main hull, when a common figure may be taken for the whole structure based on the area of the main hull only, as already explained. It is a pity that more details of weight, etc., were not available for the other types of boats in use, but in the rush of war production it was difficult to ascertain exact details of other designers' boats; at the same time, whenever possible, weights have been obtained and are given in the table.

Estimating Size and Proportions of Hull for a Given Maximum Flying Weight (W).—It is usual for the designer to receive instructions to design a suitable hull for a machine of some stated weight, and from this it is a comparatively simple matter to ascertain the main proportions of the hull and from these it should be possible to estimate the weight within 5 per cent., at any rate, for the flexible construction, provided the form is not altered. All the general dimensions of the hull should vary as $\sqrt[3]{W}$ with the exception of the width of the planing bottom, the proportion of which should slightly increase as the boat gets larger. The reason of this variation in the beam is that the area of the planing bottom is only increasing as the *square* of the dimension while the weight is increasing as the *cube*, consequently the lift of the planing bottom does not increase proportionately to the weight, unless the speed is increased also.

(*To be Concluded.*)

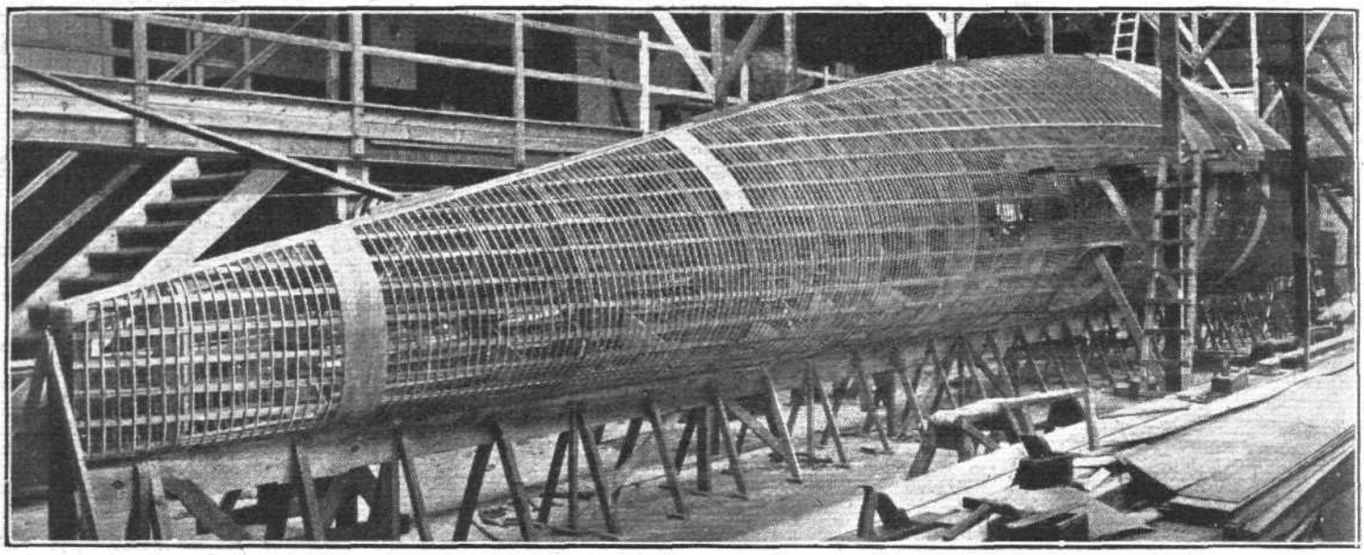

Fig. 11.—The hull of N. 4 in skeleton form

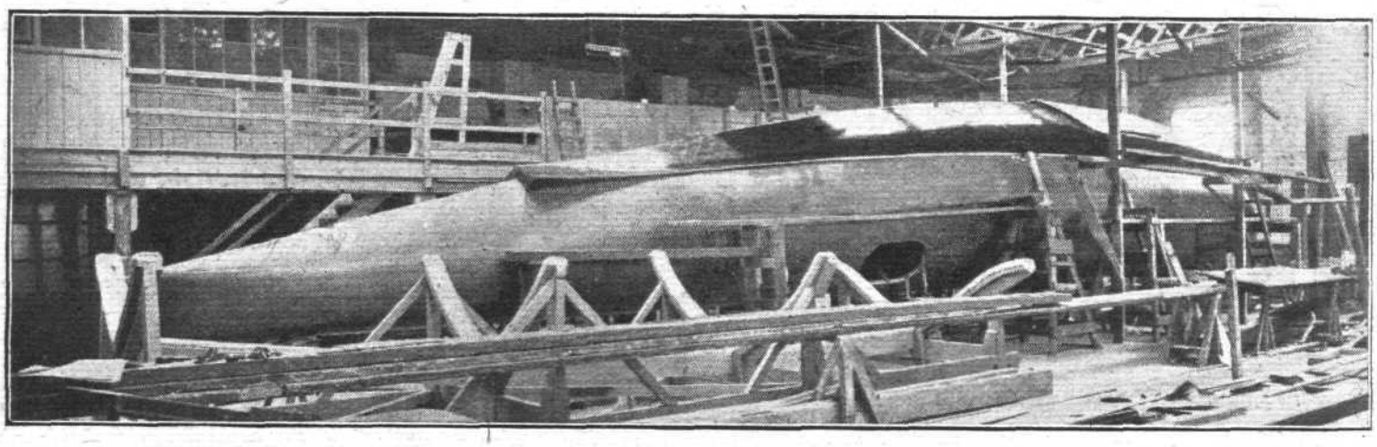

Fig. 12.—The hull of N. 4 completed

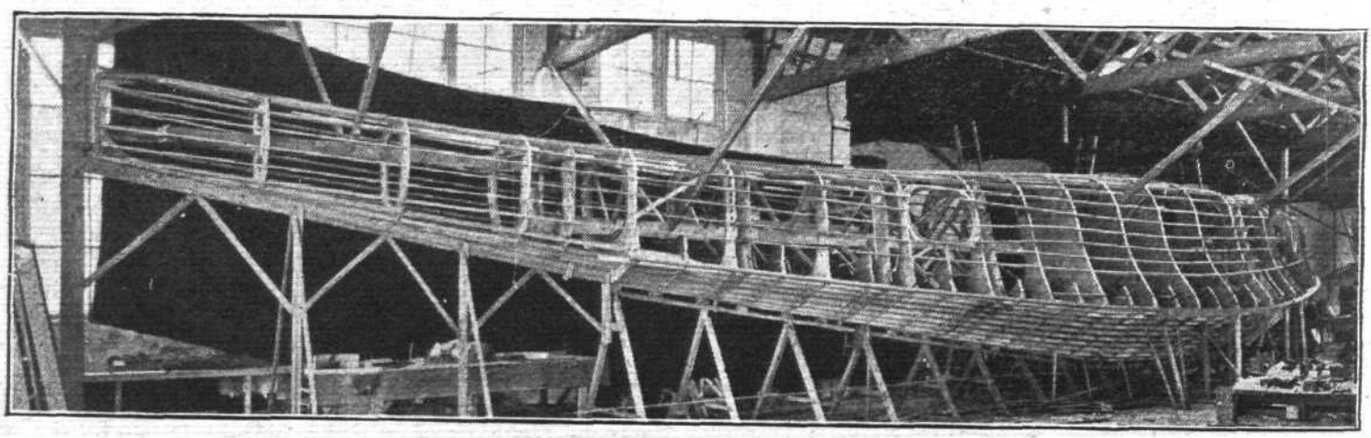

Fig. 13.—The hull of Nicholson N. 4