

said that each part separately, ~~or~~ possibly in combination with one other part, had in former patents a tendency to perform the same office, yet the execution of the function was destroyed or neutralized by incongruous parts, or by adjustment that caused conflict. The Grant tire, as compared with any previous tire, shows decided functional characteristics, and when any one or more similar parts are used they are used in such changed connection with other parts that they effect a different result, although it is the same result the previous patentees in some cases had in view, and which they attained only in such limited degree that the tire failed. It is true that in certain particulars there is a close similarity, as in the angle and its location in the Owen tire. But place the two tires side by side, and study the effect of lateral or direct pressure upon the rubber, and observe the differences in the result. The same contrasting examination of any of the other tires with the Grant tire will lead to the conviction that the former failed in obtaining the result desired. It may be that the differences in form or adjustment in some respects are slight, but it is sufficient to make the Grant tire successful, and the magnitude of that success aids the court in resolving doubtful considerations in favor of the patent in suit. Such employment of the fact of commercial success and wide use to aid the solution of doubtful questions is justified (*Barbed Wire Patent Cases*, 143 U. S. 275, 12 Sup. Ct. 443, 450; *Magowan v. Packing Co.*, 141 U. S. 332, 12 Sup. Ct. 71; *Id.*, 27 Fed. 362-364; *Kreamitz v. Cottle Co.*, 13 Sup. Ct. 719; *Consolidated Brake-Shoe Co. v. Detroit Steel & Spring Co.*, 47 Fed. 894; *Topliff v. Topliff*, 145 U. S. 156, 12 Sup. Ct. 825; *Seabury & Johnson v. Am Ende*, 152 U. S. 561, 14 Sup. Ct. 683; *Manufacturing Co. v. Adams*, 151 U. S. 139, 14 Sup. Ct. 295); and the fact of failure in whole or part of previously patented tires is available (*Gandy v. Belting Co.*, 143 U. S. 587, 12 Sup. Ct. 598).

Thus, after prolonged examination, study, and discussion, in which doubtless appears much unnecessary repetition, and in which much has been left unsaid, the result is reached that the decree should be in favor of the complainant. The consideration of the questions may have involved incorrect appreciation of the parts and functions of the parts of the tires considered, and may have overlooked features in the patent in suit as well as of others with which it has been compared or contrasted, but an effort has been made to portray faithfully the previous state of the art, so far as the printed arguments and accompanying evidence presented call attention to the same, and to state plainly the grounds of the conclusion reached.

SHREI et al. v. MORRIS et al.

(Circuit Court of Appeals, Seventh Circuit. February 16, 1899.)

No. 532.

PATENTS—INVENTION—IMPROVEMENT IN REFRIGERATOR CRATES.

The Shrei patent, No. 547,185, for an improvement in refrigerator crates, describes a cheap box, to hold perishable products to be shipped, above which is a rack for ice; the two being separated by a diaphragm of sheet metal, having its edges turned down to prevent the water from entering

the lower compartment. Its chief merit is in the cheapness of its construction. *Held*, that its cheapness alone did not render it patentable, and that its meritorious features were anticipated in the prior art,—particularly by the devices shown in the Douglas patent No. 346,647, for a can for shipping milk, and in the Colton patent, No. 101,588, for a refrigerator.

Appeal from the Circuit Court of the United States for the Northern District of Illinois.

This was a suit in equity by William A. Shrei and Hiram Mills against Nelson Morris and others for alleged infringement of a patent. There was a decree dismissing the bill (87 Fed. 217), and complainants appeal.

W. H. Carter and Robert H. Parkinson, for appellants.

A. H. Adams, for appellees.

Before WOODS and JENKINS, Circuit Judges, and BUNN, District Judge.

BUNN, District Judge. This suit was brought for the infringement of letters patent No. 547,185, issued to complainant William A. Shrei October 1, 1895, for an improvement in refrigerator crates. There is but one claim made in the patent, which is as follows:

"As an improved article of manufacture, a refrigerator shipping crate, having in combination with the box, A, a metallic plate, E, with its edges bent over the upper edges of said box, an inclosing frame, D, adapted to rest on said metallic plate, the cleats, G, secured at each corner of said frame, and their free ends extended down over the meeting edges of said frame, plate, and box, and a cover, F, all substantially as shown and described."

The invention and its purposes are further described in the specifications as follows:

"This invention relates to certain new and useful improvements in refrigerator crates, which are designed for use in shipping perishable products; the aim of the invention being to produce a shipping box or crate for the purpose described, which will be simple in construction, which may be used in one shipment of perishable goods, and then, at its destination, be destroyed, to save the expense of its return to the shipper. A further object of the invention consists in the provision of a water-tight, cold-conducting separator between the perishable products contained in the box or crate and the ice receptacle above, the edges of the separator overlapping the edges of the box to prevent the water from the melting ice entering the receptacle containing the products being transported."

It seems quite apparent from the claim and specifications what the patentee's invention consists of. It is a cheap box, made in the manner described, with two compartments, one for meat or other perishable product, and one for ice, placed on the top of the other, with a diaphragm of sheet iron between, on which to lay the ice, with the edges turned over so as to prevent the water running into the meat or other product. The box in general use at the time complainant's patent was issued was a heavier and more expensive box, intended to be used for many shipments, and as long as it should last. This box, as the evidence shows, is still in general use, but some packing houses are using complainant's box and other devices. Mr. Shrei testifies that:

"The box then in general use by the packers for shipment of perishable products consisted of a complete galvanized iron or tin box, which was placed

within a larger wooden box, leaving space on the sides and top, and also in some cases on ends, for ice. This made the box very heavy and cumbersome, and in shipping meat necessitated the payment of freight on the weight of the box in addition to the weight of the meat; and, as the box and the ice generally weighed twice as much as the meat, it made the freight very expensive. In addition to this, the freight and express companies charged for returning the empty box. The cost of the box varies considerably, according to the material used, and the manner in which it is built, and would run from \$2.50 to \$5 for a 100-pound box. According to the experience of the G. H. Hammond Company, a box, on an average, will last two years, and will average sixteen trips during that time. In addition to this, there was the wear and tear to the box, which amounted to 25 cents per trip. The boxes on their return are often repaired,—sometimes the lid is missing, at others the tin box is lost, and in some cases the boxes themselves are lost entirely; and these expenses are taken into consideration in computing the cost of 25 cents per trip."

When asked to state the cost of the different sizes of crates made under his patent, he says:

"A 100-pound crate costs about 25 cents; 200-pound crate, 40 cents; and a 300-pound crate, 50 cents."

In regard to what the witness calls the "rack," which he explains to mean that portion of his box immediately above the metallic separator, or, in other words, the ice receptacle of the box, he says that for a short trip a three-inch rack is used (meaning three inches in depth), for points more distant, a four-inch rack, and to points where the shipment will be in transit for some time, the rack is made six inches high, so there will be no waste of ice or material in making the shipment. And so it is all through the complainant's testimony. The witnesses lay stress upon the cheapness of the box, and the fact that it will not bear reshipment; it being more economical to throw it away, instead of paying 25 cents to reship the box, when it would have to be cleaned, and perhaps repaired, before it could be made ready for a second use, rendering it more economical to take a new box.

The sole question in the case is whether the complainant's patent shows any patentable novelty, in view of the previous patents and the prior art. The court below held that it did not, and dismissed the bill. This court feels compelled to adopt the same conclusion, though the box, as the evidence shows, is a good and useful box. But mere cheapness is not patentable. Cheap boxes have been made from time immemorial. It is no new thing, and involves no invention, to make a box so cheap that it may be better thrown away, or used to kindle a fire, than to reship. Most boxes that carry the world's merchandise are of that character. Dry-goods boxes, boxes for the shipment of groceries and provisions, fruit crates and boxes, of all sorts, are generally of this character, and are very seldom reshipped. Whether a box shall be made slightly and cheaply, so as to be thrown away after one shipment, or more permanently and substantially, at a greater cost, so as to be used in many shipments, is a question of construction, and good, prudent, business management, rather than of invention.

There is one feature of complainant's box which, though not new, is very commendable. The ice is placed in a rack, or, as it might be

considered, in a compartment of the box, separate from the product to be carried, with a piece of sheet iron or other metal between the ice compartment and the other. The metal diaphragm separating the meat from the ice is a good conductor of heat, much better than wood or paper, so that the heat passes from the meat or other products through the metal into the ice, which it melts by degrees, and passes off over the edges of the iron in the water. The metallic sheet serves at the same time to keep the water from the meat, which would be injured or spoiled if it came in contact with it, and serves as a ready conductor of the heat from the meat to the ice; thus keeping the meat or other products cold so long as the ice holds out. But this arrangement was not new with the inventor. It is shown in several previous patents, and is a very common device in refrigerators of many kinds. The same principle of construction appears in what the witnesses call the "old-style box," as the following cross-examination of Mr. Shrei well shows:

"C. Q. Do you know that, for many years prior to your supposed invention, it was exceedingly common to construct ice boxes or refrigerators for household use, for example, with the ice in a compartment at the upper end of such box or refrigerator? A. I knew of boxes constructed in the manner mentioned at that time. C. Q. It was also exceedingly common, in fact, almost the rule, was it not, to construct the floor or partition upon which the ice rested of sheet metal? A. The boxes in question were generally constructed of other material besides sheet metal, and the refrigerators generally provided for air tubes and spouts to drain off the water from the melting ice. C. Q. In this old style of box that you say was in general use by the packers for shipments of perishable products before you made your supposed invention, was the cover of the inner box a metal cover? A. It was, as well as the balance of the box. C. Q. How was that cover made, in order to prevent water from dripping into the provision chamber? A. It was fitted down tight on the top of the box, and generally nailed down, with small pieces of board to hold it in place. C. Q. Ice was packed on top of that metal plate or cover, as well as at the sides or the ends of that box, was it not? A. Ice was packed on top of the box as well as the sides, as stated, but one of the reasons for doing this was that the tin box had to be fastened down to the bottom of the wooden box by means of small boards, as above stated. This left no other places for the ice except the top and the sides."

It appears that in the "old-style box" the ice was always packed on top of the zinc or sheet-iron cover to the compartment containing the meat, and the water ran off just as it would run off the top of a tin-pail cover, without coming in contact with the meat. The ice, it is true, was also packed on the sides, and sometimes on the ends, of the meat box. But there was no invention in taking the ice away from the sides and placing it only on top. And there is not a particle of evidence to show that there was any advantage in so doing, except that the box would weigh less. It required no invention to make the change, and there is nothing to show that such a change constituted an improvement. A person might conjecture that, for some imaginary or unaccountable reason, the meat might be kept cold better with the ice packed on but one side instead of three or five, but there is no proof that such is the fact.

There is still another excellence claimed for the box by Mr. Shrei which seems of a still more doubtful character. He says that in his box "the ice is placed just above the meat, so that the cold air, in

going down, would have to pass directly through and permeate the products to be preserved." Mr. Shrei ought to know, for he made the box. But is what he says true, and, if true, would it be any advantage? It would be true, if the iron diaphragm were pierced with holes, or was not impervious to the passage of air. But it would be difficult, in so cheap a box, to arrange holes to let the air through and at the same time keep the water out. That might, no doubt, be done by having air tubes rising from the iron to the top of the ice. But that is not the complainant's invention, and would not conform with his claim of a cheap box. According to his invention, this metal division is impervious to air, and the edges are fitted down tightly over the edges of the meat box, so that the water will run off, and not come in contact with the meat. Of course, neither of the wooden boxes are wholly air-tight, but they are approximately so, and, no doubt, the better for being so, as it would be difficult to let the cold air in the meat box without allowing the surrounding hot air of the freight car to come in also. All the cold air that could come from the ice rack into the meat chamber must first find its way out of the top or sides of the ice rack, and then penetrate the meat box from the outside through the pores of the wood, or through any crevices that might happen to be in the box; that is, the air must pass out through the sides or top of the ice box, and again through the sides of the meat box, before it can come in contact with the meat or other product. In the sample of complainant's box that was brought into court as an exhibit, the sides and ends of both compartments are made of single pieces of lumber, so that there are no crevices or holes for the air to enter; the purpose, no doubt, being to make the boxes as tight as was practicable to keep out the surrounding warm air. But suppose, as Mr. Shrei says, the cold air falls from the ice rack directly down into the meat box; would that be an advantage? Of course, that would keep the meat cold so long as the ice lasted. But, as the cold air passed down from the ice rack, warm air from the outside would rush in to take the place of the cold air, so that the ice would soon be melted. The meat can only be kept cold by preserving the ice, and it would seem that could be best done by keeping the air in the ice rack at as low a temperature as possible. Mr. Shrei and other witnesses say that the meat is kept cool by the cold passing through the sheet iron into the meat chamber. That is one way of putting it, which is easily enough understood; but it is, no doubt, more nearly correct to say that, the iron being a ready conductor of heat, the animal and other heat of the meat passes through it into the ice chamber, where it sets free a portion of the ice, and passes off in the water. The meat will thus be kept at a sufficiently low temperature so long as the ice lasts, and there can be little doubt that this is the process by which the product is kept from being spoiled by heat in the shipment.

In the judgment of this court, everything of value presented by the complainant's patent appears in previous patents,—especially in the Douglas patent, No. 346,647, issued to James Douglas, August 31, 1886, and in the Colton patent, No. 101,588, issued to Edward S. Colton in April, 1870. The Douglas patent was for a milk can

for shipping milk. The can is made of metal (tin), and is in two parts,—one below containing the milk, and the other above for ice, which, when melted, runs off in water, so that the water cannot come in contact with the milk. The upper case or can, which holds the ice, telescopes over the receptacle for milk below, and is fastened to it when in position for shipping. The upper case contains the ice, which is separated from the milk by the metal top of the can. The construction seems almost identical with that of complainant's. The parts are combined in the same way, by means which are mechanically equivalent, perform the same functions, and serve the same purpose. We see no reason why the Shrei device could not be used for shipping milk, the same being put in cans placed in the lower box, or why the Douglas device could not be used for shipping meat or any other perishable product. Any change in size or form, from round to square, for its better adaptation to the carrying of solid products, would be a mere question of mechanical construction, which any mechanic could accomplish, without the aid of invention.

The Colton patent, issued as long ago as 1870, shows a refrigerator for containing perishable products. The construction is very similar to that of the complainant's. It has two compartments,—one below consisting of a square wooden box for receiving the product to be preserved, with a metallic cover fitting tightly over it, raised in the middle from all four sides, so that the water from the ice may the more readily run off. On top of this metallic cover is a second square wooden box, resting on the tin cover containing ice. The method of fastening the compartments together is not stated. The defendants' expert thinks they are probably held together by the outside castings, which surround the whole device. This device is like the one in suit in all essential particulars. It has a lower compartment for perishable products; an upper one directly over for ice; the metallic plate between, which serves as a conducting medium for the heat, and a cover to the lower receptacle, and also serves to separate the product to be preserved from contact with the ice and water, with projecting edges for shedding off the water. The cleats connecting the two compartments are not shown, which is the only thing it lacks of being the counterpart of complainant's device. Such cleats, however, have long been a cheap and common device for similar purposes, and could readily be supplied by any mechanic, or any person not a mechanic, without requiring invention.

There is another claim for complainant's patent which seems quite unsupported by anything in the testimony. The claim is that the edges of the metal cover are turned down over the top edges of the boxes containing the meat in such a way that the drip from the ice may be directed by these turned-down flanges over the wooden sides of the lower section, so as to keep up a constant cooling effect by evaporation. To better effect this purpose of absorption and evaporation of water to facilitate the supposed cooling process, the box is to be made of soft, porous wood, which will readily absorb the water. No such claim as this is disclosed by the patent. It is, no doubt, an afterthought brought forward by complainant's expert in complainant's rebutting testimony. The idea is nowhere brought

forward or hinted at by any of the complainant's 16 or 17 witnesses, either in their direct or cross examination. The patent in its specifications, states explicitly why the edges of the metallic diaphragm are to be turned down over the edges of the lower box containing the perishable product, which is "to prevent the water from the melting ice entering the receptacle containing the products being transported." There is no requirement that the metal should be turned down in such a way as to allow the water to flow over the wooden sides and ends of the box. So far as the specifications go, these edges might just as well be turned down so as to stand out an inch or half inch from the wood, so that it would drop to the floor without wetting the box. Indeed, there is nothing in the specifications requiring that the box should be made of wood at all, though this is no doubt intended, as comporting more completely with the patentee's purpose of making a cheap box. But, allowing the invention to be patentable, there can be no doubt that the making of a pulp or metal box after the same construction would constitute an infringement. There is clearly nothing in the patent to show that the box, if made of wood, must be of any particular kind or quality, whether porous or dense. Allowing that it should be cheap, to facilitate the purposes of a cheap box, there are many of the cheapest woods, like birch, maple, and spruce, that are not porous in their tissue. It seems quite impossible that so many things can be read into the patent that the inventor never claimed in his patent or specifications. It may be possible that a porous wooden box, with the sides kept wet by the drippings from the ice, would preserve the product better than a box with ice on these same sides instead of wet boards. But whether that is so is a mere conjecture or theory, which is wholly unsupported by testimony, and seems highly improbable in itself.

In every merit that is fairly presented by the patent, the complainant is anticipated by the previous patents and the state of the art at the time the patent was issued. And in its great cheapness, which is, no doubt, its principal merit, the complainants are anticipated by the common practice of merchants and shippers, who have made cheap boxes ever since boxes have been made of wood. The decree of the circuit court is affirmed.

**PETTIT v. BOARD OF CHOSEN FREEHOLDERS OF CAMDEN COUNTY,
NEW JERSEY.**

(Circuit Court of Appeals, Third Circuit. January 13, 1899.)

NAVIGABLE WATERS—BRIDGES—NEGLIGENCE IN MANAGEMENT.

In attempting to open a drawbridge maintained by the county across a navigable stream, for the passage of a vessel in tow of tugs, the casting which moved the bridge broke. The bridge tender then refused to permit the tugs to swing the bridge, and the vessels were delayed from 3 o'clock in the afternoon until 10 o'clock the following morning, until repairs could be made. It appeared that the tender had complained to the county board that the bridge was difficult to swing, and workmen had been sent to repair it, whose defective work caused the breakage. *Held*, that none of such facts established negligence on the part of the county