LOCAL MATTERS.

OUR WATER WORKS.

Their Trial Test---The Works, Machinery, Etc.,---The Water---The Cost---Retrospective.

BUILDINGS AND MACHINERY.

Wednesday the Water Works were put in operation in order to display the capacity and power of the machinery and to satisfy the proper authorities that the terms of the contract between the Holly Manufacturing Company and the Jackson Water Company had been carried out.

The Council, at its last meeting, appointed a committee of twenty eight gentlemen, whose names have been published, to determine whether the tests, as provided in the contract, should be fully sustained, and to examine the works, buildings and machinery. This committee will probably make an elaborate report to the Council, which will contain a full description of the plan and operation of the works; and as they have been generally described many times, we shall content ourselves to-day with a casual glance at the several parts connected with this gigantic enterprise.

All of our citizens—at least all who are interested in the progress of the work—have seen the tasty building in the grove on the margin of the pond near the M. S. & L. S. Railroad Depot, and it is universally admired. It is of brick, designed by Mr. J. F. Coots, of this city, and built by Mr. Hugh Richards, with the wood work by Mr. Coots. It is 56 by 72 feet in dimensions, 20 feet high to the cornice and 45 feet high to the summit of the tower. The chimney shaft, a tasty octagon, surmounted by a cornice, is 78 feet high. The roof is Mansard, slated and tastily ornamented. This building contains the great heart of the system—the machinery which sends the water coursing through the iron veins with regular strokes, like the blood through the animal system. This machinery consists of four steam engines, two of two hundred horse power each, a third of one hundred and twenty-five horse power, and a pony engine for supplying the boilers with water. Each of the three large engines are independent of the others, so that if any two give out (an improbable contingency,) the works can still be run by the remaining one. These engines are propelled by two immense boilers and work two of Holly's Eliptical Power Pumps, each capable discharging 2,000,000 gallons of water very twenty-four hours. The design of the three engines is to vary the supply of water according to the demand, only one being needed for the regular supply for domestic use, and in case of fire one or both of the others are set immediately in motion. An extra supply is commanded by simply opening an hydrant, and be it ever so far away, this action acts automatically on the machinery, gives fresh impetus to the pumps, supplies the increased force necessary for the extra flow in a few seconds, and simultaneously sounds an alarm to warn the engineer, so that if necessary the accessory engines may be set in motion. The water is forced through a 12-inch main to the principal street, and there converges through 8, 6 and 4-inch pipes to different localities. As has been stated frequently, there are in this city at present, five and a half miles of pipe, (half a mile yet to be laid,) and fifty-five hydrants, the farthest being a mile and a half from the works. The machinery, however, will force the water through an unlimited amount of pipe, and to a distance of several miles when necessary.

The engines, boiler, and machinery in all its parts, are highly extolled by first-class engineers, who pronounce them capable of all they are required to do, of the best workmanship, nicely adjusted, and durable. We are informed that according to tests made, 1,000,000 gallons of water can be supplied every 24 hours, *with no pressure on the boilers.* The engines have been run with 8 lbs. vacuum, and the pumps have been kept in motion with 5 lbs. vacuum. In fact the buildings and machinery are perfect as far as can now be seen. They are just double the size and capacity of those erected in Kalamazoo, and are more extensive than any works Mr. Holly has heretofore put up in cities of this size; but the rapidly-increasing demands of this growing town fully warrant the erection of works adapted to a place several times its present size. Altogether the entire scheme, in conception and execution, is a grand culmination of the science of hydraulic engineering.

THE WATER

has been pronounced the best that could possibly be obtained, and is thought to be far preferable to the hard artesian well water with which our hotels and other institutions are now supplied. In the first place it will not corrode and coat the pumps and pipes, nor injure the boilers; it is soft, easy to wash with, and more healthy for drinking and cooking than well water; for irrigation and supply of fountains and fish ponds it is far preferable, and it can be obtained easily in unlimited quantities. The water is drawn from the channel of the river in one of the deepest portions of the mill pond, through a coffer dam erected by Mr. Coots, to an immense filter built of stone and filled with gravel and charcoal. From this it is let into the reservoir beneath the pumps, and from there forced through the pipes in a constant, steady stream. This supplies sufficient for the daily demand and for all ordinary occasions. Upon extraordinary contingencies, gates can be raised and the water taken direct from the river in any quantity desired, but this will very rarely be necessary.

THE HOSE.

The city has 2,000 feet of good rubber hose with which to take advantage of the works in case of fire, having recently purchased 1,000 feet new. One of the carriages will now be kept in the new building on Courtland street, where the hook and ladder truck is also kept, and the other hose carriage will be in readiness at the old engine house. It is the intention to provide four more carriages, furnish them with hose, and locate them in different parts of the city, with companies of hose men to take charge of them. It will be necessary, before winter, to have at command 5,000 feet of available and trustworthy hose, and it will no doubt be procured.

RETROSPECT.

In December, 1869 a meeting of citizens was called for the purpose of voting money for the purpose of purchasing a new steam fire engine or otherwise increasing the facilities, so much needed for the protection of our property against fire. Previous to this time much talk had been indulged in on the streets and in council and several plans had been suggested for supplying the city with an adequate supply of water; and at this meeting the project of fresh expenditures for engines, etc., was voted down, with the idea at an early day of establishing some kind of water works, though at that time no one had a conception of any thing on half so extensive or magnificent a scale as this. In the following month a party of citizens was invited by Mayor Bennett to visit Kalamazoo and examine the workings of the Holly system as just completed in the "Big Village." Those who perticipated in the excursion, remember with pleasure the good time enjoyed and the favorable impression received, and our citizens will all remember the glowing, but truthful accounts contained in a report by a committee appointed on that occasion, of which if we remember aright Hon. G. T. Gridley was chairman. From this time it was resolved to take some active measures looking to the erection of the Holly works in this city; and as we could not, by the terms of our charter, vote money for the purpose, a company was formed, known as the Jackson Water Company, and the city as a corporation took sufficient stock therin to insure an almost entire control. The project is therefore virtually a city institution, although run in the name of the aforesaid company. At the regular meeting of the city council on the 6th of February, Mayor Bennett was appointed to represent the city in its dealings with the Jackson Water Company; was instructed to subscribe for 995 shares of the stock, amounting to $99,750; and to use his influence for the adoption of the Holly system. This gentleman was subsequently appointed by the Company general Superintendent of the construction of the works, and since that time he has been untiring in his labors and unremitting in his zeal for the completeness in all its parts and the rapid progress of the enterprese, with what result we see to-day with unfeigned pleasure. During March and April the contracts were made for the engines and machinery, the pipes and hydrants, and the necessary buildings. On the 21st of April the building was commenced, and on the 1st of August it was completed, soon followed by the completion of the coffer dam and filter. The pipe laying was begun about the middle of May, and but half a mile is to be laid on the present contracts. On the 15th of May, Mayor Bennett made his report to the council on the progress of the work, in which he said:

"The Jackson City Water Company have contracted with the Holly Manufacturing Company, of Lockport, New York, for one arch frame double cylinder piston engine, with cylinders sixteen inches in diameter and twenty-seven inches long."

[Each of these cylinders give a power of 125 horse, and are perfectly independent of each other, making in all respects two separate engines.]

"Also one Holly patent elliptical rotary steam engine of one hundred and fifty horse power; also two Holly's patent rotary pumps, capable of furnishing three million gallons of water per diem, and all necessary gearing, shafting, steam pipes, water and vacuum guages, and all valves used with said machinery; and also, one donkey engine and one boiler feed pump, two steam boilers and everything else necessary to make the whole machinery complete and adapted to its perfect use. Before the machinery is accepted the said Holly Water Company agree in their contract to cause said machinery to throw six one-inch streams of water, at the same time, to the vertical height of one huudred feet, from hose attached directly to the hydrants, anywhere between Mill and Jackson streets, also to throw three streams of water in the same manner to the same height, from hydrants located in the highest altitude in the city. The contract price for said machinery is $40,000—complete in every respect for use."

These specifications have all been fulfilled, at least that seems to be the general opinion, and we are much mistaken if the committee do not report in accordance with the general belief.

If, as we firmly believe, the report proves to be favorable to the acceptance of the work, it will be seen that in a little more than six months from the time the subject was first broached, and in just four months from the time that operations were commenced, the Jackson Water Company, and through them the city at large, are the proud possessors of the best and most complete system of water supply ever known, and our citizens can point with commendable exultation to the benefits to be derived from this triumph of hydraulic engineering—the HOLLY WATER WORKS.

THE COST

cannot at this writing be accurately ascertained, but ere long we shall be enabled to give a detailed statement of each item. There has been already expended in the neighborhood of $120,000—the machinery costing from $40,000 to $45,000, the building $12,000, the pipes and laying about $40,000, hydrants $3,000, lead for pipes nearly $2,000, stop valves, etc., about $1,000, and with the lot, which cost $2,000, and the coffer dam and filter, both expensive erections, the entire expense so far will reach, if not exceed, the amount stated—$120,000.

THE TESTS.

Shortly after one o'clock, in accordance with the published programme, the committee met at the Water Works building, and Mr. G. T. Gridley was appointed Chairman of the committee, with Eugene Pringle as Secretary. The chairman read the programme of the exercises, and the committee proceeded to an examination of the machinery, which they found to be in every respect as represented—working easily and smoothly; answering almost instantaneously to the opening of the hydrants, and performing all its work in a manner equal to any of its kind ever erected.

At two o'clock a force of hosemen, under the direction of Chief Engineer T. E. Lusk, laid their hose for the first test, through two sections of 1,000 feet each from the hydrant at the corner of Jackson street to the Hibbard House. The members of the committee and a large concourse of citizens were on the grounds and when at about a quarter after two o'clock the aqueous columns mounted aloft through each 1,000 feet of hose to the height of 130 feet, clearing the wire stretched between the two hotels at the height of 100 feet, handsomely and easily, the enthusiasm and satisfaction of the beholders were plainly manifest.

Shortly after three o'clock six single sections of hose were attached to as many hydrants on Main street, between Jackson and Francis, and as they all sent forth their columns together flashing in the sunlight and alternated with brilliant rainbows, a magnificent sight was presented. The stream thrown from each of the six points reached an altitude of at least 125 feet, and, by actual measurement on the ground a distance of 165 feet, as we are informed.

As we go to press the additional tests are still in progress, the preparations being made to proceed with the hose to hydrants in the more distant portions of the city.

We would like to have seen a single stream at its highest point through a single hydrant, and have no doubt that an altitude of 250 feet can be reached; but, notwithstanding the unfavorableness of the weather, it being quite windy, and the incompleteness of the system of piping, we have seen enough to-day to convince all candid minds that all and more than all of the requirements demanded by the company will be carried out to the letter.