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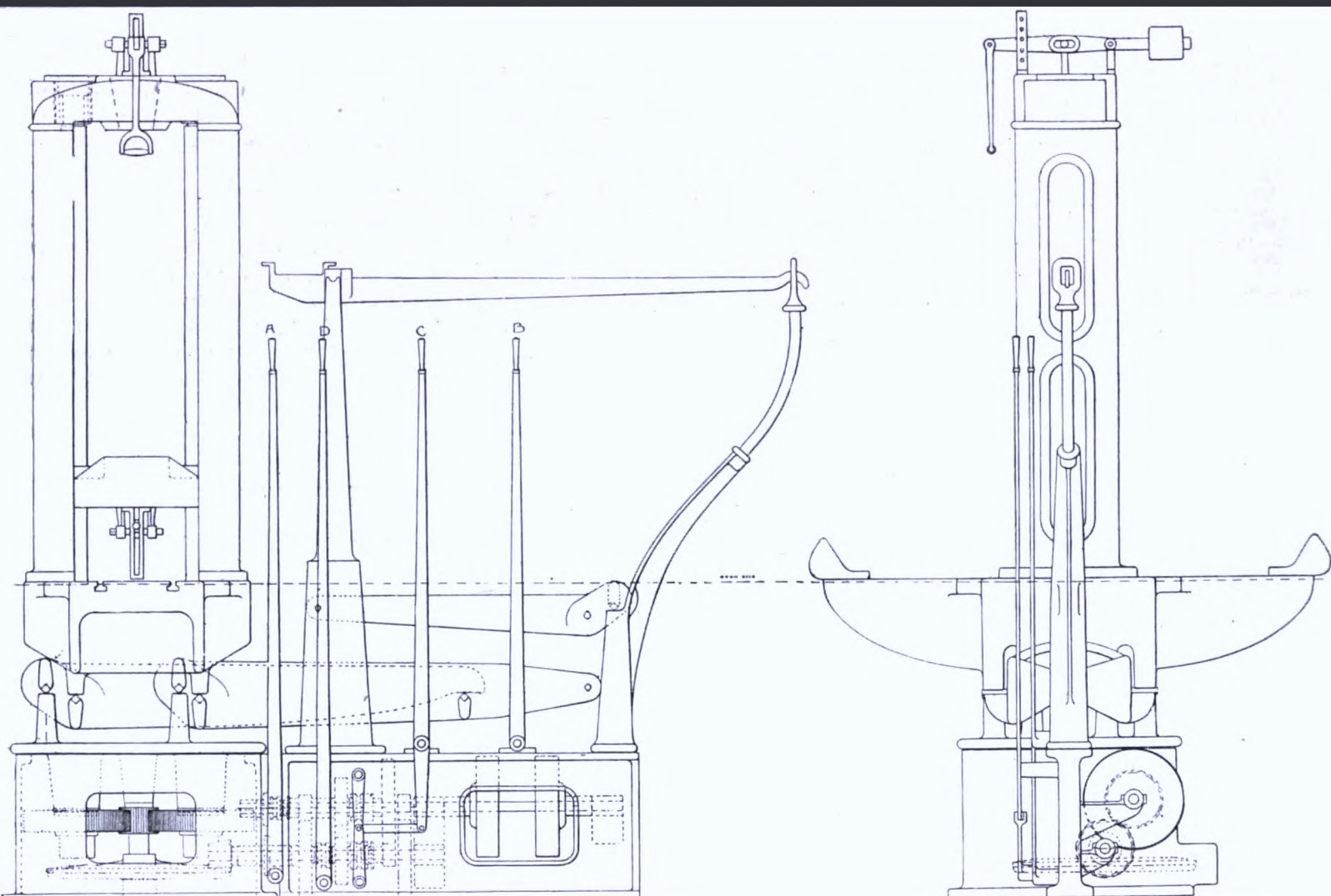
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The Railway age

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THIRTY-THIRD VOLUME.

THE Railway Age

JANUARY 1 TO JUNE 30, 1902.

38 with sheaves and four with pulleys. They are to be of different power, as follows: Twenty-three 100-horsepower, two 60 horsepower and seventeen 40 horsepower. The cars are to be handled by power by means of two 5/8-inch cables passing from winding drums around sheaves and then along the two tracks. The power will be sufficient to fill the entire track with cars at a single haul.

The cars discharge into a tank beneath the level of the floor, in which the receiving boot is placed. As shown by the cuts, the receiving tank extends 18½ feet below the floor level and is of double construction with space between the outside walls and the tank proper to allow of ready access for inspection and repairs. In case the action of the elevating belt clogs, access to the interior of the boot is obtained by a removable panel. Feed gates to regulate the supply of grain to the elevator belt are provided and arranged to be operated from the floor above. Two cars may discharge load at the same time, as the hoppers beneath both tracks empty into the common tank. George M. Moulton & Co., Chicago, are the contractors for the entire building, the contract for power to be sublet.

A COUNTERBALANCE SWING BRIDGE ON THE CHICAGO MILWAUKEE & ST. PAUL.

In The Railway Age of February 16, 1900, appeared a description of a 175-foot counterbalanced plate girder swing bridge erected by the Chicago Milwaukee & St. Paul over the north branch of the Chicago River near Clybourn place in Chicago. Plans have since been made, and the substructure is now nearly completed, for a bridge of a similar type to be built by the same company over the Ogden canal, just off the north branch of the Chicago River at Cherry street, in Chicago.

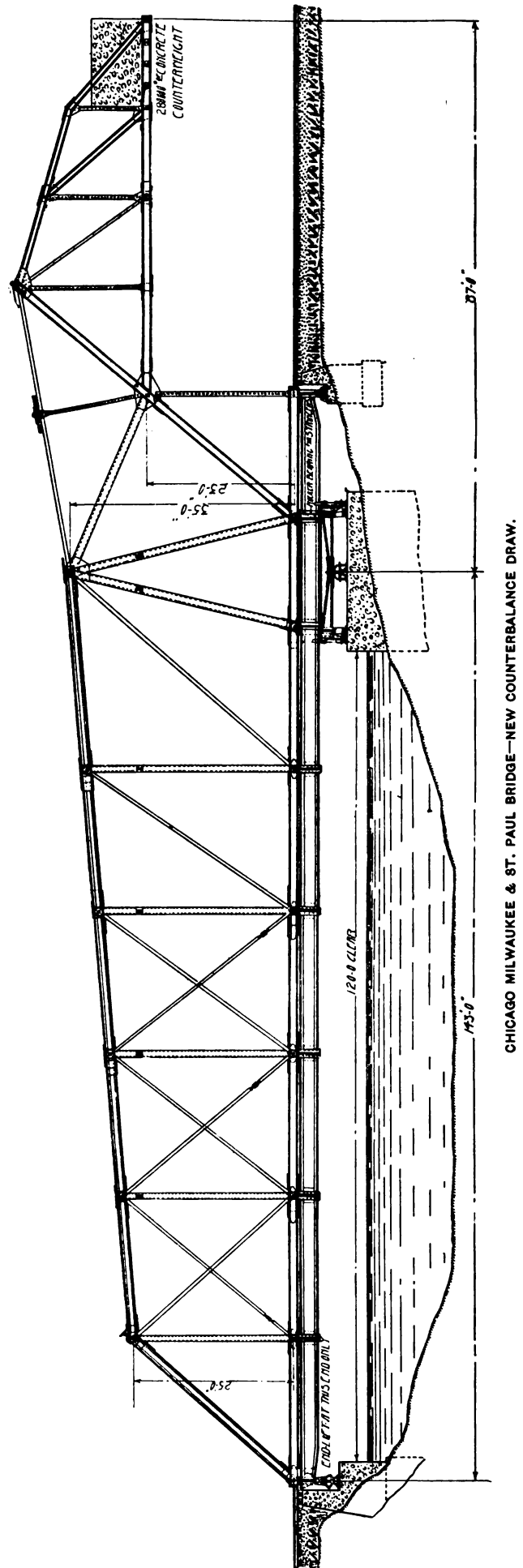
The present bridge differs from the first one in that it will be of a pin-connected truss type instead of a plate girder draw. The new bridge is on a branch line leading to the freight and warehouses on Goose Island, and is used exclusively for freight traffic. It will have a clear span of 120 feet, a total length of 230 feet, and will be 17 feet in width, providing room for a single track and a four-foot walk. The roadway will be floored over, allowing for the passage of fire engines to the island across the bridge. The height of the truss is to be 35 feet over the drum, tapering to 25 feet at the outer end.

Electricity will be used for operating the bridge, the power to be furnished by a 30-horsepower motor located over the drum. A roller bearing of 18-inch rollers is provided at the drum, the latter being 19 feet in diameter. In addition to a center bearing, when in a closed position, the bridge will be supported at the outer end of the span as well as at a point 70 feet in the rear of the drum at the other end.

The ordinary rail and end lifts will be used at the end of the span. These will be operated by a shaft run from the same motor which operates the bridge. The end lift in the present case is that generally used on the Chicago Milwaukee & St. Paul and consists of a cam arrangement operated on an eccentric shaft. The shaft has an eccentricity of 1½ inches, thus allowing a vertical lift of 2½ inches. The ordinary drop latch is used for securing the bridge in a closed position. The portion of the bridge floor between the rear bearing and rim of the drum is supported on a small deck girder. This girder at the inner end—that is, over the rim of the drum—has a rocker bearing and at its outer end is secured in slotted holes. By this arrangement the outer end of the span may be lifted the necessary distance for closing the bridge.

The bridge is designed to carry two 170-ton engines, followed by a trainload of 5,000 pounds per lineal foot, and replaces an old wooden and iron structure built some twenty years ago. The top and bottom chords and struts are of wood, while the side tension members are iron rods.

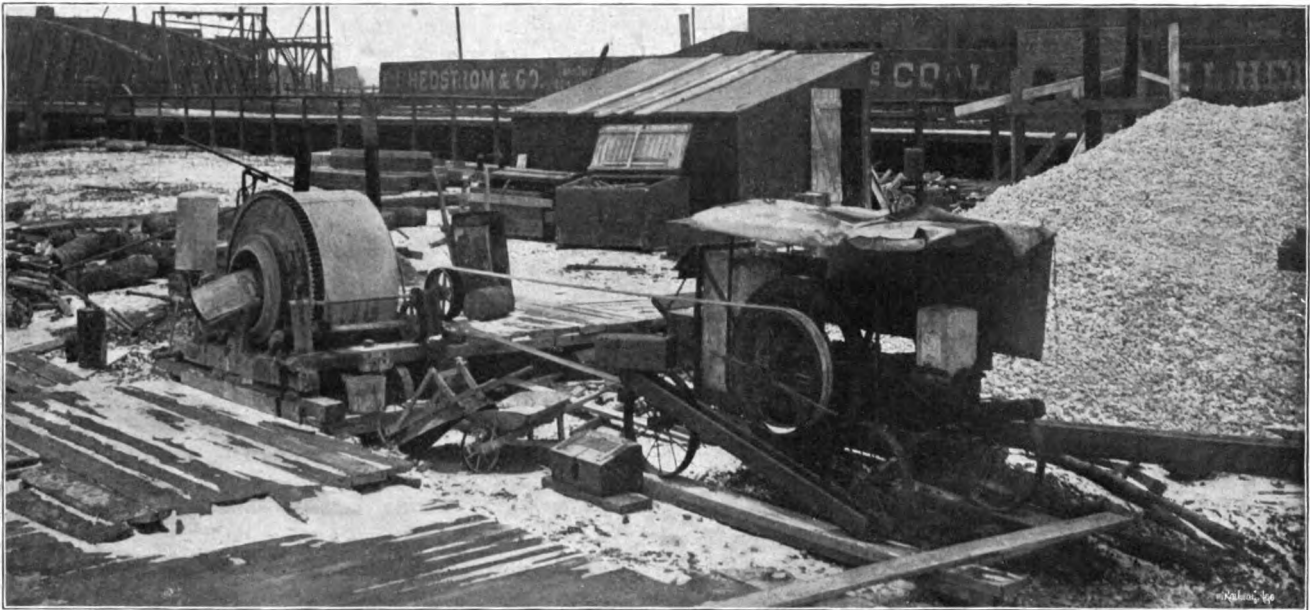
About 215 tons of steel work will be required and is to be furnished by the Wisconsin Bridge Company. The cost of the entire structure will be \$50,000. The substructure includes the center pier under the drum and the supports for



each of the other bearings. The main pier is 25 by 25 feet, sunk to a depth of 20 feet, and rests on a foundation of 147 piles, averaging 56 feet in length. The concrete was mixed in the proportions of one part of Atlas Portland cement to two parts of sand and five parts of broken stone. The mix-

which is 20 feet above the level of the tracks, thus leaving the space under the truss available for dock purposes.

The bills introduced in the two houses of the New York legislature giving the Pennsylvania Railroad the right to tun-



CHICAGO MILWAUKEE & ST. PAUL BRIDGE—CONCRETE MIXING PLANT.

ing was done by a Ransome-Smith machine, attached to a 12-horsepower Fairbanks-Morse gasoline engine. With this plant about 100 cubic yards of concrete per day were mixed. The concrete work was largely done during extreme cold

nel under the Hudson and East rivers and the island of Manhattan were both passed on February 26. Some opposition arose on account of the perpetuity clauses of the bills and that too much power was being given to a corporation



CHICAGO MILWAUKEE & ST. PAUL BRIDGE—OLD STRUCTURE TO BE REPLACED.

weather and before mixing, the stone, sand and water were all heated.

The counterweight is to be of concrete, weighing 280,000 pounds. It will be placed 70 feet in rear of the center bearing and supported on a projecting truss, the bottom chord of

without compensation, but the vote in the Senate was 29 to 11 and in the assembly 86 to 52 in favor. It remains only to substitute one bill for the other in one of the houses, and as the bills passed in exactly the form in which they were recommended, the legislation may be considered complete.