PULLMAN'S PALACE CAR CO. *v.* BOSTON & A. R. R. CO. *ET AL.*

Circuit Court, D. Massachusetts. October 9, 1890.

1. PATENTS FOR INVENTION—VESTIBULE CAR—CONNECTIONS—NOVELTY.

The object of the invention for which letters patent No. 403,137, were granted to George M. Pullman, May 14, 1889, was to provide a continuous connection between the contiguous ends of passenger railway cars, consisting of an inclosed passageway on the end of each car, the solid parts being connected by a loose joint, or buffer, made of some flexible material so constructed as to accommodate itself to the movement of each car, and yet restrained from moving sidewise so as to obstruct the passage-way, and forming, at all times, a complete vestibule connection. The invention possessed great advantages over the old open platform cars. There had been no prior attempts to construct a vestibule train having the motions and restraint of motions of the patent. Some prior experiments in the construction of vestibule cars had been abandoned, and, in others, the object of the vestibule had been for purposes of ventilation or to diminish the resistance of the atmosphere to the passage of cars. Held, that the patent was not void for want of novelty.

2. SAME—ANTICIPATION.

A patent was granted November 15, 1887, to H. H. Sessions for an improvement in the construction of railroad cars. The specification stated that the invention consisted in the application to the cars of a frame-shaped plate arranged in a vertical plane parallel with a vertical transverse plane passing through the car-body, and projecting, by means of backing springs, for a short distance beyond the end of the car, and the purpose was stated to be (1) to diminish the racking effect upon a car-body when suddenly brought from a state of motion to a state of rest, and *vice versa;* and (3) to diminish the tendency to a swaying movement when a train is running rapidly. The specification also stated that the improvement, as shown in the drawings, was exhibited in connection with another improvement in car construction, consisting of a vestibule attachment; and that the vestibule feature was no part of the invention claimed. The Sessions application was filed about two weeks Only before the Pullman application, and the patentees had been working together. The drawings in the two patents were almost identical; but, on a bill for infringement of the Pullman patent, Sessions, as a witness, limited his claim to exactly the description contained in his specification. *Held,* that the Pullman patent was not anticipated by the Sessions patent.

3. SAME.

The fact that the Pullman application was at first rejected by the patent-office, mainly on reference to the prior Sessions and another prior patent, and was not granted until after the original specifications and claims were rewritten in great part,—Pullman disclaiming anything contained in the Sessions patent,—and after an affidavit by Pullman that he completed his invention before the filing of the Sessions application, does not prove priority of invention in Sessions, where it does not appear on what ground the Pullman patent was finally granted, and there was nothing in the patent, as allowed which was not in the original application.

4. SAME—INFRINGEMENT.

In the Pullman patent, an arch-plate was to be so secured to the buffer-plate as to be capable of the same motions and restraint of motions as the latter; and, In the preferred construction, It was riveted to the buffer-plate. *Held,* that a structure in which the only important difference from the Pullman patent was that the arch-plate was hinged to the buffer plate was an infringement of the Pullman patent.

In Equity.

Chauncey Smith, Charles K. Offield, Frederick P. Fish and *Wilmarth H. Thurston,* for complainant.

George Payson and *Causten Browne,* for defendants.

COLT, J. The bill in this case alleges infringement of letters patent No. 403,137, granted May 14, 1889, to George M. Pullman, for a new and useful improvement in solid vestibule connections between railroad cars. The description and object of the Pullman invention is carefully set out in his patent. The specification says:

"The object of my invention is to provide suitable means whereby there may be made a continuous connection between contiguous ends of passenger railway cars, this connection being an entirely closed passage-way, preferably of the width of the car platforms, and serving at the same time as a vestibule for entrance and exit to the respective ends of the cars, the connection between the solid parts forming a vestibule being made of flexible or adjustable material, so as to constitute a loose or flexible joint that will permit of sufficient movement of each unit car in travel, but at all times preserving a complete vestibule connection between respective cars. * * * The problem is to hold each bellows so firmly to its car that it will maintain its place when the car is uncoupled from others; *second,* to so support them that when cars are coupled the ends of adjoining bellows or connections take their relative proper positions, so as to form a continuous passage without any necessity of manipulating the bellows or flexible connections; *third,* to provide a continuous flooring between the cars; *fourth,* so to combine the parts that both the flexible connections and the flooring shall be so supported that the cars may approach nearer and remove further from each other without disturbing either the continuity of the flooring or that of the bellows or inclosed flexible passageway; *fifth,* that the cars may, as in traveling around curves they must, have the longitudinal line passing through the center of one car at an angle with that passing through the center of another car without disturbing the continuity of the foot-passage, or causing open spaces between the ends of adjoining flexible passage-ways."

The patent *first* describes what is called a "vestibule," which is formed by inclosing the platform, except at the end, by means of a roof and doors; and, *second,* a vestibule connection which consists of an arch or face-plate and a bellows-like structure attached at one edge to the arch-plate, and at the other to the outer end of the vestibule. As cars in a moving train increase and decrease their distances with respect to each other, and also change their angles with reference to each other when rounding curves, it follows, that, in order to make a fairly tight joint between the connections of opposite cars, the bellows must be extensible and capable of being shut up on one side, while they are opened on the other, and that the face or arch plate, to which these bellows are attached, must be capable of traveling in and out from the end of the car, and also of turning, as it were, on

a vertical axis, so that its two edges can occupy either the same or different distances from the end of the car. It is also necessary that the face-plate shall be restrained from moving bodily sidewise when running on a curve, because, as a result, the passage-way

might be obstructed. It is these motions and restraint of motion which constitute the essence of the Pullman invention. The patent states:

"It {the arch-plate} can move in and out from the platform, it can oscillate, and nevertheless a vertical line drawn through its center will always practically be in a vertical plane passed longitudinally through the center of the car, and it must be supported either from the buffer-bar or by other means of the same character, so as to be capable of thus moving."

To the arch-plate is secured the buffer-plate, and the patent states that it has the same motions, and is restrained in the same manner, as the arch-plate. The patent further says:

"This buffer-plate on one car could not have its acting-face coincident with a similar buffer-plate on an adjoining car when the two cars are rounding a curve, unless it could change its angle with reference to a longitudinal line passing through the center of the car, so that it can be at times at right angles to such a line and at times at various other angles. The support of the buffer-bar, before described, not only permits these changes of angular positions, and the in and out motions of the buffer-bar, but prevents its center from leaving a horizontal longitudinal line passing through the center of the cur to which it is attached, so that the center of the buffer-bar is always, whether projected or shoved in, practically in line with the center or middle of the platform. The mode of supporting this buffer-bar must be such as to permit it to have these motions so long as the buffer-bar is permitted to move as described, and, at the same time, have its center restrained, so that it can move only in a certain path, as before described."

In the form of the Pullman invention described in his patent, the arch-plate is riveted to the buffer-plate, and the buffer-plate is mounted upon a spring-extended buffer-rod. Upon this rod is mounted a crossbar, or equalizing bar, in such manner that it can move out and in with the buffer-rod, and at the same time oscillate upon its center. Two rods are attached to the ends of this cross-bar, not firmly, but by a sort of ball and socket joint, in such manner that the cross-bar may change its angles to horizontal lines drawn perpendicular to the length of the car; while the rods always remain substantially parallel with the sides of the car. These rods pass through mortises, or guide-plates, made in or supported by the transverse timbers of the car, and are thus confined in such manner that they can slide outward and inward in the direction of their length, but cannot practically move in any other direction. These rods at their outer ends project beyond the outer cross-beam of the car, and are there pivoted to the buffer-plate. This mechanism permits the forward-and-back and oscillating motions, and prevents any lateral motion, as before described. The first claim of the patent is as follows:

"(1) The combination, substantially, as hereinbefore set forth, of a faceplate forming the open ends of a vestibule-extension to a railway-car when not coupled with another car in a train, and a buffer-plate which is pivotally connected with a spring-extended buffer-rod,

and arranged, as described, to be capable of oscillating on a fixed center, but restrained by guide-rods, as described, to compel its center of oscillation to move only in a line passing longitudinally and horizontally through the center of the car, the said buffer-plate and the face-plate of the vestibule connected therewith being free to move angularly with such fixed longitudinal line of their movement."

The second claim is for the combination of the elements of the first claim with the threshold, or foot-plate, when all three have the motions and are restrained as described. The third claim is not in controversy. The fourth claim is for the combination of the arch-plate and flexible connection, when the arch-plate has the motions and is restrained as described. The fifth claim is for the combination of a car-body extension, which incloses the platform, and is provided with doors, bellows-like connection made of flexible material, face-plate, and foot-plate, when the face-plate and foot-plate have the motions and are restrained as described.

The first ground of defense I shall consider is that the Pullman patent is void for want of novelty in view of the prior state of the art. It appears by the record, that Pullman ran his first vestibule train early in 1887, between Chicago and Jersey City, on the Pennsylvania Railroad, and that, in December, 1889, these cars had been placed upon sixty-one railroads of the United States, representing a mileage of more than 91,000 miles. Of the great advantages of the vestibule system over the old open platform cars, both in respect to the safety and convenience of passengers, there can be no doubt. Where a patented improvement possesses such marked utility, and has so speedily and universally come into public use, the court should hesitate to declare the patent invalid for want of novelty, because these circumstances tend strongly to prove inventiont The railroad passenger traffic of the country is immense, the dangers incident to the open platform connection between cars are well known, and the fact that an inventor has succeeded in overcoming this danger to human life, and at the same time has materially increased the comfort of railway travel, should not escape the mind of the court in dealing with the question of invention. Considering the amount of thought in the country directed toward improvements in railway mechanism, whereby greater safety and comfort may be secured to the traveling public, it hardly seems possible that the Pullman vestibule system, in view of what it has accomplished, and the immediate recognition of its merits, was the result of the exercise merely of mechanical skill, and, therefore, not patentable under the laws of the United States. Assuming that Pullman, and not Sessions, (a question to be presently considered,) was the inventor of that which is new and useful in the Pullman patent, I do not think it can be seriously questioned that the combinations covered by the first, second, fourth, and fifth claims of the patent are not found in the prior art. The prior attempts, so far as such attempts had been made to construct a vestibule train, had proved failures, or nearly so; at least, I find no prior attempt to construct a solid vestibule train having the motions and restraint of motion which are the prominent features of the Pullman patent. Some of the prior experiments in the construction of vestibule cars appear to have been abandoned. In other cases, the main object of the vestibule seems to have been for purposes of ventilation, or to obviate the loss of power which is caused by the space or break in the general line of cars caused by the atmosphere acting on the end of each car, rather

than in securing a continuous passageway and connection between the cars. The problem which Pullman

man undertook to solve was first shown in his patent. Under these circumstances, I do not deem it necessary to consider all the prior patents which are introduced as anticipations, to a greater or less extent, of Pullman, but it will be sufficient to refer to those which are mainly relied upon. In the English Bessemer patent of 1846, the patentee defines his invention, and states that its purpose is to diminish the resistance opposed to the transit of the cars by the atmosphere. To do this, he incloses the space between the carriages with a hood similar to that of the hooded chaise, or, instead there of, he forms a fixed hood, or projection, of wood or other rigid material, which projects so far as the ends of the buffer-stocks, and forms externally a continuation of the carriage body. I find nowhere in the Bessemer patent the arch-plate of Pullman, so supported as to have the motions and restraint of motion described in the claims of his patent. And this same observation may be made respecting the English Chidley patent of 1865, and the Smith patent of October 24, 1882. Much stress seems to be placed by the defendants upon the Atwood patent of July 10, 1855. It is true that, for several years prior to 1860, cars with the Atwood equipment were run upon the Naugatuck Railroad, in Connecticut. The patent was for an improvement in ventilating cars. Atwood describes in his patent a flexible connection attached to each end of each ear, and, therefore, the cars had a kind of vestibule connection, but the flexible connections of the Atwood patent are not supported by any rods like those of Pullman, and they are not restrained from any lateral motion. In other words, I do not find in the Atwood device those motions and restraint of motion which lie at the basis of the Pullman invention. Leaving out the Sessions patent, I can discover nothing in the prior state of the art which anticipates the Pullman patent, or which should render it void for want of patentable novelty.

I now come to the most serious defense to this suit. It is said that the patent granted to H. H. Sessions, November 15, 1887, describes what is now claimed as the Pullman invention. In other words, that, if you take the Sessions invention out of the Pullman patent, it becomes void for want of patentable novelty, or, at most, it must be so limited in its scope that the defendants do not infringe in the use of their present apparatus. To express the proposition in another form, the defendants contend that the oscillation of the car about a fixed center, or the so called "motions" and "restraint of motion," which are made the principal features of the Pullman patent, are found in Sessions's, and that the additions of a vestibule character which Pullman made, such as attaching the bellows-like structure to the end of the car, do not constitute a patentable difference from Sessions's, because this feature is found in the old Atwood patent; and that, therefore, the Pullman patent is void for want of invention. It is admitted that Pullman may have improved the vestibule connection between cars, and that this was his only object, but that all beyond that which is found in his patent was the invention of Sessions. Sessions is general man-

ager of the Pullman Company, at Pullman, Ill. He applied for his patent April 29, 1887, two weeks before

the Pullman application, which was filed May 13, 1887. The fact that these applications were filed about the same time go to prove that Sessions thought that he had invented something, and that Pullman believed he had invented something. Let us turn now to the Sessions patent and see what was his invention. The patent is for an improvement in the construction of railroad cars. The specification says:

"The invention hereinafter particularly described is embodied in the application to the individual cars, which when coupled will compose a train, of a frame-shaped plate arranged in a vertical plane parallel with a vertical transverse plane passing through the car-body and projecting, by means of backing-springs, for a short distance beyond the end of the car. The height of said frame-plate for the best results should be substantially that of the height of the car to which it is attached, and the same should be so shaped as to allow a free communication between the ends of adjacent cars for the passage of persons through such frame-plates."

Sessions then states the purpose of his invention as follows:

"The purpose of the improvement is twofold,—first, to diminish the racking effect upon a car-body, due to its momentum when it is suddenly brought from a state of motion to a state of rest from any cause, as well as the same injurious consequences when a ear is suddenly started from a state of rest, and, secondly, to diminish the tendency to a swaying or oscillating movement which is developed whenever a train is running at high speed upon an ordinary railroad track. I have illustrated my improvement in the drawings by exhibiting the same in connection with another improvement in car construction, which consists of a vestibule attachment to the ends of railroad cars for the purpose of completely inclosing the sides of the car platform and allowing of a continuous inclosed aisle or passage-way between the adjacent end of the coupled cars of a train. This vestibule feature is no part of the present invention. * * * So much of the drawings as represent the arrangement and construction of a vestibule attachment are not illustrative of any invention set forth in this patent, except as the same show, in combination therewith, the improvement hereinafter specifically described. * * * What I claim as my invention, and desire to secure by letters patent, is: 1. The combination, with the end of a railway car, of a frame-plate or equivalent series of buffers backed by springs, arranged with its face in a vertical plane and normally projecting beyond the end of the car, whereby, upon the coupling of two cars, a spring-buffer will be interposed between the superstructures of such adjacent cars above their platforms, and also frictional surfaces under opposing spring pressures to prevent the racking of the car-frames upon sudden stoppages and to oppose the tendency of the car to sway laterally when in motion, substantially as hereinbefore set forth. 2. The combination of a spring-buffer, or friction-plate, with the ends of each of the adjacent cars of a train, said buffers being located on the ends of the superstructures of the cars, respectively, and substantially at the tops of the same, and so arranged that when

the two cars are coupled the faces of the buffers will bear against each other in contact under pressure, substantially as and for the purposes specified."

To make a perfect vestibule connection between cars, it appears necessary to use both the inventions of Pullman and Sessions. But Sessions addressed himself to the solution of one problem, and Pullman, another. Each undertook to overcome certain difficulties, and each obtained a patent for the means by which they reached a successful result. The problem Sessions set out to solve was to diminish certain evils incident

to a train of cars,—namely, to the starting and stopping of them, and to a swaying which arises under certain conditions when the cars are moving,—and he accomplishes this, in the language of his first claim, by a "frame-plate or equivalent series of buffers backed by springs." It is the spring-buffer or friction-plate located at the end and substantially at the top of each adjacent car of a train, and so arranged that when two cars are coupled together the buffers will bear against each other under pressure, which constitutes the invention of Sessions. In the friction produced by the contact of heavy face-plates, or buffers; under spring pressure, Sessions solved the problem he undertook of diminishing the racking effect upon the car-frame when the car is suddenly started or stopped, and the swaying movement which is developed when the car is running at high speed. This is all he claims in his patent to have done, and all he swears he did do. On the other hand, what Pullman undertook to do was to overcome the difficulties incident to a vestibule connection between cars, and he accomplished this by means of "flexible or adjustable joints to permit of sufficient movement between individual passenger-cars," which he declares is the invention he desires to protect by letters patent. Much reliance is placed by the defendants on the fact that the drawings in the two patents are nearly identical, and from this it is inferred that the adjustable joints, or equalizing mechanism, of the Pullman patent was really the invention of Sessions, and that it is found in his patent. It must here be borne in mind that these two inventors were working together, and that both their applications for patents were filed within a few days of each other, But, more important than this, the Sessions drawings must be read in connection with his specification; and, in his specification; he declares that his improvement, as shown in the drawings, is exhibited in connection with another improvement in car construction, and that the vestibule feature is no part of his invention. Upon the questions whether the drawings of the Sessions patents show the equalizing mechanism of Pullman, the eminent experts employed on each side of the case differ. The only part of the specification throwing light on this point is as follows:

"The spring pressure to act against the lower portion of the frame-plates is obtained, as exhibited in the drawings, from the coiled spring *m,* which takes a bearing at one end, against the solid frame-work of the car, and at the other end against a cross-head beneath the entrance-platform car, which cross-head, by means of the rigid links, *s s,* is connected with the threshold of the frame-plate *a,* the said links or bars, is, being knuckle-jointed to the threshold-plate *o.*"

It is urged by the defendants that it would be useless to have these links or rods jointed to the threshold-plate, unless they were also loosely connected with an oscillating spring buffer-bar, such as is described in the Pullman patent. But, however this may be, Sessions does not describe rods so connected, or make any mention of an oscillating equalizing bar. To incorporate these features into the Sessions patent must be done by

implication, and in defiance of the testimony of Sessions in this suit as to what he invented and what he did not invent. If he were the first inventor of

this equalizing mechanism in combination with the spring-buffers, it is remarkable that he did not set it out in his specification, and include it in his claims. It is further urged by the defendants that the Sessions spring-buffers would work imperfectly, especially in rounding curves, without the equalizing bar and the rods hung loosely or jointed at their ends. Upon this question, also the experts differ. Where persons so skilled in the construction of mechanical devices as the witnesses in this case disagree, it is not strange that the court should hesitate to decide all the questions relating to frictional contact or the laws of motion which are raised by the record. The safer course to pursue, I think, is to take each patent as it stands, and give to each inventor no more and no less than what he describes and claims as his invention. It is further urged in defense that Sessions did not describe the equalizing mechanism as a part of his invention, because it was old in the art at that time, it being mainly the addition to his spring-buffers of the well-known Janney car-buffer, patented May 13, 1879. But the answer to this is, that if Sessions were the inventor of the modified janney car-buffer, such as is found in the Pullman patent, in combination with his face-plate, why did he not claim to be such inventor, and set it out in his specification? Instead of this, he swears that Pullman first suggested the application of the Janney buffer to vestibule cars. As bearing upon what Sessions invented, let us briefly examine his testimony in this suit. Sessions says:

"Mr. Pullman showed me drawings of the vestibule, and claimed it as his invention, which was practically as shown in his patent, except that he did not have a heavy iron face-plate backed with springs. When I asked Mr. Pullman about his vestibule, as to the means he purposed using for holding the flexible connections from; the car, he said that lie was to use a wooden frame. It was then I proposed to modify my former device *[i. e.,* roof-buffer] and apply it to this vestibule. * * * I used an iron face-plate with top-buffer stems and spring and, on the suggestion of President Pullman, I combined the Janney buffers with a single buffer-bar or face-plate. * * * Mr. Pullman told me he was going to build some solid trains. I didn't know what he meant by 'solid trains.' He explained to myself, and to others in my office, using, as near as I can recollect, these words: 'I want the cars to have enclosed passage ways, and to be connected together;' so that, instead of speaking of cars, he wanted them as one long flexible car. I asked him how he purposed to arrange his platforms so he could maintain the integrity of that long train when rounding sharp curves. He then used the term, a flexible connection; * * * *Int.* It appears, then, that the device, as actually invented by you alone, never came into use? *Ans.* When in combination with the bottom buffer-plate it went into use. *Int.* That is to say, after you had made the additional so-called invention, suggested by Mr. Pullman, then the thing became practical and went into general Use? *Ans.* Yes, sir."

Mr. Sessions's testimony clearly limits his invention to the heavy iron face-plates backed by springs, or, in other words, to exactly the description contained in the specifica-

tion of his patent. Suit was brought in 1887 upon the Sessions patent in the circuit court for the northern district of Illinois, and the patent was sustained. *Pullman Palace Car Co.* v. *Wagner Palace Car Co.*, 38 Fed. Rep. 416.

The record in that case by stipulation is made a part of this record. It is said that the deposition of Sessions in that case, as to the scope of his invention, is somewhat in conflict with his present position. It is true that Sessions there testifies that his buffer is attached to a Janney buffer as modified, but he nowhere says that he was the inventor of this feature, *and* he now directly and positively swears that this was suggested by Pullman. As to the position which the learned counsel for the complainant in that case took before the court, respecting the proper interpretation to be given to the Sessions patents I do not see what it has to do with this case, but, admitting that it may have a bearing, I can detect no serious inconsistency in the grounds then urged to sustain the Sessions patent and those now brought forward by the complainant. *Prima facies,* patentas good. It is for the defendants to make out in this case that Sessions was the inventor of the Pullman invention. Here is a most meritorious invention, and the credit is due to one or the other. I cannot upon a comparison of the two patents, taken in connection with the evidence of Sessions, hold him to be the prior inventor. It seems to me it would be an act of injustice for the court by inference to incorporate the Pullman invention into the Sessions patent, and thus prevent both inventors from deriving any benefit from this improvement; because it is manifest that, if we destroy the Pullman patent, Sessions can derive no benefit from the Pullman invention, because he nowhere describes or claims it in his patent. The proceedings in the patent-office are brought forward by defendants, as tending to prove priority of invention in Sessions. It is true that the Pullman patent was not granted until May 14, 1889,—two years after the application was filed. It is also true that the application was rejected mainly on reference to the prior Atwood and Sessions-patents. The original specification and claims were, in great part, rewritten, Pullman disclaiming anything contained in the Sessions patent. In his affidavit of April 1, 1889, forwarded to the patent-office, Pullman states that he completed his invention prior to the date of the filing of the Sessions application. The point is consequently made by the defendants that Pullman finally obtained his patent because the" patent-Office believed that his invention was prior to Sessions's, and not that it embraced anything patentable outside of Sessions's. In the absence of record proof, the court has no right to assume that the patent was issued on this affidavit or for this particular reason. The ground taken by the patent-office in finally granting this patent does not appear, but it does appear by this record that Sessions swears that what Pullman said in his affidavit as to his invention was true in point of fact. The statutes of the United States provide how a patent may be obtained. Where the claims of α patent are rejected, in whole or in part, it is the duty of the commissioner to notify the applicant, in order to enable him, if he desires, to make his description and specification of claims more specific and precise. The Pullman application took the usual course, and the patent was granted. There is nothing in the patent as allowed that was not contained in the original application. The structure

described is the same. Inventors work more or less in the dark. They may not know in the beginning how well they have built. Pullman may not have realized at first about the motions and restraint of motion necessary to a solid vestibule train. But he did describe in his original application, and showed in his drawings, an apparatus which produced these results. He knew what, that apparatus was, and he knew it worked successfully, since he had already built and run a train of cars so equipped. The fact that, in its progress through the patent-office, the specification and claims of the patent were made more clear and accurate, so as to express his actual invention, affords no reason for casting doubts upon the validity of his patent.

The question of infringement alone remains. Upon the construction now given by the court to the Pullman patent, I have no doubt that the structure used by the defendants is within the patent. The defendants: hinge the arch-plate to the buffer-plate. This is the only important difference in the two structures. If the hinges in the defendants' model were pinned fast, and the latches on top of the arch-plate removed, you would have the construction mentioned in the patent in which the arch-plate, the buffer-plate, and the foot-plate are all mounted so as to have the same motions, and be restrained to the same line of central motion. The arch-plate, the patent states, is to be firmly attached to the buffer-plate, and in the preferred construction it is riveted to the buffer-plate. The defendants seek to avoid infringement by hinging the arch-plate to the buffer. The patent defines, however, what is meant by "firmly attached," because it states that the arch-plate is so secured as to be capable of the same motions, and restraint of motion, as the buffer-plate. Any fastening, therefore, which is secure enough to obtain these results comes within the patent. It is clear also from the language of the specification that the patentee does not confine himself to the precise means shown in the drawings for supporting the arch-plate, foot-plate, and buffer-plate, but that various means may be employed for that purpose, so long as these parts have the motions before referred to, and are restrained centrally. The structure of the defendants may not work perfectly, but it contains the substance of the Pullman invention as set out in claims 1,2,4, and 5 of his patent. In defendants' car there is a faceplate, forming the open end of a vestibule connection when not coupled with another car, and a buffer-plate, both being pivotally connected with a spring-extended buffer-rod, and both having the motions, and restraint of motion, set forth in the patent, and it is, therefore, within the first claim of the patent. It has also the threshold, or foot-plate, combined with the arch-plate and buffer-plate, so as to have the motion and be restrained in the same manner; and it is, therefore, within the second claim of the patent. It has also the bellows-like connection when combined with other elements, so as to produce the same results, and it is, therefore, within the fourth claim of the patent. It has a vestibule provided with doors at the sides, in addition to the other elements contained in the fifth claim of the patent, and it, therefore, infringes that claim

Let a decree be drawn for complainant, as prayed for in the bill.