

**THE HARLEM RIVER SPEEDWAY, NEW YORK CITY.**  
(Continued from page 90.)

In estimating the value to the driving, and in these days it should be added the bicycling, public of the Harlem River Speedway, it must be borne in mind that it forms, as mentioned in a preceding article, the connecting link in a circular driveway, whose other portion is of greater length and, if possible, enriched with features of greater historic and natural beauty. It has been mentioned that the new speedway terminates at Dyckman Street, into which it leads. The latter thoroughfare, which has a clear width of 100 feet, runs northwesterly to an intersection with Kingsbridge Road, which forms the continuation of the famous Boulevard to the south of it. It is here that the new Boulevard Lafayette, which constitutes the western portion of the drive, commences. As finally completed it will have a clear width of 100 feet for the whole of its length from the Kingsbridge Road to One Hundred and Fifty-seventh Street—a distance of three miles. From the Kingsbridge Road the Boulevard rises on a regular grade and winds around the northern spur of Washington Heights, until it reaches the bluffs of the Hudson at a high elevation above the river. The roadway is largely blasted out from the cliffs and in many places is carried by heavy retaining walls. This lofty elevation opens out a charming and ever changing panorama of Hudson River scenery, extending from the far distant and softly outlined hills of New Jersey in the south to the wooded heights that raise their heads above picturesque Tarrytown far to the north. The new Boulevard terminates at Eleventh Avenue and One Hundred and Fifty-seventh Street, from which point the entrance to the Harlem Speedway is reached by way of One Hundred and Fifty-fifth Street. By the time he has arrived at the starting point, the horseman will have covered nearly six miles of what may be justly termed one of the most handsome and picturesque driveways in the world.

From the above description it will be seen that this magnificent system of roads makes the complete circuit of the spur of lofty land at the northern end of Manhattan Island which is known as Washington Heights. We have referred to the historical associations which cluster thickly around its colonial mansions and tell their story from many a grass-grown rifle pit and weatherbeaten fort. Here was the favorite site for the summer residences of notable colonial families. Conspicuous among them is the mansion known as Washington's Headquarters, which is built on a lofty eminence overlooking the Harlem River and not far from the southern entrance to the Speedway. Crowning the projecting headland just above the junction of the Speedway with Dyckman Street is Fort George, which figured conspicuously in the operations of the revolutionary war: and across the heights to the westward, on a spur of land which runs out into the Hudson about midway of the length of Lafayette Boulevard, is Fort Washington, where, owing to the culpable blundering of Washington's subordinate generals, the revolutionary cause suffered one of the greatest disasters of

the war. Above the avenue are to be found such historic homes as the Jumel mansion, noted as the residence of Aaron Burr; the Morris mansion; the Monroe mansion, and many another colonial building which bears a name less famous it may be than these, but destined to be forever conspicuous on the pages of our national history.

Our detailed description of the Speedway in the last issue included the first section of the work, and carried us to High Bridge. At this point the surveyors found it necessary to narrow the roadway to a width of 66½ feet, in order to pass between the piers, and to carry the

portion of the whole Speedway, and it will naturally be a source of regret that the bulkhead could not have been carried 10 feet further into the river. As it is, however, the roadway extends 15 feet beyond the bulkhead lines established by the government, and this was the maximum allowance that could be obtained from the War Department, who are naturally anxious to maintain the full width of a waterway which, now that the Harlem Canal is opened, has a high strategic as well as commercial value, giving access from the Hudson to the East River independently of the route by the Battery.

Immediately north of Washington Bridge is located the third subway. Owing to the fact that the westerly walk is carried to the west of the pier of the bridge, at an elevation of 26 feet above the roadway, there is a rise of 33 feet from the floor of the subway to the sidewalk. To obtain as easy a rise as possible, the connecting stairway will be built with a broad, easy curve, and for landscape effect the sloping ground between stairway and sidewalk will be terraced and laid out in flower beds and shrubbery. Judging from the plans of this work, it promises to be a highly ornamental feature of the driveway.

By reference to the large front page engraving, which is taken from the top of Washington Bridge, an excellent idea will be obtained of this portion of the work. To the left will be seen the westerly walk, which here falls on an even grade to the roadway, which is reached near the end of the great side hill cut. The retaining wall is built of broken range masonry, as is also the retaining wall seen to the west of the walk against the bluffs, which has been built to catch the heavy drainage and the loose material which is carried down where the soil is loose and liable to slide. The line of the coping has been broken in order to avoid a too stiff appearance, and trailing vines are to be planted against this and all retaining walls, so as to make them harmonize as far as possible with the general appearance of the bluffs.

Eight hundred feet beyond the bridge the roadway widens out to 95 feet, and the planting spaces, which have been omitted between the bridges, again make their appearance, and are continued to the end of the drive. By reference to the illustration, it will be seen that one of the stretches of masonry bulkhead has been built where the roadway has been blasted out of a projecting bluff. The white stone work and the dark strip of asphalt paving indicate the length of this work. The inclined westerly walk is to be similarly asphalted.

It is just at this point that the most costly piece of excavation on the whole driveway occurs. The center line length of the cut was over 1,000 feet, and the top of the slope is 110 feet above the roadway grade. As over 160,000 cubic yards of material were taken out at a contract price of \$1.20 per yard, this inconveniently obtrusive point of rock has cost the city \$192,000 to remove. North of the cut the roadway extends on a straight course to the mouth of Sherman Creek, where it swings to the left with an easy curve and merges into Dyckman Street. This part of the work consists chiefly of filling, and the bulkheads are built of cribwork.



THE HARLEM RIVER SPEEDWAY—VIEW LOOKING SOUTH FROM DYCKMAN STREET BEFORE COMMENCEMENT OF WORK.



VIEW OF THE SAME SPOT SHOWING WORK COMPLETED.

westerly sidewalk round the outside of the adjoining pier, and at a higher elevation than the roadway. Just beyond the bridge is located the second subway for foot passengers, for communication between the east and the west sidewalks without crossing the drive, and at this point walks will be constructed leading to the High Bridge Park. After passing beneath the bridge, the roadway widens to 75 feet and holds this width to within 500 feet of Washington Bridge, where it gradually narrows down to 55 feet, in order to pass to the eastward of the bridge pier. This is the narrowest



Two of the accompanying illustrations show the condition of this portion of the driveway before construction was commenced and after the filling was completed. They are reproduced from photographs taken from exactly the same point of view, and portray, better than any pen can describe, the transformation that has been effected. In the later cut the point of view is exactly in the center of the westerly sidewalk. The broad strip of garden mould between the sidewalk and the roadway, which shows up in the photograph of a darker shade than the surrounding material, marks the location of the masonry trench for tree planting, the construction of which was explained in the previous article.

The track which is seen to the right of the picture is being used in filling in the bays of the creek which lie between the drive and the shore. This work is part of an important modification of the original plans, which will add greatly to the appearance of the finished Speedway. It was at first intended to allow such portions of the tideland as might be inclosed between the drive and the shore line to remain as they were. This would

have left a series of unsightly holes which would have been a blemish upon the work and a continual eyesore. The present Park Board very wisely determined to fill in all such spaces to the grade level and give them landscape treatment. They will be planted with trees and laid out with winding walks, and will form a park-like border to the drive, which will extend over a considerable part of its length.

The total quantities for the second section of the work, as given by Mr. J. A. Lockwood, the engineer in charge, to whose courtesy we are indebted for all particulars, are as follows: The excavation, mostly solid rock, shows a total to date of 281,000 yards. There are 350,000 yards of filling, and this is held in place by no less than 3,750,000 cubic feet of cribwork. The masonry retaining walls account for 12,000 cubic yards of broken range masonry, and there are 30,000 yards of first-class masonry in the bulkheads and subways.

By the time it is opened to the public the Speedway will have cost about \$2,250,000, of which \$1,932,000 have been expended to date. The second section will be completed early this spring, and as about twelve months will be consumed in finishing up the work on the first section, we may look for the opening of the Speedway early in the spring of next year.

**Flowers in Sick Rooms.**

After relating several anecdotes of cases where flowers have proved injurious when kept in the bedroom of invalids, The Hospital says: "It is not necessary to comment at length upon cases like these. They tell their own story, and point their own moral. The

rule should be that, where flowers are kept in bedrooms, they should be changed frequently, and those which yield a heavy odor should not be preserved after the day is over. In sitting rooms the case is somewhat different; but even in them flowers should not be kept

to the bitts, and managed the aft ones the same way. It was a very hard job. About two o'clock next morning the forward ones snapped their hawsers and got loose again. The storm was then very severe, and the ship was rolling at an angle of 36 degrees. To make

matters worse, the forward 13 inch guns got loose, and those enormous guns began thrashing about in full command of the deck. We finally caught the big guns with a 13 inch hawser and tied them securely to the superstructure."

On the morning after the storm one of the electricians, with the permission of Capt. Evans, took a photograph of the aft pair of 13 inch guns, from which the accompanying engraving has been prepared.

It will be seen that the 8 inch hawser was passed around the chase of the gun, a few feet from the muzzle, and led around the bitts on the opposite side of the deck, the operation being repeated until a sufficient number of turns had been taken to hold it securely. Any one who has handled an 8 inch manila hawser can well believe Capt. Evans when he says: "It was very dangerous in that storm. I was



THE HARLEM RIVER SPEEDWAY—LAYING CONCRETE FOUNDATION FOR ASPHALT ON THE EASTERLY SIDEWALK.

more than a few days, and the vases in which they are placed should be well washed out with hot water once or twice a week."

**THE STABILITY OF THE BATTLESHIP INDIANA.**

It will be remembered that the new battleship Indiana, on a trip from Hampton Roads to New York harbor last October, rolled so heavily as to break loose all the heavy guns and turrets. The enormous momentum of the great masses of metal proved too much for the clamps which prevent the turrets from rotation on their turntables, and, tearing loose, the guns began to swing to and fro across the decks with every roll of the ship. In the height of the gale the crew set to work to lash the guns temporarily in place, and the story of that never-to-be-forgotten night, as told by Capt. Evans, will bear repetition just now, when the Indiana has again had to return to port lately from fear of a similar accident.

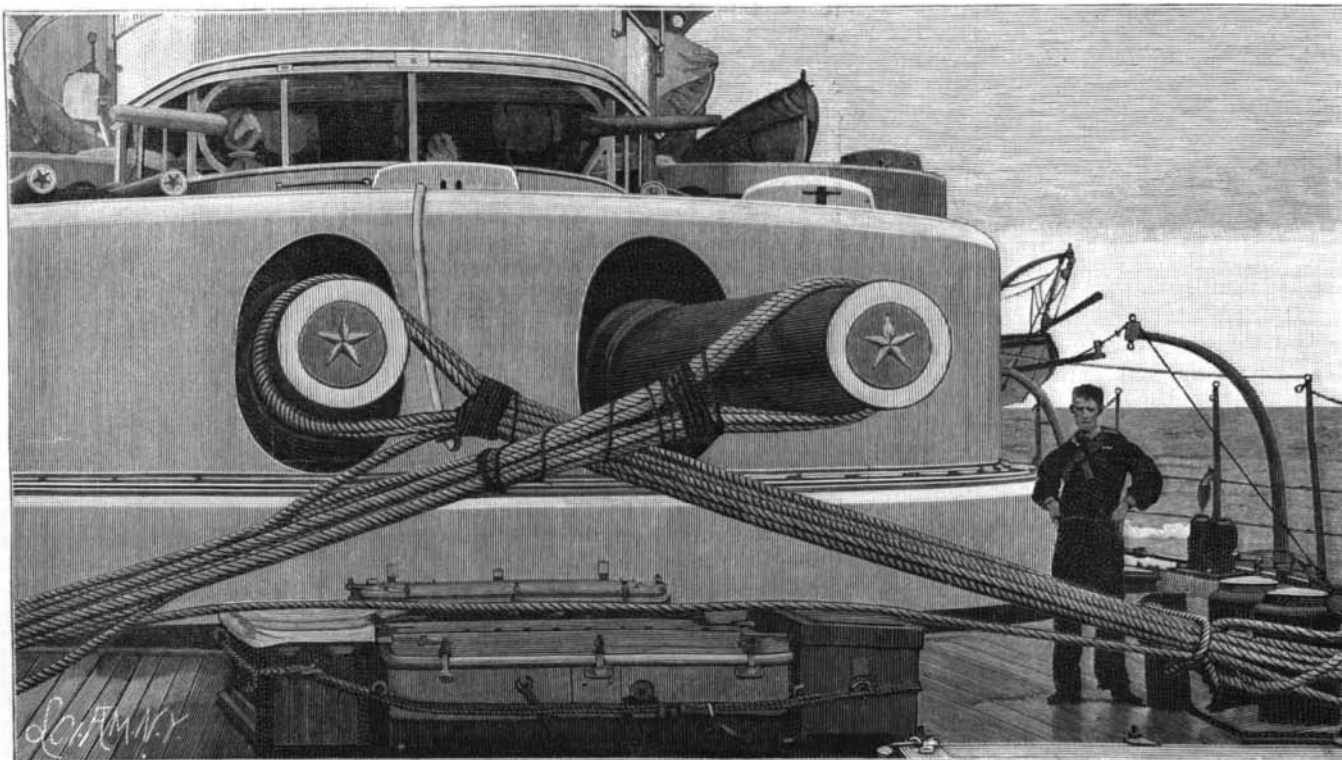
"We tied the two forward guns together by binding the guns each to the other and fastening the hawsers

afraid of losing two or three dozen men, and if I had not had the best crew in the world, I don't know how we would have come out."

Upon the return to the navy yard stronger clamps were put in place, such as, it was supposed, would stand any possible demands upon them. It seems, however, that the Indiana has again had to leave Admiral Bunce's squadron and put back, not this time because the turrets actually did break loose, but for fear they would. In a report given out by the Navy Department, it is stated that the return of the ship was due to the "caution" of the officers and a desire for "a further inspection and possible readjustment." The excessive rolling of the Indiana is ascribed to the fact that she is not fitted with the bilge keels which she was designed to have. These were omitted because the naval docks were not of sufficient capacity to accommodate the ship with bilge keels in place.

It is gratifying to learn that the rolling of the Indiana and her class is not, in the minds of the naval experts,

due to their top hamper and the great height (26 feet) at which the four 8 inch guns and turrets are carried. When the designs were published, it was predicted in many quarters that these ships would not show sufficient stability in a beam sea, and the performance of the Oregon in Pacific waters coupled with the troubles of the Indiana might seem to verify the prediction. Against this, however, it is quite sufficient to reply that the most stable ships of foreign navies showed quite as great instability before their bilge



BATTLESHIP INDIANA—THE BIG GUNS LASHED, AFTER BREAKING LOOSE DURING A GALE.



# SCIENTIFIC AMERICAN

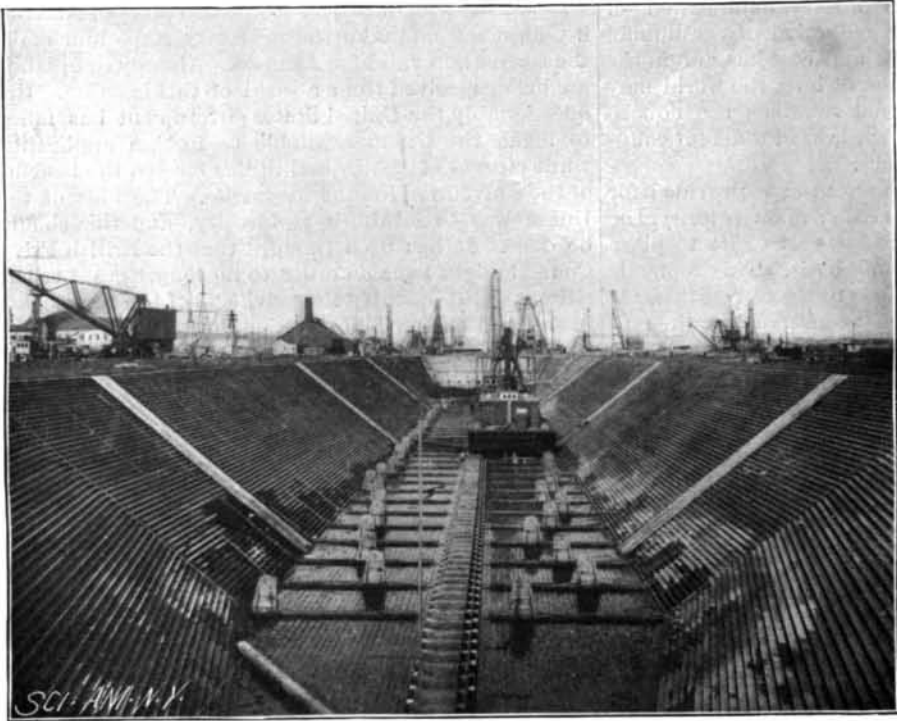
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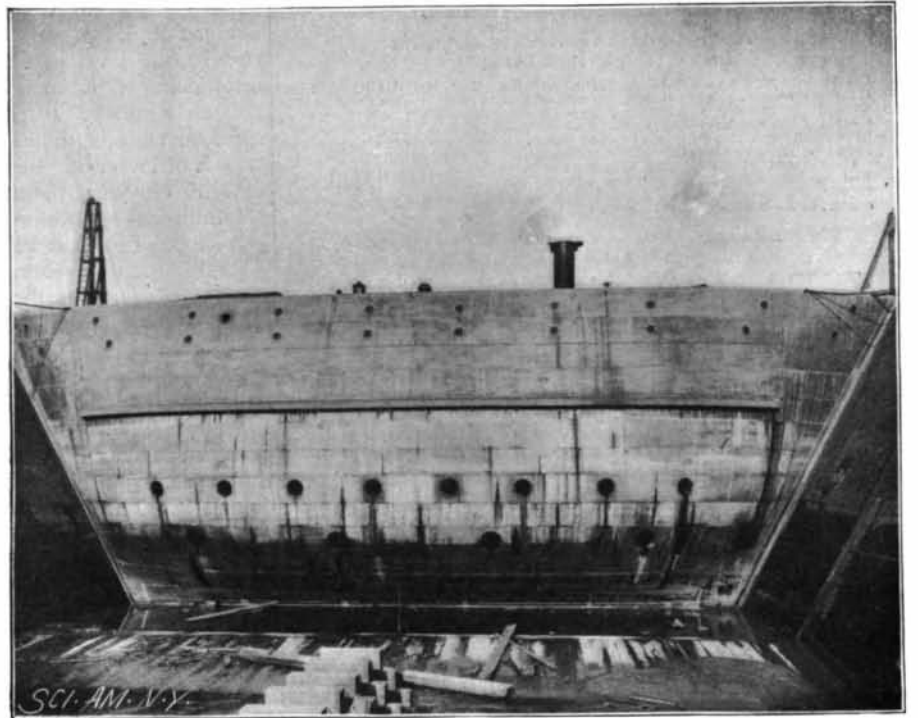
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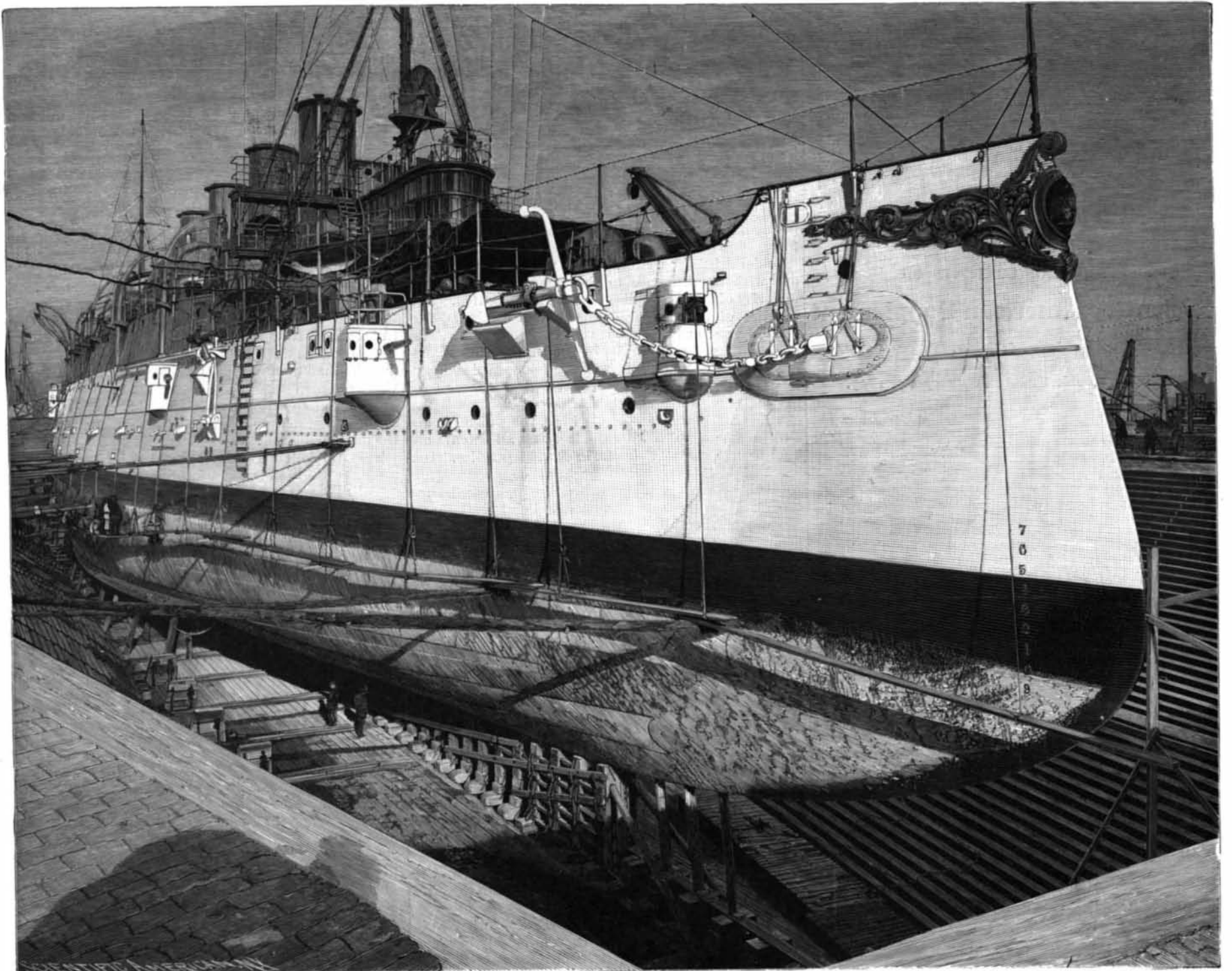
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DEPTH OF WATER ON SILL 29 FEET.



THE FLOATING CAISSON IN PLACE CLOSING THE DOCK.



THE UNITED STATES CRUISER COLUMBIA IN DRY DOCK No. 2 BROOKLYN NAVY YARD.—[See page 120.]