

## A Novel Type of Drawbridge.

(Specially Contributed by our Californian Correspondent.)

The longest one known, and the first of its kind, built west of the Rocky Mountains, is the new Salt Lake drawbridge recently built and just on completion by the Llewellyn Iron Works at Los Angeles. It is known as a Scherzer rolling lift bridge, and is being erected over the San Gabriel River at Long Beach, Calif., and connecting that

mark. Operation will be by electric power from the Long Beach end, furnished by the Pacific Electric Railway Company.

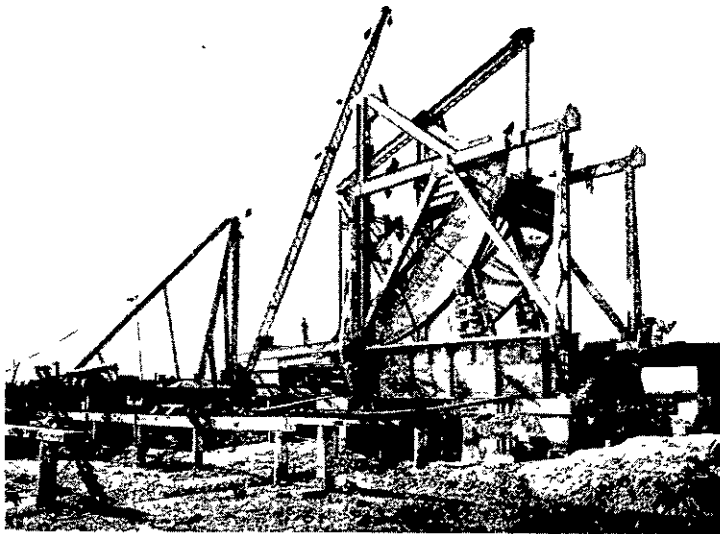
There are three piers designated A, B, and C. Pier C is at the Long Beach end. Piers B and C are 4 feet apart, and from B to A is the moving span of 180 feet, said to be the longest of its kind known.

At the Long Beach end is the counterweight tower, or box, filled with concrete. So delicately is the balance fixed that this weight is exactly that of the moving span to be raised, and if the machinery gets out

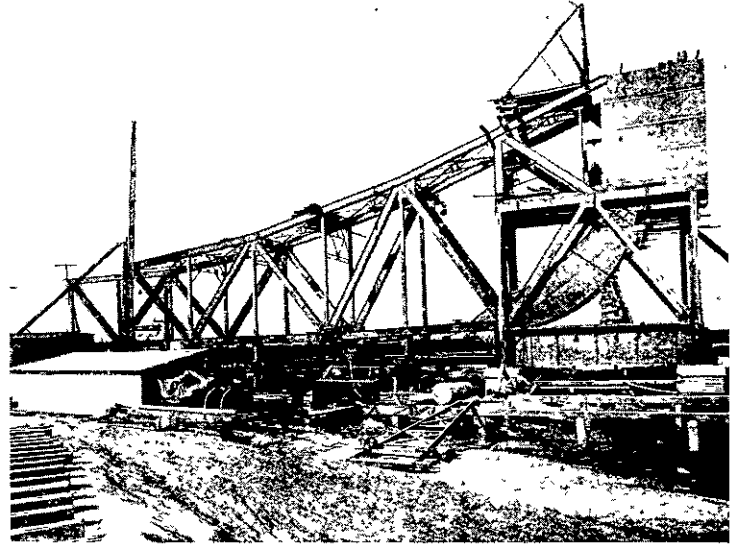
back into place by its own weight, just setting the whole in motion by a very slight exertion of power.

In this box will be also about 25 tons of pig iron additional, so as to be able to adjust the counterweight in the event of such being required in the future, owing to a possible change of the centre of gravity of the bridge.

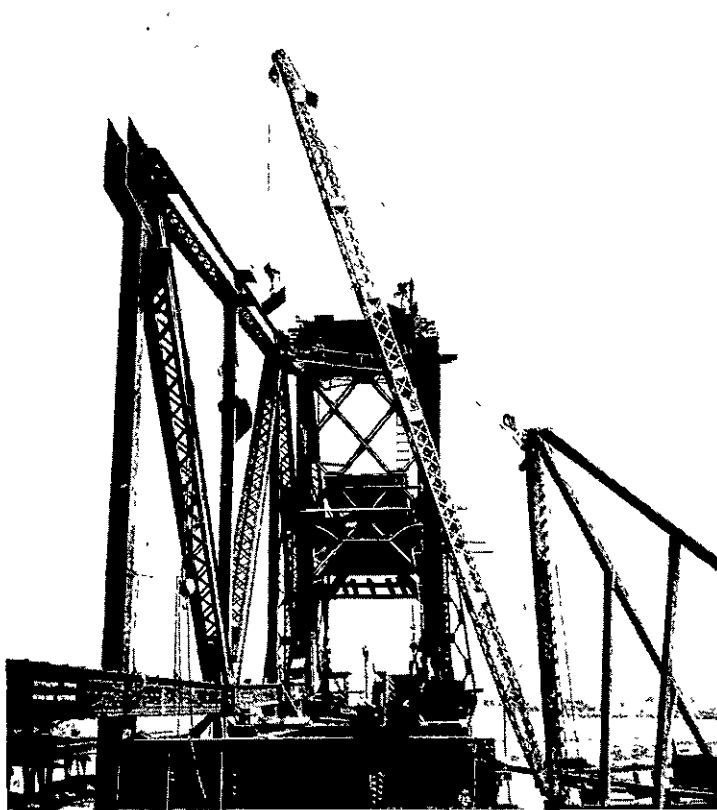
On a level with the counterweight box is a platform, known as the machinery floor, on which are placed two twenty-horsepower motors. The ladder shown in the



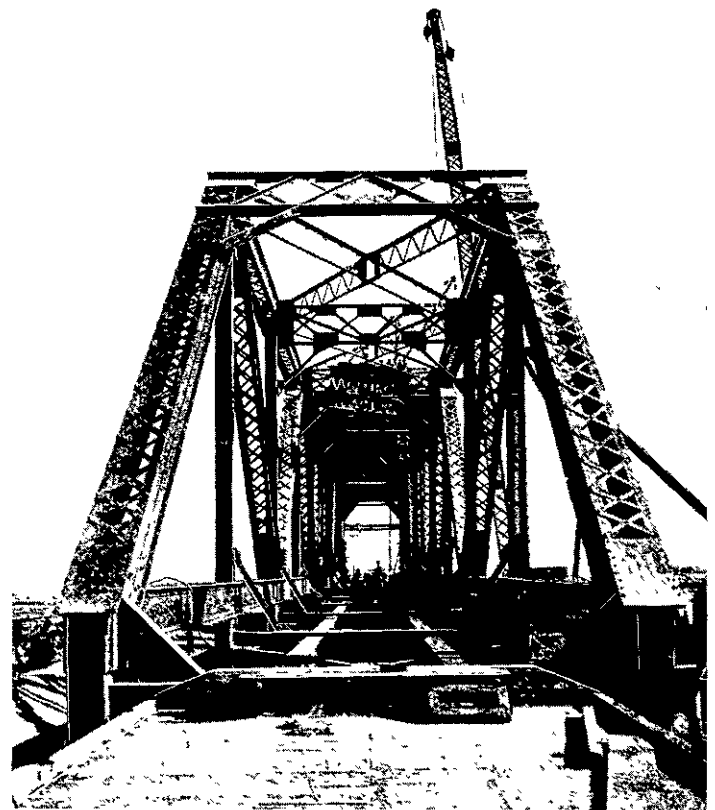
SIDE ELEVATION DURING CONSTRUCTION.



SIDE ELEVATION COMPLETE.



END OF BRIDGE DURING CONSTRUCTION.



END OF BRIDGE AFTER COMPLETION.

part with Terminal Island, for the Southern Pacific Los Angeles and Salt Lake Rail Road.

It is a single track bridge 18 feet wide, and the longest single span roller bridge yet built. The weight of the bridge is approximately 700 tons, and it is a fine steel structure. Its draw is one that raises instead of swinging on a pivot. When open, it will leave a clear channel of 180 feet, and the highest point of the bridge when in that position will be 240 feet above high tide

of order one man can raise or lower the draw by hand. This is what will be done in case of an emergency. When the draw is up, the counterweight will go down. It is much as though one were to take a huge triangle like a carpenter's square, with a heavy base, build a huge box and place it on the top of the hypotenuse to make the latter's weight equal that of the base, fasten the right angle to a pivot, then raise the base by the weight of the box on the end of the hypotenuse, and swing the base

picture, like a fire escape at one side, affords access to the machinery floor and counterweight box. When lowered, the bridge is locked in place at the Terminal Island end. A set of automatic signals will notify engineers of approaching trains to stop when the draw is raised, or to go ahead with a clear bridge.

The total height from the floor of the bridge to the top of the counterweight box is 225 feet.

The bridge is being equipped with all the