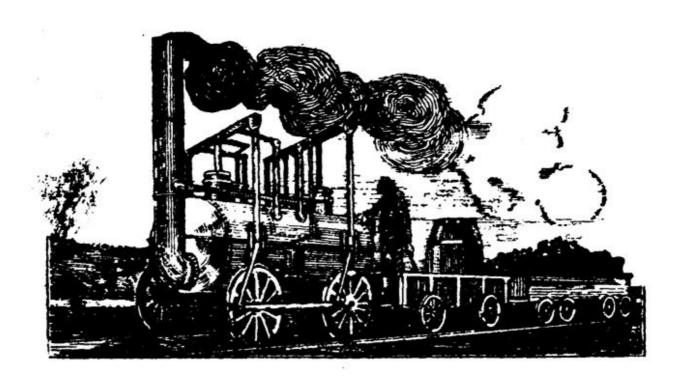
A Pioneer Railway of the West

By Maude Ward Lafferty



This page in the original text is blank.

This restoration of a portion of the original track of the Lexington and Ohio (now Louisville and Nashville) Railroad laid at Lexington in 1831, is dedicated to those men of forethought and courage who were pioneers in railroad development in America.

Erected Anno Domini MCMXVI.

Dedication Exercises 10 A. M. May 30, 1916

College of Mechanical and Electrical Engineering
University of Kentucky

This page in the original text is blank.

During the month of July, 1915, there appeared in a local newspaper an account of the finding of "Old Rail Stones" and "Old Strap Iron Rails" which had been used in the construction of the railroad generally known as "the old Lexington and Frankfort Road," though it was incorporated under the name of the "Lexington and Ohio Rail Road." It is believed by many to have been the first railroad west of the Alleghany Mountains. Be that as it may, the quaint and interesting relics had just been dug up that week by the workmen who were reconstructing the freight yards of the Louisville and Nashville Railroad. The workmen were moving more recently laid tracks back to the old original road bed of the pioneer railroad, and in doing so they unearthed those curious relics of 1831.

Although just starting that very day for a summer vacation, I hurried down town a little before train time, and went to the Main Street offices of the Louisville and Nashville Railroad where the interesting relics were on display.

As I stood gazing at that worn and rusty bar of iron with its single bent and rusty spike, I was whisked back across the years by some strange trick of memory and I saw, instead, a dimly lighted sick room, on a hot summer night—myself a little sufferer, and sitting beside me, fanning my fevered brow, my beloved father, who, notwithstanding the fatigue of a heavy and exacting practice sat thus night after night, soothing me to sleep by telling me entertaining stories of his youth, and as he was born one hundred and one years ago, the strange experiences of his boyhood were thrilling indeed to his youthful adorer.

And so, I saw in my mind's eye that familiar room of my childhood—the open window, the breezes blowing the curtains to and fro, the moon-light casting strange shadows on the terrace outside, and I heard again that voice which has meant so much to me telling how "when the first railroad started" and all the people had gathered from far and near "to witness its departure," he and a group of fellow students from Transylvania University, mounted on fast horses, galloped ahead "to see if the Wonderful Thing could round the curve without running off the track"; and how "it came in sight, thundering along, puffing out clouds of black smoke, the engineer adding to the confusion by incessantly blowing his shrill whistle," all of which so terrified his horse, he had great difficulty in keeping his seat, but yet, how tremendously impressed he was by the "gallant way in which the gentlemen seated in the coach raised their stovepipe hats in greeting as they passed by like a streak of lightning."

He said the locomotive had been invented by his old friend Tom Barlow, in whose honor he had named our Tom Barlow, his favorite race horse.

He also said the old locomotive looked like a "thresher engine mounted on a flat car," and that the coach was for all the world like an "omnibus with seats on top as well as inside," and furthermore, he added, when it had been proved safe he rode upon it himself, and then "rode home on horseback" (a distance of thirty miles) to tell his mother all about it.

And this was all that was left of that Wonderful Thing, this bit of scrap iron and a few stone sills!

Finding myself gazing vacantly at that relic of the Past, and that people were noting my abstraction, I hastily gathered myself together and crossing the street to our beautiful Union Station, I started on my journey. In a magnificent chair car, luxuriously furnished and upholstered, a liveried porter raised the windows and adjusted screens, turned on an electric fan, offered me the latest magazines and papers fresh from the press, placed a footstool at my feet and a cushion at my back. My safety was provided for by double tracking and unseen but perfectly trained employees, but neither the reading matter in my lap, the comfort of my surroundings, nor the always charming scenery from the car window, could drive from my thoughts the quaint old railroad; and when I came back to Lexington in the fall, in my eager desire to know more about it, I immediately began my research which has grown into this history of

"A Pioneer Railway of the West."

MAUDE WARD LAFFERTY.

The first locomotive engine in the world was built just one hundred years ago by George Stephenson and used at Newcastle, England, at the Killingworth Colliery.

According to the Encyclopedia Britannica railways had their origin in tramways which were used more than two hundred years ago in the mining districts of England to carry their output of coal to the sea.

The Stockton and Darlington Railway, about thirty-eight miles in length, was operating a locomotive driven by Stephenson, with a signalman on horseback, in advance, in 1825. The passenger coach in this instance was named the "Experiment," and carried six persons inside and from fifteen to twenty persons outside. But it was the year 1829, which became famous in the annals of railways, not only for the opening of the Liverpool and Manchester line, but for the invention and construction of the first high speed locomotive of the standard modern type. Robert Stephenson's engine, "The Rocket," was made under competition for the Liverpool and Manchester Railway and it gained the prize of five hundred pounds for lightness, power and speed, awarded by the directors.

FIRST RAILROADS AND LOCOMOTIVES IN THE UNITED STATES.

The newspapers of that period were filled with the wonderful "performance" of the Liverpool and Manchester Railway and the people of the United States, as well as those of Great Britain, became interested in the question of railroad transportation. As early as 1828 charters were obtained in several Eastern States and railroad companies organized.

The first locomotive engine used in this country was operated on the Delaware and Hudson Canal Company's railroad between the mines at Carbondale and the town of Honesdale, Pennsylvania. This locomotive was built at Stourbridge, England, and made its trial trip in August, 1829.

KENTUCKY'S FIRST RAILROAD.

Kentucky, which was one of the leading States in the Union in those days in all progressive movements, was wide awake to the great advantages to be gained by railroad transportation. And Lexington, which seems to have been the "self-starter" of Kentucky, was aroused to the highest pitch of excitement. The various "performances" of the English railroads were published at length in the Kentucky Gazette, and the Observer and Reporter. Lexington was the very heart of the great Blue Grass region of Kentucky. The amazing richness of the soil had lured the first settlers from the safety of their transmontane homes to the hardships of Indian fighting and primitive living. Here they had built an ideal city

adorned with beautiful Colonial homes; established the first great seat of learning west of the Alleghanies; built the first insane asylum; started the first newspaper; established the first public library, and surrounded by culture, wealth and refinement, with every want seemingly supplied and every wish apparently gratified, their business men declared there was vet one thing lacking—they needed an outlet to some great water course. The town branch was beautiful to look upon and a never-failing delight to those first inhabitants but useless for navigation. Their bountiful crops demanded transportation to the markets of the world. And now, like a miracle to solve their difficulties came this railroad proposition. read the local papers with interest, discussed the question at public meetings, sent a man to England to obtain all available information concerning it, and with a push and energy which would startle the town today, they set to work to obtain a charter from the Kentucky Legislature, then in its session of 1820-30, asking for a railroad from Lexington, Kentucky, to some point on the Ohio River.

The Reporter for February 3rd, 1830, just one week after the Charter was obtained, had the following article: "As considerable interest has been excited in this community on the subject of Railroads by the Act of the Legislature authorizing the formation of a Company to make one from this town to the Ohio River, we have copied into this paper several articles going to show their immense utility and importance.

However great the advantages of Railroads may be to any country we are convinced that there is none where this beneficial influence could be more intensely experienced than in this section of Kentucky."

Then follows a notice calling attention to Section I of the Charter and asking that subscription books be opened. On Monday, February 8th, 1830, just eleven days after the Charter was obtained, the books were opened at Brennan's Tavern from ten a.m. until two p.m. on five successive days. And in this increditably short space of time the money was raised by those public spirited, enterprising men. What a magnificent achievement!

Digressing a moment here, it must be remembered that Brennan's Tavern, which plays so conspicuous a part in this history of the railroad, was none other than the famous old Postlethwaite's Tavern, known to us as the Phoenix Hotel, which has been making history for Lexington since 1800. At this particular time it was leased and conducted by Mr. Brennan, and so took his name for the time being.

In the next issue of the Reporter, February 10th, 1830, we find: "Agreeable to the notice published in our last, the subscription books for

stock in this company were opened on Monday last, and before two o'clock p.m., the amount of stock subscribed was for \$204,000. We have procured the following list of the names of the subscribers with the sums subscribed by each respectively, which we publish by way of showing to those who are yet in doubt as to the practicability and policy of this work, how the subject is viewed by men of practical experience."

Then follows a list of twenty-two subscribers.

"These liberal subscriptions by persons who have carefully investigated the subject afford conclusive proof that they consider the project not only a feasible one but one that offers to the Capitalist an opportunity for a profitable investment of funds. They have doubtless taken into consideration the peculiar advantages of the country in which the road will be located. * * * It is impossible to imagine the full extent of the varied mutual influences which the prosperity of this section of the country and the Rail Road will exert, all tending to the convenience, wealth and happiness of the community. * * *

P. S.—At the closing of the books at two p.m. on Tuesday, the following additional subscriptions had been taken."

(Follows a list of forty-two subscribers.)

"Which makes a total amount of \$310,800; \$300,000 being all that is necessary to vest corporate rights.

"At a meeting assembled for the purpose, Mr. Elisha I. Winter was elected President and John Brand, Benjamin Gratz, George Boswell, Walter Dunn, Richard Higgins, Henry Clay, Joseph Bruen, Henry C. Payne, Elisha Warfield, Benjamin Dudley and Charlton Hunt, Directors of the Lexington and Ohio Rail Road Co."

CONSTRUCTION.

The succeeding newspapers published a great deal on construction, and when it is remembered that all of it was experimental at that time, it will be interesting to note that the Lexington and Ohio Railroad Company, patterned most closely after the English models, undertaking, however, to improve upon them by the use of our native limestone sills which they believed to be indestructible and found, to their sorrow, to be most perishable.

The Reporter of November 24th, 1830, says: "A great deal of information on the subject of Rail Roads has been disseminated by public spirited individuals in the course of the past two or three years. A number of such works have been projected in the United States and some of them completed within that period. The Baltimore and Ohio is first and most

important in every point of view. To the efforts of the enterprising Directors and Stockholders of that Company, we shall be indebted for the creation in a short period of time of a greater extent of Railway communication between the several parts of the Union than Centuries have produced of artificial or canal navigation. We firmly believe that the digging of canals in all parts of the country will cease and that many now in use will be abandoned and railroads substituted in place of them. * * * * As to the mode of construction—the route is selected upon a minute survey, with as little elevation as possible, with a view to economy. the line is then graded by excavating the earth to near a level, say 50 feet slope to the mile. The excavation for a single line of rails need not be more than one-third the width of a turnpike and, of course, this part of the work is proportionately cheaper than grading for a turnpike. Large pieces of limestone, two feet or more in length and from 3 to 12 inches thick, made straight on the upper edge, are then firmly imbedded along the graduated road in two lines, 4 feet 3 inches apart. On these lines of stone sills are laid iron bars or rails, 2 inches wide, 11/2 inches thick, fastened with iron bolts. Bridges to pass water courses and drains to carry off the water are to be made in the common way. * * * The work is now done. As to its cost—Unless the route be through hills and vallies and, of course, a very unfavorable one, the necessary grading of a narrow line for a railway will not cost more than the like work for a wide turnpike. * The next item of expense is stone work. The stone sills will cost 20 cents per foot, or \$2,112 per mile for two rows. The iron rails and bolts will cost \$57 per ton, or \$969 per mile, allowing 17 tons which will do, fastening the same from I to \$200 a mile. * * * No greater difficulty exists in fixing the precise cost of a railway than of a house of given dimensions or of a brick wall. In reference to the Lexington and Ohio Railroad the requisite data to form true estimates of the cost of each separate mile will soon be in possession of the Company. The Engineers are of the opinion that it is throughout an eligible cheap line. The whole cost then is less than \$8,000 a mile."

The Reporter of December 1st, 1830, makes an interesting correction: "In speaking in our last of the iron rails, we should have described them as half an inch thick instead of an inch and a half. The engineers have run the experimental line on a grade thirty feet to the mile instead of fifty feet as we supposed. A locomotive engine will act advantageously upon a grade of forty feet or more, but the country between Lexington and Louisville will admit of as low a grade as thirty feet without expensive excavations or embankments, there being no natural obstacle on

the whole line except at Frankfort where an inclined plane and stationary power will be required to reach the Kentucky River."

In the issue of March 30th, 1831, the Reporter makes an interesting calculation, proving in dollars and cents the value of the prospective railroad. It says: "It appears by a statement of the performance on the Liverpool and Manchester Railway that an engine has transported 142 tons of freight 180 miles in one day, making six trips between the two towns, and that on the next day, the steam engine travelled 120 miles with similar loads. The transportation of 142 tons in 180 miles is equivalent to the conveyance of one ton 4620 miles. Now, if as it is stated, the cost of fuel, oil, attendance and all other charges requisite to the operations of a Locomotive Engine be only \$5 a day, it follows that when once a Rail Road is completed and all its machinery prepared for operations 4620 tons may be transported one mile for \$5.00, or 100 tons one mile for 123/4 cents. When these results are applied to our own road it will be seen that estimating ten barrels of flour for a ton, the transportation of 100 barrels 100 miles would cost 1061/4 cents. It is true that no one can suppose that this full result can ever be reduced to continued practice but the simple fact of its having once been accomplished will be sufficient to place Rail Roads far above all other artificial means of transportation. At the same time it should not be forgotten that the wagons on the Liverpool and Manchester Rail Road are of the old construction and are known to require double the power to draw them that the wagons do on our Rail Road."

"Our Stockholders" pushed the work on "our Rail Road" with all speed; the engineer submitted his report, and from the Kentucky Reporter, September 1st, 1830, we find: "The examinations of the route for the Rail Road from Lexington to the Ohio River has been made as far as Frankfort which exhibit the following results:

- 1. There will be one Inclined Plane at Frankfort about 2200 feet long, descending one foot in fourteen. All the residue of the road can be graded to 30 feet or less in a mile which is a fraction over one-fifteenth of an inch rise in a foot.
- 2. On that grade there will be no "cut" deeper than 19 feet at the apex and but one of that depth.
- 3. There will be no embankment over 20 feet high, no bridge over 30 feet high.
- 4. The distance to Frankfort will not be increased two miles in length over the present travelled road.

- There will not be as much rock excavation in the grading as will be required to construct the road.
- 6. On the thirty feet grade which has been tentatively adopted, a single horse is capable of travelling with seven tons weight with as much ease as five horses can draw two tons on our present roads in their best condition. Hence it follows that one man and two horses can transport on the Railway as much weight in the same time as 35 horses and seven men on our present roads."

That part of the road from Lexington to Villa Grove, six miles west of Lex. was known as the "first division"; from Villa Grove to Frankfort was designated "second division."

Mr. Kneass, the chief engineer, submitted "a grade table and a table exhibiting the length of straight line, length of curve and radius of curvature" to the Directors on October 14th, 1831.

John Holburn and Company were employed to furnish stone rail sills at 371/2 cents per perch.

On April 20th, 1831, The Reporter, which by the way, was known as "Mr. Clay's organ," gives a most entertaining description of a Directors meeting. It says:

"The Stockholders of the Lexington and Ohio Rail Road Company met at the Court House in Lexington on Saturday last. H. Clay was called to the Chair and H. I. Bodley acted as Secretary.

The meeting was large, most of the Stockholders, representing upwards of six hundred thousand dollars, were present. The Stockholders at Louisville were represented by Messrs. J. S. Snead, B. Lawrence, S. S. Nicholas, J. I. Jacob and George Keats.

Mr. E. I. Winter (President of the Company) addressed the meeting an hour and a half. He described the route as surveyed by Mr. Kneass, the Engineer, entered into explanations respecting the estimates and made various calculations as to the probable cost of the work. He presented a very satisfactory and clear view of the means of the Company—its flattering prospects—the great resources of this section of the country &c.

After much discussion it was

Resolved—That the Directors of the Lexington and Ohio Rail Road Company be requested to take measures to put a proportion of the road under contract, not exceeding eight miles at Louisville and seven at Lexington, provided the same can be done at a cost not exceeding by 10 per cent the estimate made by Mr. Kneass, Engineer.

Resolved—That the Directors be authorized to call from the Stockholders a sum not exceeding \$150,000 pro rata. for the completion of the 15 miles of Road named in the foregoing resolution, in such proportion and at such times as the exigencies of the Company may require, and that they are not authorized to extend their expenditures beyond the said \$150,000 until after the Stockholders shall have been legally convened and a report laid before them of the progress made in the work."

"The meeting then adjourned, but before the Company dispersed a number of persons came forward and entered their names for stock. The Stockholders dined together with the Louisville delegation at Postlethwaite's Inn. We congratulate the friends of this noble enterprise on the results of the meeting. We especially congratulate the citizens of Lexington on the bright prospects ahead—the 'Winter of their discontent being made glorious summer'—by the proceedings of this glorious day."

The Trustees of the town of Lexington later took \$25,000 worth of stock.

At last the great day arrived for the laying of the first rail stone, and the Lexington Observer of October 28th, 1831, gives a brilliant description of this most momentous occurence. Gives it with a vividness which brings the picture so clearly before the reader that in spite of himself he joins the merry throng and takes his place in the spectacular parade which marks a new epoch in the history of Lexington. The Observer says:

LAYING FIRST RAIL STONE.

"Agreeable to the arrangements published in our last paper the ceremony of Laying the First Rail Stone of the Lexington and Ohio Rail Road, was performed in the presence of a large concourse of citizens and strangers on Saturday last.

At II o'clock the three Military Companies which formed the escort marched from their place of rendevous to the College lawn, where they were met by the various societies and individuals named in the order of the Marshal. The procession was then formed in the following order—.

Col. Leslie Combs, Marshall, with J. B. Coleman, Esq., (his aid) on horseback.

Maj. Gen. Pendleton and Staff, on horseback.

Field Officers and Staff, on horseback.

Officers of the Line—on foot.

Capt. Hunt's Artillery, in Platoons.

Gov. Metcalfe, supported by

Prof. Caldwell, Orator of the Day, and

Rev. N. H. Hall-Officiating Clergyman.

Judges Underwood and Buckner-Court of Appeals.

Judge Hickey, Fayette Circuit Court.

Hon. R. M. Johnson, R. P. Letcher, T. A. Marshall, Members of Congress.

Several Members of the Kentucky Legislature.

Capt. T. A. Russell-Ass't. Marshal.

President and Directors Lexington and Ohio R. R. Co.

Samuel H. Kneass, Chief Engineer—His Assistants and Treasurer of the Co.

Contractors and Pioneers with their implements of Labor.

State Board of Internal Improvement.

President, Engineers and Directors of Lexington and Maysville Turnpike Road.

Mayor and Aldermen of Louisville (who did not come).

Capt. Neet's Rifle Guards-in Platoons.

Military Band of Music.

Trustees of the Town of Lexington and Clerk.

Justices of Fayette County Court and Clerk.

Trustees and Professors of Transylvania University.

Reverend Clergy.

Surgeons and Physicians.

Members of the Bar and Officers of Fayette County Court.

Union Philosophical Society of Transylvania University.

Medical and Law Students.

Tutors and Students of Transylvania University.

Principal of Preparatory Department and Pupils.

Principal and Pupils of Wentworth Seminary.

Principal and Tutors of Shelby Female Academy and Pupils.

Principal and Professors of Eclectic Institute and Pupils.

STRANGERS.

Stockholders of Lexington and Ohio R. R. Co.

Capt. Postlethwaite's Light Infantry Company-in Platoons.

Lieut.-Col. A. Stevens-Ass't. Marshal.

CITIZENS ON FOOT.

"For many years we have not witnessed so imposing a pageant and never one more interesting. A Federal Salute was fired by Capt. Hunt's Artillery at sunrise and seven guns when the first stone sill was laid, indicating the seven sections of the road under contract. The procession first moved in a circle around the lawn where it was formed at which time the bells in the various churches in town commenced a merry peal which continued until the procession reached the place where the ceremony was performed. The Military Escort then formed a hollow square within which the whole civic procession was enclosed. Thousands of delighted and anxious spectators were on the outside, among whom we were gratified to see a large concourse of ladies for whose accommodation the Marshal had directed the adjacent Market House to be appropriated.

A blessing on the stupendous undertaking was then invoked by the officiating clergyman, after which E. I. Winter, Esq., President of the Company, handed a hammer to the Governor of the State, who drove the nail attaching the first iron rail to the beginning stone sill. The music struck up "Hail Columbia" and afterwards "Yankee Doodle," which was played until the Artillery ceased firing.

Prof. Caldwell then delivered a highly interesting and appropriate address. The procession then returned to the University lawn after which the Military marched to the Arsenal and were dismissed, having received the thanks of the Directors and President of the Rail Road and the compliments of the Marshal for their excellent marching and exemplary good order on the occasion.

The arrangements for this interesting ceremony were hurried perhaps by the zeal of those immediately concerned and a desire to proceed without further delay with the work. A little more time and a little more preparation would have been better but the whole proceeding was conducted very handsomely. The procession was very numerous. The streets through which the long line marched were crowded with spectators and every window and every balcony were filled with ladies. The Mili-

tary looked uncommonly well. The pupils of the various institutions wore appropriate badges. The ceremonies at the place of laying the corner stone were not tedious. The ommission to prepare a rostrum for the Orator was a grievous oversight—thousands were unable to hear the speech, but those who were more fortunate pronounced it appropriate and eloquent and considering the very short notice upon which it was prepared, the effort was worthy of the distinguished orator, which alone, is saying enough in praise.

The prayer of the Rev. Mr. Hall, by which the occasion was preceded, awakened the best feelings of the human heart. The Governor and the President of the Company quickly dispatched the duty assigned them and the procession moved from the ground in good order, nothing having occurred in the slightest degree unpleasant. All were happy that the good work was now in progress and delighted at the bright prospects now dawning upon the towns and country through which the road is to pass. Owing to the short notice the expected guests from Maysville and Louisville did not attend but the Company was honored with the presence of the Governor and several distinguished members of Congress and two of the Judges of the Court of Appeals. These with other notable guests dined with the President, Directors and Stockholders at Postlewaite's Inn and during the even the Governor visited the Theater where he was received with many rounds of applause."

Down in our hearts we are truly thankful for the present century and all its benefits and we would rather be plain Kentucky people living today than any royalty in history. And yet when we read a great thrilling tale like this we cannot overcome a strange sense of loss, a feeling of regret that we too, could not have been there to see that wonderful pageant pass by. The Military with its pomp and music; the professors and their students; the officials and the rank and file; the lawyers, and the doctors and the ministers; the contractors and "Pioneers and their implements of Labor"; the old, the young, the great, the small—all banded together in one great masterly pull for Lexington! What a picture! What a privilege! What an inspiration! What would we not give to have seen it with our own eyes, to have applauded it with our own hands.

And yet, perhaps that is what we are doing now, applauding and giving praise and credit to those splendid citizens whose generosity, foresight, energy and progressive public spirit made Lexington a leading city of its day!

But to return to our subject, the newspapers kept the people advised as to the progress of the work and the Observer of February 3rd, 1832, says:

"Those who feel an interest in this great work will be pleased to learn that the grading of the first six miles put under contract last fall is already in a state of much forwardness. The stones for the Rail Sills are excavated from a quarry a short distance below the city. The ease with which they are split out and fashioned into sills is truly surprising. They are about twelve inches wide and many of them are twenty or twentyfive feet in length."

And again on May 24th, 1832-

"The grading of the first division of six miles is nearly completed. Part of the Iron Rails for the first division have arrived at Louisville from Liverpool by way of New Orleans, and the laying of the stone sills will be forthwith commenced."

The work progressed steadily in spite of many obstacles—chief of which seems to have been the indifference of Louisville and lack of ready money, and so in the Observer for March 16th, 1832, there is an interesting and eloquent appeal:

"To the Citizens of Lexington and Fayette County-

"Now is the time for every man, who is a man and will act like one, to come forward and put his shoulder to the wheel. The Lexington and Ohio Rail Road can be finished to Frankfort before the 1st of November, 1832, if those who are able will do their duty and take stock, or increase their present subscriptions. Not one should hang back and let his neighbors do for him what he ought to do for himself. If he loves money, this is the way to improve his fortune; if he loves his country, this is the sure way to advance her power and glory.

The work can be done and will be done in the time I have named if you are true to your best interests and will act promptly on this occasion. No time is to be lost—Come all—Come quickly. Let us have no more theorizing but in its stead, efficient action."

And again in the same month the Directors authorized the President, Mr. Elisha I. Winter, to let the grading of the twenty-three sections of the "Second Division."

The Observer and Reporter, June 28th, 1832, says:

"Laying the stone sills is rather a tedious operation. Messrs. Holburn and Benson, who are the contractors for this branch of the work deserve great praise for executing their contract not only faithfully but in a style of beauty and elegance of workmanship which has excited the admiration of all who have examined it. They are now putting in the Iron Rails and we hope it will not be long before the Directors will have it in their power to gratify the universal anxiety which daily increases in intensity to behold the novel spectacle of a Rail Road Carriage in rapid motion."

This desire was soon gratified according to an article in the Lexington Observer dated August 9th, 1832, and entitled "Our Rail Road." It says:

"A splendid car (the Lexington and Ohio) was placed on the Rail Road on Thursday last. It made two trips, the distance the road is finished, having inside and outside about sixty passengers each trip. The crowd to witness the experiment was very great and we never saw spectators more delighted. The opening of the Rail Road from Lexington to the Ohio River will be the commencement of a new era in the history of Kentucky. Let unbelievers in the utility of Rail Roads witness but one experiment and their scepticism will soon vanish.

On Tuesday the 14th the road we understand will be formally opened and the car afterwards kept constantly running for the accommodation of passengers. The Governor of the State and the Mayor and Council of the City of Louisville have been invited to be present on this occasion."

The Observer and Reporter of August 16th, 1832, tells how "The Lexington and Ohio Rail Road was formally opened on yesterday. Among the persons present was Gov. Metcalf. At twelve o'clock precisely the Car left its moorings at the upper end of the lower Market in fine style, having on board about 40 passengers. The Road is completed entirely only about one mile and a half from its termination in this city. Other portions are in a state of great forwardness and will be ready for the Car in a few days which will make the whole distance completed about 3 miles. The Car travels at the rate of about 10 miles an hour."

How eagerly they longed for its completion, using it for pleasure trips when only a mile and a half was finished! And how quaintly they spoke of it leaving "its moorings" as though they were still thinking in terms of rivers and flat boats and steam boats, and could only describe it in river terms! And how they dignified it with capitals, it was always the Rail Road and the Car—as if the very immensity of the undertaking demanded

capital letters. To them the "Rail Road started" or "returned," or was "kept running," as in the article in the Observer of August 25th, 1832, which says:

"Two miles of the Lexington and Ohio Rail Road are now completed, and the splendid car, "Lexington and Ohio," is kept constantly running this distance to gratify those who feel an interest in Rail Roads, and are desirious of testing their utility. The Car is sufficiently large to accommodate 60 passengers and this number is drawn by one horse, with apparently as much ease and rapidity as the same animal would draw a light gig. The delight experienced at the sight of a car loaded by sixty passengers and drawn by one horse at the rate of ten miles an hour through a country where heretofore five miles per hour with one passenger to a horse has been thought good speed, is sufficient of itself to repay the beholder for the trouble of a journey of fifty miles. We understand a locomotive steam engine is now being constructed to be placed upon the road as soon as the distance is opened on the whole of the First Division."

Having always heard the Old Lexington and Ohio Road referred to as "the first rail road built West of the Alleghany Mountains," I was greatly surprised at this juncture to see how close the question of priority between it and the old Pontchartrain Railway really was and being unable to decide the question myself, I beg leave to lay the evidence before my readers and let them decide the matter according to their own judgment.

Mr. J. H. Ellis, Secretary of the Louisville and Nashville Railroad, at a banquet in Louisville in 1914, when speaking of the oldest railroads built West of the Alleghanies and South of the Ohio River, said: "It is commonly believed that the oldest road is the Lexington and Ohio, so it may surprise you to know that in point of antiquity it is beaten by that little old Pontchartrain Railroad, Charles Marshall's darling, but by a remarkable coincidence, by only a week. For while the Pontchartrain Railroad Company received its charter on January 20th, 1830, that of the Lexington and Ohio Railroad Company is dated January 27th, 1830. And in point of construction the latter likewise followed the Pontchartrain."

An article published in the Lexington Observer of October 4th, 1832, taken from the New Orleans Emporium of September 15th, 1832, says:

"The beautiful locomotive Pontchartrain recently received from England came up to the city this morning from the lake in a manner highly gratifying to the directors of the company, who were present and a large concourse of our citizens. It commences running Monday next at 12 o'clock. The Mayor and City Council are to be present and no doubt hundreds of our citizens will fill the train which will accommodate between

three and four hundred people. This locomotive is said to be the most perfect and elegant in the Union and that there are only two in England equal to it. The display will be at once beautiful and imposing and will no doubt attract thousands."

At this time our first locomotive was "in course of construction," as the Observer and Reporter of December 6th, 1832, says in an editorial: "We yesterday had the pleasure of examining—at the machine shop of Mr. Bruen—a new Locomotive Engine constructed for the Lexington and Ohio Rail Road Company. We understand the Engine will be in readiness for an experiment on the Rail Road sometime next week."

It is evident therefore that the Charter for the Pontchartrain Railroad was one week older than the Charter of the Lexington and Ohio Railroad. It is also evident that the Lexington and Ohio Railroad was "formally opened August 15th, 1832," while the formal opening of the Pontchartrain Road did not occur until September 15th, 1832, one month later than ours.

It is true the Pontchartrain opened with a real locomotive while the Lexington and Ohio road first used horse power. But it must also be remembered that the locomotive of the Pontchartrain Railroad was built in Stourbridge, England, while the first locomotive for the Lexington and Ohio road was invented and built in Lexington by two Lexington men, Thomas Barlow and Joseph Bruen; that it was in course of construction at the time of the opening, and that it made its trial run March 2nd, 1833, "from Lexington towards Frankfort."

So far as I have been able to learn our locomotive was the first one built in the United States unless we except that of Peter Cooper, which is said never to have given satisfaction.

By the first of January, 1833, the first railroad advertisement appeared headed:

"TRAVELING"

On The

Lexington and Ohio Rail Road

The First Six Miles of the Road Being Completed a Passenger Car will Daily Leave the Lower Market House for the end of the First Division at 9½ O'clock A. M. and 2½ O'clock P. M.

Returning will leave the end of the Division for Lexington at 10 O'clock A. M. and 3½ O'clock P. M.

Companies of 12 or more can be accommodated with a Private Car by giving one hour's notice.

Office L. & O. Rail Road Company January 1st, 1833

And so the Rail Road became a popular diversion, and the work was rapidly progressing all along the road toward Frankfort. Judging from an advertisement in the Observer and Reporter of February 21st, 1833, some change in construction must have been contemplated for it states "Sealed Proposals will be received at the Company's Office until the 15th of April next for laying 13 miles of the Second Division of the Lexington and Ohio Rail Road with Stone Sills, and 9 miles with Sleepers and Strong-pieces of wood.

(Signed by) H. J. RANNEY, Chief Engineer."

Professor Muncey says: "In the 'Second Division' of the Road wood sills—red cedar in most cases—were used in some places."

It is interesting to note here that the Baltimore and Ohio Railroad advised our promoters in the first place to use the wooden sills.

Quoting from the Observer and Reporter of March 2nd, 1833, "The first six miles of the Rail Road is now in successful operation. The Car for some time past has run regularly three times a day and is usually filled with passengers. It expedites the progress of mail about one hour each trip."

Time was become a matter to be reckoned with you see.

And in the same paper appeared the following modest announcement for which I had searched for days:

"We are happy to learn that the steam locomotive constructed by our ingenious townsmen, Mr. Bruen, is hereafter to make regular trips on this road."

The car driver was allowed a salary of \$22.50 a month. He and his assistant were to handle the car and the horses, take up fares, handle baggage and carry the United States mail.

There is a quaint epitaph in an old Scotch graveyard which says "Good times and bad times and all times, get over"; and so it was with our great little railroad. Its Charter had boldly set the Ohio River as its destination. On October 21st, 1831, it timidly started "towards Frankfort," and on January 31st, 1834, it reached that fair city with a sigh of relief after many hardships had been endured and many obstacles overcome. The cholera scourge of 1833 had halted its progress, difficulties had arisen through bad calculations of its engineers, and money was often sorely needed. Louisville seemed indifferent to its construction, being comfortably "seated" on the much coveted "water course." So the railroad stopped to rest at Frankfort and stopped so long it became known as the

"Lexington and Frankfort Rail Road." Its arrival in Frankfort was celebrated by a grand ball at Brennan's (or Postlethwaite's) which is glitteringly described in the Gazette on January 31st, 1834, as follows:

"The fete given last night at Brennan's Hotel to the members of the Legislature and to celebrate the opening of the Rail Road from here to Frankfort was truly a most brilliant affair. The company bestowed just praises on the taste and munificence of Mr. Brennan, for the splendor and profusion of the supper and refreshments, which appeared as if "earth and sky and sea" had been plundered of their sweets. The company must have numbered from four to five hundred persons who were distributed in the various rooms of the basement story where dancing parties were kept up till two o'clock. Like the Brussells Ball, we too had gathered from the Capital—

'Her beauty and her chivalry, and bright
The lamps shone over fair women and brave men,
A thousand hearts beat happily; and when
Music arose with its voluptuous swell
Soft eyes looked love to eyes which spake again
And all went merry as a marriage bell.'

A majority of the members of both branches of the Legislature were present on the occasion it is said, together with the Mayor and Council of Lexington. For ourselves we did not play a part in the mazy dance but was content to look on others—

'Steer with care through all that glitternig sea
Of gems and plumes and pearls and silks to where
He deems it is his proper place to be
Dissolving in the waltz to some soft air
Or proudlier prancing with Mercurial skill
Where science marshalls forth her own quadrille.'"

The same paper contains an account of an "elegant new locomotive," which says:

RAIL ROAD.

"An elegant new locomotive of improved model has been running on the Lexington and Ohio Rail Road for several days to Frankfort. The success which has attended the experiment thus far equals the most sanguine hopes of the projectors. Since the application of steam all doubts have been vanished, and we confess a very great change has been wrought in our own minds as to the utility and value of the undertaking. Its advantages to the town are manifest now and if it should be completed to Louisville it will be an immense advantage to the whole commonwealth and reflect the highest credit on those who have planned and executed it. Its superiority over every other kind of locomotion will carry conviction to the minds of any who may doubt and convince the country of the absolute necessity of completing it, to which purpose the Legislature will no doubt contribute largely.

The trip from here to Frankfort will occupy about two hours when the arrangements are complete."

This "new locomotive" may have been the "Nottaway" or "The Logan" or the "Daniel Boone." The latter, which was inclined to run behind time, was the butt of many jokes. One traveller is said to have asked "What is the matter, will we never arrive?" and another replied "Let us ask the engineer to feed 'Boone' another stick of cord wood, or we will never get there." Capt. Alfred Pirtle, Secretary of the Filson Club, says "The Baldwin Locomotive Works have a record that they built an engine named 'Daniel Boone' for the Lexington and Ohio Rail Road in 1842."

The Observer and Reporter January 24th, 1835, says:

"Several hundred of our citizens had the pleasure yesterday of witnessing a successful experiment on the Rail Road with the new Locomotive. Its performance justifies all our hopes. Two burthen cars and the large passenger car filled with passengers were attached to the engine. It moved off with great ease clearly indicating its ability to perform all its requirements. Every one who witnessed the experiment seemed to feel a high degree of patriotic enthusiasm that he lived in a city which had originated and thus far successfully prosecuted this magnificent and invaluable scheme.

"We learn that the Locomotive made the trip to the Villa, a distance of six miles, in a little over 20 minutes although badly provided with fuel."

The "success of the experiment" had an unfortunate set back, however, for in the Observer and Reporter, January 24, 1835, is an account of the *Accident* which caused profound distress.

"We have carefully prepared from authentic information the following account of the melancholy occurences of yesterday. To allay public excitement and prevent misrepresentation or misapprehension of facts we consider it our duty to give as brief and accurate account as possible of those unfortunate accidents today which caused the death of two individuals and severe injuries to four others.

"The splendid Locomotive Engine recently imported was placed on the road two or three days since and has made one or more pleasure trips each day to the Villa (6 miles) and back with perfect safety and entire success. This morning it performed the trip with one large Passenger Coach containing some fifty or sixty passengers, and one burden Car also loaded, attached to it, in 19 minutes going and about 22 minutes returning without accident. This afternoon as the Engineer was proceeding from the car house a quarter of a mile below the depot in the city a number of boys were continually trying to jump upon the tender although repeatedly forbidden to do so, till finally while the Locomotive was going at the rate of only about five or six miles per hour, a negro boy, 11 or 12 years of age, the property of Mrs. Ross, on attempting to jump on the fore part of the tender fell under it and was crushed to death. No possible blame can attach to the Engineer as he stopped the moment he saw the boy fall, but was too late.

He then came up slowly to the depot, both sides of the road being lined by hundreds of anxious spectators, and attached the Locomotive to two burden Cars and the large Passenger Coach, before mentioned, altogether containing, we suppose, over 150 persons, in the following order:

Ist—The Engine and tender. 2nd—A common Burden Car with temporary benches to sit on but no side on front or rear railing to protect the passengers from falling or being pushed off; fastened with common trace chains by means of the centre beams to which the shafts are used fixed to the Locomotive. 3rd—Another common Burthen Car attached to the second as it was to the first giving 10 to 12 inches loose play forward and back but with only a single bench running through the centre from front to rear. No railing or other protection to the passengers, who were obliged to stand up, except a few standards along the sides for the purpose of hauling wood. 4th—The large Passenger Coach attached to the third as it was to the second. Before starting, more than one gentleman who noticed the manner of attaching the cars, and the consequent jars which they would inevitably receive, made remarks as to the dangerous situation of the individuals crowded on the burden cars, but we made the trip down safely in 24 minutes.

After remaining to Wood and Water we started back with position reversed, the large Passenger Coach in front, then the two burthen cars following each other, and lastly the Locomotive, each pushing forward the one in front of it, by pressing the end of the centre beams, some six inches square against each other, loosely attached as before described, by common trace chains. We had proceeded in this manner about a mile at

a moderate pace when in passing a curve, the beam of the front burthen Car was seen to pass to the right of the rear beam of the Passenger Car, which jerked the wheels off the track and caused a considerable shock and great alarm. Some of the passengers on the two burthen Cars attempted to jump off, the ground being nearly on a level with the road at that place; others, especially those standing in the forward burthen Car were thrown backwards and knocked off, those near the edge of it under the wheels of the other; some attempted to leap on the bank, fell and rolled down, and thus all the mischief was done. Lewis Lankard and Leonard Taylor, of Lexington, Ky.; William A. Cocke and Joseph Holt, of Louisville; F. W. Trapnall, of Springfield, and Daniel Green, of Fayette County, were in this way thrown off the forward burthen Car and under the wheels of the other. Lankard was instantly killed: Taylor and Green had each a leg broken; Messrs. Trapnall and Holt had severe bruises and were probably saved by Lankard's falling before them and in some measure stopping the car. Mr. Cocke had his right foot firmly fastened in the forward wheel of the hindmost car and was much injured and but for the presence of mind and promptness of the Engineer in stopping at the moment must have lost his leg and most probably his life; another quarter turn of the wheel would have been fatal. He could only be released by taking that part of the Car to pieces. Several other gentlemen were bruised and slightly injured. None of the Cars turned over and if the burthen Cars had been substantially railed round or if only passenger cars had been used or all had been drawn and not pushed, nothing serious would have been the consequence. Too much praise cannot be bestowed upon the Engineer. Although under considerable headway he stopped almost instantly and much sooner than a stage with horses could have been halted. May we now be permitted to make a single suggestion or two to the Manager of the Rail Road?

1st—The number of passengers to go in each Car should be limited. Huddling numbers on the top is extremely hazardous.

2nd—Unless a wire sieve is fastened over the top of the chimney of the engine we shall soon have some dwelling house, barn or other building near the road burnt down or the Cars themselves set on fire.

In conclusion we hope that the feeling of our citizens will not be again excited by the occurrence of such a painful and heart-rending accident as the one over which a number have been called to mourn, as we are confident that by proper management and strict attention it may be easily avoided."

Now let us consider this first locomotive engine ever used on the Lexington and Ohio Railroad. This locomotive was invented by Thomas Harris Barlow (who afterward became world-famous as the inventor of the Planitarium) and was constructed by Joseph Bruen at his machine shops which stood near the corner of Water and Spring Streets.

That wonderful little locomotive is described by one who saw it with his own eyes, who rode behind it often, and who knew the men who invented and constructed it quite intimately. The old gentleman I refer to was Samuel D. McCullough, who was born in 1803 and who wrote his diary, which is now in the Lexington Public Library, in 1871.

"Mr. Thomas Harris Barlow was born in Nicholas County, Kentucky, (says his son, Milton, in a letter to me) August 5th, 1789, and resided in the State of his birth till the last year or two of his life and died in Cincinnati June, 1865."

I shall condense Mr. Milton Barlow's short biography of his father, which states that he had but a common school education. He was an industrious and even a hard working student of mechanism for which he had a wonderful natural gift, and which induced Col. R. M. Johnson to appoint him principal Military Artificer in his Regiment. He was under fire in the Battle of the Thames (1812) where he distinguished himself for coolness and bravery. After his intermarriage with Miss Lizzie West he turned his attention to erecting flour, saw and other mills and building and overseeing their steam motive power. In 1825 he removed to Lexington and opened a machine shop.

"I remember myself all which followed and give my own recollections.

Believing that Locomotives could be propelled at a greater velocity Mr. Barlow and Mr. Joseph Bruen, another mechanical genius, built an engine to run on the new Rail Road, just started from this place towards Frankfort, the finished portion of the road extending then but five miles from this City, and on which Sunday pleasure Cars were running drawn by two horses.

The Steam Engine was an odd concern; not more than three or four feet high wheels, boiler and all; the pistons working perpendicularly; two cylinders and a tongue in front to guide the steam wagon with the necessary pilot wheel with its tiller ropes. I never knew what became of the engine but I have placed all that is left of the model in the Museum of the Eastern Kentucky Lunatic Asylum along with the remnant of Edward West's model steam engine for boats. Mr. Barlow and Mr. Bruen also built another small steam engine which ran on a miniature oval Rail Road, in the large room, third story of the factory, corner of Water and Rose Streets, drawing after it a miniature car large enough to hold one grown person or two children. I paid my 25 cents for a ride on it. The novelty of the occasion brought multitudes of citizens, male and female, to see it and as Mr. Barlow quaintly and truthfully observes, 'each of the

visitors had to pay a small sum for the pleasure of riding on land by steam.' I give the following remark of Mr. Barlow, Jr., just as he used it without stopping to inquire whether it be genuine or apochryphal. He says, 'This was the first steam locomotive engine ever made in America.'

Mr. Barlow sold the miniature engine, Car and wooden rails to Mr. Samuel Robb, of this county, who exhibited the workings of them in 1827 in the cities of Louisville, Nashville, Memphis, Vicksburg, New Orleans, in which city it was consumed by fire during the year 1828. Mr. Barlow built another miniature engine for Mr. Rockhill who used it for exhibition. I wish it distinctly remembered so as not to confuse dates, that the first mattock struck and the first stone laid on the Lexington and Louisville Rail Road were done in Lexington June 3rd, 1831, the citizens, the Free Masons and the Military assisting in the ceremonies which took place at the corner of Water and Upper Streets, not ten feet from the present storage house of Hayman and Wooley. Prof. Charles Caldwell, of Transylvania Medical School, made the address on the occasion.

I remember again, that the model engine of Mr. Barlow and Mr. Bruen was run on the miniature Rail Road three or four years before the first rail was laid on the track which was a flat iron rail on a stone sill. The great danger occurring continually from the ends of the flat rails turning upwards causing what was then called 'snake heads,' and the disintegration of the stone sills induced the directors to change both sills and rails to their present form.

I recollect the old horse car running from here to Frankfort and back to Lexington.

It was in 1835, in company with my deceased friend, John J. Crittenden, who with myself was watching a splendid comet in the North West during our ride, the horse cars were four hours in running the distance of twenty-four miles, or six miles an hour. Upon arriving upon the hill near Frankfort the passenger trains were sent down an inclined plane drawn by horses. Several accidents occurred which afterwards induced the Directors to change the route to a more circuitous and safer place, the road now in constant use. At Frankfort the passengers for Louisville took seats in five and six four-horse coaches, eighteen to twenty-four passengers each. The necessities of travel and commerce finally culminated in finishing the Rail Road to Louisville. Lexington and Frankfort with the counties of Fayette, Woodford and Franklin did their parts nobly, and Louisville with that sympton of haggling so usual with her, finally was induced to help finish the road to that city.

Whilst upon the subject of inventors, inventions and Rail Roads, I may tell you that the two-horse-car ran from this City to Frankfort over the 'flat iron' rail until 18— when a little steam locomotive called the Nottaway made one trip to Frankfort and back the same day. It drew one passenger coach built by Mr. Ashton, the venerable coach builder of this city. The inside would accommodate about as many as a modern omnibus and seats on the top with an iron railing all around would seat as many more. I have an indistinct recollection where the baggage and mail matter were stored but I think they were given in charge of the engineer, who also in that capacity was baggage master and mail agent.

I recollect distinctly the little locomotives, Nottaway and Logan. More than two-score times have I and other able bodied men gotten out of the passenger car when the locomotive was not able to pull the load over some slight elevation in the road and pushed passenger car and engine up the inclined plane of less than one degree inclination. When we arrived at the summit of the inclination, which was about nine miles from Lexington in what was called the 'deep cut,' the engineer in the meantime having raised steam enough to carry passengers to the next slight ascension in the road, cried 'all aboard' and away we went. 'All out' was the engineer's next cry when he came to some slight ascension in the road. Out we came and our shoulders were again applied to help the little locomotive out of its terrible difficulty. Arriving at the top of the hill at Frankfort from a four to six hours ride of twenty-four miles we met with two serious questions either to go down the inclined plane at nearly 40 degrees inclination free of charge or take the hacks and carriages in waiting by paying 25 cents extra. My old friend, Rev. Dr. R. J. Breckinridge and myself not wishing to risk our lives on the incline plane took seats in a hack. I recollect Dr. Breckinridge's remark. when he paid his extra quarter for hack hire: 'I agree to pay \$1.00 to be carried safely to Frankfort. I pay this additional 25 cents under protest as a swindle.' The driver 'took our monies and went his ways' and proceeded to collect 25 cents from each passenger going into Frankfort until some 'change' was made by the Directors of the Rail Road."

Mr. Andy Shepherd in an interview said he remembered the old locomotives Daniel Boone, Logan and Joe Davis.

He said the passenger coach was painted yellow. He described the first locomotive as having a tall smoke stack, a single wheel, and a crank axle, with no cab, the engineer standing unprotected through wind and weather. He said it required a cord of two-foot wood to make the trip from Lexington to Frankfort and return, that the engineer stopped at Villa Grove and at Duckers "to wood and water." He said at first there was one passenger and one freight train a day, that freight came from Cincinnati to Frankfort by river, and from Frankfort to Lexington by

rail. When asked where the headlight for the locomotive was, he replied: "They did not need a headlight because they only travelled by daylight." (And yet one of the English commentaries which had made deepest impression on the railroad promoters was that "Locomotives can travel safely in the dark.")

Mr. Shepherd said the old engines were finally sold for scrap iron, loaded on a flat car, and taken away. But the Logan was sold to a coal mine.

The Gazette, November 28th, 1835, says:

"There seems to be a perfect mania prevading the country on the subject of railroads. Hardly a paper comes to hand but contains accounts of meetings held for the purpose of projecting one through some part or another."

And on January 9th, 1836:

"The Mayor has called a meeting of the citizens of Lex. and Fayette Co. on Monday next at 12 o'clock to take into consideration measures relative to the contemplated Railroad from Charleston, S. C., to the Ohio River. The meeting will take place in a Court House."

On January 23rd, 1836:

We learn that "the Directors of the R. R. Co. have declined bringing more fire wood to this city but have offered to the agents for procuring fuel the use of their road and wood cars free of expense for the transport of that article. The great quantity of freight at the depots rendering this course necessary on the part of the Company."

On December 12th, 1835, was an interesting article headed:

RAIL ROAD STOCK.

"Four shares of Lex. and Ohio R. R. Stock were sold at public auction on Monday last at \$101.00 per share, next dividend off being one per cent advance. This is some evidence of the estimation in which this stock is held. The next dividend to be struck 1st January and to which the purchaser will not be entitled would probably have added about \$5.00 per share. We repeat that the citizens of Louisville do not duly appreciate the importance to their city of the completion of the road from thence to Frankfort with as little delay as possible."

And in the same paper is an account of the sad fate of the attractive little Villa:

FIRE.

"The neat little 'Villa,' so tastefully erected by Smith and Rainey and kept for some time past by Mr. Clatterbuck, on the R. R., six miles from Lex., was destroyed by fire on the night of Monday last together with most of the furniture, liquors and a considerable sum of money. This misfortune will be seriously felt not only by Mr. C—, but by the travellers on the R. R., who were always sure of a kind reception and the solace of a cup of hot sparkling coffee at daylight after making the first stop from Lex. The benevolent we are sure will not be appealed to in vain to contribute something towards enabling Mr. Clatterbuck again to commence business. His loss in cash was about \$700."

* * * *

And now I have told you all that I have been able to find concerning this old Lexington and Ohio Railroad. I have traced its conception and birth, its construction and success. I have not the heart to tell you of its slow and lingering death, how it became antiquated, ridiculed, supplanted and re-constructed, how it was mortgaged and sold, and finally became merged into the great Louisville and Nashville system and how its very history became clouded in tradition.