

v.11, no.4-27
DELAMATER AND ANOTHER V. WOODRUFF.

Circuit Court, D. Connecticut. February 22, 1882.

PATENTS—PRIOR USE.

Where the infringing device was intended to reproduce a device which was made two years before the date of the invention it was not an infringement, and the libel will be dismissed.

Francis C. Nye and Horace Barnard, for plaintiffs.

Charles E. Perkins and Chauncey Smith, for defendant.

SHIPMAN, D. J. This is a bill in equity, founded upon letters patent granted to William D. Andrews, March 15, 1870, and now owned by the plaintiffs, for an improvement in friction wheels, or gearing for communicating motion. The defendant has manufactured since March 15, 1870, for the Calumet & Hecla Mining Company, friction wheels substantially the same as those described in the first claim of the patent. The mining company is the real defendant in the case. So much of the invention as is included in the first claim was described in the specification as follows:

“My improvement has reference to friction wheels having annular teeth or grooves extending around their peripheries for the purpose of communicating motion; such wheels, when geared together, fitting by their annular teeth and grooves, the one into the other. These wheels, as heretofore constructed, have been but little used, and are objectionable, owing to the fact that the ends of the teeth traveling faster than their base, and the ends of the teeth on one wheel being in contact with the bases of those upon the other, a dragging, sliding, or cutting friction results, which not only consumes a large amount of power without useful effect, but causes great and unequal wear upon the teeth, diminishes the useful frictional

surface in contact, and rapidly destroys the wheel. If the teeth are made full cones in their transverse section, as is ordinarily done, the points will soon bottom and prevent the contact of the sides, and if, as is sometimes done, the points of the teeth are shortened, the sides of the points wear into the bases and eventually form new bottoms, on which they roll, thereby preventing the contact of the sides. In my invention the teeth are comparatively short, which reduces the 415 lost or sliding friction to a minimum, and, as a consequence, the wear also; but, as more or less wear must necessarily occur, I make the teeth, in their transverse sections, in the form of truncated cones, standing upon bases whose sides are perpendicular to the faces of the wheel, and which are separated from each other by spaces equal in width to the thickness of the end of a tooth. The effect of this construction is that, notwithstanding the wear, the original amount of frictional surface is always maintained in contact. Under such a construction the surfaces in contact, for a given breadth of face, are less than when full cone teeth are used; but, by reason of the provision made for keeping the same amount of surface in contact at all times, I am enabled, practically, to use teeth having a greater angle to the surface of the wheel, and consequently, under a given pressure, obtain a largely-increased useful frictional effect between the two wheels or surfaces in gear.”

The first claim is as follows:

“(1) A friction wheel for transmitting motion by means of annular teeth, with intervening grooves, arranged around its periphery, having its teeth, in their transverse section, made in the form of truncated cones, standing upon bases whose sides are perpendicular to the face of the wheel, and separated from each other by spaces equal in width to the thickness of the ends of the teeth in gear with said wheel, substantially as specified.”

Truncated teeth had been used in this kind of frictional gearing. Rectangular grooves had also been used, and, in view of the defendant's testimony, the plaintiffs might properly admit that truncated teeth and rectangular spaces at the bottoms of the grooves had also existed prior to the date of the invention in the same gearing. The essence of the invention described in the first claim is (to use the language of the plaintiffs' counsel) "that, while the wheels in gear with one another have annular teeth and grooves extending around their peripheries, and the teeth stand on bases perpendicular to the face of the wheel, and the bases are separated by spaces, and the teeth are in the form of truncated cones, *the spaces between the bases are equal in width to the ends of the teeth* fitting into the grooves, and thereby, in the operation of the gearing, it retains the original amount of frictional surface in contact at all times, until worn out, notwithstanding the wear, and prevents the forming of bottoms in the sides of the teeth."

This invention, whenever made, was novel, has been of great benefit, and was patentable. The disputed question of fact in the case is whether the patentee was the original inventor. He made the invention in the summer and fall of 1867.

The claim of the defendant is that, before this time, at least 34 wheels with teeth and grooves of the patented shape were in use in 416 this country. It is not doubted that those wheels had truncated teeth and square cut grooves, but whether they contained the patented improvement is the question in issue. The theory of the defendant is that in the year 1862 the Fishkill Landing Machine Company made for the Franklin Mining Company, of Franklin, Michigan, a set of friction hoisting gear, consisting of four friction wheels and four pinions, which were designed by Charles W. Copeland, of New York, and which precisely exhibited the Andrews invention; that these

wheels were put up at the mine in 1862, and speedily attracted attention; and that by the same machine company, and by the Taunton Foundry & Machine Company, of Taunton, Massachusetts, and by Wayne & Robinson, of Detroit, Michigan, 26 other wheels were made, before May, 1866, upon the same plan and pattern, for the Quincy Copper Company, the Albany and Boston mine, the Franklin mine, and the Rhode Island mine, all near Lake Superior, and for use at the Hoosac tunnel, and for the Mount Hope Mining Company, of Rhode Island, and for the Port Henry Ore Company, of Port Henry, New York. The defendant also introduced testimony in regard to other wheels, which need not be examined here.

The drawings of the wheels which the Fishkill Company made in 1862, for the Franklin mine, are in existence, and are in conformity with the Andrews improvement; but it is clear, from the testimony of the defendant's witnesses,—Cleaves, Funkey, and Lang,—that these wheels were not made like the drawings. They continually "bottomed," and had to be altered by chipping off the teeth and enlarging the clearances. The reason for the dissimilarity was probably because neither the draftsman nor the manufacturer nor the workmen appreciated the importance of exact compliance with the drawings, or understood the relation which the size of the groove should bear to the size of the tooth in order to prevent bottoming. After the wheels were put to use they began to "bottom" by reason of this non-compliance with the drawings.

In November, 1862, the Fishkill Company made six wheels for the Port Henry mine, and in April, 1864, made six other wheels for the Quincy Copper Company. The drawings for the Port Henry wheels were made by Mr. Copeland, who probably made those for the Quincy Company also. The drawings were like the Andrews improvement, and the wheels,

if they had been made in accordance with the drawings, would have been an anticipation of the patent. Nothing is known about the Port Henry wheels after they left the machine-shop, but the success of the Quincy wheels was not such as 417 to lead to the conclusion that they were made differently from the Franklin wheels of 1862.

The Taunton Foundry & Machine Company made in October, 1864, two wheels for the Albany and Boston mine; in November, 1864, four wheels for the Hoosac tunnel; and in October, 1865, two wheels for the Mount Hope mine; and in May, 1866, two more for the same mine. All these wheels had truncated teeth and square clearances. The drawings for the Albany and Boston gear were made by James M. Shepherd, engineer of the company, and were taken from the Franklin wheels; but the unused wheel, now in existence, shows that it was not made in accordance with the drawings, and does not contain the patented invention. The Mount Hope wheels "bottomed," and, probably, did not contain the invention. No testimony was offered in regard to the history of the Hoosac tunnel wheels. It is not proved that any of the Taunton Company's wheels as made, or that any Fishkill wheel made prior to 1865, anticipated the patent.

In October, 1865, two other wheels were made by the Fishkill Company for the Franklin mine. They were made from a new drawing, were divided into two parts in the center, instead of being solid, and were heavier than the wheels of 1862. One was intended to replace a broken 1862 wheel, and the other was ordered for a spare wheel. It does not appear who made the drawings, but they were drawings of the Andrews improvement. Cleaves, superintendent of the Franklin stamp mill, says: "The shape of the teeth was the same as the old ones after the chipping, and the shape of the grooves was the same, only deeper." These wheels, in my opinion, actually contained the

Andrews invention. There is no satisfactory evidence that they were not made like the drawings, but there is positive evidence that the wheel which was put up immediately upon its arrival did its work without bottoming or the necessity of being chipped. It lasted till 1874.

In November, 1865, two wheels were made by Wayne & Robinson, of Detroit, for the Rhode Island mine, from drawings made by Mr. Shepherd in the summer of that year. The drawings closely followed the Franklin gear. The wheels were used but a short time and were very little worn, for the mine soon ceased to be worked. They were sent, in 1875 or 1876, to the Osceola mine, in Calumet, Michigan, where they were unused till June, 1879, when they were set up and put to use. In August, 1879, a plastic cast of the friction wheel was 418 taken, which is in evidence, and which shows that the wheel contained the Andrews improvement. There is no evidence that it had been turned again after it first left the foundry. The Franklin wheels of 1865, and the Rhode Island wheels of 1865, anticipated the date of the invention by Mr. Andrews. I think that the wheels which the defendant constructed after March 15, 1870, and which confessedly were an infringement, were made from drawings which reproduced the Franklin gear in use in 1868, and there is satisfactory evidence that this gear is the same which was in use before 1867.

The Woodruff & Beach iron works made, in the early part of 1869, four wheels and four pinions for the Calumet & Hecla Mining Company, from drawings of the hoisting gear of the Franklin mine, which drawings were made in September, 1868, by Frederic Labram, engineer of the Quincy mine. He examined the Franklin wheels and made his drawings like the new one at the Franklin, which had three grooves. The 1865 wheel had three grooves, one more than the 1862 wheels, and was in existence till 1874. The wheels

and pinions made by the defendant between 1870 and 1878 were duplicate wheels, to replace those worn out, and presumably to replace the 1869 wheels.

The plaintiffs seek to show that the Delamater works had made Andrews' wheels for the Calumet & Hecla Company before 1870, and that the drawings for the plaintiffs's wheels were probably taken from the Delamater wheel. There is no satisfactory evidence that the Delamater works did make Andrews' gearing for the Calumet Company before 1870. On the contrary, the first gearing containing the invention, which the superintending engineer of the Delamater works saw in the Lake Superior mining region, he saw in 1870, at the Calumet and Hecla mine, and was told it was made by Woodruff. These must have been the wheels of the Woodruff & Beach iron works. These wheels were in operation in 1879.

While it is not proved that the Woodruff wheels were reproductions of the 1869 wheels, yet the inference is quite strong that they were, and if so the infringing wheels were intended to reproduce wheels which were made two years before the date of the invention.

Let the bill be dismissed.

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