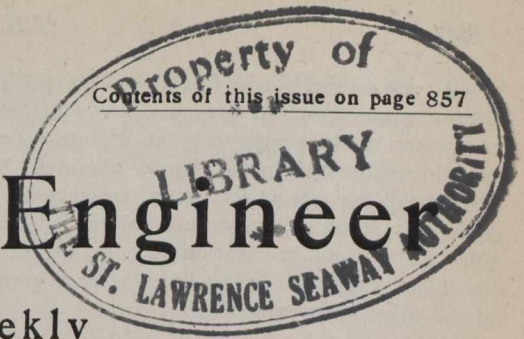


# The Canadian Engineer

An Engineering Weekly



## LARGEST REINFORCED CONCRETE ARCH BRIDGE IN THE WORLD.

There was built last year in Rome a bridge over the Tiber, which possesses special interest because of the fact that the span exceeds everything hitherto attempted in reinforced concrete construction. This bridge is called Ponte del Risorgimento.

The arch proper has a span of 333 ft. (100 m.), with a 33 ft. rise, (Fig. 1).\* At the crown the thickness is reduced

In cases where water percolated into the hole it was necessary to adopt some precaution to keep it dry, so as to obtain satisfactory concrete work. The manner of procedure was to introduce a quantity of clay which was compressed against the walls by the action of the rammer; in this way water was successfully kept from interfering with the concrete.

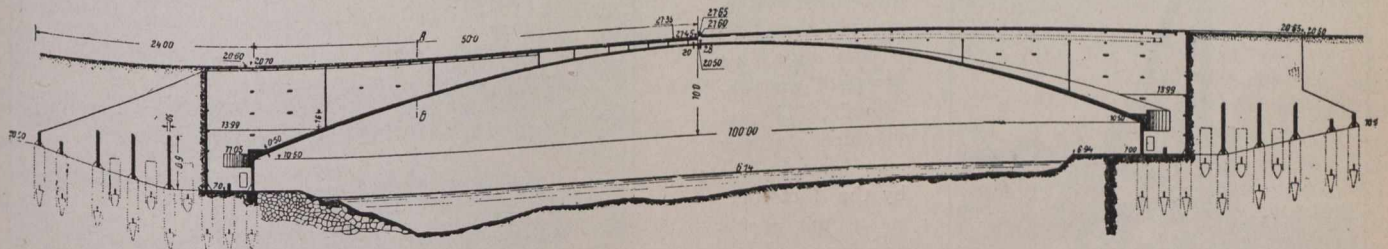


Fig. 1.

to the remarkable dimension of 8-in. (20 cm.), from this point it has been increased until it is 20-in. (50 cm.) at the springing lines. The bridge is materially strengthened by 8-in. thick stiffening ribs, which extend its whole length, and over the abutments. These consist of the above-mentioned ribs connected by cross walls and supported by concrete columns, (Fig. 2 and 3), constructed in the following manner.

A heavy conical hammer, (Fig. 4), is raised to a certain height and is allowed to fall, so that it pierces to firm ground;

When holes had been driven down to firm ground a large quantity of gravel was introduced and rammed hard with an oval monkey for obtaining a firm footing for the concrete afterwards placed in the hole. In order to connect these

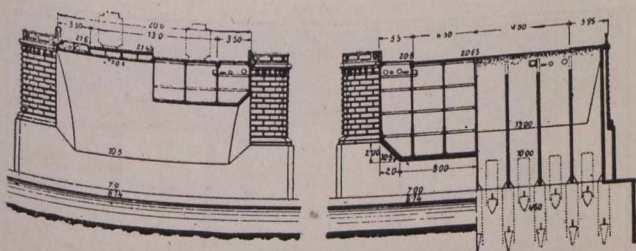


Fig. 2.

this is, of course, obtained by repeated operations, similar to pile driving. The form of this hammer ensures the surrounding earth being firm and strong, so that even when driving through loose earth, the walls of the hole will remain standing.

\* The total width of the dredge between the triangle is 64 ft., of which the roadway is 44 ft. and the sidewalk on each side 10 ft.

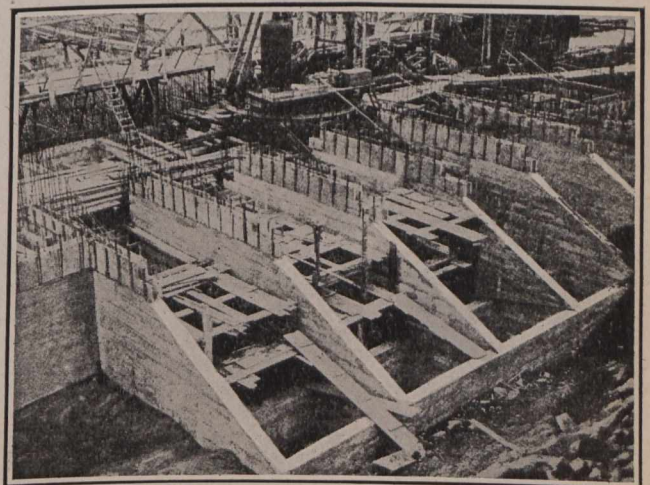


Fig. 3.—View Showing Lower Part of Abutments.

concrete piles and the superstructure a number of vertical bars were embedded in the piles.

The foundation work was done between the months of January and July, and there were frequent interruptions due to highwater in the river.