

SARVEN V. HALL ET AL.

{9 Blatchf. 524; 5 Fish. Pat. Cas. 415; 1 O. G. 437;  
Merw. Pat. Inv. 435.}<sup>1</sup>

Circuit Court, D. Connecticut. April 23, 1872.

PATENTS—REISSUE—CARRIAGE  
WHEEL—SPECIFICATIONS—AGGREGATION OF  
DEVICES.

1. A reissued patent cannot be sustained by extrinsic proof that the patentee was the inventor of all that is claimed in it, if what is so claimed was not shown or suggested in the original specification, drawings, or model.  
{Cited in Giant Powder Co. v. California Powder Works, Case No. 5,379.}
2. Defects or insufficiencies in the description of anything which is found in any form in the original specification, drawings, or model, may be supplied in the reissue.
3. The specification of the original letters patent granted to J. D. Sarven, June 9th, 1857, for an improved carriage wheel discloses two devices—one consisting of spokes, whereof a part are tenoned into a wooden hub, and a part are in wedge form, not thus tenoned; the other consisting of flanged collars applied to the hub and the spokes therein, whether the spokes are constructed in the manner last named, or in any other manner, the specification pointing out the application of flanged collars to a wheel containing the ordinary number of spokes, in which it is probable, at least, that the extra or increased number of spokes not tenoned into the hub are emitted.
4. The reissued letters patent granted to said Sarven, September 6th, 1870, on the surrender of said original patent of 1857, in declaring that the invention embraces the combination of the flanged collars with a wooden hub into which the spokes are tenoned, without including the wedge-form spokes, or the solid bearing of the spokes upon each other exterior to the hub, do not embrace a device not found in the record of the original patent.
5. The first claim of said reissued patent, namely, “A carriage wheel constructed with the spokes combined with a wooden hub by tenons entering mortises in said hub, and

with each other, in such manner that a solid belt is formed around the said hub, substantially as before set forth," is limited to a solid belt formed by alternating tenoned spokes with wedge-formed spokes not tenoned, and is not infringed by a wheel in which all the spokes are tenoned into the hub.

{Cited in *Matteson v. Caine*, 17 Fed. 527.}

6. A mere aggregation of parts, whereof the patentee has not the exclusive right to either, and in which the parts have no new operation, and produce no result which is due to the combination itself, is not patentable.

{Cited in *Russell & Erwin Manuf'g Co. v. Mallory*. Case No. 12,166; *Reckendorfer v. Faber*, Id. 11,625.}

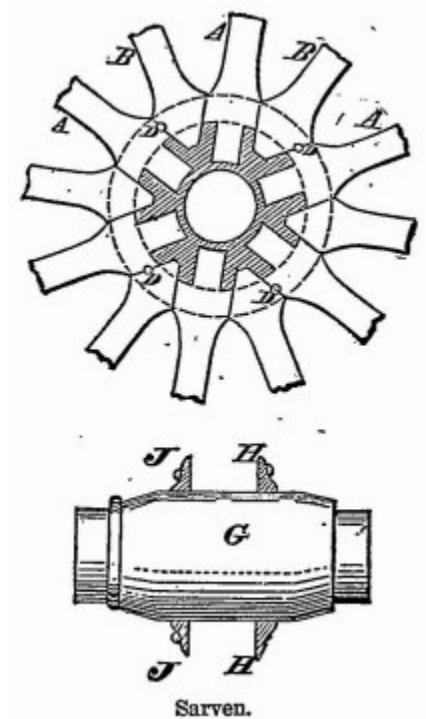
7. The second claim of said reissued patent, namely, "A carriage wheel constructed with a mortised wooden hub, with tenoned spokes, and with flanges which embrace the faces of the spokes in the immediate vicinity of the hub, and are connected together so as to form a metallic band, through which the spokes extend into the mortises in the wooden hub, substantially as before set forth," is valid.
8. Such claim is not a claim for a mere aggregation of devices.
9. Such claim is infringed by a wheel having tenoned spokes, and a wooden hub, and a mortised collar, cast in one piece, with divisions between the mortises for the several spokes, and with tapering sides formed to receive the spokes driven tightly therein, and give them endwise bearings.
10. As the mortised collar performs, both mechanically and practically, in the combination, the same office that is performed by the flanges of the plaintiff's wheel, it is none the less an equivalent therefor, in lie combination, because it performs an additional office, not performed by such flanges.

{Cited in *Wheeler v. Clipper Mower, etc., Co.*, Case No. 17,493; *Converse v. Cannon*, Id. 3,144; *Carstaedt v. United States Corset Co.*, Id. 2,468.}

- {11. Cited in *Untermeyer v. Freund*, 7 C. C. A. 183, 58 Fed. 212, as a decision based upon the language of section 111 of the act of July 8, 1870, which limited the remedial provisions of the act to suits and proceedings commenced after its passage.}

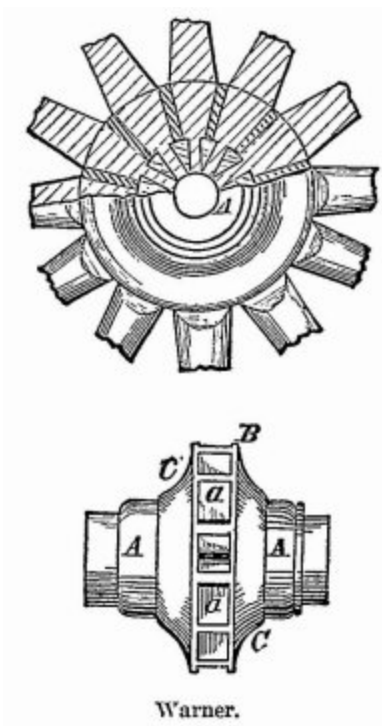
{This was a bill in equity by James D. Sarven against Elihu Hall & Co.}

<sup>2</sup> [Final hearing upon pleadings and proofs. Suit brought on letters patent No. 17,520, for an “improved carriage-wheel,” granted to complainant June 9, 1857; reissued August 11, 1868; and again reissued September 6, 1870 (No. 4,116); and extended for seven years from June 9, 1871. The defendant’s wheel was made under letters patent No. 61,900, granted to Almon Warner, February 5, 1867, and reissued April 22, 1873 (No. 5,366). The Sarven wheel is shown in the accompanying engraving. It consisted, in the form shown in the patent, of a mortised hub, with six tenoned spokes, A, placed in line. Between each pair of these spokes was inserted another spoke, B, having a wedge-shaped foot, so that the lower end of the spokes were brought in contact just outside of the hub, thus forming a solid ring of wood. Metallic flanges, H and J, were then placed around the hub and on each side of this wooden ring, so as to bear against both the spokes and the hub, and were bolted together by rivets, D, passing through the flanges and lower part of the spokes.



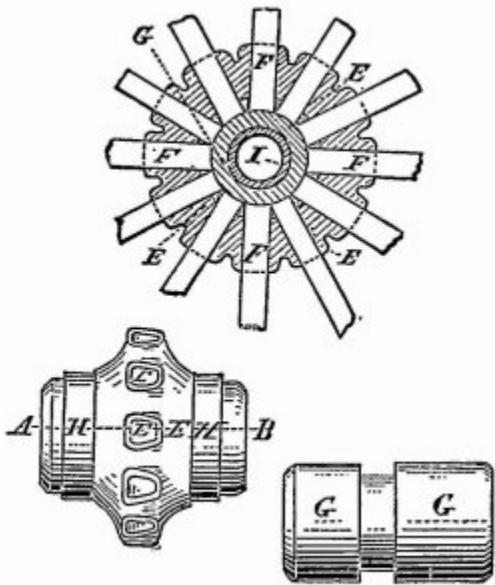
{The claims were as follows: “A carriage-wheel constructed with the spokes combined with the wooden hub, by tenons entering mortises in said hub, and with each other, in such manner that a solid belt is formed around the said hub, substantially as before set forth. Also, a carriage-wheel, constructed with a mortised wooden hub, with tenoned spokes and with flanges, which embrace the faces of the spokes in the immediate vicinity of the hub, and are connected together so as to form a metallic band, through which the spokes extend into the mortises in the wooden hub, substantially as before set forth. Also, a carriage-wheel constructed with a mortised wooden hub, with tenoned spokes combined with each other, so that a solid belt is formed around the hub, and with metallic flanges, which embrace the faces of the spokes in the immediate vicinity of the hub, and are connected together so as to form a metallic band, through which the spokes extend into the mortises in the wooden hub, substantially as set forth.”

{The first engraving on the next page represents the Warner wheel, made by the defendants. A metallic mortised collar, a, was placed round the hub, A, which was also mortised, so that each spoke was driven through the metallic collar, and then by its tenon into the mortise in the wooden hub. The metallic collar formed a bearing against the sides of the spoke and also against the hub.



Warner.

[The following engraving represents the Smith & Parfrey wheel, in which the hub, G, was not mortised, but channeled, and the spokes, F, were not provided with tenons, but after passing through a mortised metallic collar, E, substantially the same as that used by the defendants, passed into the channel in the hub, without diminution.



Smith & Parfrey.] 8

Smith & Parfrey.]<sup>3</sup>

F. S. Beach, S. S. Fisher, and C. M. Keller, for complainant.

C. R. Ingersoll and B. F. Thurston, for defendants.

Before WOODRUFF, Circuit Judge, and SHIPMAN, District Judge.

WOODRUFF, Circuit Judge. The defence relied upon herein is of a mixed or two-fold character, namely, a want of novelty in those features of the complainant's alleged invention which have been used by the defendants, and a denial that the defendants have infringed the patent granted to the complainant, in any feature which can be lawfully claimed to be secured to him. This mixed defence begets the claim, that no right which was due to the complainant in virtue of the original invention described in his patent, specification, drawings, or model, has been violated by the defendants; and that, if the invention, as described and claimed in the reissued patent, purports to cover any broader ground, upon which the defendants can be said to have trespassed, then the reissue is, pro tanto, void.

These grounds of defence require an examination not only of the state of the art when the complainant's invention is alleged to have been made, but an examination of the complainant's original patent specification, drawings, and model, to learn therefrom what invention by the complainant is disclosed thereby; for, it was conceded by the counsel for the complainant, on the hearing, that, in their opinion, at least, nothing can be legally claimed in the reissue, which does not appear either in the specification annexed to the original patent, or in the drawings, or in the model, even though it was, in fact, the invention of the patentee, and its use was contemplated by him when the patent was applied for, and that, the reissue could not, in that respect, be sustained by

extrinsic proof that the patentee was, in truth, the inventor of all that was included in it, if neither the original specifications, drawings, nor model, showed or suggested the device in question. This is in accordance with the object of a reissue, and with the license therefor given by the law. It is where a patent is inoperative or invalid by reason of a defective or insufficient description, specification, or claim, and not where the device is not described or specified at all, that permission is given to reissue the patent. Devices not described or specified may, if they are the invention of the patentee, be the subject of a patent, subject to all other rules governing the inventor's right; but it is not the office of a reissue to embrace them. *Seymour v. Osborne*, 11 Wall. [78 U. S.] 516, 544. It is true, that an observation of the court, in *Hussey v. Bradley* [Case No. 6,946], gives a broader scope to the right of reissue, and an intimation in *Doughty v. West* [Id. 4, 029], is in the same direction. But, in the 515 subsequent case of *Doughty v. West* [Id. 4,028], founded on a reissue of the same patent, the reissue was sustained on grounds entirely consistent with the doctrine above stated, and the rule is, in my judgment, not only clearly correct in principle, but settled by the authority of the supreme court in the case first-above named.

(1.) This view of the law renders it necessary to inquire what invention is disclosed by the original record—the original patent, specification, drawings, and model—and, in that inquiry, the right of the complainant must be conceded, to supply any defects or insufficiencies in the description of anything which is found therein in any form.

In the original specification, the patentee declares that the object of his invention is, “to provide a wheel with a wooden hub, that will admit of a greater number of spokes in each wheel than can be used by the old method, on account of the hub being cut

away, by mortises, to receive a number of spokes, that would be sufficiently near together at the rim of the wheel to prevent it from being flattened between the spokes by fast driving \* \* \*; it also consists in giving greater strength to the spokes at and near the hub, and to the hub itself." A twofold, or, perhaps, a threefold object is thus announced: First, strengthening the nave of the wheel, by increasing the number of spokes; second, giving greater strength to the spokes at the hub, and, at the same time, strengthening the hub itself. Obviously, each of these objects was desirable, and, obviously, each would be useful, whether they were combined or not. If the proposed devices, or either of them, could be used separately from the others, so that either object was effected, a useful result would follow, which is actually mentioned and avowed to be within the scope of the invention.

The nature of the invention is then declared to consist in the employment of flanged collars of metal, to be used in combination with a wooden hub, as follows: "I use, in general, a very small hub of wood, much smaller than in the old style of wheel, and, instead of making sixteen mortises, as is common for spokes, I make, in general, nine or ten for the tenons, somewhat larger than in the ordinary way, and, between each of these spokes, I make a mortise in the hub, about three-eighths of an inch deep, and insert spokes wedge-shape, as shown by the drawing accompanying this specification." This, it will be seen, explains the device which the patentee declares he generally employs for increasing the number of spokes, to strengthen and sustain the nave of the wheel, without unduly cutting away the hub by mortises; and the drawing shows, that, in this arrangement, the spokes have a firm hearing against each other at and for a short distance exterior to the wooden hub, so as to form a solid bearing around and exterior thereto.



Next he describes his device for giving greater strength to the spokes at the hub, and to the hub itself: "After the spokes are all fitted, I put the flanged collar on the back part of the hub, the collar fitting closely to the hub, and serves to strengthen and support the same, while the flange fits closely to the back of the spokes. I, in general, make three screw-holes in the collar next the hub, into which I insert screws, so that the collar will retain its position, in case the hub should shrink. In the flange that fits against the spokes, I, in general, make five one-fourth inch holes, in which I cut a thread to receive screws. After the back flange collar is secure, I put on the front flanged collar on the front of the hub, it fitting closely to the hub, but it is not screwed thereto, the flange fitting closely to the front of the spokes. In these flanges there are five holes, opposite those in the back flange. I now bore five one-fourth inch holes through the spokes, and insert screws, drawing both flanges firmly against the spokes, thereby securing all the spokes firmly in their proper place." This part of the specification discloses the device by which the object secondly named, which the patentee had in view, is secured, namely, giving greater strength to the spokes at the hub, and at the same time strengthening the hub.

The specification then proceeds to state the dimensions of the hub and spokes ordinarily used, and the gain in effective strength in the smaller hub, with spokes fitted as first described, and the greater power of resistance resulting from the bearing of the spokes on the flanges on either side thereof; and it then adds, that "this arrangement can also be applied to a wheel with the ordinary number of spokes, thereby preventing the tenons at the hub from being broken off." This imports, in connection with what precedes, that, although the inventor, "in general," uses the greater number of spokes, some of which are inserted in the hub by tenons, and the others, in wedge form,

enter very slightly into the hub, yet his arrangement can also be applied to a wheel with the ordinary number of spokes; and its effect in “preventing the tenons from being broken” indicates, that, in such case, the spokes are tenoned into the hub—that is to say, it can be applied to a wheel with the ordinary number of spokes inserted by tenons into the hub, which describes the ordinary wheel. It contemplates, as a practicable use of the flanged collars, their application to a wheel not containing the additional number of spokes before described as being without tenons. It, therefore, contemplates the application of those collars to an ordinary wheel, or, possibly, to a wheel in which, although the ordinary number of spokes are used, their shoulders between the flanges are so enlarged as to bear against each other. This latter mode of fitting the spokes to a bearing is certainly not expressed, and it seems, therefore, most in accordance with the terms, to regard it as a suggestion that such flanged collars 516 may be applied to an ordinary wheel with tenoned spokes, and that, when so applied, they strengthen the hub and strengthen the spokes and “prevent the tenons at the hub from being broken off.”

The specification then points out the special advantage of the flanges and the importance of securing the back collar to the hub, with the capacity of tightening the front collar on the spokes, if they shrink, in view of the custom of giving a light wheel a dish form, in which there is great strain upon the tenons of the spokes, and also in view of the necessity at times of resetting the tire.

In the drawings annexed to the specification, and in the description of the drawings contained in the specification, he gives only one kind of wheel, and that embraces both features or devices before mentioned, combined—that is to say, a wheel with the flanged collars and with the increased number of spokes, of which a part are not tenoned, but are wedge-shaped

and enter but slightly into a small mortise in the hub. This, however, is not material to the validity of the reissue, if, in fact, what was already in the specification embraces the application of either of his devices to a wheel with the ordinary number of spokes tenoned into the hub.

The statement of the claims of the patentee may properly be referred to as an aid to the same point of inquiry—what is described as the invention of the patentee. The first claim is: “The employment of flanged metallic collars, as described, or other equivalent devices, in combination with a wooden hub, and these in combination with the arrangement of the spokes at the hub, as described, by which means strength and support is given both to the hub and to the spokes at and near the hub, and by which means I am enabled to use any desired number of spokes in each wheel \* \* \* and a much smaller hub than those in general use, and at the same time retain a sufficient degree of strength at the hub, the whole being constructed and arranged substantially as and for the purpose set forth.” This claim manifestly points to and includes both of the devices, as shown in the drawings and model, and contains no suggestion or hint of any construction of a wheel except by making a part of the spokes with tenons and a part in a wedge form without tenons, so fitted that the spokes at the hub bear upon each other.

But the second claim has manifest reference to the other arrangement of spokes, already named in the specification, as follows: “I also claim the flanged collars, as described, or other equivalent devices, when used in combination with a wooden hub, if the spokes are arranged as herein set forth, or in any other manner.” That is to say, he claims the flanged collars in combination with a wooden hub, although the spokes are all tenoned into the hub. Read in connection with the specification, which declares that his arrangement

“can be applied to a wheel with the ordinary number of spokes, thereby preventing the tenons at the hub from being broken oil”—in which case it is obvious, from the whole specification, that there will be none which are not thus tenoned—this claim is comprehensive enough to embrace flanged collars applied to a wheel in which there are tenoned spokes only; and, so read, it is specific enough to refer to the application thereof to the ordinary number of spokes, previously mentioned.

Be it here observed, that this review of the original specification and claims is not for the purpose of testing their sufficiency or validity. If insufficient or defective, their defects and insufficiencies might be cured by the reissues. This review is for the single purpose of seeing what inventions or devices are found therein; and it leads to this conclusion, that the patentee has therein disclosed two devices—one consisting of spokes, whereof a part are tenoned into a wooden hub, and a part are in wedge form not thus tenoned; the other consisting of flanged collars applied to the hub and the spokes therein, whether the spokes are constructed in the manner last named or in any other manner. And the preceding specification points out the application of flanged collars to a wheel containing the ordinary number of spokes, in which it is probable, at least, that the extra or increased number of spokes not tenoned into the hub are omitted.

The reissued patent, while it retains the drawings of the original patent, which show the device of metallic flanges applied to a wheel having a part only of the spokes tenoned into the hub, is more specific in declaring that the invention embraces the combination of the metallic flanges with a wooden hub into which the spokes are tenoned, without including the wedge-form spokes or the solid bearing of the spokes upon each other exterior to the hub. The review of the original patent already given shows, I think, that this

is not an extension of the patent to a device not found in the record of the original. If so, then one advance has been made in the investigation of the questions raised by the defence—that is to say, the reissued patent is not, on its face, void, in this feature, as embracing an invention not found in the original patent, specification, drawings, or model.

(2.) The reissue also declares, that the invention, in another part, “consists in the construction of a wheel in which the spokes are combined with a wooden hub by tenons, and with each other, in such a manner that they afford mutual support in the vicinity of the hub, or so that the strain, applied to any one spoke in the direction of the length of the felly of the wheel is propagated to the adjacent spokes in the vicinity of the hub, and through them to the tenons that enter the hub, whereby such strain is distributed among all the tenons that enter the hub, instead of being borne by that one only of the spokes to which the strain is applied.” And the third 517 Part of his invention is declared to be, a wheel combining both of the foregoing characteristics, namely, the mortised wooden hub with spokes having tenons, and so combined as to form the solid belt outside the hub, and also the metallic flanges embracing the sides of the spokes. Although, in this part of the specification, the use of spokes not entering the hub by tenons is not mentioned, the drawing exhibits them as in the original patent, and the detailed explanation of the drawings distinctly recognizes the fact, that a part only of the spokes enter the hub by tenons.

The result is, that the device of strengthening the spokes at the hub by making them bear upon each other, so as to form a solid belt of wood around and exterior to the hub, is, by the introduction of wedge-shaped spokes between the tenoned spokes which are not made wedge-shaped, the giving to the tenoned spokes a somewhat larger tenon than usual, which,

by the omission of the tenons on the intermediate spokes, is rendered practicable, without injuriously cutting away the hub. No other mode of constructing this device, or of securing the solid bearing of each spoke upon the others, is shown, suggested, or hinted at, either in the original patent or in the reissue.

This mode of giving to the spokes a bearing upon each other, the defendants have not adopted. In the defendants' wheel, there is no spoke not tenoned into the hub, the spokes do not bear against each other, and their form near the hub is not the same as described in the complainant's patent. Whether, in this respect, the defendants use a mere equivalent, will, if necessary or material, be hereafter considered.

This mode of giving support to the spokes by their bearing on each other is not new; and, if we were compelled to construe the plaintiff's patent and claim as so broad as to include, as a distinct device, every mode of constructing the spokes so as to give them a solid bearing around the hub, we should be also compelled to say, that, so construed, the patent is, in that particular, void. The wheel known and designated, on the trial, as the "Woodruff and Beach wheel contains that device. The contact of each spoke with another on either side formed a solid belt of wood around the hub, operating in reference to resistance of strain in the direction of the plane of the wheel, precisely as the like arrangement in the plaintiff's wheel. It was suggested, that, in that wheel, such contact was not exterior to the hub. But that suggestion is not warranted; for, the distance from the centre to which that contact should be carried in the Woodruff and Beach wheel, is matter of mere judgment and not of invention; and, besides, in that wheel, such contact was carried to a distance exterior to the hub, unless the flanges applied on each side to resist the lateral strain be regarded as part of the hub; and, if that be claimed, the same must be no less true

of the plaintiff's flanges; and, in neither of them, is the contact or bearing of the spokes upon each other carried outward beyond the edge of the flanges. It follows, that, in respect to the use of spokes bearing on each other at and near the hub, as a separate device, the plaintiff's patent can only be sustained by giving the specification and claim the construction above already stated. It must be confined to the specific mode of effecting the result which the patentee has described, and which alone he has described, and that mode of construction the defendants have not used.

(3.) As to the lateral support given to the plaintiff's wheel by flanges, viewed as a distinct and separate device, the defendants cannot be charged, for several reasons: First Flanges had been used before on an iron hub in the Woodruff and Beach wheel, and their application differed in no wise from the plaintiff's, except that the inner flange on the plaintiff's wheel, as described by the patentee, is made fast to the hub by being screwed thereto; and, in the Woodruff and Beach wheel, it was attached to the hub firmly by being cast with it In both, the outer or front flange was adjustable, and was made fast to the other by bolts passing from one to the other. The transfer of flanges from an iron hub to a wooden hub would not be patentable, unless it required some ingenuity or contrivance to adapt it to use in its new position. Second. The defendants have not used flanges constructed or applied in the manner devised or used by the plaintiff, but have used, and only used, mortised collars. Third. The use of mortised collars on a wooden hub is found in the Smith and Parfrey patent, long before the invention of the plaintiff's wheel. Fourth. If, then, the mortised collar is to be deemed an equivalent to the flanged collars claimed by the plaintiff, the latter has no exclusive right to use them, because the mortised collar was an old device; and, on the other hand, if such mortised collar is not an

equivalent to the flanged collar, the defendants have invaded no right of the plaintiff in this respect, because the defendants have not used the flanged collars, and have a perfect right to use the mortised collar.

(4.) It follows, from these views, that the defendants have violated no right of the plaintiff in respect to the several parts of the wheel, viewed separately, as distinct devices. The right to construct a wheel having spokes tenoned into a wooden hub was not vested exclusively in the plaintiff. That was found in what is conceded to have been the ordinary wheel long in use. The right to construct a wheel wherein the spokes are in contact, and bear upon or against each other at or near the hub, was not vested exclusively in the plaintiff, except when constructed in the confessedly novel mode which alone is suggested in his patent, namely, by introducing between the tenoned spokes other spokes or pieces of wood in a wedge-form, to fill the intermediate spaces, but not tenoned into the hub. The 518 right to use the mortised collar is not vested exclusively in the plaintiff, whether it be regarded as equivalent to his flanged collars or a different device, and the defendants have used the mortised collar only. If, therefore, the defendants were sought to be charged as infringers by reason only of their use of the plaintiff's devices viewed separately, or separately patented, or as merely connected with a wooden hub, the plaintiff must fail. Each of these separately the defendants have a right to use.

(5.) It follows, that, if the plaintiff is entitled to charge the defendants at all, it is in virtue of some combination of these devices, claimed and secured to him by his patent. Upon this point the case is a very close one, and is not without embarrassment.

The rules of law applicable to the subject of combinations are free from difficulty. The counsel for the parties respectively do not appear to differ in relation to those rules, so far as they bear upon the



present case. First. A patent for a combination, where neither part is patented as new, is not infringed by one who uses one, or some, but not all, of the parts. Second. A mere aggregation of parts, whereof the patentee has not the exclusive right to either, and in which the parts have no new operation and produce no result which is due to the combination itself, is not patentable. *Hailes v. Van Wormer* [Case No. 5,904]. And see an analogous principle in cases which hold that the mere appropriation of an old device to a new use is not patentable. *Stimpson v. Woodman*, 10 Wall. [77 U. S.] 117; cases collected in Curtis, Pat. § 33, and note; *Bean v. Smallwood* [Case No. 1,173]; *Winans v. Boston & P. R. Co.* [Id. 17,858]; *Hotchkiss v. Greenwood*, 11 How. [52 U. S.] 248.

The first claim in the reissued patent is: "A carriage wheel constructed with the spokes combined with the wooden hub by tenons entering mortises in said hub, and with each other, in such manner that a solid belt is formed around the said hub, substantially as before set forth." Recurring now to the specification and to what has already been said on the subject, it will be seen, that this is not a combination of tenoned spokes with any and every manner of connecting the spokes at or near the hub, so that they shall bear against or upon each other, but a combination of tenoned spokes with the construction alone described in the specification, to wit, the alternation of tenoned spokes with spokes in a wedge-form not tenoned into the hub. This combination the defendants have not used.

The second claim is: "A carriage wheel constructed with a mortised wooden hub, with tenoned spokes, and with flanges which embrace the faces of the spokes in the immediate vicinity of the hub, and are connected together so as to form a metallic band through which the spokes extend into the mortises in the wooden hub, substantially as before set forth." This claim, construed by the aid of the specification,

is for the combination of the two flanges with tenoned spokes, the two flanges being connected together so as to give lateral support to the spokes.

This second claim raises three questions involved in the present case, which may be most intelligibly discussed in the following order: First. Have the defendants used this combination? and if so, then, second, is such combination patentable, or is it a mere aggregation of devices not involving patentable invention? and, third, is it a new combination?

The defendants have not used—it is not claimed that they have used—flanged collars, constructed separately, to be separately applied and bolted or screwed together. The mechanical construction of the mortised collar, cast in one piece, with divisions between the mortises for the several spokes, and with tapering sides, formed to receive the spokes driven tightly therein and give them endwise bearings, is not the same as the plaintiff's flanged collars. They perform a different office in the particular last named, which the plaintiff's flanged collars do not and cannot perform. The defendants' mortised collar and the plaintiff's flanged collars are, therefore, not identical, either in mechanical construction or in the office which they perform. It is, nevertheless, claimed, that, in the particular construction and office which is embraced within the plaintiff's second claim, they are the precise equivalent of the plaintiff's flanged collars. This claim suggests a question of some interest: Is a device which, both mechanically and practically, performs the same precise office of another device, in substantially the same manner, any less an equivalent of the latter, because it also performs another office or offices, by reason of a difference in its mechanical construction?

The mortised collar used by the defendants has its two sides in the same form as the two flanged collars of the plaintiff. In reference to the purpose for which the plaintiff's two flanged collars are used—to

wit, to strengthen the hub, and to sustain the spokes against lateral pressure or strain, and to cooperate with the tenons in giving firm support to the spokes—they perform identically the same office as the plaintiff's flanged collars, and in the same way. The circumstance that they are held together by connecting cross-pieces, made solid therewith, instead of by bolts or screws, has no effect on the manner of their operation in this respect. Are they, then, to be deemed any less the equivalent of the flanged collars because, by reason of the greater number of cross-pieces, they are stronger, or because the cross-pieces between each two spokes and the sides of the mortise are tapered, so as to give an endwise bearing to the spokes, and enable the spokes to be driven in and be 519 grasped firmly and held therein? I think not. In the use, and for the purpose, for which the plaintiff's flanged collars are useful, they are identical in the office they perform, to wit, to sustain the spokes against lateral strain. The mechanical construction, in the parts which perform this office, is substantially the same. The crosswise partitions and form of tapering mortises may be improvements upon the plaintiff's flanged collars, but the mortised collars do, nevertheless, operate, for all the purposes for which the flanged collars are used, in precisely the same way. If the question was between a single patented device, conceded to be new, and a device claimed to infringe, because an equivalent, the alleged infringer could not protect himself by showing that, although his device was an equivalent of the patented device, in all its functions, and in its construction and mode of operation, yet, by other or additional features, it possessed other and further useful functions. Such a device would, perhaps, be an improvement upon the patented device, but must be, nevertheless, deemed an appropriation of the former.

This view of the subject of equivalents is not stated in order to a conclusion that, as separate devices,

either of these parties has the exclusive right to the flanged collars or to the mortised collar. Both, as hereinbefore stated, are old. It does not follow that the plaintiff's combination of flanged collars with tenoned spokes is old; and the question discussed is, whether, in the combination of flanged collars with the tenoned spokes, the substitution, of the mortised collar is not, within the meaning of the law, the substitution of an equivalent in the combination, although such device (being equivalent for the purposes, and in all the functions, of the flanged collars) also contains other and additional functions due to its peculiar construction. In this view, the combination of a mortised collar and tenoned spokes with a wooden hub must be regarded as embracing the combination of the flanged collars and tenoned spokes with a wooden hub, claimed in the plaintiff's patent; and, if that patent is valid in respect of that claim, the defendants must be held to infringe it, notwithstanding the combination used by the defendants may also include other functions and produce effects not attainable by the plaintiff's combination.

(6.) The plaintiff's combination referred to in his second claim is distinguished from a mere aggregation of devices in this, that there is a reciprocal action or operation of the parts upon each other and conjointly upon the entire wheel, each part giving to the other increased support and efficiency, and the two co-operating to make a stronger and more durable wheel than is produced by the use of either without the other—that is to say, the tenoned spokes are strengthened and sustained in position by the flanged collars, and the flanged collars, bound to the spokes by the connecting-bolts or screws, are more firmly held in position by the tenons of the spokes. Combined, they unite hub and spokes, enabling the wheel better to resist a blow or strain either laterally or in the direction of its plane. It must be conceded, within the rule on

this subject, that a combination of devices would not necessarily be patentable from the mere fact that their union produced a better wheel. If the superiority arose from the fact that the two devices were intrinsically better than others and the wheel combined both—each, however, operating independently of the other—the combination would be but the exercise of judgment in the choice of parts, and not invention in discovering new means to produce useful or better results. For illustration, one mode of securing the tire to the felly, or the felly to the spokes, may be better than any other in use. One form of axle-box, or a mode of securing the axle-box to the hub, may be better than any other in use; and it might so happen that both or all had never been used together in the construction of a carriage wheel; and yet, both being old, one who should adopt both in the construction of a wheel, without other change in its construction, would not be an inventor, and his wheel would have no patentable quality. Each device is complete in itself, it performs the same functions and in the same way, in whatever wheel it is used, and without being influenced or affected by the other. This distinction may often be very nice, and sometimes may, for its application, require very close and careful discrimination; but the distinction is itself a substantial one. It reduces the basis of the second claim in the plaintiff's patent to somewhat narrow grounds, but it is sufficient to sustain it. A new relation is established between the efficient means of strengthening and supporting the parts of the wheel in question, and a new and greater efficiency is given to each, which is due not to their inherent quality but due to the combination itself.

(7.) If, then, this combination embraced in the second claim was new when the plaintiff received his patent, or, in other words, if he was the inventor, his suit against these defendants must be sustained; for, if that second claim is valid, the defendants' wheel,

under the interpretation above given to the rights of the plaintiff in other respects, is a clear infringement.

The patent is itself prima facie evidence that the combination was new. The patents and models or specimens, given in evidence by the defendants, none of them contain the combination. Neither the Smith and Parfrey wheel, nor the Woodruff and Beach wheel, contain the tenoned spokes; and the last named contains no wooden hub. The others which have tenoned spokes have neither the flanged collars, nor the mortised collar. In 520 short, there is no evidence of a prior use of this combination, except certain oral testimony to the application of hoops or bands around the hub, to increase its strength; the use, in perhaps a few instances, of rings, or parts of rings, applied to the spokes on each side, and bolted together, to repair a wheel wherein some one or more of the spokes had been split or broken near the hub; and the testimony of one witness, that his father and himself had applied to new wheels, at the hub, next to the spokes, and on each side, a ring of iron of considerable size in either direction, and bolted the one ring to the other, to bind the hub, and assist in sustaining the tenoned spokes. Without questioning the sincerity of the witnesses who testified on this subject, or doubting their intention to testify truthfully, we must say that the evidence was not very satisfactory; and the whole either failed to show much likeness to the plaintiff's device, or was otherwise of too vague and uncertain a character to warrant a conclusion that there was any actual anticipation of it. The witness last referred to no doubt testified to some approximation to the flanged collars, very rude at best, and only in a few instances used at all. But we think that the testimony fails to show satisfactorily such prior invention, knowledge, or use of the plaintiff's combination as invalidates his patent in respect to the second claim, which alone the defendants have infringed.

(8.) It is not without doubt and hesitation that we have reached the conclusion that the plaintiff is, upon the grounds above stated, entitled to a decree. There is some reason to believe that the whole invention, as regarded by himself, and set forth in the specification annexed to his original patent, was the increase of the number of spokes, by introducing wedge-shaped spokes which should not be tenoned into the hub, lest it should cut it too much away, and, at the same time, enlarging somewhat the tenons of the spokes which were tenoned, and strengthening the spokes, particularly those not tenoned by the flanged collars. Such a wheel the defendants have not constructed. But the plaintiff may have contemplated the use of flanged collars generally in combination with tenoned spokes, and the analysis of his specification and claims, which we have given, indicates, at least, that they are sufficient to include it.

The plaintiff must have a decree declaring the defendants to have infringed the second claim of the patent, and ordering an injunction. The plaintiff having, since the suit was commenced, surrendered the patent upon which his suit was founded, and his case now standing on the reissue of the patent granted September 6th, 1870, set forth in his supplemental bill, he is not entitled to an account of anything done prior to that date; and, as this suit was commenced prior to the patent law of 1870 [16 Stat. 198], he is not entitled to damages, as such, notwithstanding the fact that his supplemental bill was filed after the passage of the act.

{NOTE. In a subsequent proceeding between the same parties, an injunction was issued restraining the defendants from manufacturing the wheels, although a change had been made in the construction, which it was claimed avoided the decree in this case, and the patent itself. Case No. 12,370.}

<sup>1</sup> [Reported by Hon. Samuel Blatchford, District Judge, and by Samuel S. Fisher, Esq., and here compiled and reprinted by permission. The syllabus and opinion are from 9 Blatchf. 524, and the statement is from 9 Fish. Pat. Cas. 415. Merw. Pat. Inv. 435, contains only a partial report.]

<sup>2</sup> [From 5 Fish. Pat. Cas. 415.]

<sup>3</sup> [From 5 Fish. Pat. Cas. 415.]

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