Jan. 8, 1957 W. R. CHADWICK 2,776,637

BOAT CONSTRUCTION

Filed March 4, 1954 2 Sheets-Sheet 1

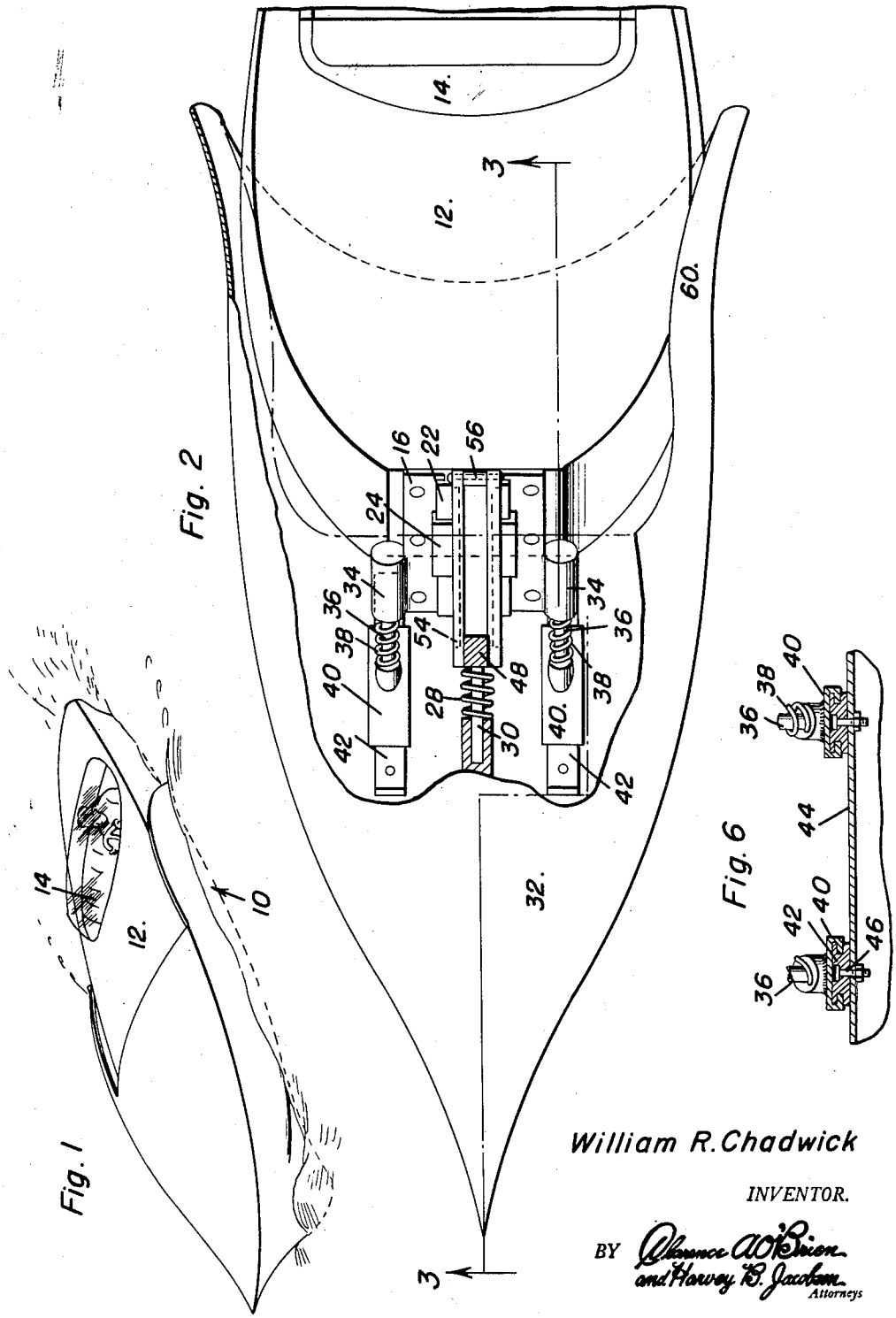


Fig. 2

Fig. 1

Fig. 6

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BOAT CONSTRUCTION

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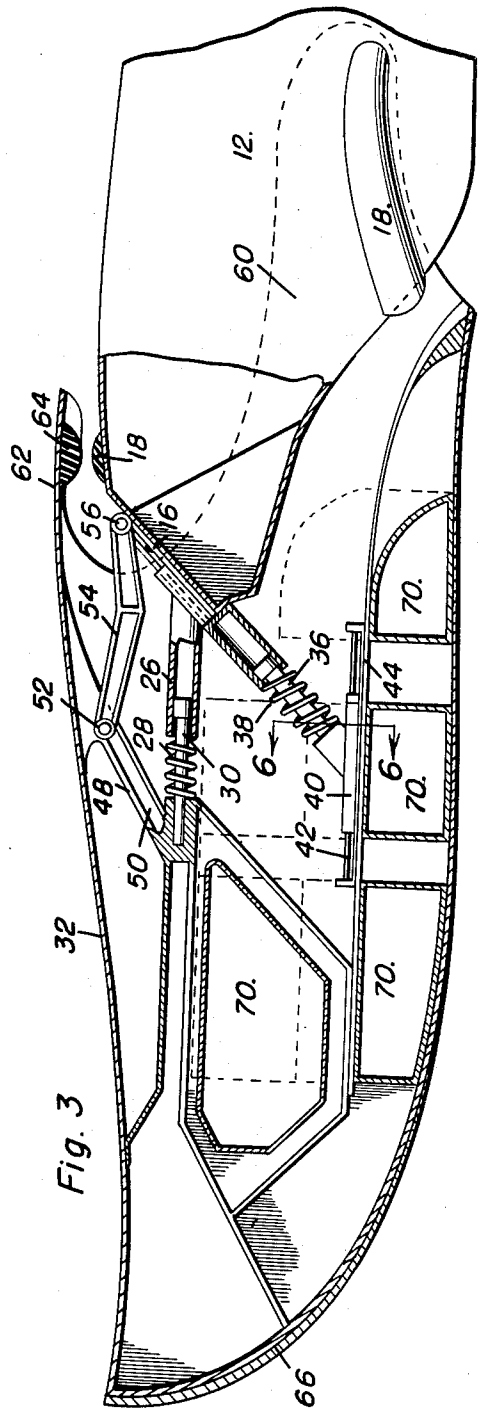


Fig. 3

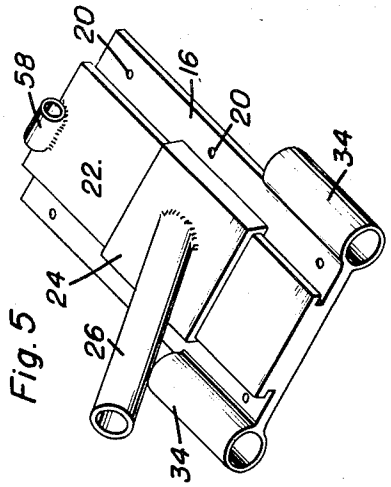


Fig. 5

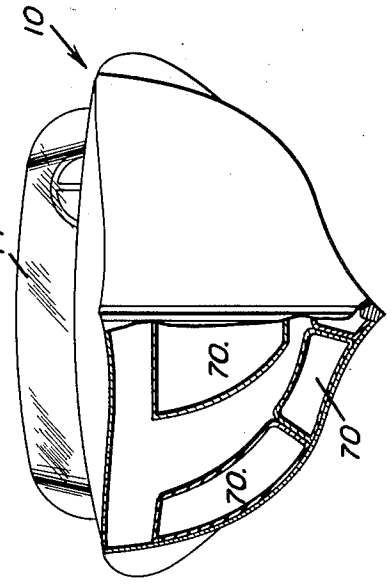


Fig. 4

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2,776,637

BOAT CONSTRUCTION

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Application March 4, 1954, Serial No. 414,082

6 Claims. (Cl. 114—219)

This invention relates to boat construction and has for its primary object the provision of means for absorbing the shocks usually imparted on the hull of a boat moving through the water.

When vessels such as speed boats and the like are driven through the water at a considerable rate, because of the various swells and waves which the bow of the boat contacts and penetrates, various shocks of considerable force are applied on the boat. The construction of the present invention features the utilization of a bow section which is attached by means of shock absorbers and a pivoting linkage to the hull in such manner that the shock absorbers will absorb the greatest portion of the shocks which would otherwise be imparted on the boat. By reducing these shocks, the engines of the boat can be constructed with closer tolerances and in a varying manner to provide added power for the boat.

Incorporated in the present invention are pressurized air tanks or cells for adjusting the ballast of the bow section relative to the hull of the boat.

Still further objects and features of this invention reside in the provision of a novel boat construction which is strong and durable, comparatively simple to install, which, because of the inherent buoyancy of this bow section, enables the utilization of a prow of optimum hydrodynamic configuration, and which is adapted for use with various types of vessels.

These, together with the various ancillary objects and features of the invention which will become apparent as the following description proceeds, are attained by this boat construction, a preferred embodiment of which has been illustrated in the accompanying drawings, by way of example only, wherein:

Figure 1 is a perspective view of a vessel constructed in accordance with the concepts of the present invention;

Figure 2 is a plan view of a portion of the vessel with parts thereof being broken away to show the structure of the invention in detail;

Figure 3 is a vertical sectional view as taken along the plane of line 3—3 in Figure 2;

Figure 4 is a front elevational view of the vessel with parts thereof being broken away for greater clarity;

Figure 5 is a perspective view of the mounting plate which is attached to the hull of the vessel and forms an important element of the invention; and

Figure 6 is a vertical sectional detail view as taken along the plane of line 6—6 in Figure 3 illustrating the tracks and the pair of slides mounted thereon which are used for attaching the bow section to the hull.

With continuing reference to the accompanying drawings, wherein like reference numerals designate similar parts throughout the various views, the reference numeral 10 generally designates a bow constructed in accordance with the present invention, which includes a hull 12 having a cockpit as at 14 or having a suitable superstructure as may be desired. The hull 12 has attached thereto a forwardly and downwardly extending mounting plate 16 as well as resilient bumpers 18, which are suitably secured at the forward portion of the hull 12.

In Figure 5 there is shown with greatest clarity the construction of the mounting plate 16. This mounting plate 16 is provided with apertures therethrough as at 20 which are utilized for the reception of rivets or fasteners provided for attaching the mounting plate 16 to the hull 12. The mounting plate 16 has a guide plate 22, preferably integrally formed therewith. The guide plate 22 is of substantially T-shape in cross-section and has slidably mounted thereon a slide 24. Attached to the slide 24 is a substantially horizontal and forwardly extending cylindrical member 26 which forms the cylinder of a shock absorber 28 of any convenient construction which may be in the form of a spring-type shock absorber or may be in the form of a spring pressed dashpot type of shock absorber.

The piston 30 of the shock absorber 28 which rides within the cylindrical member 26 is firmly attached to a bow section 32 of the vessel 10. The mounting plate 16 has further attached thereto two downwardly and forwardly extending cylinder housings 34 within which the pistons 36 of a pair of shock absorbers 38 seat. The pistons 36 are carried on a pair of slides 40 which ride on tracks 42 attached to a deck 44 forming part of the bow section 32. As can be readily seen in Figure 6, the slides 40 are substantially C-shaped in cross section and overlie the upper flanged portions of the substantially A-shaped tracks 42 which are bolted, as at 46, or otherwise attached to the deck 44.

Forming a part of the structural facing of the bow section 32 are structural members as at 48 which have slots 50 therein for reception of the slide blocks 52 carried by links 54. The links 54 are pivotally attached by means of a shaft 56 to the mounting plate 16, the shaft extending through a cylindrical portion 58 welded or otherwise attached to the guide plate 22, the cylindrical member 58 forming a stop for the slide 34.

It is to be noted that the bow section 32 has portions as at 60 which overlie the bumpers 18 and further has a portion 62 to which a bumper 64 is attached. The bumper 64 is positioned in opposition to the bumper 18 at the upper portion of the hull 12.

In operation, when the prow 66 of the bow section 32 contacts a wave or swell while the vessel 10 is being driven, the shock imparted upon contact with the swell will be transmitted to the shock absorbers 28 and 38 by movement of the bow section 32 relative to the hull. Comparatively little shock will be transmitted to the hull 12, since most of the shock will be absorbed in the springs of the shock absorbers 28 and 38 and hence the passengers in the vessel 10 will be more comfortable and engines designed for optimum performance with reduced precaution against damage by shock can be incorporated in the hull 12.

It is noted that various pressurized buoyant tanks 70 can be suitably arranged in the bow section 32 for optimum performance of the bow section 32.

From the foregoing, the construction and operation of the device will be readily understood and further explanation is believed to be unnecessary. However, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction shown and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the appended claims.

What is claimed as new is as follows:

1. A boat construction comprising a hull having a downwardly and forwardly extending mounting plate at the forward end thereof, resilient bumpers mounted on

said hull, said mounting plate having a pair of downwardly and forwardly extending shock absorber cylinder housings appended thereto, a guide plate carried by said mounting plate, a slide engaging said mounting plate, a bow section overlying said bumpers of said hull, a shock absorber terminally attached to said slide and said bow section, a pair of tracks secured to said bow section, a pair of slides mounted on said tracks, and shock absorber elements secured to said pair of slides and engaged in said shock absorber housings.

2. A boat construction comprising a hull having a downwardly and forwardly extending mounting plate at the forward end thereof, resilient bumpers mounted on said hull, said mounting plate having a pair of downwardly and forwardly extending shock absorber cylinder housings appended thereto, a guide plate carried by said mounting plate, a slide engaging said mounting plate, a bow section overlying said bumpers of said hull, a shock absorber terminally attached to said slide and said bow section, a pair of tracks secured to said bow section, a pair of slides mounted on said tracks, and shock absorber elements secured to said pair of slides and engaged in said shock absorber housings, and means pivotally attaching said bow section to said mounting plate.

3. A boat construction comprising a hull having a downwardly and forwardly extending mounting plate at the forward end thereof, resilient bumpers mounted on said hull, said mounting plate having a pair of downwardly and forwardly extending shock absorber cylinder housings appended thereto, a guide plate carried by said mounting plate, a slide engaging said mounting plate, a bow section overlying said bumpers of said hull, a shock absorber terminally attached to said slide and said bow section, a pair of tracks secured to said bow section, a pair of slides mounted on said tracks, and shock absorber elements secured to said pair of slides and engaged in said shock absorber housings, and means pivotally attaching said bow section to said mounting plate, said means including a pair of structural members having slots therein, slide blocks engaged in said slots, links pivotally attached to said mounting plate, said slide blocks being carried by said links.

4. A boat construction comprising a hull having a mounting plate attached at the forward end thereof, resilient bumpers mounted on said hull, a bow section, shock absorber means attaching said bow section to said mounting plate, said bow section having parts thereof extending rearwardly of said mounting plate and overlying said resilient bumpers, and resilient bumpers on said bow section arranged in opposition to the resilient bumpers mounted on said hull.

5. A boat construction comprising a hull having a mounting plate attached at the forward end thereof, said mounting plate extending angularly upwardly and rearwardly, resilient bumpers on said hull, a bow section, shock absorber means attaching said bow section to said mounting plate, said shock absorber means including a slide movably mounted on said mounting plate.

6. A boat construction comprising a hull having a mounting plate attached at the forward end thereof, said mounting plate extending angularly upwardly and rearwardly, resilient bumpers on said hull, a bow section, shock absorber means attaching said bow section to said mounting plate, said shock absorber means including a slide movably mounted on said mounting plate, said bow sections having parts thereof extending rearwardly of said mounting plate and overlying said resilient bumpers, and resilient bumpers on said bow section arranged in opposition to the resilient bumpers mounted on said hull.

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