derful stiffness and strength. It also lends itself easily to combinations having the same good qualities to a remarkable extent.

"Utilizing this principle, the cells used in the tower were made of ordinary half inch galvanized iron pip-

Tetrahedral Units from which the Tower was Built.

ing, secured at the four junction points by cast iron corner pieces, into which they screwed. The piping was cut into lengths of 44 3-4 inches, allowing 5-8 inch thread in each casting, when the cell measured exactly 48 inches from tip to tip of the castings. One of these cells was subjected to a compressional strain of 4,000 pounds without showing the least sign of failure."

The tower, we are informed, is built up of 260 of these cells, and rises about 70 feet above the ground. It rests on three concrete foundations 72 feet apart in the form of a triangle. The method of erecting the large tripod structure above them illustrates a distinct and useful feature of the tetrahedral system. Mr. Baldwin writes:

"Employing ordinary methods, its erection would have been very expensive, necessitating an immense amount of staging and falsework; but upon the cellular system of construction it was very simple, and no staging or falsework of any kind whatsoever was required. Practically all the work was done on the ground, the workmen having all the advantages of terra firma until the last section was completed.

"The plan of erection was a simple one. The leg containing the stair and one of the other legs were first built along the ground, forming a large V. In this position the foot of each leg was securely fastened by a hinge to its foundation; the hinge forming an axis, about which it was free to turn if raised at the junction of the two legs (which corresponds to the point of the V., and was directly above the third foundation). A system of jack-screws was used to do this, and the third leg was built up section by section."

A few of the distinctive advantages of this method of construction are thus stated:

"First.—The rigidity of the structure was remarkable. This was well demonstrated by testing the two legs which were built along the ground as a beam. In a position very slightly inclined to the horizontal, 72 feet between supports, the structure showed a deflection of only about 3-8 inches.

"Second.—The whole tower is less than five tons in weight, and is surprisingly strong for the material employed, due to the support afforded to the compression members every four feet throughout their length. A very long through member may thus be safely treated as a comparatively short post.

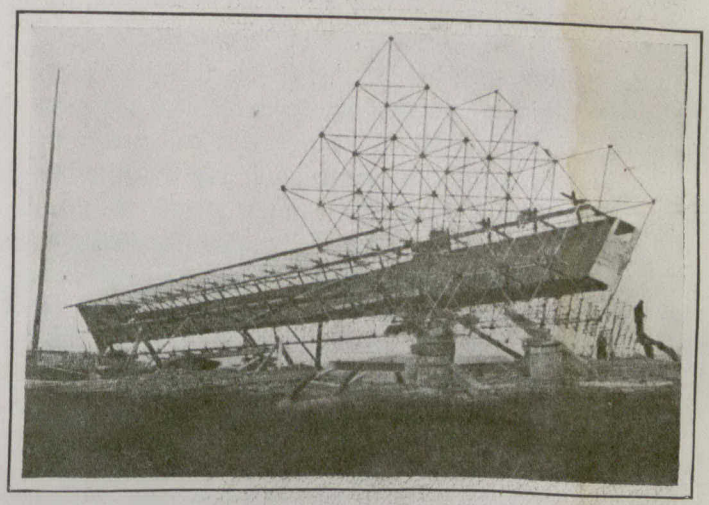
"Third.—The inspection or even complete renewal of such a structure could be easily acomplished, as no one member is indispensable to its support.

"Fourth.—The material can be rapidly assembled, offering special advantages for temporary structures of various kinds.

"Fifth.—The method of construction reduces the amount of falsework, and in some cases would eliminate its use altogether.

"Sixth.—A very small amount of skilled labor is necessary for good work.

"These points appear to be some of the chief ones which make the application of the tetrahedral principle



Two Legs Completed and Ready for Lifting.

of construction to engineering work on a large scale well worth the consideration of all interested in the subject."

MODELS OF OLD LONDON.

What is likely to prove a very interesting special exhibition is in preparation for the Franco-English exhibition next year. This is being prepared by a London architect, Mr. J. B. Thorp, and is to include models of Old London Bridge, Old St. Paul's, the entrance to the Fleet River, Westiminster Hall and other restorations in model form; these are to be placed in a series of compartments under special lighting, and thus form a series of illustrations of some of the original features of mediæval London. The model of Old London Bridge, which is completed except for one or two slight modifications, is made to a scale of 1-8 inch to a foot, and has been admirably done. The models are being built up in parts, in a solid wooden construction, so as to admit of being packed up and exhibited at different places. It is hoped that they may be interesting, especially to Colonial visitors, as illustrations of the mother-city from which all our Colonial development has sprung.