he Navy

lew York.

Amount_ \$54,131 15 29,694 37 67,884 20 9,423 60 245,969 22 141,425 49 736,611 **49** 43,519 89 153,674 36 158 884 61 84.520 84 217.043 56 26,151 38 15,543 62 19,020 83 2003.498 61

ub \$600,000. The caisson, There must ce,—also the in additional indries. and \$73,000

\$21,000 for

17

The opinions of Civil Engineers—who have been or are connected with different dry docks—vary widely as to the relative merits of wood and stone for construction purposes. Some prefer wood solely on the score of economy in the first cost, others give it their preference on account of various alleged advantages, and would adhere to it even if a stone structure could be built as cheaply, while others again say, "adopt stone if you can, and have nothing to do with wood."

I had the good fortune to meet the Chief Naval Constructor of the United States and several of the constructors attached to different navy-yards. These gentlemen have the direct charge of docking the ships of war, and are constantly supervising work done in and about the Government stone docks, their opinions, consequently, ought to be of considerable value. They all expressed a high opinion of wooden docks, some very strongly, others gave reasons for their preference which—from an engineering point of view—might be considered insufficient, and others thought the advantage lay solely in the saving effected in the first cost.

A very strong argument advanced was, that the Government contemplate extending, by the use of timber, one of their existing stone docks, but this statement was not confirmed by any of the Government Engineers. The strongest objection, however, against the use of stone was that the existing granite docks had caused the death of many men by reason of their constant dampness.

The chief points of advantage of wooden docks over those of stone are said to be:

1st. That they are dryer and consequently more comfortable and healthy for the working men.

2nd. That the wooden dock is cooler in summer and warmer in winter than the stone one; because the stone gets so hot under a summer sun that it can scarcely be touched, while in winter the sides of the dock are coated with ice.

3rd. That ice, if it should form on a wooden altar, is much easier removed than it could be from stone.

4th. That the facilities afforded to the workmen—both in docking a ship and in passing in and out of the dock at any point, while repairing her—by reason of the low and narrow altars*—are superior to those of any existing stone docks, and consequently, that the operating expenses are greatly reduced.

5th. That the form of the altars also renders all cutting of shores unnecessary.

6th. That the annual cost of repairs is less than for a stone dock.

^{*} Stone docks having low and narrow altars from bottom to top-the same as the American wooden docks-are said to exist in some European ports.