Nov. 24, 1953 E. S. SWENSON 2,660,142

TRANSOM CONSTRUCTION FOR BOATS

Filed Dec. 21, 1951

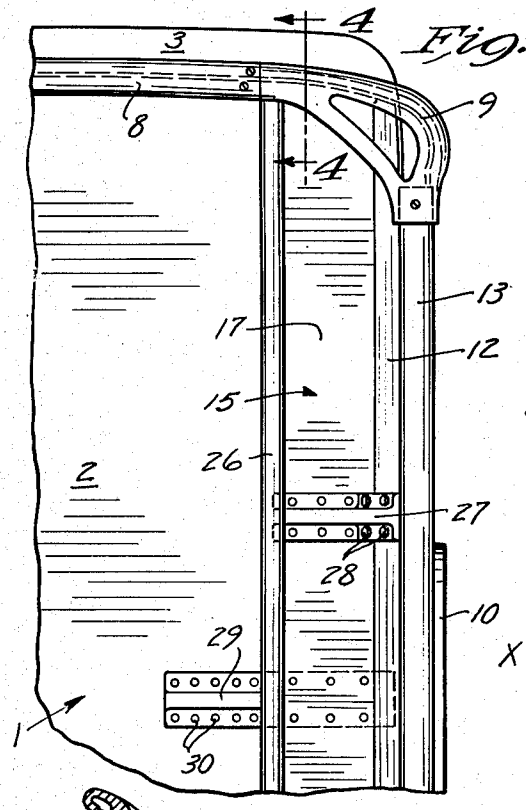


Fig. 1

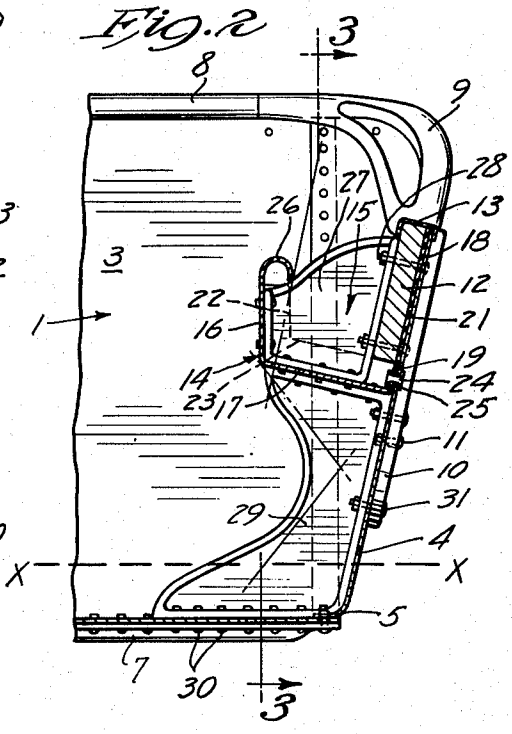


Fig. 2

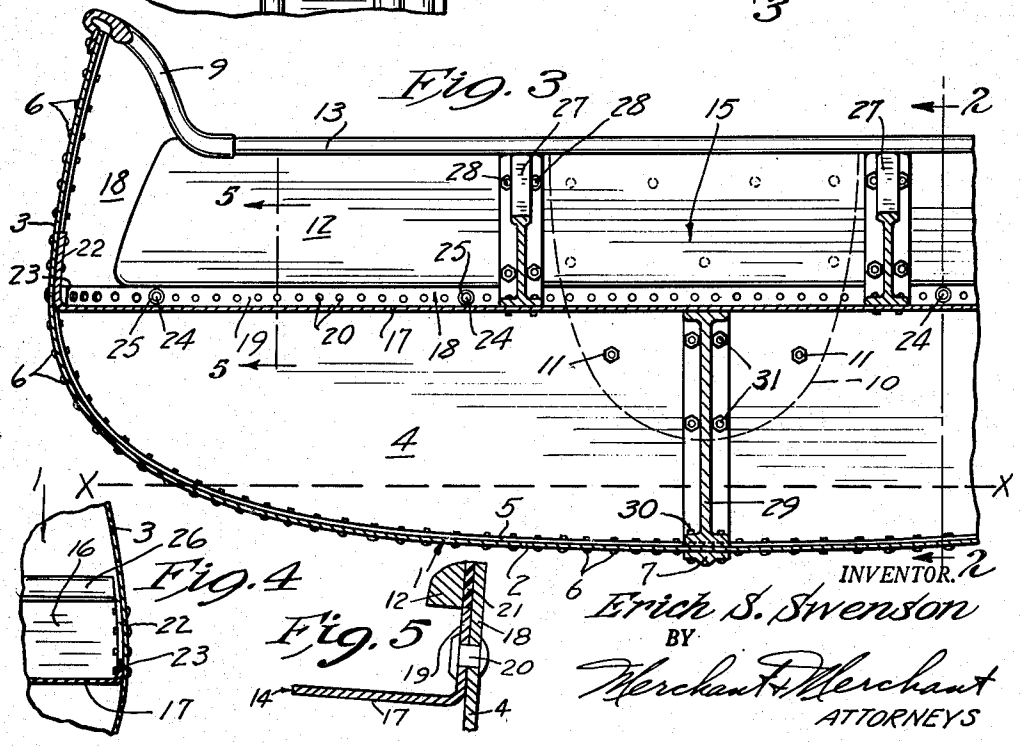


Fig. 3

Fig. 4

Fig. 5

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Patented Nov. 24, 1953 2,660,142

UNITED STATES PATENT OFFICE

2,660,142

TRANSOM CONSTRUCTION FOR BOATS

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Application December 21, 1951, Serial No. 262,713

7 Claims. (Cl. 114—182)

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My invention relates generally to boat construction and more particularly to row boat hulls and the like which are adapted for use with outboard motors.

In larger sized row boats and outboard runabouts which are built to accommodate outboard motors having a relatively high horsepower rating, the hulls are generally relatively wide and deep at the stern so as to provide sufficient buoyancy to properly support large heavy outboard motors. In keeping with the design of these boats, the transoms thereof are usually sufficiently high to prevent water from washing forwardly thereover when the boat is running slowly in a following sea or when driven backwardly through the water. The use of large powerful outboard motors for trolling is not always practical for several reasons, the most common being that the larger motors do not operate smoothly and efficiently at a slow trolling speed. Hence, in many instances, two motors are used, a relatively large powerful motor for driving the boat to and from the fishing grounds and a smaller motor of relatively low horsepower for trolling over the fishing grounds. Generally, these smaller motors have relatively short drive shafts and drive shaft housings which no not permit the propellers to be properly immersed when the motors are mounted on the relatively high transoms of the larger boats. In order to overcome this difficulty, the upper edge portions of the transoms are cut down or lowered at least at their central portions to permit lower mounting of the motors and proper immersion of the fishing motor propellers. When the upper edge portion of the transom is thus cut away or lowered and the boat is used in rough water at trolling speeds with a following wind, waves tend to wash over the relatively shallow portion of the transom. If bailing is not resorted to, sufficient water may accumulate in the boat from this cause to develop a very undesirable or hazardous condition. A primary object of my invention is, therefore, the provision of a boat hull having a transom of a height to accommodate a normal fishing motor and of means for automatically disposing of water which may wash over the transom.

In the designing and building of boat hulls of the type herein described, difficulty is encountered in providing a transom of sufficient rigidity and strength to effectively dampen motor vibrations or to withstand shock loads imposed thereon by the striking of a rock or other submerged object by the propeller or propeller

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housing particularly when the boat is driven backwardly through the water. Hence, another important object of my invention is the provision of a transom structure which is extremely rigid and which imparts a maximum strength to the stern end of a boat hull.

Another object of my invention is the provision of a transom structure of the type set forth having deflecting means for guiding and directing the flow of water washing over the transom in a manner to effectively prevent the water from reaching the bottom of the boat.

In accordance with the present invention, I provide a transom structure defining an upwardly opening forwardly projecting inboard channel which extends transversely of the hull. the bottom and front wall of the channel being rigidly secured to the opposite sides of the hull. The bottom wall of the water-receiving channel is disposed above the normal water line of the hull and passages communicating with the bottom portion of the channel and the exterior of the hull provide for rapid drainage of water from the channel. A deflecting flange or lip effectively prevents water from splashing over the front wall of the channel into the interior of the boat and confines the water to the channel from which it is drained through said passages.

Another object of the invention is the provision of brace means intermediate the ends of said channel for imparting rigidity to the walls thereof.

The above and still further important objects and advantages of my invention will become apparent from the following detailed specification, appended claims, and attached drawings.

Referring to the drawings, which illustrate the invention, and in which like characters indicate like parts throughout the several views:

Fig. 1 is a fragmentary top plan view of the stern end of a boat built in accordance with my invention;

Fig. 2 is a vertical section through the transom of the boat of Fig. 1 taken substantially on the line 2—2 of Fig. 3;

Fig. 3 is a transverse section taken substantially on the line 3—3 of Fig. 2;

Fig. 4 is a fragmentary transverse section taken substantially on the line 4—4 of Fig. 1; and

Fig. 5 is an enlarged fragmentary section taken substantially on the line 5—5 of Fig. 3.

In the preferred embodiment of the invention illustrated, the stern end portion of a row boat is indicated in its entirety by the numeral 1. The boat may be made from any suitable mate-

rial, but in the embodiment illustrated, is shown as being fabricated from sheet metal formed to provide a bottom 2 and opposed sides 3, one of which is shown. A transom 4 extends across the stern of the boat and is provided along its bottom and side edge portions with an inturned flange 5 that is secured to the bottom and side wall portions of the boat hull by rivets or the like 6. The hull is further provided with the conventional keel 7 which is riveted or otherwise rigidly secured to the central portion of the bottom 2 and extends longitudinally of the boat in the customary manner. Gunwales 8, one of which is shown, terminate at their rear ends in handle-forming members 9 suitably secured to the side walls 3 and the opposite end portions of the transom 4.

With particular reference to Figs. 2 and 3, it will be seen that the transom 4, for the greater part of its length, is of substantially less height than the side walls 3. An exterior motor support or clamping plate 10 is rigidly secured to the outer wall of the transom at its transverse central portion by suitable means such as nut-equipped bolts or the like 11 and an interior motor support 12 is bolted or otherwise rigidly secured to the interior wall of the transom 4 along the upper edge portion thereof. With reference to Figs. 1 and 3, it will be seen that the interior motor support 12 extends almost but not quite the entire width of the transom 4 and a molding or trim strip 13 covers the upper edge of the transom 4 and the interior motor support 12.

An angular member 14 extends across the entire width of the hull and cooperates with the upper portion of the transom 4 to provide a transversely extending channel 15 having a front wall 16, a bottom forming wall 17, and a rear wall 18. The bottom forming wall 17 of the angular member 14, along its rear edge portion, is bent to provide an upturned flange 19 that is rigidly secured to the transom by spaced rivets or the like 20, see Fig. 5. The flange 19 terminates adjacent the lower portion of the interior motor support 12 between which and the transom wall 4 is inserted a sheet 21 of cushioning and sound-deadening material such as rubber, cork, or the like. In the preferred embodiment of the invention, herein illustrated, the rear wall 18 of the channel 15 is actually formed by the upper portion of the transom wall 4, the flange 19, and the interior motor support 12. It should be appreciated, however, that the channel 15 could be formed by a cross-sectionally U-shaped channel member having its rear wall secured to and directly against the inner surface of the transom wall 4, and, in which instance, the back wall of said U-shaped channel-forming member would become part of the transom wall. The opposite ends of the front and bottom channel walls 16 and 17 respectively, are provided with respective flanges 22 and 23, one of each of which is shown, that are riveted or otherwise rigidly secured to the opposite side walls 3, see particularly Fig. 4.

With particular reference to Fig. 2, it will be seen that the bottom channel wall 17 slopes downwardly toward the transom wall 4. A plurality of laterally spaced drain passages 24 are formed by eyelets or the like 25 extending through the flange 19 and the transom 4. It will be further noted that the bottom wall 17 of the channel 15 and the drain passages 24 are disposed an appreciable distance above the normal water line of the hull, said water line being indicated in Figs. 2 and 3 by the broken line X—X. From the above, it should be obvious that water washing over the top of the transom 4 will drop into the channel 15 and be drained to the exterior of the hull through the passages 24 and be prevented from dropping to the floor or bottom of the boat where it would otherwise cause discomfort to the occupants and, if permitted to accumulate, would make the boat unduly heavy and ultimately cause the boat to founder.

To insure against incoming water flowing over the front wall 16 of the channel 15, I provide deflecting means in the nature of a rearwardly curved deflecting lip 26 integrally formed with the upper edge portion of the front wall 16. The lip 26 extends the entire length of channel 15 and in addition to deflecting the water backwardly toward the rear wall 18 of the channel also serves as a reinforcement for the front wall 16 whereby to help in providing a rigid structure. With this arrangement, water which comes forwardly over the transom wall 4 and striking the front wall 16 in a manner to cause the same to move upwardly thereagainst will be guided rearwardly and downwardly by the lip 26 toward the bottom of the channel from whence it will escape through the drain passages 24.

As a further aid in providing rigidity to the transom and channel structure, I provide a pair of laterally spaced brace members 27 rigidly secured at their rear end portions to the interior motor support 12 and the transom wall 4 by nut-equipped bolts or the like 28 and riveted at its bottom and front portions to the bottom and front walls respectively of the channel 15. A stern knee 29 extends generally vertically between the rear end portion of the keel 7 and the bottom wall 17 of the channel 15 to which it is suitably secured at its upper end. At its lower end, the knee 29 is secured to the rear end of the keel 7 through the bottom of the hull by rivets or the like 30. Along its rear edge portion, the knee 29 is secured to the transom by nut-equipped bolts or the like 31 extending through the exterior motor supporting plate 10 thereby binding the transom wall 4 therebetween.

The above-described arrangement imparts extreme rigidity and strength to the rear end of any boat of this type and is particularly beneficial in boats fabricated from sheet metal. By use of the above structure, I have been able to reduce to a minimum the amount of motor vibration transferred to the sides and bottom of the boat by the transom and the possibility of water gaining access to the interior of the boat from causes hereinbefore mentioned have been virtually eliminated.

While I have shown and described a commercial embodiment of my novel boat construction, it will be understood that the same is capable of modification without departure from the spirit and scope of the invention, as defined in the claims.

What I claim is:

1. A boat hull closed at its rear end by a transom structure; said transom structure defining a water-tight, forwardly projecting, upwardly opening, inboard channel having spaced front and rear walls and a bottom wall, said channel extending transversely between and connecting the opposite side walls of the hull and having its bottom disposed above the bottom of the hull and above the normal water line of the hull, said structure providing a water-return passage

from the bottom portion of the channel to the exterior of the hull, and a deflecting lip on the front wall of the channel for reversing the forward flow of water washing over the transom.

2. The structure defined in claim 1 in further combination with a knee secured to said transom and the bottom of the hull and supporting said channel intermediate its ends, and a forwardly extending brace member within said channel and connecting the front, rear, and bottom walls thereof.

3. A boat hull structure closed at its rear end by a relatively thin sheet metal transom structure, said transom structure defining an upwardly opening inboard channel having front and rear walls and a bottom wall and extending transversely between and connecting the opposite side walls of the hull, said channel having its bottom wall disposed above the normal water line of the hull, a relatively thick motor mounting plate secured to said rear wall and extending transversely of the hull in upwardly spaced relation to said bottom wall, said structure providing a water-return passage from the bottom portion of the channel to the exterior of the hull, and a deflecting lip on the front wall of the channel for reversing the forward flow of water washing over the transom.

4. A boat hull structure closed at its rear end by a transom, an angular member extending transversely between and connecting the opposite side walls of the hull, said angular member having a flange along one longitudinal edge rigidly secured to the inner wall of said transom, said member defining front and bottom walls of a transversely extended channel the rear wall of which is defined by the upper portion of said transom, said bottom wall being disposed above the normal water line of the hull, a water-return passage leading from the bottom portion of said channel to the exterior of the hull, and a deflecting lip on the front wall of the channel for reversing the forward flow of water washing over said transom.

5. A boat hull structure closed at its rear end by a relatively thin sheet metal transom, an angular member extending transversely between and connecting the opposite side walls of the hull, said angular member having a flange along one longitudinal edge rigidly secured to the inner wall of said transom, said member defining front and bottom walls of a transversely extended channel the rear wall of which is defined by the upper portion of said transom, said bottom wall being disposed above the normal water line of the hull, a water-return passage leading from the bottom portion of said channel to the exterior of the hull, a relatively thick motor mounting plate secured to the inner wall of said transom and extending transversely of the hull in upwardly spaced relation to said bottom wall, and a deflecting lip on the front wall of the channel for reversing the forward flow of water washing over the transom.

6. A boat hull comprising bottom and side wall portions and closed at its rear end by a transom structure; said transom structure defining a water-tight, forwardly projecting, upwardly opening inboard channel having rigid front, rear and bottom wall portions extending transversely between and connecting the opposite side wall portions of the hull, said channel having its bottom wall disposed above the bottom wall portion of the hull and above the normal water line of the hull, the front and bottom wall portions of said channel being continuous and unbroken throughout their length, one of said wall portions defining an opening for the passage of water from the bottom portion of the channel to the exterior of the hull.

7. The structure defined in claim 6 in further combination with a knee secured to said transom and the bottom of the hull and supporting said channel intermediate its ends, and a forwardly extending brace member within said channel and connecting the front, rear and bottom walls thereof.

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