

CUTTING OFF THE WATER SHAFTS.

At a depth of sixty-eight feet a number of boulders were encountered under one water-shaft, too large to be moved either by the dredge or by outside appliances. It therefore became necessary to cap the shaft and blow out the water, similar to the operation so frequently performed in Brooklyn. On top of the cast-iron cap was placed one of the old air-locks, so as to afford access into the shaft thereafter.

After the water was blown out and boulders removed, the shaft was cut off near the roof of the air-chamber. The same process was repeated with the other shaft. During this time the caisson was kept from sinking by banking up the frames and edges with earth.

The air pressure against the caps of the shafts was one hundred and thirty-three tons. The individual sections had been tested to twice this pressure before, but by way of precaution an additional dead weight of fifty tons was placed on them.

Where water shafts are used, it is absolutely necessary to make provisions for capping them.

SOUNDINGS FOR ROCKS.

At a depth of seventy feet, soundings were begun in the air-chamber for the location of bed rock, by means of a pointed rod, ten feet long, driven in by sledges.

A trial was made to sound by means of a pipe and water jet, but was abandoned on account of the numerous stones. These probings were carried on daily for a month, until a clear idea of the form and depth of bed-rock was attained.

The surface was evidently very irregular, composed of alternate projections and depressions, the extreme difference in elevations encountered being sixteen feet, and occurring chiefly along the water edge. Throughout the central portion, however, and covering at least two-thirds of the entire area, the irregularities were much less, amounting to only three or four feet in a length of one hundred and sixty, and width of about seventy-five feet.