and twenty-one inches diameter, inside, with the door at the bottom opening into the air-chamber, and a long door on top, through which the material is thrown in. When the upper door is open, the lower one is held shut by the air-pressure, assisted by two iron clamps worked by levers. As soon as a certain quantity of material has been thrown in, the upper door is pulled up, and the compressed air being then allowed to enter, firmly closes it. When the shaft is filled with compressed air, a signal is given to the attendant below, who removes the lugs, the door falls, and the contents of the shaft drop into the air chamber. The operation is very simple and rapid, and perfectly safe with the most ordinary precaution. Two of these shafts were found ample to furnish all the material required for filling up the caisson. They had worked well for five weeks, but danger always steps in, when through daily use and familiarity the attendants become careless and reckless. It had occurred at times that a charge of building stones or brick would become jammed, and only part of a load would drop out. To ascertain this fact, a string with a weight was let down from above each time, so as to avoid putting in a double charge. Upon this occasion a charge had jammed; the men dumped in another without measuring the depth either before or after, and then gave the signal to the man below, without shutting the upper door, or letting on the compressed air. The second charge happened to loosen the first, and the two together overcame the pressure against the lower door, when the lugs were turned. As soon as this happened, the air commenced to rush out of the caisson with a great noise, carrying up stone and gravel with it. The men above ran away, leaving those below to their fate. Any one with the least presence of mind could have closed the upper door by simply pulling at the rope.

I happened to be on the caisson at the time. The noise was so deafening that no voice could be heard. The setting free of water vapor from the rarifying air, producing a dark, impenetrable cloud of mist, and extinguished the lights. No man knew where he was going, all ran against pillars or