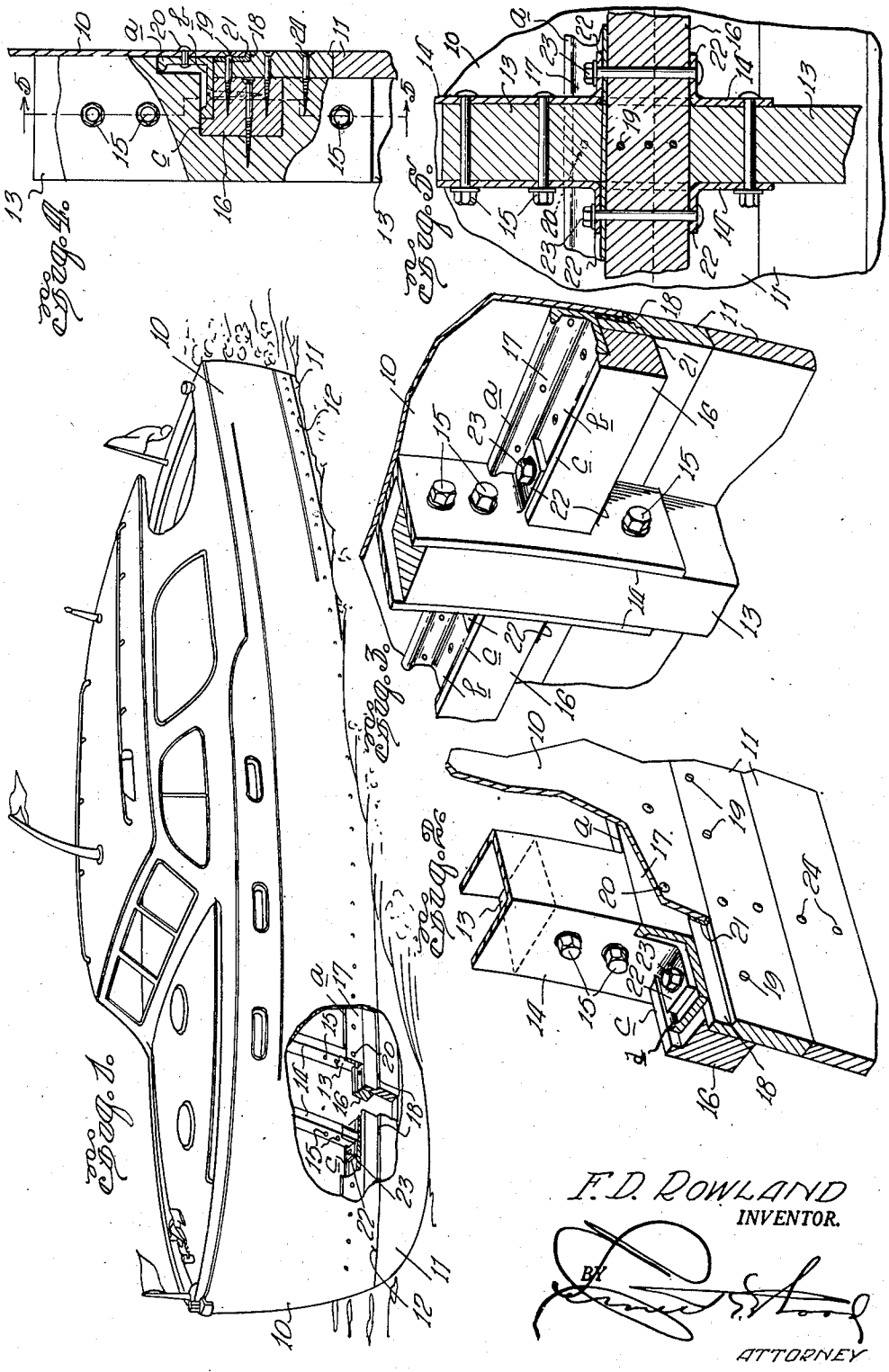
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COMPOSITE BOAT CONSTRUCTION

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COMPOSITE BOAT CONSTRUCTION

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7 Claims. (Cl. 9—6)

This invention relates to the construction of boats and more particularly to the manufacture of motor boats, yachts and the like.

The principal object of the invention is to provide a composite boat construction, making for greater economy by virtue of the reduction of hand work ordinarily necessary in all wood construction.

Further objects include the provision of a more seaworthy craft, due to lighter superstructure above the high water line; greater economy in operation due to less overall weight; streamlining to promote a more pleasing external appearance and the provision, due to the all metal and moderately prefabricated upper structure, of more adequate, attractive and durable interior appointments.

Another object of the invention of equal importance lies in the provision of an improved composite construction for small water craft in which it is made possible to design and construct that portion of a boat above the high water line in substantially the same manner as modern automobile bodies are produced, i. e., by die-stamping sections of the body and providing for their assembly upon a preconstructed wooden bottom. It is commonly known that the wood planked bottom is the best type of construction for all boats of the pleasure and yacht class, hence the present invention anticipates the use of the conventional wood bottom to a point just above the high water line and corrosion resistant metal from this point for all covering for the hull, deck, cabin, cabin roof etc., where wood is ordinarily used, and further, the novel form of means to be hereinafter described to accomplish the foregoing.

With these and other objects as paramount, the invention has further reference to certain features of accomplishment which will become apparent as the description proceeds, taken in connection with the accompanying drawing wherein:

Figure 1 is a perspective view of a conventional exterior design of craft but broken away to show the composite construction of the invention.

Figure 2 is a perspective view, enlarged, similar to that revealed in the broken away portion in Figure 1.

Figure 3 is a fragmentary detail view in perspective of the assembly shown in Figure 2 but viewing the same from the interior of the hull.

Figure 4 shows the fragmentary frame section illustrated in Figures 2 and 3 but in vertical section, and

Figure 5 is an interior view of the frame section taken on line 5—5 on Figure 4.

Continuing with a more detailed description of the drawing, reference is primarily made to Figure 1 wherein numeral 10 denotes the upper structure of a conventional motor powered boat, while the wood planked bottom is indicated by numeral 11, below the water line 12. While this figure shows the lower portion of the metallic shell 10 as being flush with the high water line 12, it is preferred that it be terminated just above this line, although the location of the joint in relation to the water line may be varied to correspond to different conditions and requirements.

The invention requires no change in the present construction of the bottom 11 up to the water line. Slightly above this point however, the vertical frames 13 are terminated and deep channels 14 are spliced to the vertical stub frames 13 by bolts 15 passed laterally through the stub frames and the flanges of the channels 14, as shown.

A horizontal frame 16 is provided and extends entirely around the hull just above the high water line and is set in correspondingly shaped recesses in the stub frames 13 to be flush with the outer surfaces thereof. To accommodate this horizontal frame, the channels 14 are likewise recessed in their outer faces, the recesses being of such depth that they will retain the vertical flange *a* of a bulb angle 17. The horizontal flange *b* of this bulb angle 17 lies flush on the top of the horizontal frame 16 the full length thereof, although a bead *c* on the inner edge of the horizontal frame rises flush with the rib *d* of the angle flange *b*, as shown in the several views to afford a reinforcing abutment for the bulb angle.

It will be observed that the horizontal frame 16 lies flush with the top of the upper side plank 11 and that the latter is notched out at 18.

Metal sheathing 10, preformed in sections by dies is feathered into the notch 18 of the upper side plank 11 which latter is secured by screws 19 to the horizontal frame, the sheathing being secured by rivets 20 to the bulb angle 17. The notch 18 in the plank 11 is made of sufficient depth to accommodate a quantity of cement 21 to provide a water tight joint between the metal and wood sections of the hull.

The frames for the metal covered portion of the hull and cabin may be of conventional wood or they may be formed of corrosion resisting metal stamped to shape, the metal frames being preferred, being of lighter weight and the sheet metal can be riveted to the frames. All metals,

frames, bulb angle, sheet metal, screws, etc., should be of the same material to insure against electrolysis. These may be stainless steel, brass, cupro-nickel, etc., stainless steel being preferred among the materials named.

Referring again to the channel extensions **14** of the vertical stub frames **13**, it will be noted that as a further contribution to the strength of the assembly, the flanges of the channels in recessing to receive the horizontal frame **16**, are cut along a line midway between the top and bottom of the proposed recess and the metal is bent upwardly and downwardly to form laterally extending projections **22** which embrace the upper and lower surfaces of the bulb angle **17** and horizontal frame **16** on each side of the vertical frame. Bolts **23** are passed through these projections and the said angle and frame to securely hold the assembly against any possible displacement.

Due to the double curves in some surfaces, it will become necessary to stamp out the metal for these surfaces, while the single curve surfaces may be covered with flat sheets, the edges of the sheet metal to be either welded and polished smooth or overlapped and riveted, using a sealing compound to insure a water tight joint. The wood planking **11** is secured by screws **24** to the stub frames above and below the water line and sealed in any conventional manner.

It is clearly apparent from the foregoing that a more seaworthy and economical craft is provided and one of greater durability and longer life by virtue of the novel structural advantages shown and described.

Manifestly, the construction as shown and described is capable of some modification and such modification as may be construed to fall within the scope and meaning of the appended claims is also considered to be within the spirit and intent of the invention.

What is claimed is:

1. A boat of composite construction including vertical stub frames covered below the high water line with wood planking, a horizontal frame flush with the top of said wood planking and recessed into said stub frames, a bulb angle overlying and coextensive with said horizontal frame, and preformed metal sheathing feathered into the upper edge of said wood planking, riveted to said bulb angle and screwed to said horizontal frame.

2. In a composite boat construction, a bottom composed of wood planking, vertical stub frames to which said planking is secured, metallic members joined to and forming continuations of said stub frames and recessed on an even plane with the top of said planking, a horizontal frame lying in the recesses of said metallic members, reinforcing means affixed along the top of said latter frame and a metal sheathing overlying said metallic members and feathered into the top of said planking to form the upper covering of said boat.

3. In a composite boat construction, a bottom composed of wood planking terminating above the high water line of said boat, vertical stub frames in spaced relationship in said bottom and extending above said planking, metallic members affixed to and forming continuations of said stub frames, a horizontal frame embracing the perimeter of said bottom and mortised in said stub frames and metallic members above said high water line and a metal sheathing affixed to said frames whose lower edge is sealed with respect to the upper edge of said planking.

4. In a boat construction, a bottom of wood planking, a plurality of vertical frames, each consisting of wood lower sections and metal upper sections joined together above the high water line on said bottom, a horizontal frame embracing said vertical frames, and a metallic sheathing affixed to said vertical and horizontal frames, forming a continuation of said planking.

5. A boat construction including a wood bottom of planking rising above the high water line on said boat, a framework of wood and metal supporting said planking and a preformed sheathing of metal forming the superstructure of said boat and whose lower portion is in sealed relation with the upper portion of said planking.

6. The construction described in claim 5, further defined in that the framework consists of vertical stub members of wood, encased at their upper ends by channel members of metal, and a horizontal frame embracing said vertical stub members below their upper ends but above the lower ends of said channel members.

7. The construction described in claim 5, further defined in that the frame-work is composed of vertical stub members of wood and metal channels encasing the upper ends of said stub members to form continuations of said vertical frames, the overlapping portions of said members and channels having corresponding recesses in their faces, said channels further having projections struck outwardly from their sides in vertically spaced relation, a horizontal member of wood lying in said recesses between said projections, and means passing through said horizontal member and projections for holding the latter in unmovable relationship with said vertical members of said frame-work.

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