WAITING FOR THE VERDICT.

The ultimate day has arrived, when, according to the original Daily bill, all wires, wherever found overhead in cities of 500,000 inhabitants or upwards in the state of New York, were to be removed and placed underground by the authority of the state. At the time the interest awakened in this discussion was greatest, we ventured the prediction that on the first day of November, 1885, there would be more wires overhead than existed at the time of writing. Such is notoriously the case, yet the date mentioned marks a certain amount of progress. Official investigation on the part of the commissioners appointed to enforce the law, has in every particular confirmed the assertions previously made by electrical experts, that there were serions difficulties to be encountered and that strict compliance with the original act would at a blow deprive the business and resident public of the facilities for electrical communication which they have long enjoyed.

The abitrary provisions of the bill which aroused so great an opposition from the various companies interested, as well as from the electrical press, was materially modified by the subsequent act of June 15th, 1885, by which the commissioners are allowed to exercise their discertion in compelling the adoption of subterranean routes, and the solitary subscriber, who has no telephonic neighbor within 18 blocks, may not be called upon to bear the expense of either constructing or paying rental for a mile or more of conduit constructed for his special benefit.

The popular idea of placing wires underground according to the teachings of the daily press, is simply to take them off the poles, tie them in convenient bundles and bury them at the bottom of a ditch. A similar view of the problem was taken by at least two of the inventors who submitted underground plans to the commission. "This is by no means an enlightened view of the situation, as progress is desired above all things, and the electrical condition of aerial wires in New York city to-day is by no means as satisfactory as might be inferred from the opposition of the various companies toward the enforcement of the underground law. They act simply upon the familiar maxium that it is "better to bear the ills we have. than fly to others we know not of." The first subterranean work undertaken some ten years ago by the Western Union company was done voluntarily, in the confident belief that a system of that character would be exempt from the well-known evils which attend aerial electrical communication in densely populated districts. Advantage was taken of European experience in the same line, and while the results have by no means been entirely satisfactory, it is far from the truth to assert, as has been more than once done, that these experiments were made merely to prove that wires could not be successfully operated underground. It will no doubt be admitted that the recent sessions of the New York commission on electrical subways afforded an opportunity for every plan to be presented, and the substantial reward awaiting the successful competitor is no doubt sufficient to bring out the best existing ideas on the subject, yet not a single system was presented which did not have its defects. Of course very many of them were wholly impracticable, either from a mechanical, electrical or financial standpoint, while others might perhaps serve the purpose more or less well but had not received practical endorsement. A large proportion of the plans proposed did not in fact come under the provisions of the law, and might without impropriety have been ruled out altogether.

A gentleman who has given this subject very thorough study for several years, informed the commission that a conduit was merely a hole through the ground, while the *New York Times*, which has perhaps been the foremost advocate of underground schemes, declared editorially a few days since that "nothing is more unreliable than a hole in the ground."

None can be more thoroughly aware of the defects and weaknesses of existing electrical systems than those who have had the greatest experience with them. Knowing the difficulties of maintaining the electric service at a high point of efficiency under its present conditions, they do not feel disposed to admit that any plan is perfect which they have not personally tested, although it may prove better adopted to their purpose than they suppose. An experienced spirituai expert once ventured the opinion that no whiskey was absolutely bad, altheough undoubtedly some brands of whiskey were not so good as others. By the same line of reasoning it may well be argued that no subterranean system is good, although some plans are worse than others.

October 15th, 1885 was the last day for the filing of plans with the Board, and those which were received before the adjournment are to to be examined in executive session and finally passed upon.

Such being the condition of affairs; the evidence all in and under consideration, advice and criticism many properly be reserved until a verdict has been given. From the very nature of the case there will be disappointment and unjust accusations, but if the commissioners give their decision in accordance with what has practically proved the best, so far as they can ascertain, they will have at least performed their duty, and may well content themselves by the reflection, that despairing of any light from the conflicting theories of the various inventors and promoters, they fell back upon their own judgment, and in accordance with the law and the evidence, decided how in their opinion, a hole in the ground could be most economically made and effectually maintained, without detriment to the existing electrical service, while at the same time giving due consideration to future growth.—*The Electrician.*

THE FLOOD ROCK EXPLOSION.

Professor W. A. Rogers, of the Harvard Observatory, has reported to the American Academy of Arts and Sciences, in Boston, the results of his observations on the transmission of shock from the Flood Rock explosion.

The air line distance between the observatory in Cambridge and Flood Rock is 190 miles, and the observations were timed as follows: Disturbance first seen, 11:17:14; instant of maximum disturbance 11:18:03; disturbance ceased, 11:20. The figures are all in seventy-fifth meridian or "Eastern" time. The method used to develop the existence of vibration was the placing of a saucer of mercury on the solid cellar floor. In this mercury was a speak or flaw. Upon this point was brought to bear a microscope of 750 magnifying power, the spider line being in exact coincidence with the flaw.

The first vibration preceived was about a thousandth of an inch, and recurred at intervals for nearly two minutes, the greatest swaying of the mercury being over a space of on five-hundredth of an inch.

In this connection it is interesting to note that General Abbot reported that the shock from 50,000 pounds of dynamite exploded in 1876 at Hallet's Point, was transmitted through the drift formation of Long Island, at the rate of 5,300 feet per second for 13½ miles. Assuming the figures of the Cambridge report as correct, and that the mine at Flood Rock was exploded at 11:14, seventy-fifth meridian time, it took the wave just 194 seconds to travel 190 miles, or at the rate of 5,120 feet per second. This is very near the rate of transmission observed by General Abbot, when the greatly increased distance is taken into account.—*Engineering News.*

THE MANCHESTER SHIP CANAL AND THE TEHUANTEPEC SHIP RAILWAY.

The Manchester Ship Canal Company, recently chartered by the English Parliament, has issued its prospectus, inviting subscriptions to its capital stock fixed at £8,000,000, in shares of £10 each. The matter has been before Parliament for several years and it is stated that the expense of its promotion has not been less than £500,000. This preliminary expense seems very large to one unfamiliar with the fact that all public works in England involving a franchise have to be fully developed and argued before a parliamentary commitee by experts, and in the face of great opposition, as in this case from Liverpool, the expenses of *promoting* alone were very heavy. To those also who have been in the habit of looking upon our annual river and harbor bill of less than one-third the cost of this scheme, for all the waterways and harbors of the country, £8,000,000 for a single channel of a few miles will seem like a very large sum of money although it excites no comment when capitalized in one hundred miles of an American railway.

The canal is to have a bottom width of 120 feet and a minimum depth of 26 feet, or its prism will be cosiderably greater than either the Suez or Amsterdam canals or the *proposed* Panama canal. It is to extend from Eastham on the estuary of the Mersey, above Liverpool, to Manchester, a distance of 35 miles and will include a dockage area of 85½ acres with four miles of quays at Manchester, Salford and Warrington. The elevation of 60½ feet from ordinary tide to the docks at Manchester will be overcome by four sets of locks of three each, the larger 550 × 60 feet, the second, 300 × 40 feet, and the small-