

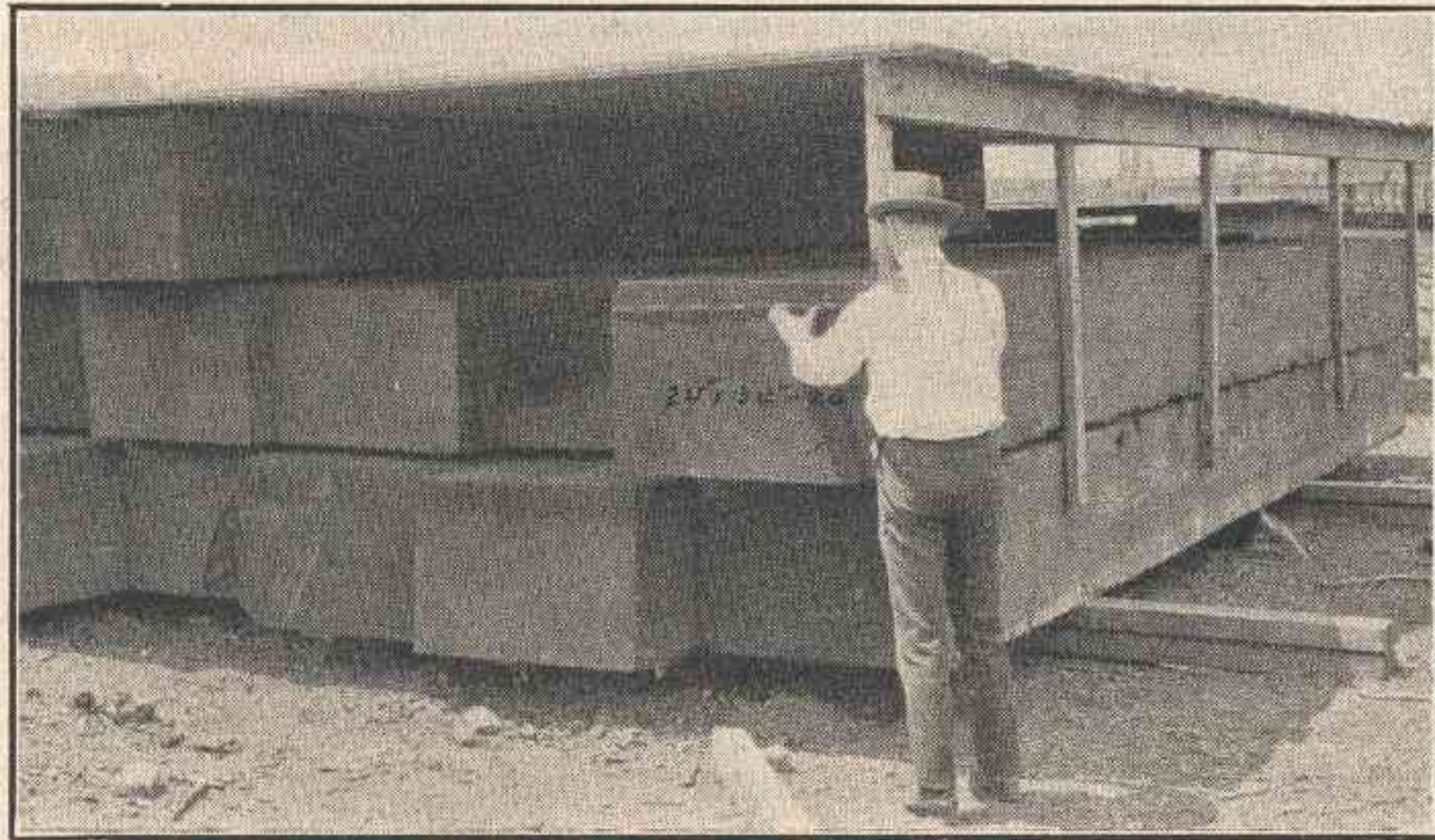
Pre-Cast Blocks Partly in Place on Inshore End

Erie Builds New Type Pier at Weehawken, N. J.

Pre-Cast Concrete, Extra Large Timbers and Sheet Zinc
Used in Interesting Fireproof Structure

PRE-CAST CONCRETE, extra large timbers of Douglas fir and zinc sheathing in a design that departs somewhat from the ordinary, are the unusual features incorporated in a new pier that the Erie has recently constructed on the North River at Weehawken, N. J. The new structure at this point replaces one of the four pier units destroyed by

wide, surmounted by a two-story structure 808 ft. long and 96 ft. wide. The fire that destroyed the old piers started on Pier D and spread rapidly to the others with the result that all four burned down to the water. A four-story warehouse was also destroyed and numerous cars of freight as well as lighters, barges, etc., were consumed by the flames or badly damaged. The experience of the road in this case led to the design of a structure and a type of construction which, in addition to being practically fireproof in itself, precludes any possibility of destruction below dock floor level in case of even the most extreme of fires.



Some of the Large Douglas Fir Timbers Used

fire on November 3, 1921, but because of its larger size it gives the railroad facilities equivalent to about two of the old structures. Pre-cast concrete blocks were used in retaining walls and column foundations in order to secure thorough seasoning before use in salt water. A seven-foot sill of cinders surmounts the piling to obviate damage to the substructure from fire. Timbers as large as 24 in. by 34 in. in cross section were used in the superstructure to localize fire hazards while sheet zinc was used on the exterior to reduce maintenance costs and fire risks.

The original four piers known as Piers A, B, C and D at Weehawken measured approximately 720 ft. long and 100 ft. wide, each surmounted by a shed 700 ft. long and 96 ft. wide. The new pier, now completed, is 828 ft. long and 100 ft.

Piling and Pile Flooring Protected by 7-ft. Fill

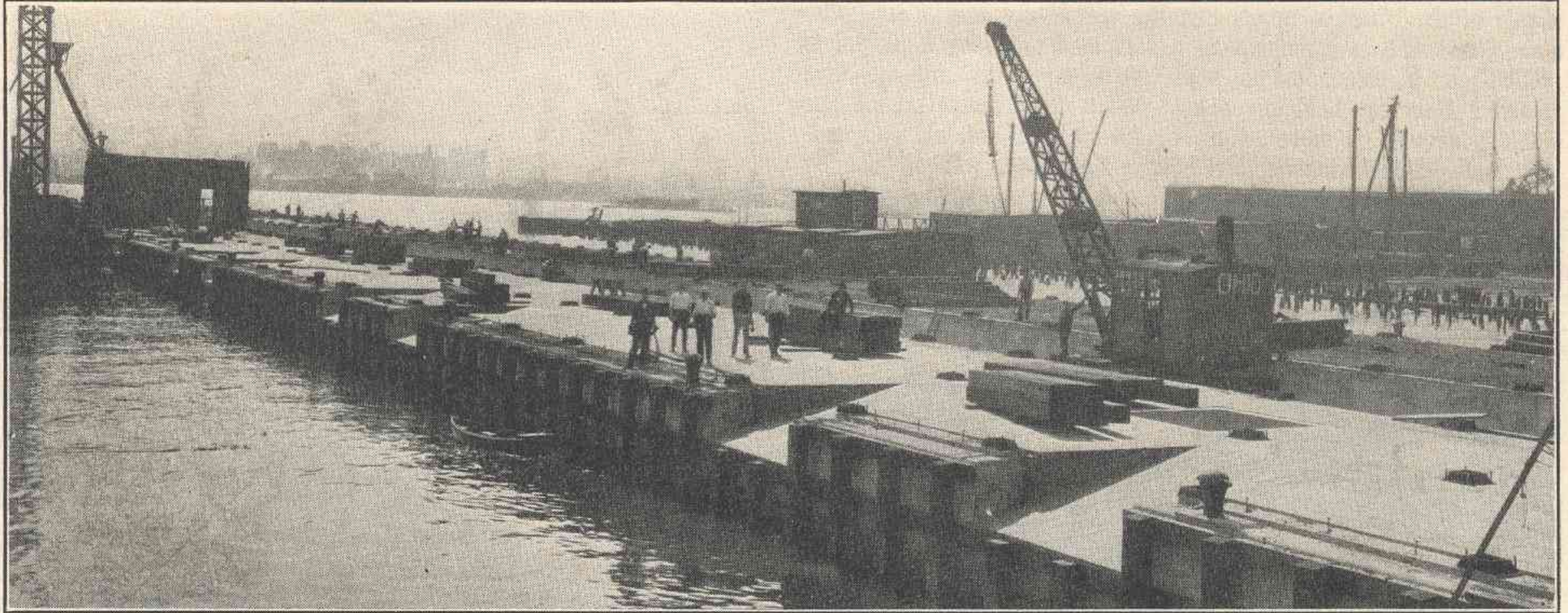
Thus it was decided to keep the timber substructure, i.e., the piling, etc., at an elevation where it would be subjected to periodic soaking by the river water and surmount this with a deep cinder fill held in place by concrete retaining walls around the outer edges, a two-track runway along the center longitudinally and around the elevator wells, etc. Above this, mill construction of Douglas fir in the form of a two-story structure with 16 gangways completely sheathed on the outside with zinc and equipped with an automatic sprinkler system was used in order to secure maximum fireproof construction commensurate with a reasonable original investment and future maintenance costs. Thus in any case, if a fire should start, the chances were excellent that it could be localized or kept under control, if not put out quickly. However, if a serious fire should get out of control, the worst damage possible would be the burning of the shed down to the cinder fill, thus leaving the foundations intact.

Old Piling Showed No Signs of Marine Borers

As the new construction was to be supported on piles, it was desired to utilize as many of the old piles as possible, although the increased weight of the structure necessitated intermediate lines of piling as well as other strengthening in the form of additional piles under the columns, etc. In order to check their condition, many of the old piles, which

were of white pine, were pulled and it was found that after 30 years of service, they had suffered no deterioration and showed no signs of marine borers. They were, therefore, continued in service while Georgia pine piles were utilized for all additional work in the extension necessary for the increased length to 828 ft. and the increased foundation supports. About 4,300 new piles were driven in lengths varying from 60 ft. to 110 ft. in a mud stratum too thick to enable

upper course, the adjoining blocks and the timber flooring over the piling. Each block weighed approximately six tons. In cross-section perpendicular to the pier edge, the over-all dimensions of the blocks are 5 ft. 6 in. wide by 3 ft. 5 in. high, the two lower edges being recessed to fit over 12-in. by 12-in. timbers which come flush with the inner and outer faces. The upper surface is recessed 6 in. deep and 14 in. wide along the center longitudinal line of the



The Pier at Dock Floor Level—Concrete Fire Wall Being Poured in the Background

the piles to reach rock. All piles were cut off at 11 in. above mean low water and capped with 12-in. by 12-in. Douglas fir timbers, upon which a wood floor was built up from 6-in. thick by 12-in. wide splined timbers for the "clear" length and width of the pier. This work forms the foundation for the fireproof substructure. The wood used was untreated.

Since the above construction was subject to periodic soaking from the river water at high tide it was thought preferable to devise some method of erecting the concrete retaining

block. Two handling stirrups are located in this recess. Lengthwise, i.e., along the line of the dock edge, the block is recessed on one end and built out at the other to conform to and engage with the adjoining blocks.

The interior pedestal blocks weighed about 4½ tons each and were pre-cast as truncated pyramids with a base 6 ft. square for those along the center tracks and 5 ft. square for those between the track wall and the outer edge. Likewise, pre-cast blocks were used for the elevator wells, of which



The Sheathing of the Pier Preparatory to Application of Zinc

walls and column foundations that would obviate any possible ill effects from pouring concrete in salt water. This led to the decision to erect the concrete work in two courses, the lower one of which was to be of pre-cast blocks.

Pre-Cast Blocks of Interlocking Design

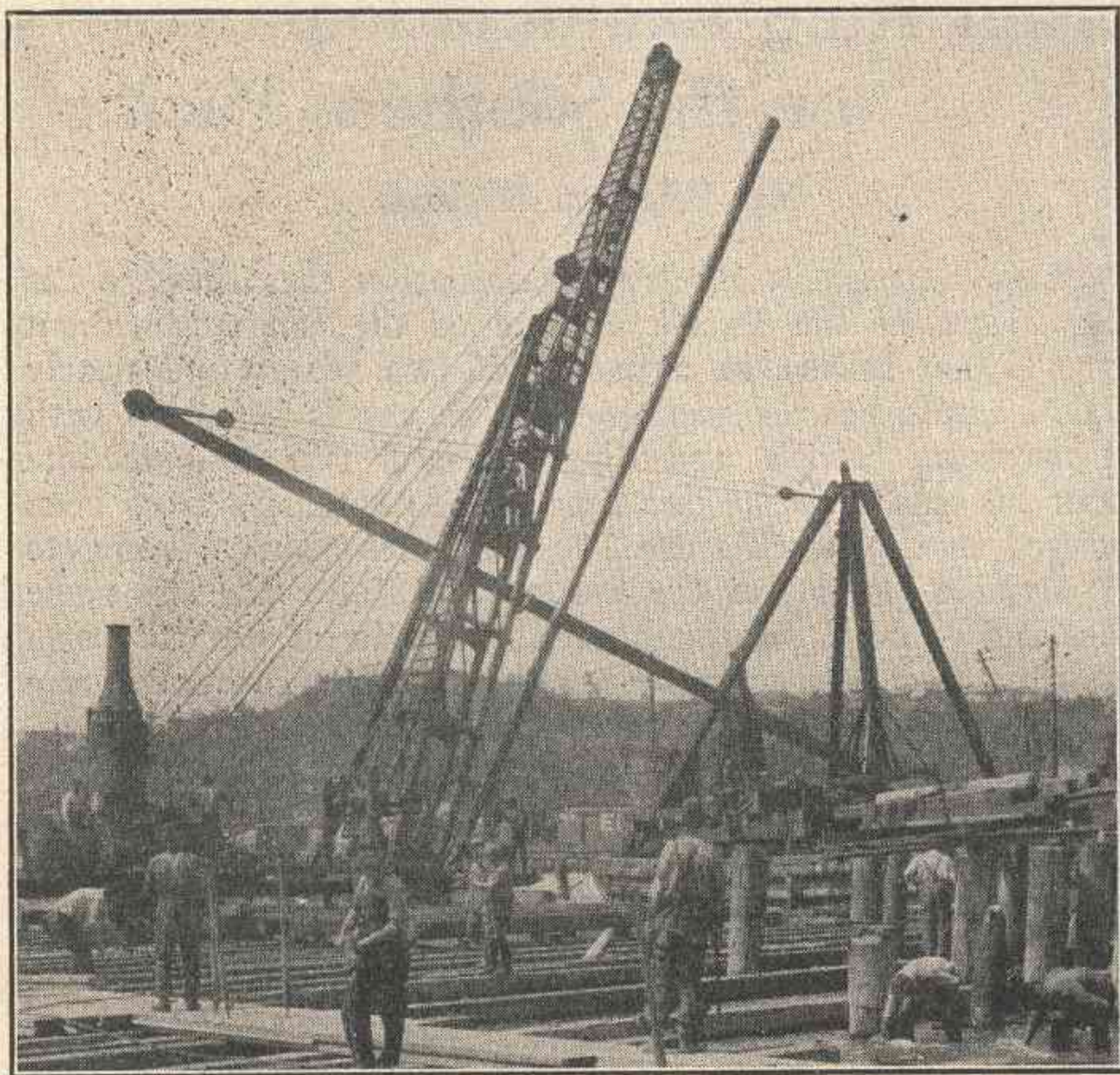
The pre-cast blocks used for the outer wall were made uniform in size and so designed as to interlock with the

there were eight. All pre-cast work was brought up to the same level. All blocks were poured by and allowed to season for about four weeks at the Newark, N. J., plant of the Massey Concrete Products Corporation and were shipped from there by boat to the pier location. They were lifted from the barges on which they were transported and placed in final position by floating derricks. Following this, steel forms were erected as quickly as the blocks were in position

This was done by using a very heavy manila paper which had been given several coats of shellac.

Interesting Types of Pile Drivers

The presence of the old burned piling made it impossible to use marine pile drivers on the new piles with the exception of the extension for additional length. As all new piling, with the above exception, was placed between the lines of the old it was necessary to use drivers that could be operated over the tops of the piling. Two types were used, both of which are of interest. One of these units was a swing rig equipped with a turntable, enabling it to swing through a full 360 deg. With a working diameter of 54 ft., it was able to cover one-half the width of the pier. This machine was also equipped with steel dolleys which, in connection



Steel A-Frame Rig Driving Batter Piles in Foundation Work

with a track built up from cribbing on the cut-off piles, permitted it to move forward or backward quickly under its own power. The other machine was a steel skid, steel A-frame rig with 60-ft. leads pivoted in such a manner that they could be inclined to a maximum angle of 45 deg. in order to drive spur piling. Both were of the drop hammer type, using 3,600-lb. hammers in conjunction with 1,200-lb. follower blocks. An average of 115 piles per day were put down regularly by the two machines.

The new pier was designed by and constructed under the direction of the engineering department of the Erie, R. C. Falconer, assistant to the president and chief engineer; C. H. Splitstone, superintendent of construction and surveys; F. A. Howard, engineer of structures, and W. I. Jefferds, resident engineer in active charge of the work. Foley Bros., St. Paul, Minn., were the general contractors for the work; L. B. Fulton, superintendent, and C. L. Swenson, assistant superintendent.

THE CLAIM DEPARTMENT of the New York Central lines is now 25 years old, having been organized at Cleveland, Ohio, on February 17, 1898; and in honor of the anniversary, The Beacon, a monthly periodical of the department, published at Columbus, Ohio, has issued a special anniversary number. F. V. Whiting, now general claims attorney for all New York Central lines, has been at the head of the department throughout the quarter century, having been chief claim agent of what was the Lake Shore & Michigan Southern

Roads Ask Reconsideration of Scrip Coupon Book Decision

WASHINGTON, D. C.

WHILE THE EASTERN railroads have been planning to ask an injunction against the Interstate Commerce Commission's order prescribing interchangeable scrip coupon books the railroads which are members of the Western, Southwestern and Transcontinental passenger associations, together with the Baltimore & Ohio, have filed a petition with the commission asking that the proceeding be reopened for reargument and reconsideration. Pending such reargument and final determination they ask that the commission suspend its order and thereafter they ask that it abrogate its order and hold that there is no justification in law or in fact for finding that a rate for scrip coupon tickets should be lower than the current just and reasonable standard rates. The American Farm Bureau Federation, by its director of transportation, C. B. Hutchings, also has filed a petition representing that it has an interest in the matter and joining in the petition for reopening and reargument on the ground that the order is discriminatory.

The petition of the railroads says that the commission in its report fails to point out or to indicate any evidence whatsoever upon which it arrived at the conclusion that a reduction of 20 per cent would be just and reasonable for interchangeable scrip coupon tickets, and they therefore aver that the commission erred and reached its decision arbitrarily and counter to the evidence and to the rules and principles of law.

Referring to language in the report indicating that the origin of the mileage ticket "bore the color of an undue preference" the petition says: "It grew out of the very practice which at the outset inspired the enactment of the Cullom act, the Hepburn act, the Elkins act, and against which regulatory legislation has been directed for a generation. Nothing has been so condemned by law and by public opinion as preferences and discriminations. That large buyers of transportation should be favored against the rights of the smaller buyer is repugnant to every line and motive of the interstate commerce act."

That the public regards the decision of the commission as an unwarranted creation of a preferred class of travelers is established, the petition says, by various developments since the announcement of the commission's report. Reference is made to a letter from the Farm Bureau Federation urging the carriers to petition for a reopening of the case, and a resolution introduced in the Kansas legislature criticizing the commission's decision as an unjust discrimination against travelers of small means; also to plans of which the railroads say they have been advised, of the railroad commissions of Alabama, Georgia, Tennessee, North Carolina, Virginia and Mississippi for joint action to offset what they allege to be an unjust and unjustified discrimination. The petitioners say they are also advised that other state commissions and governing bodies are contemplating steps to meet what they believe is an unwarranted discrimination growing out of the commission's order. These developments are cited, it is stated, "to emphasize what we believe to be the commission's error in failing to construe the amendatory statute in harmony with sections 2 and 3 of the interstate commerce act in the absence of a direct mandate from Congress to disregard those sections. These developments are also significant as indicating the dire results threatened the carriers from various sources should the commission's decision be followed as a precedent for sweeping reductions in passenger fares as a means of overcoming the undue preference."

After stating that it is not easy to reconcile the commission's report and order in this proceeding with its action in the Wisconsin passenger fare cases, in which the commission