for the Norwegian navy, and had lain under cover at Horten for 30 years. They were all grown to shape, and 10–11 inches thick. The frames were built in two courses or tiers, closely wrought together, and connected by bolts, some of which were riveted. Over each joint flat iron bands were placed. The frames were about 21 inches (56 cm.) wide, and were placed close together, with only about an inch or an inch and a half between; and these interstices were filled with pitch and sawdust mixed, from the keel to a little distance above the water-line, in order to keep the ship moderately water-tight, even should the outer skin be chafed through.

The outside planking consists of three layers. The inner one is of oak, 3 inches thick, fastened with spikes and carefully calked; outside this another oak sheathing, 4 inches thick, fastened with through bolts and calked; and outside these comes the ice-skin of greenheart, which like the other planking runs right down to the keel. At the water-line it is 6 inches thick, gradually diminishing towards the bottom to 3 inches. It is fastened with nails and jagged bolts, and not with through bolts; so that if the ice had stripped off the whole of the ice sheathing the hull of the ship would not have suffered any great damage. The lining inside the frame timbers is of pitch-pine planks, some 4, some 8 inches thick; it was also carefully calked once or twice.

The total thickness of the ship's sides is, therefore, from 24 to 28 inches of solid water-tight wood. It will