

The New Chicago Water-works, for Supplying Pure Water from Lake Michigan.



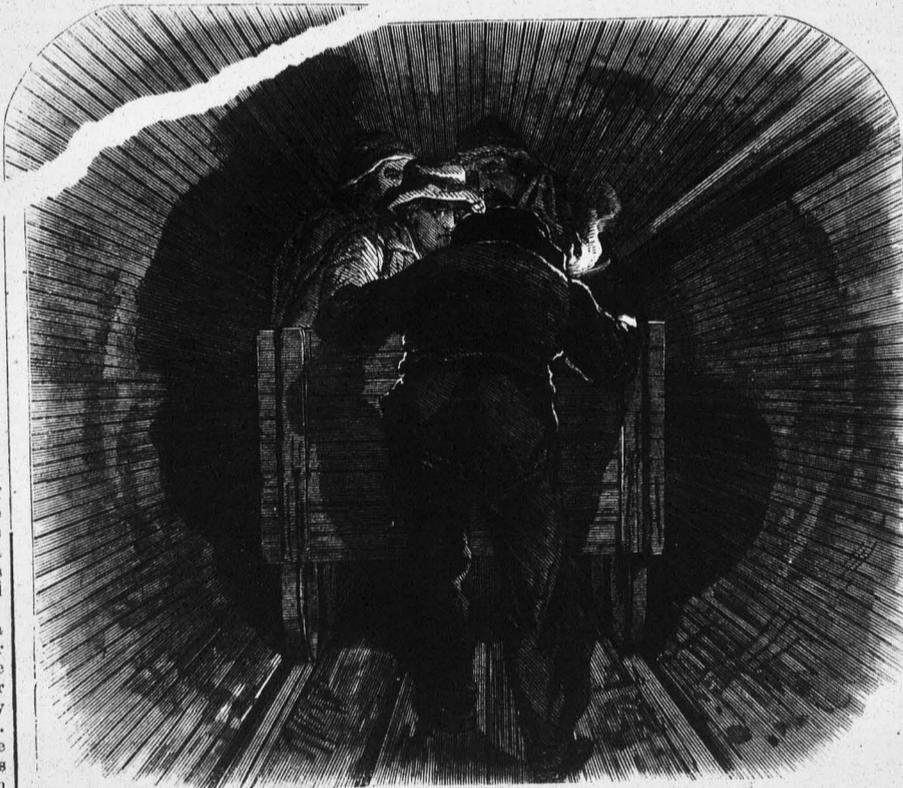
THE CRIB AT THE LAKE END OF THE TUNNEL, NOW BUILDING FOR THE PURPOSE OF SUPPLYING CHICAGO WITH PURE WATER FROM LAKE MICHIGAN.—FROM A SKETCH BY OUR SPECIAL ARTIST, MR. F. H. SCHELL.

THE NEW CHICAGO WATER-WORKS.

No less than seven of our illustrations, this week, are devoted to one of those great utilitarian enterprises with which the Americans seem just now disposed to shame the aqueduct-builders of old Rome as well as the audacity of Napoleon in building a road over the Simplon Pass of the Alps. This enterprise is the New Water-Works of Chicago—the Queen City of the West, and some time since installed in place of the great grain-market of the world, even pre-empted by Trieste and Genoa.

Chicago, as most of our readers well know, takes water (as one of our old volunteer firemen would say) from Lake Michigan, on the shore of which it stands. But Lake Michigan is like the human heart as characterized in Scripture—it "casts up mire and dirt" so often and so freely, that at and around the shores the quality of the water is not very far removed from that of the New York and Boston docks, with the single exception of the salt in the two latter. As a consequence, the old Water-Works of Chicago, which drew their supply from the edge of the lake, were found to be supplying the good people of that city with a style of liquid for their tea-kettles and wash-tubs only one remove from that which Boston enjoyed when the eels began to come out of the water-faucets, and Philadelphia at the time when the dozen or two of infanticized babies were slowly corrupting at the bottom of the Schuylkill reservoir.

But Chicago, lively and wide-awake, as becomes a Western City—Chicago did not sit down calmly under this infliction. It argued that though the water at the edge of the lake might be impure, that of some other portion, miles away from the shore and continually broken up by wind and wave, must be pure and healthy. From this sensible thought arose the enterprise of the New Water-Works—certainly one of the most audacious of modern enterprises, and eliciting from the London Times, one of whose editors has been on the spot, the praise of being "the greatest feat of engineering of



VISITORS TO THE TUNNEL.

Arrived at the "Crib," and his gorgeous array changed to an old suit befitting the damp and slime into which he was going, down the shaft he went with two others, in a box with wheels attached, thirty-six feet to the bottom of the lake, and then thirty-six feet more to the bottom of the tunnel—seventy odd feet altogether below the surface—into such a pandemonium of damp and darkness, except where the latter was relieved by a struggling lamp, as he had only read of in the old mythology. Arrived at the bottom, the wheel-bottomed box proved to be a car, and away they went along the track at the bottom of the tunnel, propelled (literally, for the fellow pushed, instead of pulling) by one-irishman power, the human engine puffing out his complaints and his opinion that, "Be dhe hair av dhe big bull-frog, dhe man dhat first pushed a bix box along in dhat way, niver did it himself, at all at all, but got some odher lazy beggar to do it—rest to his sowl, if he didn't!" (In parenthesis it may be said that the propelling power at the shore end is another description of donkey—not a donkey-engine, but a mule.)

Our Special saw many interesting things in and about the tunnel, of which we can only speak very briefly, leaving the rest to his pencil. The excavations are being made from both ends, though the meeting will take place some distance nearer to the lake than the shore end. Much difficulty has been found in the excavation, in the necessity of blasting through rocks and in the occasional dripping through of water, suggesting a possible catastrophe that, however, has not arrived. The whole work will be most substantial, the clay being blue, close, and hardening very quickly, and the inner or brick tunnel being about five feet in diameter, and laid with the utmost strength, in cement, for the preparation of which and for storing materials there is a gallery on either side of the main excavation.

Of additional particulars we have only space to give a few, though important. To carry off the foul air, from which there were explosions at first, a tin tube (shown in one of the illustrations) runs along the tunnel, a new length being added as necessary. The work is principally done by practical miners, with pick, shovel and blasting apparatus; and the ordinary mining-lamp is used to furnish light. Sometimes three men work on what is called the "face" of the tunnel, at once. Our

modern times." Nothing less was contemplated and nothing less is now being secured, than taking water from two miles out in the lake and conveying it in an immense tunnel to the shore for distribution throughout the city! It is of the arrangements for this work and of the aspects now or lately presented throughout it, that our Special has supplied us with these graphic illustrations.

It need scarcely be said that in commissioning a Special for this particular examination, due reference was had to selecting that one of the corps who knew something of water as a beverage. Good general health was also looked to, as the physical strain of one portion of the research involved no slight peril.

Arrived, then, at Chicago, and the grain-works duly inspected, the Special set about the more urgent portions of his duty. For three days he diligently drank the water raised by the Old Water-Works, coming out, at the end of that time, with a supposed average coating of Michigan mud in the internal economy, variously estimated at from half an inch to an inch in thickness. Then he accepted the courtesy of the contractors for the new works (to all of whom, and especially Mr. Gowan, he expresses many obligations for courtesies), and proceeded to compare that water with the production of the middle of the lake. A small lake steam-tug was the means of reaching the "Crib" or covering over the lake-end of the Tunnel; and while on that voyage of two miles the Special, violently assaulted by the waves of Michigan, not only found perfect freedom from the remaining deposit of mud, but imagined that by some mistake he had been transported over to the British Channel in January! The "Crib" is shown in one of our illustrations, with so much of the stern of the tug as our Special remembers to have seen sticking out at any one time.



WORKMAN REMOVING THE EARTH FROM THE FACE OF THE TUNNEL.



C. E. THOMAS, EUREKA B. B. CLU, N. Y.

The New Chicago Water-works for Supplying Pure Water from Lake Michigan.

Special was favored by seeing only one there, his sketch being the better thereof.

Besides the "Crib," our illustrations show the shore-shaft (very like an ordinary mining-shaft); the descent into the tunnel by the shaft; the railway ride; working the face of the tunnel; laying the brick-work, and a group of visitors inspecting the operations. Of our Special's report, the only remaining feature of interest is his comparison of the water at mid-lake with the old water at Chicago. He pronounces the new (with a very slight tempering) an excellent beverage, and he joins with all the world in believing that Chicago will very soon have plenty of excellent water, as well as an engineering display worth time and outlay in visiting.

The New Water-Works are expected to be completed by the close of October or early in November, and the formal opening and introduction, in emulation of that of the Croton celebration at New York, will take place very soon thereafter. Of that event—one exciting much interest in advance throughout the West—our Special will take due note, and we may possibly find in it additional matter of illustration.

OUR BASE-BALL ILLUSTRATIONS.

THE subject of our sketch of this week is Mr. Charles G. Thomas, the noted short stop of the Eureka Club, of Newark. The Eureka Club was organized in 1859, and almost from its rise assumed a leading position as a strong playing club, being also a club of the highest social standing in New Jersey. From being one of the original organizers of the club, and among its most energetic officers, Mr. Thomas became the "crack player" in his position outside of Brooklyn, occupying an equal position as a short stop to that of such noted players as Pearce, of the Atlantic then the short stop of the country, and Grum, of the Eckfords. For many years Mr. Thomas was the captain of the Eureka nine, and under his command many a well-fought battle terminated in victory. Of late years business—Mr. Thomas is paying-teller of one of the leading city banks—has somewhat interfered with his opportunities for practice, and at one time last year he had concluded to retire on his laurels, but we are glad to see that he has again resumed his old position in the nine, and in the last match we saw him play in, he attended to his duties with his wonted skill and effect,



WORKMEN CONSTRUCTING THE UPPER ARCH OF THE TUNNEL.

that Queen Victoria, then looking for a husband and a little circumscribed in her choice, had cast an eye toward the young American Prince of Kinderhook. In 1838 or 1839 he married Miss Vanderpool, of Albany, who died early, leaving one daughter, still living, and the companion of her father's last voyage. Though mingling much in politics, Mr. Van Buren has never held any office of prominence, except that of Attorney-General of the State of New York, to which he was elected in 1845. He seems to have been—to speak plainly, however kindly, of a dead man—attached by turns to all the different wings of the Democracy—

"Everything by turns, and nothing long;"

and in that vacillation is unquestionably to be found the reason why one of the ablest lawyers of the day, and one of the best public speakers of any day—a most genial companion, and "everybody's friend," has died without achieving much more distinguished and enduring honor than can now be attached to his name. If he never became one of the first citizens of the republic, however, Mr. Van Buren held a constituency of warm friends and admirers of whom any man, living or dead, might have been proud; and in his death the bar of New York, as well as the political world of America, feels, and will long feel, a loss of no secondary character.

THE question "Has the moon an atmosphere?" is practically settled in the negative. The absence of an atmosphere involves the absence of those conditions on which, so far as we can conceive, the possibility of life, in any sense of the word, must rest. Without the presence of air and of its correlative, water, our minds can picture nothing but the solitude and the silence of death. That such, in fact, is the present condition of the moon is the all but unanimous verdict of scientific observers. No movable spots, suggestive of clouds and vapors, are discernible on the moon's face, such as the belts of Jupiter or the mobile spots of Mars. No traces of the usual phenomena of atmospheric refraction are seen at the point of occultation of stars by the moon's disk, either on the dark or the luminous limb. The moment of immersion, previously determined by calculation, is exactly that at which the immersion is observed to take place, or at least agrees with it to a degree of exactitude, allowing for the ordinary limits of error, which would involve a density of atmosphere only one-thousandth part of the density of our own. No such vacuum as this can, in fact, be produced even by our most powerful air-pumps.



THE TURN TABLE IN THE TUNNEL.

His coolness in critical emergencies and his judgment in availing himself of every point of play offered is one of his most marked characteristics. A sure catch, a rapid and accurate thrower, and his activity in "back-

ing up" the several positions of the in-field is such as to make it a very risky operation to attempt to run a base when the ball is within decent reach of him. As a batsman, too, his average each year shows him to be

in the front rank in handling the ash. Socially, "Charley Thomas," as his friends call him, is the favorite ball-player of Newark. Ever gentlemanly in word and action, on or off the field Charles presents to his brethren an example of a truly gentlemanly ball-player, which it would be well for all to imitate.

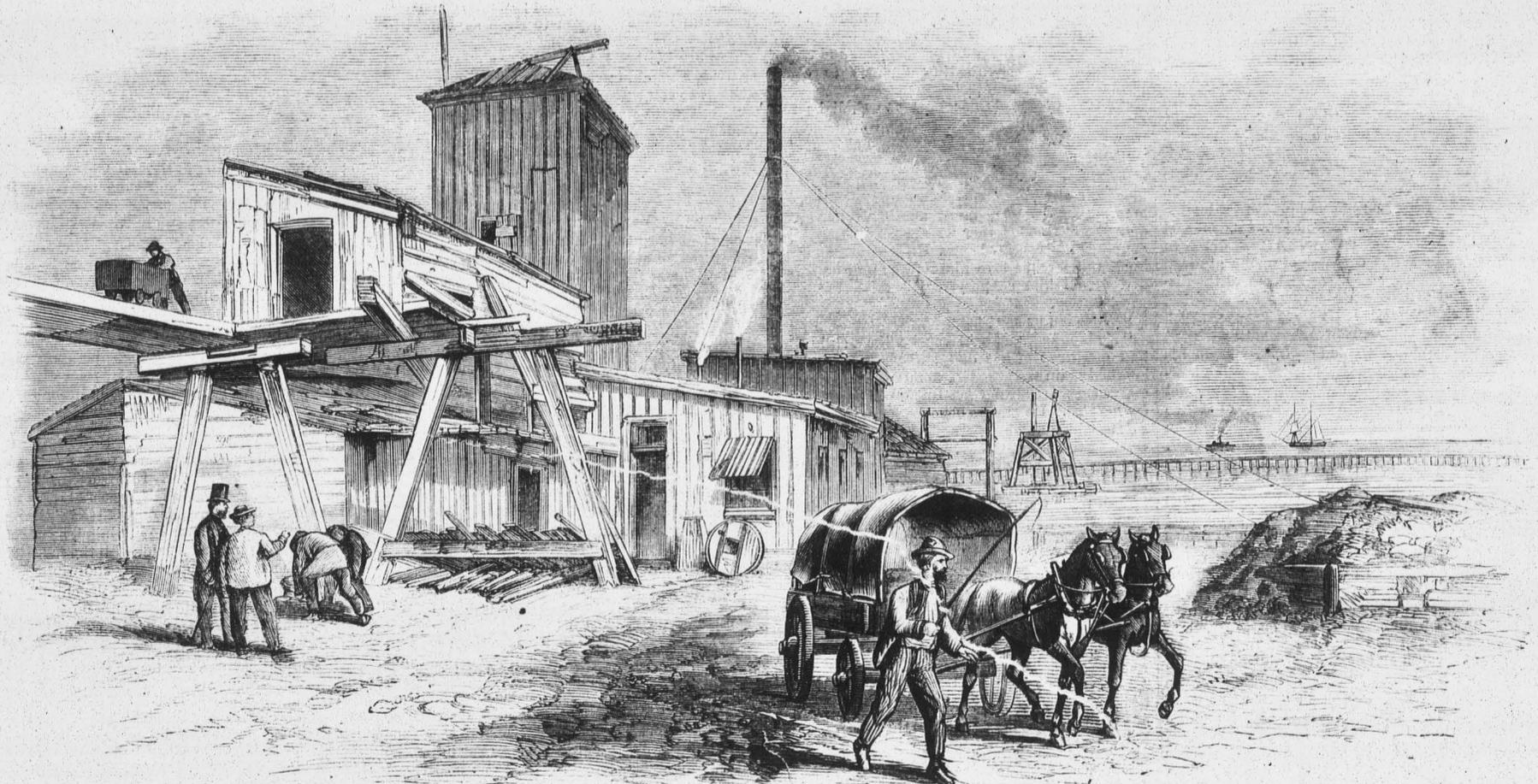
THE LATE HON. JOHN VAN BUREN.

ON our front page will be found a graphic portrait of another of the just-departed "men of the time," John Van Buren, Esq., son of the late Ex-President Martin Van Buren, and a well-known and popular member of the New York bar, as well as a public speaker and politician of more eminence than success. Mr. Van Buren's death comes a little unexpectedly, as it had been hoped that his summer in Scotland would restore his broken health, at least to some extent; and it seems to have done so, as he left Liverpool for home on the Cunarder Scotia, on the 6th of October, with no threatening symptoms. He grew ill again, however, very soon after leaving Queenstown on the 7th, and kept his berth most of the time during the passage, except a single day, when he disobeyed the orders of his physician, and spent a day on deck, after which he failed more rapidly, and finally died on the 15th, just as the Scotia was sighting land. His disease appears to have been that form of gravel known as inflammation of the kidneys—a disease now so fatally prevalent in America, and to which another well-known lawyer, the late James Humphrey, M. C., of Brooklyn, only a few months ago succumbed after a trip to Europe in the hope of relief.

John Van Buren was born at or near Hudson, in 1810, graduated at Yale College in 1830, and entered on the practice of the law at Albany. During the Presidency of his father, in 1837 or 1838, he visited Europe, and figured with so much pronounced distinction at the Court of St. James as to attach to him the name of "Prince John" (which ever after clung to him), and to create a ridiculous but perhaps not unnatural rumour



DESCENDING THE SHAFT INTO THE TUNNEL.



THE SHAFT OF THE GREAT TUNNEL UNDER LAKE MICHIGAN, FOR SUPPLYING CHICAGO WITH PURE WATER, AT THE FOOT OF CHICAGO AVENUE CIRCUIT