

Paragraph 122 is in the following language:

"122. Steel ingots, coggled ingots, blooms, and slabs, by whatever process made; die blocks or blanks; billets and bars and tapered or beveled bars; steamer, crank, and other shafts; shafting; wrist or crank pins; connecting rods and piston rods; pressed, sheared, or stamped shapes; saw plates, wholly or partially manufactured; hammer molds or swaged steel; gun-barrel molds not in bars; alloys used as substitutes for steel in the manufacture of tools; all descriptions and shapes of dry sand, loam, or iron-molded steel castings; sheets and plates not specially provided for in this act; and steel in all forms and shapes, not specially provided for in this act, all of the above valued at one cent per pound or less, three-tenths of one cent per pound. * * *

The board of general appraisers sustained the importer's protest, holding that the goods should be classified as "steel in all forms and shapes not specially provided for," under paragraph 122.

On appeal to the circuit court, the decision of the board was sustained by Townsend, J., in the following opinion:

"The merchandise in question is known as 'Diamond Steel,' and was assessed for duty under paragraph 177 of the act of 1894, as a manufacture of steel not otherwise provided for. The importer protested, claiming that it was dutiable under the provisions of paragraph 122 of said act, as 'steel in all forms and shapes not specially provided for.' The question is as to which of these provisions is more specific. Upon this doubtful question I am inclined to follow the finding of the board of appraisers that the merchandise is a form of steel. As is argued by counsel for the importer, this article is made by crushing steel ingots, which are specifically provided for under paragraph 122. The only change in the ingot is a change of form. Inasmuch as paragraph 122 covers both steel ingots and steel in all forms and shapes, and the article remains steel, but simply changed in form without any change in the character of the metal, I think the finding of the board of general appraisers sustaining the protest is right. Let an order be entered accordingly."

From this decision of the circuit court, the United States took the present appeal.

Wallace MacFarlane, U. S. Atty.

Comstock & Brown, for appellee.

Before LACOMBE and SHIPMAN, Circuit Judges.

PER CURIAM. Decision affirmed, on opinion below.

CONSOLIDATED CAR HEATING CO. v. AMERICAN ELECTRIC HEATING CORP. et al.

(Circuit Court, D. Massachusetts. August 25, 1897.)

No. 684.

1. PATENTS—INVENTION—EVIDENCE—COMMERCIAL SUCCESS.

The fact that a patented device went into immediate use, and practically supplanted all others, is not to be attributed entirely to artful advertising in the case of an article which is not sold to the public at large, but is used only by mechanics of skill in their art, as is the case with electrical heaters for railway cars.

2. SAME—ELECTRICAL HEATERS.

The McElroy patent, No. 500,288, for an electrical heater consisting of a combination of an insulating substance, a wire coiled in the form of a

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spiral spring about the insulating substance, and a nonconducting material placed between the adjacent layers of the spring, covers a novel, useful, and patentable invention, under all the circumstances. The second claim is infringed by a construction in which the core and the nonconducting material between the adjacent layers of the coil are built solidly as one piece.

This was a suit in equity by the Consolidated Car Heating Company against the American Electric Heating Corporation, the West End Street-Railway Company, and certain individuals, for alleged infringement of letters patent No. 500,288, issued June 27, 1893, to the complainant, as assignee of James F. McElroy.

Fish, Richardson & Storrow and R. A. Parker, for complainant.

Lange & Roberts, for defendant Morss.

Wm. B. Sprout, for defendants Sargent, Little, and West End St. Ry. Co.

Lange & Roberts, for defendants Smith, Sargent, Little, and West End St. Ry. Co.

Lange & Roberts, specially, for defendant American Electric Heating Corp.

PUTNAM, Circuit Judge. The main question in this case is that of patentability. It is entirely plain that, in the state of the art, whatever the inventor accomplished was by careful attention to mechanical details of a character which do not ordinarily involve invention. We think, however, the circumstances bring the patent within the practical rules stated in *Watson v. Stevens*, 2 C. C. A. 500, 51 Fed. 757.

There are two claims in this case, as follows:

"(1) In an electrical heater, a wire wound in the form of a spiral spring extending in a spiral path about a cylindrically formed nonconductor, in such a manner that each spiral shall come into contact with the nonconductor at one point only, and the layers of spirals shall be separated from each other, substantially as described and for the purpose set forth.

"(2) In an electrical heater, the combination of an insulating substance, a wire coiled in the form of a spiral spring extending in a spiral path about said insulating substance, a nonconducting material placed between the adjacent layers of the said spring, substantially as described and for the purpose set forth."

The second claim contains the real invention covered by the patent. The first differs from the second merely in the element of contact "at one point only." This is said to be for the purpose of maintaining circulation, but it is clearly such a matter of detail that it cannot form an element sufficiently distinguishable from the second claim to establish patentability. Of course, the expression "at one point only" cannot be construed in a strictly mathematical sense. It necessarily means that the point of contact is to be narrow, without designating to what extent. It is therefore plain that the extent of contact must be settled according to the judgment of the builder in each particular case, balancing on one hand the matter of convenience, and on the other the question of circulation. It is the same practical question which arises in every case where more or less circulation is desired, and which is being constantly solved, in the ordinary mechanical way. The first claim is, in effect, the second with an additional element, too indefinite to be made a distinct element in a patentable combination; so that, as one of the two claims must be rejected, it seems

more suitable to reject the first as void. We therefore limit our consideration to claim 2.

There has been very much urged on us with a view to persuading us that this invention contains an advance on the state of the art in some elementary and substantial function; but the case clearly shows otherwise. It must be conceded, as maintained by the respondents, and as clearly shown by the patent, and by what is commonly known as to the state of the art, that, prior to the complainant's device, the use of electrical resistance for converting electrical energy into heat, the use of such resistance in the form of coiled wire, and such use of coiled wire wound in coils upon cylindrical or equivalent supports, were old. It also cannot be doubted that all the electrical laws availed of in the complainant's patent were known prior to the invention in issue here. That we are right in this proposition appears plainly from the language of the specification, as follows:

"In this way, the spirally formed coil of wire is drawn out and wound about the insulating substance on the spindle in such a manner that no two successive spirals are in contact with each other. In consequence of this winding, I am enabled to place upon the nonconductor a very large amount of wire, so that the wire at all points is entirely insulated, and so that a current traversing this wire cannot be short circuited between any two parts of the winding. By this method of arranging my wire in the form of a spiral spring, I provide for the expansion of the wire when heated. The wire, instead of becoming loose and bunching, and thus short circuiting, remains tightly wound, the expansion being taken up by the spring of the wire. If two adjoining spirals should by the expansion be drawn into contact, there would be no appreciable loss of force; simply one of the spirals would be interfered with. There is no danger of two successive layers of spirals coming in contact with each other, separated, as they are, by the insulating material; but, if this should occur, it would result simply in one of the layers being short circuited, and no appreciable injury would take place. By my method of winding the wire, having but one point of the edge of each spiral in contact with the insulating substance, and the spirals separated from each other, and the layers of spirals separated in their path along the nonconducting substance, the air or liquid in which this winding may be placed can circulate freely on all sides thereof. Thus, the insulating material is protected from excessive heat, and the atmosphere and liquid are in contact with the greater portion of the wire. In this way, I am enabled to place a very large amount of wire on a small cylindrical insulator, and thus obtain a very great amount of heat energy from the electrical current."

This shows that the inventor claimed only a device in which the spirals would not be in contact with each other, in which the wires at all points would be entirely insulated, in which expansion would be provided for, in which the wires would always remain tightly in place, in which short circuiting would be prevented, or, if it occurred, no appreciable injury would take place, in which provision was made for ventilation, in which the insulating material would be protected from excessive heat, and in which a very large amount of wire would be wound on a small cylindrical insulator. Nothing beyond this was described in the patent as a function of the invention, and nothing more can now be successfully maintained. Therefore, as we have already said, the case comes down to one of success through skillful use of mechanical details, and nothing more.

The specification states that the invention relates to mechanism adapted to warming apartments, and also that its object is to provide

a device for heating street cars and railway trains by electricity. This last suggestion is important, because some of the most desirable features found in the device would not be of value with reference to heating houses, and yet become of great value in connection with heating street cars and railway trains, where there are oscillation and jar. It is mainly, if not entirely, due to the fact that the device is adapted to all these purposes that the court is led to the conclusion that it involves patentable invention.

On the questions of mere novelty and utility there can be no doubt. The precise device of the complainant is not shown by any anticipatory matter proven in the record, as will perhaps appear more distinctly when we come to the question of patentable invention. The proposition of utility will also be developed in the same connection, although the fact that the respondents, with all their experience, have adopted the complainant's device, and maintain a claim of a right to use it with great persistency, is a practical proof in behalf of the complainant on this point, rendering almost unnecessary any additional evidence in that direction.

It cannot be disputed that the complainant's device went into immediate use, has been very extensively availed of by surface railways operated by electricity, and has practically supplanted all others. The respondents suggest that this is largely, if not entirely, due to artful advertising on the part of the complainant, indeed so artful as to be to some extent fraudulent. A suggestion of this character would have great force with reference to an article sold to the public at large, but is of little value in the present case, where the device is used only by mechanics of skill in their art. It cannot be denied that the patented device is the first practical successful heater for surface cars operated by electricity; nor that persistent and very numerous efforts by persons skilled in the art were made prior to the work done by the complainant's patent to accomplish the same result, all ending in failure. There have been introduced in the records 29 patents, beginning as early as 1859, for improved electric heating apparatus, of which 24 were introduced by the respondents. The respondents maintain that the field of experiment with reference to electric heating for surface cars is very modern, and, by cross-examination of the patentee, they succeed in putting it back not earlier than 1889; but the record contains, within the period commencing in 1889, and ending with the date of the application for the patent in issue, 13 patents relating to this particular subject-matter, all of which seem to have proved failures in practice. All these, with one exception, issued from the patent office of the United States. How many other like patents, with like unsuccessful results, were taken out in foreign countries, the record does not show; but, in view of the activity of the electrical art during that period, the court cannot hesitate to assume, as a matter of common presumption, that the number not proven is much larger than that proven. In addition, the respondents, by their cross-examination of the patentee, who filed his application October 1, 1892, proved that he took up the matter covered by the patent in suit as early as 1890; so that it must have been a study by him for a period of about two years. When, under the circumstances proven, a result

has been obtained so successful and important as that of the device covered by the patent in suit, after so many efforts attempted by a class so skillful and vigilant as the electrical engineers of modern times, it would be folly for the court to deny that the result involved something more than ordinary mechanical work, or to deny the reward which would be commonly given by disinterested intelligent minds.

The respondents urge on us, in the way of anticipation, many devices contrived for rheostatic resistance. It is undoubtedly true that the arts of rheostatic resistance and electric heating are closely akin to each other, indeed so closely that they might be called one art. But, even if they can be so called, they must, at least, be regarded as subdivisions of the same art, because, while rheostats seek to produce resistance with the least possible giving off of heat, the purpose of electric heating devices is to avail themselves of resistance in order that heat may be given off. Of course, if a rheostat can be found in the prior art, constructed in all respects like the heating device in suit, it might be impossible to conceive that there was invention in using the same device for either of the two different purposes. But, by the very nature of the results intended to be accomplished by rheostats, as contrasted with those intended to be accomplished by electric heating devices, this hypothesis seems an impracticable one. Whatever may have been devised for rheostatic resistance must be assumed to be, in its construction and incidents, substantially different from a heating device. In accordance with this presumption, the record fails to show any rheostat which can be adapted to heating purposes without change in its construction or incidents; and it is this change and adaptation which, under the circumstances to which we have referred, we are compelled to admit involves invention, or else stand in the face of the common judgment of disinterested intelligent minds. It is something of this nature which the supreme court refers to in *National Cash Register Co. v. Boston Cash Indicator & Recorder Co.*, 156 U. S. 502, 515, 15 Sup. Ct. 439, where it said as follows:

"Indeed, this use of the connecting mechanism can hardly be termed analogous to such as similar mechanisms had been previously used for; but, even if it were, the results are so important, and the ingenuity displayed to bring them about is such, that we are not disposed to deny the patentees the merit of invention."

The same considerations dispose of all alleged anticipatory heating devices shown in the case. Those which come at first sight the nearest to the device in suit are Kirkegaard's coil and Rose's device. Rose's device is found in an English patent, and certainly it is not covered by a description so clearly expressed as, in accordance with the well-settled rule, is necessary in order to make a foreign publication a sufficient anticipation. Kirkegaard's coil was a comparatively small affair, used in connection with an electric arc lamp, and neither required nor suggested devices adapted to prevent difficulties coming from oscillation and jar. In other words, it lacked the method for preventing contacts between the coils found in the complainant's device. Rose's device, so far as we understand it, was lacking in the same respect.

On the question of infringement, the case seems so clearly favorable to the complainant, so far as claim 2 is concerned, that we do not deem it necessary to enlarge upon it. The only pretense of variance lies in the proposition of the respondents that in the complainant's patent the nonconducting material placed between the adjacent layers of the coil is no part of the insulating substance,—that is, no part of the cylindrical core; while in the respondents' construction the core and the nonconducting material between the adjacent layers of the coil are built solidly as one piece. Nothing either in the letter or the substance of the complainant's claim sustains this proposition.

The case was originally brought against two corporations and several individuals, alleged to be officers of one or more of the corporations. Discontinuance has been entered as against the individuals concerned, and no respondent now remains except the two corporations. In order to maintain the bill, it must be alleged and proven that the two corporations are guilty of joint infringement. It may be that both are guilty severally, one for manufacturing and selling, and the other for using. But the only proof in the record is that one manufactured and sold, and the other used, without showing any co-operation between them. This, of course, does not prove joint infringement. Therefore, as the case now stands, the bill must be dismissed. If, however, the complainant desires to dismiss the bill against one of the remaining respondents, it may do so on payment of costs. As a matter of course, the question of costs arising out of our finding that the first claim is invalid must abide the final decree. Ordered, the complainant has leave to dismiss without prejudice as against one of the respondent corporations, with costs, on or before the 4th day of September next; and, unless it so dismisses, the bill will be dismissed, with costs; if it so dismisses, there will be a decree as provided in rule 21, adjudging claim 1 void, and for an accounting and injunction as to claim 2.

MEMORANDUM DECISIONS.

ANDERSON et al. v. UNITED STATES. (Circuit Court of Appeals, Eighth Circuit.) No. 989. Certified to supreme court for instructions upon certain questions, under the provisions of section 6 of the act of March 3, 1891.

BARBER et al. v. DAYTON et al. (Circuit Court of Appeals, Eighth Circuit. September 6, 1897.) No. 795. In Error to the Circuit Court of the United States for the District of Kansas. Dismissed, without costs to either party, on motion of plaintiffs in error; attorney's fee being waived.

BOARD OF COM'RS OF PRATT COUNTY, KAN., v. BOSTON SAFE-DEPOSIT & TRUST CO. et al. (Circuit Court of Appeals, Eighth Circuit.) No. 904. Appeal from the Circuit Court of the United States for the District