

Supreme Court of the United States.
December Term 1850.

The State of Missouri
vs
The State of Iowa
and
The State of Iowa
vs.
The State of Missouri

Original Bill
Cross Bill

And now, on this third day of January A. D. 1851, this cause came on for further order and decree therein, when it appeared to the Court that at the December term 1848 thereof, Henry B. Henderson and Joseph C. Brown were appointed Commissioners to run and mark the line in controversy between the States of Missouri and Iowa; and the said Brown having died, the Hon: Rob: W. Wells was appointed in room and stead of said Brown by the Chief Justice of this Court, in vacation. And said " having resigned his appointment William S. Ingersoll was appointed Commissioner in room and stead of said Wells by this Court, at its last December term 1849; and at which term, the time for running and marking said line was extended to this present term of December 1850, for the reasons stated in the report of said Wells and Henderson, made to said Court, and which is hereinafter embodied.

2.

And the present Commissioners Henry B. Henderson and William S. Minor, have made their report in the premises to this term; and which report is as follows:

" To the Hon. the Supreme Court of the United States.

The undersigned appointed Commissioners by this Honorable Court, in the above cases, to establish the boundary line between the aforesaid States respectfully

Report

That for the purpose of arranging the operations in the field, so as to combine economy with speed, we met in the City of St. Louis in March last, and there, after consulting experienced surveyors as to the time that might be consumed in running the line - the probable amount of expense to be incurred - the necessary force to be employed and the proper outfit, we determined a plan of operations, and agreed to meet at the supposed site of Sullivan's "North West Corner" between the 1st and 20th of April last. While in St. Louis we obtained from Major M. L. Clark Surveyor General of the State of Missouri and Illinois a copy of the field notes of the survey made by John C. Sullivan in the year 1816 - of a line beginning on the East bank of the Missouri River, opposite the middle of the mouth of the Kansas River and extending North one hundred miles, where he made a corner, and also of the line run by him in an Easterly course

to the Des Moines River.

We were also furnished by Major Clark, with several charts, diagrams and copies of surveys, which had, at various times, been made of portions of Sullivan's line, and which were of much service in the prosecution of the work.

The surveyors severally appointed by us were William Dewey Esq. of Iowa, and Robert Walker Esq. of Missouri. Both these gentlemen had been connected with the public works of their respective States and enjoy a high professional reputation.

According to our agreement we left our respective homes on the 10th of April last, and soon after reaching the point of meeting - in view of the increased prices of transportation, provisions &c. caused by the immense emigration through Southern Iowa and Northern Missouri, to California, we altered our plan of work and reduced our force.

No precise trace of the "Old North West Corner" remained. The witness trees to it were on the margin of a vast prairie, and had apparently been destroyed by fire years ago. Consequently its exact position could not be ascertained, yet from the running of many experimental lines, diligently examining the evidences before us, together with the reports of the surveyors, we became satisfied of its proper position and accordingly established it.

Its latitude taken resulted as follows -

40° 34' 40" N.

At the corner so determined we planted a large solid cast iron pillar, weighing between fifteen and sixteen hundred pounds, four feet six inches long, squaring twelve inches at its base and eight inches at its top. This pillar was deeply and legibly marked with the words (strongly cast into the iron) "Missouri" on its South side, "Iowa" on its North side and "State Line" on the East.

From the monument so planted at the "North West corner" aforesaid, in the said latitude, the survey of the line was commenced, running due West on said parallel of latitude to the Missouri River, as directed by this Honorable Court, and at its terminus as near the bank of said Missouri River, as the perishable nature of the soil would admit, we planted a monument similar in figure, weight, dimension and inscription to the one planted at the "North West corner" the words "State Line" facing the East.

Unexpected delays arising from a condition of the weather which prevented the surveyors from making reliable astronomical observations, together with the fact that to a great extent in the vicinity of said line there were no roads and the settlements distant and sparse, compelling us to open a track for the transportation of the monuments and baggage of the Corps, and also to construct necessary bridges and grade fords, greatly retarded the work.

Returning to the "North West corner" the survey of the line was commenced, extending Eastwardly

from said "corner" to the Des Moines River, as run and marked by said Sullivan in 1816, from said corner to said river. On this line by close examination we discovered abundant blazes and many witness trees which enabled us to find and re-mark the said line as directed by this Honorable Court.

The survey of this portion of the line, more than one hundred and fifty miles in length, was commenced on the 13th day of August and finished on the 18th September.

Near the bank of the Des Moines river where the line terminated, we planted a cast iron pillar, similar in weight, figure, dimensions and inscriptions to those planted at the "N. W. corner" and near the bank of the Missouri River. The words "State Line" facing the West.

Solid pillars of cast iron weighing each between three and four hundred pounds and minutely described, as to figure and inscriptions, in the report heretofore made to this Honorable Court by Messrs Wells and Wendersholt, Commissioners, we caused to be planted at every ten miles in the due West line extending from said "N. W. corner" to the Missouri River, and also at every ten miles in the line extending East from the "N. W. corner" aforesaid to the Des Moines River.

No iron monument was planted at mile 150 in the line running East, because, between it and the point where the large one is planted on the bank of the Des Moines River there existed but a small fraction

of ten miles, being only fifty one chains.

For a fuller account of the said survey we respectfully refer to the report of the surveyors made to us marked A, and to the following exhibits herewith transmitted.

Field notes of said survey, accompanied by a map of the line (marked) B.

Tabular statement of the costs and charges incurred in said survey (marked) C.

All of which is most respectfully submitted.

Henry B. Wendershott
Comr. of Iowa.

W. G. Minor

Comr. Mo"

And the report of the surveyors employed by the Commissioners, and above referred to as part of said Commissioners' report, is in the words and figures following:

"Keokuk September 30" 1830

Messrs Wendershott and Minor

Commissioners of the Boundary Survey.

Gentlemen,

Having been appointed by you, on the part of the States of Iowa and Missouri severally, to locate and survey the boundary between those States, under the decree of the Supreme Court of the U.S., we met according to your appointment, on the 28th of April last, near the supposed site of the old N.W. Corner, for the purpose of commencing operations in the field.

7.

We proceeded to search for the old corner, which was to be the basis of our future operations. Having a certified copy of Sullivan's field notes, from the Surveyor General's Office at St. Louis, we knew that the corner had been originally located in timber, and designated by two witness trees. Aided by a view of the topography of the locality - as indicated in the notes, and especially by the manner in which Sullivan's North line crossed the Platte River near its terminus, we were able to determine the locality of the corner approximately; and an inspection of the ground satisfied us that every evidence of its exact position had long since disappeared. Time and the fires that annually spread over the prairies, had destroyed the witness trees and every trace of both lines near the corner. This point, known familiarly as the "old N.W. corner", was the termination of the line surveyed by Sullivan in 1816 from the mouth of the Kansas River North 100 miles, and was the point at which he turned East, in running to the Des Moines River, his miles being numbered North from the Kansas, and East beginning again at the corner.

Having no direct evidence of the exact site of the required point, it became necessary to find determinate points in the two lines as near the corner as possible. Prolonging the lines severally from such points, their intersection would be the point to be assumed as the corner, and if Sullivan's measurement were correct, would be the precise spot where he established it.

Near the supposed locality of the 99th mile corner on the North line, we found a decayed tree and a stump, which correspond in course, distance and description with the witness trees to that corner, and cutting into the tree we saw what we supposed to be the remains of an old blase upon which was preserved a part, apparently, of the letter M. This supposition was verified by measuring South two miles to a point, which we found to be Sullivan's 97th mile corner, from one witness tree, which was perfectly sound. The marks upon it two or three inches beneath the bark, were plain and legible.

On the East line we found the witness tree to the 3^d mile corner. The wood upon which the marks had been inscribed was decayed, but their reversed impression appeared upon the new growth which covered the old blase, and which was cut out in a solid block.

Prolonging the lines three miles each from the points thus determined, their intersection was assumed as the required corner, and at that point was planted the monument specified in the decree. By measurement made from the surveyed lines, we found the corner to be in the N. E. quarter of section 35, Township 67 North, Range 33 West. Its exact position with reference to these lines can be seen in the diagram in the field notes.

The latitude of the corner, determined by a series of observations taken on the ground, we found

to be $40^{\circ} 34.40''$ North. While employed upon these observations, we were delayed by unfavorable weather, and it was not till the 24th of May, that we were in readiness to commence the survey of the West line from the corner to the Missouri River.

This portion of the boundary, being required to be a parallel of latitude, was run with Burt's solar Compass, the use of which requires the longitude of the place of observation to be at least approximately known. Not having the requisite means of ascertaining the longitude of the corner, we calculated it from maps to be about $94^{\circ} 30'$ West from Greenwich, which was sufficiently accurate for the purpose. The instrument used being an untried one, some delay was experienced in its adjustment. To ensure accuracy in the work, a telescope was attached to it.

The principles upon which this line was run involve a mathematical investigation, which will be found in Note A, accompanying this report, but the mode of running it will be briefly described here. Each successive mile was prolonged in the plane of the prime vertical passing through its beginning. The direction indicated by the instrument stationed at the beginning of a mile is in the plane of the prime vertical passing through that point, and that direction was continued through the mile by means of fore and back sights. At the end of the mile, an offset North was made to compensate for the sphericity of the earth. This offset it will be seen

by the note is 6.855 inches for one mile. The instrument being moved at the end of the mile, the proper distance North, and a new direction given and continued as before, the parallel passing through the initial point was continued throughout the line. In some instances however, it became convenient, whenever the nature of the ground admitted of it, instead of offsetting, to continue the same direction through several miles. It will be seen by the note, that the offsets increase as the squares of the distances, being for one mile 6.855 inches; for two miles, four times that distance &c. Thus it appears that the offsets rapidly increase with the distance run, and that by continuing the direction of the prime vertical from the corner to the terminus, the southing would have been over 2000 feet.

At the Western terminus of the line the observations for latitude were repeated. Having established that point, we returned to the N. W. corner and commenced retracing Sullivan's East line on the 13th of August.

It is thirty four years since this line was run, and every vestige of the mounds and pits established in the prairies has disappeared. Much of the country through which it passes consists of brushy barrens, or high rolling prairies, dotted with detached groves, or covered with a thin growth of dwarf timber. Much of this description of timber has been destroyed by fire, forming in some instances, prairie, and in

others, brushy barrens, destitute of trees; while in some places, an entirely new growth of young timber, principally hickory, has sprung up. In all such cases the witness trees and other marks, mentioned in Sullivan's field notes, were gone, and thus it occurred that we frequently ran several miles without finding any traces of the line. But in heavy bodies of timber no difficulty was experienced in discovering evidences of the precise location of the line, not only by blases, but by line and witness trees, many of which are sound and the marks in good preservation. The general topography of the Country, and especially the croppings of the streams, greatly facilitated us in following the line, and in some instances, when confirmed by the old blases, enabled us to establish it with sufficient certainty. In the absence of any traces of the line between two known points, distant from each other more than one mile, we assumed the line to be straight between such points, and established our posts accordingly. This was done by running a random line from the last found corner, in a direction as near that pursued by Sullivan as we could determine, until another point was found, and then correcting back. No notice however is taken of these random lines in the field notes, which relate to the true line only.

We soon satisfied ourselves that the line run by Sullivan, was not only not a due East line, but that it was not straight. That more or less northing should have been made in the old line, was to

have been expected from the fact that Sullivan ran the whole line with one variation of the needle, and that variation too great. This would account for the fact that the Northing increases as he progressed East. But there are great irregularities in the course of the line, for which it is difficult to find a cause. Sudden deviations, amounting to from one to three degrees frequently occur, and it rarely happens that any two consecutive miles pursue the same direction.

A re-survey of the line between the 91st and 134th miles was made in the year 1845, and we found the witness trees on that part of the line defaced and others substituted. We succeeded however in identifying Sullivan's trees, and we destroyed the marks of that survey as far as they related to the old line. In all instances where a corner on Sullivan's line is mentioned in our field notes, one or both witness trees were found to identify it and we did not always think it necessary to repeat the fact in the notes.

Accompanying this report are the field notes and map of the boundary, the former of which are sufficiently explained, in the note prefixed to them.

On the West line the monuments every ten miles were deemed sufficient. On the East line mile posts are established marked and witnessed as described in the field notes.

It will be perceived that the measurement of this line as run by us exceeds that of Sullivan by $11\frac{80}{100}$ chains, and that this increase although gradual

is not regular. Some portions of the old line agree very nearly with our measurement, while others differ materially, and the greatest gain is generally made in brushy and broken land.

For the convenience of estimating distances and that the true length of the line might be indicated by the mile posts, they were established by our measurement, taking care in every instance to note the distance of the posts set by us from the corresponding corners in the old line, whenever found. The different courses being extended from one known point to another, the line was not altered at those points, being made to pass through them, but only its length corrected.

The length of the entire line is 211 miles and $32 \frac{80}{100}$ chains, embracing $4^{\circ} 1' 7'' 29$ of longitude. The length of a second of longitude is calculated in note 10, and the longitude of any point of the line being known, that of any other point can be deduced.

The map is plotted from the field notes on a scale of half an inch to the mile, and is only intended to represent the general features in the topography of the line. The scale upon which it is made is much too small to show the angles in the East line, to do which would require it to be extended to a length that would render it inconvenient. All the purposes for which it can be used, will be attained by its present form.

Wm Dewey

Surveyor on the part of Iowa.

R. Walker

Surveyor on the part of Missouri.