inside surface was to be plastered with a special mixture of cement, sand, glue and alum.

One of the rejected bids proposed waterproofing the walls, without plastering, by using three coats of castile soap and alum, after the wall had been otherwise completed.

The walls of this standpipe are eighteen inches thick at the bottom and eight inches thick at the top. The crushed stone and sand were carefully screened, and daily tests were made of the mixture in order to insure all voids being properly filled.

It is notable that after the tower was completed as designed, it was found necessary to apply a coating of soap and alum, such as was contemplated in the rejected bid mentioned.

CAUSE OF JARRING NOISES IN PIPES.

The cause in the case described is, in all probability, due to the vibration of the rubber seating in the draw-off valve. The remedy is the draw-on valve. The remeay is to take off the old seating and replace it by one of vulcanite or woodite. A still further improve-ment would be effected by using what are called capped jumpersthat is to say, the edge of the rubber seating and enclosing in a metal rim which prevents the edges of the rubber from becoming loose and vibrating.

A. LEOFRED

Consulting Engineer

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