

HOUSE No. 476.

Commonwealth of Massachusetts.

HOUSE OF REPRESENTATIVES, June 24, 1886.

The Committee on State House, who were instructed to examine, with the aid of one or more experts, the elevators in the State House, and report upon their condition as soon as possible, report that the committee have attended to their duty and would say that the elevator in the west wing of the State House is undergoing repairs, and that the one in the east wing has been inspected, and we submit herewith the report of the expert engaged by us.

For the Committee,

JUSTIN PERRY.

Commonwealth of Massachusetts.

BOSTON, June 18, 1886.

State House Committee of the House of Representatives of Massachusetts :

In answer to your request, regarding the elevators put in at the State House, I have examined to-day the one in the main hall, as well as opportunities would permit, and herewith submit to your consideration my following conclusions : In its present condition, I do not feel justified to call it a first-class machine. Instead of gun iron as material for racks and pinions, I should recommend forged steel, the teeth of same, cut accurately on proper machinery, to at least $1\frac{3}{4}$ -inch pitch and keyed carefully on the 4-inch steel shafts, so that all the faces will bear the whole length, thereby greatly decreasing the wear on the teeth. In order to elevate 2,500 pounds, the strain on the teeth will be 22,500 pounds, friction not included, and which could be safely borne by the above suggested changes, and in my estimation would make that part of the machine good and durable. The present teeth on gears and racks are cast, without cutting same, and some of them show too much wear, considering the time they have been running. Also should recommend 3 additional bolts, say 1 inch diameter, for top cylinder heads. I think the main gate for letting on and shutting off the water to the cylinders should be changed or the shipping arrangement be altered, so as to overcome the rebound of the cage in stopping it. The safety-attachment needs some alterations around the compression-cylinder in connection with the regulator. I do not consider the mechanical parts of the regulator and safety properly con-

structed, although under proper care and careful watching I apprehend no danger, but should recommend an early overhauling. The cage should have a little more play in well-way, which would make it run with less noise. The overhead timber work is strong and good. The pressure on pump could be reduced materially per square inch by putting in pipes of proper dimensions from pump to tank.

For constant running I would suggest a duplicate pump, in case of accident to present one, both connected to the same pipe.

I am, very respectfully yours,

WILLIAM DUTEMPLE.

