

PAGE, ADM'R, AND ANOTHER, V. THE HOLMES
BURGLAR ALARM TELEGRAPH COMPANY.

Circuit Court, S. D. New York. February 17, 1880.

PATENT — EMPLOYE IN PATENT OFFICE —
INVENTION PRIOR AND PATENT SUBSEQUENT
TO EMPLOYMENT — ACT OF JULY 4, 1836.— The
second section of the act of July 4, 1836, (5 U. S. Stat.
at Large, § 118) disqualifying an employe in the patent
office from acquiring an interest in a patent, does not
disqualify such employe from obtaining a patent, after such
employment has ceased, for an invention made prior to the
commencement of such employment.

SAME — ABANDONMENT — PROPERTY OF
GENERAL PUBLIC IN THE INVENTION —
PATENT SUBSEQUENTLY ALLOWED BY ACT OF
CONGRESS.—The consent of the inventor to the public
use of his invention, or the withdrawal of his application
for a patent, does not vest any right of property in the
general public, in the sense of the fifth amendment to
the constitution of the United States, so as to prevent
the subsequent allowance of a patent for such invention,
by act of congress, unless there was, in a particular case,
a reduction of the invention of use and practice, by its
embodiment in some apparatus prior to the issue of such
patent.

Infringement of patent.

BLATCHFORD, J. This suit is founded on
reissued letters patent granted October 10, 1871, to
Priscilla W. Page, administratrix, etc., of Charles G.
Page, deceased, and the Western Union Telegraph
Company, for improvements in induction coil
apparatus and circuit-breakers, the original patent
having been granted to said Page April 14, 1868.
It was granted under an act of congress approved
March 19, 1868. (15 U. S. Stat. at Large, 356,) which
provides as follows: "The commissioner of patents is
hereby authorized to receive and entertain a renewal
of the application of Charles Grafton Page, for letters
patent for his induction apparatus and circuit-breakers,
305 now on file in the United States patent office,

including therewith his circuit-breakers described by him prior to said application, and that if the commissioner shall adjudge the said Page to have been the first inventor thereof, he shall issue to him a patent, which patent shall be valid, notwithstanding said Page's invention may have been described or in use prior to said application, and notwithstanding the fact that said Page is now an examiner in the United States patent office: *Provided*, that any person in possession of said apparatus prior to the date of said patent shall possess the right to use, and vend to others to use, the said specific apparatus in his possession, without liability to the inventor, patentee, or any other person interested in said invention or patent, therefor."

There are 15 claims in the reissue. It is insisted that claims 11, 12 and 13 have been infringed by the defendant. They are as follows: "11. The adjustment of the retractile force of an automatic circuit-breaker, substantially as set forth. 12. The combination of an electro-magnet, armature and adjustable retractor. 13. Adjusting or regulating the length of vibration of the armature of an electro-magnet by means of a set-screw, or any mechanical equivalent for substantially the same purpose, substantially as herein set forth."

Portions only of the specification are necessary to be considered. After describing the arrangement of revolving armature for an automatic circuit-breaker, the specification says:

"Instead of a revolving armature for a circuit-breaker, a vibrating armature may be substituted, and the latter will be found more convenient for several reasons. One especially is, that it can be readily adjusted so as to increase or diminish the rate of interruption of the circuit and the force to be overcome in working it. A vibrating automatic circuit breaker, consisting of a very small electro-magnetic bar, vibrating between the arms of a permanent magnet,

the magnet changing its poles at each vibration, the length of vibration 306 of the bar being regulated by a set-screw, makes a good circuit-breaker, and will be found fully described by the said Charles G. Page in Silliman's Journal, volume 32, pages 356 to 358, in a communication dated April 19, 1837. This species is, however, not so simple as other, and further allusion to it is not necessary. A vibrating armature is preferable, as it requires no change of poles to effect its motion, this being produced by merely intercepting the galvanic current at suitable intervals. One form of vibrating armature is shown at fig. 8. A small rod of soft iron, about the size of that shown in the figure, is mounted upon an axis or shaft, *s* which is supported in suitable bearings upon two pillars, *r*, so as to vibrate freely. A small electro-magnet is supported upon one of these pillars, and the armature is placed between its branches, so that one end is above and the other below the plane of the magnet. One end of the armature bears a branching copper wire, its branches passing down into mercury cups *c*, *c'*. Cup *c* may be partly of glass, so that the play of the end of the branch wire in and out of the mercury in the cup may be seen, and the spark produced on breaking the circuit rendered visible. When the magnet is charged the armature is attracted towards its poles, and around the ends of the armature is a ferrule of thin brass or non-magnetic metal, to prevent magnetic adhesion of the armature to the magnet. The galvanic connections are under the base board and may be traced as follows: One pole of the battery being connected with cup *p*, and the other with cup *n*, the current will pass along from cup *p* to cup *c*, as indicated by the arrow, thence upward through one branch of the wire and downward through the other branch into cup *c'*; thence upward again into one end of the wire around the electromagnet, and, circulating around the wire coil, will pass out through the other end to cup *n*, and so back to the

battery. The passage of the current charges the magnet, lifts one end of the armature, raises the branch wire from the mercury in the cups c, c' , and breaks the wire overbalancing the other end, the circuit is again completed, and thus it may be 307 broken with great rapidity. An adjusting or set-screw may be placed on a suitable support over this end, after the manner of the last named vibrating circuit-breaker, so as to regulate the extent of the vibrations. The weight of this end, or what may be denominated its retractile force, may also be regulated by a small movable weight placed on or over this half of the armature, after the manner shown in figure 10. This circuit-breaker is introduced into the circuit of the primary coil in the same way as the revolving armature. A more simple form of vibrating armature is shown in figure 9, in which the armature n vibrates to and from the electro-magnet u , in a direction parallel to itself. It is attached to a light brass spring s , fastened to pillar 2. This spring passes through an opening in the yoke y on the top of pillar 3. At p is a tip or small disk of platinum, soldered to the spring, which is in contact with the platinum point on the lower end of the set-screw s^2 , passing down through the top of the yoke. Set-screw s^2 is accompanied with a tightening nut $8'$. This set-screw regulates the proximity of the armature to the magnet, and, to some extent, the tension of the spring and the rapidity of its vibrations. It will be seen, however, that the regulation or adjustment is imperfect, for, as the spring is pressed down towards the magnet, the armature is brought nearer to the magnet, and, as the attractive force increases more rapidly with the diminution of the distance between the armature and the magnet than does the force of the spring increase, the adjustment is, in a measure, defective. If, now, the magnet $d d$ be connected with the battery and charged, and the circuit with the battery is made by the current

passing up pillar 2, thence into spring s , thence into set-screw s^2 and pillar 3, and thence through the wires of the electro-magnet back to the battery, the magnet will draw down the armature, and with it spring s , and thus break the circuit, by pulling the platinum disk away from the platinum point on the lower end of set-screw s^2 . On breaking the circuit the magnet loses its power, and the spring rises and completes the circuit again, the magnet is again charged and the armature drawn down and breaks the circuit again, 308 and thus a very rapid series of vibrations and interruptions of the circuit may be effected. It is evident, therefore, if the circuit of this breaker is included in or forms part of the main circuit which passes through the primary coil, that at each break an induced current will be set up in the secondary coil, as with the other circuit-breakers. In figure 10 is shown an electro-magnet and armature in which the retractile force of the armature is made adjustable. This is oftentimes important. The coils i are secured to a base board and enclose a bundle of soft iron wires, seen projecting slightly at a . Between the two pillars x is suspended the vibrating electrotome or circuit-breaker. g is a small cylinder of soft iron attached to one end of the lever e , which passes through or is otherwise secured to the vibrating shaft k . The other end of the lever dips into a mercury cup m , fixed upon the metallic strap b' . On the strap b is another mercury cup of brass, into which descends a branch wire h , from the vibrating wire e . Arising from the shaft k is a stiff brass wire, in the form of a bent lever, carrying upon its horizontal portion o a ball f , which is movable on a screw thread from end to end of portion o . It will be seen that, as the ball is moved towards the extremity o , it increases the weight of the long arm of wire e . If the coils and magnet be charged by the current from the battery, and the current passes from the strap b to b' , through the lever e and mercury

cups, the magnet *a* will attract the hammer piece *g*, and, in so doing, will lift the end of lever *e* out of the mercury in cup *m* and break the circuit, when the armature-lever, being drawn back by the retractile force of the weight, will again close the circuit. As the weight *f* is further removed from the center of vibration, the more magnetic power will be required to move the hammer *g*, its distance from magnet *a* remaining the same the greater is its retractile force, and the more suddenly and completely will the circuit be broken in cup *m*. The distance between *g* and *a* can be varied by slightly bending the wire *e*.”

The text of the specification of the original patent is, in the foregoing parts, substantially identical with that of the 309 specification of the reissue, and the drawings of the two are identical. Among the claims of the original patent were the following: “Eleventh, I claim the adjustment of the retractile force of an automatic circuit-breaker, substantially as set forth. Twelfth, in combination with such adjustment, I claim adjusting the distance of the hammer, or the armature, from the pole or poles, of the electro-magnet which actuates them, as set forth. Thirteenth, I claim adjusting or regulating the length of vibration of the circuit-breaking bar, by means of a set-screw, or any mechanical equivalent for substantially the same purpose, substantially as herein set forth.”

Dr. Page was appointed principal examiner in the United States patent office in 1842. It is claimed that, before that time, and in 1836, 1837, and 1838, he had made some or all of the inventions covered by the patent sued on in this case. Being prevented by statute from obtaining a patent while such examiner, he applied to congress in 1845 to remove such disability. Not obtaining such relief, he resigned his office of examiner in 1852. On the second day of February, 1854, he applied for a patent for what he called “a new and useful machine for administering

electricity as a remedial agent.” The specification was sworn to February 2, 1854. Part of the contents of the file wrapper in that case is an affidavit made by Dr. Page January 27, 1854, in which he states “that, sometime prior to his appointment as an examiner of patents in the United States patent office, he made an invention entitled by him the compound magnet and electrotome, the same consisting chiefly in combining a self-acting electrotome with a compound magnet and helix, and that, sometime after said appointment, upon discovering that said invention was being extensively made and sold, he applied to congress for authority, by special act, to take out a patent for said invention, by and with the advice and written recommendation of Hon. H. L. Ellsworth, then commissioner of patents, and that said application was refused by congress; that, as soon as he was able, he resigned his office, and took the necessary steps to secure his rights to said invention, and 310 that said invention is now in public and common use, and extensively made and sold, and that he has never consented to such sale or use, nor abandoned such invention to the public.”

Accompanying said application was a letter from Dr. Page to the commissioner of patents, dated January 27, 1854, in which he said: “Being about to apply for letters patent for the invention set forth in the accompanying affidavit, I beg leave to request that you will authorize the examination of my claims without delay, in view of the facts in the case, but more especially for the reasons that the invention has been so long in public use without my consent or power to restrain it, and that I have hitherto made application for letters patent for this invention to congress, the only source from which, under the law, I could expect to get a patent”.

The drawings accompanying said application do not seem to have been preserved on file, through the record shows that there were two drawings. The

specification on the application, as originally filed, said: "Fig. 1 is a perspective view of the machine. Fig. 2 is a bottom view of the base board of the machine, showing the wire connections. Figs. 3, 4, 5, 6, are views of various forms of compound electro-magnets. Figs. 7, 8, exhibit different forms of interrupters or electrotomes. My invention consists, first, in combining with a helix or helices, enclosing a compound and adjustable electromagnetic core, a self-acting electromagnetic electrotome, so that, when said helix or helices are connected with a galvanic battery, the galvanic circuit shall be instantly broken and re-established, and thus continuously and rapidly interrupted and completed, without the aid of the operator, or mechanical movements, whereby a rapid succession of shocks may be obtained and graduated in a convenient manner for medical purposes. Prior to my invention mechanical interrupters or electrotomes were employed to produce shocks from helices, enclosing electro-magnets, and required the services of an attendant, and the size, expense and difficulty of working such machines prevented their use to any considerable extent; but the employment of the self-acting electrotome in 311 combination with the compound electro-magnet reduced the size and expense of the machine, rendered it more simple and efficient, dispensed with the attendant, and thus brought it within the reach of almost every afflicted person requiring the remedial aid of electricity. The helix consists usually of two sizes of wire, the layers nearest the magnetic core being of large wire, say No. 16, and those exterior to them of fine wire, say No. 20 and upwards. The large wire is to be connected with a galvanic battery to induce magnetism in the core, and the shocks are obtained by contact with the ends of the fine wire. The helix *a* thus formed, is secured to a base board by brass straps, *b, b*, and the extremities of the fine and large wires are let down through suitable

holes in the base board, for the purpose of making all the necessary connections underneath the board, out of sight, and give a neat appearance to the instrument. The connections through which the galvanic circuit is completed, and the mode of breaking the circuit, are as follows: The positive pole of the battery is to be connected, we will suppose, with a binding screw cup 1. At wire P, soldered to the lower part of this cup, passes under the base board to the point p^2 , where it rises through the board to connect with one extremity of the large wire of the helix, the other extremity coming down through the board to connect with wire p^2 . The wire p^2 is soldered to the lower part of the pillar 2, and upon the top of this pillar is secured a metallic spring, s , which is in contact with a metallic point upon the lower end of set-screw s^2 , and by this means in contact with pillar 3, from the lower end of which there passes a short wire, p^3 , to the extremity, 4, of the wire d , d surrounding the little electro-magnet e . The other extremity, 5, descending through the board, is connected by a short wire, p^4 , with the lower end of binding screw cup 6. The metallic circuit for the battery is thus completed, and the magnet e draws down the armature n attached to the end of spring s , and, breaking the contact between spring s and the point of the set-screw s^2 , interrupts the galvanic circuit and produces the shock. The force of the spring s renews the contact with the set-screw, and the magnet e again acts, 312 and thus we have a series of shocks produced with a rapidity dependent upon the strength of magnet e , and the adjustment of spring s by the set-screw s^2 . The fine wire helix has its extremities connected with cups x , x , by wires p^5 , p^5 . The shocks are obtained by immediate contact of the fingers with the cups x , x or by other well-known

modes of communicating shocks. The figs, 3, 4, 5 and 6 represent different forms of compound magnets. The term, compound magnet, was originally applied to a bundle of iron plates, as in fig. 3, or a bundle of wire, as in fig. 4, but, as the scroll of thin plate iron, fig. 5, and an iron bar divided down to its center, as in fig. 6, act in a similar manner to the bundle of wires or plates, they are termed, also compound magnets, though they are not so efficient as the two first named. The lower end or tip of the set-screw is armed with platinum, and the surface of the spring *s*, immediately under the set-screw, is covered with platinum in order to preserve a clean surface when the current is broken. The bundle, *m*, of iron or steel wires is generally inserted loosely in the helix for the purpose of graduating the shocks, the strength of the shocks depending upon the degree of insertion of the bundle of wires. Figs. 7 and 8 represent two varieties of electrotome, either of which may be substituted in place of the electrotome or interrupter shown in fig. 1. The drawings, without any special description, will suffice to explain these interrupters to persons skilled in the subject, and full descriptions of both have been hitherto published by me in *Silliman's Journal*, vol. 35, pages 262 and 267."

The claim was in these words: "What I claim as my invention is, combining with a helix or helices, inclosing a compound electro-magnet, a self-acting interrupter or electrotome, substantially in the manner herein set forth."

The patent office, on the fifteenth of February, 1854, addressed Dr. Page as follows: "In the matter of your application for letters patent for an alleged improvement in magneto-electric machines, it is found you have been anticipated in the device of combining with a helix or helices, inclosing a compound electro-magnet, a self-acting interrupter, 313 in the publication of the same thing by Golding Bird, in the *London*,

Edinburgh and Dublin Philosophical Magazine for January, 1838.” Dr. Page replied thus, on the seventeenth of February, 1854: “I have examined the publication of Golding Bird, upon which you have rejected my claim, and, if you will take pains to read the whole of his article, you will find that he gives me credit, in so many words, as the first inventor. I therefore ask for a reconsideration of the case.”

He also, on the same date, addressed the patent office thus: “As my invention for the medical application of electricity has been for some years in public use, if the office, in view of the affidavit which I have recently filed, should consider the question of abandonment, I beg leave, further, to state that I have from the first had in contemplation the making of this application as soon as practicable, and that I used all reasonable diligence in seeking protection of my rights in relation thereto. I made application for a special patent for this invention to the only tribunal to which I was allowed to go as soon as I discovered that it was going into public use, and that application, it would seem, might be regarded as still pending and entitling me to privileges of protection as well as those who, under the law, make application to the patent office. I ask of the patent office as much indulgence as the law gives to inventors and patentees within the pale of the law. An inventor is not debarred his patent by reason of public use for any number of years after his application and before his patent, nor are his acts of consent and allowance called in question, if his application lie un touched by him for years. Nor is public use and sale for any number of years within the term of a patent held to be a bar to the recovery of that which was inadvertently not claimed; though its publication, unclaimed in a patent, seems to me to approach very near a formal dedication of it to the public. The statute of limitations applies neither to the applicant nor the patentee in this particular; and, as my

case is novel, peculiar, and without precedent, I trust the office will leave this question to be decided by the courts, and 314 grant my patent, provided no other objection should be found.”

The office replied thus, on February 23, 1854: “Yours of the seventeenth instant, relating to the matter of your machine for administrating medical electricity, has been received, together with an amended claim. The publication made by you of the subject of this claim in *Silliman’s Journal*, in 1837, anticipates the publication made by Bird, as referred to in the official communication of the fifteenth instant. The only remaining difficulty in the way of the grant of a patent to you, therefore, so far as the office is informed, is the fact that the machine has been for a long course of years in public use. By the seventh section of the act of 1836 it is made the duty of the commissioner of patents of take cognizance of the case where the invention has been in public use or on sale with the applicant’s consent and allowance, this being placed on the same footing as the other conditions for refusing a patent. The only modification of this part of the section is that by which a period of two years is allowed for the previous sale or use, as provided in the seventh section of the act of 1839. In the present case, that period has been exceeded many years. The only remaining question, therefore, is whether the sale and use have been with the applicant’s consent and allowance. In the affidavit made by you on the twenty seventh of January, 1854, it is testified that you have never consented to such sale or use, nor abandoned said invention to the public. It is not, however, necessary that the consent should be actually expressed. It may be inferred from the acts of the applicant; and it will be inferred when nothing appears to show that he has properly warned the public, or the parties selling and using, against the sale and use, or that he has taken timely measures to secure a

patent for his invention. All that has been adduced to show this in the present case is the allegation that the applicant, from the time he found the invention going into general use, was laboring under a legal disability to procure a patent therefor under the law, in consequence of his official connection with the patent office, and that he applied to congress for a special patent for 315 this invention. But it does not appear that the particular invention now in question was described in the application to congress, or indicated by any title sufficient to identify it. That application, therefore, cannot be taken as a notification to the public of your intention to reserve to yourself the right to this invention. Neither could it be considered equivalent to an application filed according to law in the patent office, where a description of the thing is required. It can only be entertained as showing what effort was made to remove the disability which would prevent you from obtaining a patent while holding the office of examiner of patents. If it was proved that the effort thus made had reference to the procuring the patent now applied for, it is allowed it would be worthy of much consideration; and, as it is, the refusal of congress to grant the petition that was made, may be regarded as enforcing the fact of disability. But, then, in either case, the disability must be considered as self-imposed, inasmuch as the applicant had it in his power at any time to remove it, by resigning his office. The fact that he retained his office for many years, and declined to take the only course open to him for obtaining a patent, while his invention was going into extensive public use, without any public reclamation by him, must be considered proof of consent and allowance. This inference, that the public sale and use were with the applicant's consent and allowance is, also, much strengthened by the fact that nearly five years elapsed, after the first publication in *Silliman's Journal*, before the legal disability commenced, without

any steps being taken to secure a patent, and by the further fact that, after the disability ended, and notwithstanding the great length of time the invention had been before the public, nearly 20 months more were allowed to pass before the filing his application, making, in all, a period of nearly 17 years from the time of the first announcement of the invention to the public. For these reasons the patent is refused.”

On the twenty-eighth of July, 1854, Dr. Page addressed the office as follows: “*To the Commissioner of Patents*—Sir: I hereby withdraw my application for a patent for machine for administering electricity as a remedial agent, now in your 316 office, and request that \$20 may be refunded to me, agreeably to an act of congress in such cases made and provided.”

On the same day the \$20 was returned to Dr. Page in person. Subsequently, Dr. Page presented to congress a petition dated January 16, 1866, in which he said: “During the years 1836, 1837 and 1838, your petitioner invented a magneto-electric apparatus for administering electricity as a remedy for diseases, and also, for purposes of scientific illustration, since known under the various names of Page’s compound magnet and electrotome, Page’s induction coil, Page’s separable helices, and Page’s analysis of shocks, a distinguishing feature of which invention was an automatic or self-operating circuit-breaker, by which the presence of an attendant or assistant was dispensed with. Said apparatus also embraced other novel and original features of improvement. In the year 1842 your petitioner was appointed principal examiner in the United States patent office. Some time after said appointment, your petitioner discovered that his said invention was being introduced into public use by others without his consent, and being disabled, under the law, from obtaining a patent, your petitioner, at the recommendation of Hon. Henry L. Ellsworth, then commissioner of patents, in the year 1854 applied to

congress to remove the disability in his case, inasmuch as the invention was made before his said appointment to office. Failing in this to obtain relief, your petitioner, as soon as his circumstances permitted, did, in the year 1852, resign his office, and, as soon thereafter as practicable, February 2, 1854, applied for a patent for this, his said invention. After a very thorough investigation, the commissioner of patents decided that the invention was novel and original with your petitioner, but refused to grant a patent, on the ground of abandonment of the invention to the public. Your petitioner is unwilling to admit that the public use of said invention was with such entire consent and allowance on his part as in equity, to have worked an abandonment against him, as the circumstances were peculiar and extraordinary, and such as have never before occurred to an American inventor, and he, therefore, prays your honorable bodies to 317 remove the disabilities in his case, and enable him again to apply for, and take out, and hold, a patent for this, his said invention, notwithstanding its previous public use. Your petitioner moreover states, that, by a recent act of the emperor of France, the honor of this, his said invention, has been accredited to M. Ruhmkorff, by an imperial award of 50,000 francs for the same. (See *Silliman's Journal*, vol. 39, No. 115, January, 1865.) Thus deprived of all emolument from this, his invention, and robbed of the honor which justly belongs to him, by this act of a foreign power, your petitioner is prepared to show, by testimony of the highest character, from men of science in this country and in Europe, and by experimental demonstrations before your honorable bodies, that this invention is entirely his own; (see *Silliman's Journal*, vol. 15, 1853, p. 115, foot note by the editors; also, same volume, p. 115, foot note by the editors; also, *London and Edinburgh Philosophical Magazine*, vol. 12. p. 22; also, *Sturgeon's Annals of Electricity and Magnetism*, vol.

1, pp. 293, 294, 1837; also, same volume, p. 500, 1837; also, *Davis' Catalogue*, of 1838; also, *Scientific American*, vol. 12, No. 1, p. 5; vol. 12, No. 5, p. 69; vol. 12, No. 15, p. 230; also, *Silliman's Journal*, vol. 35, p. 252, 1839; also, *Silliman's Journal*, vol. 32, pp. 355-6, 1836; also, *Silliman's Journal*, vol. 31, p. 141, 1836; from all of which publications *verbatim* extracts are hereto annexed;) and he, therefore, prays that your honorable bodies will, as an off-set to this foreign appropriation of his rights, and in justice to an American inventor, empower him to apply for, and take, and hold, a patent for this, his said invention, notwithstanding said imperial award, and the aforesaid previous public use, provided the commissioner of patents shall be satisfied of his right thereto, as the original and first inventor of the same.”

Extracts from the publications referred to were annexed to the petition. The act of March 19, 1868, was then passed. Under that act, Dr. Page applied, on March 26, 1868, for the patent which was granted April 14, 1868. The specification was sworn to March 19, 1868. In a letter to the patent office, dated March 25, 1868, accompanying the application,

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Dr. Page said: “In making this application for a patent, according to the recent act of congress authorizing the same, permit me to say that, on the original application, filed February 2, 1854, the claim as first presented was rejected on the fifteenth of February, 1854, upon a publication of Dr. Golding Bird, in the *London, Edinburgh and Dublin Philosophical Magazine*, for January, 1838. It so happened that, in the conclusion of that article, Dr. Bird gave me credit as the first inventor of what he at first supposed was the novelty of his apparatus, viz.: the automatic circuit-breaker. Finding, however, that the precise combination which I claimed was used by him before I used the same, I amended my claim,

making it much broader than before, striking out the word *compound* electro-magnet, and substituting the word electromagnet, and also claimed the automatic circuit-breaker in connection with a helix or helices. This amendment the examiner accepted, and admitted the claim to be good, but rejected the application on the ground of abandonment. I have not, therefore, in this application, reiterated the original claim, but have claimed the helix or helices, and compound electro-magnet, in combination with an automatic circuit-breaker, in which the length of vibration of the circuit-breaking bar is regulated by suitable devices. I have also claimed the combination of the helix or helices, and compound electro-magnet, with a circuit-breaker in which the retractile force of the vibrating or circuit-breaking bar is regulated. Both of these features are original with myself, and their introduction distinguishes these claims from the original. The introduction of these and other claims is in accordance with the provisions of the act of congress."

The defendant is a corporation which manufactures and sells telegraph burglar-alarms, in which a circuit-breaker acts automatically to make and break the circuit, so that, by the movement of an armature to and from an electromagnet, a bell is rapidly struck by a hammer. The plaintiffs' specification, and figs. 10 and 11 of the drawings, show an arrangement whereby, when the circuit is broken and the magnet ceases to attract the armature, the armature is drawn 319 back or retracted to make the circuit again, by a weight attached to an arm, and adjustable thereon. Such weight overbalances the weight of the armature, and draws it away from the magnet when the circuit is broken. The adjustment of the weight or retractile force is made by moving the weight on a screw thread cut on the arm. In the defendant's apparatus, the retractile force which acts on the armature, to draw it away from the magnet, is a spiral spring, the tension

of which spring is made adjustable, by minute adjustments, which can be made while the apparatus is working and without stopping it. The weight in the plaintiffs' patent has the same extent of adjustable capacity. The defendant's apparatus has the combination of an electro-magnet, an armature, and an adjustable retractor. It also has a set-screw, against which the armature strikes when it is withdrawn from the magnet by the retractile force, such set-screw being adjustable and regulating the length of the vibration of the armature. It is quite clear that the defendant's apparatus infringes the eleventh, twelfth and thirteenth claims of the plaintiffs' patent, and the plaintiffs' expert so testifies.

It is contended, for the defendant, that the eleventh claim is not infringed, because the plaintiffs' weight and the defendant's spring are not mechanical equivalents. In the place in which the two are used, and in view of the service they perform, it is manifest that they are mechanical equivalents. It is also contended, that the object of making the spring adjustable is to ascertain, by using the adjustable functions of the spring, whether the apparatus is in working order originally, and that then the spring is left at the tension fixed upon. But the defendant makes the apparatus adjustable for some purpose, as to the retractile force, and such adjustability is confessedly availed of, in setting the apparatus for use originally. The words, "the adjustment," in the eleventh claim, are to be read as meaning the mechanical means of making the adjustment.

It is not really seriously contended that the twelfth claim is not infringed.

In regard to the thirteenth claim, it is contended that, in 320 the defendant's apparatus, the set-screw is set originally at a given point, to determine the extent of the vibration of the armature, and is not afterwards changed. But the apparatus is made with a

set-screw, which can regulate the length of vibration of the armature, and it is used for that purpose, if used only once. Moreover, the claim is to the set-screw, or its mechanical equivalent, so arranged as to be capable of making such regulation, and is a claim to the mechanical means.

The act of congress of March 19, 1868, authorized a renewal of the application made by Dr. Page, February 2, 1854, to the patent office, for a patent, "including therewith his circuit-breakers described by him prior to said application." Such application shows the combination of a self-acting electrotome; that is, an automatic circuit-breaker, with a compound and adjustable electro-magnetic core and a helix. The expression, "circuit-breakers described by him prior to said application," is to be understood by a reference to the petition to congress on which the act was passed. That petition refers to an apparatus invented by Dr. Page, in 1836, 1837 and 1838, and states that a distinguishing feature of it was an automatic or self-operating circuit-breaker, and that it embraced other novel features. The petition refers to various publications, some of which were descriptions by Dr. Page of circuit-breakers invented by him. Those are the circuit-breakers intended by the act, and the word "circuit-breakers" there includes such appendages or added instrumentalities, so previously described by Dr. Page, as were calculated to make the circuit-breaker more efficient of perfect.

The apparatus which embraces the invention covered by the eleventh claim of the plaintiff's patent is the one shown by figure 10 of the drawings of the patent. That identical drawing is found on page 258 of volume 35 of *Silliman's Journal*, published January 12, 1839, in an article by Dr. Page, commencing on page 252. There is, in the text, on pages 258 and 259, a description of the manner in which the retractile force of the automatic circuit-breaker is adjusted, 321

with references to the drawing and to the letters on it, which description is substantially the same as the description in the plaintiff's patent of what is shown by figure 10 of the drawings of the patent. The same description and drawing set forth and show the combination covered by the twelfth claim of the plaintiff's patent, as it is described in that patent.

Figure 1 of the drawings of the application of February 2, 1854, was, undoubtedly, the same as figure 9 of the drawings of the patent. Such application describes, by references to letters which must have been on such figure 1, the same apparatus, and by substantially the same description, which is described in the patent by references to letters on figure 9 of the drawings of that patent. The thirteenth claim claims the regulation of the length of vibration of the armature of an electro-magnet by a set-screw or its mechanical equivalent for that purpose. The specification of the re-issue says that the set-screw in figure 9 regulates the proximity of the armature to the magnet. It does so. As the set-screw is turned so as to press down further the spring which carries the armature, the armature is brought nearer to the magnet. Thus, its proximity to the magnet is regulated. Such proximity is a different thing from the tension of the spring, and a different thing from the rapidity of the vibrations of the spring. Nothing is claimed in the thirteenth claim as to regulating such tension or such rapidity. It is such tension and such rapidity which are stated in the specification to be regulated only to some extent by the set-screw, so that the regulation of them is imperfect. When the proximity of the armature to the magnet is regulated, its length of vibration is regulated, although the consequence of pressing down the spring and bringing the armature nearer to the magnet is, that the attractive force of the magnet on the armature increases more rapidly, as the distance between them is lessened, than the force of

the spring increases, and thus the same relation is not maintained between the tension or force of the spring and the attractive force of the magnet on the armature which the spring carries, as the spring and the 322 armature are brought down by the set-screw. So, the regulation of the rapidity of vibration of the spring and armature is imperfect. But the length of vibration of the armature, or the distance from the magnet to which the spring can carry the armature, is regulated; and that is all that the claim deals with. The description in the application of February 2, 1854, says that the set-screw adjusts the spring, against which it bears, and that the armature is attached to the end of the spring. Of course, it follows, from the construction, that, if the set-screw is turned so as to carry the spring down, the armature will be brought nearer to the magnet, although the description does not state that conclusion. It does state that the rapidity of the vibration of the armature depends on the strength of the magnet and the adjustment of the spring by the set-screw. On page 356 of an article by Dr. Page, in *Silliman's Journal*, volume 32, published in July, 1837, is a description and drawing of an automatic circuit-breaker, in which there is a metallic wire vibrating between the poles of a horseshoe magnet, with a thumb-screw for regulating the vibrations of the bar, they being made more rapid by bringing down the thumb-screw on the bar. This, of course, regulates the length of vibration of the bar, as well as the rapidity of the vibrations. This apparatus is referred to in the specification of the plaintiffs' re-issue, as described in *Silliman's Journal*, volume 32, pages 355 to 358, and as "consisting of a very small electro-magnetic bar, vibrating between the arms of a permanent magnet, the magnet changing its poles at each vibration, the length of vibration of the bar being regulated by a set-screw," and as being "a vibrating automatic circuit-breaker."

There is no doubt that what is covered by the thirteenth claim, as described in the specification and shown by figure 9, can take date from February 2, 1854, because described in the application of that date. But it cannot take date from the date of the publication in volume 32 of *Silliman's Journal*, pages 355 to 358. The specification of the re-issue draws, on its face, a clear distinction between an electromagnetic bar vibrating between the arms of a permanent 323 magnet, which changes its poles at each vibration, and a vibrating armature of soft iron, attracted towards the poles of an electro magnet, when such magnet is charged, no change of poles being necessary to effect the motion of the armature, and its weight causing it to fall away from the magnet when the circuit is broken. The former is the arrangement in volume 32 of *Silliman's Journal*, and the latter is that of figure 8 of the patent drawings.

The specification states that, into the arrangement shown by figure 8, an adjusting or set-screw may be introduced to regulate the extent of the vibrations of the armature, after the manner of the set-screw in the arrangement in volume 32 of *Silliman's Journal*. The same distinction is drawn in the specification, in reference to the vibrating armature shown in figure 9 of the patent drawings, which is an armature vibrating to and from an electro-magnet, and carried at one end of a horizontal spring, the magnet, when charged, drawing the armature down, and the spring carrying it up and away from the magnet, when the circuit is broken. Then, after thus describing the vibrating automatic circuit-breaker, with the electro-magnetic bar, the permanent magnet, and the regulating set-screw, and two forms of vibrating armature, such vibrating armature vibrating to and from an electro-magnet, temporarily charged, and then losing its power of attraction, on the breaking of the circuit, the thirteenth claim limits itself studiously to adjusting or

regulating the length of vibration of the armature of an electro-magnet. It discards all claim to adjusting or regulating the length of vibration of the bar in the circuit-breaker, which has a permanent magnet, The specification plainly says that an electro-magnetic bar, vibrating between the arms of a permanent magnet, is not a vibrating armature, because it says that a vibrating armature is preferable to an electro-magnetic bar vibrating between the arms of a permanent magnet, for the reason it assigns that when the permanent magnet is used, with the electro-magnetic bar, such magnet changes its poles at each vibration, while with the electro-magnet and the vibrating armature no such change of poles occurs, the motion of the 324 vibrating armature being effected by merely intercepting the galvanic current at suitable intervals. It is apparent, therefore, that the patent itself makes the adjusting or regulating the length of vibration of the armature of an electro-magnet by means of a set-screw, as set forth in the specification, a different invention from the adjusting or regulating by a set-screw the length of vibration of an electro-magnetic bar, vibrating between the arms of an permanent magnet. Hence, the date of the latter invention cannot be taken as the date of the description of the former invention. The matter of the thirteenth claim is patentable under the act of March 19, 1868, because it was described in the application of February 2, 1854, and not because it was described by Dr. Page, in connection with a circuit-breaker of his, prior to said application. It is not shown to have been described by him prior to said application.

The novelty of the invention covered by the eleventh claim is attacked. A publication in volume 1, page 534, of "Scientific Memoirs," in 1837, in London, edited by Richard Taylor, in regard to an apparatus of Dr. Schulthess, is adduced; also a publication in volume 6, page 25, of the "Report of the Seventh Meeting of the British Association for the

Advancement of Science,” in 1838, in London, in regard to an apparatus of the Rev. J. W. MaGauley. The same two publications are adduced against the novelty of the invention covered by the twelfth claim. The defendant has failed to establish by them the defence of want of novelty in the eleventh and twelfth claims. In the Schulthess apparatus there is no adjustment of the retractile force of an automatic circuit-breaker of any practical utility; none by minute increments and decrements, as in the plaintiffs’ and the defendant’s apparatuses, and the description gives no evidence of any design to regulate the retractile force, so as to accommodate it to varying currents of electricity. The description of the MaGauley apparatus is not so full and explicit as to entitle it to be considered as a description anticipating either the eleventh or twelfth claim. At page 532 of the same book above mentioned, which contains the description of the Schulthess apparatus, 325 is a description of an apparatus of Prof. Botto, which is adduced to affect the novelty of claims 11 and 12. Little need be said about it. The description is too vague and uncertain to entitle it to any weight. The defendant’s expert, Mr. Renwick, makes no allusion to it.

The MaGauley description is adduced against the thirteenth claim, but it is not sufficiently explicit.

There is nothing to affect the novelty of the eleventh, twelfth or thirteenth claims in any of the prior publications adduced in evidence.

The Morse model, with its placard, proves nothing of itself, and there is not a particle of legal evidence as to when it was made or by whom.

The answer of Dr. Page to the ninth interrogatory to him in the suit of *French v. Rogers* is of no force. It relates solely to certain adaptations made by Prof. Morse to a long or main circuit, for telegraphing purposes. Such is the purport of all the interrogatories.

It is contended, for the defendant, that the act of March 19, 1868, is unconstitutional and void. One ground urged is that as Dr. Page was, by section 2 of the act of July 4, 1836, (5 U. S. St. at Large, 118,) disqualified, while an employe in the patent office, from acquiring an interest in a patent, he necessarily, as a consideration for becoming such employe dedicated to the public, on becoming such employe, all inventions which he had previously made, and could not afterwards reclaim them. The soundness of this proposition cannot be admitted. The second section of the act of 1836 does not declare that a person taking employment in the patent office shall be held to have forfeited or dedicated to the public thereby any invention before made by him. It simply prevents him from acquiring an interest in a patent while he remains such employe. But, as soon as his employment ceases, he is in the same position, so far as any effect of the mere fact of his having been in such employment is concerned, as if he had never been in such employment.

It is contended that the act of March 19, 1868, declares only that the patent to be granted “shall be valid, notwithstanding 326 said Page’s invention may have been described or in use prior” to his application of February, 1854, and does not declare that it shall be valid, although Dr. Page might have, before said application, abandoned his inventions to the public; and that, if it did so declare, it would be void. It is urged that Dr. Page, by withdrawing his application of February, 1854, abandoned his inventions to the public. A consideration of all the language of the act, taken together, shows that congress intended to say, and said, that Dr. Page should have a patent which should be valid, if he was the first inventor of the inventions in question, notwithstanding all that had taken place in regard to the prior description by Dr. Page of the inventions, and in regard to their

use prior to his former application, and in regard to such former application. The fact of the withdrawal of the application was necessarily known, as it was a public record. That application had been rejected solely on the ground of the use by the public of the invention, with his presumed consent. No other form of abandonment was alleged, and none other is now alleged, except the withdrawal of the first application. Congress has a right to secure to an inventor the exclusive right to his invention for a limited time. It has no right to deprive any person of his property without due process of law. In the act in question it is provided that "any person in possession of said apparatus prior to the date of said patent shall possess the right to use and vend to other to use the said specific apparatus in his possession, without liability to the inventor, patentee, or any other person interested in said invention or patent therefor." So far as Dr. Page's right to obtain a patent was affected by his presumed consent to the public use of his inventions, or by his withdrawal of his first application, congress had full power, if he was the first inventor of those inventions, to exercise its sovereign power of waiving any obstacle arising from such consent, or from such withdrawal, by exempting Dr. Page from the operation of the general statutory rule. But neither such consent nor such withdrawal operated to vest in any one a right, as against the patent finally granted to Dr. Page, to use his inventions after the granting of such patent, 327 except to the extent covered by the proviso in the special act. Neither such consent nor such withdrawal vested in the general public, including the defendant in this suit, any right which amounted to a right of property, in the sense of the fifth amendment to the constitution of the United States, unless there was, in a particular case, a reduction of the inventions to use and particular case, a reduction of the invention to use and practice, by their embodiment in some apparatus,

prior to the granting of the patent. Then the apparatus had become property. But the inchoate right being unexercised before the granting of the patent, was not property, in such a sense as to make it possible to hold that to forbid the use, after the granting of the patent, of an apparatus made after the granting of the patent, is to deprive its owner of property which was in existence when the patent was granted. The proviso in the special act fully protects and preserves all that was property when the patent was granted. The defendant does not present any case within the proviso, nor any case except that of a right claimed, which any other one of the general public might equally have claimed at the time the patent was granted.

The application to be made under the special act was subject to the same rules as other applications, and the same right to a re-issue existed as in the case of other patents.

All the consideration urged against the validity of the patent, and the right of the plaintiffs to recover in this suit, have been examined, although some of them may not have been particularly alluded to in the forgoing decision. The result is that there must be the usual decree for the plaintiffs.

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