

Dec. 21, 1965

M. D. BORAK

3,224,141

PROJECTILE PROJECTING AND RETRIEVING TOY BOAT

Filed March 25, 1963

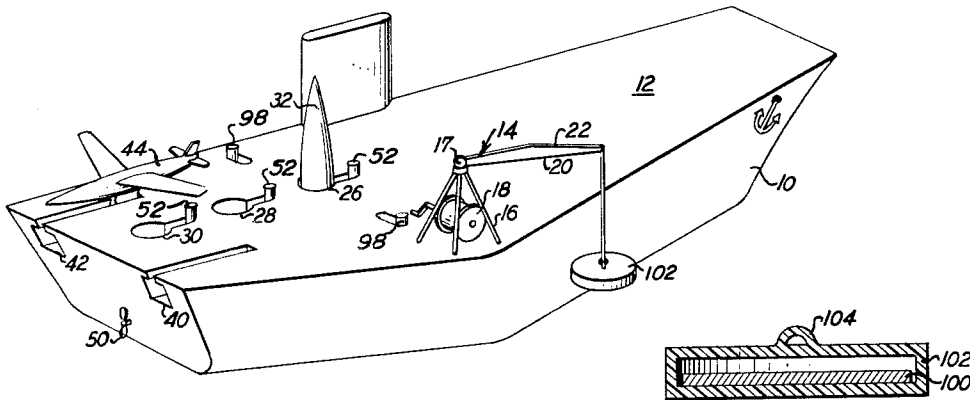


Fig. 1

Fig. 5

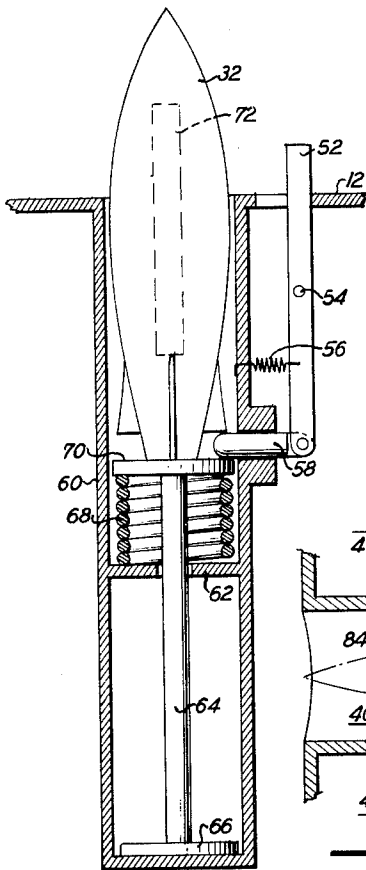


Fig. 2

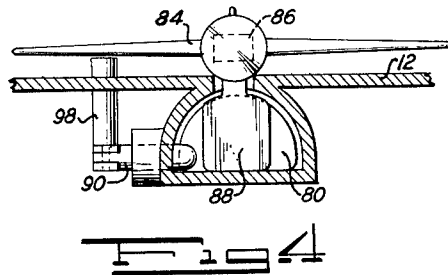


Fig. 3

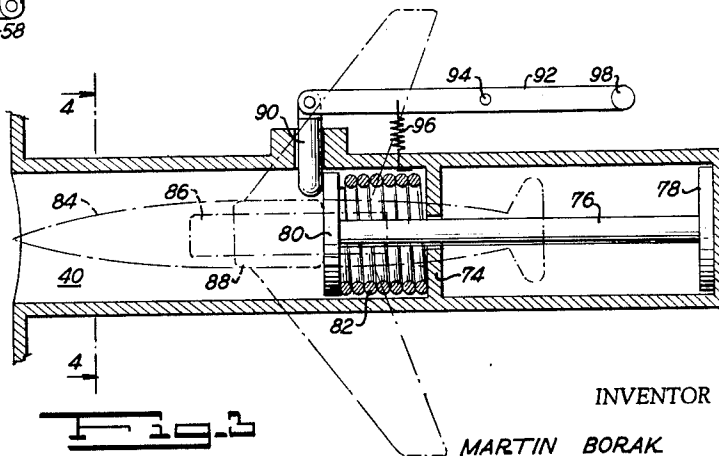


Fig. 4

INVENTOR

MARTIN BORAK

BY

Sol B. Wick
ATTORNEY

1

3,224,141

PROJECTILE PROJECTING AND RETRIEVING TOY BOAT

Martin D. Borak, 12617 Epping Road, Wheaton, Md.

Filed Mar. 25, 1963, Ser. No. 267,472

4 Claims. (Cl. 46-242)

This invention relates to improvements in toy vehicles capable of launching and retrieving projectiles. More particularly, the invention relates to a toy boat having specially provided launching and magnetic retrieval means for projectiles.

In the broad aspect, the present invention provides a toy vehicle comprising a base structure, projectile means on the base structure, magnetically attractable projectiles, means for magnetically retrieving projectiles launched by the projectile means, and a crane mechanism on the base structure for returning launched projectiles magnetically affixed to said retriever means.

In the preferred embodiment, the present invention provides a toy boat comprising a floating hull, projectile means on the hull, buoyant magnetically attractable plane and missile projectiles for launching by the projectile means, buoyant means for magnetically retrieving launched projectiles, and a crane mechanism on the hull for returning launched projectiles magnetically affixed to said retriever means.

It is the primary object of this invention to provide a toy vehicle having means for launching and magnetically retrieving projectiles.

It is also an object of this invention to provide a toy boat having means for launching and retrieving plane and missile projectiles with magnetic means associated with the projectiles or with the retrieving means for returning launched projectiles magnetically to the toy boat.

It is specifically an object of the invention to provide a toy boat having means for launching or catapulting buoyant magnetic projectiles which may be retrieved by a buoyant magnet attached to a crane mechanism on the toy boat.

These objects and other aspects of the invention will become apparent from the following detailed description taken in connection with the accompanying drawings in which the preferred embodiment is given by way of illustration.

In the drawings:

FIG. 1 is a perspective view of the toy boat of the invention;

FIG. 2 is an enlarged elevated sectional view of the vertical launching ballistic-missile mechanism;

FIG. 3 is an enlarged plan sectional view of the horizontal launching mechanism for winged projectiles;

FIG. 4 is a sectional view taken along lines 4-4 of the horizontal launching mechanism of FIG. 3; and

FIG. 5 is an elevated sectional view of the retriever magnet.

Referring to FIG. 1 of the drawings, there is shown a toy aircraft carrier hull 10, preferably formed from plastic, having launching deck 12 on which is mounted crane 14. The crane includes a tripod structure 16, pivotal point 17, spool 18 for winding line 20 which is strung through boom 22 and connected to magnetic retriever 102. The deck of the carrier contains vertical launch receptacles 26, 28 and 30 designed to receive and launch projectiles such as missile 32 by pressing launch buttons 52. Horizontal launch guides 40 and 42 are designed to receive winged projectiles such as plane 44 which may be catapulted from the carrier by pressing launch buttons 98. Propeller 50 is included to propel the aircraft carrier through the water. The propeller is powered by any suitable means, not shown, which are known to the art such as battery operated motors, remote control systems, mechanical

2

motors, compressed gases and the like. For simplicity, however, the propeller is powered by a spring wound mechanical motor.

FIG. 2 shows in detail the vertical launch system as built beneath deck 12. The launch system includes release lever 52 extending through the deck structure and pivoted about pin 54. The release lever is biased by spring 56 to maintain locking pin 58 normally in the locked position through tubular receptacle 60. The tubular receptacle contains divider 62 through which passes metal plunger rod 64. The divider functions as a stop for plunger rod 64 by stop plate 66 and also as a support for spring 68 biased against projectile plate 70 shown locked in compressed position by locking pin 58. Projectile plate 70 supports and launches missile 32 enclosing permanent magnet 72, such that the missile is buoyant and ballistically balanced. In operation, the missile is inserted in tubular receptacle 60 while release lever 52 is shifted. Pressure is applied on the missile until spring 68 is contracted whereupon release lever 52 locks projectile plate 70 in the launch position. When the release lever is shifted, the missile will launch. Thereupon the missile, floating on water, is recovered by allowing the magnetic retriever 102 which is connected to crane 14 of FIG. 1 to magnetically engage the floating missile and return it to the aircraft carrier.

FIGS. 3 and 4 show the horizontal launch system which includes horizontal launch guide 40 with divider plate 74 through which passes metal plunger rod 76 having stopper plate 78 at one end and plunger plate 80 at the other. Spring 82, between the plunger plate and the divider plate, provides the necessary force to launch buoyant winged projectile 84 having permanent magnet 86 enclosed therein. The winged projectile is provided with suspended base structure 88 which engages plunger plate 80 to receive the catapult force. The release mechanism for the horizontal launch includes lock pin 90 engageably attached to lever 92 which is pivotably mounted on pin 94 and biased by spring 96. A launch pin 98 attached to lever 92 projects through the aircraft deck 12. When launch pin 98 is shifted, lever 92 pivots about pin 94 and removes lock pin 90 from engagement with plunger plate 80 which then launches winged projectile 84. The recovery of the launched projectile is performed in similar fashion as the vertically launched missile of FIG. 2.

FIG. 5 is an elevational view showing the central structure of magnetic retriever 102 of FIG. 1. The magnetic retriever contains permanent magnet 100 within a buoyant shell such as plastic casing 102 which provide sufficient buoyancy for the retriever to float on water. The plastic casing has eyelet 104 to receive line 20 of FIG. 1.

When the aircraft carrier is powered by an electrical system, the retriever magnet may be electro-magnetic although the simpler permanent magnet is preferred. The magnet is preferably present in both the projectile and the retriever, although either may contain sufficient magnetism to attract a magnetically attractable material such as iron, steel and the like present in the other.

The projectiles herein described may be of similar construction as the magnetic retriever and preferably having a solid magnetic internal structure enclosed within a plastic shell to provide sufficient buoyancy to float on water. Other modifications for the projectile and retriever having the requisite characteristics of magnetism and buoyancy are readily apparent; for example, magnetic particles such as iron carbonyl, iron oxide and the like may be suspended in a plastic body, shell and the like.

The present invention is applicable to a variety of vehicles such as automobiles, tanks, planes, ships and submarines, and to a variety of projectiles such as bullets, tank shells, bombs, torpedoes, missiles and the like. The vehicle structure may also be built for use on water or on

3

a dry surface and may be provided with wheels or endless treads for self-propulsion or may merely have a flat bottom for use on any surface.

Since various modifications of the invention which do not depart from the spirit and scope will become apparent from the general description and specific embodiment appearing herein, it is intended that the invention be limited solely by the appended claims.

I claim:

1. A toy boat comprising a buoyant hull, projectile launching means on said hull, magnetically responsive buoyant projectiles projectable by said launching means, a crane mechanism on said hull having a cable extensible and retractable by said crane and a retrieving magnet on the end of said cable cooperative with the magnetic projectiles for retrieving each after launching.

2. The boat defined in claim 1 wherein both projectiles and retrieving magnet are buoyant and will float whereby placing of the magnet within a magnetically responsive distance of a launched projectile on the water surface will allow the projectile and retrieving magnet to float together for retrieval of the projectile on the hull.

3. The boat defined in claim 1 wherein at least some

4

of the projectiles are toy planes, the hull has a flat deck and the launching means is a spring actuated catapult operative horizontally parallel to said deck.

4. The boat defined in claim 1 wherein at least some of said projectiles are shaped symmetrically ovate as a missile and the launching means is spring actuated substantially to project said missiles vertically.

References Cited by the Examiner

UNITED STATES PATENTS

1,351,565	8/1920	Gilbert	46—93
1,685,707	9/1928	Keedy	46—40
2,289,702	7/1942	Fast	46—93
2,478,224	8/1949	Armstrong	273—104
2,537,754	1/1951	Hanshaw	124—37 X
2,848,232	8/1958	Wadell	273—1

FOREIGN PATENTS

48,749	5/1934	Denmark.
--------	--------	----------

DELBERT B. LOWE, *Primary Examiner.*

RICHARD C. PINKHAM, *Examiner.*