and supporting the grate. But neither in the construction of the ring and legs nor in the combination of them is there a mechanical conception which is not found or suggested in stoves, grates, and furnaces, and, indeed, in tables, stands, chairs, stools, and other devices of long and familiar use. The reciprocating grate, itself old, is not embraced in the claims, and it required only common skill to provide notches in the legs to receive and support it. So, too, the coal basket, which is the subject of the third claim, and is described as cast integral, and having a flaring flange with a series of pintles projecting downward, has no feature of essential novelty either in construction or use. It has been urged as important that when in place in the stove the parts of the ring are held together by the pintles of the flange of the basket projecting through the holes of the ring. There is, however, no claim which covers the basket and ring so made and combined, and there would be no invention in it if there were. Considering the manner in which the ring is fitted into the fire pot, the necessity for providing special means for holding the parts together is not apparent, and, if there were such necessity, it was a matter of small intelligence and skill to meet it, either as it was done, by using pintles and holes, or other form of dovetailng between the flange and ring, or by some form of fastening between the pieces of the ring when in place, for which purpose the pintle and hole, links, clasps, hinges, or other devices might have been used.

It follows that the decree below should be set aside, and the bill dismissed for want of equity; and it is so ordered.

WESTERN ELECTRIC CO. v. SPERRY ELECTRIC CO. et al.

(Circuit Court of Appeals, Seventh Circuit. October 2, 1893.)

No. 104.

1. PATENTS FOR INVENTIONS—ABANDONMENT OF APPLICATION—PLEADING.
   Where, in granting a patent several years after the filing of the application, the patent office decided that there had been no such delay in the prosecution of claim as to forfeit the application, the question of abandonment of the application will not be considered by the court in an action for infringement, where the answer does not specifically aver that the application was abandoned, but merely denies having any information or belief whether the patent was duly issued.

2. SAME—ABANDONMENT OF INVENTION—EVIDENCE.
   The fact that an inventor, after making a successful experimental machine, puts it away, and pays no further attention to it for more than two years, and then applies for a patent, does not show an abandonment of the invention, where the machine is not in the mean time manufactured for sale, and the application for patent is duly prosecuted.

3. SAME—APPLICATION FOR PATENT—CHANGE OF SPECIFICATION.
   An inventor has a right to change his specification, so long as he does not change the structure of his device or invention, even though he makes the change with reference to another patent which has been applied for and issued while his application was pending.

4. SAME—INFRINGEMENT—ELECTRIC ARC LAMPS.

Letters patent No. 420,109, issued January 28, 1890, to Charles E. Scribner, for an improvement in electric arc lamps consisting of the combination, with an electro-magnet in the shunt of the arc and its armature, of an electro-magnet in the main circuit and its armature, the latter carried upon a movable support which is controlled by the armature of the other electro-magnet, is infringed by lamps constructed under letters patent No. 405,440, issued June 18, 1889, to Elmer A. Sperry, such lamps being the same as those described in the Scribner patent except as to the relative positions of the two magnets, the horizontal parts being changed to vertical and the vertical parts to horizontal.

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

Bill by the Western Electric Company against the Sperry Electric Company and others to enjoin infringement of a patent. Defendants obtained a decree. Complainant appeals. Reversed.

Statement by WOODS, Circuit Judge:

The appellant, as assignee of the inventor, Charles E. Scribner, to whom had been granted letters patent No. 420,109, brought this suit to enjoin infringement and to obtain an accounting. The respondents, not admitting that the patent was issued in due form of law, nor that the complainant was the sole and exclusive owner thereof, answered that the invention described was not new nor useful when the application for the patent was made; and that the inventor, Scribner, and the complainant "actually abandoned the said alleged invention." In respect to infringement the respondents allege "that they have not since January 28, 1890," (as charged in the bill,) "or at any other time, * * * made, used, or sold any electric lamps embodying the invention described and claimed; * * * that since the 28th of January, 1890, they have made certain electric arc lamps in accordance with and under and by virtue of the patent to Elmer A. Sperry, dated the 18th day of June, 1889, No. 405,440, and the invention therein described and claimed." The court below found and held that the application for the patent had been abandoned, before the letters were granted, by reason of the failure of the applicant to prosecute the same within two years after action thereon, as required by section 4894 of the Revised Statutes, and dismissed the bill for want of equity. Counsel for the appellee insists that the record shows abandonment of the invention as well as of the application.

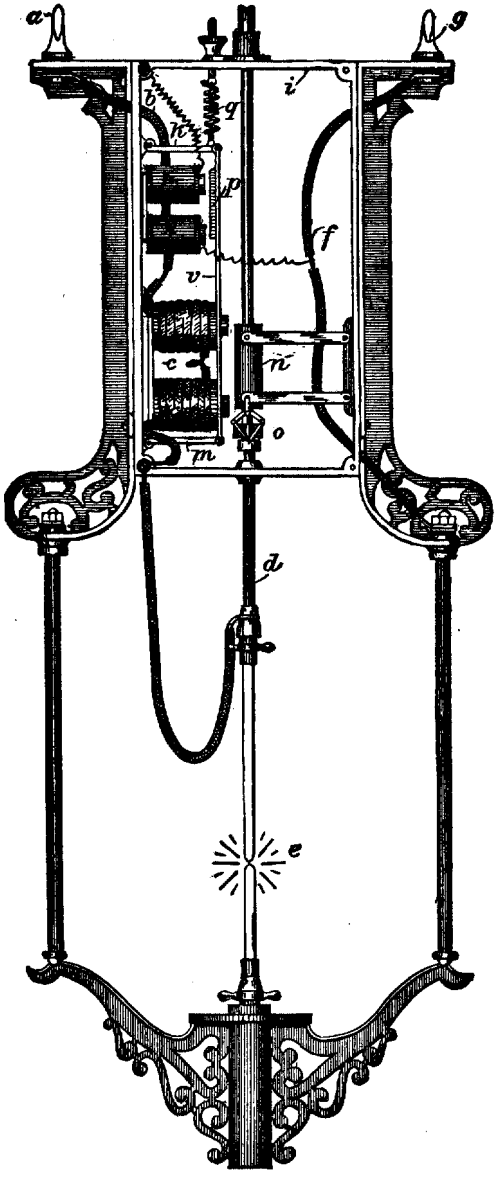
The facts pertinent to the question of abandonment are as follows: Scribner's application for the patent in suit was filed January 2, 1883. On the 25th of the same month the patent examiner wrote him, to the effect that the claims were rejected on references cited; and nothing further was done until the 26th of December, 1884, when Scribner's attorney wrote to the commissioner of patents, "Please reconsider last official action," etc., to which, on January 9, 1885, an examiner replied: "Further action will be taken in this case when the requirements of office rule 67 have been complied with. No invention has been pointed out in this case over the references of record, and none is believed to exist. The last official action is repeated." The next movement was made July 25, 1885, when the applicant proposed amended claims, and from that time there were communications, dated, respectively, August 13, 1885, July 6, 9, and 16, October 13, 1886, August 10, 1887, and September 15, 1887; the last being to the effect that claims 2 and 3 as they then stood, were indefinite in form, and did not clearly distinguish the construction sought to be covered. To this the applicant made no response nor took other step in the matter until August 30, 1889, when he wrote to the commissioner in support of his claims, and in conclusion said: "Applicant's attorney, being in doubt whether the action of September 15th, 1887, would be considered a final or second rejection, files this request for reconsideration, *and asks* that action be had thereon immediately, in order that the appeal

may be perfected. If the office holds, however, that the action of September 15th, 1887, was a second action, this paper may be returned to applicant's attorney, and the appeal filed." The necessary papers and money for the taking of an appeal accompanied the letter. On September 9, 1889, the examiner responded to the effect that the action of September 15, 1887, was of a purely formal character, the repetition of which would not warrant an appeal to the examiners in chief, and concluded by saying: "As the action of September 15th, 1887, appears, on reconsideration, to have been well taken, it is now repeated, but the appeal filed cannot be entertained for the reasons above explained. Applicant's remedy is by a petition to the commissioner, as indicated." On October 1, 1889, the same examiner declared the application abandoned, because there had not been proper action by the applicant within two years after September 15, 1887. The action of the office on that date having been upon the form of the case, by the last paragraph of rule 171, the applicant was required, as the examiner held, to treat the formal matter within two years; but instead of doing that he had requested a reconsideration, and at the same time filed an appeal to the examiners in chief, the rule of practice being that action upon the merits cannot be had until all formal objections have been disposed of. On October 29th ensuing this decision was overruled by a new examiner, meanwhile come into office, who, "in view of the fact that a reconsideration of claims 2 and 3 was requested within the two-year limit after the action of Sept. 15, '87, (by which objection to their form was made,) and in view of the fact that such reconsideration was accorded, (as shown by the letter of Sept. 9th, '89, in which the examiner refuses to act upon the merits of the case and file the appeal, and repeats the formal objection,)" held that the ruling that the application had been abandoned was not justified, was made through oversight, and was therefore withdrawn. On December 12, 1889, the applicant presented an amended specification, and on January 28, 1890, the patent was issued to the appellant as the assignee of Scribner.

The drawing which accompanied the original application has not been changed, and the specification remains substantially the same as at first, except that by the amendment of December 12, 1889, the part in brackets was added. The specifications, claims and drawings of the patent are as follows:

"My invention herein set forth relates to electric arc lamps, in which a regulating magnet is attached rigidly to the frame of the lamp, and a suspending lifting magnet is employed, as hereinafter described and claimed. In lamps now in common use, including those in which the lifting magnet is wound differentially, one winding being a portion of the main circuit and the other a portion of a shunt around the arc, and also including those lamps like the Von Hefner Alteneck, (United States patent No. 243,341, June 21, 1881,) in which the lifting solenoid in the main circuit and the solenoid in the shunt of the arc act upon the same carbon rod, the current of the main circuit acts in opposition to the current of the shunt of the arc. In all these lamps the armature of the lifting magnet, in order to compensate or feed, moves away from the poles of said lifting magnet. This movement of the lifting armature away from the poles of its magnet, which produces the feed, is caused chiefly by the variations in the strength of the current of the shunt of the arc. As the strength of the current in the shunt of the arc increases, the armature of the lifting magnet moves away and causes the feed. The compensation for the inequalities of the current is caused chiefly by the variations of the strength of the current of the magnet in the main circuit. In my lamp, however, as herein described, the electro-magnet in the shunt of the arc does not act in opposition to the electro-magnet in the main circuit. The strength of the lifting magnet is not changed, nor is the position of the armature of the lifting magnet changed relatively to the poles of said lifting magnet, by variation in the strength of the electro-magnet in the shunt of the arc.

"The accompanying drawing, which is illustrative of my invention, shows a front elevation of an electric arc lamp.



"The circuit may be traced from hook, a, by wire, b, through the suspended lifting magnet, c, and thence to the carbon rod, d, and thence through the arc, c, and by wire, f, to hook, g. The regulating magnet, h, is included in the shunt of the arc, and attached rigidly to the frame, i, of the lamp, and controls the regulating mechanism of the lamp. The three pieces k, l, and m, pivoted as shown, form a kind of pivoted armature lever supporting the lifting magnet, c, the poles of which extend toward the lifting armature, n, that carries the usual friction clutch, o. The lifting armature, n, with its suitable

movable supporting parts, is carried up and down with the lifting magnet. It should therefore not extend either above or below the poles of the lifting magnet. The two ends of the lifting armature come, preferably, opposite the centers, respectively, of the two poles, as shown. The armature, p, of the regulating magnet is mounted upon the pivoted armature lever. The frame is held suspended by means of the adjustable retractile spring, q. Armature, n, of the main-circuit magnet is mounted upon armature levers, n^1, pivoted to the frame of the lamp. The clutch, o, is suspended directly upon the lower one of these two pivoted levers upon which the armature, n, is mounted.

"The operation of my lamp, as thus described, is as follows: As soon as the circuit is closed, the armature, n, is raised by the lifting magnet, and the clinch, o, lifts the rod, thus separating the carbons, and establishing the arc, as shown. The action of the magnet, h, will at the same time draw upon its armature against the tension of spring, q. The spring, q, must therefore be adjusted to sustain its armature lever and the parts it supports after the lifting magnet has raised the rod. The armature, n, will move as the magnet, c, moves. It has also a compensating motion up and down, as the strength of the magnet, c, increases and diminishes. As the resistance of the arc increases, the regulating magnet becomes more strongly magnetized, and the armature, p, is drawn downward, and also piece, i, which carried the lifting magnet, c. The lifting armature, n, it is evident, will descend at the same time, thus compensating and feeding as the current varies or the carbons burn away. It will thus be seen that the current in the shunt of the arc acts to change the position of the lifting magnet and its armature. This action is in no way opposed to the action of the current which is passing through the coils of the lifting magnet. Increase of the current in the shunt lowers the armature, p, and the lifting magnet, c, just the same, without reference to the magnetic force of the lifting magnet; [that is to say, armature, n, is attracted by the main-circuit magnet, and assumes a definite position with relation thereto, which position it holds, no matter what changes may take place in the strength of the shunt magnet. Armature, n, through the attraction of the main-circuit magnet, is connected through magnetic action with armature lever, k, l, m, and the movements of this armature lever in responding to the changes taking place in the electro-magnet in the shunt of the arc are communicated to armature, n, its lever, and to clutch, o. Thus it will be seen that clutch, o, is carried and controlled by the pivoted armature lever, k, l, m, and the pivoted armature lever upon which said clutch is supported.] The compensation and feeding of my lamp is thus more delicate than in lamps heretofore known or used.

"I claim as my invention: (1) In an electric arc lamp, the combination, with an electro-magnet in the shunt of the arc and its armature of an electro-magnet in the main circuit and its armature, said electro-magnet in the main circuit being carried upon a movable support, said support being controlled by the armature of the electro-magnet in the shunt of the arc, whereby the position of the main-circuit electro-magnet and its armature is caused to vary in response to the variations in the strength of the current passing through the electro-magnet in the shunt of the arc. (2) In an electric arc lamp, the combination, with a clutch suspended upon suitable movable supporting parts, an armature forming part of said movable supporting parts, an electro-magnet in the main circuit with its poles presented to said armature, a regulating mechanism pivoted to the lamp frame, and carrying the main magnet, and an electro-magnet in the shunt of the arc with its poles presented to an armature carried by said regulating mechanism, whereby the position of the carbon-feeding mechanism is varied as the strength of the magnet in the shunt varies independently of the action or electrical condition of the magnet in the main circuit. (3) In an electric arc lamp, an electro-magnet in the shunt of the arc, a pivoted armature lever responding to the changes in the strength of said shunt magnet, in combination with a magnet in the main circuit, and a pivoted armature lever responding to the changes in strength of said main-circuit magnet, a carbon rod, and clutch for the same, said clutch being carried and controlled by the said armature levers, whereby the movements of either armature lever may be communicated to the clutch to feed and regulate the lamp."

In his specification for patent No. 415,571, Scribner made the following statement concerning the application for the patent in suit:

"In my application, Serial No. 80,752, filed Jan. 2, 1883, I have described a lamp, in which the position of the lifting armature relative to the poles of the lifting magnet remains unchanged by any action of the shunt magnet, a change in the relative positions of said lifting armature being only effected by a change in the strength of the main circuit. In this case, however, the lifting magnet is made movable, and moves with its armature by the action of the shunt magnet."

The specification of the Sperry patent No. 405,440, after giving a lengthy and minute statement of the construction and operation of the device, concludes with the following comprehensive description:

"The entire device, consisting of the parallel moving frame, supported on elastic bars, and containing the main-circuit electro-magnet or solenoid and carbon-rod clamp, is described as a carbon-separating device, since its office is to seize and separate the carbons in the first instance. The entire frame is then bodily moved by means of the derived-circuit electro-magnet or solenoid for the purpose of feeding the carbons."

Of the 18 claims of this patent, some of which are distinguishable from others only by very slight differences, the first is as follows:

"(1) In an arc lamp, the combination of a main-circuit electro-magnet or solenoid with a moving frame, on which it is supported, a carbon-rod clamping device moved by said electro-magnet or solenoid, and a shunt magnet or solenoid, adapted to move said frame."

Chas. A. Brown and Geo. B. Barton, for appellant.

F. W. Parker, for appellee.

Before FULLER, Circuit Justice, and WOODS and JENKINS, Circuit Judges.

WOODS, Circuit Judge, (after making the foregoing statement.) There is a material difference between the abandonment of an invention and the abandonment of an application for letters patent thereon by failure to comply with section 4894 of the Revised Statutes. The first gives the invention to the public, and, once done, the act is irretrievable; but, besides the power conferred upon the commissioner of patents to relieve an applicant from an abandonment of his application under the statute, an application, which has lapsed, or been rejected or withdrawn, may be renewed or repeated so long, we suppose, as the invention itself has not been abandoned by reason of a two-years public use or otherwise. The subject has been considered by the supreme court quite fully in Planing Mach. Co. v. Keith, 101 U. S. 479, where, after citing Kendall v. Winsor, 21 How. 322, and Shaw v. Cooper, 7 Pet. 292, the court says:

"These were cases, it is true, where the alleged dedication to the public, or abandonment, was before any application for a patent; but it is obvious there may be an abandonment as well after such an application has been made and rejected or withdrawn as before, and evidenced in the same manner. In Adams v. Jones, 1 Fish. Pat. Cas. 527, Mr. Justice Grier said: 'A man may justly be treated as having abandoned his application if it be not prosecuted with reasonable diligence. But involuntary delay, not caused by the laches of the applicant, should not work a forfeiture of his rights.' The patent law favors meritorious inventors by conditionally conferring upon them for a limited period exclusive rights to their inventions. But it requires them to be vigilant and active in complying with the statutory conditions. It is not unmindful of possibly intervening rights of the public. The invention must not have been in public use or on sale more than two years before the application for a patent is made, and all applications must

be completed and prepared for examination within two years after the petition is filed, unless it be shown to the satisfaction of the commissioner that the delay was unavoidable. All this shows the intention of congress to require diligence in prosecuting the claims to an exclusive right. An inventor cannot without cause hold his application pending during a long period of years, leaving the public uncertain whether he intends ever to prosecute it, and keeping the field of his invention closed against other inventors. It is not unfair to him, after his application for a patent has been rejected, and after he has for many years taken no steps to reinstate it, to renew it, or to appeal, that it should be concluded he has acquiesced in the rejection, and abandoned any intention of prosecuting his claim further. Such a conclusion is in accordance with common observation. Especially is this so when, during those years of his inaction, he saw his invention go into common use, and neither uttered a word of complaint or remonstrance nor was stimulated by it to a fresh attempt to obtain a patent. When, in reliance upon his supine inaction, the public has made use of the result of his ingenuity, and has accommodated its business and its machinery to the improvement, it is not unjust to him to hold that he shall be regarded as having assented to the appropriation, or, in other words, as having abandoned the invention."

See, also, U. S. Rifle & Cartridge Co. v. Whitney Arms Co., 118 U. S. 22, 6 Sup. Ct. Rep. 950.

Guided, as we must be, by these decisions, we are not able to find in the present case an abandonment either of the invention or of the application for the patent. The final decision of the patent office was that there had been no such delay in the prosecution of the claim as to work a forfeiture of the application, and, even if we had the power to do it, we are not required to review that decision, because the answer in the case does not raise the question,—the abandonment alleged being of the invention, and not of the application for the patent. It is true that the respondents denied any information or belief whether "the letters patent referred to in the bill of complaint were issued in due form of law," and asked for strict proof of that and of other averments not admitted; but the facts touching the prosecution of the application were matters of record in the patent office, easily accessible if not known already, and, if the respondents proposed to tender an issue of abandonment, it was necessary to do it by averments to that effect, specific and clear enough to be understood. The abandonment of the invention, it has been suggested, is alleged in terms too general and indefinite to be available; but the essential meaning of the allegation is unmistakable, and, there having been no effort in the court below to obtain a more specific statement, the objection made here comes too late. In respect to the merits of the question, it being established or conceded that the application for the patent was kept alive until the letters issued, it follows, upon the proofs before us, that if there was ever an abandonment of the invention it must have occurred before January 2, 1883, when the application was filed. But there is nothing in the evidence to warrant that conclusion. As tending to show such abandonment, reference is made to Scribner's own testimony, to the effect that he made the discovery and reduced it to successful form in an experimental lamp more than two years before he applied for a patent; that he dismembered that lamp, and laid away its parts for reference, but never afterwards used them, and did not produce them in evidence; that he has never caused the

lamp to be manufactured for sale, but has put upon the market in large numbers another lamp, which he invented later, and that he made no earnest effort to obtain this patent until he had seen the Sperry lamp. But, viewed in the strongest possible light, these things show no purpose to abandon the invention, because, so long as it was not in public use, and no one else had made and procured a patent for the same discovery, his right to apply for a patent was subject to no restriction. Even if he had forgotten the invention, or laid it aside as worthless,—abandoned it,—he had the right to take it up again, and to proceed as if he had then first made the discovery. And once the application was filed it became notice to the world of his claims and rights as they should finally be defined by letters patent, and that notice in this instance, besides being lawful, was fair and ample, because one of the experts in the case has testified that "from the dimensions of the drawing" he made a lamp which he found "to operate as described in the specification."

Scribner denies that he had seen the Sperry lamp before his own patent was granted; and even if he did acquire earlier knowledge of Sperry's patent, it was only natural and right, as the quotation from the decision of the supreme court recognizes that he should be stimulated to a fresh attempt to obtain a patent,—it being clear beyond dispute that he was the first discoverer.

There remains the question of infringement. The claims of the patent in suit, it is conceded, may in terms cover the device of the respondents, but, it is insisted, should be construed so as to include the construction which alone is illustrated in the drawing, described in the specification, and pointed out as material in this patent and in the inventor's second patent application; that is, that construction in which the main-circuit magnet and its armature are separated mechanically, and the armature has "a compensating motion up and down as the strength of the magnet increases and diminishes;" that, so construed, the device of the defendant does not infringe, because in it the main-circuit magnet and its armature are mechanically connected, and when the magnet is energized, become and remain rigidly connected until the current is turned out of the lamp; making impossible the up-and-down compensating motion incident to the other form of construction. There is the difference of construction stated between the two lamps. In Scribner's drawing the poles of the lifting magnet, c, are in a horizontal position, while the position of the armature, n, is vertical. The armature is mounted upon levers, which prevent its coming into actual contact with the poles of its magnet, and for that reason it is said to be not connected mechanically with the magnet. In the Sperry lamp, the main-circuit magnet or solenoid is carried upon a movable frame, but in a perpendicular position, with its armature in a horizontal position, and when the current is on the armature is lifted into actual contact with the magnet, and so remains in cohesion or mechanical connection while the current lasts. In each lamp the frame on which the lifting magnet or solenoid is carried is drawn downward by force of the shunt magnet, and so by the reciprocal action of the two magnets,

one lifting the carbon so as to form the arc and being itself drawn down by the other so as to shorten the arc, an arc of constant length and a steady light are maintained; that effect being produced, not by the resultant or differential force of the two magnets working in opposition upon the clutch and carbon, but by their independent and nonconflicting action.

To what extent the regulation of the arc in the complainant's lamp is affected by a compensating movement up and down "of its armature, as the strength of the magnet, c, increases and diminishes," is a disputed point. In the original specification the fact of such compensating motion was asserted; but in the amended specification, filed December 12, 1889,—the Sperry patent having been issued June 18th, of that year, upon application filed October 22, 1888,—though the first statement was left unchanged, the expression shown in brackets was interpolated, that the "armature, n, is attracted by the main-circuit magnet, and assumes a definite position in relation thereto, which position it holds, no matter what changes may take place in the strength of the shunt magnet." As a change in the strength of the shunt magnet implies a corresponding but reversed change in the other magnet, this statement seems to be inconsistent with the other, but, being the later and more definite, should be regarded as controlling. Upon this question, Scribner's testimony was to the effect that within the ordinary limits of variation of current strength the operation of feeding will be independent of the strength of the current, though a great decrease in current without an abnormal length of arc existing would cause a feeding down of the carbon rod as magnet, c, would be weakened by the change; that the pull upon the armature would be constant so long as the magnetism of the pole pieces of the electro-magnet, c, is constant; that if the pole pieces were magnetized to saturation, a change of current strength would not appreciably vary the pull of the magnet upon the armature; but that if the magnet were not charged to saturation a change of strength in the current would vary the strength of the pull, but not necessarily affect the position of the armature, which is raised by the attraction of the magnet to the position shown in the drawing and held there during immaterial changes of current strength, not in equilibrium, but in a practically fixed relation, though conditions might arise by which a slight movement of parts would be brought about, which, however, would not affect the successful operation of the lamp; that the special utility of the invention is its freedom from complicated and differential features of action in prior lamps; that the special and valuable feature of construction is the mounting of the main-circuit magnet upon a movable frame, which is moved by the magnet in the shunt of the arc, so as to control the feeding of the rod.

On the other hand, Prof. Carhart, teacher of physics at Ann Arbor, has testified that, since the magnetic connection between the armature and poles of the magnet, in the complainant's lamp, is an elastic one, so long as the armature is not in actual contact with the poles, any weight in a vertical direction brought to bear

upon the armature must necessarily depress it below the symmetrical position shown in the drawing, and that without change from the construction shown by the drawing the armature, sustaining as it does the weight of the rod and carbon, will have a compensating motion up and down as the strength of its magnet increases and diminishes; that the connection between the magnet and its armature, being through lines of magnetic force, is elastic, and, since the direction of the pull is nearly horizontal, a vertical force applied to the system must necessarily depress it, the result in the lamp being to produce a compensating motion up and down, according to the varying strength of the magnet; that the position of the armature is one of equilibrium when the lamp is in operation, and can be practically independent of moderate changes in the current only when the size of the magnet, c, is so great as to be out of all proportion to the lamp of which it forms a part. There was other testimony to the same effect.

There is little of the prior art in the record, but enough to show that Scribner was mistaken in thinking that by his invention he was the first to arrange magnets so as to have independent and not differential action; which latter, as he explains it, means "the differential or opposing action of two separate electro-magnets or solenoids, one in the main circuit and the other in the shunt of the arc, upon a common armature or armature lever, the mechanical pull of one being opposed to the pull of the other, to bring about a regulation of the carbon." The Kellogg patent, No. 229,536, dated July 6, 1880, shows a lamp with separate magnets or solenoids, each acting independently through a clutch or lifting bar of its own, one to raise and the other to draw down the carbon; and, the lifting bars being so arranged that the grip of one is released before that of the other commences, there arises no opposition between the magnets to produce a resultant or differential effect. So, too, in Scribner's patent, No. 415,571, issued November 19, 1889, upon an application filed December 31, 1883, there are main-circuit and shunt-circuit magnets, which operate independently and without conflict to move the same carbon rod. But in neither of these patents is the lifting magnet mounted upon a movable frame, which is controlled by the other magnet in a shunt circuit, and in that respect the novelty of the patent in suit is unquestioned. That feature the respondents have appropriated and are using in a structure which is a clear infringement of the patent, unless the horizontal position of the poles of the lifting magnet and the vertical position of its armature are essential features of the invention. These features, as we have seen, are important only with regard to the question of the compensating up-and-down movement of the armature as the strength of the magnet increases and diminishes; and that strength increases and diminishes with the force of the current through the magnet. But the magnetic current itself is not a part of the device any more than is water an element of a water wheel. In the one water is the power and in the other the electric current, and the devices are contrived for the purpose of controlling and

applying the power. The invention is in the device, which may have one, two, or more functions, one of great and another of trifling worth. It may be supposed to have a function which it has not. The patent is upon the device, and not upon the functions, real or supposed; and if the device is appropriated in its essential features it will be an infringement, notwithstanding some change in the location and relation of parts, whereby a doubtful function of little comparative worth is eliminated. At first Scribner, it is clear, believed the up-and-down compensating movement of the armature in the main circuit, irrespective of the action of the regulating magnet, to be an important feature of his lamp; but before the patent issued, without changing the drawing or modifying the structure of his device in the least, he presented an amended specification, in which he repudiated that idea, and described the armature in operation as assuming and holding a definite relation to the magnet. So long as he did not change the structure of his device or invention, he had the right to change the specification, even though he did it with reference to the Sperry patent, which was applied for and issued while his application was pending; and, the specification being as we find it, there is no support for the proposition that for the purpose of preserving the possibility of a function, which the patentee had repudiated before the patent issued, the claims, though worded differently, should be so read as to cover only the exact construction and relation of parts illustrated in the drawing. The proposition is not reasonable, nor, so far as we know, supported by authority.

The first claim of the Sperry patent, and other claims not quoted, are essentially the same as the first and second claims of the patent in suit, and the lamp made by the respondents differs in essential elements from the complainant's lamp only in respect to the relative positions of the main-circuit magnet and its armature, horizontal parts being made vertical and vice versa.

Our conclusion, therefore, is that the patent in suit is valid, that it belongs to the complainant as assignee of the patentee, and that the respondents before suit had infringed the first and second claims thereof as charged. The decree below, it follows, must be reversed, and it is so ordered.

TEMPLE PUMP CO. v. GOSS PUMP & RUBBER BUCKET MANUF'G CO.

(Circuit Court of Appeals, Seventh Circuit. October 2, 1893.)

No. 111.

1. PATENTS FOR INVENTIONS—INFRINGEMENT—CHAIN-PUMP BUCKETS.

Letters patent No. 347,342, issued August 17, 1886, to Sanford A. Goss, for improvement in expansion rubber buckets for chain pumps, consisting of "the rubber bucket, A, having its largest inward diameter at a', thickened at its lower end to form the inward incline, a, whereby it is adapted to be expanded by moving an interior nut in either direction along the supporting link, substantially as described," is not infringed by buckets made on a model different in shape from the drawing in the specification, since the patent, in consideration of the prior state of the