

**Case No. 9,055.** MANY V. JAGGER ET AL.  
[1 Blatchf. 372;<sup>1</sup> Merw. Pat. Inv. 650; 1 Fish. Pat. Rep. 222.]

Circuit Court, N. D. New York.

Oct., 1848.

PATENTS—ASSIGNMENT—DECLARATIONS AND ADMISSIONS OF  
ASSIGNOR—INFRINGEMENT—PRIOR KNOWLEDGE—CLAIM FOR  
ENTIRETY—CAR WHEELS—ABORTIVE EXPERIMENT.

1. The declarations and admissions of an assignor of personal property, made after he has parted with his interest in it, are inadmissible either to show a want of title in him, or to affect the quality of the article, or to impair the right of the purchaser in any respect.
2. In an action for the infringement of a patent, the defendant offered to show that the patentee, after he had assigned all his interest in the patent, had declared that the patented article had been abandoned and had failed and was worthless: *Held*, that the evidence was inadmissible.

[Cited in *Woodward v. Boston Lasting Mach. Co.*, 8 C. C. A. 622, 60 Fed. 284.]

3. The patentee having been previously examined as a witness for the plaintiff, and not having been interrogated as to any such declaration, the evidence offered was not admissible by way of contradicting him.
4. Under section 15 of the patent act of July 4, 1836 (5 Stat. 123), a notice of defence gave the name of B. as having had prior knowledge of the invention. On the trial, F. was called as a witness to prove the prior knowledge by B., the notice, however, not making any mention of F.: *Held*, that the evidence was admissible.

[Cited in *Woodbury Pat. Planing-Mach. Co. v. Keith*, 101 U. S. 493.]

5. Where the claim of a patent was “the manner of constructing wheels for rail-road cars, with double convex plates, one convex outwards and the other inwards, and an undivided hub, the whole cast in one piece, as herein fully set forth,” held, that the claim was not for the mode of constructing the wheel, as distinct from the wheel itself, but was for the car wheel after it was constructed.
6. The claim was not for any part of the wheel taken separately, as the plates or the hub, but for the entire wheel as constructed.

[Applied in *Andrews v. Carmen*. Case No. 371.]

7. The plates being described in the specification as “parallel or nearly and,” and as being “convex on one side and concave on the and,” and the specification also setting forth that in consequence of the curvature of the plates they contracted in cooling without danger of fracture, held, that the peculiar form of the plates was not claimed as essential except as respected a form that would allow of their contraction in cooling without fracture.
8. The specification held sufficient against the objection that it did not describe the old article on which the improvement was made, and that a mechanic could not, from reading it, distinguish between the old thing and the improvement.
9. To maintain a patent, as regards the utility of the thing invented, it is not necessary that it should be the very best article for the use to which it is applied, but if it be at all valuable, if its use for the purpose for which it is constructed is practicable, that is sufficient to sustain it as a useful invention.

[Cited in *Stimpson v. Woodman*, 10 Wall. (77 U. S.) 125; *Seymour v. Osborne*, 11 Wall. (78 U. S.) 549.]

[Cited in *Tod v. Wick*, 36 Ohio St. 393.]

10. Where a prior invention is set up to defeat a patent, the idea of it must not merely have been conceived, but it must have been reduced to practical use. Nor is an abortive or abandoned experiment sufficient.

[Cited in *Ellithorp v. Robertson*, Case No. 4,408.]

11. Where a prior invention was claimed to be the same in substance as a subsequent one, the jury were instructed to take into consideration, in passing upon the question, the fact that the prior invention was known to persons who experimented to produce the subsequent invention but failed to do so.
12. The question as to the identity or difference between two rail-road car wheels is whether one embodies in its mechanical construction, mind and ingenuity not found in the other, by which the result is produced.

This was an action on the case, to recover damages for the infringement of letters patent [No. 640], issued to Samuel Truscott, George Wolf, and James Dougherty, of Columbia, Pennsylvania, on the 17th of March, 1838, for “a new and useful improvement in the mode of making cast iron wheels to be used on rail-roads and applicable to other purposes.” The plaintiff was assignee of the entire interest in the patent, (which was commonly called the Wolf patent,) for the whole United States. The defendants were iron founders and workers in iron at Albany, New-York, and the infringement alleged was the making of rail-road car wheels substantially like the patented wheel in principle. The defendants claimed on the trial that the wheel for making which they were sued was no Infringement of the Wolf patent, but was an entirely different wheel from the Wolf wheel in principle, and was an invention of William B. Treadwell one of the defendants, for which he had applied for a patent. They also claimed that the patentees of the Wolf wheel were not the first inventors of the thing patented by them, and that the patent was void on various other grounds.

The specification annexed to the patent was in these words: “To all whom it may concern: Be it known, that we Samuel Truscott, George Wolf, and James Dougherty, of the

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borough of Columbia, in the county of Lancaster, and state of Pennsylvania, have invented a new and improved mode of constructing cast iron wheels for rail-road cars and for other purposes; and we do hereby declare, that the following is a full and exact description thereof: We denominate our wheel 'The Double Plate Car Wheel,' because we use two plates instead of the spokes or arms usually employed, which plates are cast with the rim, and form one substance therewith. We give to the rim of our wheels the same form in all respects as is now given to the rims of car wheels; but, instead of arms, we cast our wheels with two parallel or nearly parallel plates, which plates are convex on one side and concave on the other. The hub or nave which is to receive the axle, is cast in the centre of these plates, extending from one of them to the other. The accompanying drawing gives a sectional view of one of our wheels; a a being the rim; b b the front and back plates, convex on one side and concave on the other; c c being the hollow or void space between them; and d d the nave or hub. The hollow c c between the two plates, is formed by a core in the process of casting, which core is supported in the flask by leaving suitable holes in the plates for that purpose, which holes serve also for the removal of the sand of which the core is formed. We cast our rim in a chill, in the usual manner, and, in consequence of the particular form given to the plates, they contract in cooling without danger of fracture, and without it being necessary to divide the hub, as is done when car wheels are cast with spokes or arms. The only effect of contraction is to flatten the two plates in a slight degree, operating in this respect like the curved arms of many cast iron wheels. We are aware that car wheels have been made with plates as a substitute for arms, but such plates have been made separate from the wheels and united together by screwed bolts, embracing the hub in a distinct piece between them. The difference between such wheels and those constructed by us is so obvious as not to need pointing out. What we claim as our invention and wish to secure by letters patent, is the manner of constructing wheels for rail-road cars, or for other purposes to which they may be applied, with double convex plates, one convex outwards and the other inwards, and an undivided hub, the whole cast in one piece as herein fully set forth."

The wheel made by the defendants was cast all in one piece, and had a rim chilled in the usual manner, and a solid hub constructed in the usual manner. Next inwards from the inner circumference of the chilled rim, and starting from its centre, there was a concentric solid ring of metal, next a concentric hollow ring of metal, next another

concentric solid ring of metal, and next the half of another concentric hollow ring of metal, a transverse section of which resembled an acute or lancet-shaped arch, its vertex joining the last named solid ring, and its abutments resting one on each end of the hub and enclosing an annular semi-cylindrical space around the hub, the whole so arranged that a plane extending from the centre of the hub to the centre of the inner circumference of the rim or tread of the wheel divided all the annular parts and the enclosed spaces into two equal parts.

In the course of the trial, the defendants offered evidence for the purpose of showing that the Wolf wheel was not a useful wheel, and, among other things, they offered to prove by a witness, Elias Johnson, that in April, 1847, he went to Columbia, to negotiate for the purchase of the Wolf patent, and that Truscott, one of the patentees, then told him that the wheel had been abandoned and had failed and was worthless. Truscott had assigned all his interest in the patent to Frederick Baugher and George Wolf on the 3d of August, 1839, reserving to himself, however, one manufacturing right not to be located within one hundred miles of Columbia. He assigned his reserved right on the 26th of May, 1817. The plaintiff did not become interested in the patent till the 11th of June, 1847. Truscott had been examined by deposition as a witness for the plaintiff on the trial, but had not been interrogated by the defendants as to any conversation between him and the witness Johnson. The plaintiff's counsel objected to the evidence offered on the ground that it was hearsay evidence; that at the time specified Truscott had no interest in the patent; that the matter sought to be proved could only be proved by Truscott himself; that he had been examined as a witness and should have been enquired about then as to the matter; that he had assigned to Baugher and Wolf in August, 1839, and had nothing in April, 1847, but a reserved shop-right that was nothing till located; that he could not be called to impeach the patent in any greater proportion than he was the owner of it at the time, because it was only as being an owner that his declaration was sought to be proved; that the fact that the patent was not profitable or useful could not be proved by hearsay; and that that was all there was of the proof offered. The defendants' counsel urged that Truscott had an interest in the patent in April, 1847, because he had a right to establish a foundry to make the wheels not within one hundred miles of Columbia; that the amount of his interest was of no consequence; and that the evidence was admissible as a part of the *res gestae*. The court held the evidence to be inadmissible, and remarked that the declarations and admissions' of an assignor after he had parted with his interest in personal property were inadmissible either to show a want of title in him, or to affect the quality of the article, or to impair the right of the purchaser in any respect; that this case came clearly within that doctrine; and, besides, that the evidence was not offered to contradict Truscott, and, if it was, he should have been first interrogated as to the matter. During the trial, the defendants called as a witness one Robert T. Fry, and proposed to

prove by him that one Matthias W. Baldwin, prior to the invention of the Wolf wheel by the patentees, invented and had knowledge of a wheel identical with the Wolf wheel. The defendants, in their notice of special matter under section 15 of the patent act of July 4th, 1836 (5 Stat. 12a), had given notice of Baldwin as having had such prior knowledge, but had given no notice of the name of Fry. The plaintiff's counsel objected that the witness could not show that Baldwin knew of the invention, because that would be showing that the witness knew of it himself, and that the witness could not show that he knew of it himself because his name was not in the notice. The court overruled the objection and admitted the evidence.

William H. Seward, Samuel Stevens and Samuel Blatchford, for plaintiff.

Seth P. Staples, Azor Taber and Rodman L. Joice, for defendants.

Before NELSON, Circuit Justice, and CONKLING, District Judge.

NELSON, Circuit Justice (charging jury). The first branch of the case which it is necessary to examine and settle, is the improvement which the plaintiff claims that his patentees have discovered. For this purpose we must call your attention to the specification. That contains a description of the invention by the patentees in their own language, and affords the highest evidence of the thing or instrument which they claim to have discovered. They begin by stating, in very general terms, that they have discovered a new and improved mode of constructing cast iron wheels for railroad cars. They denominate the wheel they have discovered, the double plate wheel, because, as they say, they use two plates instead of spokes or arms as usually employed before in constructing the rail-road wheel, the two plates being east with the rim and hub and forming one piece with them. The patentees then describe the mode of constructing their wheel. The rim, they say, is cast as usual. They claim nothing new in this respect, but that, instead of spokes or arms, they cast their wheel with parallel plates, which are convex on one side and concave on the other. The hub which is to receive the axle is cast in the centre of these plates, extending from one plate to the other. They then explain the reason why they can cast an iron rail-road wheel with double plates and a solid hub and still retain the chilled rim. This is owing to the form which they give to the

plates, which allows for the expansion by heat and the contraction by cooling in the plates in chilling the rim. This fact or process in constructing the rail-road wheel, by which they avoid this effect of expansion and contraction, and, of course, the breaking of the iron by the contraction, has been explained, illustrated and confirmed by all the witnesses whose attention has been called to the subject. There is no pretence or evidence in the case that this was new. On the contrary, it is admitted by the patentees in their specification, that this mode of avoiding the effect of the contraction of iron was known before. Curved arms, they say, were used in easting the spoke wheel with a chilled rim.

The patentees then state, that they are aware that car wheels had been made with plates as a substitute for arms before their discovery, but that such plates were made separate from the rim and hub and united together with screws or bolts, embracing the hub between them. Then they state their claim, which is the most material part of the specification. The claim is the attempt on the part of an inventor, to describe the very thing which he supposes he has invented and for which he asks the patent. The claim of the patentees here is the manner of constructing a wheel for rail-road ears, with double convex plates, one convex outwards and the other inwards, and an undivided hub, the whole cast in one piece. That is the claim; and, on comparing it with the model of the wheel, it is found to be a perfect description and one that cannot well be mistaken.

It was supposed by one of the counsel for the defendants, that the claim here was for the method or mode of constructing the wheel, as distinct from the instrument itself; not for the rail-road wheel as constructed, but for the mode or process of producing it. But, on examining the language used, it will be found that the good sense of the claim embraces a wheel constructed in the manner set forth in the specification. That is the thing which the patentees were aiming at. It was the car wheel for practical use in running rail-road ears, and a description of the mode or process of constructing the wheel, was essential for the purpose of explaining the thing which they believed they had invented. It was the instrument after it was made which they claimed to have discovered, and which was new and of general utility.

We do not understand, either, that the patentees set up any claim to the parts of this wheel taken separately; that is, the plates, the rim or the hub, when regarded separately and distinct from the perfect wheel. But we understand that they claim the entire wheel as they have constructed it, and which embodies the new idea in the mind of the inventor. This is claimed as a new manufacture, and as the subject of a patent.

They do not claim the solid hub. There is nothing in the specification indicating an intention to claim that as a thing they have discovered and which was never before in public use. Nor do they claim the chilled rim, nor, in terms, the plates separately. The plates taken separately are as old almost as any other form of matter. There could be no novelty in the parts when taken separately; indeed, many and perhaps all of the separate

parts which go to constitute this new manufacture, taken detached from the wheel and according to the names given to them, will be found to have existed in most of the wheels theretofore constructed. A rim and a hub are probably essential to constitute a wheel of any description, and the use of plates, as a substitute for spokes, was doubtless common and well known, particularly in the construction of wooden wheels. All that part of the case may be laid entirely out of view, for the patentees claim that they have manufactured a cast iron wheel, with double plates, a solid hub, and a chilled rim, all cast in one piece, and that such a wheel had never before been produced. For that instrument they asked a patent, and for that the patent was granted. The plates were made convex, one inward and one outward, but this peculiar form given we do not understand as essential, or claimed to be essential, any further than as respects a form that will allow for the contraction of the plates in cooling, the allowance being made for the purpose of procuring a chilled rim. This particular form is given as one which affords an allowance for that particular principle in iron. Undoubtedly, if the form of the plate could be regarded with reference simply to the great desideratum—strength—in the construction of a rail-road wheel, it would be made on a plane. The plates would be made straight, because all the experts who have been examined on the subject say, that strength is the quality desirable in a rail-road wheel, and that the plane or straight plate would afford to a wheel the greatest possible strength. That form would be adopted were it not necessary to make an allowance for contraction in cooling, and avoid breaking in chilling the rim; and any form that will make the proper allowance for that principle of iron, is all that is essential, so far as regards the form of the plate, except that it is essential the form should approach as nearly to a straight plate as practicable, and allow, at the same time, for this principle of expansion and contraction.

It was objected by one of the counsel for the defendants to the description of the plaintiff's wheel in the specification, that it is not sufficiently particular and specific to distinguish the improved wheel from the old article on which it is claimed the improvement was made; and the law has been very properly referred to, for the purpose of showing that it is necessary that the

patentee should so describe his improvement as to distinguish It from the old structure on which it is claimed to be an improvement. We think the description is sufficiently particular and specific. Indeed, so far as regarded the improvement itself, the objection was not very strongly urged; but the principal objection was, that the old instrument or thing on which the improvement was made was not described, and that therefore a mechanic would not, on the perusal of the description, be able to distinguish between the old thing and the improvement.

But, as we understand this part of the specification, this improvement was made on the old cast iron spoke wheel, and when the patentees refer in general terms to this old instrument as a cast iron spoke wheel, that affords all the information which is necessary to a person skilled in that department. They say they have substituted the double plates for the spokes. That is the essence of their improvement; a substitution, in the mode they have pointed out. A strong illustration of the soundness of this view is found in the testimony of James Dougherty, who states that the first wheel the patentees cast was cast from a pattern that had been made for casting a spoke wheel, by substituting a core for the spokes.

This being the new manufacture of the patentees, the next question you have to settle is as to its originality, and whether they were the first inventors of the article, because it is insisted on the part of the defendants that they were not. The patent was issued on the 17th of March, 1838. The application for it was made on the 13th of January, 1838. The first wheel was cast at Wolf's foundry, in Columbia, in the fall of 1837, from the pattern of a spoke wheel. That is the date of the invention. The idea seems to have occurred to the patentees early in the fall of 1837, and late in the fall the invention was complete by the casting of the wheel. These wheels went into use immediately on the Philadelphia and Columbia rail-road, and on the Baltimore and Susquehanna rail-road. Many were cast in 1838, 1839, and 1840, also in 1841, 1842, and 1843. This is stated by Wolf, who was the owner of the foundry, and by Smedly, who was concerned in casting the wheels. Smedly says, that during this time, from eight hundred to one thousand of these wheels were put into use on those two roads, and that many of the wheels now in use on the Columbia rail-road, are wheels he cast in that foundry in 1838.

A point is made on the part of the defendants that, conceding this wheel to have been an original production of the patentees, there is no utility in it. But, it will be seen that one thousand were cast and went into general use, and were valuable for the purposes for which they were manufactured. It is not necessary, to maintain a patent, or the right of the inventor, that the thing invented should be the very best article for the use to which it can be applied. Indeed, the objection generally comes with bad grace from a person charged with an infringement, because, if the invention is of no utility, then he ought not to use it, and the very fact of his using it, if he is using it, shows that his practice and



his professions, as regards the utility of the instrument, are very much at variance. On the evidence in the case, although the jury should find that the plaintiff's wheel is not the best wheel, yet if it is at all valuable, if its use for the purpose for which it is constructed is practicable, that is sufficient to sustain it as a useful invention.

It is said that three wheels had been constructed and were in use prior to the improvement claimed by the patentees; one a wheel of Baldwin, of Philadelphia; one a wheel of Tiers, also of Philadelphia; and one a wheel of James, of New-York. It is claimed that each of these wheels was substantially identical with the plaintiff's.

Baldwin's wheel, the only one of his wheels relied on in this branch of the case, is a cast iron rail-road wheel, from a pattern which is before you. That pattern was made and the wheel was cast from it sometime in 1835. The time is fixed by Robert T. Fry, who was at the head of Baldwin's establishment at the time. Baldwin himself is unable to fix the time. He says that it was before 1838, as nearly as he can define it. Fry fixes the time. He says the pattern was made and the wheel cast in the old shop, and that they moved from the old shop to the new one in the fall of 1835. This was before the date of the Wolf patent. Baldwin is unable to say how many were cast. Fry is unwilling to say that any number beyond four were cast. The pattern of this wheel of Baldwin's has been critically examined by the experts in your presence. Most of the experts, indeed all of them, concede that the compensating principle for the expansion and contraction of iron is not to be found in the shape there given to the plates of the wheel; that the plate is not a curved plate, but is a straight conical plate, and is not better than if it had been a horizontal plate so far as regards the principle of contraction.

But this is not the most material part of the evidence. It is admitted that the four wheels cast were cast by way of experiment, and that the experiment was abandoned. Baldwin's testimony is as follows: "That none of the wheels cast from the pattern are extant; that he cannot tell how many of them he cast; that he has no data by which he can tell how many; that he cannot tell what became of them; that the success of that experiment was like the others; that they were all very much alike in the result; that that result and," and this is the material part, "breaking in the casting and soft in the tread; that they ascertained these defects sometimes on breaking them up; that, in a word, they were deficient in strength." They

were therefore abandoned, and it was an abortive experiment beyond all doubt.

It is not enough, gentlemen, to conceive the idea of a new manufacture, or of a new and useful instrument. That alone is of no benefit to mankind., and is not worthy of the patronage of government. The new idea must be reduced to some practical use before it can become the subject of a patent, or be set up and relied on to defeat a patent.

It here appears from the person himself who is set up as the inventor, Baldwin, that all the wheels made from the pattern failed and were abandoned, and it appears from the evidence in the ease that there were but four cast, and those by way of experiment. We shall not trouble you further on the subject of this wheel of Baldwin's, except to say that the practical result in casting that wheel goes to confirm the opinion of the experts, that it did not contain the principle which is essential to cast the double plate rail-road wheel with a solid hub and a chilled rim.

The next wheel is the Tiers wheel, of which a model is before you. It has double plates resting on spokes or arms, both on the inner and the outer side. The same objection, founded on the testimony of the experts, is made to this wheel, that was made to the wheel of Baldwin. No allowance is made for the expansion and contraction of the plates. The expansion and contraction are prevented by the arms on which the plates rest, and the wheel is, in principle, the same as the cast iron wheel with straight plates or straight spokes. This wheel was made in December, 1835, or in the spring of 1836. Tiers says, that he took out a patent for a spoke wheel in December, 1835, and that soon after, or about that time, he made some wheels with double plates and spokes inside. But it was early enough, if the experiment was successful, to defeat the invention of the plaintiff's patentees. Tiers says, that from half a dozen to a dozen wheels were cast after the pattern of the wheel of which this is a model; that they were all cast by way of experiment, that the experiment was not satisfactory, for the reason that they cracked around the rim, and that they were abandoned. I will refer you to his testimony in regard to this wheel, he speaking himself as the inventor, of his own knowledge and with the best opportunity of any witness. He says on his cross-examination, "that all the wheels that deponent made, of the kind not patented, were made with arms in the middle, like the models thereof shown him on his direct examination; that they were all made as an experiment; that he relinquished the experiment after making the number mentioned in his direct examination; that they were all made about the same time; that they were not satisfactory to him, for the reason that they appeared to be cracked around the rim in a few days after they were made, a circumstance which often happens in castings; that the castings, when they came out, would appear all right, and, after a short time, would be cracked for want of the proper proportions." This is the account he gives of his wheel cast in the spring of 1836. He abandoned it while it was in process of experiment, because it failed and cracked. It thus stands on the same footing as the wheel cast shortly before by Baldwin in the same

city, and it failed undoubtedly for want of the compensating principle, if we can believe the testimony of the experts. No perfect wheel, according to Tiers' evidence, was cast by him. He does not give us to understand that he succeeded in perfecting his wheel so as to bring it into any public use, and therefore he abandoned it.

The next wheel is the James wheel. These two models represent his wheel. It is a single plate wheel, with a solid hub and chilled rim. In one of them is the improvement he made of strengthening the rim by a ring on the inside of the wheel. This wheel was cast in the city of New-York, in 1834, at Mr. James' establishment, in Eldridge street. The wheels were immediately put in use on the New-York and Harlem railroad, and they were also put in use on the New-Jersey railroad. Mr. James says, from a reference to his books, that the wheel was cast as early as 1834.

It is insisted that this wheel embodies the same invention as the double plate wheel of the plaintiff, and it is probably the only wheel produced on the part of the defendants that will require your examination. On the part of the plaintiff it is claimed that his patentees have constructed an entirely different instrument, not only different in form, (which of itself would in general amount to nothing,) having double plates and being hollow, but a wheel of greater strength and security, embodying in its production mechanical contrivance and ingenuity that are not found in the James wheel, and involving a new invention beyond anything to be found in that wheel. It is alleged that the plates of the plaintiff's wheel support both ends of the solid hub, one plate supporting one end of it, and the other plate the other end, and that the rim is supported by the two plates, one on either edge of the rim, and that in this respect the wheel is different from the James wheel, not only in mechanical contrivance, but in producing a new and useful result. Mr. Dunham, an exceedingly intelligent mechanist, said, that so far as regarded the effect of vertical pressure on the two wheels, he did not think that the plaintiff's wheel had the advantage, but he admitted that as respected lateral pressure its construction was the better one. Experts on both sides have been examined at large, and, as usual, they differ in opinion. Some consider the James wheel quite as good as the plaintiff's wheel. Some think it superior, and say that it embodies every thing claimed as new in the plaintiff's wheel. Other experts take a different view, and give reasons in detail why they

regard the plaintiff's wheel not only as a different manufacture from the James wheel, but as a better article, of greater strength and of greater practical utility.

It is a question of fact which the jury must determine, whether there was anything substantially new in the mechanical construction of the plaintiff's wheel. But there is one fact to which we will call your attention, that is entitled to some consideration on this branch of the case, although it is not decisive. The James wheel was in general use on the Harlem rail-road in 1834, and, to some extent, on the New-Jersey rail-road. Baldwin, in Philadelphia, in 1835, and Tiers in the same city, in 1836, one of them a year after, and the other a year and a half after the James wheel was in common use on those two roads, made trials to cast the double plate wheel, and we think, on the evidence in the case, it is fair to infer that they made their experiments with full knowledge of the James wheel. That wheel was in use the year before the experiments were made, in an adjoining state, on the New-Jersey rail-road, and publicly on the Harlem rail-road in New-York, and it is natural to conclude that persons bringing their minds to bear on the production of a valuable rail-road wheel, would take an interest in understanding the character of the wheels at that time and before in general use. If this inference be a fair one, and it is for the jury to say whether it is or not, then, with the James wheel before them, Baldwin and Tiers both failed to make a double plate wheel. They had the idea of such a wheel in their minds, but were unable to perfect it. The conclusion would seem to follow, that the James wheel and the double plate wheel were not necessarily identical, or that the former would naturally lead to the making of the latter, without any ingenuity other than ordinary mechanical skill.

There is one more question left. It is, whether the defendants' wheel is in substance identical with the plaintiff's wheel. The question is one of fact. There must be a substantial difference between the two wheels in their mechanical construction; and not only a difference in that, but the defendants' wheel must involve something that required mind and ingenuity over and beyond that of the plaintiff's patentees. It must embody a different principle from that found in the plaintiff's wheel. A change of form will not do, inasmuch as a different form might answer all the purposes of the first invention. There are instruments invented, in which the particular form is a material part of the discovery, and then a departure from the form would be a substantial departure, because the form is essential to the invention. But there are many new manufactures, where the particular form of the thing is not essential to its utility, and there may be a departure from that form and still a valuable instrument be constructed. Take the plaintiff's wheel for an illustration. The curved form is given to the plates to allow for the expansion and contraction of the plates in casting the chilled rim. But, for the purpose of making allowance for contraction, any other form involving the principle of that allowance may be used, and there would obviously be no substantial change in the thing manufactured, because the particular form

given by the first inventors is not essential to the production of the instrument. If the form is a part of the thing invented and is essential to its value, then a change from the form is a substantial change, and may be the means of producing a new manufacture. Take the Blanchard machine as an illustration. It is one of the most ingenious machines of the day, and is constructed to turn irregular forms after a pattern, such as gun-stocks, lasts, and spokes for carriage wheels. Blanchard, in his machine, cuts the block, whether for a last or a gun-stock or a spoke, after a pattern, by means of rotating cutters. A modification of this machine was made and set up as a new machine, and claimed not to be an infringement. Instead of rotating cutters, the cutters were made stationary, and the block rotated. It was claimed that this was an entirely different principle from Blanchard's, and that the party making the change had not violated his patent. Now, any person of common understanding would see that the thing could be done in that way. It was a mere difference in the mechanical contrivance, and a change of form, in which there was no skill and no ingenuity. This illustrates the difference between a change of form, and a substantial change involving mind, ingenuity and invention.

Applying these principles to the two wheels, you are to say whether the defendants' wheel involves, in the substantial parts of it, anything different from the double plate wheel of the plaintiff. If it does, then it is not an infringement of the plaintiff's patent. If it does not, then it is, and the plaintiff is entitled to recover the sum of \$150, the amount agreed on.

The jury were discharged, being unable to agree upon a verdict.

The construction given by the court in this case to the Wolf patent was substantially affirmed by the supreme court in the case of *Sizer v. Many*, on writ of error from the circuit court for the Massachusetts district, decided at the December term, 1851. See [16 How. (57 U. S.) 98].

[For other cases involving this patent see *Many v. Sizer*, Cases Nos. 9,056 and 9,057.]

<sup>1</sup> [Reported by Samuel Blatchford, Esq., and here reprinted by permission.]