

6 WESTMINSTER CHAMBERS, }
LONDON, September 6, 1881.

CAPT. J. B. EADS, C.E.

Dear Sir:—Referring to our interview on the subject of the proposed ship railway across the American Isthmus, we now beg to say that our works are likely to be so much occupied during the next year that we should scarcely be in a position to execute any works out of England in connection with the proposed railway, but we should be very happy to prepare the drawings for the construction of the terminal works for lifting the vessels at the Atlantic and Pacific ports.

We understand it will be requisite to transport loaded vessels of the weight of 4,000 to 6,000 tons, more or less, on the railway, at the rate of about six miles per hour, on a gradient of one or two per cent., and that it will be required to raise the vessels on a railway car out of the water to a variable height not exceeding 46 feet, and deposit them on the rails in a time not exceeding thirty minutes. These conditions may be fulfilled in two different ways, and we need not say that it is a plan in which Mr. Edwin Clark has entire confidence, and in which he will take the fullest interest in arranging the details. The hydraulic system would probably be the most rapid but probably the more costly. At the Bombay Hydraulic Dock we have lifted weights up to 12,000 tons, with 72 presses, 14 inches diameter, and 36 feet stroke. The Victoria and Malta Hydraulic Docks have been many years in constant operation.

At the canal lift at Fontinettes we employ presses with rams, 6 feet 7 inches in diameter, with a 50-feet stroke. Each of these presses will raise a dead weight of 1,000 tons through a height of about 50 feet, in three minutes. The weight lifted is a movable portion of the canal, about 132 feet long, containing the water and a barge floating in it. This work is now in course of construction for the French government, and it is to be erected near St. Omer, in France, and we are now designing a set of four similar canal lifts for the Belgian government, in which the weight raised will be somewhat larger. It is evident that a few presses such as these would more than accomplish the work required.

Our ordinary depositing dock, similar to that at Sebastopol, which raises vessels of 6,000 tons, would also meet the requirements of the case very satisfactorily. We are now constructing a second of these docks, of 10,000 tons, for the Russian government at Vladivostok, and a third, of 3,000 tons, for the Barrow and Railway Company, at Barrow-in-Furness, to be afterwards increased to 5,000 tons. We have designed one of these docks for the Italian government, to raise iron-clads of 15,000 tons' weight with a lift of 30 feet. There would be no difficulty in modifying the proportions so as to render it suitable for a lift of 46 feet, and this form of dock raises the vessels out of the water and deposits them on a gridiron stage in a most convenient manner for railway transport.

It will probably depend to a great extent on their relative cost as to which of these systems may be adopted, and we shall be prepared at any time to go into the necessary calculations, and render every assistance in our power towards the accomplishment of the great work in which you are engaged.

We apprehend no difficulty in perfecting the necessary details of the plans so as to insure the safe transportation of the largest loaded ships on the railway cars with absolute safety.

We remain, dear sir, yours faithfully,
CLARK & STANDFIELD.

The writers of the following letter are the contracting engineers who constructed the Anderton Lift and the hydraulic docks at Malta and at Bombay. The execution of these works was so satisfactory as to prompt the most flattering testimonials in their behalf:—

HEATON FOUNDRY, STOCKPORT, October 1, 1881.

JAMES B. EADS, ESQ., C. E.

My Dear Sir,—When you are ready to commence the construction of your ship railway, we shall be pleased to undertake the building and completion of the necessary works for placing the ship, with her cargo, on the railway track, ready for attaching the locomotives to her, and after transport across the Isthmus to lower her