

PATENT SPECIFICATION

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(54) A TEMPLATE FOR USE IN BUILDING LARGE FLOATABLE STRUCTURES

(71) I, JAMES ANDERSON, a British Subject, of Kayron, 5 The Craigs, Newark Street, Greenock, Scotland, do hereby declare the invention, for which I pray that a patent may be granted to me, and the method by which it is to be performed, to be particularly described in and by the following statement:—

The present invention concerns a template for use in building large floatable structures. The subject matter of this specification has been divided out from our co-pending British Application No. 16792/70 (Serial No. 1,295,543), in which there is described and claimed a method of building a large floatable structure in a plurality of parts, including building one part of the structure, making a record of the profile of an end of the one part by means of a template, building another part of the structure, utilising said template so that an end of the other part conforms in profile to said template, launching the one part and the other part and joining the parts together at the ends of said parts which conform in shape to the template while they are afloat. The template of this present invention is suitable for use in that method.

According to the present invention there is provided an adjustable template for recording hull profiles, said template including a rigid frame carrying a plurality of spaced adjustable measuring heads, each measuring head being provided with means for moving it relative to the frame and for holding it in any desired position relative to the frame.

An embodiment of the present invention will now be described by way of example with reference to the accompanying drawings, in which:—

Fig. 1 is a front view of one half of a template the other half being a mirror image of the half shown; and

Fig. 2 is a side view of the template.

[Price 25p]

In the embodiment a large ship is built in two parts which are launched independently from the same building berth. The stern part of the ship is built first by any conventional shipbuilding techniques and on completion of the hull, the profile of the end of the stern part which is subsequently to be joined to the bow part is recorded by means of an adjustable template device, this end being furthest away from the water.

The template as shown in more detail in Figs. 1 and 2, comprises a rigid framework which includes two side sections 1, only one of which is shown, and a plurality of intermediate portions 3 again only one of which is shown. The side sections are of such a dimension that they surround the curved bilge plates 20 of the hull, the hull in this instance being substantially rectangular in cross-section but having a curved bilge portion between the substantially vertical side plates 21 and substantially horizontal bottom plates 22.

These side portions of the template include a plurality of spaced measuring heads 5, the measuring heads 5 being formed on the end of a screwed rod 7 which is threadably mounted in a nut arrangement 9 rigidly fixed to the frame.

Two rows of measuring heads are provided, the rows being parallel and spaced apart by a distance of about 8 feet along the fore-and-aft axis of the hull. Locking nuts (not shown) may be provided to hold the measuring heads fixed in position after they have been adjusted to any desired position.

The intermediate sections 3 of the jig are rigidly interconnectible and at least some of these sections 3 include longitudinally extending links 8 which have length adjusting means incorporated therein so that by varying the number of intermediate sections 3 between the side sections 1 and, if necessary, varying the length of the intermediate

section 3, the template can be adjusted for use with hulls of varying dimensions.

To facilitate positioning the template relative to the hull, it is mounted on wheels 10 and laser beam or optical sighting gear 11 is provided on the side sections 1 and can be used in co-operation with a sighting target 13 fixed to the bottom plates at the fore-and-aft line of the hull.

Indicating means 15 are provided on the template for showing the declivity of the template and the frame is provided with adjusting screws 17 which are in the form of jacks which are utilised to fix and adjust the rest position of the template.

As stated above on completion of the hull of the stern part of the ship, the template is wheeled into position adjacent the end to be subsequently joined to the bow part and the profile of the hull at this position is recorded by the template, the declivity, distance apart and other measurements being recorded at the same time. Further the position of the longitudinals, etcetera may be recorded by photo-grammetric techniques.

The template is now wheeled away from the stern part and turned through 180° and fixed in position on the landward end of the building berth by the jacks 17 so that the declivity and all other measurements correspond to those taken from the stern part of the ship.

From these measurements building of the bow part of the ship is commenced so that the end to be joined is furthest away from the water.

WHAT I CLAIM IS:—

1. An adjustable template for recording hull profiles including a rigid frame carrying a plurality of spaced adjustable measuring heads, each measuring head being provided with means for moving it relative to the frame and for holding it in any desired position relative to the frame.

2. An adjustable template as claimed in claim 1, wherein each measuring head is provided at the end of a threaded rod mounted in a nut arrangement fixed to the frame.

3. An adjustable template as claimed in claim 1 or claim 2, wherein the measuring heads are arranged in two spaced apart parallel rows.

4. An adjustable template as claimed in any one of claims 1 to 3, wherein the rigid frame is fabricated from angle section steel beams.

5. An adjustable template as claimed in any one of claims 1 to 4, wherein the rigid frame comprises two side portions carrying the measuring heads interconnected with a central portion.

6. An adjustable template as claimed in claim 5, wherein the central portion includes length adjustment links.

7. An adjustable template as claimed in claim 5 or claim 6, wherein the central portion is formed from a plurality of inter-connecting sections such that by adding or subtracting sections the distance between the side portions may be varied.

8. An adjustable template as claimed in any one of claims 1 to 7, wherein the rigid frame is mounted on wheels.

9. An adjustable template as claimed in any one of claims 1 to 8, wherein means are provided on the rigid frame for measuring the declivity of said frame.

10. An adjustable template as claimed in any one of claims 1 to 9, wherein optical sighting gear is provided on said frame to facilitate alignment.

11. An adjustable template as claimed in any one of claims 1 to 10, wherein laser sighting gear is provided on said frame to facilitate alignment.

12. An adjustable template for recording hull profiles substantially as hereinbefore described with reference to Figs. 1 and 2 of the accompanying drawings.

FITZPATRICKS,
Chartered Patent Agents,
14—18 Cadogan Street,
Glasgow, C.2,
and
Warwick House,
Warwick Court,
London, WC1R 5DJ.

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To facilitate positioning the template relative to the hull, it is mounted on wheels 10 and laser beam or optical sighting gear 11 is provided on the side sections 1 and can be used in co-operation with a sighting target 13 fixed to the bottom plates at the fore-and-aft line of the hull.

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