

HISTORIC NEW ORLEANS COLLECTION
533 ROYAL ST.
NEW ORLEANS, LA. 70130

PROSPECTUS

— OF THE —

CARROLLTON

Holly Water Works

COMPANY.

Carrollton, La., 1871.

CHRISTIAN & HYATT, PRINT. 38 CAMP ST. N. O.

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Fire Protection and Water Supply.



THE CARROLLTON HOLLY WATER WORKS COMPANY respectfully invite the attention of citizens interested to the following information concerning the Holly system of "*Fire Protection and Water Supply*," which they now propose to introduce through the city of Carrollton, the rights and privileges required having been granted to this Company by the City Council for this purpose.

The Reservoir plan of Water Works is confessedly imperfect. Its settling process does not furnish water of satisfactory quality; its fixed gravitation pressure does not meet the varying wants of communities so far as quantity is concerned; its value for Fire Protection is generally limited to the supply of Fire Engines. It is, withal, so expensive, that tax-payers shrink from the liabilities it imposes. Topographical difficulties prohibit numerous localities from supplying their wants for water by this method. There was urgent need, therefore, of a new and better way of accomplishing the important object of Water Supply and Fire Protection. Happily these public wants are fully met in the new system of Water Works invented by Birdsell Holly. Gifted with a mind which intuitively discerns how mechanical results may be wrought out by simple and effective means, his past life had been spent in devising and perfecting numerous useful inventions relating to hydrostatics. The frequency of fires in Lockport, N. Y., which Fire Engines were lamentably incompetent to check or control, turned his thoughts in the direction of providing a better method of Fire Protection.

An experimental set of machinery, of his own devising, was constructed and put in operation in that city, under contract which stipulated that the works should be competent to throw a stream of water one hundred feet high from a hydrant set fifty feet above the pump. Upon the public trial, the contract test was largely exceeded, and this pioneer set of machinery, although it will not favorably compare with the subsequent manufactures of the Holly Manufacturing Company, is still performing its work efficiently and satisfactorily. These experimental works were soon afterward duplicated on a larger scale, to embrace

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both the features of fire protection and daily domestic water supply. The plans of Mr. Holly now having been fully developed, and their utility demonstrated, these works were constantly referred to, until—as the result so far—the system has been introduced, contracted for and put in operation in the following named cities and towns:

Lockport, N. Y.; Auburn, N. Y.; Minneapolis, Minn.; Ogdensburgh, N. Y.; Peoria, Ill.; Canton, Ohio; Marquette, Mich.; Covington, Ky.; Indianapolis, Ind.; Norwalk, Ohio; Saratoga Springs, N. Y.; Evansville, Ind.; Schenectady, N. Y.; Syracuse, N. Y.; Atlanta, Ga.; Dayton, Ohio; Gouverneur, N. Y.; Vergennes, Vt.; Binghamton, N. Y.; Batavia, N. Y.; Kalamazoo, Mich.; Connersville, Ind.; Columbus, Ohio; Jackson, Mich.; Buffalo, N. Y.; Cumberland, Md.; La Porte, Ind.; Columbus, Ind.; Tronton, Ohio.

Method of Water Supply.

The peculiarity of the Holly system of Water Works is, that the supply of water is direct from the inlet pipes *without the use of a reservoir*. To guard the action of the pumps and provide for a varying supply, it has a system of mechanism that either increases or decreases the power of the pumps by letting on more or shutting off water in amount only limited by the capacity of the machinery to supply.

The delivery of water takes place through properly constructed mains and services provided with fire hydrants, placed at convenient intervals and at proper points. By means of a suitable arrangement of safety valves, pressure gauges and registers, perfect uniformity of flow and complete control of the water is obtained.

Testimony of Engineers.

WE would here call attention to the following extracts from the report of a distinguished Canadian engineer, who was appointed to report upon the most feasible plan for supplying with water the City of Ottawa, the new Capital of the British Provinces. Thomas C. Keefer, Esq., under whose skillful direction the Reservoir Water Works of Montreal, Toledo and Hamilton were constructed, states, in his published report, dated May 13th, 1869, as follows:

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“In gravitation plans it is necessary either to provide a supply for future generations, entailing heavy interest charges on the present one, or else to duplicate the works at a great extra cost when an additional quantity is required; and, in this respect, a pumping system has an advantage over the others, additional pumps being added only as required, and at a comparatively trifling cost.

“Gravitation supplies of water must also be assumed for a fixed level, and with the increase of consumption and waste, an annually increasing loss of head sets in, for which there is no remedy, save a higher head, which the fixed level cannot supply; but with the Holly system the water can be kept up to any required level by the application of more power.

“With the expensive city reservoirs, the supply, although as in some cities it may be abundant, it is often restricted to the first floors of the house in consequence of the great draught. With the Holly system a pressure of from thirty pounds to forty pounds to the inch is sufficient for the ordinary supply for all domestic uses and for supplying constantly water in the upper rooms of the highest dwellings.

“For fire purposes, the only value of the Reservoir plan of Water Works is to feed promptly the fire engines; and for this purpose alone hydrants were so much superior to wells, tanks or water carts, that a great advance was made. But it does not appear that the question of dispensing with fire engines altogether was considered in connection with the construction of water works, until within the past few years, and until the introduction of the system of Mr. Holly. The peculiarity of this system consists in the employment of rotary pumps, which possess the power of rapidly increasing the pressure, and thus supplying the place of high level reservoirs, when such are impossible, either from physical or financial reasons.

“For the speedy extinction of fires, NOTHING CAN EQUAL THE HIGH PRESSURE HYDRANTS, from which, as soon as a hose can be attached, a ceaseless stream is poured on the flames, confining them to the place of origin. *This system not only extinguishes the fire in the shortest possible time, but it has been found greatly to reduce the number of fires, and has been the means of detecting incendiarism.* The fire is extinguished before the proofs of intended incendiarism are destroyed; and the prepared and saturated combustibles are thus revealed.

“Mr. Holly, by his ingenious and economical arrangement, has done invaluable service to many towns; and by his rendering all kinds of fire engines unnecessary,

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will doubtless create a revolution in the existing system of water works throughout the United States."

The above is significant; and when an engineer like Mr. Keefer, whose life has been spent in constructing Reservoir Water Works, is brought, after a full examination, to express the opinion that Mr. Holly's plan "will doubtless create a revolution in the existing system of water works throughout the United States," it is quite conclusive of its pre-eminence over all other systems.

Another experienced engineer, J. L. Pillsbury, Esq., of Ohio, was employed to recommend plans and take direction of the construction of water works in Canton, Ohio. He says:

"After having carefully examined these works in operation at Lockport, and looking to the best interest of my employers, and desiring to construct the best possible system of works for this place, I believe it is my duty to ask you to permit me to amend my former report and estimate by striking out all that relates to the construction of a reservoir, and adding instead an estimate for the Holly machinery, and am certain, beyond the possibility of doubt, that it will make your water system a Fire Department more efficient and reliable than any number of fire engines, and will not be likely to cost any more money than will be saved by omitting the reservoir.

"I have seen these works throw a stream through an $1\frac{1}{4}$ inch nozzle 175 feet into the air; and while a hard wind was blowing, the water was deluging a roof and running from the eaves in a perfect sheet for forty feet in length. No fire could have stood any length of time before this one stream; and when we consider that, in the compact part of the city, with proper hose companies, any number of such streams can be turned on to a fire in five minutes after the alarm is given; and that every private hydrant and water-cock becomes, under this system, a fire engine of the most effective kind, I should feel myself neglecting a serious duty if I did not use my best endeavors to have this system introduced. In view of these facts, and the abundant evidence of the usefulness of the Holly system, I unhesitatingly recommend its adoption, and that our estimates, plans and specifications be so amended as to include this within our system, AND REJECT THE RESERVOIR AS USELESS, under the proposed system."

Working of the Machinery.

There is strength combined with beauty of appearance and motion; great

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power used with much ease. It is comparatively noiseless, but gigantic in its effects. The nice and delicate arrangements by which the necessary signals are given, and the safeguards that are provided against almost any conceivable emergency, constitute a combination of machinery that none but a master mind could invent, arrange and put in motion for such great good to man. In fact, it seems as if a living thinking intelligence were hidden away in its mysteries.

THE MOTIVE POWER consists of *piston* and *rotary* engines—the maximum capacity of either adapted to any required demand, and adjusted and arranged by intermediate connections, so that either engine can be attached to the mammoth gang pump, or the elliptical rotary pump, or all the engines to all the pumps at the same time, thereby giving security against accident to either engine or pump.

The mammoth gang pump is composed of separate piston pumps, and arranged each eccentric to the other, or so rotating in their discharge, that cessation in the flow of water into the mains is dispensed with.

"B. Holly's system of pumping into the mains, and pipe laid in distribution for DOMESTIC SUPPLY AND FIRE PROTECTION," all of which is controlled by machinery arranged separately, but so constructed that it is capable of being used jointly to meet the increased demands, which demonstrates the pre-eminence of Mr. Birdsell Holly's conception of a system combining utility and economy in its service, pumping expense being greatly reduced as compared with the reservoir system, which distributes water by force of gravity through the mains, producing the same pressure throughout the twenty-four hours; while the achievement of Mr. Holly enables a reduction of pressure during the hours of night, when but little water is consumed throughout the city, thereby rendering it unnecessary to sustain the higher pressure required to meet the demands during the hours of daylight, but can be increased within one minute to the required pressure in the event of a conflagration, which pressure is governed by the action of an AUTOMATIC REGULATOR, controlled by hydrostatic pressure, so arranged as to maintain any pressure that may be required either for fire protection or domestic supply, the automaton being attached to a variable cut-off—the cut-off of each engine being operated by conical scroll-cams, adjusting the cut-off levers to comply with the capacity of the engines, as the consumption of water is increased or diminished. An economical feature connected with the Holly machinery, is the mode of condensation of exhaust steam, through the application of a jet condenser, and favorable results of vacuum produced.

In further explanation of the extraordinary and superior efficiency of the

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Holly system, reference may be made to the rotary principle upon which the pumps are constructed. Water is incompressible, and its momentum, when flowing through pipes, is the same as all other heavy bodies in motion. In all reciprocating pumps, the water comes to a stand-still twice in every revolution of the pumps, and has to start back in the opposite direction in order to escape from the pump, on account of this reacting motion of the water. In marked and favorable contrast is the action of the Holly Rotary Pump. From the moment the water comes under the influence of the pump, there is no reaction, no cessation, but one steady and unremitting flow, and with velocity largely increased by this difference of the rotary over the reciprocating or piston pump. Another advantage of these works is, that they save and make available the precious time consumed by fire engines in reaching a fire after the alarm is given. Fire engines wait for men to draw them, or are liable to be detained by a balky horse, or by overturning the engine, or by muddy streets or some other difficulty which keeps them from reaching the spot where their services are required, until too late to be of any service at all. The Holly works, on the contrary, reach out, by their under-ground pipes, throughout the entire town; and wherever a fire breaks out, there will always be, nearest at hand, several hydrants, which, under this system, is but another name for most powerful engines—ever standing sentinel—and always ready, without waiting to be moved, (upon the turning of a wrench, and the attaching of a section of hose,) for instant and successful action. The value of these works, in this feature cannot be over-estimated; for a few minutes gained in throwing water upon a fire at the outset, are more than equivalent of hours at a later period, where the conflagration has spread, and is sweeping all before it in its devastating course.

The Holly system, it is to be observed, meets a public necessity, inasmuch as it combines fire protection and water supply, without the expense of constructing and maintaining reservoirs and fire engines; and thus places within the reach and means of communities to enjoy almost perfect immunity against fires, while at the same time a full supply of water is secured for household and other purposes.

Better Quality of Water.

In the old Reservoir Water Works, the *settling process* is relied upon for purification. It is inadequate to relieve water of its impurities. Hence the

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universal complaint of the *poor quality* of water furnished. The *Richmond (Va.) Enquirer*, crystallizes these complaints in its issue of January 21st, 1870. The editor, after referring in strong terms to the miserable quality of the water of the James River, which the reservoir through which it flows does not render fit for use, speaks thus in general and emphatic terms upon the question of reservoir water:

"The old-fashioned reservoirs for the accumulation of enormous quantities of stagnant water, as well as for the growth and encouragement of green slime, frogs, tadpoles, water-lizards, frog-spew, juvenile snapping-turtles, crawfish, decomposing cats and puppies, defunct insects, snakes, eels, catfish, are things of the past. Modern science has devised very admirable methods for supplying the very largest cities with pure living water without digging huge holes for the accumulation of such saturated solutions of mud and water as those which fill our hydrants. Machinery, at once economical and perfect, now provides large cities with water of infinitely greater purity than it is possible for an old-fashioned reservoir to furnish."

The city of Buffalo received her water supply through a reservoir; and from its bed of accumulated impurities flowed out through the street mains and into the dwellings of her citizens, what one of her newspapers described as "neither good to eat or drink, and that we should hesitate to recommend for medicinal purposes."

"If this state of things is to continue," says the editor, "we must eschew water altogether; for we do not believe that even the Good Templars, who are said to be partial to water, will insist upon people drinking the muddy fluid served up to them."

The complaint as to the quality of the water, of which the above extract is but a specimen, together with the partial and unreliable supply in quantity, compelled Buffalo to contract with the Holly Company for a set of machinery; and her wants for water, both in quality and quantity, are now fully met.

Filtration.

In contrast with the reservoir *settling process*, the Holly plan for purification of water may be described as a *filtering* method. The city of Binghamton receives water from the Susquehanna River (at times very turbid) by means of the

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Holly filtering process; and its *quality, at all times*, is thus referred to by one of her newspapers: "We must congratulate our citizens that they are not as the people of so many cities are—drinkers of water they know not of. New Yorkers like the Croton; but sometimes it is exceedingly impure. We hope our people will appreciate the filtered water; they are favored above ordinary mortals."

The works at Binghamton stand one hundred feet from the Susquehanna River; and the water from the river flows into the pumping wells (which are sunk eight feet below the river bottom) through the intervening gravel bed.

In Dayton, Ohio, also, the same process yields abundance of water, transforming the turbid flow of the Mad River into clear and healthful streams. In other places, where the Holly system is introduced, as, for instance, Peoria, Illinois, the banks of the Illinois River—the source of supply—being clay, an artificial filter, constructed in sections along the river bank, secures the same result. Thus, either by natural or artificial filter, the Holly plan assures to communities the inestimable boon of pure and wholesome water.

Holly Water Works as a Fire Extinguisher---Uniform and Extraordinary Efficiency.

The vast superiority of these works over the Fire Engine system has been abundantly demonstrated in the following instances among many others which might be quoted of a similar character:

In Lockport, where they have been longest in use, it is universally acknowledged by the citizens, that the prompt suppression of a single one of the fires which have occurred, under the most unfavorable circumstances, by these Water Works, saved the business part of the town from destruction. The fire broke out about two o'clock in the morning, in one of the few wooden buildings remaining on Main street, occupied as a grocery and provision store. The building was twenty feet wide on the street, and seventy-five feet deep. When discovered, the flames had made formidable headway. The night was intensely cold, and the wind blowing furiously in the direction to sweep nearly the entire extent of Main street. It was so cold that the fire engines would have immediately frozen up. So apparent was this impotency of the fire department to contend, either with

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the frost or the fire, that the shivering firemen did not withdraw their engines from the engine houses. Within a few minutes after the alarm was sounded, and without the slightest impediment or delay, two streams in front, and two in the rear of the burning building, were brought to bear from the nearest hydrants of the Holly Water Works, and their powerful and incessant flow covered and protected the adjacent buildings, drowned out the flames, and left a considerable portion of the building standing.

In every other case in Lockport, the breaking out of a fire, when the works have been in operation, has been followed by its prompt suppression **WITHIN THE BUILDING IN WHICH IT ORIGINATED.**

Fires in Auburn.

In Auburn, since the erection of these works, several fires have broken out, and there, as well as in Lockport, they have proved themselves equal to any and every emergency, in promptly suppressing what would otherwise have proved to have been wide-spread and desolating conflagrations.

One of these fires broke out in an oil refinery in Auburn, on the ninth of February, 1867, with the following results, as stated by the *Auburn Advertiser and Union*, of that city, in its issue of the next day:

"The engine and retort house of the extensive oil refinery of Messrs Burgess & Bros., of this city, took fire about seven o'clock last evening. We are happy to state that the progress of the fire was arrested in the building in which it originated, containing the engines, boilers and machinery. The street hydrants of the Water Works Company are about 1500 feet from the refinery. A sufficient quantity of hose was promptly connected, and a continuous stream of water was poured upon the storehouses, outbuildings, offices, etc. In the storehouse was a large quantity of oil, naphtha, etc., which was all saved. The engine, boilers and machinery were also uninjured, and will only interrupt the business of Messrs. Burgess & Bros. a few days. We think no one present, who saw the operations of our Water Works Company upon this fire, at a distance of three miles from the works, and 1500 feet of hose attached, and then a sufficient power to throw water over the building with great force, will doubt its efficiency in case of fire, and our city and citizens may congratulate themselves on the result of this trial. And we also think the public are largely indebted to Mr. Holly, of Lockport, who invented and also constructed the machinery for this Company."

Another fire in Auburn broke out about two o'clock in the afternoon, in a large wooden building occupied as a chair and cabinet manufactory. The building contained shavings, oils, varnishes and other combustibles incident to carrying on that kind of business. The fire originated from upsetting a pot of varnish,

and in a very brief space of time the smoke and flames burst out of the openings in front, nearly to the middle of the street, and within three minutes by the watch, four full sized and powerful streams were thrown from as many of the nearest hydrants of the Water Works, which, by their overwhelming flow, speedily subdued the flames and saved the building and part of the contents without much injury.

Still another fire occurred there about ten o'clock at night, in a frame barn, caused by breaking of a lantern, which at once set fire to the hay and other combustibles, communicated to the wood-work, thoroughly charred the roof boards, rafters and ceiling, and yet, upon the alarm being given, so prompt and effectual was the application of water from the Water Works Hydrants, that the flames were extinguished without harm to adjacent buildings, and the structure itself left standing in a condition to repair at a moderate expense.

A fire broke out on Tuesday evening, November 17, 1868, in the dry-house of D. M. Osborne & Co.'s large Reaper Manufactory, in Auburn. Three or four streams from the Holly Water Works were promptly applied, and the flames subdued with trifling loss. A gentleman of that city, who witnessed the spectacle, states: "It was a beautiful sight to see those four streams pouring without cessation for some three hours on this combustible material. Any other system of fire protection would have been almost of no account in such a fire as this." The *Auburn News* of next day, in its account of the fire, says: "The firemen with the efficient aid of the Water Works, did all in their power to extinguish the fire, and after quite a contest, succeeded. All firemen know what an ugly thing a board pile is to put out, and this is just what our firemen had to do, and they did it. The fire was confined to the dry-house and prevented from spreading to the yard, filled with valuable lumber." In connection therewith Messrs. Osborne & Co. published the following:

"A CARD.

"OFFICE OF D. M. OSBORNE & Co., }
"AUBURN, N. Y. NOV. 17 }

"We wish to thank the firemen of Auburn for their promptness and energy at the fire in our lumber yard this evening. Their exertions saved us from great loss, and confined the fire to the dry house. We cannot speak too highly of the performance of the Water Works; they gave us a supply of water such as no fire could gain headway upon, and was the admiration and praise of all who saw it. With such a boundless supply of water, and a well organized fire department, a very large fire in this city is almost an impossibility.

"D. M. OSBORNE & CO."

The *Daily Advertiser*, of February 17th, 1868, thus describes a fire which occurred the evening previous:

"The Church of the Holy Family, (Catholic) was discovered to be on fire at about half-past five o'clock Tuesday evening. The fire originated in the organ loft. Its cause is not known, but is being investigated. It was first discovered on entering the church for the purpose of practice by the choir. The alarm was immediately sounded, and our ever-willing Fire Department promptly rallied with their apparatus and got quickly to work. The credit of 'the first stream' is between Hose Nos. 1 and 4. However that may be, the boys fought with a will against the usual obstacles of bad location and difficult access to the immediate seat of the fire, and threw water enough to float a small navy. As a result of their prompt work under the experienced direction of Chief Engineer Reynolds, and the overpowering volumes of water from the city mains, the flames were quenched and the edifice saved. The loss is comprised in the total destruction of the fine organ, the largest in the city, originally costing \$2500, on which there is an insurance of only \$1500; the walls and ceiling are badly damaged by discoloration from smoke, while the gallery floor is somewhat charred. The cornice and corbels are also somewhat damaged, and some of the stained glass windows broken. It is thought that \$2500 to \$3000 will cover the loss on the building, but the organ cannot be replaced at its former cost. The house was insured for \$15,000. The church is being cleared of the *debris* and will be ready for the usual services on Sunday next. General sympathy is evinced by citizens of all denominations in this loss to the church, and many assisted generously in clearing away the rubbish occasioned by the fire. But for the efficacy of our water works system, the building must have proved a total loss. A fire timely discovered stands no chance against the volume of water supplied by our glorious Holly system of Water Works, which have already more than paid their cost in saving property."

On the night of February 27th last, a fire occurred in Auburn, of which the *Daily News* gives the following account:

"ANOTHER FIRE.—One of the oldest landmarks of the early enterprise of our city, succumbed to the flames Saturday night. We allude to the old red building on the south side of the outlet adjacent to the gas house. The alarm was sounded about half past ten, and by the time the firemen reached the building it was completely enveloped in flames; but we have the Holly system of Water Works here, and no steam fire engines; and, therefore, the fire was confined to the building in which it originated, a portion of which is still standing. The building was occupied by John Marsh, Esq., who carried on the business of wool pulling. He had on hand about \$1100 worth of wool and pelts, which were nearly all ruined, and must prove a total loss. Our firemen, as usual, worked hard, regardless of danger, and it was due to their efficient labors, aided as they were by the Water Works, that the ruin was not more extensive."

Fires in Minneapolis.

In Minneapolis, soon after the works were put in operation, the efforts of incendiaries to destroy the city were baffled with trifling loss. The following official letter tells the story:

"B. Holly, Esq.:

"DEAR SIR—The occurrence of four fires in our city within the last month, and each getting well under way before being discovered, has demonstrated the efficiency of your rotary pumps and machinery to the satisfaction of all, and beyond the expectation of many.

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"In each case the fire has been LITERALLY DROWNED OUT, and thereby thousands of dollars in valuable property saved, *which could not have been done with any ordinary fire apparatus.*

"Last Sunday morning a fire broke out in a large two-story frameboarding house on Helen street, and the entire upper story and roof were in flames before the hose companies got their hose attached and were ready for water; and in less than ten minutes from the time the first stream was thrown, the flames were extinguished, and the building now stands with the upper story and roof burnt off—a prominent advertisement of the Holly Water Works.

"Very respectfully yours,

"S. H. KING, *City Engineer.*

"MINNEAPOLIS, MINN., July 22, 1868."

A prominent citizen of Minneapolis, W. H. Lee, Esq., in a long letter, giving a detailed account of these conflagrations, estimates the aggregate saving of property at ONE AND A HALF MILLIONS OF DOLLARS, over and above what the timely use of fire engines could have accomplished.

The *Minneapolis Tribune*, of May 15th, 1869, gives the following accounts of two fires occurring there about simultaneously:

"ANOTHER FIRE—*Splendid Success of the Water Works.*—Last evening, about half-past six o'clock, a fire broke out in Hunt & Grimsshaw's carriage manufactory, corner of Kansas street and Washington avenue. When first discovered it was seen issuing from the roof near the chimney, in the back part of the building. The firemen were promptly on the ground, and in less than ten minutes Mutual Hose Company No. 2 had a stream on the fire, through about 1000 feet of hose, from the hydrant at the Nicolet House. Minneapolis No. 1 was on hand in quick time from the Cataract House, and had a stream on the building from the hydrant at the Opera House just as soon as they could get hose enough to reach. Both Companies labored under a disadvantage, as their carriages are not large enough to carry more than five or six hundred feet of hose. When Mutual No. 2 got fairly at work it was not twenty minutes before the flames were subdued and the buildings completely flooded. Every one seemed surprised at the force of the stream and the immense volume of water thrown, at so great a distance from the hydrants. It is but another proof of the great success of our Water Works. The damage by fire to the building was but slight, as only a small portion of the roof and the upper ceiling was burned. The damage to stock and material by breakage, and by interruption of business will, perhaps, amount to several hundred dollars, but it is probable the whole loss on building and stock will not exceed \$600."

"STILL, ANOTHER FIRE—A DWELLING OWNED BY THE PACIFIC ROAD PARTIALLY BURNED. GREAT TRIUMPH FOR THE WATER WORKS—*Water Thrown Through 2000 Feet of Hose.*—At about 10 o'clock last night the alarm of fire was again sounded. This time it came from a small story and a half house, corner of Second and Nebraska streets, owned by the St. Paul and Pacific Railroad Company, which was undoubtedly the work of an incendiary, as the house has been unoccupied for some time. When first discovered, the fire was burning in one of the lower rooms, between the plastering and the outside wall, and was rapidly extending up to the roof, and before the Hook and Ladder and Hose Companies arrived the whole upper part of the house was in flames. The distance was so great that few expected the hose companies would attempt to reach the fire with their hose, but in a few minutes Minneapolis Company No. 1 came up on the double quick, having attached their hose to No. 2, which extended from the hydrant at the Opera House, on Kansas street, and a stream of water was soon thrown upon the fire. A section of the hose on Kansas street bursted, but it was immediately replaced, and

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a powerful stream was continued until the fire was extinguished. This, like all the fires since we have had the Water Works, was completely flooded, before the building was half destroyed, and this, too, through 2000 feet of hose. IT IS ANOTHER GRAND TRIUMPH FOR THE WATER WORKS; STEAM FIRE ENGINES ARE NOWHERE!"

On the 14th of May, 1870, a fire occurred in Minneapolis and the following account of it is copied from the *Tribune* of that city:

"NOT SO MUCH FIRE AS WATER—HALF A MILLION OF PROPERTY SAVED—THREE THOUSAND DOLLARS LOST—A TREMENDOUS TEST OF THE WATER WORKS—IN WHICH THEY ARE TRIUMPHANT—*Glory Enough for one Day.*—At ten minutes past noon yesterday an alarm of fire was given from the Cataract House, the cause being the burning of an old, empty ice house belonging to the Cataract House property, and in rear of it only a few feet. The flames spread very rapidly, and ignited the piles of lumber in Jones, Herriek & Co.'s yard, immediately adjoining. The spread of the fire from the burning building to the lumber seemed instantaneous. Less than five minutes had elapsed before Hose Company No. 1 were on the ground, and within ten minutes had two streams upon the fire. Hook and Ladder Company and Hose Company No. 2, were on hand immediately after, and within twenty minutes five streams of water from such nozzles played upon the raging element. These furnished water constantly for seven hours. When the fire spread from the ice house it communicated to three piles of dry common lumber, and the flames and smoke rolled up in immense volumes, and the heat was intense. These piles of lumber were about fifty feet from the hotel building, and on either side the lumber was piled but ten feet distant. Across an alley about twenty feet from the fire was piled lumber even higher than that consuming, and directly under lee of the wind, from the northeast. These adjacent lumber piles *were not scorched.*

"The efforts of the firemen were directed to confine the fire within the three lumber piles, and these were literally walled in with water. It would have saved time to have allowed these to have burned more rapidly, as it was impossible to save any of the stock, but the firemen were fearful that the wind or the fire might gain the advantage, and spread to other property. So the fire was drenched; the water, of course, not reaching the inside, where the fire devoured the core and left the charred shells standing.

"The heaviest loss that was sustained was by that eccentric old gentleman, the Father of Waters. The water in the canal fell *more than three feet*, but the gate was raised so as to give a more plentiful supply, and the current of the river had free course into the new rival tunnel.

"About 150,000 feet of lumber is destroyed, valued at about \$3000. This is the first instance within the knowledge of any one present yesterday where any part of a lumber pile was saved from ashes. Its peculiar position is such that it cannot be reached by water. The ice house was entirely consumed; value about \$150.

"What might have been, had we had no Water Works yesterday, we cannot undertake to say. The Cataract House and the entire block, with the elevator beyond, and we know not how much else might have been destroyed. No power could have saved the lumber in the yard.

"About dusk the whole mass was in ruins, black, smoking, and saturated. Hose Company No. 1 was left on duty during the night with two streams at their command, and the jaded men went to their homes. All honor to the Fire Department and the men who have sustained through good and evil report THE CITY WATER WORKS!

"A CARD.

"To the firemen and citizens of Minneapolis who aided in saving our property from destruction by fire on Thursday, we desire to return our sincere thanks.

"When the fire had communicated to the dry lumber, it seemed that no human efforts could save our entire yard from destruction; but your untiring and well-directed efforts for

many hours, confined the raging element to a space extremely limited, and finally subdued it, without injury to the numerous other piles standing but a few feet distant. No one could have witnessed this demonstration, without having all pre-existing doubt as to the value and practicality of our Water Works completely washed away. We believe no parallel instance is on record where a raging fire, in the midst of a dry lumber yard, was so completely controlled. To say nothing of the loss, it was a *grand success—a glorious triumph* of water over fire, the result of which is wholly due to the gallant behavior of our noble firemen, and our admirable and invaluable system of Water Works. Again, we say, thanks.

“JONES, HERRICK & Co.”

Fires in Vergennes.

The Mayor of Vergennes, Vt., in a letter dated January 9, 1869, addressed to the Holly Company, says:

“We have had a practical test of the works, and of their efficiency, which I have no doubt you will feel an interest in knowing. On the 30th day of December, Messrs. Hays, Filardo & Parker's Lumber Drying House took fire; in the house at the time was some 10,000 feet of lumber. We attached our hose to the nearest hydrant, and carried our pipe to the two openings in the dry-house, and in the course of half an hour we had literally drowned the fire out. An examination of the lumber after being taken out, shows that every piece had been on fire. The owners say that, from half to two-thirds can be used by dressing. On Tuesday, at half-past two o'clock in the morning of the 5th inst., we were aroused by our fire alarm. The fire proved to be in the extensive tannery of C. D. Keeler, Esq. The fire had gained great headway before it was discovered, and the entire engine house in the interior was in flames, and the fire had got into the main finishing room, a very large room on the second floor, in which was a large amount of leather in various stages of finishing, together with large quantities of oil, tallow, etc., making the material of the most combustible kind. Before we could get our hose properly attached, the fire had completely filled this room, and was fast getting to the story above. We began to play on the fire with two streams, from 1½ and 1¼ inch nozzles; in the course of an hour we had the fire subdued, so much so that when we were able to get into the rear of the finishing room, whole pails of water could be taken from the floor. Mr. Keeler's loss is some six or eight thousand dollars. Had we not had abundance of water his loss would not have been less than twenty-five or thirty thousand dollars. Directly north and opposite, across the street, about six rods is situated the largest manufacturing establishment in the city. Had we not been able to put out the fire in the tannery, we can see no way in which we could have stopped the fire short of the loss of all the buildings on the north side of the Falls, the entire value of which could have not fallen below seventy-five or one hundred thousand dollars.”

Fires in Ogdensburg.

In Ogdensburg, soon after the works were put in operation, a fire was disposed of in the following summary manner, according to the *Ogdensburg Journal*, of April 16, 1869:

“FIRE SATURDAY NIGHT.—A fire occurred in the frame dwelling occupied by James McCarthy, three doors south of the Baptist church, at eleven o'clock, on Saturday night. Some little time elapsed before the alarm became general, but Hose Company No. 3 came promptly

to the work, and in less than one minute after arrival at the hydrant, corner of State and Montgomery streets, had a stream playing upon the fire, which was extinguished in a few minutes. The fire had got well under way when the Hose Company arrived.

“In this instance the full benefit of the Water Works was exhibited, for without them, one or two buildings must have been destroyed. The stream of water thrown was one of the very best we have ever seen. The alarm indicator at the Water Works house responded at the first opening of the hydrant, and ran up the pressure of the required amount instantaneously. Everybody praised the Water Works. They proved all that could be desired on this occasion.”

In this account three things are eminently worthy of notice: 1st. That upon opening a hydrant the Regulator connected with the machinery instantly run the pressure up to the point for throwing effective fire streams. 2d. That in less than a minute after the arrival of the Hose Company at the hydrant a powerful fire stream was brought to bear upon the fire; and 3d, and as a necessary consequence, that the fire was extinguished in a few minutes.

Another fire took place in Ogdensburg on the 21st of July, 1870, which the *Journal* of that city thus describes:

“A fire broke out in the new wooden dwelling-house of J. F. Arnold, on Green street, about eleven o'clock Wednesday night. It took in the chamber over the kitchen, and when discovered was well under way, having communicated to the garret of the whole building. Yet in a short time after the alarm the firemen were at work and had the fire reduced and under control. The building was most elegantly finished and just ready to be occupied. The damage from fire and water will reach probably \$1500.

“The performance of the Water Works on this occasion was most satisfactory. In one minute after the alarm was sounded, sixty pounds pressure was upon the pipes, and the flood of water from the hose was overwhelming. It is owing entirely to the efficiency of the works that we are spared the presence of a great black burnt district in one of the most beautiful places in the city.”

“The first stream of water passed through the pipes, in this city, on the first day of November, 1868; but up to Wednesday night we have never had an opportunity to test their full value as a fire annihilator. On this occasion a fire took in a wooden building, in a locality where it could not burn without communicating fire to several other buildings, and was well going when discovered. The water in the pond was at its lowest ebb; the weather so dry that everything was like a tinder box. Yet instantly, after the alarm, the pumps were driving the water into the mains in a volume sufficient to give sixty pounds pressure per square inch, in any part of the city. The result was an immediate reduction of the fire after the opening of the hydrants. If there were doubts remaining with any of our people as to the power of the works as a fire engine, they are now happily removed. A fire has no chance in a contest with the Holly Water Works.”

Fires in Binghamton.

In Binghamton the first demonstration of the value of the Works in suppressing fires occurred on Christmas day, 1868, in a cabinet shop, full of combustibles and threatened, for a short time, to destroy many buildings. “The alarm was

Carrollton Holly Water Works

sounded," says the *Binghamton Republican*, "and the firemen, along with a great crowd of citizens were promptly on the ground. Lawyer Hose Company attached their hose to a hydrant near by, and succeeded in staying the flames and saving the residence of Mr. Harding, situated a few feet from his barn. This is the first time the water supply by the Water Works has been brought into use, and but for its convenience the residence of Mr. Harding would have been entirely destroyed. The success of the works was so complete that the firemen are delighted with having, in the future, a sure reliance. It is a great satisfaction to all to know that we are now provided with water, not only for culinary, but fire purposes. Already have we reaped one benefit from it."

"The second fire and the indispensable service rendered by the Water Works, is thus described by the *Binghamton Republican*, in its issue of January 8th, 1869:

"DESTRUCTIVE FIRE—*Corbett & Owen's Planing Mills Burned*.—About two o'clock this morning, a fire was discovered in the upper story of Corbett & Owen's planing mill, situated on the bank of the canal, touching on Hawley street, by Mr. Standley, who, at that time, was running the saw mill attached to the planing mill. Standley immediately placed a weight upon the steam whistle, which caused an alarm, while he ran to the Firemen's Hall and rang the alarm. The mill, which was an old frame structure, burned rapidly, and by the time the fire companies got on the ground the upper story was completely enveloped by the flames. The hose companies in a short time attached their hose to hydrants in the vicinity, and had three streams playing upon the fire before any of the engines got in position to work. In course of time the engines were put into use, and between them and the hydrants as many as five or six streams were brought to bear, and in about two hours the fire was subdued, having burned the upper story only, but so far damaging the building that it will have to be removed. But for the fact that the fire caught in the upper story and had to burn downwards, and the aid rendered by the Water Works, not only the planing mill entire, but several other buildings would have been destroyed. The mill was a rickety old frame, as dry as powder, and filled with shavings. Within a few years, it has been several times on fire, either from accident or otherwise, but the fire was extinguished without damage. The machinery—consisting of lathes etc.—in the upper story was destroyed; that in the lower story, as well as the saw mill machinery, was not injured. Property holders in the vicinity had good reason to be thankful for the Water Works. Had it not been for the supply from the hydrants, much valuable property would doubtless have been destroyed."

The third visitation by fire occurred early in March. It broke out in the frame building occupied as a grocery and produce store of J. W. Sullivan, which was enveloped in flames before the alarm was given. The *Binghamton Democrat* of next day says:

"In a very short time the firemen arrived, and attaching the hose to hydrants, let on the water; but the flames had made such headway that the grocery building and its contents were destroyed, and the dwelling damaged to such an extent that it will require a complete rebuilding. It has been found by a great many citizens that at remote distances from the wells of the Water Works, sufficient force could not be put upon the water to drive it through the pipes at a fire. It was clearly demonstrated last night that the distance did not make any difference

Water Supply and Fire Protection.

with the force and the volume. Two splendid streams were put upon the flames which soon died down. IT WAS REMARKED LAST NIGHT, THAT BINGHAMTON WOULD NOT SELL HER RIGHT TO THESE WORKS FOR A MILLION DOLLARS, and she would not."

On the 12th of October, 1869, Binghamton had another fire. Says the *Republican*:

"Between twelve and one o'clock, this morning, a fire was discovered in the shoe store of E. P. Hulbert, in Lafayette block. An alarm was sounded by the fire bell, and the fire companies were out and in position in a very short time. Sections of hose were attached to the hydrants on the corner by the American Hotel, and in front of Cafferty's livery stable, and large streams of water were thrown into the store with great force, literally flooding it. When the firemen arrived, the counters, boxes, shelving, and everything of a combustible nature in the room was in a blaze; but fortunately the fire was checked and subdued before it spread into other portions of the building."

On the 17th of January, 1870, still another fire, which the local papers thus refer to:

"A little before twelve o'clock, last Saturday night, a fire was discovered in a two-story frame-house, on Second street, near Franklin, known as the Stanton House, and owned by Mr. Henry McClellan. The fire originated in the second story, near a cockloft, and the smoke issued in great volumes from all parts of the roof and gables, the exact location being hard to determine. Some men undertook to put out the fire by the use of buckets, but the smoke was so blinding that they were obliged to desist.

"Justice Cunningham, who resides near by, took some small hose, which he had in his possession, and attaching them to a small plug in Ald. Hanna's yard, adjoining the burning building, soon had a fine, though small stream, playing directly upon the flames.

"The Central City and Independent Hose Companies were soon on the ground, and hose was attached to a fire plug on the corner of Monson and Third streets, and a stream thrown upon the back of the building, and from hose attached to the hydrant on the corner of Second and Franklin streets, a stream was thrown upon the front of the house. With these two powerful streams of water playing upon the premises the fire was soon put out.

"The house is an old frame, dry as tinder, and would have been totally destroyed but for the Water Works. Streams were set to playing upon the fire, without any trouble, the hose companies reaching the scene in good season. A perfect deluge of water was thrown upon the house, and the ceilings are somewhat damaged by the flood, but it prevented the possibility of communicating to the adjoining houses."

On the third of March, 1870, there was another fire, with the following result:

"The water tank at the west end of the platform of the Erie Railway Depot, ignited from a stove pipe about half past twelve o'clock to-day. The alarm was promptly sounded and several of the fire companies were on the ground in a few minutes from the time the fire was discovered. Crystal Hose attached to a hydrant, in front of Captain Fee's saloon, on Canal street, and got the first stream; Fountain Hose took her supply of water from the hydrant on the corner of Chenango and Lewis streets; and Ford Hose attached to a hydrant on the corner of Eldridge street and Prospect avenue. The Erie Company has heretofore refused to take water from the City Water Works, but in this instance they were glad to receive it, in large quantities.

"The fire was extinguished before the tank was badly injured, although the house covering it was nearly destroyed. The damage will amount to between \$500 and \$800. The baggage house and shed escaped injury."

On the 8th of April last, there was still another fire in Binghamton—the work of incendiaries, like those previously described—which the *Republican* of that city chronicles thus:

"Last evening, about half past nine o'clock, an alarm of fire was given, which originated from the house on 'the old Rogers' property,' 153-5 Court street, at present unoccupied, and in which, when discovered, the flames were breaking out in the middle of the main structure, where it, without doubt, had been set early in the evening. In a short time two powerful streams were put on the fire by Hose Companies 1 and 4, and but a little time elapsed before the same was extinguished; but not until considerable damage was done to the interior.

"We feel that we must again speak of the satisfactory workings of the Holly Water Works, of which all our citizens are full of praise, and the faithful services of the attentive engineers on duty. Old Joe Dewitt, of Owego, was present and expressed great satisfaction over the workings of our system at a fire, it being the first he had witnessed here since the introduction of the works."

Of another fire at Binghamton, on the 28th of May, the *Republican* says:

"Almost as soon as the people in the immediate vicinity of the fire were aroused, the fire companies were on the ground and had the fire under control.

"There were a number of valuable frame houses situated within a few feet of the barns, which must have been destroyed had it not been for the promptness and great activity of the firemen, and the valuable aid of the City Water Works. Those houses were only slightly damaged by the heat, which blistered the paint considerably on some of them.

"It is estimated by experienced firemen that at least twenty-five thousand dollars worth of property was saved by the Water Works. The nearest reservoir is at the corner of Court and Carroll streets, and before a stream could have been thrown from that the fire would have ignited six or seven dwellings. In this lies the great value of the Water Works for fire purposes. THEY ARE ALWAYS THERE, ALWAYS READY, AND ALWAYS EFFECTIVE."

Fires in Peoria.

In Peoria, since the introduction of the Holly Water Works, numerous fires have broken out, but no serious loss has occurred except one in the suburbs—beyond the reach of the works—involving the loss of Paper Mill, Distillery, etc., with an aggregate loss of \$500,000. Within the region protected by the Works the following results are reported. Of the first to occur, August 21, 1869, the *Peoria Transcript* says:

"An alarm of fire was sounded yesterday afternoon, and the engine companies, as of old, came out. The fire originated in the back part of Mr. Story's turning shop, on the corner of Fourth and Sanford streets. Two sets of hose were quickly attached to a hydrant on the corner of Fourth and State streets, and two streams were thrown upon the building with such success that the flames were quickly subdued. This is the first time that an alarm of fire has been raised within the precincts guarded by the Water Works, and it is the first time that the practical workings of the Water Works have been shown. The fire gained but little headway before the hose were attached and the flames subdued. Hose Company No. 1 deserves the credit for the first trial, they being the first to attach their hose to the hydrant."

Under date of December 30, 1869, the same paper has occasion to chronicle another fire as follows:

"The value of the Peoria Water Works, as a protection against fire, was again satisfactorily demonstrated at the fire at Plant Brothers, Pratt & Co.'s extensive plow works, on Saturday evening.

"The company have a three-inch water pipe running up through the three stories of the building, with hydrants and one hundred feet of hose attached and coiled up on each floor. The water can be turned on from the street mains, and the hose brought to bear with a stream on any part in the whole building in less than one minute.

"It was owing to this excellent arrangement that the fire was so quickly subdued on Saturday evening. It was extinguished entirely from the water apparatus on the inside, and with very little damage. The fire companies were promptly on the ground with hose attached to the street hydrants, all prepared for action, but were stopped from playing as it was not deemed necessary."

The Committee of the Peoria Common Council under whose superintendence the Holly Water Works were constructed for that city, in their final report, giving a detailed history of the enterprise, and announcing the completion of the work, states that these works "not only supply our citizens with abundance of water of good quality for domestic and other purposes, but it affords one of the most complete fire protections ever invented. The value and superiority of the system lies in the fact that it allows of no large conflagrations, but is brought to bear upon and extinguishes a fire in its incipency."

Fires in Dayton.

In Dayton, although it is but recently that the Works were put in operation, they have performed signal service on several occasions in prompt fire suppression. Of one of them—occurring on the 13th of June, the *Dayton Journal* says:

"On the 13th inst., a little after seven o'clock, a fire was discovered in the extensive Wheel Manufactory of S. N. Brown & Co., southwest corner of Fourth and St. Clair streets. Fortunately, the immense building is supplied with water from the Holly Works, and the water was immediately sent from the hose over the fire, drenching it out in a few minutes, and before the alarm, which was sent from the box in the vicinity, could possibly be answered by the presence of the fire engines.

"A huge fan is used in the manufactory, to carry the dust and shavings away from the workmen to the 'shavings room,' and it was, doubtless, this arrangement which, by rapidity of motion and friction, caused the fire. The flames were forced up into the second story by means of the 'shavings carrier,' and were making frightful headway when first seen.

"Had it not been for the Holly Works in the building, there is no question among sensible men but that the flames would have gained such headway among the combustible matter in the upper floors that the mammoth building would have been past saving before the steamers could have got there and commenced to throw water on the fire.

"Here is a brilliant instance of the invaluable Holly system as a protection against fire."

"The damage was inconsequential, and operations were not even checked."

The same paper describes another fire which broke out about the same time with threatening aspects. It says:

"Yesterday morning, a few minutes after eight o'clock, the 'picking room' of the Cooper Cotton Factory was discovered to be on fire. Notice was immediately sent to Central Engine House, in the vicinity, and the alarm was telegraphed from that point. In double-quick time, the Centrals attached their hose to the fire hydrant in front of the Osceola Mill, and in a couple of minutes afterwards, the water from the Holly pumps were dashing on the fire, which was extinguished 'in less than no time!' as expressed by an enthusiastic bystander. The damage was trifling, and the 'pickers' will be running as usual in a day or two. The delay will not affect any interest.

"The fire was doubtless caused by the pickers striking fire. They are run with fearful velocity, and one of the spikes getting a little out of trim, struck lightly against another spike, knocking out fire like a steel and flint, and communicating the fire to the 'elevator'—a contrivance for carrying the picked cotton up to the room above; and this affair being as dry as tinder, the fire resulted.

"The 'picking room' is isolated from the factory; and if the former should burn, with our present system of Holly Water Works, it would be impossible to seriously threaten the latter."

On the 29th of June there was still another fire in Dayton. The *Journal* thus describes it:

"While the churches were dismissing, Sunday about noon, an alarm from the Fourth Ward engine house, called the firemen and a large concourse of people to Dock street, running parallel with the canal leading south from Warren street, where a fire was raging in a small frame stable, occupied by Joseph Fisher, and an adjoining two double story frame house, tenanted by the owner, Martin Wolf, a stone cutter, and Mr. Baker, a musician.

"The fire was apparently out of reach of the Holly Works system, there being no plugs or mains on that side of the canal in that neighborhood. The engines had just got to work, however, when the hose were attached to a plug on the corner of Main and Washington street, several hundred feet distant, and were dragged across the canal. The stable, a mere shell, meantime had burned down, and the house alongside was blazing. The furniture was quickly removed and in ten minutes the flames were extinguished. There was vastly more water about the premises than there had been fire. The total loss did not exceed \$1000.

"Without detracting from our serviceable fire engines, it is proper to say that the great superiority of Holly in the way of force, body of water thrown, and steadiness, was too manifest for dispute."

The same paper had occasion to give an account of another fire, on the 25th of July last, which, although serious, would have been much more so, but for the timely and powerful action of the Holly Water Works. The following account of it is given by the *Journal*:

"The Sash and Blind Factory and Planing Machine establishment of D. W. Stewart & Co., on Waynestreet and the canal, was burnt last night at about half past ten o'clock, causing a loss to the firm—D. W. Stewart and J. H. Pierce—of probably \$35,000.

"The alarm was given by Capt. Will Shoemaker, who discovered the flames under the planing mill. The fire shot up the slaving flume with great rapidity, and spread over the combustible factory like a rushing wind. It was apparent before the Fire Department got there with their apparatus, that the Miami River poured upon it would not save the interior. The flames

went through the building like a flash of powder. Shavings and dry pine lumber, in various prepared shapes, were distributed throughout the establishment.

"The hose were quickly applied to two fire plugs, and the men were expeditious in getting water upon the fire. The best that could be done, however, was to save the brick shell of the factory, the engine house and the frame storehouse in the rear.

"All the valuables in the office were saved, and the engine and boiler were not injured in the least. The belting, of course was destroyed, and some of the shafting damaged. Most of the fine machinery, tools, etc., were doubtless ruined.

"The fire raged for an hour before it was thoroughly controlled, the combustible character of the house, and its rather hazardous walls preventing as efficient work by the firemen as might be expected ordinarily.

"The firemen worked with their usual energy, and the Holly streams again demonstrated their superiority as fire protectors over the ordinary steam apparatus."

Still another fire broke out in Dayton about midnight of October 16th. The locality was a wood house on Morrison alley, with stables and cabinet manufactory adjoining. Says the *Dayton Journal*: "The material being very combustible, the flames spread very rapidly and made a great blaze indicating a formidable conflagration. The Fire Department responded very promptly to the summons and the Holly Water was applied when the flames were extinguished, almost as if a blast of wind had blown them out. Mr. Jas. R. Young, whose stable was across the alley, applied his garden hose to his own and adjacent stables to which the flames had communicated, and saved them. The total loss was inconsiderable, not exceeding \$1000. The efficiency of the Holly system as a protection against fire was again handsomely demonstrated."

Fires in Kalamazoo.

IN Kalamazoo the local newspapers give the following accounts of the fires occurring there since the introduction of the Holly Water Works. The first took place May 6, 1870, and the *Kalamazoo Telegraph* says of it:

"Yesterday afternoon an alarm of fire was sounded from Mrs. Longbottom's house on Portage street. The flames had made considerable progress under the roof, and the chances to save the building looked rather squally. But Phelps has been waiting for just such an opportunity to show off the Holly Works. The hose was brought out, and the water was poured on in several streams, and in great abundance. The fire was squelched at once. There were from two to six streams of water pouring on it at once. The people were pleased to see how quick the thing was done. A few hundred dollars damage was done by fire and water, but there was an insurance on the house for \$500. The crowd returned from the scene shouting "Great is Holly! Great is Sweet Water."

On the 18th of May there was another visitation by fire, with the following result, as stated by the same paper:

A few minutes before twelve o'clock, last night, flames were discovered bursting out of a barn, belonging to LeGrand Whitecomb, located in the rear of his premises on Portage street. The alarm of fire was given, but owing to the impossibility of effecting an entrance to the engine house, there being no keys to be found, a considerable time elapsed before the hose could be got upon the ground, and in the meantime the fire had communicated to an adjoining barn, also the property of Mr. Whitecomb, situated immediately in the rear of J. Taylor's residence, and as the fire was rapidly spreading in that direction, it seemed as though that building, also, would be destroyed; but the hose having been attached to a hydrant on the corner of Portage and Cherry streets, the water was turned on, and then the value of the Holly Water Works was fully demonstrated. The shingles and siding flew in every direction, and the flames, that until then had towered above the tree tops, disappeared as if they had been deluged by Niagara Falls, and in a short time hardly a spark of fire was to be seen. There are those in Kalamazoo who have pronounced the Holly Water Works a failure; if they were at the fire last night, and witnessed how quickly the fire was extinguished, we have no fear of hearing their complaints hereafter."

Fires in Canton.

Since the Holly Water Works were put in operation, last February, in Canton, there have been two or three fires there which were promptly and easily mastered, with trifling loss. It was not fully understood, however, by her citizens what these works were worth for the protection of property, until the night of October 17, 1870, when a fire broke out, with results as stated by the local newspapers in the following terms. Says the *Canton Democrat*, in its issue of October 21st:

"On Monday night, about ten o'clock, our city was endangered by a serious fire, which broke out in Dr. Doud's stable, in Court Alley, west of Market street, and on the block immediately south of the Square. It was soon enveloped in flames, and the fire soon communicated to the two stables of C. Oberly, reaching Seventh street, and the wind blowing from the southwest, in a brief time lashed the flames into fury. The stables, of course, were more or less full of hay, straw, oats, etc. Mr. Oberly's large two-story frame warehouse, abutting his stable, on the east, also caught. Indeed, the flames spread very rapidly, and for a time looked very dangerous, threatening to sweep through to Market street, and north to Eagle block. Our firemen and hosemen were soon in position, and got their hose attached to the water plugs. From three to six fierce streams of water continued pouring upon the fire for over an hour, and gradually subdued the raging and devouring element, and prevented its spreading.

"Doll's livery stable, across the alley, and on Seventh street, was on fire several times, but the deluge of water saved its destruction, although it was somewhat damaged. Oberly & Son's warehouse was entirely burned down, although the fire had, for a time, full possession of the east end in the upper part of the roof. The warehouse contained a large quantity of wine, liquors and groceries. In a room up stairs were several beds, in which the male members of the family kept their clothing not for immediate use. One of the clerks was in bed when the fire commenced, and had to hurry himself out. The horses, cows and hogs on the premises were all got out, though some had a narrow chance.

"Our citizens again, on this occasion, witnessed the efficacy of our Water Works. IT IS HARD TO SAY WHERE THE FIRE WOULD HAVE RUN TO HAD WE DEPENDED ON THE OLD SYSTEM OF CISTERNS, AND ENGINES AND WELLS."

The other city paper—the *Canton Repository*—after giving a detailed account of the severe conflagration, adds the following:

"It is unanimously agreed that OUR SYSTEM OF WATER WORKS REPAID THEIR ENTIRE COST ON MONDAY NIGHT. The entire Eagle and Harter's blocks must have been destroyed, for a high wind was blowing from the south. Indeed, we doubt if the fire could have been stopped until it had swept to the north end of the city. Houses three blocks distant caught fire time and again, and flaming shingles were borne on the wind for a quarter of a mile. The old barns, amid which the fire raged, were tinder, yet even some of these were saved, and that after their mowfull of hay had been filled with flame, time after time. Through all the hose it is computed that an amount of water equal to the cubic contents of all the available cisterns was emptied into the fire every twenty or thirty minutes. THE WATER WORKS SAVED THE CITY."

It will be universally acknowledged that the above accounts end all controversy in regard to the extraordinary efficiency of the Holly method of fire suppression. The entire history of fire engine service cannot furnish a record which will at all compare with their uniformly successful performances in saving property from destruction by fire. A disastrous conflagration, which recently occurred in Chicago, illustrates in marked contrast the difference and imperfections of gravitation works and fire engines, as compared with Holly's variable pressure method of fire suppressions. Chicago has model works of their kind. The cost of them, up to March 31, 1869, was \$3,146,383 14. They embrace a capacious tunnel reaching out for water supply into the broad and unfathomable waters of Lake Michigan. Within a building, large in size and of fine architectural proportions, is placed massive and powerful machinery, which lifts the abundant waters of the lake to the top of a Stand Pipe 136 feet high. This elevation is relied upon for pressure by gravitation to yield a supply of water to her citizens through 209 miles of street mains, and also furnish her seventeen fire engines with water through 1070 hydrants for fire service. Can Chicago rely upon these costly and extensive arrangements for the protection of the property within her limits? Far otherwise, as the recent case, among many others, palpably and painfully demonstrates. On the 4th of September last, a fire broke out in the upper, or fifth story, of one of her splendid business blocks. Assuming each story to be fifteen feet high, and it would locate the fire seventy-five feet above the street. The alarm was given—the fire engines appeared on the ground, and commenced playing, but could not reach the fire. Meanwhile the flames spread—enveloped the whole block, and, despite all the Fire Department could do to check them, destroyed the block of buildings and their contents, to an amount estimated at nearly \$3,000,000, besides the loss of several precious

lives. The cause of this pitiable failure was investigated, and, according to the testimony of the Fire Marshal, it was principally the scanty supply of water through the hydrants, which limited the power of the engines to reach and master the fire. "The scarcity of water," he declared, "was the principal obstacle to the prevention of the fire." The *Evening Post*, in its account of the conflagration, stated that "the water supply was entirely inadequate. As to our fire apparatus, it was pitiable to see its utter inability to contend with the flames. The whole thing had an absurdly useless look. There were the great volumes of flames roaring and surging, far above the utmost reach of the poor steamers, which strove in vain to reach them." The explanation develops an inherent and most serious defect of the Chicago works, and all others on the plan of gravitation pressure, whether by Stand Pipe or Reservoir. Here was a sudden demand for an increased flow of water, obtainable only by increased pressure. The Stand Pipe did not respond to the call. Its pressure could not be increased beyond what its altitude, of 136 feet, gives it, and hence, with its costly works—its splendid array of engines, and all Lake Michigan to draw upon for a supply, Chicago suffered a loss of \$3,000,000 for lack of water to supply her engines!! This fatal defect Holly's plan remedies. Pressure is increased promptly as required in the emergencies of fire, and it is safe to say, that by this complete, effective and comprehensive method, the above terrible conflagration would have been mastered, without the intermediate agency of fire engines, by numerous powerful streams from the adjacent hydrants, drawing their full supply of water directly from the lake, and free from the obstruction of a Stand Pipe. It is not surprising, therefore, that wherever Holly Water Works are introduced, it is found by experience that fire engines are superfluous. The Holly Works *Supersede Hand and Steam Fire Engines.*

—♦♦♦—
Largely Reduced Taxation for Fire Department Expenses.

This reduction of taxes is no trifling affair. The expenses of a fully equipped and well regulated Fire Department, including a full complement of engines, makes a large portion of the expenses for which municipal corporations provide by taxation.

The total cost of the Chicago Fire Department is \$678,086 93, and of this sum the fire engines and auxiliary apparatus cost \$286,198, or nearly one-half the gross amount. The annual cost of maintaining her Fire Department was officially reported last spring at \$400,000, and it was stated by one of the Board of Public Works that at the present rate of increase they will soon reach \$1,000,000 per year!

In 1867, the expenses of the Boston Fire Department were \$147,000; of Cincinnati \$239,000, and of St. Louis \$196,000.

The expenses for fire purposes in Toledo last year are reported at \$52,238 20, with a Fire Department numbering only three engines.

The Committee of the Columbus (Ohio) Common Council, in their report recommending the introduction of the Holly Water Works into the city, state that the Fire Department expenses are rapidly increasing, and that it is a fair conclusion to estimate that the actual expenses of the Department for the year ending April, 1870, together with the unpaid indebtedness of former years, and the cost of wells and cisterns contracted for last year, will amount to thirty thousand dollars.

In continuation, the Committee remind the Council that "the Fire Department and machines now used, and the employees and appliances for the extinguishment of fires are not materially greater now than they were seven years ago, and it is safe to say that the increase of population and growth of your city in the way of buildings has been at least one-third in that time, and if what was done then in the creation of the Fire Department was necessary, has not the time arrived, if not, will it not soon be an absolute necessity, that the Department must be doubled in the number of machines and employees, and hence the annual expenses be at least doubled, with a direct outlay in buying ground, building houses, purchasing engines, hose carts, etc., and all other things necessary to complete the addition made and required to be made of not less than \$100,000? nor will it be safe to estimate when these things are done that the annual expenses of the Department can be less than from \$50,000 to \$55,000. The Holly Works will relieve the public of two-thirds of the expense of the present Fire Department, dispensing, as they do, with all the steam fire engines, and requiring nothing in the shape of the Fire Department, save hose and hose carts, fire ladders and the necessary number of employees to handle the same. They will relieve the city from the annual expense of digging cisterns and wells, and

the expense of maintaining them after being built—which, if the present system of a Fire Department is continued, must be a greater expense than ever heretofore."

Columbus, in respect to its costly and increasing Fire Department expenses, is a type of numerous other cities, and they, like her, may be relieved of full three-fourths of the burden by imitating her example in the introduction of the Holly Water Works.

The commercial prosperity of no community in this country is so dependent as this upon the perfection of sanitary measures to secure the public health and guard against epidemics; and yet how sadly in want of pure, wholesome water are the masses here who are the most exposed to danger.

Our better classes little know or can appreciate what suffering is caused every season of drought for the want of good water in abundance, within the reach of all—the poor as well as the rich. No one measure is so important for the preservation of the public health as a thorough and adequate supply of water, accessible to all classes, and at a reasonable rate. Destructive conflagrations are continually occurring; multitudes are pecuniarily ruined; and insurance companies, hitherto safe to the insured and profitable to the stockholders, are being seriously crippled. Underwriters seek a partial remedy for this alarming state of things by increased and onerous rates of insurance upon property; while the real and urgent want is increased protection against these disastrous conflagrations. Conclusive proof of the superiority of the Holly system is found in the fact that underwriters readily make large concessions in the rates of insurance within districts covered and protected by this system.

It is pertinent to state that, in Lockport, with a view of overcoming the incredulity of tax-payers, a prominent citizen, who had faith in the system, secured a large portion of signatures to the petition, asking the Common Council to authorize their construction, by the promise that he would obligate himself to pay the tax of each one for the amount of saving in insurance for the term of three years. *He has not been called upon to make up any deficiency under his stipulation.* In fact, in many cases, two years' saving has more than equaled the tax paid for construction.

A full and reliable supply of water, embracing household purposes, watering streets, sprinkling lawns, and supplying fountains and public baths, is more than ever felt to be a public necessity, because in this way is the public

health largely promoted, and the beauty and attractiveness of the city greatly augmented.

Cities are now rivaling each other in providing water abundantly for the necessities of man and beast.

We quote from an article in a late number of Scribner's Monthly Magazine: "There are many things in Philadelphia worthy of imitation, and among them one which deserves the attention of every city in the land. About two years ago, some humane citizens had their sympathies aroused in view of the suffering and inconvenience caused by want of water in the streets. Although the Schuylkill yielded its abundance to the city, public fountains, where the weary passer-by or the tired beast could quench its thirst, were unknown. Instead of going to the city authorities and waiting their slow action, Dr. Swann invited a number of ladies and gentlemen to meet at his house and take into consideration the propriety of forming a society for the erection of fountains along the streets and thoroughfares of Philadelphia. It was resolved to open at once subscription books and solicit subscribers who would agree to pay five dollars annually towards erecting fountains and keeping them in order, and when a hundred names were obtained, to organize a society. In a few days the requisite number was secured, the organization perfected, and, in process of time, a charter was obtained from the Legislature. Work was now commenced and pushed rapidly forward. According to a report made last year, the society, from private funds alone, had erected one hundred and seventeen fountains and ninety-nine troughs. The officers of the society who had charge of the enterprise received no pay. So grateful were all classes for this inestimable boon, that they have carefully protected these fountains so that not one has received injury even from thoughtless boys. These fountains are made of iron, granite or marble, and many of them are the voluntary gifts of wealthy ladies and gentlemen. Some of them show great artistic taste, and are ornamental as well as serviceable. At three of these fountains, count was kept of the number of persons who drank at them during one day, and it was found to exceed *seventeen thousand!* At six fountains, more than a thousand horses and mules drank in a single day."

Free public baths are of the highest sanitary importance in a crowded city. In Boston the free baths are all in constant use; and in the month of July of this year, there were 516,086 baths taken in the seventeen public bath-houses of that city.

Carrollton Holly Water Works

What untold blessings cannot be derived by an abundant and cheap supply of pure, wholesome water. No city in the world is more fortunately situated than this to command at her very doors an inexhaustible quantity; and by the introduction, as proposed, at an early day, of the Holly system of machinery, our citizens will begin to realize those blessings, not only in enhanced comfort, great protection and the beautifying results, but in an increased valuation of property, which has been astonishing wherever this system has been introduced.

In conclusion, the "Carrollton Holly Water Works Company," now organized and domiciliated at Carrollton (suburban to New Orleans), has been established for, and we are determined upon introducing this character of machinery and equipments for a general supply of water, which, for all uses, *shall be filtered*, and shall be furnished with all the foregoing advantages, at ten per cent. below the price now asked by the city of New Orleans, from her works for muddy water.

The Company is chartered under the general law of the State, with a charter liberal towards the Public, and has secured from Carrollton for twenty-five years the exclusive privilege of supplying water, from which point the Mississippi river will give a more wholesome water than if located elsewhere, as we escape the entire debris of the city front, and when filtered this water will be equal to the best in the world.

The citizens of the Sixth and Fourth District of the city of New Orleans, who will be in our path of supply, must heartily welcome us in this important improvement, and cannot too fully appreciate its advantages.

The books of subscription to the capital stock of the Company are now open, at its office, where its officers are ready at all times to give information relative to any and all points of interest, not thoroughly understood or embraced herein.

The public are invited to invest a portion of their surplus funds in the capital stock of the Carrollton Holly Water Works Company.

THEODORE MEEKS,
Secretary.

F. FISCHER,
President.

Water Supply and Fire Protection.

CHARTER

OF THE

"Carrollton Holly Water Works Company."

BE IT KNOWN, That on this twenty-ninth day of June, in the year of our Lord one thousand eight hundred and seventy-one, and of the independence of the United States of America the ninety-fifth, before me, William Henry Pascoe, a notary public in and for the Parish of Jefferson, State of Louisiana, duly commissioned and qualified, and in the presence of the witnesses hereinafter named and undersigned—personally came and appeared, the parties whose names are hereto subscribed, who declared that, availing themselves of the provisions of the laws of this State relative to the organization of corporations for works of public improvement and utility, they have covenanted and agreed, and do by these presents covenant and agree, and bind themselves, as well as such other persons as may hereafter become associated with them, to form and constitute a corporation and body politic in law, for the purposes and under the stipulations and articles following, to wit:

ARTICLE I. The name and title of this corporation shall be the "Carrollton Holly Water Works Company," and the place chosen for its domicile is the City of Carrollton, in the State of Louisiana, and it shall have a corporate seal with the name and domicile of the Company thereon.

ART. II. The objects and purposes of this Company are declared to be as follows:

To furnish the City of Carrollton and the citizens thereof with filtered water by the construction, erection and introduction of the new and improved system of water works for supplying cities and towns with water, under the plans and inventions of Birdsell Holly, and which have been patented from time to time by the United States Government as a COMPLETE SYSTEM, asset forth in the specifications accompanying the Letters Patent and declared to be "NOT ONLY TO SUPPLY CITIES WITH WATER FOR ORDINARY PURPOSES AT ANY DESIRED ELEVATION, WITHOUT THE USE OF A RESERVOIR OR STAND PIPE, OR ANY OTHER CONTRIVANCE FOR CALLING INTO REQUISITION THE PRINCIPLE OF HYDROSTATIC EQUILIBRIUM, BUT ALSO TO FURNISH MEANS OF EXTINGUISHING FIRES AT SEVERAL POINTS AT THE SAME TIME, IF NECESSARY," and to furnish water thereby during the term of this Charter; and this Company shall have the power to contract for and purchase all Machinery, Filterers, Pipes, Valves, Hydrants and building material, erect the same, acquire rights of way and lands by purchase or otherwise, necessary for the location, construction and establishing said Water Works, and for successfully conducting the same, and for this purpose shall have power to hold, receive, purchase and convey under the corporate name, property, both real and personal, of every description, including rights and credits.

ART. III. All citations and other judicial process shall be served upon the President in person, or at the domicile of said Company.

ART. IV. The Capital Stock of this Company shall be *Five Hundred Thousand Dollars*, represented by five thousand shares of one hundred dollars each. After the Company is organized the President shall cause books for subscription to the capital stock of the Company to be opened and the same to be paid for in such installments as shall be determined by the Board of Directors, but not more than ten per centum of said subscription shall be called for at any one time, and not oftener than once in thirty days, and all subscribers to the stock of said

Carrollton Holly Water Works

Company who shall fail or refuse to pay the installments thereon when due, shall forfeit their stock, and the same shall be re-issued and sold as stock newly subscribed for.

ART. V. Modifications, additions or changes in these articles may be made by the stockholders at a general meeting convened specially for that purpose, with the assent of a majority of all of the capital stock of the corporation.

ART. VI. This corporation shall go into operation from and after the thirty-first day of July, 1871, and unless sooner dissolved by some definitive act of the stockholders, this corporation shall exist and have corporate succession for twenty-five years from date of the recording of this act, and for such longer time as may be allowed by general or special laws.

ART. VII. All corporate powers are hereby vested in a Board of seven Directors, to be elected as herein provided, except such as are provided for in article V of this charter.

ART. VIII. The following named corporators or their transferees, or any seven of them, shall constitute the first Board of Directors, to serve until their successors are elected and qualified under the provisions of this charter, in whom and their successors shall be vested the corporate powers of this corporation, to wit: H. A. Miller, C. W. Newton, N. Commandeur, Amos S. Collins, Wm. A. Bates, H. L. Burns, A. R. Whitney, B. Hector, Charles Owen, Dan. Hickok, W. M. Hart, F. Fischer.

ART. IX.—Section 1. The first meeting of the stockholders of this Company for the election of seven directors shall be held on the first Monday of June, 1872, and annually thereafter, at such place as may be fixed by the Board of Directors herein before named. All subsequent annual meetings of stockholders shall be held at such time and place as shall be named in the by-laws to be adopted by said Company. No person shall be eligible as a director who is not the owner of at least twenty-five shares of stock. The stockholders at all elections may vote either in person or by proxy, and shall be entitled to one vote upon each of their respective shares, not in excess of five hundred. No number of votes shall constitute an election unless the same constitute a majority of the whole stock of said corporation.

Sec. 2. A failure to elect directors at a regular meeting of the stockholders shall not dissolve this Company; but the directors then in office shall continue to exercise their functions until a new Board be elected.

Sec. 3. Five members of said Board of Directors shall form a quorum to do business, and the Board of Directors shall have power to make and adopt all necessary rules and by-laws for the government of the Company, provided the same do not conflict with the true interest and meaning of this act of incorporation, and the laws of this State. The Board of Directors may declare dividends from time to time, as they may deem advisable.

Sec. 4. If any director shall cease to be a stockholder during his term of office, his place as director shall be declared vacated, and in that event, or in case of the death, permanent absence or resignation of any director, the Board shall have the authority to fill the vacancy occasioned thereby.

ART. X. The officers of the Board shall be a President, Vice President, Secretary and Treasurer. The President and Vice President shall be selected from their own number. Said officers shall be elected at the first meeting of the Board after their election for directors, and to serve for the term of one year and until their successors are elected and qualified.

The Company shall also have a General Superintendent or Engineer, who shall be elected at such time as the Board of Directors may deem expedient.

ART. XI. Under no circumstances shall any stockholder be liable for the debts or losses of the Company beyond the amount due on his subscription, nor shall any mere informality in the organization of said Company render this charter null and void.

ART. XII. No assessment shall be made on the subscriptions to the capital stock of this Company until the sum of one hundred thousand dollars has been subscribed, when a payment of ten per cent. shall be due and payable.

Three hundred shares of the capital stock of this Company shall be set apart and the proceeds appropriated to expenses of organization.

Water Supply and Fire Protection.

ART. XIII. The Board of Directors shall transact the business of said Company by and through a majority of their members; they shall hold at such times as they shall fix upon, regular meetings for the transaction of the business of the Company, and shall convene specially when thereto required by their President, or any three members of the Board, after twenty-four hours' notice, to be personally given. They shall have the power to make by-laws, rules and regulations, or to alter, amend or repeal the same whenever they shall deem it expedient for the interests of the Company. They may provide a seal, with such device and motto as may be agreed on by them. Vacancies may be declared on account of death or resignation, and such vacancies, for the period intervening between their occurrence and the next general election, shall be filled by election by the Board. The Board shall have full power, and are hereby authorized to buy and to sell, to mortgage and to pledge such real or personal property as may be necessary for the uses and purposes of the Company, and to borrow money by an issue of the bonds of the Company or otherwise, to an amount not exceeding the actual capital stock of the Company, and, generally, the said Board shall be empowered to carry into execution all the objects and purposes of this charter, and to that end shall nominate and appoint all the executive and other officers of said company, and shall have and exercise such other and further powers as may be conferred upon them at any regular or special meeting of the stockholders, not inconsistent with this charter or the general laws of this State.

The Board shall provide in the by-laws the manner of registry and transfer of stock.

ART. XIV. The liquidation of the affairs of this Company shall be made by three commissioners, having the same qualifications as directors, elected by the stockholders, this meeting to be convened for that purpose, after thirty days' public notice in one or more of the daily newspapers of Carrollton and New Orleans, such liquidation to be regulated by existing laws.

Thus done and passed, in my office, at the City of Carrollton, in the presence of Henry W. Boss and William Hoey, competent witnesses, who hereto subscribe their names with the parties, and me, the said notary, on the day and date aforesaid.

Original Signed,

H. A. MILLER,	C. W. NEWTON,
N. COMMANDEUR,	B. HECTOR,
CHARLES OWEN,	AMOS S. COLLINS,
DAN. HICKOK,	WM. A. BATES,
WM. M. HART,	H. L. BURNS,
F. FISCHER,	A. R. WHITNEY.

HENRY W. BOSS,
WILLIAM HOEY.

A true copy of the original, June 29, 1871.
Wm. H. Pascoe, Notary Public.

WM. H. PASCOE, Notary Public.

Carrollton Holly Water Works

AN ORDINANCE

Granting to the "Carrollton Holly Water Works Company" certain rights to construct Water Works, and to supply the city and citizens of Carrollton with water, under the system known as the Holly Water Works System.

BE IT ORDAINED, by the Mayor and Council of the City of Carrollton, that the "Carrollton Holly Water Works Company" and their successors be, and they are hereby granted, the exclusive privilege for the period of (25) twenty-five years, for supplying water to the City and citizens of Carrollton, at the rate of at least ten per cent. below the present tariff of the City Water Works, now supplying the citizens of New Orleans with water.

Provided, No discrimination be made between the price of water for public and private use; and to erect buildings, machinery and filterers, and to enter and lay pipes on any and all streets and by-ways of said City of Carrollton, and to cross at right angles (except when and where mechanical difficulties may exist) with the pipes laid on the streets, any and all banquettes, for the purpose of conveying water from their main pipes to any building or buildings, public or private, and to place not less than one hydrant and the necessary valves therefor, on each square fronting on one side of the line of main pipes, and to supply water for domestic and ornamental uses, sanitary purposes, and fire protection.

The above ordinance to be null and void, *provided*, the said Company known as the "Carrollton Holly Water Works Company" fail to purchase or select a site within the present limits of the City of Carrollton, and to erect the necessary buildings and machinery, to be in course of construction within twelve months from and after the date of the passage of this ordinance.

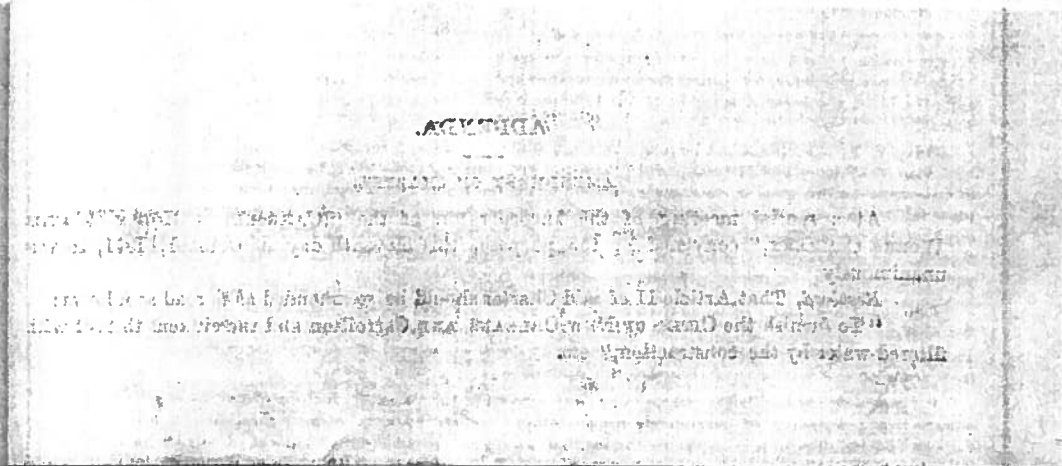
And provided further, That if the said Company, known as the "Carrollton Holly Water Works Company," should change its name, or merge itself into any other Company by an act of incorporation; transfer, sell, or dispose of its rights or privileges, for the purpose of establishing any other system of supplying water to the City and citizens of Carrollton, other than the system known as the "Holly Water Works System," then, and in that event, this ordinance to be null and void.

And provided, The said Company will lay a line of main pipes from Lowerline to Upperline streets through St. Charles and its continuation, Levee street; also, from St. Charles street through Carrollton avenue to Fifth street, and will furnish and place one hydrant for each square fronting on one side of said line of pipes, and said hydrant shall be in place and condition to receive water, when the works shall be ready to supply the same; also, to lay pipes and hydrants on Dublin street for the use of the new Market now being constructed.

And the said pipes and appurtenances thereto belonging, together with the buildings, machinery, filterers, lands, etc., to be purchased and built by the said Company, and the said City of Carrollton to be in no manner held responsible for any part of the cost or expense thereof.

And it is further provided, That said Company shall, from time to time, extend their pipes throughout the city, as fast as the public demand shall justify the same, and all water so furnished shall be filtered water.

This ordinance shall take effect from and after the date of its passage.



HISTORIC NEW ORLEANS COLLECTION

533 ROYAL ST.

NEW ORLEANS, LA. 70130

BOARD OF DIRECTORS.

F. Fischer, *A. G. Brice,*
N. Commandeur, *E. E. Chubbuck,*
C. W. Newton, *H. L. Burns,*
Henry L. Jones.

OFFICERS.

F. Fischer, - - - *President.*
N. Commandeur, - - *Vice Pres't.*
C. W. Newton, - - *Treasurer.*
Theodore Meeks, - *Secretary.*