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TRANSPORTER-LAUNCHER

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2 Sheets-Sheet 1

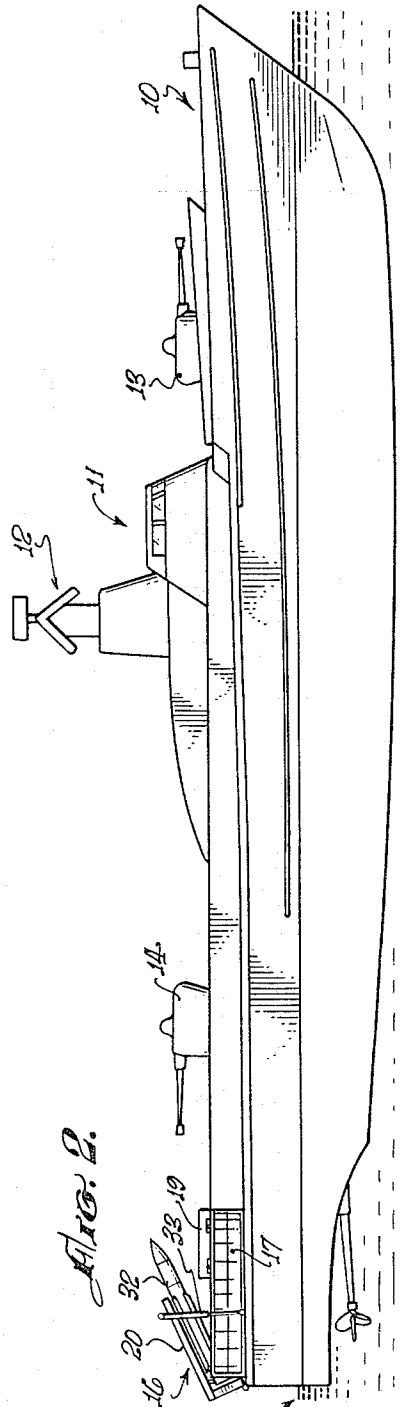
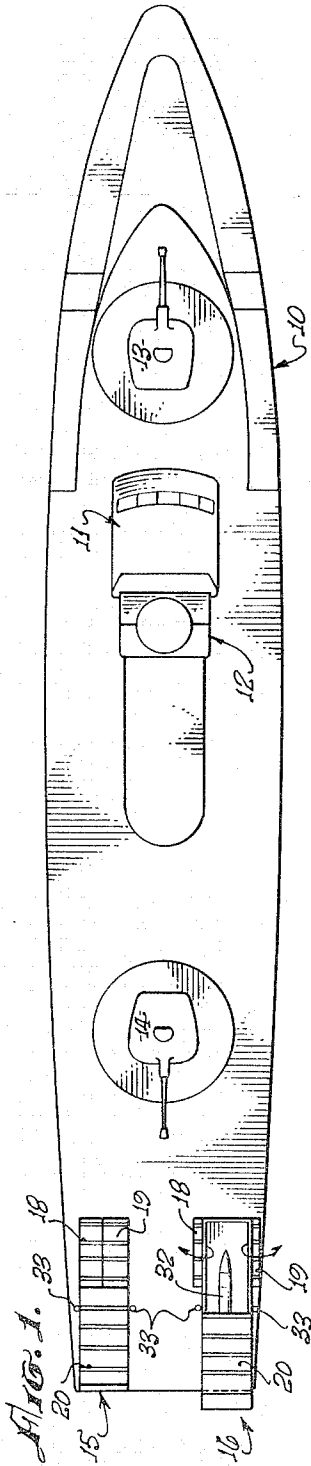


FIG. 2.

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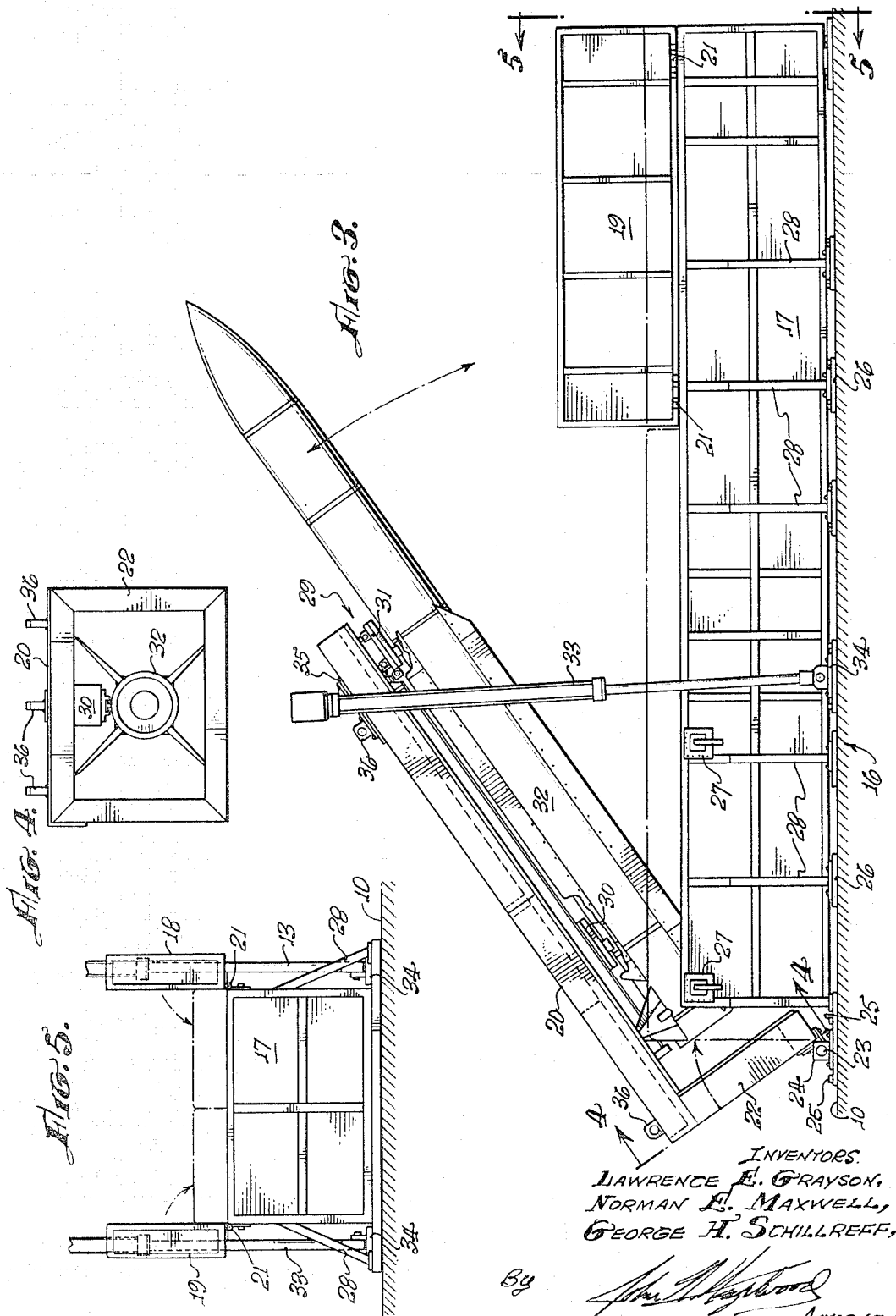
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TRANSPORTER-LAUNCHER

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The invention relates to launchers, and more particularly to missile launchers which additionally function as the transporting mechanism for the missile.

The advent of supersonic aircraft and missiles has imposed difficult problems in regard to the design of defensive and offensive equipment adequate for use against these types of targets. Heretofore, the speed of attacking aircraft and the early type of missiles was relatively slow in comparison to those in present day use, thus providing an ample time factor for locating the target, bringing a weapon to bear thereon and firing. Under such circumstances the target could be engaged within a relatively short range and the equipment generally employed against such a target was accordingly designed for short range operation.

The tremendous increase in speed of present day attacks has, however, reduced this time factor to such an extent that it is now necessary to initiate defensive or offensive measures when the target is located at a considerable range or distance from the weapon station. Long range weapons for operation against high speed aircraft and missiles have been developed, such weapons being generally large in size and of heavy construction. While existing requirements now call for this long range weapon, the need still exists for weapons which are effective within relatively short ranges since efforts at short range must be exerted should the extended range operation fail.

In addition a present day need fulfilled by this invention is a simple yet effective manner of transporting and launching surface to surface type missiles.

Also, another problem area has developed due to the strike ability of the present day aircraft and missiles; namely, a relatively simple yet effective means for deploying either the long or short range weapons so that these weapons may be land or shipboard mounted.

Prior to this invention, all known launching systems are of a complexity such that, if shipboard mounted for example, the craft would require extensive modification to handle the weapon system. Also, the prior known weapon systems require separate transporting and storage facilities, thus greatly increasing the expense of the weapon as well as limiting the deployment capabilities thereof.

Therefore, it is an object of this invention to provide a launcher mechanism.

A further object of the invention is to provide an apparatus which functions for transporting and launching a missile.

Another object of the invention is to provide a coffin type missile storage means wherein at least a portion of the cover thereof also functions as the transporting and launching mechanism for the missile.

Other objects of the invention will become readily apparent from the following description and accompanying drawings wherein:

FIG. 1 is a plan view of a craft illustrating the activated and inactivated positions of an embodiment of the invention mounted thereon;

FIG. 2 is a side view of the FIG. 1 craft;

FIG. 3 is a view of an embodiment of the invention in its activated position;

FIG. 4 is a view taken on the line 4—4 of FIG. 3; and

FIG. 5 is a view taken on the line 5—5 of FIG. 3.

Broadly, the invention relates to a missile launcher box

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having application on land or water borne vehicles. More particularly, the launcher box is comprised of a water tight cover, a portion thereof having a rail secured interiorly along the top; said rail being employed to mount a missile ready for firing. In operation, the launcher box, whose aft end of the missile carrying lid is pivotally mounted in proximity to the aft end of the vehicle in this illustration, is raised to the desired angle of attack by actuators associated therewith, thereby aiming the missile forwardly with respect to the vehicle on which it is mounted.

Referring now to the drawings, FIGS. 1 and 2 illustrate a water-borne craft 10 which may be of any type or size desired. Craft 10 is provided with a superstructure generally indicated at 11 which houses the controls in conventional manner. Positioned on superstructure 11 is a radar screen structure indicated at 12 for operation in conventional manner. Gun mounts 13 and 14 are positioned on the fore and aft decks, respectively.

Positioned on the aft deck of craft 10 are a pair of water-tight launcher box assemblies of the invention and generally indicated at 15 and 16, the launcher box assembly 15 being on the port side and shown in the closed or inactivated position while launcher box assembly 16 on the starboard side is in the open or activated position.

The launcher box assemblies 15 and 16 are identical and consist basically of a box or coffin 17 having three lids or cover members 18, 19 and 20. Lids 18 and 19 cover approximately the forward half of box 17 and swing outwardly (see FIG. 1) on hinge members 21 which are attached to the upper portion of box 17 as shown in FIGS. 3 and 5. Lid 20 swings upwardly and to the rear of box 17 via a member 22 attached to or integral with lid 20 which pivots about a pin 23 of a support mount 24 attached to the deck of craft 10 via bolts 25. When lid 20 is in the inactivated or closed position shown by assembly 15 in FIG. 1, member 22 abuts the rear of box 17 which is also attached to the deck of craft 10 via pads and bolts or the like indicated at 26. Box 17 is provided with a plurality of clamp members 27 (only two being shown) which secure lid 20 thereto. Lids 18 and 19 may also be provided with means for securing same in the closed position if desirable. A plurality of brace members 28 extend from box 17 to certain of pads 26 as shown in FIGS. 3 and 5.

Cover member or lid 20 is provided on the under side thereof with a rail-type launch assembly indicated generally at 29. Launch assembly 29 includes members 30 and 31 which are operatively connected to support a missile 32 mounted thereon. The specific details of the launch assembly do not constitute a portion of the present invention and a detailed description thereof is deemed unnecessary except for the fact that assembly 29 cooperates with cover member or lid 20 for the transporting, storage, and launch of missile 32.

A pair of hydraulic actuators 33 are pivotally connected at one end thereof to the deck of craft 10 via mounts 34 and at the opposite end to cover member or lid 20 via mounts 35. Actuators 33 are supplied with pressure fluid from a source (not shown) via control mechanism (not shown) to raise the lid 20 and associated missile 32 to the desired position or to lower the lid and missile by proper manipulation of the hydraulic control mechanism. While not shown, lids 18 and 19 are provided with actuating means for opening and closing same which may be hydraulic, mechanical, electrical or any combination thereof. Lids 18 and 19 may be manually opened and closed if desired. The actuators 33 are only illustrative and may take various forms or may be mounted in various places on the assemblies 15 and 16 so as to raise and lower lid 20. Mechanical or electrical type actuators may be utilized instead of the hydraulic type illustrated.

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Cover member or lid 20 is provided with a plurality of ring-like members 36 attached to the top thereof (see FIGS. 3 and 4) to facilitate handling of the lid and associated missile 32 during the transporting and positioning in box 17.

Missile 32 is operatively mounted on the assembly 29 of lid 20 for transporting the missile from a remote storage area to the launcher assembly 15 or 16, the lid 20 being carried by a crane or other lift type vehicle via ring members 36. Lid 20 is aligned with box 17 so that member 22 of lid 20 can be pivotably attached to mount 24 and so that actuators 33 can be attached to mount 35 on lid 20. The connections to ring members 36 from the lift vehicle are removed and, with forward lids 18 and 19 open, lid 20 and missile 32 are lowered by actuators 33 until lid 20 abuts box 17, thereafter lids 18 and 19 are closed, thus providing a water-tight storage container for missile 32 as illustrated by assembly 15 in FIG. 1.

Upon command, lids 18 and 19 are opened and lid 20 pivots on pin 23 to raise missile 32 to its firing position as illustrated in FIG. 3 and by assembly 16 in FIGS. 1 and 2. Missile 32 is fired by means not constituting part of this invention and therefore not illustrated or described, thus leaving lid 20 ready for the reception of another missile, if desired, or for removal from box 17.

While the launch assembly 29 has been illustrated as being of the rail type, any other type of launch assembly may be used which is compatible with the launcher box assembly.

It has thus been shown that the present invention provides a simple but yet effective assembly for the transporting, storage, and launch of a missile. The specific type of cover members or lids for the storage box are determined by the type of missile utilized therewith and the specific requirements of the individual application.

Although a particular embodiment of the invention has been illustrated and described, modifications will become apparent to those skilled in the art, and it is intended to cover in the appended claims all such modifications as come within the spirit and scope of the invention.

What is claimed is:

1. A transporter-launcher apparatus adapted for transporting, storing and launching a missile or the like comprising: a box-like container means, cover means located at one end of said container means and adapted to cover and uncover that end portion of the box-like container means, a cover member located at the other end of said container means and adapted to pivot with respect to said other end of said container means for covering and uncovering the said other end of said box-like container means, said cover member being provided with means adapted for releasably supporting an associated missile or the like on one side thereof, said cover member additionally provided with means mounted on the opposite side thereof for transporting the cover member, and actuator means for pivoting said cover member with respect to said container means.

2. The apparatus defined in claim 1, wherein said cover member includes a protruding portion adapted to pivot about a point adjacent said other end of said box-like container means upon movement of said cover member with respect to said container means.

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3. The apparatus defined in claim 2, wherein said releasable supporting means is of a rail type.

4. A missile launcher assembly for mounting on a water craft comprising a coffin-like structure adapted to be fixed to the deck of a water craft, said coffin-like structure having three lid members, two of said lid members being hingedly connected to a forward portion of said coffin-like structure and adapted to cover and uncover same, the third of said lid members being adapted to cover and uncover the remainder of said coffin-like structure and including a portion extending toward the deck of the associated craft and pivotally connected thereto at a point aft of said coffin-like structure, said third lid member being provided on the underside thereof with a mechanism for releasably supporting a missile, and actuator means operatively connected with said third lid member for pivotally moving said third lid member about said pivotal connection aft of said coffin-like structure for covering and uncovering said remainder of said coffin-like structure.

5. The launcher assembly defined in claim 4, wherein said third lid member is additionally provided with means for supporting the same when said third lid member is removed from cooperation with said coffin-like structure.

6. The launcher assembly defined in claim 4, wherein said mechanism is of the rail type.

7. Apparatus adapted for transporting, storing, and launching a missile or the like comprising an assembly defining a box-like container means, at least one removable cover member adapted to cover and uncover said container means, removable means for allowing said cover member to pivot with respect to an end of said box-like container means, said cover member being provided on one side thereof with means adapted for mounting and releasably supporting an associated missile or the like, said cover member being additionally provided on the other side thereof with means for transporting the cover member separate from said container means, and actuator means removably connected to said cover member for pivoting said cover member with respect to said container means, whereby said cover member may function in cooperation with said container means for storing and launching an associated missile or the like, may be removed therefrom for separate transportation thereof, and may be utilized for separately transporting an associated missile or the like.

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