Section 13 of the act provides for a reappraisement if the collector shall deem the appraisement of any imported merchandise too low, which reappraisement shall be made by one of the general appraisers. The decision of the general appraiser, in cases of reappraisement, is made final and conclusive as to the dutiable value of the merchandise reappraised, against all parties interested, unless the importer, owner, consignee, or agent of the merchandise shall be dissatisfied with such decision, and shall within two days thereafter give notice to the collector, in writing, of such dissatisfaction, or unless the collector shall deem the appraisement too low. In either case it is made the duty of the collector to transmit the invoice, and all the papers appertaining thereto, to the board of three general appraisers which shall be on duty at the port of New York, or to a board of three general appraisers who may be designated by the secretary of the treasury for such duty at that port or any other port, which board shall examine and decide the case thus submitted, and their decision, or that of a majority of them, shall be final and conclusive.

Section 14 provides for an appeal within 10 days from the decision of the collector as to the rate and amount of duties chargeable upon imported merchandise, including all costs, charges, fees, and exactions, of whatever character, excepting on tonnage, and that in default of such appeal the decision of the collector shall be final and conclusive. The defendant has neglected to take any of the steps provided by law to review the action of the collector, which has now become conclusive and final. The judgment will be in favor of the United States, with costs.

DIXON-WOODS CO. v. PFEIFER.

(Circuit Court of Appeals, Second Circuit. April 18, 1893.)

PATENTS FOR INVENTIONS—VALIDITY—DESCRIPTION—GLASS ANNEALING.

Claim 1 of letters patent No. 258,156, issued May 16, 1882, to Cleon Tondeur, for an improvement in glass-annealing furnaces, was for "the combination of the bars, d, d', arranged side by side, and alternately between each other, the set, d, supporting the sheets of glass while the bars, d', are pushed towards the leer or flattening wheel, a, and the set, d', supporting the sheets of glass, and moving them onward and through the tunnel." The drawings show the bars raised some distance above the floor, and the specification states that a space of about one foot beneath the bars is desirable; also, that in transferring the glass one set of bars is raised and the other is lowered, in all about one inch. It was shown that the advantages which this device had over prior ones were due to the fact that the glass was held some distance above the floor, and moved in a horizontal plane. *Held*, that the bars, d, d', are bars which are above the floor, and in such relation to each other that the glass is carried forward in practically the same horizontal plane, even though the inventor did not precisely point out the advantages to inure from this arrangement, and was perhaps not aware to what the improvements effected by his device were due. 51 Fed. Rep. 292, affirmed.

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

In Equity. This was a bill by the Dixon-Woods Company against Pfeifer for the infringement of letters patent No. 258,156, issued May 16, 1882, to Cleon Tondeur, for an improvement in glass-annealing furnaces. There was a decree for complainant, (51 Fed. Rep. 292,) and defendant appeals. Affirmed.

Mr. Wilkinson, for appellant.

Thos. W. Bakewell and Mr. Kerr, for appellee.

Before LACOMBE and SHIPMAN, Circuit Judges.

SHIPMAN, Circuit Judge. This is an appeal from a decree of the circuit court for the northern district of New York, upon a bill in equity which was founded upon the alleged infringement by the defendant of letters patent No. 258,156, dated May 16, 1882, to Cleon Tondeur, for improvements in glass-annealing furnaces. The circuit court rendered, upon final hearing, an interlocutory decree against the defendant, for an injunction and an accounting. This patent has been twice the subject of adjudication by the circuit court for the western district of Pennsylvania. Judge Acheson's opinions, sustaining its validity, are contained in 28 Fed. Rep. 561 and 37 Fed. Rep. 333. Judge Wallace doubtingly followed, in this case, the decisions of Judge Acheson. 51 Fed. Rep. 292. The three opinions in the circuit courts fully explain the mechanical character of the improvement upon pre-existing machines. The invention relates to an annealing glass furnace, which is generally called a "leer," and is a long, arched tunnel into one end of which the sheets of glass are placed as they leave the flattening furnace, through which they are conveyed, and are gradually cooled in their transportation. In order to properly temper the glass, and prevent breakage or warping, or undue hardness or unequal tension of its particles, the cooling process should be gradual, and equally distributed. To this end the glass should not be subjected to alternations of heat and cold, but the temperature should be uniformly decreasing, and uniformity is found in the same horizontal plane and above the floor. Free radiation and an equal distribution of heat should take place from both sides of the glass, and therefore it should not rest upon the floor or upon a broad surface.

Formerly, the glass was carried from the flattening furnace through the annealing leer upon loaded cars, which was obviously a slow and unsafe method. The state of the art before the Tondeur invention, as manifested by the patented inventions which substituted transportation of sheets placed side by side for transportation upon loaded cars, is described as follows by Judge Wallace:

The two types of leers which were said to have been used "are shown in the patents to Bievez and to Bouvy. The Bievez leer is of the usual rectangular form, with the usual tile or stone floor. The floor is divided longitudinally by a series of channels. Located in these channels, and connected together so as collectively to form a frame, are a series of iron bars, resting on a series of grooved wheels. The wheels are supported by axles located in transverse channels beneath the floor. Coacting mechanism is employed for actuating the

frame, whereby the series of iron bars are raised, advanced, lowered, and pushed backward. In operation a plate of glass from the flattening oven is placed upon the floor of the leer, and the mechanism is actuated to elevate the frame and lift the glass from the floor, carry the glass forward, and deposit it upon the floor. The frame is then lowered, pushed back to its original position, and the operation repeated until the glass is transported through the leer. The Bouvy leer, in general construction, resembles that of Bievez, but differs in the devices for transporting the glass through it. The frame which is supported in the longitudinal channels consists of two series of iron shelves, which reciprocate each between the other, each having a vertical and longitudinal motion, which is coincident and equal, and also continuous. Mechanism is employed which actuates one series of the shelves downward and forward, and the other at the same time upward and backward. In operation the glass is placed upon one of the series of shelves, the mechanism is actuated, and, as the two series pass each other, the ascending series removes the glass from the descending series, and carries it forward until it is in like manner removed again by the other series, and thus is transported through the leer.

"To summarize: In the Bievez patent the frame has a free vertical and longitudinal movement. Its function is to lift a sheet of glass by its vertical movement from the floor of the leer, and by its longitudinal movement carry it to an advanced position on the floor. In the Bouvy patent one series of shelves moved vertically and longitudinally, while the other set is moving vertically and longitudinally in an opposite direction. The function performed by the shelves is to transfer a sheet of glass from one set to the other, and advance it through the leer. In the Bievez leer the sheet of glass rests upon the bottom of the leer throughout its passage, except while being advanced at each elevation of the frame. In the Bouvy leer the glass does not rest, at any time in its passage through the leer, upon the floor, but it is not advanced in the same horizontal plane, and in its movement describes a circle, which varies the longitudinal plane about eight inches.

"Besides the patents introduced in the former litigation to show the prior state of the art, the defendant has introduced others in the present case, of which those relied on in the argument at bar are the French patent to Leverne of 1868, and the Belgian patent to Bouillet of 1878. The Belgian patent to Gugnon, set up in the answer, cannot be considered, because it was not introduced in evidence. Neither of these patents is of any value as impeaching the novelty of the claim as it has been construed. Each of them belongs to the Bievez type, but, in Bouillet's, two sets of parallel bars cooperate to lift the glass from the floor and advance it along the leer, instead of the single set of Bievez."

The improvement contained in the Tondeur leer consisted in a successful attempt to simplify the machinery, and lessen the large amount of breakage which had been the result of former annealing processes. The patentee says in his specification:

"My device for removing the glass out of the furnace consists of two sets of bars of iron, one of which reciprocates between the other. By this reciprocating motion the glass is carried through the annealing tunnel of the furnace, the bars of each set being one elevated, while the other is lowered, between the movements of the glass, by means of a lever attached to one of several transverse shafts that support the bars. Sets of arms are attached to each shaft,—one set of arms with rollers for the reciprocating bars, and the other set of arms with hinge joints for the other set of bars."

The vital part of the improvement resides in the two sets of bars, one set reciprocating, and called "d'," the other set supporting, and called "d," in the patent. The following description of the operation of the double bars is condensed from the description in the specification: Both sets are parallel to each other, and are placed alternately. When a sheet of glass is in readiness, it is taken from

the flattening furnace, and placed on the ends of the reciprocating bars, four in number and parallel to each other, and by the aid of wheels having a motion backward and forward of about four feet. The operator, who stands at the further end of the leer, then pulls these bars towards himself, which causes their ends to move, with the sheet of glass in them, until the ends coincide with the ends of the supporting bars, and the sheet is also over the ends of these bars, d. The movement of a lever, which is fast to the end of a shaft, lowers the bars, d', and raises the bars, d, simultaneously, to the extent of about one inch, which takes the sheet from the bars, d', and leaves it on the bars, d. The bars, d', are then pushed backward for another sheet. The bars, d, are fast to the arm of the shaft, and their motion is very small, since they can move only the distance the lever moves the arm, which has no effect on the progress of the glass through the tunnel, "but by the motion of the bars, d', together with the elevation and lowering of both sets of bars, a gentle change of the sheets is had from one set of the bars to the other, and the glass moves onward through the annealing tunnel, until a series of sheets fill the tunnel, after which the operator, at each reciprocal movement of the bars, d', removes from the exit a sheet of glass. This he repeats as long as the furnace is in operation. The specification says, also: "A space of about one foot deep is desirable beneath the bars."

The drawings of the patent, and the leer as made and presented to the public, show that, as a matter of fact, the supporting bars were at some distance above the level of the floor, and that the movement of the sheets was in the same horizontal plane. The invention, as a fact, consisted in substituting a pair of supporting bars, raised above the floor of the leer, for the floor or the floor ribs of the Bievez type, and in so arranging the reciprocating bars with the supporting bars that the sheets are pushed forward through the leer in the same horizontal plane, instead of through different degrees of temperature, by the oscillating or jumping movement of bars of the Bouvy type. The glass is continually supported above the floor, and is both supported and carried forward in the same horizontal plane. The advantages of the leer, and the reasons why it was an improvement, are abundantly proved, not only by the testimony of mechanics and manufacturers, but by its history. It has well-nigh displaced other systems, and is in almost universal use in glass furnaces in this country. The claims of the patent are as follows:

"(1) The combination of the bars, d, d', arranged side by side, and alternately between each other, the set, d, supporting the sheets of glass while the bars, d', are pushed toward the leer or flattening wheel, a, and the set, d', supporting the sheets of glass, and moving them onward and through the tunnel, substantially as set forth.

"(2) The transmitting bars, d', reciprocating between the alternate bars, d, which receive the glass at the times described, in combination with the arms, e', e''', which by the lever, h'', and shafts, f, change simultaneously the elevation of the sets of bars, d, d', and the glass supported by each, as set forth.

"(3) The furnace, x, and tunnel, h', made with a continuous and straight chamber from the section, c'', of the flattening wheel, a, in combination with

the bars, d, d', so constructed that the bars, d', shall enter the leer furnace over the section, e'', of the wheel, as set forth.

"(4) A furnace and tunnel made with a draft through both from the fuel chamber, a', and with a draft flue, m, and dampers, n, in combination with the bars, d, d', the several parts being constructed as set forth.

"(5) The furnace, x, with flattening wheel, a, and tunnel, h', constructed and adapted to the two sets of bars, d, d', the bars, d', being made by the wheels, e, to reciprocate and project alternately into the furnace over the segment, c'', and out of the exit, h, whereby the sheets of glass are received by the furnace ends of said bars, and discharged by their exit ends out of the tunnel, without opening the furnace or tunnel, as set forth."

The case depends upon the construction which shall be given to the bars, d, and d', in the several claims of the patent. The first claim is the broadest and most important one, being for the two sets of bars, irrespective of the particular mechanism by which they are operated. The second is for the two sets of bars with the described operative mchanism. The third, fourth, and fifth are for the two sets of bars, in combination with the furnace and tunnel, and specified details of construction mentioned in the respective claims. The defendant's theory of the invention as it existed in Tondeur's mind, and as he presented it in his specification, is that it was a modified construction of the bars so as to avoid violent movement, and consequent breakage; that its intended result was a gentle change of the sheets from one set to the other; that, so far as appears from the specification, the supporting bars could be on a level with the floor, and the reciprocating bars could move in a variable plane; and that it was a mere mechanical change, and not an improvement in the art of annealing. If this theory is correct, there was no patentable invention in the improved leer. The defendant's argument relies upon the fact that the alleged distinctive features of the bars, viz. their elevation above the floor, and the forward movement in the same horizontal plane, are not mentioned in the specification or in the claims as patentable features or patentable improvements, or as the causes by which breakage is avoided, and that elevation above the floor is only alluded to as desirable.

It is perfectly true that the description in the specification is confined to the purely mechanical features of construction of the bars and the other operative mechanisms, and that the patentee nowhere told why his improvement diminished breakage, or pointed out as a part of his invention that the movement was in the same horizontal plane, and that the supporting bars must be above the floor, although he does mention the amount of space beneath the bars which would be desirable. The specification closely, and altogether too closely, adheres to mere mechanical features, and creates doubt as to whether Tondeur thoroughly understood his invention. It indicates that the patentee did not understand the philosophical principles which caused his mechanism to produce an improved annealing. If he had known, they would have been alluded to in the patent; but an examination of the specification and its drawings leaves little doubt that the patentee meant, and that the specification means, to describe bars in such relation to each

other that the glass is carried forward constantly in the same horizontal plane. He meant to instruct the public that the glass was to be carried through the tunnel on a level, though he might not have known why it was to be so conveyed. A very slight vertical movement transfers the glass from one set of bars to another, and it is, during its entire progress through the tunnel, in substantially the same horizontal plane. The motion of the bars, d', is called a backward and forward one, and the specification says that the operator draws the exit ends of the bars, d', out with a sheet of glass on them when the bars, d', are up or elevated, and he pushes them in when they are lowered, and the bars, d, are up or elevated. The bars, d', are pushed backward and pulled forward on wheels which are mounted on shafts whose journals are either made fast to the sides of the tunnel, or set in them, all at one level. Any other motion than one in a horizontal plane would not seem to be practicable.

The fact that the supporting bars are raised above the floor is not so clearly found in the written parts of the specification. It is plainly implied, because the distinctive feature of these bars is that they are supporting, and the glass passes through the leer upon a grating, and the plan of movement is inconsistent with a rest upon, or contact with, the floor. Moreover, Fig. 1 of the drawings clearly shows that the bars are above the floor. In addition, the fact that the advantages arising from the elevation of the supporting bars above the surface of the floor, over the old hearth-leer construction, were immediately understood by practical glass manufacturers, is suggestive that they understood the real nature of the invention as described in the patent. The patentee told the trade of which he was a member by what mechanical means breakage of glass in the process of annealing could be saved; in other words, how to anneal glass better and more economically. His patent described clearly enough the way in which bars and the operative mechanism should be constructed and operated, and the glass should be conveyed through the leer. He did not know, or he did not tell, why the new method would produce better results. He simply told how to construct a machine which carried the glass through the leer on a level, and saved much breakage; but he ought not to lose the statutory benefits which would certainly belong to him if he had seen and described the philosophy of his machine accurately.

Our conclusion is, in accordance with that of Judge Acheson, that the bars, d', d, are two sets, arranged alternately, side by side at some distance above the floor of the leer, so that the sheets of glass are supported by one set, and moved onward by the other through the tunnel, in practically the same horizontal plane, when coacting mechanism is applied.

The defendant is a builder of leers, and constructs them substantially in accordance with the description shown and described in letters patent No. 400,708, which were issued to him, and dated April 2, 1889. In the opinion of the circuit court it is said "the combinations which are the subject of the several claims [of the

Tondeur patent] are each employed in the furnaces or leers of the defendant." The questions which were actually in controversy before the circuit court, and are before this court, relate to the construction of the patent and to patentable novelty. If the validity of the claims is sustained, infringement is not controverted.

The decree of the circuit court is affirmed, with costs.

DIXON-WOODS CO. v. SYRACUSE GLASS CO.

(Circuit Court of Appeals, Second Circuit. April 18, 1893.)

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

In Equity. Bill by the Dixon-Woods Company against the Syracuse Glass Company for infringement of a patent. There was a decree for complainant, and defendant appeals. Affirmed.

Mr. Wilkinson, for appellant.

Thos. W. Bakewell and Mr. Kerr, for appellee.

Before LACOMBE and SHIPMAN, Circuit Judges.

SHIPMAN, Circuit Judge. The facts in this case are the same as in the case of Dixon-Woods Co. v. Pfeifer, 55 Fed. Rep. 390, (which has just been decided.) Judgment of the circuit court is affirmed.

ANDERSON v. MONROE et al.

(Circuit Court, W. D. Pennsylvania. April 5, 1893.)

No. 38.

1. PATENTS FOR INVENTIONS—VALIDITY—INVENTION—MANTELS.
   Design patent No. 19,872, issued June 3, 1890, to W. Anderson, for a design for mantels, is valid, as showing invention, inasmuch as the elements, though old, are combined in a new and harmonious design, which presents a different impression to the eye from anything that preceded it.
2. SAME—INFRINGEMENT—DEFENSE—ABANDONMENT.
   In a suit for infringement of a patent, where the defense is public sale and the use of the patented device more than two years before the patent was applied for, the burden of proof is on the defendant; and the defense is not sustained by evidence which leaves in doubt the identity of an exhibit which embodies the device, and is alleged to have been so sold.

Suit by William Anderson against W. T. Monroe and Edward T. Germain for the infringement of a patent. Bill dismissed as to Germain, and decree for complainant as to Monroe.

W. L. Pierce, for complainant.

W. Bakewell & Sons, for respondent.

BUFFINGTON, District Judge. This bill is filed by William Anderson against W. T. Monroe and Edward T. Germain, alleging infringement of design patent for mantels, No. 19,872, applied for by Anderson 20th February, 1890, and granted June 3d following. The design is known as the "Anderson AA Mantel." On application