dred and eighty tons of bolts were used in the fastenings. The dimensions of the base are one hundred and seventy-two feet by one hundred and two feet, covering an area of seventeen thousand five hundred and forty-four square feet. Its length is four feet greater than the Brooklyn caisson.

The Air Chamber has a height of nine feet six inches, and is divided into six rooms by means of five main frames. The rooms vary from twenty-five to thirty feet in width by one hundred and two feet long, and are subdivided by lighter secondary frames running through the middle. In addition there are two heavy cross frames extending through the whole length of the caisson. The amount of bearing surface is eighteen per cent. of the whole base, and will be increased to twenty-five per cent. of the whole base, by reason of the sloping sides, in case the caisson should sink into the soil two feet.

The main frames are of solid timber and four feet wide, composed of two central tiers of horizontal timber and two outer rows of posts. They are secured to the roof by long through bolts, extending through the lower three courses of the roof, and are heavily braced sideways. The ends of the frames are secured to the sides of the air chamber by knees and iron straps. Each frame is pierced by doorways of ample size to afford communication between the adjoining chambers.

The secondary frames are open work, composed of posts and sills, and can be strengthened if the necessity should arise. An

Iron Skin

lines the inside of the air chamber. The iron is light boiler plates of No. 6 gauge. A light iron was purposely selected in order to overcome to some extent, by its buckling, the difficulty arising from the expansion and contraction of so large a surface rigidly bolted to an unyielding mass of timber. In addition, a series of expansion joints of angle iron were put in transversely to aid in taking up the contraction. No trouble has been experienced from this source since the