

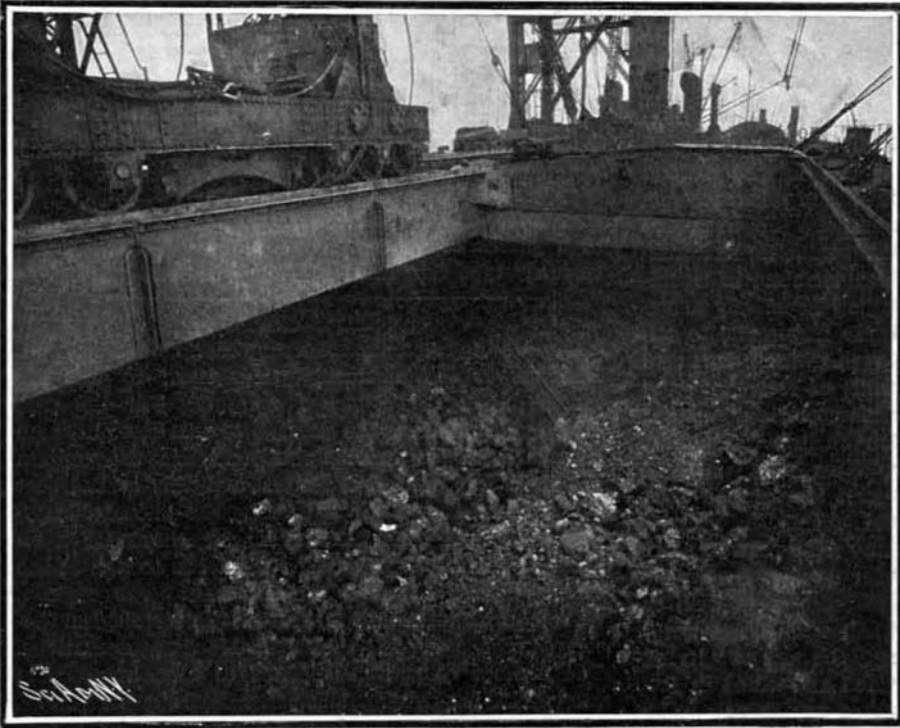
FLOATING DEPOT FOR COALING WARSHIPS.

BY DAY ALLEN WILLEY.

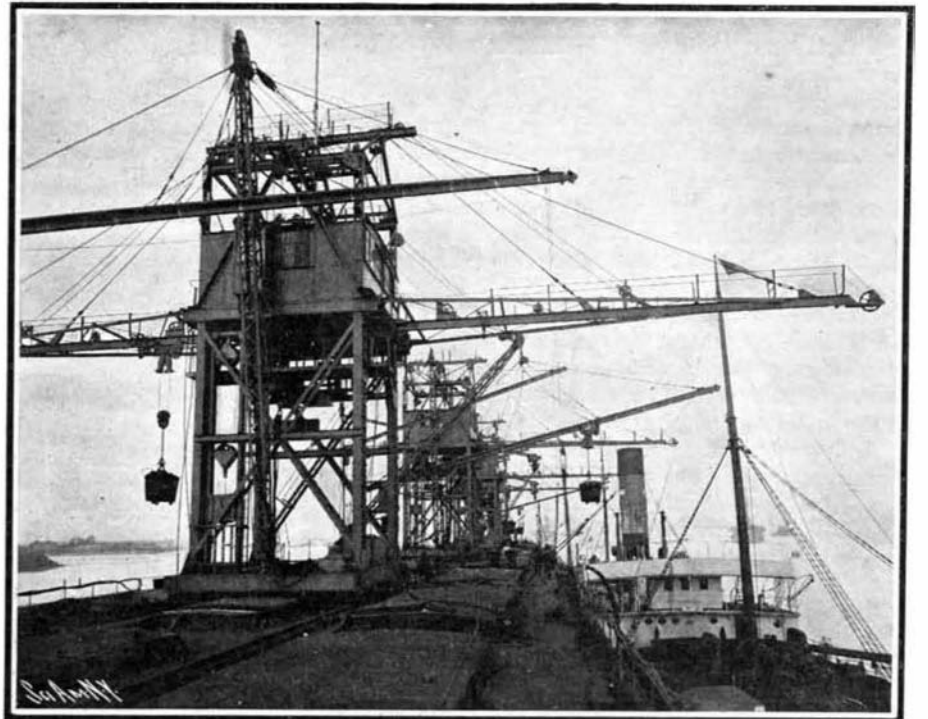
The British Admiralty has placed in service a floating depot for coaling warships, which is notable by reason of its great capacity, novel design, and the mechanical methods used for loading and unloading purposes. The coal depot, which is known as No. 1, has

electric motor; but to assist in overcoming the load of the receptacle, the chain holding the bucket is attached to a wire cable and sheave. The trolley system is utilized in hauling the buckets back and forth, as well as in the up and down movements, and as the tramways extend from both sides of each tower, two vessels can be coaled at once or the depot filled from both sides.

be served by the mechanism. In the trials which have been made of the coal depot at Portsmouth, it has been hauled alongside of a dock, and a certain proportion of its cargo sacked and dumped on the dock in a given period of time. In another test the mechanism of the depot was employed to transfer its cargo to the dock, where the coal in bags was trundled on board a war-



One of the Compartments in Which the Coal is Stored.



Deck View of the Floating Coal Depot.

FLOATING DEPOT FOR COALING WARSHIPS.

been utilized in the harbor of Portsmouth, where it has been tested in a variety of ways with such successful results, that it is understood the government will place several other depots at naval stations elsewhere.

As the illustrations show, the craft is of large dimensions. It is constructed of heavy steel plates, the framework being sufficiently massive to withstand the strain of the load of fuel as well as the machinery with which it is equipped. In reality, it is a huge barge which can be towed from harbor to harbor, if necessary, or to any convenient point in a harbor, while its capacity—12,000 tons of fuel—permits it to coal a small fleet of warships before its compartments are emptied. The hold is divided into a series of compartments, or large bins, which are covered with movable hatches like the compartments in the hold of an ordinary ship. The bottom plates of the storage bunkers, however, are V-shaped, allowing their contents to be transferred by gravity to other portions of the depot and at the same time assorted into lump and slack coal if desired. The compartments are arranged in two parallel rows with open galleries between them extending from the bottom to the upper deck.

As the photographs show, a modification of the fast plant, so commonly utilized in this country in transferring cargoes on the Great Lakes, is employed. The depot is equipped with four Temperley conveyors, each consisting of a steel tower mounted upon rails, so that it can be moved forward and back, and adjusted to a hatch of the depot or the ship which it is to serve. Each tower supports a series of lateral tramways consisting of steel girders, which can be raised and lowered to a suitable angle. Beneath each tramway travels the bucket, which can be operated from any point between the extremities of the tramway by means of an automatic guide. The power is supplied by an

In addition to the tramway conveyors, however, the depot is also provided with a series of boom derricks—the arms being constructed of latticed steel work. These are auxiliary to the tramways, but are intended principally to serve the galleries to which we have referred. Frequently it is desirable for a warship to take on assorted fuel in bags. Nearly all of the manual labor required on board the depot is to fill the fuel bags with coal in the lump form. The lower portions of the bins open out into the galleries, and as fast as the bags are filled they are wheeled into these, when the fuel is lifted out by the derricks, swung over the side, and placed on board the receiving vessel. A half dozen or more bags can be transferred at once by means of the series of hooks which are attached to the boom cable, the hooks fitting into rope grips fastened to the fuel bags.

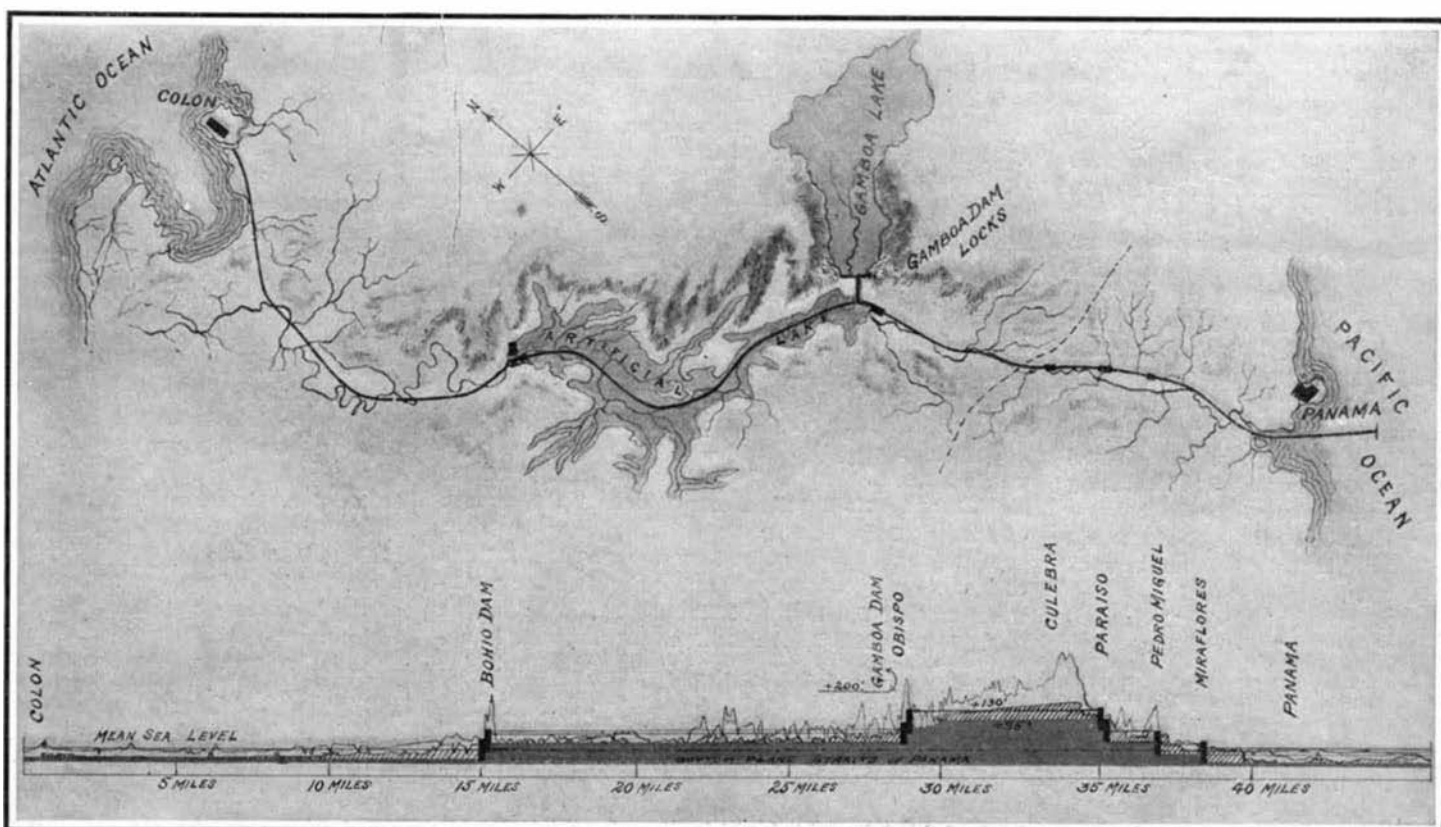
As may be inferred, the coaling depot contains an individual power plant, but all of the operations with the exception of filling the bags are performed by electric power. The current is generated by steam power, and transmitted by cable and wire system to the series of motors installed on the tramway towers. The boom derricks are also of motor design. The length of the depot allows the bunkers of a flotilla of gunboats to be filled at one time, while the reach of the tramway arms is such that two small vessels can lie abreast and

ship. As the photographs show, to keep pace with the charging capacity of the series of tramways, an entire ship's crew was required. Perhaps the most valuable feature of the depot, however, is that it is not only movable, but is available for serving vessels on either or both sides. It can also be utilized while loading cargo to coal the battleship or cruiser. While the bunkers of the war vessel are being filled on one side by the tramways and booms, the contents of the collier can be taken aboard by the mechanism on the opposite side. Indeed, the cargo of the collier can be transferred directly to the warship, the coal being taken across the deck of the depot by its conveying mechanism.

PROPOSED EXCAVATION OF THE PANAMA CANAL BY FLOATING DREDGES.

The plans for the rapid construction of a high-level canal, and its ultimate enlargement to a sea-level canal, which were presented in much detail by Mr. Bunau-Varilla before the Board of Consulting Engineers last September, is developed in general outline in the following article. Mr. Bunau-Varilla believes the best way to carry through successfully the great task which the United States government has set itself at the Isthmus is first, to build a high-level canal with locks, placing the summit level at an elevation of 130 feet,

so as to secure a canal of the necessary depth and width with a minimum amount of excavation, and in the shortest possible time, which is estimated to be not over four years. When, at the expiration of that time, the canal is opened to traffic, the work of widening the waterway and cutting it down to sea level would proceed contemporaneously with the use of the canal for navigation. Mr. Bunau-Varilla explained to the Board of Engineers his special method of construction of the locks,



Map and Profile of Preliminary 130-Foot Level Canal at Panama, Proposed by Bunau-Varilla, Chief Engineer of the Former French Project.

PROPOSED EXCAVATION OF THE PANAMA CANAL BY FLOATING DREDGES.

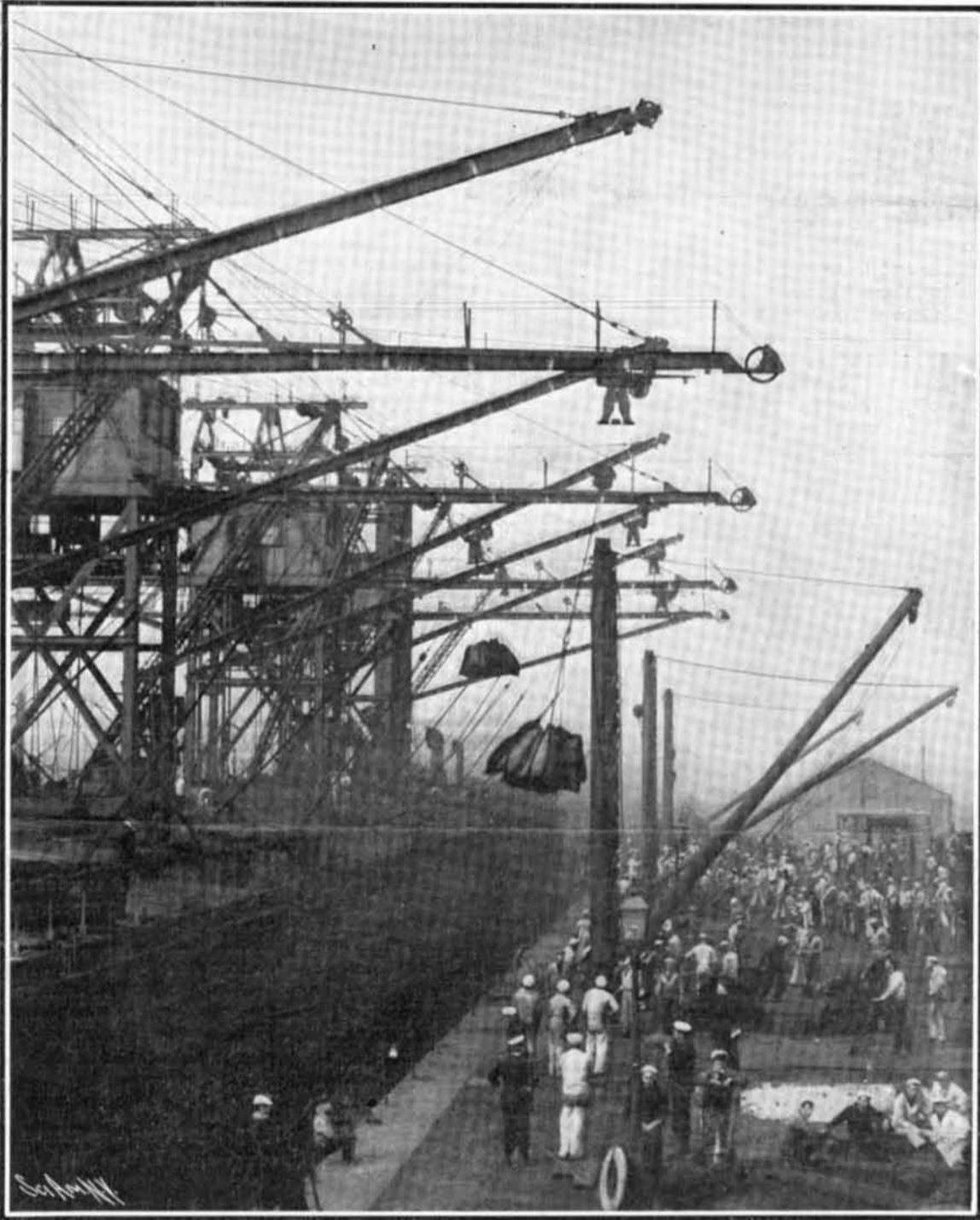
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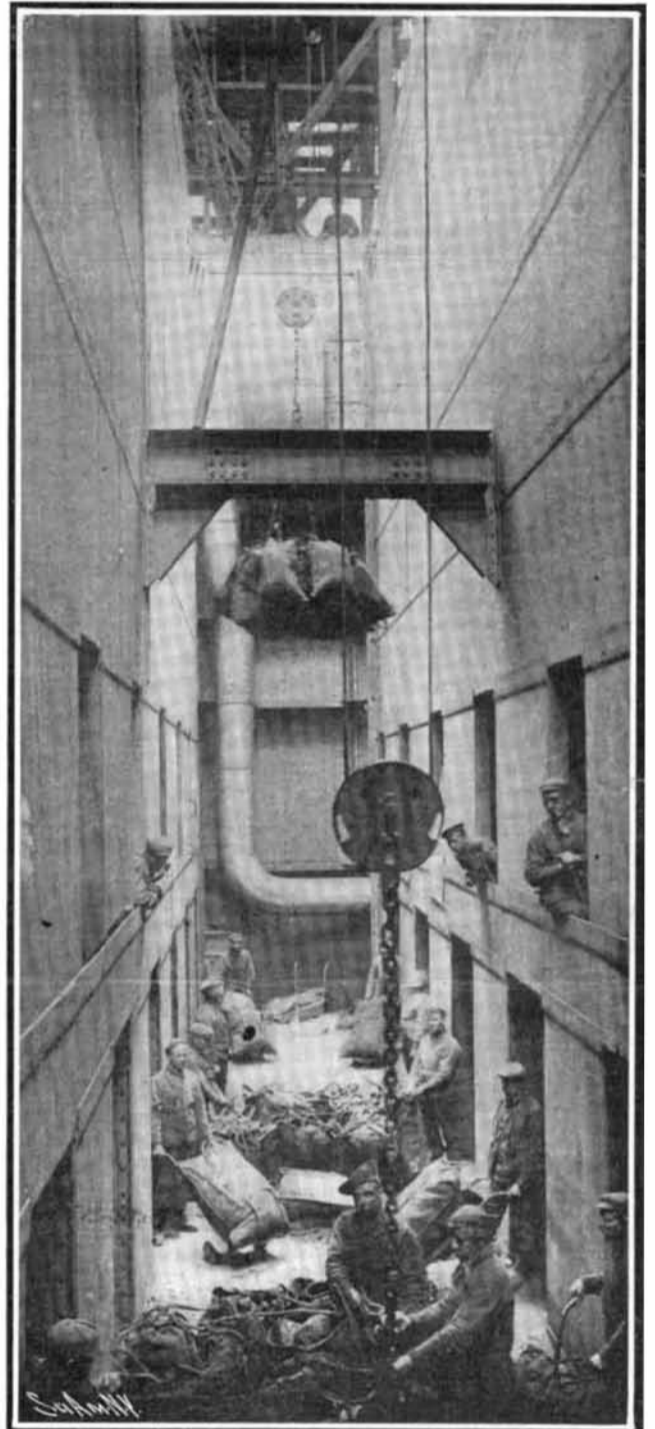
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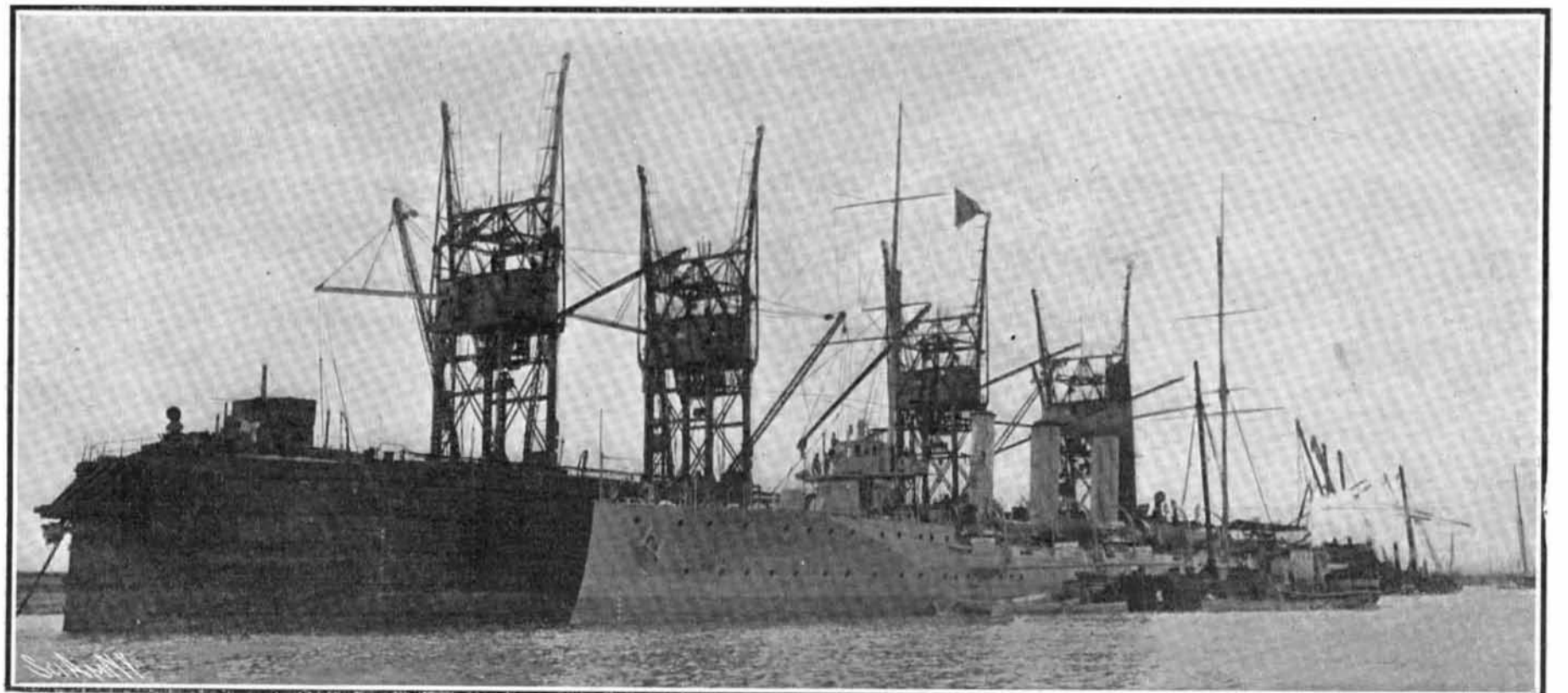
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Transferring the Coal to a Supposed Warship with the Assistance of 770 Sailors.



Hauling up the Coal from the Bunkers.



Coaling a Cruiser from the Floating Coal Depot.
FLOATING DEPOT FOR COALING WARSHIPS.—[See page 68.]