

averaged 50 ft. in length. They were covered with bark and logs (from the lumber mills nearby) to a depth of 3 or 4 ft. Owing to inaccessibility it was found impossible to secure the ordinary floats or scows for lifting

This was then floated out over the old pipe, and divers disconnected the sections and placed a chain around either end. The pipes were then raised by the windlasses, emptied of water and a bulkhead put on each

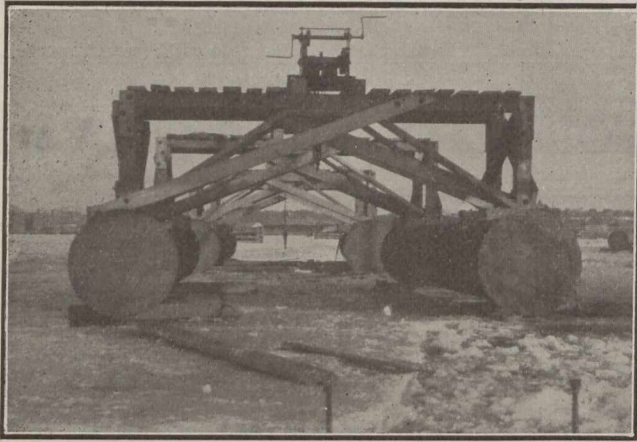


Fig. 5.—The Form of Pipe Float Used.

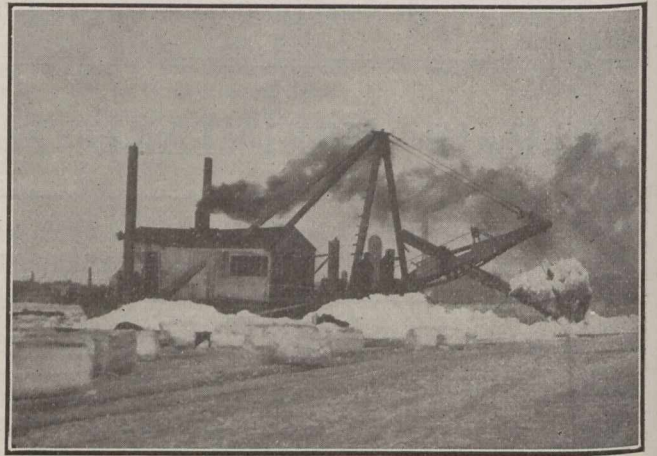


Fig. 8.—Dredging Anchor Ice.

and taking the pipe ashore. The device used to overcome this difficulty was that of putting bulkheads on two lengths of pipe and erecting a gantry frame at either end, fitted with windlasses. This formed the pontoon

end. They were floated ashore to a temporary repairing yard and repairs similar to those in the aqueduct were effected.

Four of these pipes were connected together by means of alternate plain and special flexible corrugated slews giving an approximate length of 200 feet. (See Fig. 1.) Then curved flanges were riveted on each end

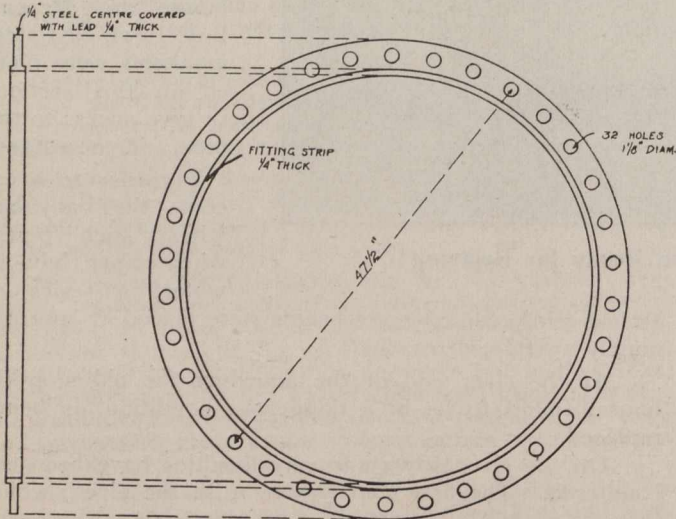


Fig. 6.—Style of Gasket.

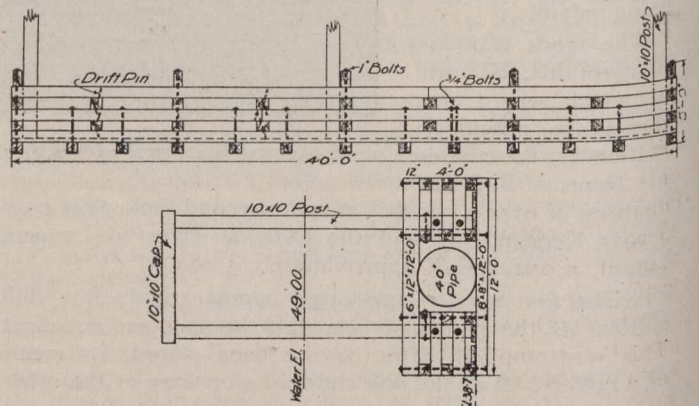


Fig. 9.—Form of Crib for Anchoring Pipes.

illustrated in Fig. 5, 40 ft. in length, 15 ft. wide, with an open space between the pipes of 6 ft. It had a lifting capacity of approximately 13 tons.

and the pipes tested to a pressure equal to twice the working head. All caulking and riveting was done by means of compressed air.

In the old pipe cast iron ball joints were used, but, not being found satisfactory, have been discarded altogether, and special angle pieces are being used instead.

There are 4 new piers being placed on the new pipe line, fitted with sluices. From piers Nos. 1 and 3 arrangements have been made to have cross connections between the 40- and 42-in. pipes. In the case of any accident one section of the pipe can thus be shut off while the remaining sections will be in commission. Pier No. 4, shown in Fig. 2 while under construction, from which there are four connections, was made-up on shore before floating out and sinking into position. This necessitated breaking into the 42-in. pipe, a length of which was

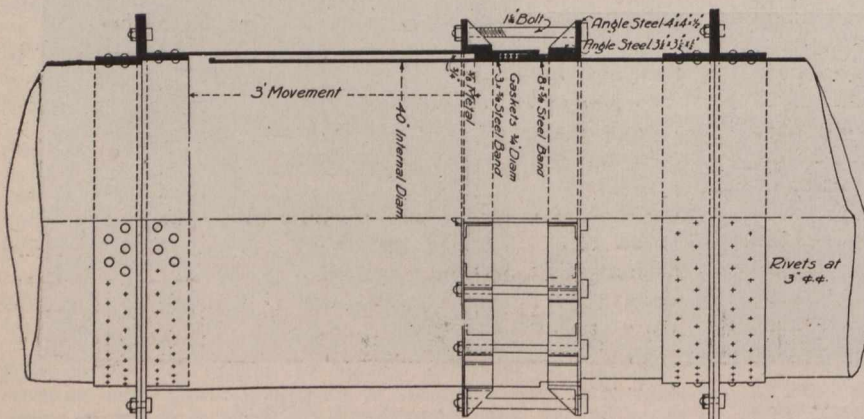


Fig. 7.—Section and Details of Expansion Joint.