

A heavy oak sill, two feet square, rests directly on this casting. The succeeding three courses are laid lengthwise, of yellow pine. After that the alternate courses are heading courses. The whole V is thoroughly held together by drift-bolts and screw-bolts. In addition there are heavy angle irons, uniting the V to the roof. At the principal corners the courses of timber are halved into each other and strapped together.

The immediate roof is composed of five courses of twelve-inch square yellow pine sticks, laid close together, bolted sideways and vertically, and having a set of bolts running through the whole of the five courses. The outer face of the caisson has a batter inward of one foot in ten, to facilitate its descent into the ground.

To make the caisson air-tight, the seams were all thoroughly caulked for a depth of four inches inside and out. In addition, a vast sheet of tin, unbroken throughout, extends over the whole caisson, between the fourth and fifth courses, and down the four sides to the shoe. The tin on the outside is further protected by a sheathing of yellow pine. The space between the timbers was filled with hot pitch and grout. As air under a pressure of forty or fifty pounds will penetrate wood with ease, the inside of the air-chamber was coated with an air-tight varnish, made of rosin, menhaden oil, and Spanish brown. The air-tightness produced by these means has throughout proved quite satisfactory.

The yellow pine timber used in construction, came principally from Georgia and Florida. Its average weight was forty-eight pounds per cubic foot, although many sticks were so heavy as to sink in water. All bolt-holes bored into this timber have a drift one-eighth inch to insure a good hold. No bolts were used with ragged ends.

SHAFTS.

The water shafts, two in number, are rectangular in section, seven feet by six feet six inches, made of three-eighths inch boiler plate, properly stiffened by angle-irons, and secured to the caisson timber. These shafts are open above and