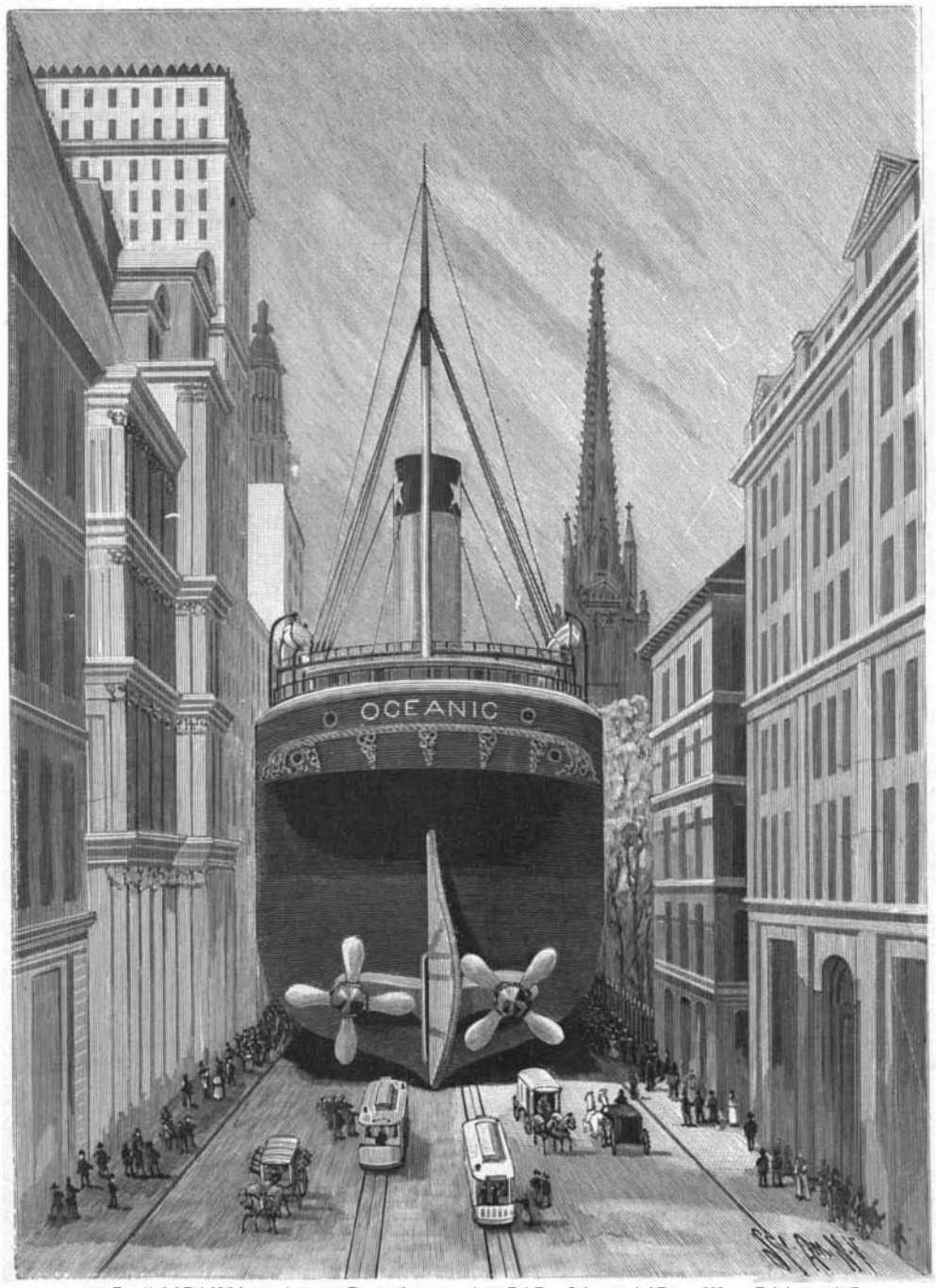
THE WHITE STAR LINER "OCEANIC."

For the future, in stating the size of large ocean steamships, we shall have to adopt a new standard of measurement. It will no longer be the fashion to refer the successive ocean liners as they are turned out of the shipyards to that marine giant of fifty years ago the "Great Eastern;" for at last, after the lapse of nearly half a century, she has been eclipsed by the latest of the modern passenger steamers, the "Oceanic," which recently took the water at the celebrated yard of Harland & Wolff, Belfast, Ireland. The end of the century ship exceeds the "Great Eastern" on all points of comparison, save two. She is longer, draws more water, is of greater displacement, and, of course, greater speed; but in the two respects in which the "Great Eastern" exceeds the "Oceanic" she does so by a very ample margin. The "Great Eastern" was 57½ feet deep, as against 49 feet for the modern ship, and she had 83 feet of beam, as against 68 feet for the "Oceanic"—an excess of no less than 15 feet. As regards the other dimensions, the "Oceanic" is 704 feet long, or 12 feet more than the "Great Eastern;" her draught when fully loaded for sea is 32 feet 6 inches, or 7 feet more than that of the earlier ship. The displacement of the two ships at the given draught is 23,500 tons for the "Oceanic," as against 27,000 tons for the "Great Eastern."

At first sight, on comparing the dimensions of the two ships, it would look as though the displacement of the "Great Eastern" would be larger on account of her great excess of beam, as it is well known that, other things being equal, a slight addition to the beam of a ship makes a large increase in displacement. Indeed, if the draught of the two ships were the same, namely, 32 feet 6 inches, there would be a considerable excess in favor of the older vessel. At 30 feet draught the displacement of the "Great Eastern" is estimated at 32,160 tons, and, of course, at 32½ feet it would increase proportionately. On the other hand, the lines of the "Great Eastern" were very much finer than those of the Belfast ship. For several hundred feet amidship the section of the latter ship is very full, there being only about 2 feet of rise in the floor and the tumble home being only about 1 foot. This fullness is carried well out toward the stem and stern, and, of course, goes a long way to compensate for the comparatively narrow beam in proportion to length of the "Oceanic." On the other hand, the "Great Eastern," in spite of her enormous beam of 83 feet, does not hold this width for any great length amidship, but commences to fine away toward the ends, and, of course, loses proportionately in bulk.

DIMENSIONS OF THE LARGEST OCEAN STEAMERS.

Name of Ship.	Date.	Length Over All.	Beam.	Depth.	Draught.	Displacement.	Speed.
		Feet	Feet	Feet	Feet	Tons.	Knots
Great Eastern.....	1858	692	83	57½	25½	27,000	12
Paris.....	1868	560	63	42	26½	13,000	20
Teutonic....	1890	585	57½	42	26	12,000	20
St. Paul ..	1895	554	63	42	27	14,000	21
Campania...	1893	625	65	41½	28	19,000	22
Kaiser Wilhelm der Grosse..	1897	649	66	43	29	20,000	22·35
Oceanic ...	1899	704	68	49	32½	28,500	20

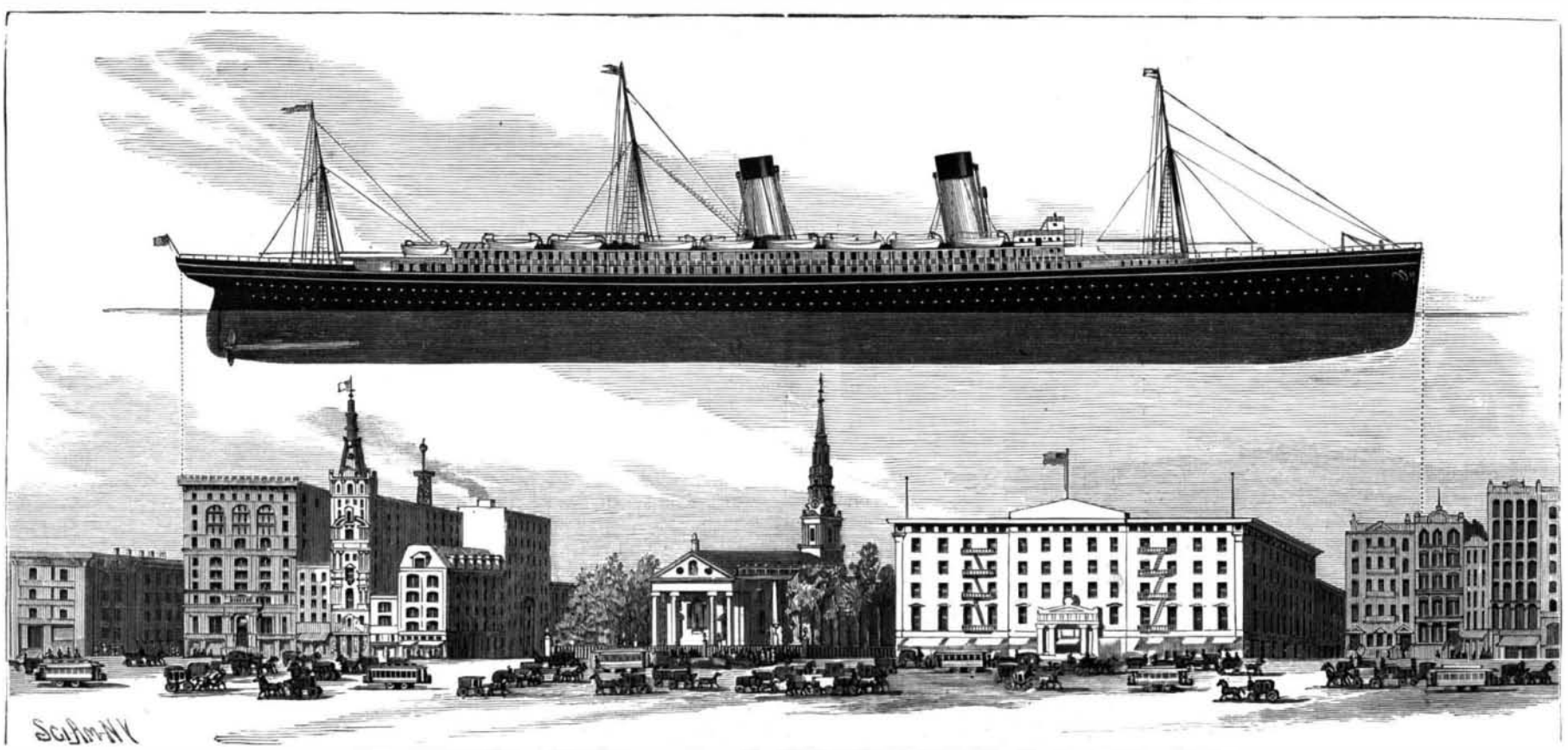


THE "OCEANIC" AS SHE WOULD APPEAR IF PLACED IN BROADWAY AT TRINITY CHURCH.

We are all familiar with the story of the heartbreaking anxiety and early failure which attended the launching of the "Great Eastern." As no ship approaching anywhere near her weight had been sent off the ways before, it was determined to build her parallel with the river and launch her sidewise into the water. The first efforts were a failure, and it was only after three months of labor that the huge mass, weighing about 9,000 tons, was pushed bodily by hydraulic jacks into the river. The launching weight of the "Oceanic" was about 11,000 tons, and the special precautions which had been taken in strengthening the fixed ways at the points subjected to greatest pressure were so successful that the time occupied from the moment she started down the ways to the time when she was brought to rest in the river was a little less than two minutes. The preparation of the ways alone cost about $100,000, and much of the ground over which the vessel passed was completely covered with 1½-inch steel boiler plate. The nearest approach to this launching weight in modern times occurred at the launch of the Japanese battleship "Shikishima," which took place last November at the Thames Iron Works, London. The weight on this occasion was 8,250 tons.

Comparing the "Oceanic" with modern passenger vessels, we find that she is 42 per cent larger than the next largest transatlantic liner, the "Kaiser Wilhelm der Grosse," whose displacement on a draught of 29 feet is 20,000 tons. The next largest vessel is the "Campania," with a displacement of 19,000 tons, and following this come the "St. Paul," of 14,000 tons; the "Paris," of 13,000 tons; and the "Teutonic," whose displacement is given as 12,000.

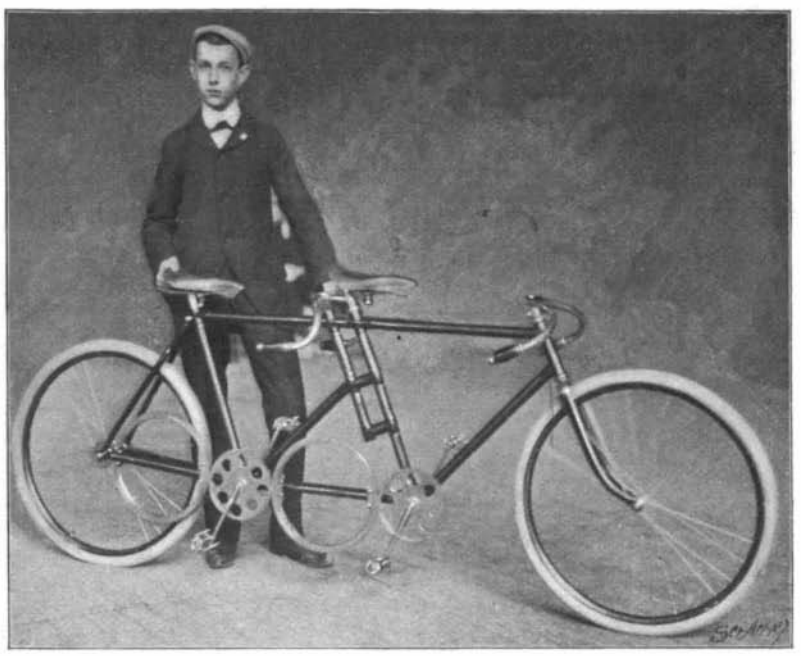
In respect of horse power and speed, it will be a surprise to many of our readers to learn that the horse power of the big ship will be only 28.000, which is the same as that of the "Kaiser Wilhelm" and 3,000 less than that of the "Campania." The speed, moreover, of the new ship is announced as twenty knots an hour for the whole trip across the Atlantic, which is one knot less than that of the "St. Paul," two knots less than that of the "Campania," and 2·35 knots slower than the best record of the "Kaiser Wilhelm." Moreover, both of the latter boats have maintained an average of about twenty-three knots an hour for an all day's run. Assuming that the White Star Company has no



THE "OCEANIC" COMPARED WITH THE BROADWAY BUILDINGS AT CITY HALL PARK.

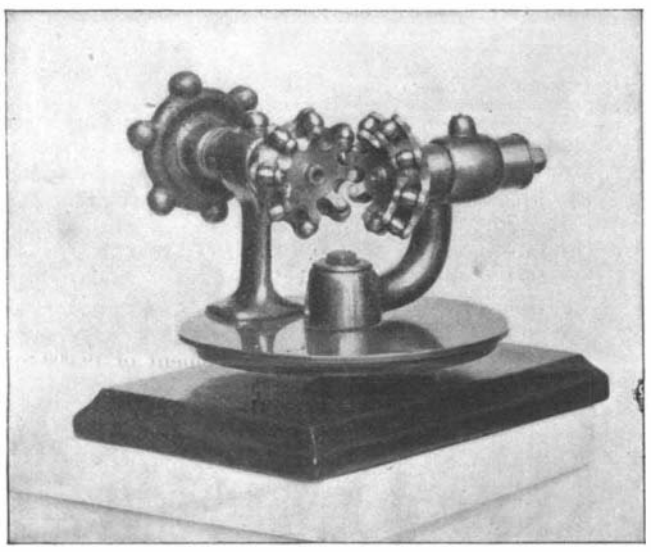
Length, 704 feet; beam, 68 feet; depth, 49 feet moulded; 75 feet from keel to captain's bridge; displacement on 32½ feet draught, 28,500 tons.

intention of exceeding this speed, it is to be presumed that their determination to withdraw from the record-breaking contest is based upon practical considerations. According to the oft-repeated statement of the company, they consider that there is nothing desirable in the extra two or three knots that may be obtained, beyond the mere prestige which goes with the fastest ship, while, on the other hand, there are positive disadvantages attending this high speed. In the first place, the great increase of weight and the large demand upon space, due to the powerful machinery which must be installed, consumes so much of the ship's capacity as to leave very little room for cargo. Moreover, the consumption of coal is increased by from 30 to 40 per cent, and, of course, the profits of the ship are considerably reduced. Viewed from the standpoint of the passenger, it is claimed that the twelve hours which are saved by putting a ship across the Atlantic at the highest speed frequently only serve to land the passengers in New York Harbor just too late to pass the quarantine, and necessitate their being detained on board until morning. However, in spite of these statements of the company that they intend to run "a regular week boat" instead of a "record-breaker," there are many people in shipping circles who expect the new ship to run very close to, if she does not exceed, the existing records.



CHAINLESS TANDEM.

With regard to the construction of the ship, particular attention has been paid to the element of strength and stiffness. The frames are heavy channels of steel, 9 inches in depth, and they are spaced 31½ inches from center to center. The plating varies in thickness from 1 inch to 1⅛ inches. The plates are generally 4½ feet wide by 28 feet long, and they vary from 2 to 3½ tons in weight. The total number of rivets used throughout the hull was 1,704,000. The double bottom, which is built on the usual cellular system, extends throughout the full length of the ship, and, in general, is 5 feet 1 inch in depth, except beneath the engines, where, in order to comply with navy requirements, the depth is increased to 7 feet, for the purpose of giving the requisite strength.



BULLIS "BALL BEARING" GEAR.

The "Oceanic," it should be said, has been built to meet the Admiralty requirements, and has a sufficient number of gun platforms to carry a powerful rapid-fire battery. As an armed cruiser, she would be of great service, for, with her full supply of coal on board, she could steam around the world at 12 knots speed without recoaling, and, of course, her enormous size would make her an ideal troop ship.

The determination to provide the vessel with great longitudinal strength is shown by the fact that, in addition to the deep inside vertical keel, there are each side of the keel three longitudinal plate girders, worked in between the outer and inner bottoms. Moreover, at the turn of the bilge, the plating is worked in double thickness, and the sheerstrake and the strake next but one below it have been doubled in thickness, while the upper deck stringers have also been doubled for a considerable length amidships.

Great strength is also afforded by the five steel decks, which are completely plated from stem to stern. Including the inside floor of the ship, there are seven distinct decks in all, and above these is the boat deck, which extends for several hundred feet amidship. The captain's bridge is exactly 74 feet 9 inches above the keel, and will be about 40 feet above the water line when the ship is down to her load line. The names of the decks commencing from the bottom are the lower orlop, orlop, lower, middle, upper, promenade deck and boat deck. The engines are of the twin-screw triple-compound, inverted type, working upon four cranks, and the cranks will be set according to the well known Schlick system, which is designed to eliminate vibration and has shown very good results in practice. The high pressure cylinders are 47½ inches, the intermediates 79 inches, and the two low pressure cylinders 93 inches in diameter, the common stroke being 72 inches. The crank shaft is of Whitworth compressed steel and is built up in four lengths. Its diameter is 25 inches; and the diameter of the crank pins is 26 inches. The boilers are of the double-ended return-tube type; they will work under a pressure of 190 pounds to the square inch.

There will be accommodation for 410 first-class passengers, 300 second-class and 1,000 third-class, and as her crew will number 390, the total number of souls on board, when she carries her full complement, will be 2,100.

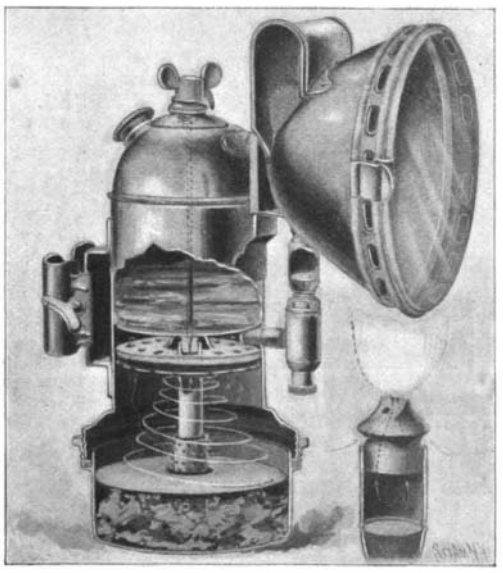
In conclusion it should be mentioned that this magnificent ship is only one of a large fleet which this great Irish shipbuilding firm has constructed during the last twenty-five years for the White Star Company. In fact, every one of the vessels of the company's fleet has, we believe, been built by Harland & Wolff, and in no single instance have the ships failed to live up to and exceed expectations. The total value of these vessels, including the "Oceanic," amounts to $37,500,000, and it is a remarkable fact that the ships have been built without any hard and fast contract.

It is probable that the "Oceanic" will make her maiden trip to New York in August or September of this year.

NOVELTIES AT THE LATE BICYCLE SHOW.

The most striking feature of the late bicycle show at Madison Square Garden, New York, was the absence of radical novelties in the make-up of the bicycles themselves. It is safe to say that in no interval between two successive exhibitions of the development of the wheel has there been so little actual organic change to record as in the two years' interval between the present show and the last that was held in this city. It really does begin to look as though the finality of which we have been talking for a decade had come at last.

But, although there is little change in the general form of the wheel, there has been steady improvement in its details; the various adjustments of handle-bar, seat-post, pedals, rear wheel, etc., have received considerable attention, and they are more simple and more quickly adjusted than in the earlier machines. The low steering head which was coming into favor two years ago has now become universal, and with it has come the dropped crank hanger, a drop of 2½ to 3½ inches being common. Flush joints continue to be popular, although there are many practical men who consider that for a given weight of material better results can be obtained with the old style. On the score of appearance, however, the flush joint is incomparably superior, and, as reliable results have been secured, it is likely that the flush joint will remain the standard type.



ACETYLENE LAMP, WITH FILTER.

The predicted return to 30-inch wheels (they were the standard size many years ago) has not occurred. There were one or two of this diameter in the exhibits, but they failed to attract much attention. Theoretically there is an advantage in the larger diameter, especially on a rough road or on worn macadam, for the larger wheel spans the hollows and surmounts the obstructions with less shock. We have tested this under exactly similar conditions, by replacing the old 28-inch by 30-inch wheels on a favorite machine on which we had ridden 2,000 miles. The lessened vibration is distinctly noticeable when running over rough surfaces, such as poor macadam or Belgian blocks. There is, however, an increase in weight, and, perhaps, a loss in the trim appearance of the wheel, which will probably prevent any return to the larger wheels.

We are also glad to note that there is a return to reasonable weights, and the presence of eighteen and twenty-pound wheels in the exhibits of a few of the best makers testifies to the truth of our recent contention that a thoroughly reliable wheel could be made at these weights. The reduction of weight has been secured by using the very best material and by cutting out every ounce of it that is not essential to the strength of the wheel. The price of such wheels is usually $75, as against $50 for the heavy machines. This is to be expected, for it takes the very best of work to produce a reliable eighteen-pound wheel. A lovely little wheel of this weight was shown in the Cleveland exhibit.

In our last issue we gave a comprehensive survey of the exhibition, and we now present several cuts showing a few of the novelties which attracted most attention.

The chainless wheel was, of course, the

WILFORD HALL CRANKLESS BICYCLE.