

became the owner of the patent, has failed to allege ownership at the date of filing his bill. The complaint is defective in both these particulars. *Blessing v. Trageser*, 34 Fed. Rep. 753. The first ground of the demurrer is sustained, with liberty to the complainant to amend within 20 days without costs.

The second ground of demurrer assigned is want of patentable novelty on the face of the patent. The patent is for an improvement in floral letters or designs, whereby, instead of tying single flowers to a toothpick, and sticking them, when so tied, into a floral piece, so as to form a letter or design thereon, the letter or design is first cut out of some stiff material, and the flowers fastened to it. When the form is complete, it is fastened to the floral piece by toothpicks. The question is whether this improvement involves invention. The patentee alleges that he is the first inventor and discoverer of this improvement. He claims that the questions of novelty and utility were heard and decided in his favor by the commissioner of patents, and that his invention has displaced all other methods of making floral designs. The question of patentable novelty is a question of fact, and, except in a very clear case, it ought not to be decided until after an opportunity has been given to submit evidence thereon. *Blessing v. Trageser*, *supra*; *Dick v. Supply Co.*, 25 Fed. Rep. 105. And where this question is doubtful, an extensive use by the public may serve to resolve the doubt in favor of the patentee. *Topliff v. Topliff*, 59 O. G. 1257, 12 Sup. Ct. Rep. 825. I am not satisfied that the want of patentable novelty is so palpably manifest on the face of the patent that the bill of complaint should be dismissed on demurrer. The second ground of demurrer is overruled.

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FRANCIS *et al.* v. KIRKPATRICK & Co., Limited.

(Circuit Court, W. D. Pennsylvania. September 17, 1889.)

No. 28.

1. PATENTS FOR INVENTIONS—INVENTION—SHEET-HEATING FURNACES.

Letters patent No. 408,475, granted August 6, 1889, to Evan James Francis and Charles Banfield, for "a bottom for heating furnaces, formed of segregated masses, broken pieces, or fragments of noncombustible material having interstitial passages, and presenting a broken or uneven surface," disclose a patentable invention.

2. SAME—ANTICIPATION.

The defense of anticipation examined, discussed, and overruled.

In Equity. Bill by Evan James Francis and Charles Banfield against Kirkpatrick & Co., Limited, for infringement of a patent. Decree for complainants.

*J. I. Kay*, for complainants.

*D. F. Patterson*, for defendants.

Before ACHESON, Circuit Judge, and BUFFINGTON, District Judge.

ACHESON, Circuit Judge. This is a suit for the infringement of letters patent No. 408,475, for a bottom for the heating chambers of sheet-heating furnaces, granted August 6, 1889, to Evan James Francis and Charles Banfield, the plaintiffs, on an application filed December 23, 1887. The patent has a single claim, which is as follows:

“A bottom for heating furnaces, formed of segregated masses, broken pieces, or fragments of noncombustible material having interstitial passages, and presenting a broken or uneven surface, substantially as set forth.”

In such furnaces it is necessary that the heat should pass freely under the sheets, in order to heat them uniformly, and, prior to the invention here in question, this was, and long had been, accomplished by a bed of coke of the depth of about six inches, spread over the bottom of the furnace. But there were very serious objections to the use of such a coke bottom. As the coke was combustible, it caused the bottom of the heating chamber to become hotter than the rest of the chamber, and consequently the lower sheets became too hot, and thus were often spoiled. Then, without the exercise of much care, and often in spite of customary care and skill, the ashes and sulphur from the coke adhered to the sheets, marking and spotting them, and also frequently causing several sheets to stick together so as to spoil them. Moreover, the coke bottom had to be often renewed at great expense and extra labor. To remedy these difficulties was the purpose of the invention described in the plaintiffs' patent. The specification states that the noncombustible substances forming the bottom may be broken pieces or fragments of cinder or slag, or oxide of iron, or asbestos, soapstone, etc., furnishing a remarkably cheap and durable bottom, free from dust, ashes, and sulphur, and which does not get hotter than the rest of the furnace; that the segregated character of these pieces or fragments causes interstitial passages to be formed, through which the heated gases are free to pass; and the upper side of the bed presents a broken or uneven surface; and thus the pile of sheets will be heated to the same degree at the top as at the bottom.

The patented improvement is certainly very simple, but the proofs clearly show that it possesses uncommon merit, and has accomplished the most beneficial results, obviating the evils incident to the coke bottom. As soon as it became publicly known, it was immediately and universally adopted in sheet-heating furnaces. That it was novel is indisputable. Under the proofs and the authorities, we do not hesitate to pronounce it to be a patentable invention. *Loom Co. v. Higgins*, 105 U. S. 580, 591; *Magowan v. New York Belting Co.*, 141 U. S. 332, 12 Sup. Ct. Rep. 71; *The Barbed Wire Patent*, 143 U. S. 275, 12 Sup. Ct. Rep. 443.

It is shown that the plaintiffs perfected their invention as early as October, 1887, and in the latter part of that month put the same into public and successful use at the sheet-iron works of Wallace, Banfield & Co., Limited, at Irondale, Ohio. But it is alleged that the plaintiffs were not the original and first inventors, and that for several months before

their alleged invention furnace bottoms composed of broken bricks and of cinder were publicly used at the Canonsburg Iron & Steel Works at Canonsburg, Pa., and furnace bottoms composed of cinder were so used at the works of Summers, Bros. & Co., at Struthers, Ohio, at the defendants' works at Leechburg, Pa., at the Chartiers Iron & Steel Company's works at Mansfield, Pa., and at the Apollo Sheet Mills in Armstrong county, Pa.

As respects the alleged prior use at the Canonsburg mills, the defendants examined five witnesses. Richard S. Jones testifies that about two months before the death of Jack Cole, the then manager, (who died January 11, 1886,) they tried a furnace bottom made of broken bricks, which worked right, but streaked the sheets, and that, after using this brick bottom a week, they took it out, and put in cinder, and thenceforth continued to use cinder bottoms. John Williams agrees substantially with Jones, but there is strong evidence to show that he was not at those works between April, 1885, and May, 1886. John F. Budke, the superintendent of the company, testifies that the broken brick bottom was put in in the fall of 1885, and used until the next summer, and worked satisfactorily. He says:

"I worked that bottom on until the following summer, and Billy Richards, my roller, came to me and told me that Banfield and Francis claimed a patent on the cinder bottom, and I told him that I did not think they could claim a patent on it, and he asked me to try the cinder bottom in the big sheet furnace. I told him I would whenever we had time to alter the furnaces. In the mean time we would mix some cinder with the brick in the small furnace. We did use it in the large furnace in the July following, and have been using it ever since."

It seems, then, from Budke's account, that the use of cinder bottoms at Canonsburg was after he was informed by Richards of the plaintiffs' invention; but that invention was not made until the fall of 1887. The testimony of William H. Richards does not help the defendants. He cannot give any dates, and otherwise his recollection is deficient. The defendants' other witness on this branch of the case, Mark Lewis, Jr., stated: "We used coke at first, then used brick a while, then went back to coke, and then used cinder after that;" but he was not able to fix the date when cinder bottoms were first used. He further stated that he worked at the small furnace in which the broken brick bottom was used at the time it was tried, and he thought it was not used "very long," because pieces of the brick would stick to the sheet, and be rolled out with it, making a long white streak on the sheet. Mr. Lewis was called back to the stand by the plaintiffs in rebuttal, and he then testified that he thought the broken brick bottom was not used "longer than a day or two," and that they then returned to the use of coke bottoms. The plaintiffs rebutted this defense by several witnesses. Enoch Thomas, a roller at those works from 1884 to September, 1886, testifies with particularity about the trial of the broken brick bottom, which took place on his "turn." He says they used it for three heats only; that it marked the sheets and "made them waste." He states: "I told Cole that it

would not do. 'Well,' he says, 'damn it, throw it out.' Then we threw it out, and that was the end of it. We put coke back in, and worked from that time on coke, until I quit there." Joseph A. Dean, who worked at this mill, first as a doubler, and then as a roller, from April 2, 1885, to April 2, 1890, gives the same account of the trial of the broken brick bottom as Enoch Thomas, and Dean testifies that they used coke bottoms until December, 1887. Reese Johns, a roller, and Robert Johns, a heater, who worked there during the years 1885 and 1886, testify that coke bottoms only were used down until they left, late in the fall of 1886. David Llewellen corroborates this. Elias Williams, a sheet heater, who worked at Canonsburg from September, 1886, to October, 1890, testifies that they used coke bottoms in the "big mill" till the spring of 1888, when they put in cinder bottoms, and that only a short time before was the change made from coke to cinder in the "little mill." George Gittings went to work as a catcher in the little mill March 10, 1887. He testifies that they were then using coke bottoms, and continued to use them as late as Christmas of that year; and he thinks they first introduced cinder bottoms several weeks later.

Such is the substance of the direct evidence on this branch of the case. Now, it is the established rule that he who sets up prior use as a defense to a suit for the infringement of a patent has the burden of proof upon him, and every reasonable doubt is to be resolved against him. *Cantrell v. Wallick*, 117 U. S. 689, 6 Sup. Ct. Rep. 970; *The Barbed Wire Patent*, *supra*. The defendants have not only surely fallen short of that standard of proof, but we think the decided preponderance of the evidence is with the plaintiffs. The only reasonable conclusion is that the use of the broken brick bottom in the fall of 1885 was an unsuccessful experiment, speedily abandoned, and that cinder bottoms were not used at the Canonsburg works until after the public use of them at Irondale.

As to the use at the works of Summers, Bros. & Co., at Struthers, Ohio, little need be said. Undoubtedly the introduction of cinder bottoms into those works was not until after the plaintiffs had completed their invention, and put it into actual practice at Irondale, Ohio. What had been done previously at Struthers did not amount to the practice of the invention, either openly or secretly. The most that can be said is that occasionally,—William Summers states "every time the heater complained about the bottoms being dirty,"—for the purpose of holding the sheets up out of the ashes, a few shovelfuls of cinder were scattered across the rear end of the furnace bottom, when the coke had burned away there, and no coke was at hand to fill in at the rear; the coke, however, elsewhere on the bottom of the furnace being kept replenished. This was done by William Summers, the roller, and Frederick Bailey, the heater, secretly, and knowledge of the fact was carefully concealed from the mill manager. This casual use of cinder did not rise even to the dignity of experiment, for it does not seem to have then occurred to either Summers or Bailey that coke could be dispensed with, and a cinder bottom substituted therefor. It may be that the germ of the in-

vention was in this use of cinder, but it was unperceived. At any rate the matter was not followed up beyond the experimental stage. Such use, therefore, cannot avail as against the plaintiffs. *The Barbed Wire Patent, supra.*

It is significant that in the original answer, which was verified December 16, 1889, the defendants, in describing the construction of their heating furnaces at Leechburg, stated that "up until about a year last past" they had used a layer of coke on the bottom of the furnace, but that "within about a year last past" this layer of coke had been dispensed with. But on December 11, 1890, by an amendment to the answer, they fixed the time when they first substituted a layer of broken cinder for the coke at "some time in the spring of 1887."

The defense of anticipatory use at Leechburg rests upon the oral testimony of seven witnesses, doubtless honest enough, but who speak as to the time when cinder bottoms were introduced there from mere general recollection. No one of them pretends to exactitude, nor is any circumstance mentioned having any natural connection with the main fact, or tending to determine the date with certainty. They testified three years after the event. Upon the unreliability of such testimony, coming even from the best-intentioned witnesses, we need not enlarge. One of these witnesses, Harry E. Sheldon, the manager of the Leechburg works, having from recollection named the spring of 1887 as the time when the change from coke bottoms to cinder bottoms was made, was asked if he had then heard of their use elsewhere. His answer was: "How I first came to hear about cinder bottoms in sheet furnaces I cannot tell. I have been trying to think. Somebody told me, but who it was I cannot recollect; nor do I recollect where." But Sheldon's want of memory is well supplied by George B. Pavitt, a witness on the part of the plaintiffs, and John C. Wallace, a member of the defendant firm, and also a member of the Irondale firm of Wallace, Banfield & Co., who testified in behalf of the defendants. Being asked on cross-examination at which place (Irondale or Leechburg) the cinder bottom was first used, Wallace answered: "To the best of my knowledge, as far as I know anything about it, it was first used at Irondale. That was the first place I knew of its use. By 'Irondale' I mean at the works of Wallace, Banfield & Co., Limited." Pavitt, who is a sheet heater, states that he first saw the cinder bottoms used at the works of Wallace, Banfield & Co., Limited, at Irondale, Ohio, where he was then working, and that he then and there learned that Francis and Banfield were the inventors; that subsequently—to the best of his recollection, in December, 1887—he made a visit to Leechburg, and that they were then using coke bottoms at the defendants' Leechburg works; that on the occasion of this visit he conversed with Mr. Sheldon, the defendants' manager, about cinder bottoms, and he gives that conversation as this: "Mr. Sheldon asked me what I thought of the cinder bottom. I told him that it was a good thing. Then he asked me about what size they broke the tap to put in the furnace, and I told him about the size of an egg. That was the conversation between him and me." At the