Feb. 18, 1969 L. J. LIVAUDAIS 3,427,671

METHOD FOR FORMING PONTOONS, BOATS AND THE LIKE

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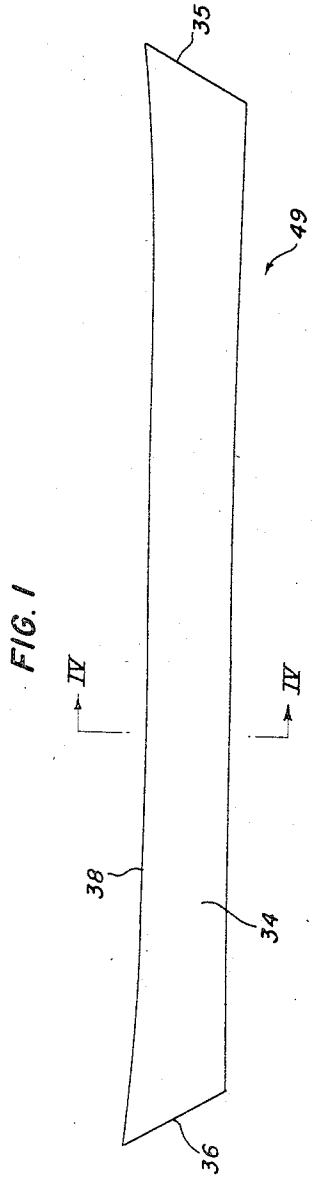


FIG. 1

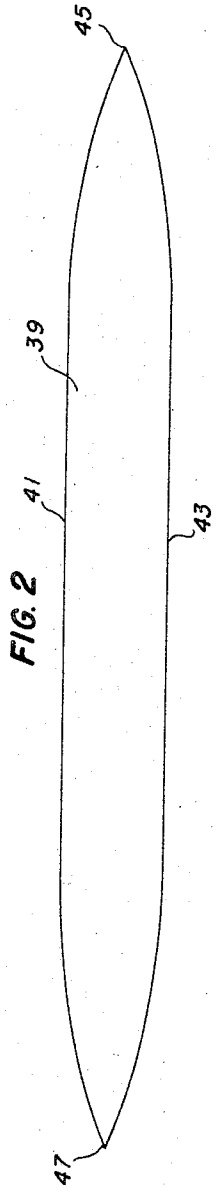


FIG. 2

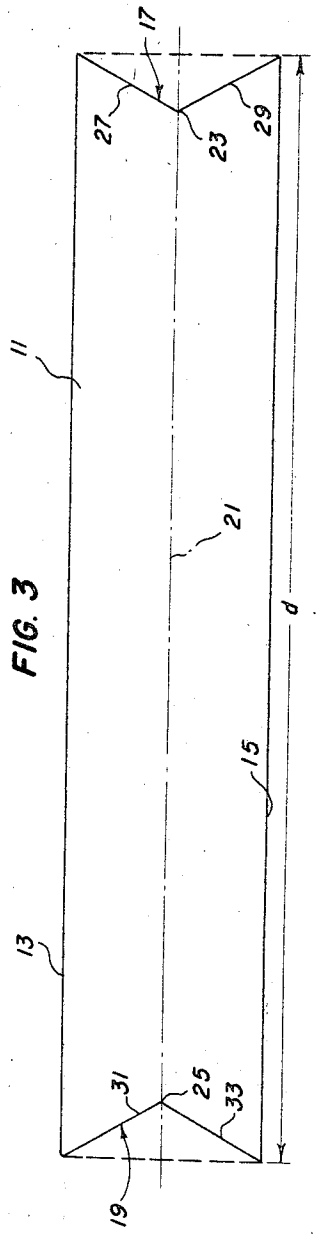


FIG. 3

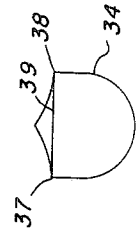


FIG. 4

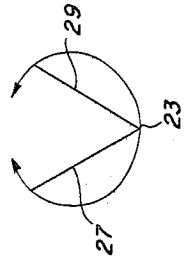


FIG. 5

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METHOD FOR FORMING PONTOONS, BOATS AND THE LIKE

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This invention relates to a method for forming pontoons, boats and the like.

Heretofore, in the forming of pontoons or boats having symmetrical arcuate or contoured metal hulls with pointed ends, there has been the problem of forming the hull so that it has a smoothly contoured surface. This problem can be appreciated when it is considered that the hull at the ends thereof must be bent in more than one direction in order for it to be perfectly smooth. Heretofore, the usual means of trying to overcome this problem was to form and shape the metal by the use of heat and presses, and by the use of stiffening ribs disposed in spaced relationship along the length of the pontoon or boat.

The present invention is directed towards overcoming the above-mentioned and other problems in forming pontoons, boats or the like.

Thus, one of the objects of the present invention is to provide an improved method of forming pontoons, boats or the like in which the resultant hulls thereof are smoothly contoured.

A further object is to provide such a method which is easy and economical to accomplish.

A further object is to provide such a method in which no heating of the metal is required.

A further object is to provide such a method wherein the resultant product is structurally sound and in which strengthening ribs are not necessarily required.

A further object is to provide a method of forming pontoons, boats and the like which utilizes only two sheets of metal.

The means by which the foregoing and other objects of the present invention are accomplished and the manner of their accomplishment will be readily understood from the following specification upon reference to the accompanying drawings, in which:

FIG. 1 is a schematic side elevational view of a pontoon or boat formed by the method of the present invention.

FIG. 2 is a plan view of the deck utilized in the method of the present invention.

FIG. 3 is a schematic plan view showing the piece of metal which has been cut to be utilized in forming the hull in the method of the present invention.

FIG. 4 is a schematic view taken as on the line IV—IV of FIG. 1.

FIG. 5 is a schematic view showing one of the steps in the method of the present invention.

Referring now to the drawings in which the various parts are indicated by numerals, the first step in the method of the present invention comprises forming, stamping or cutting a sheet of metal to establish a single elongated flat first piece of metal **11** in the form shown in FIG. 3. It will be seen by referring to FIG. 3 that piece **11** has opposite and substantially parallel equal side edges **13, 15** and end edges **17, 19** that respectively interconnect the ends of side edges **13, 15**. If desired, piece **11** may be rectangular with the end edges perpendicular to the side edges as shown by the dashed lines in FIG. 3, in which case the resultant boat would have a vertical bow and stern. However, end edges **17, 19** are preferably V-shaped as shown by the solid lines in FIG. 3, in which case the metal respectively between the end edges and the dashed lines as shown in FIG. 3 would be cut out, and the resultant boat or pontoon would have an angular stern and bow, as best seen in FIG. 1, and as will be better understood in the description to follow. In FIG. 3 it will be noted that the imaginary center line **21** extends halfway between and parallel to side edges **13, 15** from end edge **17** to end edge **19**. Also, it will be noted that center line **21** intersects end edges **17, 19** respectively at points **23, 25** to divide the end edges **17, 19** respectively into adjacent end edge halves **27, 29** and **31, 33**. In addition, it will be noted that end edge halves **27, 29** are substantially the same length and are substantially at the same acute angles relative to the center line **21**. Similarly, end edge halves **31, 33** are substantially the same length and are at substantially the same acute angles relative to the center line **21**. By selecting the proper angle of the end edge halves relative to the center line **21**, it will be understood that the angular rake of the bow and stern can be determined. It will be understood that the end edge halves do not necessarily have to be straight lines, but may take varied forms without departing from the spirit and scope of the present invention.

After the piece of metal **11** has been formed, as above described, the next step is to measure one of the side edges **13, 15** to determine the length or dimension *d* thereof.

In the next step of the present invention, the piece **11** is folded at points **23, 25** (the folding of one of the ends of piece **11** is shown diagrammatically in FIG. 5), and the end edge halves **27, 29** and **31, 33** are respectively brought into contiguous relationship. It should be pointed out that the metal during the folding as above described should be only creased at points **23, 25**. Then, while the end edge halves are in said contiguous relationship, each of the adjacent pairs of end edge halves **27, 29** and **31, 33** are welded to establish a partially finished pontoon or boat hull **34** having a bow pointed along the line **35** and a stern pointed along line **36**. It will be apparent that the side edges **13, 15** of the flat piece of metal **11** after the metal is folded as above described will become the upper edges **37, 38** of the boat or pontoon **39**.

The next step is to cup a second piece of flat and substantially rigid material, preferably a sheet of metal, to establish a symmetrical deck **39** pointed on the opposite ends thereof as shown in FIG. 2 and having side edges **41, 43** extending from the point **45** at one end of the deck to the point **47** at the other end with each of the side edges **41, 43** as measured therealong being equal to the length *d* of each of side edges **13, 15**. In other words, the side edges **41, 43** are measured along the curved end portions as well as the intermediate straight portions as by the use of a flexible steel tape or the like, and this dimension is made equal to the previously determined dimension *d*. This is an important step in the present invention to have the side edges **41, 43** each equal to the previously measured side edges **13, 15**.

The last step of the method of the present invention is to secure deck **39** in place on hull **34** with the side edges **41, 43** being respectively in engagement with upper edges **37, 38**. This securing is preferably done as by welding. When the deck **39** is secured as above described, the finished pontoon or boat **49** takes its final full shape in which the hull **34** is forced into a smoothly contoured shape. Thus, when deck **39** is put in place as above described, a clean form will result causing the metal to seek its own lines and in the stern and bow thereof the metal actually bends in more than one direction. The finished boat **49** will have a smooth bottom just as if it had been molded, as for example, from plastic.

From the foregoing description, it will be understood that a method of forming pontoons, boats or the like is provided which is economical and easy to accomplish.

Also, it will be understood that such a method is provided in which no heating of the metal is required, and the resultant product is structurally sound with no strengthening ribs or the like being necessarily required on the interior of the hull. In addition, such a method is provided in which only two sheets of metal or the like are necessary. Additionally, it will be understood that this method can also be used for open boats with gunwales by forming the rigid gunwales with the same measurements as the length of the original flat piece of metal from which the hull was made just as in the preferred embodiment of the present invention.

Although the present invention has been described with reference to a preferred embodiment, it is to be understood that it is not to be so limited since changes and modifications may be made therein which are within the full intended scope of the present invention as hereinafter claimed.

I claim:

1. A method of manufacturing a pontoon and the like comprising the steps of providing a single elongated first piece of metal having opposite and substantially parallel equal side edges, having opposite end edges interconnecting said side edges, and having an imaginary center line parallel to and halfway between said side edges extending from one of said end edges to the other to divide each of said end edges into an adjacent pair of end edge halves; measuring one of said side edges to determine the length thereof; folding said piece of metal at said end edges where said center line intersects said end edges; bringing the adjacent end edge halves of each of said pair of end edge halves into contiguous relationship; while said end edge halves are in said contiguous relationship securing together each of said adjacent pairs of end edge halves to establish a partially finished hull having a pair of upper edges provided by said side edges of said first piece; providing a substantially rigid symmetrical piece of material pointed at the opposite ends thereof and having side edges extending from the point at one end of said material to the point at the other end with each of said side edges of said material as measured therealong being equal to the length of each of said side edges of said first piece of metal; securing said material in place on said hull with said side edges of said material being in engagement with said upper edges of said hull to force said hull into a smoothly contoured shape.

2. A method of manufacturing a pontoon and the like from sheets of metal comprising the steps of cutting one

of said sheets of metal to establish a single elongated first piece of metal having opposite and substantially parallel equal side edges, having opposite end edges interconnecting said side edges, and having a center line parallel to and halfway between said side edges extending from one of said end edges to the other to divide each of said end edges into an adjacent pair of end edge halves; measuring one of said side edges to determine the length thereof; folding said piece of metal at said end edges where said center line intersects said end edges; bringing the adjacent end edge halves of each of said pair of end edge halves into contiguous relationship; while said end edge halves are in said contiguous relationship welding each of said adjacent pairs of end edge halves to establish a partially finished hull having a pointed bow and a pointed stern and having a pair of upper edges provided by said side edges of said first piece; cutting a second piece of said sheets of metal to establish a symmetrical deck pointed on opposite ends thereof and having side edges extending from the point at one end of said deck to the point at the other end with each of said side edges of said deck as measured therealong being equal to the length of each of said side edges of said first piece of metal; securing said deck in place on said pontoon hull with said side edges of said deck being in engagement with said upper edges of said hull to force said hull into a smoothly contoured shape.

3. The method of claim **2** in which said end edge halves of each of said end edge halves are respectively disposed at acute angles relative to the center line of said first piece of metal.

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U.S. Cl. X.R.

114—66.5; 29—407, 446, 475