

half; not including the necessary apparatus, which in one item alone comprised over forty gas cylinders.

ORGANIZATION OF WORKING FORCE.

Each shift of men worked in the caisson eight hours at a time, the first watch from six A. M. to three P. M., including one hour for breakfast; the next watch from three P. M. to eleven P. M., including one hour for supper; then a special night-gang from eleven P. M. to six A. M.

The majority of the men took their meals along and remained down the full eight hours without any injury.

The two day-shifts alternated from week to week. They consisted of one general foreman, six assistant foremen (one for each chamber), and one hundred and twelve laborers. The special night-gang was composed of one general foreman, with two assistants and forty laborers, making a total force below of three general foremen, fourteen assistants, and two hundred and sixty-four laborers. This force was constantly recruited from time to time, and an inspection of the time books shows that two thousand five hundred different men have worked in the caisson.

On deck there were double shifts of engineers and firemen to run the excavating engines, and engines for running the dirt-cars, also two gangs for attending to the dumping of the latter. In addition there were the engineers for the air-compressors and stone-hoisting engine, blacksmiths, machinists, and gas men, one gang to remove the boulders brought up by the buckets. A carpenter's force of twenty-five men and thirty men for setting masonry.

The total daily force amounted in all to three hundred and sixty men.

Under ordinary circumstances it would have been economical to work three full gangs below throughout the twenty-four hours. The work, however, was so severe upon the dredge buckets that the night hours from twelve to six A. M. were devoted to repairs, both to the buckets as well as cars, engines and other machinery. The night gang usually devoted themselves to getting out boulders where