than had been done in other devices in which they had been previously employed, or than would suggest such use in a drop hook such as used in complainant's patent. I do not, therefore, think that the Hinman patent was an anticipation. For the reasons stated before, I do not think the earlier Zeller patent is an anticipation, It is intimated in brief of defendant's counsel that the claim in the earlier patent, abandoned by Zeller, viz.: "A harness finding consisting of the plate, A, upon which is formed the elevation, a, having an eye or passage, A' to receive a terret or ring, a hook, or other harness attachment, substantially as and for the purpose set forth," -is substantially the same as the claims of the later patent, and should estop him from setting up the same in his present suit. The essence of the later invention is that the parts are cast separately, and so made as to be easily and cheaply made and put together, and, when so combined, to furnish a stronger and more satisfactory product. All this is accomplished. And there is no ground for estoppel on the plea that the former claim abandoned is the same device. The defendant has not seen fit to use any of the devices set out in the nine patents pleaded. It has, however, patterned the article it manufactures exactly from that of complainant. It has done this after correspondence, and with full information as to complainant's claims. The hook is a clear infringement of the first and third claims of the patent, and the terret is of the second claim. The complainant is entitled to a decree sustaining its patent, finding infringement, and for an accounting.

LEVY v. DATTLEBAUM et al.

(Circuit Court, S. D. New York. October 4, 1894.)

1. PATENTS-ISSUANCE TO JOINT INVENTORS. Issuance of a patent to "T. and L., of the firm of T. & L.," puts the legal title in the parties jointly, and not in the firm.

2. SAME-REQUISITES OF ASSIGNMENT.

Where the legal title to a patent used in the business of a firm is in the partners jointly, an assignment by one partner to the other of all goods and machinery, etc., "and all other property whatever belonging to said firm, and all his rights, title, and interest therein," does not convey the legal title to the patent. An instrument assigning a patent should dis-tinctly describe the patent, though description by name, number, and date is not indispensable.

8. SAME-PRACTICAL CONSTRUCTION OF ALLEGED ASSIGNMENT.

One of two joint patentees, who were partners in business, gave to the other, on the dissolution of the firm, a writing which the latter claimed operated as an assignment of the patent. It appeared, however, that after the execution of that instrument each gave the other a license under the patent. Held, that this was a practical construction of the prior instrument, and implied that each still owned an interest in the patent.

This was a bill by Charles M. Levy against Dattlebaum & Friedman for infringement of a patent.

H. A. West, for complainant. Arthur Murphy, for defendants.

TOWNSEND, District Judge. This is a bill in equity for the infringement of letters patent No. 389,776, granted September 18, 1888, to Otto Thie and the complainant, as joint inventors of an interchangeable ring. The defenses are invalidity of patent, and license from Otto Thie. At the time of the application for the patent, said Otto Thie and the complainant were partners in the jewelry business, under the name of Thie & Levy. The application for the patent describes them as "Otto Thie and Charles M. Levy, of the firm of Thie & Levy." The fees for procuring the patent were paid by The firm used the invention in its business. On January the firm. 21, 1890, the firm was dissolved by a written agreement, which included an assignment from Thie to Levy of the goods, machinery, etc., "and all other property whatever belonging to said firm of Thie & Levy, and all his rights, title, and interest therein." Levy assumed the payment of certain obligations of the firm. Afterwards. on June 5, 1890, Levy and Thie made a settlement, in which Thie gave Levy an instrument called a counterbond. This was a bond by Henry Jaeger and Thie, containing, among other things, the following:

"Whereas, certain controversies have since arisen between them (Thie and Levy), &c.; and whereas, certain claims have been made as to the rights of said Levy to manufacture under certain United States letters patent, heretofore taken out in the name of Thie and Levy: Now, therefore, if the said Otto Thie and the said Henry Jaeger shall indemnify and hold the said Charles M. Levy, his heirs, executors, and administrators, free and harmless from the payment in whole or in part of any claim against the aforesaid firm, &c., or from any claim of said Otto Thie or his assigns against said Levy, by reason of his manufacturing under said letters patent, then this obligation to be void; otherwise, to remain in full force and virtue."

The patent referred to in said counter bond is the one in question. Levy testified, and it was not denied, that he at the same time gave Thie a license to manufacture under the patent. Thie, when testifying for the defendants, declined, upon cross-examination, under advice of defendants' counsel, to produce the license. Defendants produced in evidence a license from Thie, dated January 10, 1890. 11 days before the dissolution of the partnership, to manufacture under patent No. 389,779, no royalty to be paid for two years. The number of the patent is manifestly a clerical error, and the patent referred to is the one in question. Dattlebaum, one of the defendants, testified that they obtained this license before the dissolution of the partnership, but after he had heard that it was to be dissolved. Complainant claimed the said license was not in fact made until after the dissolution of the partnership, and that, if made at the time of the date, Thie had no right to make it, and that under the circumstances it was not taken bona fide. Complainant testified that the patent was partnership property. This testified that he alone made the invention, and that the patent was his own personal Complainant claimed that the legal title to the patent property. was originally in the partnership, that Thie's interest passed to Levy by the assignment "of all other property whatever belonging to said firm," and that the license to Thie was conclusive proof that Thie's only interest in the patent after the dissolution of the partv.63f.no.7-63

nership was as licensee from Levy. Defendants claimed that the patent was void, as having been fraudulently obtained as a joint patent, when it was the sole invention of Thie; that it was void by reason of prior use; that Thie was a joint owner, and had a right to license.

I do not think it necessary to pass upon the various charges of fraud, or the question of the validity of the patent. I hold that the legal title to the patent, when issued, was in Levy and Thie jointly, not in the partnership, and that, as the legal title was never conveyed to the partnership, the assignment of "all other property" of the partnership did not convey the legal title to the patent. Assignments of patents ought always to distinctly describe the patent assigned. It is the duty of assignees of patents to see that their assignments do distinctly describe the patents, and if the language of the assignment contains no reference to the patent, but leaves in doubt the question of whether the patent was intended to be included, I think the doubt ought to be resolved against the assignee, in suits between him and third parties, until he has obtained a clear conveyance.

I do not assent, however, to the claim of the defendants that an assignment which does not identify the patent by name, number, and date cannot convey a title to the patent. If the legal title to the patent had been assigned to the partnership, as such, the conveyance by Thie would have been sufficient. Railroad Co. v. Trimble, 10 Wall. 367.

Furthermore, in the present case. I think the acts of the parties decide the question against the claims of the complainant. The "counter bond," so called, of June 5, 1890, clearly contains a license from Thie to Levy to use this patent. Thie and Levy on that day, in settlement of their difficulties, gave each to the other a license to use this patent. The fact that the license was given by each to the other seems to me to have precisely the contrary effect to that claimed by complainant's counsel for the license to Thie. It was a practical interpretation by the parties of their prior agreements, and implied that the whole title to the patent was not in the com-I think this practical construction should prevail, even if plainant. there were serious doubt as to where the legal title rested. Such practical construction is now recognized by the courts as controlling wherever the intent is doubtful, and is sometimes allowed to prevail even against the literal terms of the instrument. District of Columbia v. Gallaher, 124 U. S. 506, 8 Sup. Ct. 585; Central Trust Co. v. Wabash, St. L. & P. Ry. Co., 34 Fed. 254. If complainant has an equitable title, I think he should make Thie a party to his suit. If judgment were rendered for the complainant in this action, Thie might still sue Levy for his royalties, and other evidence might be presented in such suit. Also, there is no evidence that the assignment which it is admitted Levy gave to Thie was not transferable; and, if Thie had no other title, it may be that defendant would be entitled to the benefit of it, especially as complainant has never recorded his alleged assignment. Let a decree be entered dismissing the bill.

FRONT RANK STEEL FURNACE CO. V. WROUGHT IRON RANGE CO.

(Circuit Court, E. D. Missouri, E. D. October 19, 1894.)

1. PATENTS-INVENTION-IMPROVEMENTS IN DEGREE.

An apparatus constructed upon the same operative principles as a prior one, differing therefrom only in slight particulars, and which, if an improvement at all, is merely one of degree, and not of kind, possesses no patentable invention.

2. SAME-ANTICIPATION-PRIOR CONCEPTION-REDUCTION TO PRACTICE-PRIOR USE.

Priority of conception, without reduction to practice, and without filing an application until more than two years after the device has been made and put in use by another, will not sustain a patent, when no sufficient excuse for the delay is shown.

3. SAME-HOT-AIR FURNACES. The Campbell patent, No. 414,018, for improvement in hot-air furnaces, is void because of anticipation by the Powell furnace.

This was a suit in equity by the Front Rank Steel Furnace Company against the Wrought Iron Range Company for infringement of a patent for hot-air furnaces.

B. F. Rex, for complainant.

George H. Knight and H. G. Ellis, for defendant.

PRIEST, District Judge. This case comes before me on an order sustaining a petition for review, and is placed in very narrow lines by the order. The cause was heard by Judge Hallett, who ordered an interlocutory decree, adjudging the complainant's patent valid, and awarding an injunction and accounting against the defendant for infringement of letters patent No. 414,018, to Francis M. Campbell, inventor, and William Thuener, assignee, for an improvement in hot-air furnaces. No written opinion was filed by Judge Hallett. While submitting his oral views, which were very imperfectly reported, he observes:

"I shall not discuss this matter at great length, but I must say, again, I think the complainant's device, comprehending, as it does, the location of the several flues, the upward and the side, and the manner of connecting with the fire chamber, and the introduction of the cold air, may be of the nature of invention.'

Judge Hallett had before him several furnaces of similar construction, and involving much the same principle of action, as that of complainant's. A petition was filed upon the ground of newlydiscovered evidence, and the attention of the court was called particularly to the Powell and Krause furnaces, the former of which was put in use as early as 1884, and the latter in 1888. Upon this showing, Judge Hallett ordered-

"That a rehearing be allowed at the next term of the court upon the question of the novelty of complainant's invention with reference to the Powell furnace and the Krause furnace, mentioned in respondent's affi-davits filed June 24, 1893."

The necessary steps marked out in the order have been taken to present the question thus reserved. Whatever might be my disposition otherwise, I felt constrained to the consideration of this single question and such others only as are strictly incidental to and necessarily grow out of it, though counsel have given attention in their respective arguments to quite all the issues involved in the contest as it originally stood. The respondent mainly relies, so far as this hearing is concerned, upon the Powell furnace as an anticipation of the complainant's furnace. The number of anticipations is not material. If one perfected and used has preceded, it is sufficient to defeat the validity of the patent relied upon. This, then, at once introduces the question whether the Powell furnace was an anticipation of the complainant's. The Campbell patent, under which complainant claims, is for an improvement in hot-air furnaces, "which relates especially to the system of flues traversed by the products of combustion in their escape from the combustion chamber." The arrangement of complainant's furnace is thus described:

"Leading from the upper portion of the combustion chamber, which is practically an upright chamber, in the customary form, are two horizontal escape flues, B, B', which lead, respectively, into two vertical flues, C, C', at and towards the upper portion thereof. The upright flues at the lower end thereof connect with a horizontal chamber, D, towards the ends of it. The exit from the horizontal chamber is by means of an upright flue, E, which rises from the center of the chamber midway between the vertical flues, C, C', and at its upper end connects with any suitable escape flue. Cold air is admitted into the hot-air chamber at the rear of the furnace. and directly to the rear and under the chamber to which the two upright flues unite.

The operation of the furnace is described in the specifications as follows:

"The heated products of combustion escape from the chamber A into descending flues, C, C', which are quite large in diameter and larger than the flue E. Owing to their size and the use of the pair of them. the flues C, C', are sufficient for the chamber A, and no direct escape is needed. The course from the flues C, C', is downward into the chamber D, which serves not only to provide an additional heating service, but also as a dust chamber, and as a guard to favor the delivery of the incoming cold air towards the central portion of the hot-air chamber. From the chamber D the escape is as stated upward through the flue E."

Three claims are predicated on these specifications, the first and third of which are necessary to notice:

"(1) In a furnace the combination with the hot-air chamber, having an air inlet in one side near its bottom, of the combustion chamber, situated eccentrically within the hot-air chamber, and adjacent to the side thereof, opposite that having the air inlet, the flues B, B', extending from the inner opposite that having the air inlet, the lites B, B', extending from the inner side of the combustion chamber near the top thereof, the descending flues O, C', communicating at the top with the flues B, B', respectively, the cham-ber D communicating with the lower ends of the flues C, C', and the ascending flue E rising centrally from the chamber between the flues B, B', substantially as specified."

"(3) In the furnace the combination with the hot-air chamber and the combustion chamber, situated eccentrically therein, of the flues B, B', extending from the top of the combustion chamber, the descending flues C, C', of large diameter, communicating respectively with the flues B_i , B', the heating chamber D communicating with the lower ends of the flues C, C', and the ascending flue E rising from the chamber D between the flues C, C', of much smaller diameter than the latter flues, as and for the purpose set forth."

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The virtues of this special mode of construction or system of escape flues are particularly dwelt upon in the specifications. Of the vertical flues C, C', it is said, owing to their size and the use of a pair of them, they are sufficient for the combustion chamber, and no direct escape is needed. Of the horizontal chamber it is claimed that it not only provides additional heating service, but also a dust chamber and a guard to favor the delivery of the incoming cold air through the central portion of the hot-air chamber. In addition to this the dust chamber is not connected with the combustion chamber, and the space between the two affords an opportunity for the air to rise. The ascending flue E is smaller than the descending flues C, C', which is for the purpose of retarding the descent through the flues C, C', and increasing the heating service thereof, and, by means of the retardation of the product of combustion, the greatest possible amount of heat will be thrown out from the descending flues into the hot-air chamber; and, because of this difference in size between the flue E and the flues C. C', the air will pass much more rapidly upward through the flue than it can descend through the flues C. C'. I assume that this arrangement of flues has in it the quality of an invention. The Powell furnace is constructed upon the same operative principle as that of the complainant's, the mechanical structure differing only in a few slight, and, to my apprehension, unimportant, particulars. In other words, if the complainant's furnace be an improvement on the Powell furnace, it is one of degree, and not of kind; and as was said in the case of Burt v. Evory, 133 U. S. 349, 358, 10 Sup. Ct. 394:

"The test is that the improvement must be the product of an original conception (Pearce v. Mulford, 102 U. S. 112, 118; Slawson v. Railroad Co., 107 U. S. 649, 2 Sup. Ct. 663; Munson v. Mayor, etc., 124 U. S. 601, 8 Sup. Ct. 622; and many other cases); and a mere carrying forward or more extended application of an original idea—a mere improvement in degree —is not invention."

The same idea was more fully expressed by Mr. Justice Strong in Smith v. Nichols, 21 Wall. 112, as follows:

"But a mere carrying forward or new or more extended application of the original thought, a change only in form, proportions, or degree, the substitution of equivalents doing substantially the same thing, in the same way, by substantially the same means, with better results, is not such invention as will sustain a patent. These rules apply alike whether what preceded was covered by a patent, or rested only in public knowledge and use. In neither case can there be an invasion of such domain and an appropriation of anything found therein. In one case, everything belongs to the prior patentee; in the other, to the public at large."

Counsel for complainant insists that complainant's furnace, as described in the specifications and claims of the Campbell patent, differs from the Powell furnace in the following particulars: First. That, unlike complainant's furnace, its parts were not intended to operate with a single cold-air inlet at the rear, but with two coldair inlets at the sides. Second. The lower horizontal chamber was located on an ash-pit extension, whereas in the Campbell patent an air passage exists between the ash pit and the horizontal chamber D. Third. In the Powell furnace the down flues are constructed

so as to be smaller than the up flues. The method of introducing the cold air at the rear is not an essential claim of the Campbell patent. If so, it appears that the patent would have been refused, because that method of introducing cold air had long prior been in use: 6 Complainant's claim must rest upon the arrangement of a system of flues for the product of combustion. To such a design the specifications limit and commit it. The place of introducing the cold air is a nonessential. The attachment of the horizontal chamber to the ash pit in the Powell furnace, whereas in the Campbell furnace it is independent of such connection, does not destroy the identity of principle in operation or design. It may be conceded, because of the nonattachment of this chamber to the combustion chamber or ash pit, the hot air would rise more freely than in the Powell furnace; yet this does not impeach the identity of principle in the operation of the two, but only the degree, and is not the product of inventive skill. It is manifest, not only from the physical structure of the Powell furnace, but the fact is clearly emphasized by the testimony, that there is a free circulation upwardly of air between the combustion chamber and the down flues in the Powell furnace. Moreover, just such an independent arrangement of the horizontal chamber D is found in the Ringen furnace of 1885. In the Powell furnace the two vertical chambers or flues are contracted at the lower end, but the body of these flues are larger in diameter than the escape flue located between them. They operate precisely alike and upon the same principle. An equivalent of this is found in the smaller horizontal flues B, B', of the Campbell furnace.

Counsel for complainant seems to realize that the Powell pattern of furnace stands conspicuously in the way of the Campbell patent, and, to overcome this impediment, strives, for the first time on this rehearing, to show that Campbell completed and perfected his invention as early as January, 1884, but was prevented, by lack of pecuniary means, from pressing an application for grant of letters patent. If I am right in concluding that the Campbell furnace is an essential duplicate of the Powell furnace, this argument cannot avail the complainant. The Powell furnace was put in public use in 1884, and to a limited extent has been in service ever since. The Campbell patent was applied for in February. 1889.

Section 4886, Rev. St., provides that:

"Any person who has invented or discovered any new and useful art, machine, manufacture or composition of matter, or any new and useful improvement thereof not known or used by others in this country or any foreign country * * * not in public use or on sale for more than two years prior to his application, * * * may * * • obtain a patent therefor."

The interpretation of this statute by the supreme court in the case of Andrews v. Hovey, 123 U. S. 267, 8 Sup. Ct. 101, clearly defeats this contention of complainant. In a case to which reference is made in the opinion just referred to, and speaking with reference to the policy of the statute, it is said---

"That the inventor must apply for his patent within two years after his invention is in such a condition that he can apply for a patent for it,

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and that if he does not apply within such time, but applies after the expiration of such time, and obtains a patent, and it appears that his invention was in public use at a time more than two years earlier than the date of his application, his patent will be void, even though such public use was without his knowledge, consent, or allowance, and even though he was in fact the original and first inventor of the thing patented and so in public use."

If Campbell's plans of furnace were complete in conception in January, 1884, it was his duty to give it to the public for use at the earliest practicable time. Inventive talent is encouraged that public comfort, utility, and convenience may be augmented. It has been well said:

"Justice requires that the public should reward those only who keep faith with it, who apply their creative energies to the promotion of the public good, and who, having generated ideas, reduce them as speedily as possible to practical and beneficial public use." 1 Rob. Pat. p. 546.

We are entitled to presume that the conception is contemporaneous with the application; but, waiving this and the further presumption that a failure to apply for a patent evidences an incomplete and imperfect conception, the circumstances that would justify the inventor in withholding his invention from public use for a period of four or five years must be of a more immoderate character than I find to exist in this case. But conception alone, although complete, is not sufficient; for, when the patentee proposes to assert that his invention was anterior to the date of his application, he must not only prove that he made the invention at the period suggested, but that he reduced it to practice in the form of an operative machine. Johnson v. Root, 2 Cliff. 116, Fed. Cas. No. 7,409. No effort has been made to prove the construction of a furnace prior to 1888, Complainant's counsel cites us to those cases which seem to encourage experimental tests in order to perfect the instrument before applying for patent, as if, by such reference, to lead us to suppose that Campbell was demonstrating the value or perfecting the detail of his invention through such actual experiments. Of this I find no evidence in the record. If, however, he were thus engaged. he assumed the chances of the field being occupied by other and more diligent designers, more prompt to supplement their creative efforts by a reduction to practice. The fact is, the Powell furnace was constructed and satisfactorily employed in 1884, incorporating all of the mechanical elements of construction and arrangement, and combining all of the operative principles, obtaining in the Campbell furnace.

The bill will be dismissed, at complainant's costs.

CONSOLIDATED VAPOR-STOVE CO. v. NATIONAL VAPOR-STOVE & MANUF'G CO.

(Circuit Court, N. D. Ohio, E. D. May 12, 1893.)

No. 4,800.

PATENTS-VAPOR STOVE BURNERS.

The Whittingham patent, No. 235,600, for a vapor-stove burner, held valid, as covering a novel and patentable device, and also held infringed by defendant's burner.

This was a suit in equity by the Consolidated Vapor-Stove Company against the National Vapor-Stove & Manufacturing Company for infringement of letters patent No. 235,600, issued December 14, 1880, to Charles and Joseph Whittingham. A full description of this patent will be found in Consolidated Vapor-Stove Co. v. Ellwood Gas-Stove & Stamping Co., 63 Fed. 698.

Sherman, Hoyt & Dustin, for complainant.

W. M. Lottridge, for respondent.

RICKS. District Judge. This is a bill filed by the complainant, alleging that the defendant infringes patent Noi 235,600, dated December 14, 1880, for a vapor-stove burner. The complainant makes the usual allegations that it has a patent issued to it for an improved vapor burner used on stoves commonly known as gasoline stoves. The defendant denies infringement, and claims prior use. The only proof taken is as to the novelty and patentability of the complainant's device, offered on its behalf, and proof denying infringement, offered on behalf of the defendant. I have inspected complainant's exhibit of defendant's device, and also the testimony of the experts, and the testimony of the manager of the defendant. From this testimony it seems to me clear that the complainant, under its first claim, has a combination of devices which results in a novel and patentable process for generating gas and consuming the same. The defendant's burner is certainly an infringement of the complainant's device. The only difference I can discover is that the cap, S, in the defendant's burner, has different shaped o lifes; but in both devices it acts as a burner. In the defendant's combination it may be a better burner, but the function it performs is the same as cap S in the complainant's combination, as described in claim 1. The conducting pipe, F, as given in the exhibit (which is the defendant's stove), which corresponds to complainant's tube, F, is given a horizontal position, because such position answers defendant's purpose better, inasmuch as its conducting tube performs other functions in connection with outer or auxiliary burners. But it performs the same, though additional, functions as tube F in complainant's device. In the latter it is heated from the heater plate; in the defendant's combination, through the central burner. But in both it acts as a conductor, commingler, and heater. For these reasons I think it a clear infringement of the first claim in complainant's patent, and a decree may be accordingly entered.