

## MUNICIPAL ENGINEERS, CONTRACTORS AND MATERIALS

25ft. should be attainable, but a lower lift, say 18ft or 20ft., is preferable.

**SUCTION AND DELIVERY PIPES.**—These should be of ample area, with as few bends as possible, to minimize friction, but if unavoidable they should be in gradual sweeps and not sharp elbows. For small pipes, wrought iron is to be preferred to cast, on account of its strength and consequent lightness. Small wrought iron pipes are sometimes screwed at the joints, and when rusted often give considerable trouble when it is required to disconnect them. For this reason, pipes with flanged joints held together by bolts are preferable. A foot-valve is usually required at the bottom of the suction pipe to retain the water when the pump is stopped, and in the case of centrifugal pumps to save repriming. Great care must be taken to render suction pipes perfectly air-tight, otherwise the efficiency of a pump will be greatly reduced. To prevent solid matter getting into the pump, a strainer should be attached to the end of the pipe, care being taken that the combined area of the holes is two or three times the area of the suction pipe. Sometimes the strainer is placed close up to the pump to facilitate cleaning, etc. The delivery pipe should be of uniform size throughout, and when working against heavy pressures must have a relief valve, set at slightly greater pressure than the pump is forcing against, in order to prevent breakage of the pipe or pump if the discharge is blocked from any cause. A check or delivery valve should also be provided, to relieve the pump of pressure when starting, and also to prevent the escape of water when it is taken to pieces for examination or repairs.

## WATER WORKS

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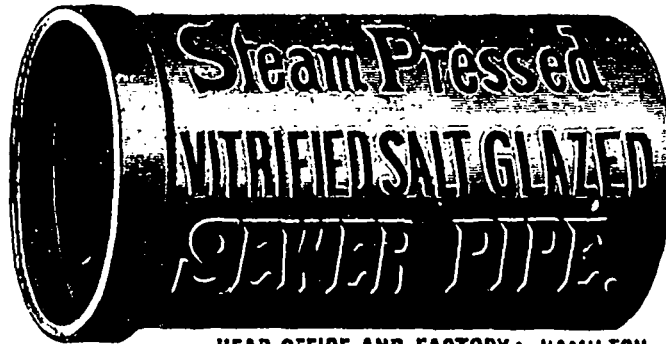
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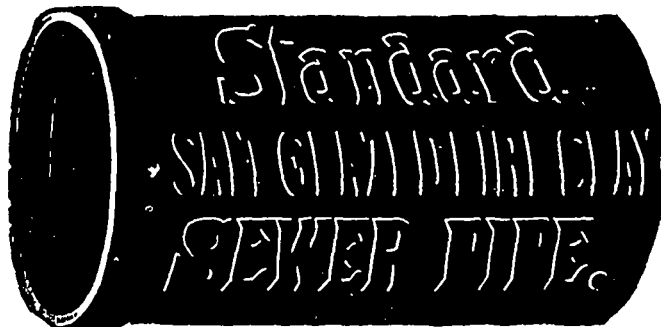


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## To Municipal Authorities, Engineers and Others

Owing to the excellent reputation which our "STAR" Brand of Portland Cement has acquired and which trade mark is protected by government registration at Ottawa, foreign manufacturers have been sending cements into Canada under the name of "Star," which we believe to be inferior in quality, weight per barrel, etc., to our goods; hence, to ensure the use of the genuine article, we respectfully suggest that in framing specifications you be careful to see that RATHBUN'S "STAR" BRAND is specified and used. We guarantee it.

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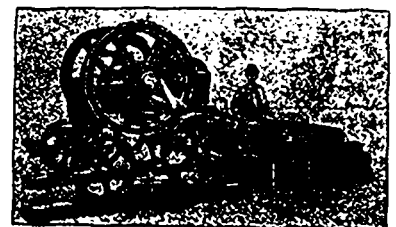
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