Case No. 5,598.

GOODYEAR DENTAL VULCANITE CO. ET AL. V. SMITH.

{1 Ban. & A. 201; Holmes, 354; 5 O. G. 585.}[1]

Circuit Court, D. Massachusetts. May, 1874.[2]

PATENTS—IMPROVEMENT IN ARTIFICIAL GUMS AND PALATES—ABANDONMENT TO PUBLIC.

1. The claim of the patent, for improvement in artificial gums and palates, was for "the plate of hard rubber or vulcanite or its equivalent, for-holding artificial teeth, or teeth and gums, substantially as described." The specification described the method whereby the plate is formed, and the teeth, gums, etc., embedded in it: *Held,* following Dental Vulcanite Co. v. Wetherbee {Case No. 3,810}, and Goodyear Dental Vulcanite Co. v. Gardiner {Id. 5,591}, that the invention patented, was the described product and manufacture, by the means described in the specification.

{Cited in Goodyear Dental Vulcanite Co. v. Root, Case No. 5,597; Same v. Flagg, Id. 5,590.}

2. In 1856, an application for a patent was improperly rejected. The inventor did not withdraw his application, or in any manner acquiesce in the rejection, nor did he appeal from the commissioner, but he pressed his claim for a patent, from time to time, as his circumstances allowed, until 1864, when he made a new application: *Held,* that the patentee, neither lost, nor did the public acquire against him, any rights by their unauthorized use of his invention during the time between the two applications.

3. The reissued patent, for an improvement in artificial gums and palates, granted to the Dental Vulcanite Company, assignee of John A. Cummings, March 21st, 1865, held valid.

{Followed in Goodyear Dental Vulcanite Co. v. Root, Case No. 5,597. Cited in Goodyear Dental Vulcanite Co. v. Willis, Id. 5,603;}

Goodyear Dental Vulcanite Co. v. Davis, Id. 5,589; Colgate v. Western Union Tel. Co., Id. 2,995; Dederick v. Cassell, 9 Fed. 308; Schultz Belting Co. v. Willemsen Belting Co., 40 Fed. 157.]

[This was a bill in equity by the Goodyear Dental Vulcanite Company against Daniel H. Smith for an injunction and account]

Edward N. Dickerson and Benjamin F. Lee, for complainants.

Jeremiah S. Black and Henry Baldwin, Jr., for defendant

SHEPLEY, Circuit Judge. Letters patent of the United States [No. 43,009], issued June 7, 1864, to John A. Cummings, for improvement in artificial gums and palates. The bill in equity in this case is filed against the defendant alleging infringement of the letters patent which, upon a surrender of that patent in accordance with law, were reissued to the Dental Vulcanite Company, the assignees of the title in and to the letters patent, upon the 21st of March, 1865 [No. 1,904]. While the patent describes the invention as "an improvement in artificial gums and palates," the patentee gives a better description of his invention in his specification in his original patent in which he claims to have invented certain new and useful improvements in the manner of forming artificial palates and gums used for inserting artificial teeth. The claim in the patent is for "the plate of hard rubber or vulcanite, or its equivalent for holding artificial teeth, or teeth and gums, substantially as described." This claim of the patent has been construed in this circuit, in the cases of Dental Vulcanite Co. v. Wetherbee [Case No. 3,810], and Goodyear Dental Vulcanite Co. v. Gardiner [Id. 5,591]. The substance and effect of the determination of the court in those cases is, that the invention claimed was the described product and manufacture by the means described in the specification. Adopting the construction given in those cases to the claim in the patent, I know no better description to be given of the invention patented to John A. Cummings, and reissued to the complainant than this, that it is for a new article of manufacture, consisting of a plate of hard rubber or vulcanite, with teeth, or teeth and gums, secured thereto in the manner described in the patent. The patent is not for a process or art, but for the new product resulting from the manipulation by the described new process. It is one of those products, as will be seen by examination of the specifications describing the process of manufacture, in which the process so inheres that the described product can only be made by the described process. The patent is not for a dental plate of vulcanite or hard rubber alone; it is not the substitution of the old material, vulcanite, in place of the gold and other materials which have been before used in the same way; it is not as claimed by defendant, for a dental plate of hard rubber vulcanized in moulds in the manner described in the patent: but it is for a set of artificial teeth as a new article of manufacture, consisting of a plate of hard rubber or vulcanite, with teeth, or teeth and gums, secured thereto in the manner described in the patent by embedding the teeth and pins in the vulcanizable compound so that it shall surround the teeth and pins while the compound is in a soft state before it is vulcanized, so that when the compound

is vulcanized the teeth are firmly secured by the pins embedded in the vulcanite, and there is a tight joint between the vulcanite and the teeth. This manufacture was a new manufacture, new as to the thing made, new as to the process of making it considering that process as a whole. The invention is not like that of a machine, but is one in which the process by which it is made is a part of the substance of the thing made, the manufacture, and a characteristic feature of its construction. It is evident, from an examination of the very brief and imperfect description of the invention given by Cummings in his caveat, filed as early as May 14, 1852, that he fully appreciated the fact that the importance of his invention consisted not merely in the substitution of a material "rigid enough for the purposes of mastication, and pliable enough to yield a little to the mouth," in place of the "hard, unyielding" metals previously used, and not merely in the substitution of a material light and inexpensive in place of the expensive and heavy materials before used for the plate, but also in the additional fact which he states, that "by his improvement the teeth can be easily baked into the gums, which form one piece with the plate." This statement at that early period sufficiently suggests that he fully appreciated the advantages of the material which he used, and which was capable of being so used in the process as to insure the cleanliness and purity resulting from the absolutely perfect joint formed between the teeth and the plate, and the consequent absence of any crevices for the retention of food.

In the specifications of the reissued patent, after adverting to the fact that the method previously in use of attaching artificial teeth to a metallic plate fitting to the roof of the mouth was attended with many objections and inconveniences, he states his invention to consist "in forming the plate to which the teeth, or teeth and gums, are attached, of hard rubber or 'vulcanite,' so called, an elastic material possessing and retaining in use sufficient rigidity for the purpose of mastication, and at the same time being pliable enough to yield a little to the motions of the mouth." He then describes what he calls his "manner of making and using said hard rubber plates," but which would be more appropriately described as his mode of forming and making a set or case of teeth, including the plate, gums, and teeth. A wax or

plaster impression of that part of the mouth which the plate is to fit is first taken, and from that impression a plaster cast is made which will exactly resemble that part of the mouth from which the first impression was taken. A plate of wax of the general form of the intended rubber plate is then made from this plaster cast, and around the front of this wax plate a vertical ridge of wax is fixed, about in the same position which the teeth are to occupy, in the same manner as is generally practised in the construction of gold plates for artificial teeth. A plaster mould is then made from this wax plate, fitting it both on the upper and under side, which plaster mould is known, generally, as the articulator, and is constructed so as to hold the wax plate securely and conveniently for manipulation, leaving the front edge, where the teeth are to be applied, exposed and accessible. The specification then describes the kind of teeth which may be employed, and says, the mode of operation is the same whether the teeth have porcelain gums formed in one piece with the teeth, and properly colored, or teeth without porcelain gums, in which case the palate and gums are formed of one piece of hard rubber; the mode of operation is the same whether gum-teeth, or teeth alone, are used, either singly or in groups. The teeth are set in place in the wax plate, and adjusted to the proper distance and fulness in the same manner as is generally practised in setting teeth in gold plates. The wax plate and gums, with the teeth adhering thereto, are now set upon the original plaster cast of the corresponding part of the mouth, and plaster is poured all around up to about the lower edge (as it lies) of the wax plate. The margin, or outlying surface of plaster, is oiled or varnished, and plaster poured over the whole, forming a complete mould of the plate and teeth. Upon the opening of this mould, the wax is warmed and removed so as to leave the teeth adhering in the plaster mould in exactly the relative position they are to occupy in the hard rubber plate. The teeth are provided with pins projecting therefrom in such manner that the rubber, which is to constitute the plate, will close around them, and by means of them hold or secure the teeth permanently in position. The plaster mould with the teeth adhering therein, as just described, is now filled with soft rubber, a little at a time, pressed in with the finger, or any other convenient way; and care is to be taken that the rubber is made to completely fit into the cavities, and around the protuberances, including the pins, and is filled to the thickness or depth desired to form the plate. The rubber plate is then locked in position by shutting the other half of the plaster mould over it to insure its retaining its exact form, and it is then subjected to sufficient heat to harden or vulcanize the compound.

While defendant admits that this process or mode of constructing the plate or case of teeth, which is included in the claim of the reissue, constitutes a substantial and material part of the thing patented therein, yet he insists that it was not described or suggested or indicated in the original patent of June 7, 1864, but was interpolated in the reissue, which is therefore invalid, having been granted contrary to law.

Since the exhaustive exposition of this branch of the law of patents, in the case of Seymour v. Osborne, 11 Wall. [78 U. S.] 516, the principles of law applicable to the consideration of this question are too well settled to admit of any doubt Where the commissioner accepts a surrender of an original patent and grants a new patent his decision on the premises in a suit for infringement is final and conclusive, and is not re-examinable in such suit in the circuit court, unless it is apparent upon the face of the patent that he has exceeded his authority, and that there is such a repugnancy between the old and the new patent, that it must be held as matter of legal construction that the new patent is not for the same invention as that embraced and secured in the original patent, Reissued letters-patent must, by the express provisions of the statute authorizing them, be for the same invention; and, consequently, when it appears on a comparison of the two instruments, as matter of legal construction, that the reissued patent is not for the same invention as that embraced and secured in the original patent the reissued patent is invalid, as that state of facts shows that the commissioner in granting the new patent exceeded his jurisdiction. The patentee may amend what is defective or insufficient in the description of his invention, but he cannot make any material additions to the invention claimed in the original, by interpolating in the reissue any thing not described, suggested, or substantially indicated in the original specifications, drawings, or patent office model. The claim of the defendant is, that, in the reissue No. 1,904, a new process of forming the plate is substituted for the one described in the original patent; and that the new process described was not suggested or indicated in the original patent. To properly determine this question, we must carefully examine the two specifications, to ascertain what steps in the described process are claimed as new, as distinguished from those steps in the process which were old. The plaster moulds, or the manner of using them, or of the wax in connection with them, are not described or claimed as new. What is described and claimed as new in the process is, in substance, the making of a vulcanite dental plate out of a vulcanizable rubber compound, into which the teeth were embedded in its plastic condition, and the rubber compound, with the teeth thus embedded in it, afterwards vulcanized by heat so that the teeth, gums, and plate should be perfectly joined without any intervening crevices, and the plate should possess the qualities of hard

rubber or vulcanite. All that is involved in this statement is clearly indicated in the original patent. It is true that the patentee does not describe in detail precisely bow the teeth were to be embedded in the plastic compound, before vulcanization, as fully as he states it in the reissue, but he does substantially indicate and describe the new manufacture, and all that is claimed in the reissue. Upon a comparison of the two patents, and an examination of the specifications and of the drawings, the court cannot arrive at the conclusion, as a matter of legal construction of the instruments, that the reissued patent is for any different invention from the one substantially indicated in the original. It is insisted in argument that Cummings did not, in his original application, describe a vulcanizable compound, because he says, "the teeth, gums, and plate are then baked until the rubber or other elastic material becomes sufficiently vulcanized." This description, it is contended, does not apply to vulcanite, because the soft rubber is not elastic before vulcanization. But when we take the whole description, it is plain that he does not intend by the expression, "or other elastic material," to apply it to the rubber in its soft, plastic, or putty-like condition, but to a material which may be an elastic material, either before its reduction to the soft condition, or after its vulcanization. This meaning, however imperfectly expressed, is easily gathered from the whole description, which plainly designates the material to be used as rubber, and the compounds commonly employed therewith, reduced to a soft plastic condition capable of vulcanization, and subsequently vulcanized.

The defendant also seems to have misapprehended the language of the court in Goodyear Dental Vulcanite Co. v. Gardiner {Case No. 5,591}, where it is said, speaking of the claim, that "it includes not only the plate of hard rubber for holding artificial teeth, or teeth and gums, but the process or mode by which they are constructed." It is contended that this construction makes the use of the moulds "the process or mode by which they are constructed;" and that inasmuch as the moulds were not described in the original, the reissue is broader than the original; and inasmuch as the use of such moulds for this purpose was not new, the patent is void. But, upon reading the opinion in that case, it is clear that no such construction as is contended for was given to the claim. The process of forming a plate by the use of plaster moulds was well known; the process of retaining and confining the vulcanizable compound in the mould, until it was converted by heat into hard rubber or vulcanite, was well known to those skilled in that art, and for that reason perhaps Cummings considered it unnecessary to describe minutely those details of the process in his original application. But, upon the suggestion that these steps in the process were not known to those skilled in the art of dentistry, a reissue was taken, which more at length described all the steps of the process. In view of the construction heretofore given to the claim, and in view of the evidence in this record, which shows that the use of such moulds in the described mode, and for the described purpose, was known to those skilled in the art, it is at least doubtful if there was any necessity for a

surrender and reissue. Such a use of moulds was not "the process or mode by which they are constructed," referred to by the court in the sentence above quoted from Goodyear Dental Vulcanite Co. v. Gardiner [supra]. What the true construction is, as given by the court in that case, we have before stated, and need not repeat.

It is again, in this case, most strenuously contended that Cummings was not the original and first inventor of the thing claimed by him, or a material and substantial part thereof. Considering the importance of this question, the great pecuniary interest involved, the public interest as well as the interests of the many thousand licensees under this patent in the dental profession, and the thousands who are alleged to be using the patented invention without license; and in view of the fact that this has been made a test case, and carefully prepared and presented to the court with all the light that can be thrown upon the history of the art, by careful and scientific research; I have carefully considered the evidence in the record upon the question of novelty, as if this were the first case in which this issue was presented. The first step in the solution of this question is to fix the date of the invention of Dr. Cummings. The caveat filed by him on the 14th of May, 1852, substantially describes his invention; and if there can exist any doubt that it was perfected at that time, there can be no question that it was perfected and reduced to practice in the latter part of 1854, or early in 1855, and before he filed his application for a patent on the 12th of April, 1855.

It is insisted, on the part of the defendant, that Cummings allowed his invention to be used freely and fully by the public before his application for a patent, and acquiesced in and permitted and assented to such use without asserting any claim or right thereto, and thereby waived and abandoned the same and dedicated it to public use, and thereby forfeited any right he might have had to letters-patent for his invention. Support to this theory of the defence is sought in the fact of the long space of time suffered to intervene between Feb. 6, 1856, when his first application was rejected by the commissioner, and his subsequent application in 1864. He did not after this rejection exercise his statute right to withdraw his application and receive back

his fee of twenty dollars; and although he did not appeal from the commissioner, he persisted in his claim for a patent. In the case of Godfrey v. Eames, 1 Wall. [68 U. S.] 317, the supreme court decided that if a party choose to withdraw his application for a patent, intending at the time of such withdrawal to file a new petition, and he accordingly do so, the two petitions are to be considered as parts of the same transaction, and both as constituting one continuous application within the meaning of the law. But Cummings did not withdraw his application, nor in any manner acquiesce in the rejection. On Jan. 17, 1859, his solicitor applied to the commissioner for the specification and drawing. When the commissioner declined to return the specification, additional counsel was employed in Washington to make an examination and endeavor to secure a patent. The counsel discovered, in the reasons which had been given for the rejection, that a palpable error had been committed, and applied for a rehearing, or for an appeal to the board of examiners. This application was also refused. Cummings was then poor, too poor to pay the expenses necessary to a persistent and successful prosecution of his application. Constantly persisting in the assertion of the importance and great value of his invention, he wearied his friends with his importunities for the means necessary to prosecute his claim and secure his patent, even offering, in vain, one-half of his patent for the means necessary to secure it He finally prevailed upon Flagg and Osgood to assist him with means; and on the 1st of March, 1864, he made a new application, which was filed March 25, 1864. On the 7th of April, 1864, the office replied to him: "Your present claim is embraced in an application filed by you in 1855, and rejected for want of novelty." The commissioner admits, that, although three times rejected, his former claim and specification, as amended before such rejection, so as to confine it to hard rubber or vulcanite, was improperly rejected, "the case of Steam's vulcanized rubber palate and vellum, to which you were then referred, having no bearing whatever upon your invention." After the new application was amended at the suggestion of the commissioner, so as to limit the claim and specification to make it conform to the original application as amended, the patent was issued on the 7th of June, 1864, which the commissioner thus decided he was entitled to have received on his application of April 12, 1855. That under such circumstances he neither lost, nor did the public acquire against him, any rights by their unauthorized use of his invention during the time after his application was made, when he was doing all in his power to secure a patent, is clear on principle, and well settled by the authorities. It is only necessary in this connection to refer to the very able opinion of Judge McKennan upon a similar state of facts in the ease of McMillan v. Barclay [Case No. 8,902], which leaves nothing more to be said upon this branch of the case, and if further authority be needed it will be found in the opinion of Mr. Justice Clifford, in Jones v. Sewall [Id. 7,495].

Upon the question of novelty, the construction which has been given to the claim renders it unnecessary that any particular allusion should be made to the foreign patents or

publications, or to the great mass of the evidence in the record exhibiting the state of the art prior to the patented invention. For it is not even claimed in argument that before the date we have ascribed to Cummings's invention any other person had successfully made what we have defined as his new manufacture; namely, a set of artificial teeth, consisting of a plate of vulcanite with teeth, or teeth and gums, secured thereto in the mode described in the patent, by so embedding the teeth, with the pins which help to secure them, in the vulcanizable compound in its-soft and unvulcanized state as to make a perfect joint after vulcanization. It is, however, claimed that, with gutta-percha, tin, platinum, and porcelain, sets of teeth had been made by a process substantially like that of Cummings, differing in substance from it only in the material used for the base. It is claimed that this is the mere substitution of one known material for another, and therefore not patentable. It is first to be remarked that the process which is new in the Cummings invention, by which the new patented manufacture is made, is not, as defendant supposes, the process of making the moulds, but the process of moulding, forming, and making the united plate and teeth, or set or case of teeth. Without, therefore, considering in this connection the question whether the same process had ever before been used in the manufacture of a plate with teeth, or teeth and gums, embedded in it so as to make a tight joint, and in effect, so to speak, a perfect union, using for a base a material other than vulcanite, it may be well to consider, upon the hypothesis-assumed by the defendant, under what conditions such a substitution of an old material would or would not be patentable. This is not in any proper sense a case of double use. It is claimed that the case at bar falls within the class of cases like Hotchkiss v. Greenwood, 11 How. [52 U. S.] 248. In that case a knob of porcelain or clay, such as were in common use for doorknobs, was attached to a metallic shank or spindle, by making the cavity in the knob, in which the shank or screw is inserted, largest at the bottom of its depth, in form of a dovetail, and a screw formed therein by pouring in metal in a fused state. The knob was not new, nor the metallic shank or spindle, nor the means by which the metallic shank was securely fastened therein. The only new thing was the substitution of a knob of clay in that form, in that combination, in place of a knob of

wood or metal. The jury were instructed in the circuit court, that, if no more ingenuity or skill was required to make this change and construct the knob in this way than that possessed by an ordinary mechanic acquainted with the business, the patent was invalid. The supreme court, in sustaining the instructions given in the circuit court, which were the subject of exception, say (Mr. Justice Nelson delivering the opinion): "The difference is formal, and destitute of ingenuity or invention. It may afford evidence of judgment and skill in the selection and adaptation of materials in the manufacture of the instrument for the purpose intended, but nothing more." The case, when carefully examined, decides only that "a machine made in whole or in part of materials better adapted to the purpose for which it is used than the materials of which the old one is constructed, and, for that reason, better and cheaper, cannot be distinguished from the old one, and, in the sense of the patent law, cannot entitle the manufacturer to a patent." The case of Hotchkiss v. Greenwood [supra], as the facts had been found by the jury, and as they were assumed in the opinion of the court, presented nothing more than the naked substitution in the same combination of one material for another, without any attending difference in function or effect. It was precisely as if a patent had been claimed for substituting in the same contrivance a silver knob in place of a brass one, or one plated with gold instead of one plated with silver, or one plated with gold or silver on a base metal, instead of the base metal knob. The mere exercise of taste or judgment, without invention, in the selection and substitution of materials, is not considered by the court, in that case, sufficient foundation for a patent. But it is not to be lost sight of, in considering the case of Hotchkiss v. Greenwood [supra], that when the counsel contended that the mode of fastening the shank to the clay knob produced a new and peculiar effect upon the article, beyond that produced when applied to the metallic knob, inasmuch as the fused metal by which the shank was fastened to the knob prevented the shank from acting immediately upon the knob, it being enclosed and firmly held by the metal; and that for this reason the clay or porcelain knob was not so liable to crack or be broken, and was made firm and strong and more durable; the court disposed of this point, not by deciding that such difference of effect would not be patentable if new, but by saying that this peculiar effect on the clay knob, as compared with the old metal knob, was not distinguishable from that which would exist in the case of the wood knob, or one of bone or ivory, or of other materials that might be mentioned, which were old. In effect, the court decided that the peculiar effect claimed was not new, and therefore not patentable, and not that the combination might not have been patentable had any effect been shown which was new, peculiar, and useful. If the knobs of porcelain or clay used by the complainants in that case had been new, or if, being old, the complainants by a novel use of them in the old combination had accomplished a new and useful result, differing not merely in degree, but in kind, from the result of the old combination, the patent would clearly have been valid; and the case

cited is certainly not an authority to the contrary. Strictly speaking, no new manufacture is any thing more than a new combination and arrangement of old materials; and whenever such new combination and arrangement produces a new and useful result, there being diversity of method and diversity of result, the invention is patentable.

The utility of this invention is shown by the vast number of persons making use of it, both as licensees and infringers. To overcome the presumption that it is a new manufacture arising from the grant of the letters-patent, the defendant has not introduced the opinion of any expert who is willing, in view of the state of the art as known to him and proved in the case, to testify that this was not, at the date of the original application, a new manufacture. Reliance is placed upon the evidence introduced in the case by the defendant, to convince the court of the fact, upon which defendant's experts were not convinced, that the manufacture patented, as distinguished from those which had preceded it, was not a new manufacture. The nearest approximation to the process of manufacture used by Dr. Cummings is, perhaps, to be found in the experiments of William A. Royce and George E. Hawes in casting a base of pure tin in a mould in the same manner substantially in which the vulcanite base is moulded. If these had been successful instead of abandoned experiments, they would not have furnished any obstacle to the granting of letters-patent to Cummings, for reasons clearly apparent. Hawes cast rude sets of teeth in this way for the lower jaw only, the weight of the tin, when made of sufficient strength out of this soft metal, rendering them impracticable for upper jaws. The shrinkage of the metal, when cooling, rendered it impossible to fit the plate accurately to the mouth, and rendered difficult, if not impossible, a tight joint between the base and teeth, to prevent the set from becoming offensive by the deposit in the crevices of food and fluids from the mouth. The extreme heat of the molten tin was communicated to the metal pins, causing them to expand, and resulting in a consequent liability by their expansion to crack the porcelain teeth. The tin, also, was subject to corrosion by the chemical actions of the fluids of the mouth. Royce had also made three cast-tin plates prior to 1850. He abandoned the experiment, making no more after that time. Yet Hawes testifies that

the use of vulcanite for dental purposes is the greatest improvement in the profession known to him for twenty-five years, and the testimony of Hawes and Royce alone, given as it is by very intelligent and practical members of the dental profession, would be sufficient to prove the utility of the invention, and to distinguish it as a new manufacture, as compared with any thing known in the prior history of the art Without going into a detailed examination of the Wildman plates, made by casting tin around the roots of the teeth upon gold or silver plates, and the unsuccessful attempts to use gutta-percha, the experiments of Dr. Hill with a secret compound of gutta-percha and some metallic salt, it is sufficient to state that none of these, much less any of the printed publications of which notice is given in the answer, suggest or describe an article of manufacture substantially like that described and claimed in the reissued patent on which this suit in equity is based.

Upon a careful review of all the evidence in the record, I have no hesitation in coming to the conclusion that the invention of Dr. Cummings was a new and useful manufacture; that nothing appears in evidence to show that he was not the original and first inventor of the thing claimed by him; that the reissued patent in suit is a good and valid patent; and that the defendant has infringed the same, as alleged in the bill.

Decree for injunction and account.

{Affirmed in 93 U. S. 486. Mr. Justice Bradley. Mr. Justice Miller, and Mr. Justice Field dissenting.}

{For other cases involving this patent, see note to Dental Vulcanite Co. v. Wetherbee, Case No. 3,810.}

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

[2] {Affirmed in 93 U. S. 486.}