

LOCOMOTIVE ENGINE SAFETY TRUCK CO. v. PENNSYLVANIA R. CO.
Case No. 8,453.

{1 Ban. & A. 470;¹ 6 O. G. 927; 31 Leg. Int. 324; 6 Leg. Gaz. 324; 1 Wkly. Notes Cas. 16.}

Circuit Court, E. D. Pennsylvania.

Oct. 1874.²

PATENTS—PILOT TRUCK FOR LOCOMOTIVE ENGINES—EVIDENCE OF INTENTION TO ABANDON INVENTION—EXPERIMENTAL USE OF INVENTION.

1. The complainant's patent, was, for the combination of a locomotive engine, with a pilot truck, having a lateral motion by means of a swinging bolster and pendent links, and having also a rotary motion around the king-bolt, at its centre. The evidence showed, that prior to the invention, passenger cars, each having two of the same trucks, had been used, both trucks rotating freely on their respective centres around the king-bolts: *Held*, that the truck used in combination with an engine, the hindmost or driving wheels of which are rigid, produced a new and useful result, different from the result produced by the use of two of the trucks upon a passenger car, in that the drivers of the engine move on a curved track with less grinding or sliding, and the friction is greatly diminished: *Held*, also, that the invention was not a mere double use or aggregation of two devices acting independently of each other; and, that the invention was not anticipated by the use of the trucks on cars, and was patentable.

{See note at end of case.}

2. The combination claimed in complainant's patent, of a locomotive engine with a pilot truck having a lateral motion by means of a swinging bolster, and pendent links, and having also a rotary motion around the king-bolt at its centre, is not anticipated by the invention previously patented to Levi Bissell, of a combination with a locomotive engine of a pilot truck fitted to allow lateral motion by means mechanically equivalent to the sliding bolster and pendent links, but incapable, when in combination with the engine, of rotating on a king-bolt at its centre, the centre of rotation being a pin in the rear of and outside the frame of the truck.
3. Imperfect and crude descriptions of an invention, imparted to others by the inventor, at a time when he did not have a complete conception of the invention for which he subsequently obtained his patent, are no evidence of an intention to abandon it.
4. Experimental use of an invention, although made in public, from necessity, is not a public use, and is no evidence of abandonment.
5. The complainant's patent, granted to Alba F. Smith, February 11, 1862, for an "improvement in trucks for locomotive engines," construed and *held* valid; and, that it was not anticipated by letters patent, granted to Davenport and Bridges in 1841, nor by the improvement subsequently made by Kipple and Bullock, for which a patent was granted to them December 20, 1859.

³ [Complainants, assignees of the letters patent granted February 11, 1862, No. 34,377, to Alba F. Smith, for "improvement in trucks for locomotive engines," filed their bill, complaining of an infringement by defendants, and asking an injunction and account. The defences were: (1) Want of patentability; (2) want of novelty; (3) abandonment to the public; and (4) forfeiture by reason of public use with the patentee's consent for over two years prior to his application for a patent. It was proved that trucks substantially the same as

LOCOMOTIVE ENGINE SAFETY TRUCK CO. v. PENNSYLVANIA R. CO.

that described in patentee's specification had been patented, and in use upon eight-wheel cars long prior to this invention. Letters patent to Levi Bissell, No. 17,913, dated August 4, 1857, were relied upon as an anticipation of the use of such a truck upon a locomotive engine.

{Under the 3d and 4th defences it was shown that in 1853—eight years before his application for a patent—Smith communicated to several persons his idea of combining the old and well-known swivelling truck with a locomotive, and that three years before the application he had tried the combination upon an engine on the Hudson River Railroad, and kept it successfully in use for several months. Changes, however, were made in the details of the invention, after this trial, and it was hence contended that the use had been experimental merely. There was no controversy as to infringement.

{Keller and Blake (with whom was Hollingsworth), for complainants, cited *Hussy v. McCormick* [Case No. 6,948], and *Yale & G. Manuf'g Co. v. North* [Id. 18,123],—upon the issue of patentability. *Mellus v. Silsbee* [Id. 9,404]; *Pitts v. Hale* [Id. 11,192]; *McCormick v. Seymour* [Id. 8,726]; *Winans v. Schenectady & T. R. Co.* [Id. 17,865]; and *Jones v. Sewall* [Id. 7,495],—upon the issue of abandonment and public use.

{C. Biddla and Mr. Latrobe, for defendants, cited *Hailes v. Van Wormer* [20 Wall. (87 U. S.) 353]; *Tucker v. Spalding*, 13 Wall. [80 U. S.] 453; *Stimpson v. Woodman*, 10 Wall. [77 U. S.] 177; *Northwestern Fire Ins. Co. v. Philadelphia Fire Extinguisher Co.* [Case No. 10,337]; and Curt. Pat. § 56.]

STRONG, Circuit Justice. It is indispensable, at the outset of this case, to have a clear apprehension of the device or improvement, for which the patent was granted to Alba F. Smith—the patent which, it is alleged, the defendants have infringed. The invention is denominated by the patentee, in his specification, “an improvement in trucks for locomotive engines,” and in the description of the drawing, he calls it a plan of his truck. His language is: “In the drawing I have represented my improved truck itself. The mode of applying the same to any ordinary locomotive engine will be apparent to any competent mechanic, as my truck can be fitted in the place of those already constructed, or the same may be altered to include my improvement” But, though this seems to indicate that, in the mind of the patentee, the thing invented by him, or at least the principal thing, was an improvement in trucks, the state of the art when this alleged invention was made, as well as other parts of his specification, and his claim, make it quite clear, that the patent must be construed as embracing nothing more than a combination; or, in other words, the employment, in a locomotive engine, of a truck for pilot wheels, framed in the manner described, and capable of specified operation. That constituent of the combination, called a truck, is particularly defined. Its peculiarities are pointed out, and thereby it is distinguished from other trucks, which might have been, and some of which had been, used in locomotive engines. But the truck so described was an old device, I think, well known and in common use long before the Smith patent was granted. This has been established, in my opinion, beyond doubt, by the evidence relative to the state of the art.

In 1841, a patent was granted to Davenport & Bridges, for an improvement in railway carriages, especially eight-wheel carriages, having two trucks, one at each end of the car, and each truck connecting a set of four wheels. The improvement consisted, mainly, in constructing each truck with a swinging bolster, located centrally between the axles. Upon this bolster the car rested, and was connected with it by a king-bolt passing through its centre. The bolster was sustained by pendent links at or near each end of it, suspended upon two iron bars resting on the truck frame, and having their lower extremities connected. The links, and the bolster sustained by them, were thus allowed to swing transversely to the track, limited, however, in the extent of their play, by springs set on each side of the king-bolt, at a suitable distance from it. The objects and effects of this device were to allow, in addition to free rotation of the truck around the king-bolt, a lateral movement of the truck under the ear, when running upon, into, or out of a curved track, or at other times, and also to relieve passengers in the cars from the sudden jars caused by the side-way movement of the flanges of the wheels against the track rails. This improved truck appears to have been applied extensively to eight-wheel cars, generally, if not always, at each end of the car. It was, however, said in the specification of the patentees, that one of the truck frames of such car (an eight wheel) might have their invention applied to it but that, when applied to two of them, at opposite ends of the cars, there was a combined

LOCOMOTIVE ENGINE SAFETY TRUCK CO. v. PENNSYLVANIA R. CO.

action of the two, which tended to straighten the line of draft, in a train of cars, when running on a curve of the railway.

It does not appear that any truck, exactly like that described in the Davenport & Bridges patent, was ever applied to a locomotive engine, or any car, in which the driving or hindmost wheels are rigidly attached to the body of the car or engine, and are incapable of rotating under the body. Nor was the truck, in all respects, like the truck employed in the Smith combination, though it made a near approach to it. It was not essential to it, that the pendent links should be divergent. But the truck was so constructed as to allow lateral motion, and swivelling on the king-bolt, and, in the improvement subsequently made by Kipple & Bullock, for which a patent was granted to them on the 20th of December, 1859, divergency of the links was an essential part. In that improvement, while the swinging bolster and the pendent links were employed, as in the Davenport & Bridges invention, the side springs were dispensed with, and the links were constructed so as to diverge outward from the bars on which they were suspended. The links were thus fitted, to restrain the lateral movement of the bolster, and, correspondingly, of the car resting upon it—whether the tendency was to move toward the right or the left—and to keep the car within the limits of the space over which the links were allowed to vibrate. The use of divergent links had also a tendency to bring back the superincumbent car to a central position between the wheels, for, as one of the links became more inclined, the other necessarily assumed a more vertical position, thereby raising the ends of the bolster next the outer rail of the track. Thus, the car, resting on the bolster, was compelled, by any lateral movement of the truck, to move up an inclined plane, in a direction opposite to the lateral motion, and, consequently, its weight was ever forcing it downward toward the central line between the rails. This improved truck was undoubtedly the same, in all essential particulars, as that employed by Smith in his combination.

I think, also, it has been proved in this case, that pilot trucks, having beams or bolsters swinging on links, spread at the base, so that the lower ends pointed outward, and swivelling on the centre king-bolt, had been made and used before even the Kipple & Bullock invention. They appear to have been used on both the Vermont Central Railroad

and the New York and New Haven Railroad before May, 1852, and on the Connecticut River Railroad as early as July, 1856. It is, therefore, very evident, that there is nothing in the truck, employed by Smith, that was originally invented by him—nothing for which a patent could have been legally granted to him. But if there were, neither the truck, as such, nor any improvement in it, is claimed in his specification, as his invention. It is in effect disclaimed. Though he calls it his truck and his improvement, evidently he means the truck or improvement which he uses in his combination. His language is: “Several laterally moving trucks have heretofore been made and applied to railroad cars. My invention does not relate, broadly, to such laterally moving trucks; but my said invention consists in the employment, in a locomotive engine, of a truck or pilot wheels, provided with pendent links to allow of a lateral movement, so that the driving wheels, of a locomotive engine, continue to move correctly on a curved track, in consequence of the lateral movement allowed by said pendent links, the forward part of the engine travelling on a tangent to the curve, while the axles of the drivers are parallel, or nearly so, to the radial line of the curve.” Such, also, almost in totidem verbis, is the language of the only claim made. It is true, the specification describes minutely the truck which the patentee calls his, with its swinging bolster, diverging pendent links, and with its centre and elongated opening for the kingbolt; but, in view of the other parts of the specification, the description must be regarded as merely an identification of the peculiar truck which he proposed to employ in combination with a locomotive engine.

It must, then, be concluded, in view of the history of the art, and of the specification itself, that the invention patented to Smith was not a pilot truck having an improved construction, nor any improvement in a truck. Nor was it, I think, merely a combination of a truck with a locomotive engine, even though the truck should be capable of lateral movement; but it was the combination with, or the employment in, such an engine, of a truck fitted with divergent pendent links to allow lateral motion, and having the properties and capacities of the peculiar truck described in the specification. Capability of lateral motion, obtained through the agency of a swinging bolster and pendent links, or some equivalent therefor, was undoubtedly essential to the truck; but, I think, this was not all that was essential. The different devices described, were intended to accomplish a purpose, which was declared to be to allow the drivers of the engine to remain correctly on the track, in consequence of the lateral motion of the truck, allowed for by the pendent links, when running on a curve, as set forth. This is part of the language of the claim, and in describing the operation of his improvement, the patentee says: “When running upon a straight road, the engine preserves great steadiness, because any change of position transversely of the track, in consequence of the engine moving over the truck, or the truck beneath the engine, is checked, by the weight of the engine hanging upon the links O, O; and, in consequence of their divergence, any side movement causes the links, on the side toward

LOCOMOTIVE ENGINE SAFETY TRUCK CO. v. PENNSYLVANIA R. CO.

which the movement occurs, to assume a more inclined position, while the other links come vertical, or nearly so; hence, the weight of the engine acts, with a leverage, upon the most inclined links, to bring them into the same angle as the others, greatly promoting the steadiness of the engine, in running on a straight line. As the pilot or truck wheels enter a curve, a sidewise movement is given to the truck, in consequence of the engine and drivers continuing to travel at a tangent to the curve of the track; this movement, and the slight turn of the whole truck on the king-bolt, i., not only causes the truck wheels to travel correctly on the track, with their axles parallel to the radial line of the curve of the track, but also elevates the outer side of the engine, preventing any tendency to run off the track upon the outer side of the curve. Upon entering a straight track, the truck again assumes a central position, and, in case of irregularity in the track, or any obstruction, the truck moves laterally without disturbing the movement of the engine." From this it appears, plainly, that the combination intended to produce the results desired, was of a locomotive engine with a pilot truck, capable, not only of lateral motion, but also of rotation around the king-bolt at its centre. Swivelling on the king-bolt, as well as lateral motion, was, therefore, of the essence of the invention. Such, I think, is the true and reasonable construction of the patent.

That the combination, if an original device of Smith, was patentable, can hardly admit of question. Conceding, that the truck used by him, was in all essential particulars, old, that it was the same as Davenport & Bridges' truck, or that of Kipple & Bullock, it had never before been employed in a locomotive engine, unless so employed by Levi Bissell, to whose patent I shall presently refer. It had been used under eight-wheeled passenger cars, and, perhaps, under eight-wheeled freight cars; but, in all those, both trucks were allowed to swivel freely on their centres around a king-bolt. When applied to a locomotive engine or a car, the hindmost wheels of which are rigid and cannot swivel, while the operation of the truck is precisely like its operation when under a passenger car, a new effect, upon the movement of the engine, is produced. The drivers, or rear wheels, move on a curved track with less grinding or sliding, and the friction is greatly diminished. It is not, then, the case of a mere double use, nor the aggregation of two

devices acting independent of each other, but the production of a new and useful result.

I come, next, to what appears to me the most important and difficult question in the case, in regard to which my mind has not been free from doubt. Was the combination described and claimed by Smith novel, when invented by him? His patent is dated February 11, 1862, and the application for the patent was made on the 10th day of July, 1861. The defendants contend, that prior to both those dates, and before Smith had devised his combination, as patented to him, a combination, substantially the same, had been completed and brought into use by Levi Bissell, and they have given in evidence a patent granted to Bissell on the 4th day of August, 1857. That patent was surrendered in 1864, and a reissue was granted to these complainants, as assignees of Bissell, which, of course, must be regarded as a patent for the original invention. That invention, as described by the patentee, was, in substance, a combination with a locomotive engine, of a pilot track, framed to allow lateral motion. Like the invention claimed by Smith, it was not the application, to a locomotive, of any kind of a pilot truck. The patentee particularly described the distinctive features of the track he proposed for the combination, while preserving capacity for lateral motion, he dispensed with a swinging bolster and pendent links, and substituted for them a curved sliding beam or block, sliding in a curved groove or slot in the top plate of the truck frame. The general direction of this slot was across the track, and the curve, both of the slot and of the sliding beam, corresponded with an arc of the circle, the centre of which was a fixed point behind the truck, and slightly forward of the centre, between the drivers of the engine. This arrangement of the sliding beam in the curved slot, admitted lateral motion of the truck under the locomotive, and the tendency to too great vibration of the engine, on the truck, was limited by inclined planes fitted into the bottom of the slot at each end, and the block on the sliding beam surrounding the bolt which passed through its centre. "The position of the inclines," said the specification, "is such, that the blocks, n, n, rest in the lowest part of the double inclines when the engine is on a straight track, and, on coming on a curve, the inertia of the engine (tending to move in a straight line and cause the truck flanges to mount the outer rail), is expended in going up the inclines, o, o, as the truck moves laterally toward the inner part of the curve, and, on coming on to a straight line, the blocks descend by gravity to the bottom of the inclines, and the engine is prevented by gravity from acquiring a sidewise or oscillating motion." Other devices were pointed out for attaining the same results, namely, the allowance of lateral motion, and, at the same time, making use of the weight of the engine to restore it to its normal position, when the truck has been moved laterally under it.

I think the sliding beam, the block, and the inclined planes, may well be regarded as but mechanical equivalents for the swinging bolster and the pendent links—certainly when the links are made to diverge. But there were other features in the truck of Bissell which must be noticed. A primary object which he had in view, was "to prevent the truck from

LOCOMOTIVE ENGINE SAFETY TRUCK CO. v. PENNSYLVANIA R. CO.

swivelling around its centre in case of meeting with any obstruction." The patentee pointed out the difficulties and dangers attending the running of locomotive engines on curves with the pilot truck previously in use. His language was: "There is still a rigid straight line from the centre of the truck to the centre of the axle of each pair of drivers, and this cannot be exactly in the centre of the track which is curved. This fact contributes, with the tendency of the machine to move forward in a straight line, to push the truck outward. The truck is constantly, by this means, borne to the outer side of the curve, and the engine has a tendency to go off in the direction of the arrow in the drawing, i. e., beyond the outside of the curve, particularly in case a broken rail or obstruction occurs, when the truck swivels around on its centre pin, throwing the locomotive off the track." He then proceeded to set forth how he proposed to remove these difficulties and dangers. "I construct my track," said he, "in such a manner, that the axles of the driving wheels shall be parallel to the radial line of the curve, passing through a point between them, so that the drivers have a direct forward propelling motion along the rails, and do not strain or wear the flanges, and so that two or more pairs of drivers can be fitted with flanges. The central line of the locomotive in going around the curve, travels in a position tangential to the curve at a point between the drivers, and fit the truck wheels in such a manner as to allow the truck a tranverse motion. This is equivalent to a bending of the locomotive, the said truck swinging laterally upon an axis of motion, located centrally between the centre of the drivers and the centre of the truck, or slightly forward of the same, so as to give a slight tendency of the truck to run to the inner side of the curved track." He then detailed the effects which he claimed for his arrangement, and added: "At the same time, there is no chance for the truck to turn on its centre by any obstructions coming in contact with the wheels. The wheels will pass over a broken rail, and not be displaced, unless all the wheels are simultaneously, unsupported, and even then, the track, being set correctly in an angular position with the drivers, will continue to move in the correct direction, and will pass over any obstacle or broken rail, and attain the uninjured part of the track. In running on a straight track, the

truck is held correctly in position, and will run over quite considerable obstructions, without being turned aside. In running an ordinary engine on either a straight or curved track, one of the truck wheels sometimes breaks off, and the truck swivels around on its centre pin in consequence, and throws the engine off the track. But, with my invention, one wheel, or even two wheels, on opposite sides of the truck, might break off, and still the truck would not run off the track, because its position, relatively to the body of the locomotive, is firmly maintained." And, in his description of his drawings, the patentee said of the centre pin, that is, the bolt connecting the engine with its sliding beam: "It is the centre pin, which, in my arrangement, changes its character from a centre of motion to that of a draught block or pin, while the centre of motion is thrown back to the point h, which is slightly forward of the centre between the drivers." Once more, after reiterating some of the results of his arrangement, he said: "By reason of the above facts, and also of the further fact that I compel the truck to swivel around the centre, meaning the centre of motion in the rear of the truck frame, in proportion as the truck and the body move sidewise relatively to each other, I cause the angular position of the truck to conform to the conditions required on a curve, and also steady the track in running both on curves and straight lines, so that obstacles may be run over, and wheels or axles may fail, without allowing the truck to assume a false position."

I make but one other quotation from the specification. In describing his mode of attachment of the truck to the locomotive, he said: "The block k (that is, the curved block or beam, curved from the centre h, and sliding in the curved slot), might be bolted directly to the under side of the engine, and the curved slot would bring the axles of the wheels, e, e, parallel with the radial line, or nearly so; but, to allow an easier motion to the parts, the said block k, may be prevented from turning by radius bars i, to the centre h. I, however, prefer that said radius bars i, should be attached at 3, 3, to the frame, so as to cause the truck to swing on the centre h, in which case the block k, may be made use of, or the pin (king-bolt), be fitted to move in a curved slot, as shown in the drawing."

I have made these large extracts from Bissell's specification, in order to show, what I think, in view of them, must be apparent, that whatever else he may have planned, it was essential to his invention, that this truck, when in combination with a locomotive engine, should be incapable of swivelling on a king-bolt at the centre of the truck or within its frame. Such, undoubtedly, was his purpose, and, that purpose, his devices, I think, fully accomplished. Whether the locomotive was attached to the truck by being bolted rigidly to the curved block, or sliding beam, or bolster, which was compelled to move in a curved slot, of which the point h, behind the truck frame was the centre, or whether the block was prevented from turning by the radius bars holding it to that centre, or whether the radius bars were attached to the truck frame, it seems to me, that, rotation of the truck around any bolt or point at its own centre or within its frame, was rendered impossible.

LOCOMOTIVE ENGINE SAFETY TRUCK CO. v. PENNSYLVANIA R. CO.

The truck in its entirety had a centre of rotation at the point h, and, that there can be but one centre of rotation, is confessedly true.

A very earnest and ingenious argument has been addressed to me, and enforced by the exhibition of drawings and a model, in order to convince me, that, in fact, the combination of Bissell did allow some swivelling of the truck around the bolt through the sliding beam. I have given to the argument, the drawing, and the model careful consideration, but I have not been convinced by them. There is a change of position of the bolt, as there is of the block through which it passes when the block slides in the curved slot or grooves, for the bolt slides with the block, but the block does not rotate around the bolt, and, therefore, the truck, of which the block is a part, cannot. It is true the bolt might be forced to turn very slightly on its own axis, as it is in the model exhibited to me, and thus give an apparent slight rotation of the truck around the bolt. This might be done by carrying the bolt through the curved block and the curved groove or slot, and then attaching its lower end to another slide below the groove in the cross plate, the under slide being constructed to move directly across the frame in a rectangular slot, instead of a curved one corresponding with the slot above it. The swivelling, even then, would be almost imperceptible; but such was not Bissell's arrangement. He devised another centre of rotating motion for the entire truck, and gave no intimation that his arrangement permitted the truck to swivel around two centres of rotation.

The result of this examination of Bissell's patent, then, must be the conclusion that his invention was the combination with a locomotive engine of a pilot track, fitted to allow lateral motion, but incapable, when in combination with the engine, of swivelling on a king-bolt at its centre. Place now, side by side with this, the Smith invention, and, to my mind, it becomes plain, that the combinations of the two inventors, were substantially different. As has been seen, Smith's was the combination of a locomotive with a truck, capable, not only of lateral motion, but also of free rotation around the king-bolt at its centre. Lateral motion was common to both, but free swivelling around a centre within the frame of the truck was essential to one, while the impossibility

of it was essential to the other. Practically, therefore, the elements of the two combinations were not the same. The operations of the trucks, were unlike, when they were brought into combination with the engines, and in such combination they may well be regarded essentially different trucks.

And not only so, but different results were, Obtained from the combinations, alike in the working of the trucks, and of the locomotives, as well as in their concurrent action. While travelling upon a straight track, or on a curve, the radius of which is constant or invariable, there is no appreciable difference in the working of the Bissell and the Smith arrangements. But, when the locomotive is on a straight track, and the pilot truck is on a curve, or vice versa, or in passing from one curve into a reverse curve, there is a very important difference, for in either of the three cases last mentioned, the position and the direction of the track axles depend, in Bissell's combination, upon the position of the pin in the rear of the frame of the truck, which is made by him the centre of rotation, and the position of that pin is controlled by the locomotive. Necessarily, therefore, his truck wheels are twisted on the track by the drivers acting through that pin and the radius bars, or through the curved block moving in the curved slot around the pin as a centre. On the other hand, Smith's truck wheels are never twisted on the track, for the track, alone, controls their position and the direction of their axles. Swivelling, as the truck does, on its own central king-bolt, the axles and wheels are unaffected by the direction of the longitudinal centre line of the engine's motion. Of course they assume a correct position, and with the lateral movement, allow the drivers to remain correctly on the track.

I dwell no longer upon this part of the case. I have said enough to show that the truck employed by Smith, is, when in combination with a locomotive engine, a substantially different truck from that employed by Bissell; that its mode of operation is different, and that a new and useful result is obtained thereby. And, if so, it follows that the patent granted to Smith is not invalid for want of novelty in the invention. The combination is not claimed to have been anticipated by any other than Bissell.

I come now to the consideration of an other objection to the Smith patent, which was elaborately urged during the argument. It is, that the invention was abandoned by the patentee, or permitted by him to be in public use, more than two years before his application for a patent. This is, in fact, a double objection, but it may well be considered as one.

It appears from the testimony of Smith himself, that, in the year 1853, when in New York, he went on one occasion with a Mr. Bridges and Mr. Bissell to the rotunda of the Merchants' Exchange, to examine a contrivance exhibited there for preventing the disastrous effects of the breaking of railroad axles. In the rotunda they found a complete model, on a small scale, of a railroad car, and of a track having a curve and a reverse curve, with the novel invention attached, to show the operation. While there, Smith took

LOCOMOTIVE ENGINE SAFETY TRUCK CO. v. PENNSYLVANIA R. CO.

occasion, having permission from the owner of the model, to illustrate his views of the proper construction of locomotives, having swivelling trucks with swinging bolsters. What his views were, the evidence does not show. But this testimony, it has been argued, is proof that he then dedicated or surrendered his invention to the public. I cannot think so. I cannot see, that it shows he then had any complete conception of the invention for which he subsequently obtained his patent, and, if he had, the conception was not embodied. For aught that appears, his idea may have involved some changes in the locomotive itself—some new mode of construction to adapt it to the use of swivelling trucks with swinging bolsters. He may then have contemplated a truck swivelling on a centre outside of its frame, like the one which Bissell subsequently employed. And, whatever his view may have been, very clearly, it was not a perfected invention, which could then have been patented, and, consequently, there was no invention capable of abandonment. I think, it would be going unwarrantably far, were I to hold, that what took place at the Merchants' Exchange, amounted to a dedication, to the public use, of the invention, which he claimed in 1861, and for which he received a patent.

There is, however, other evidence, upon which the defendants rely, to establish their allegation of abandonment. According to Smith's testimony, the history of his invention was this: In 1856, he was general superintendent of the Hudson River Railroad, and, in the fall of that year, or early in 1857, he described his truck to Mr. Buchanan, who was then the master machinist of the road, and illustrated its operation by chalk sketches. At that time, at his suggestion, and under his direction, an engine with the truck was constructed. It was completed, on the 16th day of September, 1858, was put upon the road and tried. Manifestly, it was an experimental thing. Neither Smith nor Buchanan had full confidence in it. It was first tested without a train, and then with freight and slow passenger trains. These trials seem to have suggested modifications, and two other engines were constructed, in another shop of the company, and delivered in July, 1860. Into these, several changes were introduced, suggested by observation of the working of the first. Two other engines were built and delivered in the spring of 1861, in which other changes were made, and it was not until their construction, that the invention was considered perfected. Very soon afterwards, the application was made for a patent. Such is the testimony of Smith, and it is fully confirmed

by that of Buchanan. There is a little conflict in the testimony, respecting the time when the first engine was constructed. I do not regard it as of importance. It is impossible to see, in all this, evidence of abandonment. It was correctly said by Justice Clifford, in *Jones v. Sewall* [Case No. 7,495], to be settled law, that the mere forbearance to apply for a patent, during the progress of experiments, and until the party has perfected his invention, and tested its value by actual practice, affords no just grounds for presuming an abandonment. *Kendall v. Winsor*, 21 How. [62 U. S.] 328; *Agawam Co. v. Jordan*, 7 Wall. [74 U. S.] 607. It is true, an express relinquishment of an invention to the public is not indispensable to an abandonment. It may be inferred from long delay, unexplained, or from acts of the inventor inconsistent with any other theory, but it cannot be presumed from mere delay to apply for a patent, when the inventor is all the while perfecting the invention and testing its merits.

Nor has it any bearing upon the case, that Smith's experiments were made in public, and that his experimental engines were run upon a railroad—that was, a public highway. Thus only could the invention be tested. There is an obvious distinction between a public use, or a use by the public, and an experimental use in public. In many cases, it has been decided, that a use in public for test or experiment, is not such a public use as was contemplated by the act of congress, nor such a use as can be held evidence of dedication to the public. The *Nicholson* pavement case was notably one.

It has not been contended, and, certainly, in view of the evidence, it ought not to be, that the Smith invention was in public use, or on sale, with his consent, more than two years prior to his application for a patent. It appears to have been used on the Old Colony Railroad, in April, 1859, but there is nothing to show that such use was allowed by Smith, or that he knew of it.

My conclusions, then, upon the whole case, are as follows: 1. The combination claimed by Alba F. Smith, and described in his specification, was a patentable invention. 2. The patent granted to him on the 11th day of February, 1862, is not void for want of novelty of the invention. The invention had not been anticipated. 3. There is no sufficient evidence that the patentee abandoned the invention. 4. The patent is not invalid because the invention was in public use, or on sale, with the allowance of the inventor, more than two years before his application for the patent.

The only question that remains, is, whether the defendants have been guilty of infringement. In regard to this there is no controversy. An infringement is very clearly proved. I shall, therefore, order the injunction prayed for in the bill, and decree an account, etc. Let a decree be prepared accordingly.

{NOTE. In pursuance of the order of the court, a master was appointed to state an account of the profits realized by the defendants through their infringement of complainants' patent, and to assess the damages caused thereby. Following the rule laid down in *Mowry*

LOCOMOTIVE ENGINE SAFETY TRUCK CO. v. PENNSYLVANIA R. CO.

v. Whitney. 14 Wall. (81 U. S.) 620, and finding that the defendants had received no gains by reason of the infringement, and that the case was one for damages only, the master reported such damages to be \$89,644. Exceptions to this report, filed by the defendants, having been overruled (2 Fed. 677), they prosecuted an appeal to the supreme court. Here the evidence and arguments in the whole case were reconsidered, and the court, the opinion of which was delivered by Mr. Justice Gray, weighing the reasons assigned for sustaining Smith's patent in the opinion of the court below (principal case), was unable to escape from the conclusion that the application of the old truck to a locomotive engine neither was a new use nor produced a new result. 110 U. S. 490. 4 Sup. Ct. 220.

{For another case involving this patent, see *Locomotive Engine Safety Truck Co. v. Erie By. Co.*, Case No. 8,452.}

¹ {Reported by Hubert A. Banning, Esq., and Henry Arden, Esq., and here reprinted by permission.}

² {Reversed in 110 U. S. 490, 4 Sup. Ct. 220.}

³ {From 1 Wkly. Notes Cas. 16.}