Aug. 7, 1928. 1,679,630

L. ROYS

METHOD OF BOAT BUILDING

Filed Jan. 16, 1928

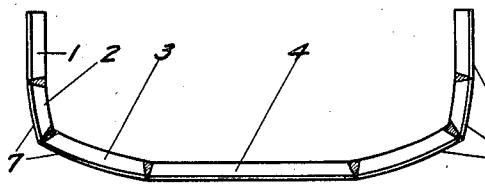


FIG-2

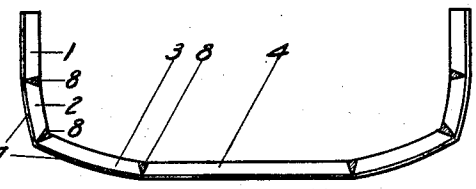


FIG-5

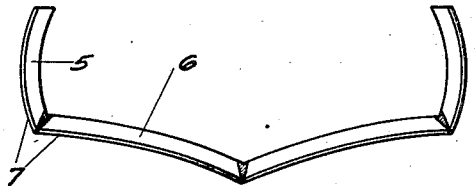


FIG-3

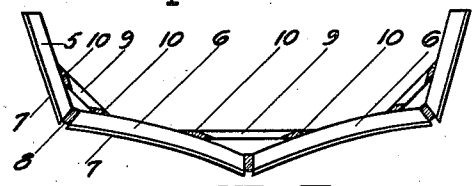


FIG-6

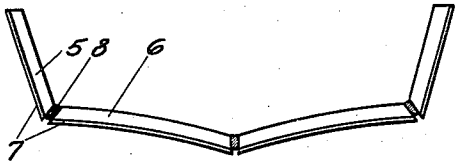


FIG-7

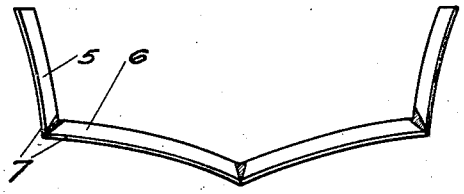


FIG-4

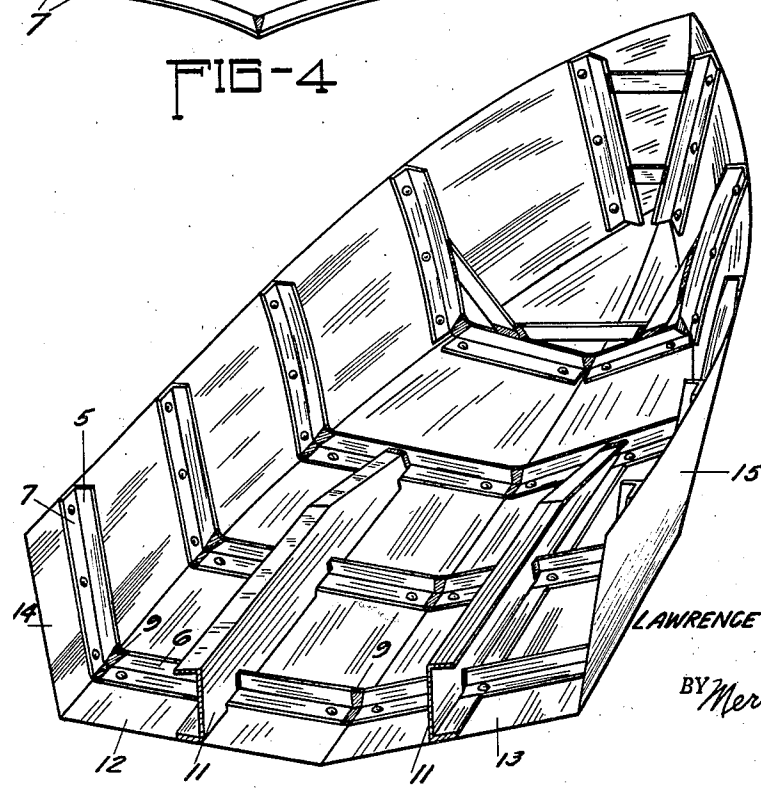


FIG-1

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Patented Aug. 7, 1928. 1,679,630

UNITED STATES PATENT OFFICE.

LAWRENCE ROYS, OF MOLINE, ILLINOIS.

METHOD OF BOAT BUILDING.

Application filed January 16, 1928. Serial No. 246,929.

This invention pertains to the building of sheet metal boats and has as its principal object the construction of a boat in which the shell will accurately fit the internal supporting members, such as ribs and longitudinal beams. In metal boats as ordinarily built, in which the rigid ribs are laid out in the desired form and the shell is bent and secured thereto, there is almost always more or less space between the shell and ribs, of any rigid type, it being difficult to accurately fit the shell to the ribs. In my method of construction, this difficulty is obviated by first shaping the shell and then shaping rigid ribs to fit the shell and then securing the ribs and shell together.

In the drawing annexed hereto and forming a part hereof, Fig. 1 shows in perspective a portion of a boat built in accordance with my method; Figs. 2 to 4, inclusive, show typical rib forms detached from any shell and showing the joints in the ribs united together autogenously; Figs. 5, 6 and 7 are similar views showing certain features of construction not shown in Figs. 2 to 4.

Among the objects of this invention are to reduce the manufacturing cost in the production of sheet metal boats; to produce a boat of the character referred to in which the strains due to water slapping are reduced to a minimum; and such further objects, advantages and capabilities as will hereafter appear and as are inherent in the structure and methods disclosed herein.

Referring more specifically to the annexed drawing, numerals 1, 2, 3, 4, 5 and 6 denote sections of angles used as ribs in a sheet metal boat. In this specification the term angles is used to denote structural steel shapes such as angle irons, T irons, Z bars, I bars, channels, flat bars and other rolled or forged shapes. The term "web" is used to denote that part of the angle which rests against the shell of the boat while the term "flange" denotes the outstanding part of the angle. In the construction of Fig. 5 the web 7 is left continuous and notches are cut in the flange of the angle to make the sharp bends therein. The bends of lesser curvature are made in any suitable manner well-known to the art. In this form of construction, the leaving of the web of the angle continuous has a tendency to strengthen the ribs more than in a construction in which the angles are cut into sections and then the sections autogenously united. In this construction, the sections of the angle are bent to fit the interior of the previously constructed shell and then, when an accurate fit has been attained between the shell and rib, the spaces in the flange of the rib are filled in with metal, autogenously. This makes a perfectly rigid rib which fits the shell accurately and does not permit the shell to work back and forth toward and away from the web of the angle, during use, being constantly in contact therewith. It will be understood that when the rib has been shaped so that it accurately fits the interior of the shell it is then secured in place by suitable means, such as rivets. It is preferred not to spot weld the shell and ribs together because of the fact that spot welding burns the galvanizing material from the surface of the shell. However, this may be resorted to, if desired.

In the constructions of the figures other than Fig. 5, the angles are cut into segments which are independently shaped to fit the interior of the boat and are then fastened together autogenously to make continuous ribs. In some forms, both webs and flanges are secured together, while in others only the flanges are so secured.

In Fig. 6 I have shown a structure similar to that shown in Fig. 7 except that the sections of the angle are connected together by braces 9 which are autogenously united at 10 to the sections of the rib. In some of these figures the amount of metal flowed into the space between the sections of the angle is somewhat exaggerated but it shows the general principle involved. Fig. 7 lacks the braces shown in Fig. 6 and naturally would not be so rigid a construction, though less obstructed in its interior by reason of the absence of the braces.

Fig. 1 shows in perspective view one end of a boat embodying the features described above, except that shown in Fig. 5. There are also shown in this figure some longitudinal channel members which serve to strengthen the boat longitudinally as well as serving as additional supporting means for the bottom plates 12 and 13. These are connected in watertight relation with the side plates 14 and 15.

By reason of the method of building outlined above, the sheets 12, 13, 14 and 15 will rest tightly against the webs of the angles and therefore can not yield toward and away from the ribs with the slapping

of the boat on the water. This results in a reduction in the strain at the points of attachment of the sheets to the angles, thus resulting in an improved structure. Furthermore, this method of manufacture reduces considerably the amount of time consumed in the building of such a boat, resulting, in the case of medium sized constructions, in a saving of approximately $100.00 per boat in manufacturing cost.

Having now described a boat built in accordance with my invention and the method of building same,

I claim:

1. That part of the method of building metal boats which consists in first shaping sheet metal into the shape of shell desired, then shaping angles into rigid frame members to conform to the interior sections of the shell, and autogenously uniting the sections of the individual frame members while the same are held in place in the shell.

2. That part of the method of building metal boats which includes first shaping sheet metal into the shape of shell desired, then removing sections from the flanges of rigid angles, then shaping the angles to conform to the interior sections of the shell which they are to fit, and then uniting the adjacent ends of the flanges autogenously.

In witness whereof, I hereunto subscribe my name to this specification.

LAWRENCE ROYS.