

Case No. 17,520.

WHIPPLE v. MIDDLESEX CO.

[4 Fish. Pat. Cas. 41; Merw. Pat. Inv. 211.]¹

Circuit Court, D. Massachusetts.

Oct., 1859.

PATENTS—CONSTRUCTION OF CLAIMS—PATENTABLE
COMBINATION—INFRINGEMENT—WOOL CLEANING MACHINES.

1. If by the examination of a specification, and by applying it to the then existing state of the art, it can be ascertained what the invention was, then the claim, which is designed to be a condensed summary of the invention, is to be construed so as to be co-extensive with the invention, if that can be done without doing violence to its language.

[Cited in *Andrews v. Carman*, Case No. 371.]

2. Forming and arranging the teeth, within the meaning of Whipple's claim, includes not merely their points or projections, but also the plain surface in the rear, and against which the guard is to act in removing the burrs.
3. If the same form of teeth, and the same surface or arrangement, were combined by applicant for the first time, though both were acknowledged to be old, and, by combining them, he made a cylinder materially different from any which had previously existed, the combination would be patentable.
4. Upon the question of infringement, if the result be the same in kind, it is not necessary that it should be the same in degree.
5. A patent calling for smooth or plain surfaces is infringed by surfaces having slight inequalities, but which are sufficiently smooth for all practical purposes, and are substantially the same as the patented surfaces in their mode of operation and kind of result.

This was an action on the case [by Milton D. Whipple against the Middlesex Company], brought to recover damages for the infringement of letters patent for "improvement in machines for cleaning wool from burrs and other foreign substances, and also for ginning cotton," granted to plaintiff, more particularly referred to in the report of the case of *Whipple v. Baldwin Manuf'g Co.* [Case No. 17,514].

After the case was at issue, the parties agreed upon the following order of reference:

"And now the parties appear and agree to refer this action to the determination of the Honorable Peleg Sprague. His report to be made as soon as may be; judgment thereon to be final, and execution to issue accordingly; and if either party neglects to appear on due notice, then the referee is to proceed ex parte."

The referee, having fully heard the case, delivered the following opinion.

A. B. Ely, J. Giles, and B. R. Curtis, for plaintiff.

J. G. King, G. T. Curtis, C. L. Woodbury, B. F. Butler, and Geo. Gifford, for defendants.

SPRAGUE, District Judge, Referee. This suit is founded wholly upon the second claim. This claim is "forming and arranging the teeth of cylinders for burring wool." It is

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not a claim for a machine, but for a cylinder, or rather for the forming and arranging the teeth of a cylinder.

The claim, then, states two limitations upon the generality of the previous language, viz: that the forming and arranging of the teeth is to be “in such a manner that their outer convex sides shall be substantially concentric with the axis of the cylinder, for the purpose of seizing and holding the fibres, and presenting a surface against which the guard can act in removing burrs and other foreign matter therefrom.”

The outer convex side of the teeth are to be concentric, etc. What is meant by the outer side of the teeth? Again, these teeth are to present a surface against which the guard can act in removing burrs, etc. What kind of surface? and what action of the guard against the surface?

These questions, and others that may arise upon the meaning of the claim, can be solved only by reference to the specification in which the invention is fully set forth and explained.

If, by examination of the specification, and applying it to the then existing state of the art, we can learn what the invention was, then the claim, which was designed to be a condensed summary of the invention, is to be construed so as to be co-extensive with the invention, if that can be done without doing violence to its language.

What, then, was the invention? So far as is necessary for the present inquiry, it may be stated to be, to form and arrange the teeth with points which would seize and hold the fibre; with a smooth surface in rear of the points, firm and non-elastic to support or float the burrs, so that the guard could remove them, and these teeth to be in such succession around the cylinder that their points should be protected by the heels or smooth surface, in rear of the preceding teeth, so as to prevent burrs from being taken hold of by the points of the teeth, and also so as to prevent too many fibres of the wool being seized.

This smooth surface, or, as it is called in one place, this “plain surface,” is made by what in the claim is called the outer convex side of the teeth. Forming and arranging the teeth, within the meaning of the claim, includes not merely their points or projections, but also the plain surface in rear, and against which, as stated in the claim, the guard is to act in removing the burrs.

In the specifications, the smooth surface is sometimes spoken of as distinguished from the teeth. Thus it is said: “Upon this roller I affix a combination of teeth and smooth surface.” But then it is declared, “these teeth may be made in various ways, but I prefer the plan of combs reaching lengthwise of the roller.” And it is added, “but the main object is to have both teeth and surface in combination, the teeth to seize and hold the fibres, and the smooth surface to and the guard,” etc.

It is clear that the claim regards the smooth surface as a part of the teeth, or an essential ingredient in the arrangement of the teeth,

and, by the specification, it is emphatically made an essential part of the invention. Thus it is said, "The main object is to have both teeth and surface in combination." And again, "The teeth, when thus protected, by the preceding plain surface;" and again, "These protected teeth form an essential feature in my machine."

The defense is placed on two grounds: First, that the patent is void for want of novelty, and second, that the defendants have not infringed it. And it is insisted that the plaintiff must fail upon one or the other of these grounds. That if such a construction be given as to sustain the invention as new, then there is no infringement; or if so construed as to show an infringement, then there was no novelty.

On the point of novelty, it is first insisted that the plaintiff's patent is defeated by Whitney's cotton-gin. That in the drawings annexed to his patent specimens of teeth are shown, having concentric backs, constituting a plain surface, and that these teeth are cut from a metallic ring, so that their points are successively protected by the preceding heel or smooth surface of the other.

In giving a construction to the plaintiff's patent, we are to ascertain what he intended. Now it is certain that he intended not to embrace Whitney's invention. For he says expressly, "these teeth differ from ... the teeth of the saw-gin in being combined with a convex, smooth surface, to facilitate the removal of burrs and seeds."

It is said that the saw-gin in use did not contain teeth having convex backs, or any smooth surface in rear of the points, and that this formation of the teeth was never put in, practice, nor was even theoretically beneficial for ginning cotton. However that may be, I think that the convex backs of those teeth in Whitney's specification and model are not the smooth surface of the plaintiff's patent, which he emphatically declares is to be in combination with his teeth, for the purpose not merely of protecting the points, but of supporting or floating the burrs, and presenting a surface against which the guard is to act in removing them. Now, the Whitney teeth, instead of being so arranged as to prevent seeds of cotton from falling between them, that is, presenting a surface which will support or float foreign matter, are designedly so arranged as to create no such surface, but to permit the seeds and foreign matter to fall between the rows of the teeth; and it is in this respect the plaintiff's patent says that its teeth are distinguishable from those of the saw-gin, in the language already quoted.

The plaintiff's teeth differ from Whitney's in their arrangement.

But is this a material difference? Does it involve such invention or discovery as to be patentable? There is a mechanical or physical change, by bringing the metallic rings, from which the teeth are cut, so near together that burrs or cotton seeds will not fall into channels between them. This change of arrangement creates a surface which supports or floats the burrs, so that the guard may remove them, which could not be done if they fell into channels between the rings.

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This result is important. Indeed, it is the attainment of the whole object of the machine, viz: the removing the burrs, by bearing them on this surface to meet this guard. This mechanical change, and its effects, are, I think, so considerable as to be patentable.

The next invention relied upon, as prior to the plaintiff's, is the Shly patent. No machine or model, pursuant to this patent, has been produced, and no witness ever saw one that he knew to be such. We have only the patent.

The only difference from the Whitney invention, which has been relied upon or pointed out by the defendants, is, that in Shly's, "the saws are to have eight or ten teeth, cut in the space of an inch, on the circumference of the saws. Then three inches on the circumference of the saw is to be left uncut, and so continue until the saw is cut around."

But this change from Whitney's is not material in the present case. It does not make Shly's any more like the plaintiff's. The blank space does not protect the tooth that follows it, and the saws or circles of teeth are not brought any nearer together than in Whitney's. Indeed, it is said in the specification, that they are to be one inch apart. Their arrangement, in this respect, is the same as Whitney's, and subject to the same remarks as to presenting the plaintiff's surface.

We have, in the next place, the Simpson cylinder. This consisted wholly of card teeth. This, also, the patentee expressly excludes from the description of his invention. He says, "These teeth differ from the teeth of a common card, by having greater strength combined with sharpness."

The specification teaches, how this greater strength combined with sharpness is obtained. It is by the different mode of formation. The card teeth were made of round wire stuck in leather. The teeth of the patent were cut in plates of metal, fastened upon the cylinder in such manner that they may be said to be cut from the surface of the cylinder, and in such a manner as to be both firm and sharp. This mode of formation is materially different from that of the card teeth, and produces also some difference of result. To what extent they differ, in practical operation, there is some conflict of evidence, but I do not think it necessary to determine the degree of that difference, because I am satisfied that the difference in the mechanical or physical formation, combined with the difference of result, are so considerable as to sustain a patent.

It is contended that Whitney gave the same form of teeth, and Simpson the same surface or arrangement. It is sufficient to say that if this were true, of which I am not satisfied, still such formation and such arrangement were never before brought together, and by

combining them Whipple made a cylinder materially different from any which previously existed.

We come now to the question of infringement. The inquiry here is not whether there have been such changes, mechanical and functional, as to be patentable, but whether, notwithstanding such changes, any thing is used which was invented by the plaintiff, and embraced in his patent Do the defendants use any thing that belongs to the plaintiff?

We certainly find in their cylinder all that is set forth in the second claim, viz: Forming and arranging the teeth of a cylinder for burring wool, "in such a manner that their outer convex sides shall be substantially concentric with the axis of the cylinder, for the purpose of seizing and holding the fibres, and presenting a surface against which the guard can act in removing burrs and other foreign matter therefrom."

Is the formation and arrangement of the teeth, and their outer convex sides, and the surface presented, such as are required by the plaintiff's specification? The defendant's cylinder differs from the plaintiff's both in structure and function. Are these differences only modifications of, or improvements upon, the plaintiff's, or do they displace and supersede it? In the plaintiff's, the only cylinder described has the surface continuous from end to end. In the defendants', it is not continuous, being formed by plates or rings of metal, going round the cylinder, and placed near to each other, but with some space between them. The specification does not require the surface to be continuous. It states it only as one form, and that which the patentee preferred. The language is, "These teeth may be made in various ways, but I prefer the plan of combs reaching lengthwise of the rollers." If, therefore, the surface of the cylinder were covered with combs, and then, by some fine instrument, channels were cut around the cylinder, between the teeth, so that they would then be in plates or rings of metal, they would still present the plaintiff's surface, provided the other descriptions and requirements of the specification remain.

The next mechanical change in the defendants' is, that the teeth are not in straight lines lengthwise with the cylinder. This change is produced by a slight alteration in the relative positions of the rings, that is, suppose them to be so placed that their teeth are in straight lines lengthwise with the cylinder, then moving each alternate ring slightly around it will destroy the straight lines, but leave each ring and its teeth precisely as before. To this the same remarks apply which have just been made, as to the change by channels in the surface.

The next mechanical change is in the edges of the rings, and is effected by passing a triangular file around the cylinder, between the rings, to sharpen the teeth. This produces a ridge on the upper side of the tooth, or the surface in rear of the tooth, the top of the ridge being in the middle of the tooth, with slopes on each side toward the channels, between the rings. The top of this ridge is not brought to a sharp edge, and varies in the different cylinders used by the defendants, being sharper or narrower in some of them

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than it is in others. Here, too, we may observe that we find no express prohibition of such a change, nor does it seem to be in itself incompatible with any of the requirements of the specification. By these mechanical changes a new function is introduced. Some of the fibres of the wool fall into the channels between the rings, instead of being supported on the surface. This produces two effects, (1st) those fibres are protected from the action of the guard, and (2d) they are separated or loosened, more or less, from their burrs, because the rings are placed so near together that the burrs, and other foreign matter, can not pass between them, but are supported upon the surface. But the fibres of the wool do not all go into those channels. Some remain upon the surface, and upon them and their burrs the action of the guard is the same as if the channels did not exist.

The question is, do all these changes displace the plaintiff's patented invention, or are they modifications of, or improvements upon it? The question is asked if these changes do not make the defendants' cylinder so different as to be no infringement, what changes would have that effect? What is the criterion?

The answer is to be found in the case cited, *Winans v. Denmead*, 15 How. [56 U. S.] 344. It is there said that, to constitute an infringement, the thing used must be so near to that set forth in the patent, "as substantially to embody the patentee's mode of operation, and thereby attain the same kind of result as was reached by his invention. It is not necessary that the defendant's cars should employ the plaintiff's invention to as good advantage as he employed it, or that the result should be precisely the same in degree."

It seems to me that the defendants' cylinder comes up to this standard, that it does substantially embody the plaintiff's mode of operation, and thereby attain the same kind of result as was reached by his invention. We have seen that it corresponded with the language of the second claim, and I think, it meets all the requirements of the specification.

We find in the defendants' cylinder that each tooth is protected by a preceding plain surface, and has strength combined with sharpness, and is combined with substantially such a surface as is described in the specification, viz: a surface to and the guard in detaching the burrs, or other impurities, from wool, a surface which supports the burrs, below which they can not sink, and against which the guard acts in removing them, and which protects the succeeding teeth.

If it be said that it does not support all the fibres of the wool, and present them to the guard, to the same extent as would a continuous surface, the answer is that it is sufficient; if the result be the same in kind, it is not necessary that it should be precisely the same in degree. The defendants' cylinder might embody the plaintiff's invention, if it acted upon a part of the wool and burrs, although it should be so constructed as to permit another portion, not only of the wool, but of the burrs also, to escape its action. If it be said that the surfaces are not smooth or plain, it would be answered that they are so for all practical purposes, and to meet all the requirements of the specification. It is true that it speaks of them as smooth or plain. And in the case cited, the patent called for a circle, but the court held it was not confined to a perfect circle, but that it might be departed from as above quoted. So in this case, the form of the surface may be varied within the same limits, and, as we have seen, the variation does not exceed them. It can not be admitted that the defendants can escape infringing by making slight inequalities. In the surface, either lengthwise or around the cylinder, while, in its mode of operation and kind of result, it will remain substantially the same.

But it has been earnestly contended that the defendants' cylinder has more similarity to Whitney's or Simpson's than it has to the plaintiff's. But the defendants' agrees with the plaintiff's, and differs from them in precisely those particulars which are pointed out in the plaintiff's specification, and which I have already mentioned in discussing the question of priority.

The defendants' has a convex, smooth surface, to facilitate the removal of burrs and seeds, which Whitney's had not. But, it has been emphatically asked, if you take Whitney's metallic plates, or rings with teeth, like some of those described in his drawing, and place them around a cylinder, when will they become the plaintiff's invention? I answer, when you have placed them so close together that, by this new arrangement, you have obtained that surface which the plaintiff's specification demands, and which is nowhere found in Whitney's, but is there carefully avoided by designedly leaving channels into which the seeds of cotton, and other foreign matter, may fall.

The defendants' cylinder differs from Simpson's and agrees with the plaintiff's in the formation of the teeth. The defendants' teeth are cut from plates or rings of metal, which are placed around the cylinder, close to each other, and the teeth may be considered as cut from the periphery of the cylinder, and, like the plaintiff's, have strength combined with sharpness, so as readily to seize the fibres, and, at the same time, present a firm, non-elastic surface to the action of the guard—qualities which Simpson's card teeth did not possess. The case of *Silsbee v. Foote*, 14 How. [55 U. S.] 225, meets an objection as to the sufficiency of the specification and claim.

I am of opinion that the plaintiff's patent is valid, and has been infringed by the defendants.

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Judgment for plaintiff for two thousand dollars, costs of reference eight hundred and fifty dollars, and costs of court to be taxed.

¹ [Reported by Samuel S. Fisher, Esq., and here reprinted by permission. Merw. Pat. Inv. 211, contains only a partial report.]