

A REPORT

PAVING LAID IN CRESTON, IOWA, DURING THE SEASON OF 1910
A Discussion of Patents on Bituminous Concrete Pavements, by Theo. S. DeLay, B. Sc., E. M., City Engineer, Creston; Surveyor, Union County; Member Iowa Engineering Society; Member of the American Society of Municipal Improvements.

Author's Note.

The paving laid in Creston, Iowa, during the season of 1910 has attracted considerable interest from engineers and others who wish to use bituminous concrete in paving surfaces and I have prepared this report for use in answering the numerous inquiries, trusting that it may be of use to engineers and others engaged in public improvements.

T. S. D.

Creston, Iowa, 1911.

A Report of the Paving Laid in Creston, Iowa, in 1910, and a Discussion of Patents on Bituminous Concrete Pavements

The wide-spread tendency of modern business to eliminate competition finds its manifestation in one way or another in nearly every branch of human effort and, notwithstanding the fact that the word and spirit of the law in many states require that the letting of municipal improvements for which the property owners are to pay shall be by competitive bidding, the monopolistic tendency has made itself manifest in many, if not all, branches of municipal improvements.

The line along which many of the would-be monopolists in the business of municipal improvement work is the patenting of an alleged invention covering some general method of construction and then, by means of threats, injunction proceedings, and other perversions of the process of law, to bluff municipalities into permitting a letting to only the bluffers or persons whom they favor.

Now, there is an old saying that "Necessity is the mother of invention," and also that "Necessity knows no law;" and, in considering the question of the legitimacy of some of the "inventions" which these would-be monopolists of municipal construction endeavor to use, one is led to the suspicion that the mother of said inventions was a very lawless necessity indeed. What appears to be a very typical example of these conditions is the situation which has for some recent years existed in the business of constructing bituminous concrete pavement surfaces.

During the autumn of 1909 I was required, by the City Council of Creston, Iowa, to prepare specifications for about 25,000 yards of pavement with bituminous concrete surface (or Bituminous Macadam by the mixing process.)

About the first thing confronted was the fact that several letters patent, taken on a principle as old as the use of concrete, were supposed to cover the whole field of bituminous concrete used in paving surfaces and the owners of these patents were using every machination known to legal technique to compel any person or corporation building bituminous concrete pavements, to pay royalty directly or indirectly to them. An application to the owners of the patent brought an offer to furnish the bituminous concrete and royalty to any contractor undertaking the job at a price about \$1.40 per square yard of street paved. This price is about 50 per cent above the actual cost of bituminous concrete delivered.

About 1895 I was for a short time in the employ of a contractor who was at that time laying pavement surface of bituminous concrete, and I remember that the "talking point" at that time in connection with the pavement was that the use of various sizes of mineral aggregate in accordance with the ancient concrete principle would and did give the mass inherent stability, independent of the cementing medium.

Knowing, therefore, of my own personal knowledge, that this ancient principle of concretes had been practically applied to bituminous concretes for paving surfaces at a time antedating the above named patents, I resolved to undertake the task of defying this "Jabberwock" of the paving industry, and set about acquiring information of what had been recently done and was being done along the

line indicated.

I found that, after overcoming a weak defense, the owners of the patent had scored a victory in the U. S. Circuit Court of Appeals against the City of Owosso, Michigan, and the Barber Asphalt Paving Company, and that the question was again up in cases against the South Park Board of the City of Chicago, the City of Montgomery, Alabama, and the City of Topeka, Kan.

None of these later cases were at that time settled, and I had reason to think that in one or more of them a strong fight would be made to defeat the monopoly of the patent. I, therefore, prepared specifications as loose as would comply with the requirements of the Statutes and left as much as possible to be determined by the engineer, intending to avail myself of any advantages which might result from the adjudication of the cases then on trial.

Scarcely were the specifications in circulation before notices of infringement and threats of injunction began to arrive from the owners of the patents, addressed to myself and the city administration, but the administration had fortunately sufficient backbone and confidence in my advice to ignore these preliminary growlings and go on to a letting.

The letting was largely attended by contractors, and the result was a bid of \$1.68 per square yard for a pavement consisting of 2 1/2 inches of asphaltic concrete laid on a 4 inch Portland concrete base. Incidentally it may be remarked that the bid of the local representative of the owners of the patents was \$2.15 per square yard, showing a difference of 47 cents per square yard, or \$11,750.00 which the patent owners proposed that the property owners abutting this job should pay for the supposed monopoly.

The next step of the owners of the alleged patent was taken along the maze-like paths of high finance, and the successful bidder found that every financial institution to which he made application had been notified of trouble ahead and was unwilling to furnish the necessary financial backing. But the fighting blood of the "Blue Grass Belt" finally prevailed over the timidity of accumulated capital, and the necessary financing was undertaken by a local bank.

On the advice of counsel, the city administration required that the party furnishing the asphaltic cement should join with the contractor in defending the city against claims for patent royalty, etc., and this became an impediment in the line of progress as the concern which had undertaken the supplying of asphalt flatly demurred to the provision. While we were mulling over this difficulty, I fortunately had learned the whereabouts of the contractor with whom I had gained my early information in regard to bituminous concrete pavements, who had now taken up the business of producing asphaltic cement, and, by correspondence, I had learned that he was even better satisfied than was I of the invalidity of the above-named patents, and, through his long acquaintance with the paving business, was prepared and supplied with the necessary definite data to give battle on the issue and prove the common, continuous and practical use of bituminous concrete paving surfaces for a long time immediately preceding the issuance of the patents above mentioned.

At my suggestion, the contractor and I went to the place of business of this producer of asphaltic cement, where, after a complete canvass of the situation, arrangements were made for supplying the material in accordance with the requirements of the city administration.

As time progressed, I was carefully watching the developments in the Chicago, Montgomery, and Topeka cases. I found that the Chicago case had been mysteriously dropped. I was later informed that an arrangement between the patent owners, the contracting company, and the South Park Board, entirely independent of the merits of the case, was responsible for the cessation of hostilities. In the Montgomery, Alabama, case, rumor was that the defense had been practically dropped and that injunction would issue in favor of the patent owners. This, I was informed, was due to the fact that the city had been assured that no royalty would be collected for the paving under contemplation.

In the Topeka case, however, a strong defense had been filed, and, before the case came to trial, the patent owners had suggested a compro-

mise and a temporary stipulation along the lines of the decree finally entered, copy of which is attached, was filed. The Topeka specification was designed in accordance with an analysis of a pavement laid in Pittsburgh, Pa., at a time considerably antedating the supposed patent and, as the Topeka case showed the most advanced ground in the fight against the patent monopoly, I also adopted the analysis of this Pittsburgh pavement for the grading of aggregates in the Creston specification.

The work proceeded in Creston without any actual interference by the owners of the supposed patent until the laying of the foundation concrete was well started, when a motion for a preliminary injunction to prevent the laying of the wearing surface was filed in the U. S. Circuit Court.

The petition coming up for hearing at Kansas City on the 16th day of June, 1910, we went to that place on the date, prepared with samples of the Pittsburgh, Denver, and other bituminous concrete pavements, the evidence shown in the attached docket having been previously filed.

When the attorneys for the owners of the patent saw the case we had prepared, they suggested a settlement, and offered the usual proposition, i. e., that we should permit the entering of a decree declaring the validity of the patent and the fact that our contemplated work would be an infringement and enjoining us permanently from infringing, with the understanding that we might go ahead and build our contemplated pavement as license under the patent without any obligation for royalty.

To this proposition we demurred, and took the position that we would consider no settlement, except a decree setting forth the fact that our specifications would not lead to any infringement of patent. After some little discussion, this decision was accepted by the owners of the patent and by mutual agreement, the decree shown in the attached court proceedings was entered.

Returning to Creston, we proceeded with the construction without further interference of litigation.

A little incident which occurred during the progress of the work indicates by inference the methods sometimes used to harass a municipality which undertakes to defy one of these patent monopoly bluffs. About September 1, 1910, an attorney from Iowa City, the residence of the Iowa contracting and legal representatives of the patent owners, appeared in Creston and endeavored to find some property owner abutting on the pavement being laid who would lend a name to proceedings to enjoin the payment of the contractors, on the ground that the mixture of asphaltic concrete was not according to specifications. I am glad to credit the people of Creston with the fact that no property owner was found who was willing to have his or her name used in such a dirty proceeding.

As the work progressed, the good qualities of this class of pavement and its reasonable cost became so evident that two additional jobs were petitioned by property owners and ordered by the council. The whole work was completed in the early autumn and has been in use during the past winter, with eminent satisfaction to all parties concerned.

The past winter has been a very dry one and though the new pavement has been without any of the usual covering of snow and ice and continually exposed to the sudden and extreme changes of temperature which characterizes the climate of Iowa, only one crack has developed in the whole work, which comprises 7,500 lineal feet of pavement. This crack occurred just where a dissatisfied foreman did his last work before

being discharged, and in view of the fact that this man was reported to have boasted that he had "fixed" the contractors, I am inclined to the opinion that the fault is due to some malicious act of this man, rather than to any defect in the material used.

The accompanying tabulation of data concerning this job of paving shows a total cost per square yard of paving laid, including all incidentals, of \$1.924. I doubt if any point in the middle west can show the same grade of pavement laid during the past year at a cost anywhere near as low, and this town is peculiarly ill situated as regards paving materials, as every pound of material used had to be shipped from great distances.

Such is the history of Creston's 1910 paving improvements, and it appears to indicate that, aside from the question of good citizenship, it pays, in money saved, for municipalities to resist the threats and demands of patent monopolies in the line of public improvement.

It is an unfortunate fact that the court records can not give the actual history of any case, unless the case be honestly fought on its merits by both parties; and, in looking over the records of some of the cases in which the patent on bituminous concrete pavements have been at issue, I am led to doubt if many of these cases have been so fought.

In the Owosso case (Federal Reporter, 166-309), which is much cited by the patent owners, the defense of anticipation was made largely on the history of a small piece of sidewalk built of bituminous concrete, though the affidavits of Joseph H. Ryan, James Martin, and William D. Hamilton, in the hereto attached copy of the Topeka case docket, show that at the time the Owosso case was tried there were in Pittsburgh large areas of bituminous concrete street pavements in practical use, many of them built long prior to the date of the patent in suit. Now, the Barber Asphalt Paving Company was the actual defendant in this case, and it is hard for me to believe that the existence and construction of these Pittsburgh pavements were unknown to any of the many paving engineers which this company had in its employ. The only explanation of this oversight which occurs, to my mind, is the fact that this defendant is probably the largest producer of bituminum in the world, and it may have considered it good business policy to allow a judgment to be rendered against itself and thus handicap, with a patent royalty, a method of construction which used only eight per cent of bituminum in the paving surface and spout it out of competition with the standard sheet asphalt construction, which uses thirteen per cent of bitumen.

The decision of the case against the City of Montgomery, Alabama, was practically made on the strength of the Owosso decision, so far as the published opinion of the Court (172 Fed. 414) would indicate.

In the autumn of 1910, the City of Atlantic, Iowa, let a contract for some asphaltic concrete pavement and was immediately attacked by the patent owners with an injunction suit. This case came up for hearing at Creston, and the same line of evidence which is hereto attached was prepared by the defendant. The case was dismissed on plaintiff's motion, and a decree filed which states that the defendant confesses the validity of the patent and that its specifications would be an infringement, but that the parties have compromised and adjusted their differences out of court.

It is probable that the same consideration offered to Creston was extended to Atlantic and accepted. At any rate, I am reliably informed that the Atlantic job is being done as originally contemplated and that no royalty is

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Porto Rico Bonds sec. Postal Dep.	5,000.00
Premium on U. S. Bonds	491.14
Bonds and City and County Warrants	16,490.58
Banking House, Furniture and Fixtures	28,396.40
Redemption fund 5 per cent of circulation	1,250.00
Cash and due from Banks	152,480.78

\$530,652.59

LIABILITIES

Capital Stock	\$100,000.00
Surplus and Undivided Profits	12,101.62
Circulation	25,000.00
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Deposits	381,710.21

\$530,652.59

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However, such a graft as this cannot long prevail, particularly when it touches that most sensitive nerve of public sentiment, the public pocket; and I am glad to say that such an amount of evidence has now been gathered as, if presented to any court will probably result in a decision declaring the invalidity of these supposed patents. But it is not probable that such a decision will be reached in the near future, as the history of the cases already tried or dismissed seems to indicate that the owners of the patent are not at all anxious for a fair fight where the defendant is well armed with evidence, and it is probable that the only immediately noticeable effect of the accumulation of evidence on this point will be an increasing number of cases like that of Atlantic, Iowa, in which the defendant will allow a decree to be entered acknowledging the validity of the patent and the fact of infringement in consideration of being allowed to go ahead with its own work, and these faked decrees will be used by the patent owners to intimidate such municipalities as do not understand the situation, into paying royalty on the supposed patent.

As to the relative desirability of the various courses open to a municipality which wishes to lay asphaltic concrete pavements without paying any patent royalty, it is difficult to decide. The different gradings of min-

eral aggregate recommended all have their adherents and all have proven successful in producing good paving surfaces when well laid. As regards expense, the grading consisting of one inch crusher run stone with the necessary proportion of sand and gravel, as used in the Denver work, will probably be found the least expensive in many localities. As regards availability, the Pittsburgh specification, as used in Pittsburgh, Topeka, Emporia and Creston, has a long history of successful use to recommend it, and the fact that the Topeka and Creston decrees declare it to be free of any infringement of at least two of the numerous patents (probably the two most available ones) makes it the grading most free of probable legal difficulties.

There is no doubt in my mind that any city may order any grading and defeat the royalty claims at no greater expense than that of collecting the evidence, which is readily available, and presenting it before any court in which the case may be considered on its merits; or, if the municipality be willing to descend to joining in a faked decree, the expense need be no more than the cost of gathering and filing the evidence.

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