

It is probable, however, that a considerable deviation from these dimensions might be made without seriously affecting the value of the instrument.

**THE NEW SPANISH WAR STEAMER REINA REGENTE.**

Another magnificent vessel has been added to the Spanish navy, being a cruiser of the first class, Reina Regente, constructed on the Clyde, under the direction of the Spanish Minister of the Marine, by Messrs. James & George Thompson, naval constructors.

The principal dimensions of the Reina Regente are as follows: Extreme length, 335 ft.; extreme width, 50 ft. 7 in.; depth, 32 ft. 6 in.; normal draught, 20 ft.; when loaded, 26 ft.; normal displacement, 4,800 tons. She has two screws, and triple expansion engines, which give 7,000 indicated horse power for normal draught and 12,000 horse power for forced draught. Calculated velocity of the vessel, 20½ knots per hour.

The hull is of steel, best quality, and is divided into compartments by means of water tight bulkheads. She has three decks, and is protected by armor varying from 3 to 4½ in. The stem, stern, rudder, etc., are of steel. She has a capacity of 1,200 tons of coal, suffi-

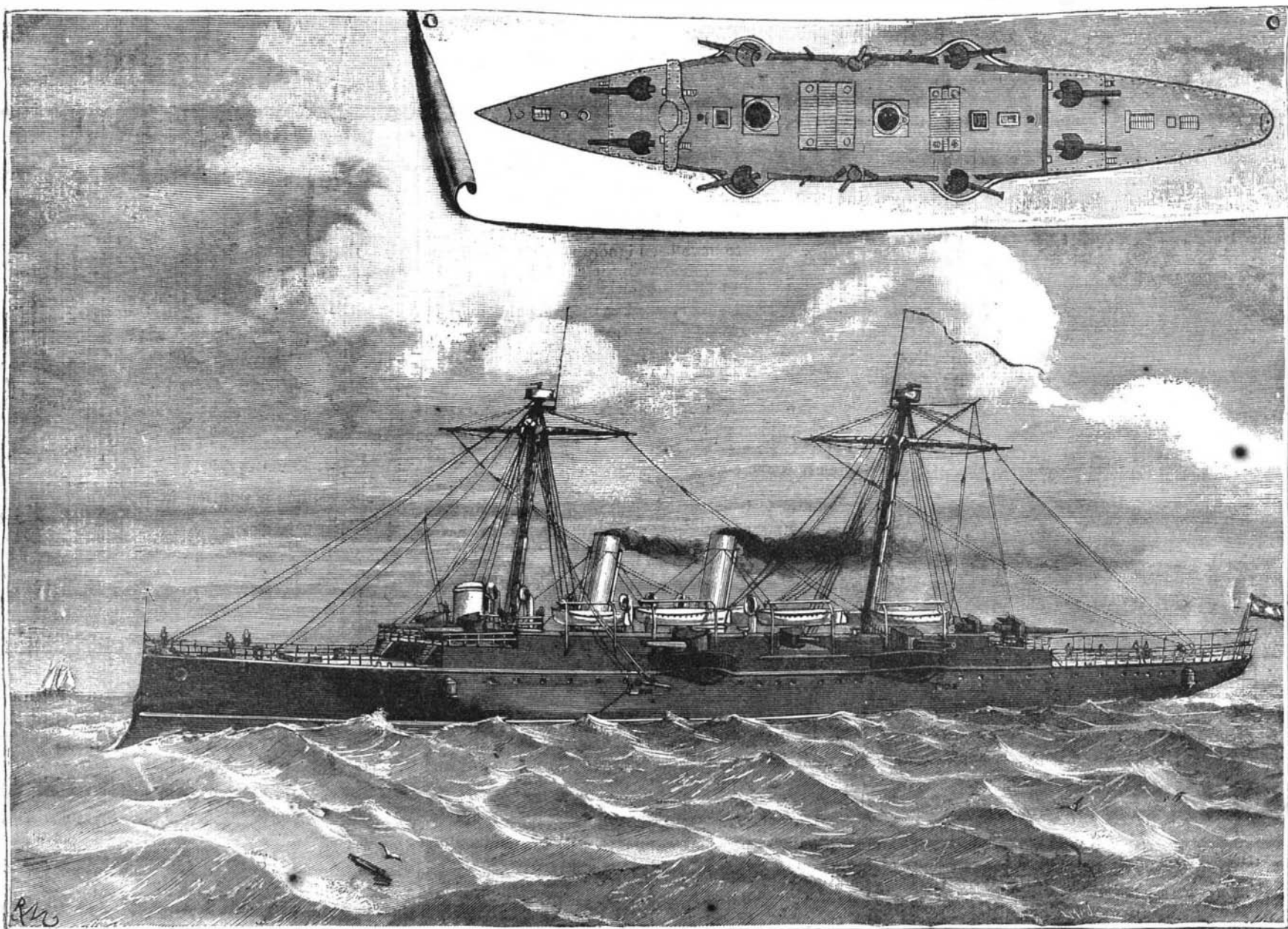
**The New Woodward Colliery.**

The greatest mine of the anthracite regions will be the new Woodward colliery near Wilkes-Barre. It is being developed by the Delaware, Lackawanna, and Western R.R. Company, who have a tract of about eight hundred acres at that point. The main shaft was commenced in 1881, and is the largest opening in the anthracite fields, being 12 x 55 ft. in size. There are four hoisting ways, one pump way, and an air way, the latter two being a portion of the southern division. The shaft is entirely timbered. As the surface is somewhat unstable a rock foundation was found necessary, and solid masonry four feet thick was recently put in to a depth of nearly eighty feet. The shaft was sunk to the Red Ash vein, which was cut at a depth of ten hundred and forty feet. In going down to this seam, the sinkers cut through the same veins as are found in that vicinity, and in some instances the thickness was surprising. The array of coal in this shaft was pronounced the most extensive in the Wyoming region. The quantity of water in this opening is very great and will require three Knowles pumps to keep it clear. The air shaft is located about one hundred yards from the main opening. The shaft is 10 x 37 feet in size, has two

capacity will be 3,000 tons per day. In order to furnish a foundation for the breaker, a large creek was turned inland about seventy feet for quite a distance, at a great expense. The gangways of the mine will be opened up as soon as a place can be arranged to stock the coal. The colliery will probably be in full-working order within a year, and employment will be furnished about twelve hundred hands. The surface buildings are nearly all contracted for. The head house of the main shaft is one hundred and one feet high, and is just completed. W. H. Storrs and T. H. Carey are the superintendents of the mine.—*Coal Trade Journal.*

**Ingenuous Financiering.**

One of our foreign contemporaries relates the following method adopted by the people of Guernsey for providing themselves with a new meat market, which they very much needed, but had not the means at hand to pay for it. But they were determined to have the market, so £4,000 was voted to defray the cost, and notes were issued by the authorities for that amount, and were guaranteed on the "whole of the property of the island, said to be worth four millions." A singular provision was introduced, which rendered these notes



**THE NEW SPANISH WAR STEAMER REINA REGENTE.**

cient to drive her a distance of 12,000 to 13,500 knots. She is provided with electric lights, telegraphs, and all the latest accessories for a vessel of the first class. She carries twelve small boats, of which three have steam. Her armament consists of four Hontoria cannon of 7 in., six of 4¼ in., six Hotchkiss guns, and various other repeating small arms. She has five torpedo tubes—two in the bow, one in the stern, and one on each side.

Our engraving shows a general view of the Reina Regente, also a plan of her battery deck.—*La Ilustracion Espanola.*

**Chicago Cable Roads.**

The North Chicago Street Railway Company has laid one mile of tunnel on Clark Street for the new cable line. The tunnel is of steel and continuous, and the manholes, which are of new pattern, are placed every 31½ feet. A 9 inch sewer pipe, opening every 300 feet into the main sewer, is laid between the tracks, into which a pipe runs from each manhole, affording complete drainage. The engine to be located on Clark Street, near Division, is to be of the Corliss type, 2,000 horse power, and built by Messrs. Robt. Wetherill & Co., Chester, Pa. The winding machinery is of new design, with a compensating arrangement to take up the wear on the drums. The pulleys which carry the cable are 18 inches in diameter.

hoisting ways, and cuts the Red Ash vein at one thousand and three feet. This shaft is timbered, and now remains idle and full of water, pending surface improvements.

Two immense ventilating fans of about forty feet in diameter are to be constructed for these shafts. For the first hoisting ways of the main shaft, first motion engines of 24 in. cylinders and 48 in. stroke are now being arranged, while those for the lower hoisting ways are direct acting, with 24 in. cylinders and 60 in. stroke. The two conical drums are 14 and 16 ft. in diameter. Engines of the same size as those at the main opening are being located at the air shaft. Over thirty cylindrical boilers will be required to furnish the power for the vast amount of machinery of the mine. The guides are now being inserted in the main shaft, and about three hundred and fifty feet of water still remain to be pumped out, when the sump will be cut in the Red Ash vein. Lodgments will be cut for the Knowles pumps, three being required for each orifice. The immense trestling from the main shaft to the site of the breaker is nearly completed. It is nearly six hundred feet long, and at one point is over one hundred and thirty feet high. The foundations for the immense double winged breaker are being constructed, and have the appearance of being natural terraces. The breaker, which is to be commenced at once, will be one hundred feet wide, will consume 1,150,000 ft. of lumber, and the

worthless outside of Guernsey, and so they were never exported. They were one pound notes, and were numbered from 1 to 4,000. With them the contractor was paid; he paid his workmen in the same money, and those that supplied him with materials. Tradesmen took them for goods, landlords for rent, and the authorities for taxes. "In due season," to quote from Jonathan Duncan, "the market was complete. The butchers' stalls, with some public rooms constructed over them, were let for an annual rent of £400. At the first year of tenancy the States called in the first batch of notes, numbered 1 to 400, and with the £400 of real money received for rent redeemed the £400 of representative money expressed by the 'meat market notes.' At the end of ten years all the notes were redeemed through the application of ten years' rental; and since that period the meat market has returned a clear annual revenue to the States, and continues to afford accommodation without having cost a farthing in taxes to any inhabitant."

**Over Sixty-seven Miles an Hour.**

On Nov. 16 a Michigan Central train on the Canada Southern division, having on board a number of directors and officials, ran from St. Clair Junction to Windsor Dock, a distance of 107 miles, in ninety-five minutes, being at the rate of over sixty-seven and a quarter miles per hour.