

JOURNAL OF PATENT LAW.

A COVENANT NOT TO INFRINGE—A SLIGHT CHANGE OF MECHANICAL STRUCTURE IS NOT THE SUBJECT OF A PATENT, BUT IS AN INFRINGEMENT.

Where a defendant covenants not to further infringe an existing patent, and receives for entering into such covenant a valuable consideration, he will be enjoined by a court of equity from infringing, unless he shows some equitable reason why he should not be bound by his covenant. The application of this principle of patent law is illustrated in the case of *Sargent et al. versus Larned et al.*, decided in the first Circuit Court of the United States by Judge Curtis.

The alleged infringement for which the action was brought was upon a patent for a machine for paring apples, invented by Ephraim L. Pratt, and patented Oct. 4, 1853. There were two instruments executed by the parties, and, taking the two together, it appears that on Sept. 6, 1853, the defendant Seagrave received from the plaintiffs a qualified license to complete and sell certain machines, including the improvement for which Pratt's Letters Patent were issued; and in the May following this license was relinquished, and another, and a different license to sell certain of the said machines, was substituted, and Seagrave expressly covenanted to make no more of said machines after the date of said instrument; but it appears that he subsequently *did* so, although the defendant claimed that they were different in their construction from those covered by the plaintiff's patent, and consequently were no infringement. The counsel for the complainant insisted that the respondent Seagrave was estopped by his covenant from disputing the validity of the patent, and, in reference to this covenant, the court said: "If this was a valid contract, a court of equity will not allow Seagrave to violate his covenant and defend himself by attacking the validity of the patent. He must keep his covenant to desist from the manufacture, unless he shows some equitable reason why its performance should not be decreed. It is open to the defendants to allege and prove any facts which render a specific performance of the covenant inequitable, and great latitude is allowed to the covenanter who resists performance.

"It appears from the facts alleged in the answers relating to this subject, that Seagrave's machine was completed and put in use about nine or ten months before the date of Pratt's patent; that Seagrave had no belief that any patent could or would be granted for anything contained in Pratt's machine, and he told the plaintiffs that if a patent should be finally obtained, which would be valid at law, and he should continue to use it, he would make them a fair allowance therefor. An interference was afterwards declared by the Patent Office, between Pratt's and Seagrave's inventions; upon which Sargent and Foster and Seagrave met together and made an arrangement set forth and embodied in a partly-written and partly-verbal contract, dated Sept. 6, 1853. By this arrangement it was mutually agreed that Seagrave should withdraw all opposition to Pratt's claim and should petition the Patent Office to grant the said claim, which Seagrave accordingly did, and the patent to said Pratt issued immediately after. On the other hand Seagrave was to have the right to use the patented improvement upon as many machines as he had castings for, and it was further agreed that said Sargent and Foster and Seagrave might use each other's improvement.

"After this arrangement Seagrave went on making machines. Sargent and Foster received the patent of Pratt, and said Seagrave applied to the plaintiffs to have the verbal part of the contract reduced to writing; but they refused to do it, and Seagrave went on to finish up the machines. While at work on these machines, his own patent was issued, dated April 18, 1854.

"A new contract was entered into, May 26, 1854, whereby, in consideration of the complainants' buying, for \$117, all the odds and ends and parts of machines which said Seagrave had on hand; they being machines containing the knife-holder loose upon the knife-rod, or, in other words, containing Pratt's alleged improvement, said Seagrave agreed to give up all rights acquired by him under and by virtue of the first contract. In pursuance of this agreement Seagrave sold and delivered to the complainants all the parts of such machines as he then had on hand, and from that time it was alleged Seagrave ceased wholly from making such machines as contained said Pratt's improvement, and resumed the

manufacture of machines previously patented by himself, adding other and further improvements, one of which was the mode of connecting the spring which draws the knife-rod towards the apple with the knife-rod itself. In no instance had the defendant Seagrave made a machine, since said last-mentioned agreement, having a knife-holder united to the knife-rod in the manner described in Pratt's patent.

The court, referring to the facts we have briefly stated, said: "The defendants have stated in their answer some circumstances which are relied on by their counsel as furnishing equitable reasons for preventing the interposition of the court. But it will be perceived that the defendants do not here claim the right to continue the manufacture, notwithstanding the covenant. On the contrary, the defense is a denial that the covenant has been violated, and my opinion is that if the facts alleged in the answer were proved, they would not affect the validity of the final agreement of May 26, 1854, which contains the covenant in question. If those facts were true, there was, at the date of the agreement, a controversy between the complainants and Seagrave, in which Seagrave was equitably right, and in the course of which the conduct of the complainants had been unfair; but, assuming this to be so, Seagrave, with a knowledge of all the facts, and under no duress, made the agreement for a compromise of May 26th, and then the complainants executed it on their part and bought the machines and parts of machines, and paid for them as agreed. The answer does not show any reason to suppose that the agreement was unconscientious or unreasonable. Seagrave cannot be allowed to go behind the agreement, especially when he retains the fruit of it. Moreover, there is no evidence of the facts alleged in the answer respecting these negotiations. The bill alleges that the agreement of May 26th was entered into by the complainants for the sake of avoiding litigation, and because Seagrave was not pecuniarily responsible. The answer does not deny either of these allegations. So far as the motives of the complainants for entering into the contract are concerned, and so far as respects the pecuniary responsibility of Seagrave, the answer is silent; and as to motive of Seagrave, the bill charges nothing. The answer goes into a history of negotiations and agreements which it alleges preceded this agreement. But this is responsive to nothing in the bill, which contains no allegations concerning any such negotiations or agreements, nor respecting the state of the controversy between the parties, further than to say (what the answer, in substance, admits) that the complainants requested Seagrave to desist from making machines which violated their patent.

"Shortly stated, the case is this:—The bill alleges that a controversy existed concerning the violation of a patent, and that an agreement of compromise was made by the complainants, to avoid litigation, and because the defendant was not pecuniarily responsible. The answer says nothing of either of these points, but goes into a history of the controversy which was compromised. I am of opinion that it is not responsive to the bill and is not evidence, and that no sufficient reason appears why the compromise should not be executed on Seagrave's part. As to the other question, whether the machines made by Seagrave do include, in substance, the improvement for which the complainants' Letters Patent were granted, I am of opinion that the infringement is made out.

"The improvement patented consists in so attaching the knife-block to the rod which moves it as to allow it to rotate around the rod at right angles therewith, and thus the knife accommodates itself to any irregularity in the surface of the vegetable to be pared. The defendants, instead of making the knife thus movable on the rod, have made the rod movable in its socket. The knife-block has the same motion; but, in one, it is around the rod, in the other, it is with the rod. The change is so obvious and slight, and its practical effect so small, if it be anything, that I cannot consider it introduces a substantially new mode of operation, within the meaning of the patent law. It is one of those changes of form merely, or of mechanical structure, which would not be the subject of a patent without showing that some new or materially-improved result is obtained by it, which is not made out in this case. As against Seagrave, I think the complainants entitled to a decree for an injunction and an account. **But Larned—**

the other defendant—is merely a workman in the employment of Seagrave. No decree for an account can be had as against him, for he has nothing to do with any profits; and upon the facts of the case I entertain doubts whether he ought to be enjoined, upon the footing of Seagrave's covenant. Unless the complainants elect to dismiss their bill, as against Larned, and take a decree against Seagrave alone, I must consider what is to be the effect of thus enjoining Larned."

INFRINGEMENT CASE.

UNITED STATES CIRCUIT COURT, BOSTON.
Before Judge Sprague and a Jury.

JUNE 11.—*Charles A. Eames vs. Aldrick S. Cook.*—

This was a suit for infringement of a patent for an improvement in boot-trees, held by the plaintiff, and granted to him May 27, 1856. The parties both reside in Milford, Mass.

The boot-tree patented to the plaintiff was claimed to be so arranged and contrived as to be adapted to tree boots varying very considerably in sizes and pattern or style, and it was claimed that the mode of applying the force or stretching power to boots was such that its use did not expose the boots to be burst or torn, as was the case with trees previously in use, when worked by machinery.

The general issue was pleaded by the defendant, and under this plea the defendant denied that the plaintiff was the first inventor of the machine described in his patent, and contended that the same arrangement shown in the plaintiff's patent had existed in boot-trees previously made by Reuben L. Lewis, of Milford, and was shown also in boot-trees patented to Wm. Upfield in 1850, and to Jarvis Howe in 1848; and the Howe tree was relied on particularly, as containing the same arrangement and operating on the same principle as that claimed by the plaintiff in his patent, and the evidence in the case related mainly to a comparison of these two trees (Howe's and the plaintiff's) in respect to the construction and mode of operation of each, respectively.

Judge Sprague charged the jury very fully and clearly on all the points raised on either side, and analyzed the plaintiff's machine, as described in his patent, and those of Howe, Lewis and Upfield, relied on in defense, with reference to all the evidence in regard to each, and stated the bearing of all the evidence upon the various points in dispute, and the law applicable to the questions raised, with the dialectic skill for which the judge is so distinguished in cases relating to patents.

The jury found a verdict for the plaintiff, thus sustaining the validity of his patent, and assessed damages for infringement in the sum of \$1,000.

POLYTECHNIC ASSOCIATION OF THE AMERICAN INSTITUTE.

[Reported expressly for the Scientific American.]

On Thursday evening, June 14th, the usual weekly meeting of the Polytechnic Association was held at its room in the Cooper Institute, this city; Professor Mason presiding.

MISCELLANEOUS BUSINESS.

Bitumen.—Dr. Stevens read a paper on bitumen, giving an account of the origin, localities and properties of that remarkable substance. Asphaltum, coal, rock oil and burning springs have a similar vegetable origin; heat, pressure and chemical agencies accounting for all the specific differences. When all the mineral coal is exhausted, the doctor thinks that there will be found plenty of bitumen, for lighting purposes, to supply its place.

Japanese Paper.—Mr. Bruen exhibited samples of the paper in which the presents sent by the Japanese embassy to Mayor Wood were wrapped. The paper is of a light straw color and remarkably stout, being nearly as strong as calico. The fiber of the paper material is very long and resembles raw cotton.

The president here called up the regular subject—"Gas and Gas-burning," for the

DISCUSSION.

Professor Hedrick—Coal gas cannot be profitably made on a small scale, for the reason that the apparatus and the process are too complicated. Resin or oil gas, however, may be made at a moderate cost, the apparatus required is small and simple, and the gases, when generated, need only to be cooled to condense tarry matter, and to be washed with water, when they are fit for burning. Ordinary coal gas is a mixture of many gases

and vapors, and the most valuable of these are the hydro-carbons. Among the substances considered as impurities are carbonic acid, carbonic oxyd, sulphide of hydrogen and ammonia; and of these, the most troublesome to remove is the sulphide of hydrogen. Carbonic acid and ammonia are readily washed out with water, but the sulphur compounds require lime. It is sometimes supposed that gas is destructive to books and pictures, and that it should not be used in reading rooms. But this is an unreasonable prejudice; the products of combustion of good gas are only carbonic acid and water.

The President—Has private gas-making been found practicable?

Professor Hedrick—Yes, but many families have found it too troublesome to make gas every day, and the apparatus is liable to get out of order by neglect and disuse.

Mr. John Johnson here made a grand display of burners in actual use, being set on a "float of lights" extending the whole width of the room. The whole number of burners exhibited was fifty; a large majority of these was of the stuffed or checked variety. A burner revolving on the Barker-mill or turbine principle was in rapid motion the whole evening. The Johnson and Stevens burner, of adjustable orifice, attracted a great deal of attention, being capable of yielding the smallest flame as well as a flame nearly a foot wide. But the most curious was a straight, thin and elastic tube, about three feet high. When this tube was upright and still, the gas burned like a candle flame; but when the tube was swung back and forward like a pendulum, the flame was white and brilliant only at the instant of rest at the extremities of the vibrations. In the dark, a bluish streak is seen, and alternating at the ends, a brilliant star. By swinging the tube in a circle or ellipse, interposing screens, &c., a great variety of curious effects are produced. Mr. Johnson described the peculiarities of the various burners, illustrating his remarks by experiments, and concluding with a condemnation of stuffed burners as a class.

The President—The main points to which we seem to have arrived in this discussion are:—1st. The yellowish flame is the most economical, and is yielded by gas burning at a low pressure from wide orifices. 2d. A large flame gives more light than when the same amount of gas is burned from two or more small ones. 3d. The great desideratum is a burner which will regulate the flow of gas automatically. Our New York gas is of excellent quality, and does not suffer in comparison with gas of other cities. It is better than the gas of London.

Mr. Seely presented some tables of experiments made to determine the regulating power of the Thompson burner. The comparison with the most approved of the ordinary burners showed that the Thompson burner performs well and regulates, with certainty and reasonable accuracy, within ordinary limits of pressure. At the present time this is the only true regulating burner before the public, and will come into use unless a better one can be devised.

Mr. Fisher—Why not have reflectors over our street lamps, so that one-third of our light shall not be wasted on the sky?

Subject for the next meeting: "The Theory and Value of Cut-offs."

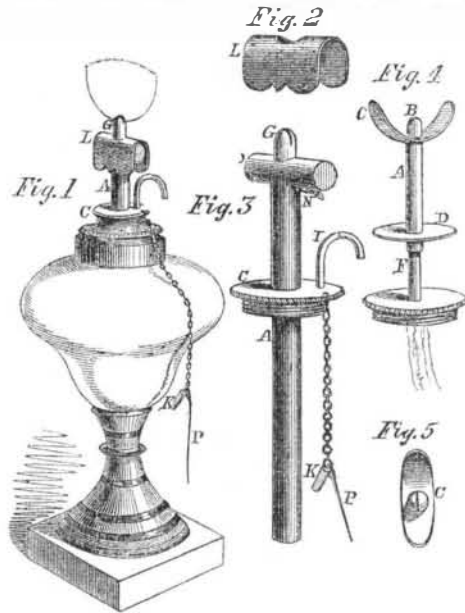
GAS BURNER LAMPS.

The generation of vapor from a volatile hydro-carbon fluid in a lamp, and the burning of it in jets has been long practiced. In such lamps the fluid is drawn up to a heated surface by capillary attraction; and being converted into vapor by the heated metal, it issues through small orifices under a button and is burned like common gas. Such lamps are really Lilliputian portable gas-works, and are very cleanly and convenient. The accompanying engravings represent improvements on this class of lamps, for which two patents were granted on April 3, 1860. Fig. 1 is a perspective view of a lamp, Fig. 2 is a view of the vacuum chamber cap; and Fig. 3 is a view of the wick and fountain tubes, with the heating chamber. These illustrate the invention embraced in one patent. Fig. 4 is a view of the wick tube and slide; and Fig. 5 represents a curved vaporizing plate embraced in the other patent. We will describe the two separately, so as to convey clear ideas of their nature and construction.

First: The lamp, Fig. 1, has a conducting tube, A, which passes down through the screw cap plate, C, to

within three-fourths of an inch of its bottom, and its lower end is always beneath the surface of the fluid. D, is a hollow chamber screwed on the upper end of this tube near the orifice. There is a jet hole, N, on each side of the tube, A, immediately under the chamber, D. The burner-tip, G, is screwed or otherwise connected to this chamber. I is a curved air tube which passes through the plate, C, and communicates with the atmosphere and the interior of the lamp. L, is a cover for the hollow chamber, D.

When the chamber, D, is exposed to heat from a flame, a partial vacuum is created inside by rarification and escape of heated vapor. The air outside of the lamp then passes through the tube, I, and presses on the surface of the fluid in the lamp, forcing it up the conducting tube, A, in quantity commensurate with the heat or rarification at the chamber, D. It is therefore a fountain pressure lamp, and is different from one that is merely governed by capillary attraction. If the heat is too great at the chamber, D, one of the jets, N, may be stopped by the tapered plug, P, and when the lamp is not in use, the air tube, I, is closed by the plug, K. The tube, A, may be stuffed with wick in the usual manner. The fluid is generated into gas by the great heat maintained at the vacuum chamber, D, by the jets under it. The cover, L, protects the heating chamber



from currents of air so as to maintain a steady and uniform action, and we have been assured that a most steady and brilliant gas light is thus secured. The flame is thus raised above the top, without being depressed and drilled with a button as in the common vapor burners.

Second: In the ordinary fluid lamp a wick is inserted in the tube, F, in the usual manner. A slide, A, is provided to pass over tube, F, like a sleeve, and to this is secured the curved metal plate, C, the tip or burner, B, and circular plate, D. Allowing the lamp to be filled with fluid, and the flame of alcohol from a piece of wire-gauze or the flame of another lamp is held under the curved plate, C, the fluid in tube, F, minutely distributed in the wick, will be converted into gas by the heat, and it will ignite at the tip or burner, B. The flame of the burner will issue through the slit and follow the inner surface of the curved plate, C, up to its end, and by thus intensely heating this plate, the vapor is converted into pure gas, and a brilliant light obtained. The slide, A, may be raised by the plate, D, to diminish the volume of light as may be desired.

Perfect combustion is not effected in lamps unless the vapor of the fluid is converted into pure gas. In common vapor burners where the heat is not sufficiently intense below the outlet of the tube, some of the fluid is drawn up in the condition of mixed vapor and escapes without undergoing perfect combustion because it cannot be supplied with sufficient air. A loss of burning material is thus sustained in connection with a more feeble light. The high heat to which the vapor is exposed in the above lamps converts it into pure gas, thus saving material and giving a very bright light. The small burner may be lighted with a common match owing to the great heating surface of plate, C. These improvements have been applied to all forms of lamps, from the parlor chandelier to the common hand lamp.

More information may be obtained respecting them by letter addressed to Messrs. Hopkins and Anderson, patentees, at Easton, Md.

A COLUMN OF VARIETIES.

Gold is usually found in a solid metallic condition, when not distributed through quartz. At Sonora, Cal., however, some beautiful specimens of crystallized gold have been found; they are very rare productions.

At a late meeting of the Society of Natural History, held in the Medical College, this city, Mr. Morris presented specimens of boiler iron, crystallized by the action of fire, being portions of the boiler lately used in the Deaf and Dumb Institution. When placed in the building, the boiler was perfect, and of the best iron, but, by continual action of the heat, had become very brittle, so that a very slight blow would fracture it.

One of the most accomplished entomologists in this country is Mrs. Charlotte Taylor, of Savannah, Ga. She has contributed illustrated articles to *Harper's Magazine*, on the insects of the cotton plant, which are held to be the most learned ever published on the subject.

The French government have applied to the Academy of Medicine, at Paris, to ascertain the best means that can be adopted to put an end to the baneful effects of phosphorus on the men engaged in making lucifer matches. The Academy recommends that they should be made of pure amorphous phosphorus, or without phosphorus at all.

Sir J. F. Herschell, in a communication to the London *Photographic News*, directs the attention of photographers to the desirableness of discovering the art of taking photographic pictures with their natural colors. He says:—"I fully believe the problem will, one day, be solved; already we have a certain approach to it. I possess photographs in which the green of the foliage is unmistakably distinguished. In particular, a photograph of my residence, in which certain magnolias, trained against the brick building, and some other shrubs, have a fullness and decision of color which render it difficult to imagine that they have not been gone over with a brush, while the use of a magnifier shows that most certainly such has not been the case."

In the region of Oil Creek, Pa., the atmosphere is so saturated with oily vapor that, when an electric cloud comes over the oil springs, it is at once robbed of its noisy character, and descends quietly to those lubricating fountains in the shape of genuine "greased lightning."

A correspondent (Abraham Hardy) of the *Irish Agricultural Review* writes, in glowing terms, of dandelion salad, plain bread and pure water. He asserts that nothing can be better than these for the promotion of mental and bodily health. He expresses an experimental opinion, not a hypothetical sentiment, and he revels on dandelion salad as an ox on fresh clover. There is no accounting for tastes.

Kamptulicon is a substance manufactured from ground cork and india-rubber, and is extensively used in England for many purposes; it is proposed as a lining for the iron-plated war ships. An 8-inch shot fired through a block of this substance, one foot in thickness, did not make a single splinter, and the kamptulicon immediately closed upon the opening, so that no water could pass through.

A varnish made with one pound of sulphur boiled for half an hour in an iron vessel is a perfect protection from damp to brick walls. It should be applied with a brush, while warm.

To enamel iron articles, clean the surface; put on a composition of ground feldspar, quartz and borax; then fuse in a furnace. Black copal varnish may answer as a coating for cast-iron articles that are exposed to water. This varnish must be made with linseed oil and asphaltum.

Water-proof paper may be made as follows:—Take 2 ounces of alum and 1½ ounce of white soap, and dissolve them separately in a pint of hot water for each. In another vessel, containing a pint of water, dissolve 1½ ounce of glue and 1½ ounce of gum arabic; then mix the two solutions, heated over a fire. The paper is passed through this bath, then squeezed between rollers and dried. Or, the paper may be dipped in the solution, in sheets, then hung up to dry in the air.

The production of iron in Great Britain, in 1859, amounted to 5,600,000 tons. In 1740, the whole product of iron was but 17,000 tons. Cort's inventions of the puddling furnace and drawing rolls, with the use of Neilson's hot-blast have revolutionized the making of iron.