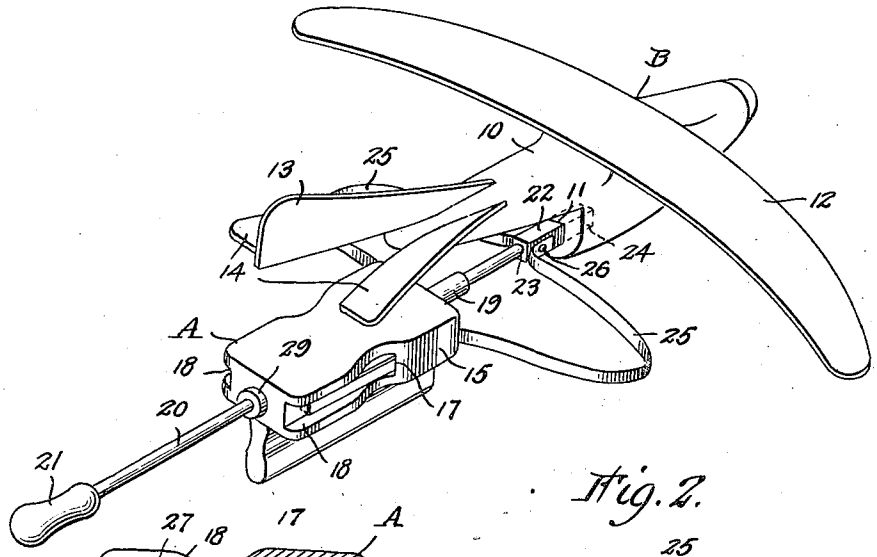


Fig. 2.

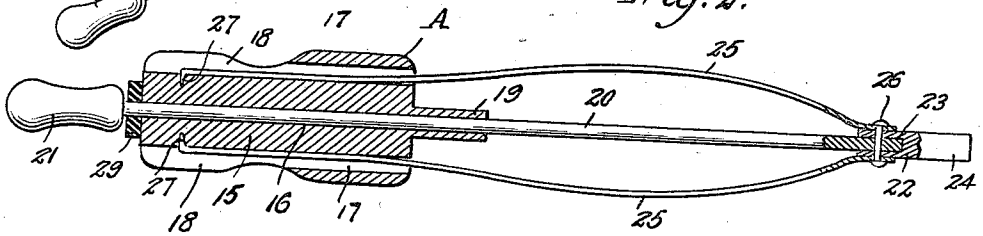


Fig. 3.

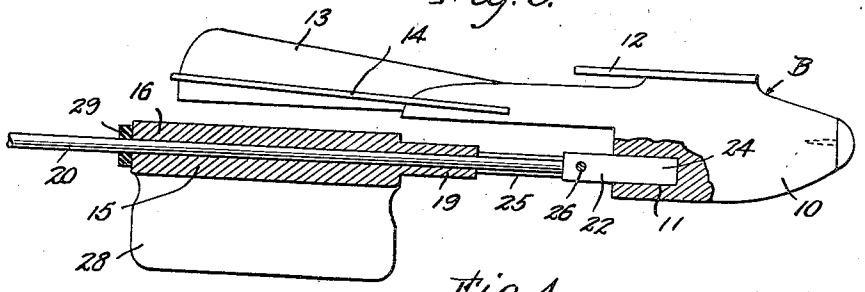
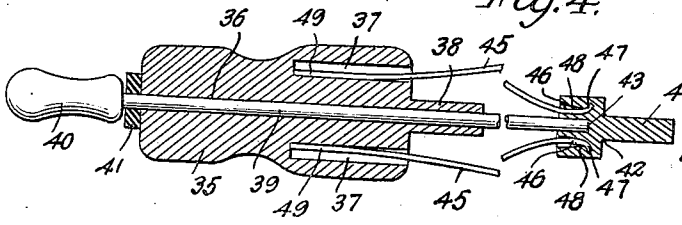


Fig. 4.



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TOY CATAPULT AND PROJECTILE

Robert Lazzari, Bronx, N. Y.

Application April 26, 1941, Serial No. 390,477

5 Claims. (Cl. 124—21)

This invention relates to toys and is directed to a toy catapult and projectile which projectile, while not necessarily restricted thereto, is preferably in the form of a toy airplane.

The invention broadly comprehends a toy catapult which is designed to be held in one hand and manipulated by the other so as to discharge a projectile therefrom and the primary object in view is to provide a simple and effective catapult which is capable of economical production and assembly.

More particularly the invention resides in a toy catapult employing leaf springs which are adapted to be manually placed under tension to effect the discharge of a projectile therefrom and wherein the mode of connection and assembly of the springs with the handle and stem of the catapult is such as to preclude fracture and breakage of the springs.

As a further feature the invention contemplates in a toy catapult of the indicated character, a handle member with which a stem member is associated for relative guided sliding movement and adapted to be tensioned by a pair of leaf springs together with a terminal piece at the forward end of the rod which is secured thereto by a common means attaching the forward ends of the springs to the terminal piece and rod.

With these and other objects in view, the invention is set forth in greater detail in the following specification and illustrated in the accompanying drawing in which:

Fig. 1 is a perspective view illustrating the catapult and projectile in associated relation and ready for projection.

Fig. 2 is an enlarged sectional plan view through the catapult.

Fig. 3 is an enlarged longitudinal vertical section through the catapult in its retracted position with the projectile applied thereto.

Fig. 4 is a sectional plan view through a catapult constructed in accordance with the modified form of the invention.

Referring to the drawing by characters of reference, A designates generally the catapult and B the projectile, the latter being in the form of a toy airplane having a body or fuselage **10** formed with a longitudinally extending socket **11**, a wing structure **12**, a rudder fin **13** and a pair of elevator fins **14** adapted to be set to various positions for controlling the direction of travel of the projectile.

The catapult A includes a handle member **15** which is formed with a centrally disposed longitudinally extending bore **16** opening through the front and rear ends thereof and provided on opposite sides of and parallel to the bore with a pair of side openings **17** adjacent the forward end of the handle, the opposite sides of the rear portion of the handle being formed with longitudinally extending grooves **18** which communicate with the openings **17**. At its forward end the handle is provided with a reduced forwardly extending boss or extension **19**, the purpose of which will be hereinafter set forth. A rod or stem **20** extends through the bore **16** and is provided at its rear end with a manipulating knob **21**. A terminal piece **22** formed with a socket **23** opening through the rear end is fitted over the forward terminal of the rod or stem **20** and is provided with a forepart **24** of non-circular cross sectional configuration.

A pair of leaf springs **25** are provided, one for each side of the catapult, which springs are bowed longitudinally and laterally outward and the forward terminals of said leaf springs are secured on opposite sides of the terminal piece **22** by means of a transverse rivet **26** which extends through the spring terminals, the terminal piece **22** and the forward portion of the stem or rod **20** to serve as a common means for securing these elements together and locking the terminal piece and rod or stem against relative turning movement. The rear portions of the leaf springs are extended respectively through the side openings **17** and thence rearwardly through the grooves **18**. A lateral inwardly directed anchoring spur **27** is formed at the inner terminal of each spring and is forced and embodied in the handle member **15** and normally urged laterally inward by the inherent resiliency of the spring to anchor the rear ends of the springs to the handle. The side openings **17** are of sufficiently greater cross sectional size than the springs to permit of a limited lateral movement of the same during the initial retraction of the stem **20** so as to avoid breaking or fracture thereof due to an acute bending of the springs as they are placed under tension. The boss or extension **19** at the forward end of the handle member **15** constitutes a stop with which the terminal piece **22** engages to limit the retraction of the rod or stem **20** so as to restrict the lateral bowing of the leaf springs beyond a predetermined curvature. The handle member is provided with a depending hand grip **28** properly shaped to be grasped in the hand for supporting and steadying the catapult. In order to absorb the shock and provide a buffer, a washer **29** of

rubber or equivalent elastic material surrounds the stem 20 and is positioned adjacent the rear end of the handle 15.

In use and operation, the socket 11 in the projectile body 10, which is also of non-circular formation and corresponds in cross sectional size and shape to the forepart 24 of the terminal piece 22, is fitted onto the terminal piece with the projectile B disposed in an upright position as illustrated in Figs. 1 and 3 of the drawing, and the manipulating knob 21 is employed to retract the rod or stem 20 rearwardly with reference to the handle member 15. This effects a lateral outward bowing of the springs 25 to place the same under tension so that when the manipulating knob is released, the rod or stem 20 is forcibly moved forwardly with reference to the handle member until the power of the springs is expended and the same resume their normal position and arrest the forward movement of the rod or stem 20. The projectile or toy airplane B is thereby catapulted from the terminal piece 22 under inertia and is caused to glide in the direction controlled by the rudder 13 and elevator fins 14.

In the modified form of catapult illustrated in Fig. 4 of the drawing, the handle member 35 is formed with a centrally disposed longitudinally extending bore 36 opening through the front and rear ends thereof and provided on the opposite sides of and parallel to the bore with a pair of sockets 37 which open through the forward end of the handle and are arranged on opposite sides of a forwardly extending boss 38. A rod or stem 39 extends through the bore 16 and is provided at its rear end with a manipulating knob 40. A buffer washer 41 of rubber or other elastic material surrounds the stem and is positioned against the rear end of the handle 35. A terminal piece 42 is formed with a socket 43 opening through the rear end and is secured over the forward terminal of the rod 39 and has a fore part 44 of non-circular cross sectional configuration. A pair of leaf springs 45 is provided, one for each side of the catapult and said springs are longitudinally bowed laterally outwardly with the forward terminals 46 provided with outwardly curved extremities 47 and said terminals and extremities are fitted into correspondingly shaped sockets 48 formed in the terminal piece 42 on opposite sides of the sockets 43. The rear extremities 49 of the leaf springs are loosely fitted in the openings 37.

In this form of the catapult, the mode of operation is similar to the previous form and the only difference resides in the manner in which the springs are associated with the handle and terminal piece.

What is claimed is:

1. In a toy catapult, a handle having a centrally disposed longitudinal bore and side openings extending parallel to and located on opposite sides of the bore adjacent the forward end of the handle, a stem extending through the bore for guided sliding movement and adapted to support a projectile from the forward terminal thereof, a lateral outwardly bowed leaf spring extending through each side opening of the handle and having a lateral inwardly directed spur at the rear terminal thereof embedded in the handle and normally urged laterally inward by the inherent resiliency of the spring to anchor the rear end thereof to the handle, and means securing the forward terminal of each spring to the stem adjacent the forward end thereof, the side openings of the handle being of a size to permit of limited lateral movement of the springs.

2. In a toy catapult, a handle having a centrally disposed longitudinal bore and side openings extending parallel to and located on opposite sides of the bore adjacent the forward end of the handle, a stem extending through the bore for guided sliding movement and adapted to support a projectile from the forward terminal thereof, a lateral outwardly bowed leaf spring extending through each side opening of the handle and anchored at the rear terminal to the handle, and means securing the forward terminal of each spring to the stem adjacent the forward end thereof, the side openings of the handle being of a size to permit of limited lateral movement of the springs.

3. In a toy catapult, a handle having a centrally disposed longitudinal bore and side openings extending parallel to and located on opposite sides of the bore adjacent the forward end of the handle, a stem extending through the bore for guided sliding movement and adapted to support a projectile from the forward terminal thereof, a lateral outwardly bowed leaf spring extending through each side opening of the handle and anchored at the rear terminal to the handle, a terminal piece carried by the forward end of the stem, and a common means securing the forward terminal of each spring to the terminal piece and securing the terminal piece to the stem, the side openings of the handle being of a size to permit of limited lateral movement of the springs.

4. In a toy catapult, a handle having a centrally disposed longitudinal bore and sockets extending inwardly from the forward end of the handle and parallel to and located on opposite sides of the bore, a stem extending through the bore for guided sliding movement and adapted to support a projectile from the forward terminal thereof, a lateral outwardly bowed leaf spring extending at its rear terminal into each of said bores and of lesser size than the stem to permit of lateral movement of said rear terminals in the bores, a terminal piece secured to the forward end of the stem and having sockets arranged on opposite sides of the stem extending inwardly from the rear face of the terminal piece and outwardly curved terminals at the forward end of each spring fitted in said sockets for anchoring the forward end of the springs thereto.

5. In a toy catapult, a handle having a centrally disposed longitudinal bore and side openings extending parallel to and located on opposite sides of the bore adjacent the forward end of the handle, a stem extending through the bore for guided sliding movement and adapted to support a projectile from the forward terminal thereof, a lateral outwardly bowed leaf spring extending into each side opening of the handle, and means retaining the forward terminal of each spring to the stem adjacent the forward end thereof, the side openings of the handle being of a size to permit of limited lateral movement of the springs.

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