

This result has not as yet been realized in actual practice, but none of the systems have had so large a number of consumers on so short a main.

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#### DEVELOPMENTS AND CAUSES OF FAILURE.

The winter's experiment, at Lockport, in 1877-78, having proved the practicability of the system, and the consumers being so well satisfied, several other towns at once took the matter up, and had systems in operation for the following winter. The first meters did not work well, and the only way of charging for heat was by bargain, based upon the previous coal bills of the consumer. The companies suffered severely in these bargains, but the greatest loss was caused by having long lines of main, with only a few consumers drawing steam,—the loss by condensation being then very great. In many cases the trenches were not properly drained; and the system was adopted before sufficient time had been given to perfect all details. The result of all this being the failure of several of the companies.

#### DUPLEX SYSTEM AT LYNN, MASS.

At Lynn, Mass., a duplex system was put in, for first supplying high pressure steam, through one main, to drive large mill engines—these engines, exhausting into a low pressure main, from which steam was supplied for heating, &c. The idea being to utilize the power first and leave sufficient pressure for heating purposes.

The boiler house here was situated on very low land, which was subject to inundation, during extreme high tides; the consequence being, that near the boiler house the steam mains were sometimes under water, and as few of the streets in Lynn are sewered, the ground was constantly damp in many of them, and a very large amount of condensation took place. The steam supply was discontinued, and the works sold and utilized for other purposes, although the steam works were fully paying expenses at the time of selling out.

d.  
5¾  
0¼  
3¾  
1¼  
6½  

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5½

d.  
7  
4½  
1¼  
1¼  
6½  

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7

d.  
½  
¼  
½  

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¼  
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