Cleopatra's Needle on the Thames Embankment.

We regret that, in defence of good taste, it has been deemed expedient to erect the obelisk on the Thames Embankment. We have spoken often and strongly on the selection of a site, and we shall not further refer to the subject now.

It is well to know, however, that no objection can be urged on engineering grounds to the position selected on the Embankment; in other words, there is no fear that the monolith will tumble into the river, bringing a large section of the Embankment with it. We give below a section of the river wall at the Adelphi Stairs, with the base of the Needle shown in dotted lines. From this it will be seen that a very large base is provided, and that the water stands as a buttress and elevating wall. The arches and vaults are to be filled in solid with cement concrete. The only place where danger is to be apprehended is in the subway, the river breach of the arch which may be exposed to a considerable additional strain. The side pedestals are to be cut off at or below the lines A B.

The Britannia Ironworks, Middlesbrough.

The Siemens Company, of London and Darlington, are glad to hear, have recently acquired the Britannia Works, and this fact is a proof of the confidence felt in the future of the Cleveland district, and the probable expansion of the iron and steel trade as soon as the present depression causes. The Britannia Works are of good magnitude, and when in full work help to maintain the reputation of Cleveland as the largest iron-producing district in the world. The works were erected in 1871, and probably never before in the history of the trade was the enormous number of 120 puddling furnaces built at one time under one complete design. The works are situated on the river Tees, between Newport and Middlesbrough, and about one mile from the latter town. They were originally intended for the manufacture of iron rails and accessories, but as these have now been superseded to a great extent by steel, the works have been sold for some time past, the Siemens Company intend them for an auxiliary to their Darlington establishment—which is of about the same magnitude—and will for the present devote them to the manufacture of shipbuilding iron, but we understand steel-producing plant will shortly be added. The existing Britannia plant is capable of turning out from 1500 tons to 2000 tons per week, and when in full operation employs about 1000 men.

We shall proceed to notice briefly the principal features of these works, which, it may be observed, have a most imposing appearance, and undoubtedly take rank as one of the most interesting establishments in this remarkable district. As we have stated, they contain 120 puddling furnaces. There are two 220', forge trains worked by separate direct-acting steam engines, by which the use of gearing is entirely dispensed with. The diameter of the cylinder is in both engines 36", with 4½, 6½, steam, the weight of the fly-wheel being 37 tons. Six 6-ton single-acting steam hammers are erected, for which the steam blocks weigh 42 tons each. In the centre of each forge train, steam boilers are fixed for cutting puddled bars as they come from the rolls. After the puddled bars are cut they are made into plates for rolling. These plates are afterwards hoisted in Siemens' patent furnaces, twelve of which are built for the purpose, these being the first application of this invention in the heating of plates. The blooming mill is White's patent, and consists of two pairs of horizontal and one vertical pair of rolls, the advantages of such an arrangement being that the plate only requires to go through the mill once. The rail mill is constructed in accordance with Brown's patent.

The train consists of a double set of 26", rolls, which are so arranged that while the usual costly reversing gearing is abolished the same results are obtained as in a reversing mill. In other words, the rail is rolled alternately backwards and forwards, and never passed over the rolls. The engine for working this mill is similar in construction to the forge engines. Every endeavour has been made to render this mill as perfect and thoroughly self-acting as possible. After being rolled, the rail is traversed by self-acting gear to the saws, and on being sawn it is again traversed to the hot straightening plate. The rails are then finished in the usual way for transport, either by ship—by which a special winding is provided—or by rail. The entire plant is arranged on the most modern principles, comprehending all the improvements which experience has suggested.

All the fuel, pig iron, and letternare brought to the ground on a high-level railway, which, at an altitude of 180', traverses the whole line of the forge, the latter, we should observe, being arranged in the form of a parallelogram, with four lines of