

WATER WORKS.

Continuation of the Investigation.

TESTIMONY OF ENGINEER TUBBS AND JAMES E. BOOTH.

Our reporter's notes of the testimony taken yesterday by the Commission of Investigation were crowded out. We give to day the substantial parts of the details of the work as testified to by Engineer Tubbs:

J. Nelson Tubbs testified as follows, as respects the flow of water from Hemlock lake: In the five months from August to December, water enough passed over the weir to supply the city of Rochester with 6,000,000 gallons a day and leave 3,500,000 a day to feed the mills: August, 1874, was the smallest flow during the year, the average per day being 6,220,000 gallons. No observations have been made this year, but there is no doubt it will show better this year than the previous years, as more water has fallen; the gauging for the corresponding months of 1873 and 1874 would show a difference; take October, for instance; in 1873 the average per day from Hemlock was 42,500,000; and in the same month in 1874 was 18,500,000. The gauging fully confirms the calculation by the other methods. The question does not admit of the slightest doubt that the supply is ample for all purposes. The minimum supply could not be less than 60 gallons per capita per day for a population of 150,000. Have not the slightest doubt but that Hemlock and Canadice lakes will supply all the water stated in my last report.

THE RESERVOIR.

The area of the Rush reservoir is about 20 1/2 acres; the depth about 24 feet. The bottom of the reservoir is clay. It is a clay which, united with gravel or loam, forms a sort of cement. It is now exposed to view and can be examined.

In the distributing reservoir at Mt. Hope the original bottom was sand, but had made an artificial bottom of clay puddle about fifteen or eighteen inches thick. The banks were constructed exactly like the Rush reservoir. Daniel Richmond had the superintendence of the construction of this reservoir, and W. W. Jerome that at Rush. The bottom was manufactured from brick clay, gravel and sand. Have given general superintendence to the construction of both these reservoirs. The Mt. Hope reservoir will contain 35,000,000 gallons. The Rush reservoir is strong enough to resist ten times the amount of pressure. It was intended to have the Mount Hope reservoir the same. There are two pipes from this reservoir, one passing down South avenue and St. Paul street into a 20-inch main in Main street. The other passes over Judge Warner's lot in Mt. Hope avenue into Exchange street, and from there up and down several streets to Lake avenue. There is also a branch pipe that connects with the Main street main.

MAIN PIPES LAID.

The total amount in the city of 16-inch pipe up to the 1st of last month was 26,675 feet; of the 12-inch, 26,317; 44,159 feet of 8-inch; 71,713 feet of 6-inch, 78,058 feet of 4-inch. These are the changes made up to the 1st of June. Since the last part made in January on the following there are no changes:

25,500 feet of 24-inch of wrought iron pipe, 7,344 feet of 20-inch, 6,086 feet of 10-inch, 833 feet of 4-inch wrought iron, 82 feet of 3 1/2-inch, 542 feet of 2-inch, 375 feet of 1 1/2-inch.

The total length of pipe is 22 13-100 miles. There may be 1/4 of a mile still to lay and about 300 feet to connect the reservoir on Mt. Hope. The dimensions of the pipe already laid from Hemlock lake to Bush reservoir. There is none laid till Frost's hollow, where about 1,000 feet is laid. There is no more laid till the minor ponds are reached, when about a mile and a half of 30-inch wrought iron is laid and about a mile of trench open ready to lay. The total length of the wrought iron laid between the lake and Bush reservoir is about one mile, and the length of cast iron about six miles. There are about three miles of trenches open ready to lay the pipe. When all is laid there will be ten miles of wrought iron thirty-six-inch pipe north of the lake; also a gap two and one-half miles twenty-four inch diameter, and between five and six miles of cast-iron pipe. None of this cast iron was indicated on the profile as twenty-six inch pipe. Between the Rush and Mount Hope reservoirs the pipe is all laid. It is all cast iron of twenty-five inch diameter. There were several inspectors at the factory of the cast iron. The inspector of the wrought iron pipe was Mr. Jones. These inspectors acted under the orders that they were to see that the trenches were the proper depth; to thoroughly inspect the pipes, to see the blocks properly put in the packing with hemp and all such duties. The supply pipe is coated with coal tar and linseed oil; the wrought iron is coated with asphaltum and a very small mixture of coal tar. Up to the 1st of June the gross weight of all the cast iron pipes laid is 6,036 tons of distribution pipe was 7,344 tons in conduit line. The amount of

WROUGHT IRON PIPE

laid up to the same time is about twenty-seven tons. The total cost of the cast iron pipe laid under the contract for the distribution pipe is \$482,882; the conduit pipe, \$580,424; and the wrought iron \$5,900. The total cost of the cast iron is \$23,700, and hemlock about \$300. There was a large lot of materials not included in either contract; the amount of these can be taken from the books. As to the cost of the reservoirs:

COST OF RESERVOIRS.

The Rush reservoir, including the land, will probably cost, when completed, between \$100,000 and \$120,000; the lower reservoir, without the land, will probably cost less than \$100,000. The total cost up to the present time is on the first contract about \$1,800,000, and on the second contract \$200,000. This has not all been paid, as five per cent. has been retained, which is included in this sum. All the cast-iron pipe to fill the first contract is delivered; a few specials are yet to be delivered. Their cost may amount to \$2,000 or \$3,000. There is still about four or four and a half miles wrought iron pipe to be delivered; over a mile and a half are delivered; this is all manufactured.

WHAT REMAINS TO BE PAID.

To complete the works I estimated to close up all matters, think the cost is about \$500,000; already the cost is very nearly \$2,000,000, perhaps \$2,500,000; from best information estimate \$2,500,000 on hand, and \$182,000 more are anticipated. Think that would complete the work; the distributing pipe will supply 7,000,000 gallons daily, even if 9,000,000 gallons should be needed, the Holly Works would furnish the remainder; we can get 7,000,000 daily from Hemlock Lake; there is no part of 24-inch pipe on the route that will not supply 7,000,000 gallons per day. [Witness was shown the report and estimate of 1872.] The increase of expense on that estimate is owing to the fact that it was only on 4,500,000 gallons per day, while now it is for 7,000,000 gallons; also for more expensive material used at the upper end; the amount of oak used is 337,000 feet; the increased expense from that is \$16,500; have never said there was \$1.00 profit per pound on pipe; the reason contractors have not been completed by the time, July 1, 1875, were, first, rights-of-way could not be gained soon enough; also, funds could not always be got just when needed, keeping back materials; secondly, way is all got save through premises of old water company, of a man named Fox, another named Hoar and Village of Hemlock lake; nothing to hinder speedy completion now; estimation time necessary up to January 1st; think there was some pipe laid in front of Judge Warner's, on South avenue, we have just obtained the right of way; have settled with every one else along the highway except Judge Warner.

WHO WAS THE LOWEST BIDDER.

The statement that if each bidder except Gere, Candee & Co. were allowed the difference between their bid and McDonald's and \$1 per foot, and on McDonald the difference would be in favor of McDonald is correct; think no bids were more favorable to the city than Mr. McDonald's, except, perhaps, Gere, Candee & Co.; except the commissioners in making estimates published in the Democrat and Chronicle, Gere, Candee & Co. and Cross were left out; in each estimate we find a difference in favor of McDonald; Randolph & Cross Randolph & Cross, so that it is included; for brick and cast iron is in favor of McDonald; taking out the brick, in favor of Gere, Candee & Co.; the statement published April 13, 1875, was by my approval; the statement that was intended to do away with iron at the end of the brick conduit was true; could not estimate brick altogether as we might need it; it has since been shown to be true; yet the iron has been used mostly and not the brick; in canvassing the bids we tried to determine which was the lowest bid and most favorable to the city of Rochester; don't know whether we figured on estimate of wrought iron; it was a matter of little difference, as it could be let by separate contract; the bids were balanced as to the white oak; I think; can't say exactly; the whole thing was carefully canvassed; other manufacturers were consulted and gave figures on the wrought iron. Mr. Leighton's figures were ten cents per pound, Mr. Booth, after talking some time, said ten cents per pound was a fair price; but he wouldn't do it for that; there were two parties here from Buffalo several times to see about it, but I have not their figures; there is a memorandum in several places on the profile where brick conduit or iron pipe would be necessary; there is no specific place marked for wrought iron; we hadn't determined then to use iron pipe; had no definite information and thought that if we had to use it, it could be let by other contracts just as well; the original proposals I will look for; B. G. Clark, of Jersey City, has sub-contract for cast iron pipe; the Commissioners approved it and it is entered on the minutes; this pipe was made in seven foundries; Florence, Millville, Camden, Burlington, Bucksburg and Phillipsburg; the best part of the line on which brick conduit seemed to be found to be quicksand; the extra width of trenching in such soil would come upon the city; the difference would be somewhere near the difference between iron and brick; think even if properly laid would not answer for more than a mile and a quarter; not for four miles; the ravine bank there would be apt to slide off and break connection with the lake; the trench for brick would have to be twice as wide as for iron through quicksand; uneven setting is apt to break iron pipe; we found many places where hard and soft foundations alternated; if pipe is put down rapidly and quicksand confined it is all right; the supply pipes are of good materials, coated with asphaltum; I am anxious according to contract and to be most efficient.

COST OF MAINTENANCE—REVENUE.

The reservoirs also are perfect and sufficient to supply 7,000,000 daily; all the materials, outside of McDonald's contracts, have been good and work perfect; has been done under my supervision; the Hemlock system will be fully equal to purposes intended; very little repairs will be need; during thirty years' estimate repairs on Hemlock plan, perhaps \$25,000 or \$30,000; operating expenses probably be about \$10,000 per year each for Hemlock and Holly Works, including repairs; for repairs, about \$5,000 for Hemlock works; Holly Works smaller; my estimate of the revenue for the first year, both in operation, is \$30,000; if managed right, more—perhaps \$50,000; do not know of any Commissioner, employe or agent who has received any compensation, benefit or advantage from any of the contracts, or in any way except regular salary, for which vouchers are made and on file; I believe the plans of the work to be of the most superior kind; have seen nothing to change my opinion upon them; no change or variation to cheapen work and operate to its disadvantage has been done; I think the works are the best that could be made.

Mr. Tubbs read the following statement:

If all the bids were canvassed at one dollar per thousand for brick and all other items same as bid the result would be as follows:

Table listing bids for materials with names like J. McDonald, John Hickler, Peck & Peterson, etc., and amounts.

Note—In reference to the bid of Gere, Candee & Co., it may be remarked it was not deemed by myself or the Commissioners as worthy of serious consideration, and for the following special reasons: The bid for distribution pipes in the city is at the rate of \$60 per gross ton, an amount not equal to the cost of pig iron at that time, and the bid for conduit pipe at the rate of \$85 per gross ton, while the cost of manufacturing distribution pipe is much more than conduit pipe for two reasons: First, that a large amount of special castings have to be furnished with the distribution, and, second, because the distribution pipe are all smaller than conduit. Again, Gere, Candee & Co. bid twenty cents per lineal foot for trenching and back-filling and replacing paving in the city streets. No matter what the character of the material excavated, a price which was regarded by us as being not more than one-third the cost of the work. Taking these two items in connection; first, the pipe to be laid in the city at less than cost of pig iron and the trenching in the city for laying these pipes at one-third its cost, it seems to bear evidence on its face that there was concealed an object inimical to the work. The undersigned has since been informed and believes that the intention of the bidder was to purchase of or enter into some combination with the old Water Works Company by which the old pipes of that company should be used and only a comparatively small amount of new pipes be required or trenching be done in the city. I had but little confidence then that sold old pipes were fit for the purpose intended, and I have none now. Respectfully submitted, J. NELSON TUBBS.

STATEMENT NO. 2.

If the item of brick is eliminated from all the bids and the price of cast iron in distribution estimated at the price bid by McDonald, namely, \$60 per gross ton, which is the least bid by any bidder except Gere, Candee & Co., and the result is as follows:

Table listing bids for materials with names like James McDonald, John Hickler, Peck & Peterson, etc., and amounts.

STATEMENT NO. 3.

If the item of brick is eliminated from all the bids and cast iron thirty-inch pipe substituted for brick, the McDonald bid will be about \$10,000 lower than any other.

THIS MORNING'S SESSION.

The following members of the committee met this forenoon at 10 o'clock; Messrs. WARNER, CRAIG, PERRY, FILON. Mr. LAMPERT sent in his resignation to the Mayor yesterday. The communication was not presented to the Board this morning. The first business done was the examination of records, deeds and papers, showing the right of way, etc. The committee, before beginning their work, engaged in conversation regarding the resignation of Mr. LAMPERT. The members present expressed themselves in positive terms of disapproval of the course that Mr. LAMPERT has seen fit to take. They did not consider his withdrawal, at this state of the proceedings, exactly the right thing. No action, however, was taken in regard to his resignation, while the committee was in session, for the simple reason that they had received no official notification of the fact.

The following is a copy of Mr. LAMPERT'S resignation: ROCHESTER, N. Y., July 6, 1875.

To His Honor, Mayor Clarkson: DEAR SIR:—I decline to serve further in connection with the Commission appointed to investigate the affairs of the Water Works and City Hall Commissions.

Please accept herewith my resignation. Thanking you for the honor conferred, Very respectfully, yours, HENRY LAMPERT.

James E. Booth was sworn:—Am a member of the firm of Woodbury, Booth & Co.; our business is steam engine and boiler manufacture; made some wrought-iron pipe for the Water Works Commission; the first wrought iron pipe was made by us in 1873; made about 50 or 100 feet to go under the race; the total in tons made by us in 1873 was about 80 feet of 24-inch pipe, and about 80 feet of 50-inch pipe for a flume; in 1874 made some 24-inch pipe and 12-inch pipe; the order was for 1,200 feet 24-inch pipe; there was about that manufactured; about 500 feet of 12-inch was made; also, made some cast iron bends and hubs for the pipe; could not say how much those bends would weigh; think we made all the bends connecting the wrought-iron pipe in the streets; think there were about fifteen bends, and a few special pieces of the 24-inch pipe; could not say how many special pieces were made; in 1874 the straight pipe would average about seventy-four feet; if I remember right in 1873, the pipe was laid by the day without any fixed price; the contract was simply for making the pipe and not for laying it; the manufacture of pipe included delivering at the shop; 9 1/2 cents was a fair price, including special lengths; for a large quantity, several miles, the price would be lower, depending upon circumstances; at that time 24 inch pipe would have cost probably 8 1/2 cents; iron had not depreciated much in 1874; manufactured some cast-iron Y connections last summer; made six; work done by day, 50 cents per hour for machinists and 25 cents for labor, delivered at the shop; 1/2 for the castings; pattern work on castings was done by the day at \$1; can make a statement in writing of the amount, &c.; don't remember anything else; was requested to make figures for the large pipe to be put in between here and reservoir; had a talk with Mr. Tubbs, and was finally referred to George D. Lord; requested to see him by Mr. Tubbs and Com. Morse; had several conversations with Mr. Tubbs; cannot give the whole conversation; he asked me to make estimates on practical points; made the estimates at 10 cents, including laying and putting together in trenches. Com. Morse informed me that the matter had been turned over to the contractors, and referred me to Mr. Lord; had no conversation with the other Commissioners; called on Mr. Lord, got specifications and read them over; told Mr. Lord I could not make the pipe for less than 10 cents; he wanted it made for 8 1/2 cents; I said I could not live up to the specifications and make it less than 10 cents; it was to be put in trenches in 100 foot lengths; the specifications were in writing; that was the sum and substance of the whole conversation; think ten cents was a fair price for the large quantity, according to specifications; pipe manufactured in twenty-eight foot lengths would have been delivered at the trenches, worth 8 1/2 cents per pound; that would have been a fair price; there are no manufacturers making a special business of manufacturing wrought iron pipe; boiler makers do this kind of work; Peter Kelly and Mr. Thomas Leighton, besides our firm, manufactured this pipe in this city; there are several firms in Buffalo and Syracuse; can not give all the names; there are boiler-makers in all large cities; do not know that any pipes are being put together in 100-foot lengths between here and the reservoir. [Witness here read the specifications.] They were not a part of the exhibit shown to me by Mr. Lord; there is some variation in details; my impression is that they are essentially the same, excepting the details; cannot say that the hand-writing is the same. [Witness pointed one change in the specification.] The pipes were to be riveted together, making the pipes uniform; it would have been worth to manufacture in car lengths, according to specifications, 10 cents per pound; never offered to do it any other way; have very little knowledge how the work has been done; saw no signs of any process of cleaning the iron according to the specifications; if every car length is manufactured with a hub they could not be riveted together in 100-foot lengths; it would cost more to manufacture at the works 28 feet lengths with the hub; our firm has not paid, or allowed, or agreed to pay or allow, directly or indirectly any commission or reduction, for contracts to Water Works Commission or contractor, except a reduction from the face of one bill on one piece of pipe; expected no commissions from any one; cannot swear positively that any changes have been made in the specifications.

The Committee then took a recess until half-past 2 o'clock this afternoon.

Opera House—A Benefit for the Trevor Family.

The entertaining Roberts Pantomime Troupe played to another fine audience last night, and gave the utmost satisfaction. Thursday evening the entertainment will be for the benefit of Mr. HINDMAN BARNEY, the unfortunate Toronto actor. Performances will also be given this evening and Friday and Saturday evenings, and should be well attended. On Saturday afternoon a performance will be given for the benefit of the family of the late JOHN TREVOR. Such liberality on the part of the management should be rewarded by a full attendance at the evening performances.

Entertainment at West Wolcott.

Last Saturday the people of West Wolcott celebrated their Fourth of July in a sensible and entertaining manner. They procured from FIELD'S a large tent, which W. J. COCHRAN set up in a pleasant place. The afternoon was spent by the young folks in dancing, and in the evening an amateur dramatic association performed "The Streets of New York" and "Faddy the Piper," to the gratification of a large audience. The affair was pleasant in every particular.