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STEAM FIRE ENGINES.—It is probably known to most of our readers that the city of Philadelphia is the owner of one of Shawk's steam fire engines; but it may not be known to them that the selfish policy of petty politicians—knowing that those machines have no votes—has hitherto prevented the use of this efficient and powerful engine in the extinguishing of fires. Yet such is the fact, strange as it may appear to Cincinnati-ans, who have become accustomed to see nothing else used by the firemen of Cincinnati. The North American in speaking of the late disastrous conflagration in that city, and in which \$700,000 worth of property was given to the flames, says that, "had the steam fire engine been employed, the exhausting labors of the volunteer firemen would have been materially lightened, and the progress of the devouring flames would have been stayed, and an immense amount of property saved from destruction." Really, such things are preposterous. Had the people of Philadelphia an opportunity of witnessing a fire in the Queen City—which, thanks to our perfectly organized and efficient and well-paid department, is quite seldom—so as to get a sight of our seven steam fire engines with their five miles of hose pouring floods of water upon the fire, they would not be long in pitching their city council overboard, if they long neglected to supply their city with a sufficiency of these fire-annihilators at once, or refused to organize an efficient, paid fire department—the only kind to be relied upon in a large city. S. Warden.

Reported for the Pennsylvania Inquirer.

Philadelphia Academy of Music.—The gentlemen having in charge the erection of an Academy of Music in this city, on a scale worthy at once of the art and of the city of Penn., held their first annual meeting yesterday, when the Board of Managers presented the first annual report of the affairs of the Academy.

Soon after their election their attention was directed to procuring a lot suitable for the erection of a proper building, and after mature deliberation and investigation, they decided to purchase the lot at the corner of Broad and Locust streets, containing 250 feet front on Broad street, and extending 200 feet in depth on Locust and Westmoreland streets, for the sum of \$18,360, subject to a ground rent of \$80,000 principal.

The Managers have been greatly disappointed at the apparent lukewarmness of their fellow citizens towards this enterprise, which they had believed would have enlisted the sympathies of all our business men; and, to their great regret, found that the subscriptions on the 1st of May only amounted to the sum of \$83,000.

They then called a meeting of stockholders, to decide what measures should be taken to ensure the success of the enterprise, or whether they should be compelled to abandon it.

At that meeting a vigorous effort was started to secure \$100,000 of new subscriptions prior to the 3d July next, and a committee of twenty was appointed to aid the Board in making up this amount.

From the report of the Committee you will learn that \$50,000 of this amount has now been made up; and this is only subscribed on condition the whole \$100,000 is obtained prior to the 3d of July next.

The Managers will not believe that there can be any serious difficulty in obtaining the remaining \$50,000 of this conditional subscription within the time limited.

They have secured at a fair price the most eligible lot in the city for the erection of the academy; large and spacious, in a good location, with fronts on three streets, and when they reflect that since this measure was undertaken in this city, similar projects have been started in New York and Boston, and been carried through successfully, they feel that the pride as well as the interests of their fellow citizens will not allow the enterprise to fail.

Our city is growing with great prosperity; our lines of railroads, perfected and projected, are destined to bring us large numbers from the whole interior, but we cannot hope to keep them here to transact their business, and spend their time with their families, unless we make an effort to afford them the same inducements they find in our sister cities.

Let each stockholder who has already subscribed take an active interest to secure additional subscribers, and let each one decide that the enterprise must and shall succeed,—and it cannot fail.

By order of the Board of Managers, C. H. FISHER, Chairman.

Accident and Narrow Escape.—On Friday eve.

The over-crowding of family in ill-ventilated dwellings, and the occupancy of low and damp cellars and basements, should also be prevented.

The practice of watering the streets with Croton water, is in my opinion, deleterious to the public health, as likely, to instigate fevers of the intermittent class. This water no doubt, contains considerable paludal deposits, the debris of the surrounding forest, at its source, which under the influence of the sun upon the mud, created by being wet with it, engenders vapors productive of the disorders referred to. If this be so, salt water should be used for street purposes instead. It is well known that salt marshes are free from maladies peculiar to swamps and fresh meadows. This truth has been abundantly illustrated in the Campagna di Roma, in Italy, and the fens of Lincolnshire and Essex, in England. In this connection I would recommend that the Croton be permitted to run freely through the gutters, to carry off to the culverts such vegetable and other substances as may collect.

To perfectly enforce these regulations, and to render

Heating Buildings.—The proper apparatus for heating buildings has engaged the attention of builders and mechanics for several years past, and large sums of money have been expended in endeavoring to construct such as will answer the purpose of heating large and small buildings. The inventive genius of the country has produced a score or more varieties of heaters, all of which have been tried in different ways, and all seem to have their imperfections. At the Pennsylvania Hospital for the Insane, numerous experiments have been made to get at the most effective as well as the most economical means of heating that large establishment. As early as 1816 a plan was matured for using steam for warming the wards, and put up that year in the institution, instead of the ordinary hot air furnace, but until 1849 was not made effective. During that year two small tubular boilers were introduced for warming four wards, which proved so successful that this plan has been adopted for the whole institution, with far greater safety and satisfaction than before. A boiler-house has been constructed outside of any portion of the Hospital building, in which a tubular boiler, 19 1/2 feet long and 4 feet in diameter has been arranged. This contains 96 flues, each 13 feet long and 2 1/2 inches in diameter, with a fire-bar surface of 4 1/2 feet square. The whole fire-bar surface, which includes the bars, the top and four sides of the fire box and the inside of all the flues, measures 810 square superficial feet, and its capacity has been shown to be so great that there is no difficulty in generating more steam with it than with all the old boilers used on the premises, combined with less fuel and less labor. The amount of radiating surface in the chambers varies from 385 to 3266 feet of either three quarter or one inch welded iron pipe; that with 3366 feet of three quarter inch tube, and 6505 feet of one inch. The entire amount of space at present warmed by steam is calculated to be 493,366 cubic feet, which is, including the surface of the main, one superficial square foot of radiating surface for every 98 feet of space heated. This is in addition to all the steam cooking in the kitchen, the heating of water, warming the drying-rooms, heating the steam closets in dining rooms, &c., and the whole consumption of anthracite coal to effect this has been for every 24 hours, from 4595 pounds (less than 2 1/2 tons) during the few days when the thermometer was as low as five degrees below zero at 8 A. M., and not more than eight above at any one time in the day, to 6330 pounds (less than two tons) in ordinary winter weather.

Professor Kirkbride says that, "by means of one of Schmidt & Co.'s steam-gauges, which is found to correspond very accurately with the indications of the safety-valve, we have ascertained that the pressure on the main pipe, four feet from the valve through which the steam is admitted from the boiler, is about five pounds less than in the boiler itself, and that, except in starting the heating, when, to secure an active circulation promptly, a pressure of about thirty pounds is desirable, from five to ten pounds at the boiler is found to be as much as is necessary for all our purposes, and it is rare that more is used. The condensed steam from all the air-chambers, except the cottage, is returned directly into the boilers, and no pump is used for supplying the boilers with water at any time."

This "Self regulating Hot water Furnace," is strongly recommended for private dwellings and small establishments, where steam is not required for various other purposes, economy, and the simplicity, ease of management, and the healthful and pleasant character of the air emitted from the registers. The fires at the Pennsylvania Hospital require taking but once in 24 hours, and fuel is added in the morning and evening only; and in dwelling houses the labor would be reduced very much from that required by ordinary furnaces. Messrs. Morris, Tasker & Morris constructed and put up the boiler and pipes in the Hospital, and are competent to give any information on the subject.

DIRECTORS.

1856 74-5

- John B. Budd.
Charles Henry Fisher.
George S. Pepper.
Frederic Graff.
James C. Hand.
Samuel Branson.
John P. Steiner.
Isaac S. Waterman.
James Traquair.
Lyon J. Levy.
F. J. Dreer.
Fairman Rogers.

favor of repeating the Croton water. We are justly proud of our Croton water, and the magnificent conception and bold enterprise which have brought it into our city. As a beverage, it is almost free from exception, and as to supply and plan of introduction and dissemination, it is for the present sufficient for our wants. We have now about thirty millions of gallons of water each day of twenty-four hours, brought over the High

Bridge, which, at the rate of 650,000 inhabitants would give a supply of forty-eight gallons for each person. This estimate, however, will be materially diminished, when we deduct for the use of ships, factories, public houses, and business purposes generally, which probably consume and waste more water than one half of the whole quantity. But allowing liberal use for all purposes, it is enough for actual use, which would make an aggregate quantity of only thirteen million gallons, leaving seventeen millions unaccounted for, which, of course, is wasted. To this fact I desire to call especial attention as a subject for thoughtful concern. It has caused much uneasiness, not only with the members of the present board, but with their predecessors. Stringent ordinances have been adopted, making it an offence, punishable with fine, which has been enforced with much energy by those whose duty it was to prosecute.

The utmost capacity of the aqueduct, when in perfect order, is sixty million of gallons, which, if no allowance for waste is made, would furnish a supply for three million inhabitants; but estimate the same per acre of waste that there is now, the quantity would be sufficient for only thirteen hundred thousand inhabitants, about double our present population—a number to which we are rapidly tending, and may reach in ten years. If, therefore, no other and more effectual mode be adopted for the prevention of waste, our present works, though so capacious and grand, will very soon be inadequate to the wants of the city. This will present the singular fact of works constructed comparatively but yesterday, at an immense cost, which have been the admiration of the whole American public, and the just pride of our citizens, and which, it had been supposed, were of sufficient capacity for ten times our present population, and so on all that New York has done for the advance of prosperity, as having become already the object of fear, and apprehension in approaching inadequacy even of the present generation. And when it is recollected, in addition, that this alarming prospect arises, not from the want of capacity of the work itself, but from the profligate conduct of the people, for whose benefit it exists, we should hang our heads in shame and humiliation. And yet it is so. This magnificent monument of the forethought and enterprise of the minds and energies of those who conceived and constructed it, is being used in the main to supply the city with waste water—as a thing to be neglected and despised.

From this reasonable calculation you will see that its proper care has become a matter of much moment. It has ceased to be a trifling question. The consequences have already assumed a threatening aspect. If the increase of waste keeps pace with the increase of population, as it most assuredly will if no efficient method be adopted to prevent, we will find ourselves forced to consider the necessity of a speedy engagement of the powers of introduction by the construction of another aqueduct. Indeed, this alternative is already presented. We must materially decrease the waste, or prepare for another aqueduct, and yet greater capacity of reservoir. These fears are entertained by men of reflection cognizant of the subject, as well as by myself. That the waste of water can be diminished to a great extent, there is no doubt. Additional ordinances are required, entirely within your power to enact, making the penalties exceedingly severe, and clothing that department with full police powers to enforce and exact them. But as the most effectual preventive of waste is provided by every household, and by which the waste is received by every household, it can be ascertained, and for which he or she property should be made to pay. These meters should be placed in the cellar of each house by the department, at the cost of the owner or occupant thereof. The slight individual expense involved could not be felt, but even if so, will be trifling compared with the taxation for the construction of a new aqueduct and reservoirs.

That an enlargement of the capacity of the introduction of the Croton water must at some future period be made is quite certain, under the best regulations as to the economical use of the water that can be devised; but yet the day will be so far as an, if my suggestions as to the use of meters be adopted that even the next generation need have no apprehension of taxation in consequence. In this connection it may be appropriately considered whether the water rents in thus increasing the income from that source, by which to do much towards paying for the new aqueduct and reservoirs whenever required. It is not an over estimate to say, that under the best and most prudent management, a hundred million gallons per day will be required for the absolute wants of New York at no distant period. With our present rate of increase of population, which, in my opinion, is far below what it will be soon, we shall have numbered the same population that old Rome had when she required nine large aqueducts, with a capacity of 300 million gallons, to supply her with water. We will not now, however, determine the action necessary to provide for so large a population on this island. These can be as well, if not better, accomplished when the city has reached its maximum of population, and when there has been more experience in the regulation and management of public affairs than now, with the present limited experience and generally bad system and administration of our municipal government.

There is, however, one very important consideration in connection with the future, that we should not disregard, viz.: The securing of the sources from whence the Croton river derives its water.

The head waters of this, to us, important stream, should be looked after in time. I am informed that there are now being established factories, of various kinds, upon the rivulets and small lakes, which empty into the larger lakes and streams, which make the bulk of the water which forms the Croton river; and that the business of some of those factories is likely to prove deleterious to the purity and healthfulness of this water as a beverage. If this be so, it is worthy of consideration whether the whole stream to run over our aqueduct, and which supplies the city, may not be more or less affected. If affected from these causes, in the least degree, the consequence upon the public health may be very serious.

I recommend, therefore, the appointment of a commission of competent men to investigate and look into this whole subject, with power to select such spots as in their judgment are desirable for the city to possess, to the end that no great an injury to our population may be prevented.

The commission for taking the ground for the new reservoir, appointed under the act of June 30, 1853, have completed their report, and the work will soon be commenced. As the report from the department, made to the Common Council, has stated all that is now required on this subject, and as I have no recommendation to make in connection therewith, I omit any further allusion to it at this time.