sulphuric acid, and the formation of this latter product appears moreover to be instantaneous.

If it appears that this latter supposition is true, then all specimens prepared upon any thing like a large scale, must be composed of a series of various products of different degrees of energy. The part first moistened may be the most energetic, and that which was first wet being able to burn only.

He also believes that the spontaneous explosions which have occurred from it, are due always to insufficient washing.

(His suggestions as to the instantaneous formation of the fulminating cotton, and the cause of its spontaneous explosions, may be correct, but he is decidedly in error as to the nature of the compound made by immersing the cotton in sulphuric acid and nitre. With the proper precautions a very excellent gun cotton may be prepared in this way.)

AMERICAN PATENTS.

Bain and Morse's Telegraphs.

Decision of Judge CRANCH in the case of ALEXANDER BAIN, Appellant, vs. SAMUEL T. B. MORSE, Appellee.

From the Daily Union, April 5, 1849.

Upon the question of interfering applications for a patent:

The Commissioner, upon hearing, decided that Mr. Bain's claim interfered with Mr. Morse's, and that Mr. Morse was the first inventor; and rejected the claim of Mr. Bain. From this decision Mr. Bain has appealed.

It is contended by the counsel for Mr. Morse, that the judge upon appeal has no jurisdiction of the question of interference,—that an appeal is given only upon the question of *priority of invention*; and that upon the question of interference the decision of the Commissioner is conclusive.

Whether it be thus conclusive, then, is the first question to be decided.

By the act of 1836, ch. 357, sec. 7, it is enacted, that "if the specification and claim shall not have been so modified as, *in the opinion of the Commissioner*, shall entitle the applicant to a patent, he may, on an appeal, and upon request in writing, have the decision of a board of examiners, to be composed of three, &c.: and on examination and consideration of the matter by such board, it shall be in their power, or of a majority of them, to reverse the decision of the Commissioner, either in whole or in part; and their opinion being certified to the Commissioner, he shall be governed thereby in the further proceedings to be had on such application."

This section is applicable to cases where there is no conflicting applicant, and shows that the legislature, by saying, "*if in the opinion of the Commissioner*," &c., did not intend to make that opinion conclusive. On the contrary, it provides "that the board shall be furnished with a certificate, in writing, of the opinion and decision of the Commissioner, stating the particular grounds of his objection, and the part or parts of the invention which he considers as not entitled to be patented; and that the said board shall give reasonable notice to the applicant, as well as to the Commissioner, of the time and place of their meeting," &c. All these provi-

sions were evidently intended to enable the board of examiners to revise the opinion and decision of the Commissioner, and show that his opinion was not to be conclusive.

By the 8th section of the same act, (1836,) it is enacted, "That wherever an application shall be made for a patent which, *in the opinion of the Commissioner*, would interfere with any other patent for which an application may be pending, or with any unexpired patent which shall have been granted, it shall be the duty of the Commissioner to give notice *thereof* to such applicants, or patentees, as the case may be; and if either shall be dissatisfied with the decision of the Commissioner on the question of *priority* of right or invention on a hearing thereof, he may appeal from such decision, on the like terms and conditions as are provided in the preceding section of this act; and the like proceeding shall be had, to determine which, or whether either, of the applicants is entitled to receive a patent as prayed for."

The question of priority of right or invention necessarily implies *interference*. The Commissioner, before he could decide the question of priority, must have decided that of interference; for without interference there can be no question of priority. Before I can have jurisdiction of the question of priority, I must be satisfied that there is an interference; and I must decide the question of jurisdiction as well as any other question which arises in the cause.

The opinion of the Commissioner, (mentioned in the 8th section,) that interference exists, only justifies him in *giving notice thereof* to the other applicant, and appointing a day to hear the parties upon that question.—He decides it only *pro hoc vice*, and for that purpose only. Upon that hearing he is to decide; and from that decision, if either shall be dissatisfied with it, on the question of priority, including that of interference, he may appeal; and upon such appeal, as I understand the law, the judge, in case of real interference, may "determine which, or whether either, of the applicants is entitled to receive a patent as prayed for." The scope thus given to the judge is broad enough to include the question of interference as well as that of priority, if it should arise.

By the act of 1836, ch. 88, sec. 11, it is enacted, "That in all cases where an appeal is now allowed by law from the decision of the Commissioner of Patents, to a board of examiners provided for in the 7th section of the act to which this is additional, the party, instead thereof, shall have a right to appeal to the Chief Justice of the District Court of the United States for the District of Columbia, by giving notice thereof to the Commissioner, and filing in the Patent Office, within such time as the Commissioner shall appoint, his reasons of appeal specifically set forth in writing; and also paying into the Patent Office, to the credit of the Patent Fund, the sum of twenty-five dollars.

"And it shall be the duty of the said Chief Justice, on petition, to hear and determine all such appeals, and to revise such decisions, in a summary way, on the evidence adduced before such a Commissioner, at such early and convenient time as he may appoint, first notifying the Commissioner of the time and place of hearing, whose duty it shall be to give notice thereof to all parties who appear to be interested therein, in such manner as the said judge shall prescribe.

"The commissioner shall also lay before the said judge all the original papers and evidence in the case, together *with the grounds of his decision*, fully set forth in writing, *touching all the points involved by the reasons of appeal*, to which the revision shall be confined."

One of the reasons of appeal in this case is, that there is no real or substantial interference between the two applications.

The question of interference, therefore, is involved by the reasons of appeal, and must be decided by the judge. By limiting the jurisdiction of the judge to the points involved by the reasons of appeal, the legislature has affirmed it to that extent.

The interference mentioned in the 8th section of the act of 1836, must be an interference in respect to patentable matters; and the claims of the applicants must be limited to the matters specifically set forth as their respective inventions; and what is not thus claimed, may, for the purpose of this preliminary inquiry, be considered as disclaimed.

The question then is, does Mr. Bain claim a patent for any matter now patentable for which Mr. Morse claims a patent?

To answer this question, it is necessary to ascertain for what patentable matter Mr. Morse now claims a patent.

In his specification, filed January 20, 1848, he says: "What I claim, as my own invention and improvement, is the use of a single circuit of conductors *for* the marking of my telegraphic signs already patented, for numerals, letters, words, and sentences, by means of the decomposing, coloring, or bleaching effects of electricity, acting upon any known salts that leave a mark as the result of the said decomposition, upon paper, cloth, metal, or other convenient and known markable material. I also claim the invention of the machinery as herein described, for the purpose of applying the decomposing, coloring, or bleaching effects of electricity acting upon known salts as herein before described."

The Commissioner, in his written decision in this case, says: "Such use of a single circuit [i. e. to produce marks upon chemically prepared paper] is not the point at issue; *nor is this claimed by either party*. Said Morse claims using a single circuit of conductors for a certain purpose, or in a certain way, viz: to mark his telegraphic signs; and also claims the machinery by which he accomplishes this purpose. Said Bain does not specifically mention in his claim using a single circuit, though this must be considered an essential part of his invention and claim, and is necessarily involved in the final clause of his claim, to wit: 'So that in either case these form the *received communication*, substantially in the manner and with the effects described and shown.'"

The Commissioner proceeds: The third clause of the claim of said Bain, with which the true claims of said Morse interfere, is as follows, to wit:

"Third, The application of any suitable chemically prepared paper, without regard to the chemical ingredients used for such a purpose, to receive and record signs forming such communications—such signs being made by the pulsations of an electric current or currents, transmitted from a distant station, said currents operating directly, and without the intervention of any secondary current or mechanical contrivance, through a suitable metal marking style that is in continuous contact with the receiving paper,

thereby making marks thereon; which marks correspond with the groups of perforations in the paper *composing* the transmitted communication; or may be given by the pulsations from the spring 45 and block 46; so that in either case these form the received communication substantially in the manner and with the effects described and shown, including any merely practical variations, analogous and equivalent in the means employed, and the effects produced thereby."

The Commissioner, in his written decision, says:

"The invention, it will be seen by reference to the specifications of the parties respectively, does not consist in the use of the electric current to make marks upon chemically prepared paper; nor making marks through a single line of conductors; nor could a claim to either of these devices have been entertained as patentable, as they have been long known."

Again: It is said by the counsel of Mr. Morse, "it is admitted that neither could patent the *battery*, the *circuit*, the prepared paper, or the marking by the electro-chemical process—it was only a *new combination* of the several parts so as to produce a new result, or *an old result in a better manner*, that either could patent."

Again: The Commissioner, in his "*reasons of decision*," says: "It is true, as Mr. Bain asserts, that no one can monopolize the use of air, fire, or water; but it is equally true that any one can monopolize the use of air, fire, or water, upon certain principles of operation which he may have invented or discovered; and this is precisely what the respective claimants, in this case, demanded as their rights, and gave rise to the interference, viz: each claimed the right to use, and exclude others from using, galvanic power to mark certain signs [which signs have been already patented by said Morse] upon chemically prepared paper through a single circuit of conductors.

"*A single circuit of conductors*, consisting either wholly of wire, or in part of wire and part of earth, for telegraphic purposes, *were not new*; the *signs or signals* to be marked *were not new*, the same having been before patented by said Morse, and *chemically prepared paper*, for receiving telegraphic signs by galvanism, *was not new*, the same having been patented in England in 1838, by Mr. E. Davy. Moreover, the *use of a single telegraphic circuit*, for marking the aforesaid signs upon paper, *was not new*, the same having been before patented by said Morse.

"Neither party claimed any one or any two of the above elemental features. *The invention of each was made up of the three combined*; and the advantages claimed to have been discovered by each, in these combined operations were identical."

If, then, these matters are not now patentable in themselves, there is nothing patentable in Mr. Morse's claim left to be interfered with, except his claim of a patent for his invention of the machinery described in his specification, or for his combination of machinery and materials, as described therein. The claim of each applicant, therefore, is reduced to the claim *for the combination of machinery and materials* which he has invented, and does not include any of the matters claimed in his specification which are not now patentable.

These combinations seem to me to be far from identical. Mr. Bain includes in his combination the use of the perforated paper, for *composing* the

communication; and of the style which passes the electric current through the perforated paper; and the machinery for transmitting the same communication to several different places at the same time. It is said that the style is not new; but he makes it an ingredient in his combination, and in that respect his combination differs from that of Mr. Morse, and it is a very important item in connexion with the perforated paper. He includes in his combination new patentable matter with old matter, not patentable, and thereby makes a new patentable combination. This new matter, thus introduced into the new combination, is admitted to be patentable in itself without combination with the old unpatentable matter; and, indeed, it seems to be a great improvement in the transmission of telegraphic information.

But it is said that Mr. Bain is only authorized to obtain a separate patent for each of those inventions, and cannot claim a patent for his new combination of the old and new together. If, however, his new combination of old materials be patentable, (which must be admitted, or it would not interfere with Mr. Morse's claim,) it seems to be not the less patentable because it includes the new matter in connexion with the old. The old matter may not, in itself, be patentable, but joined to the new matter, a combination may be formed which may be patented. He is not obliged to take separate patents for each new patentable matter. He does not now ask for them; he may be willing to ask only for a limited use of those new matters—to wit: *in combination*; and not for an exclusive use of them for every purpose to which they may be applicable.

Mr. Godson (in p. 63) says: "A combination or arrangement of old materials, when, in consequence thereof, a new effect is produced, may be the subject of a patent. This effect may consist either in the production of a new article, or in making an old one in a better manner, or at a cheaper rate." "This manufacture may be made of different substances mingled together, or of different machines formed into one, or of the arrangement of many old combinations." "Each distinct part of the manufacture may have been in common use, and every principle upon which it is founded may have been long known, and yet the manufacture may be the proper subject for a patent. It is not for those parts and principles, but for the new and useful compound, or thing thus produced by combination, that the grant is made; it is for combining and using things before known, with something then invented, so as to produce an effect which was never before attained."

The counsel of Mr. Morse, in argument, said:

"It is obvious, and is admitted by our adversaries, that Morse's instrument is a very different thing, in its *form* and *structure*, from Bain's."—But *form* and *structure* are very important matters in machinery; and if they enable the operator to do the work in a better manner, or with more ease, or less expense, or in less time, it is no interference; but is an improvement for which the inventor may have a patent.

When the application is for a patent for a combination of machinery and materials, form and structure become *substance*; they are of the essence of the invention; and an admission that Morse's instrument is a very different thing, in its form and structure, from Bain's, is an admission of a fact which is *prima facie* evidence, at least, that there is no interference between the two, and throws the burden of proof on the other side.

There was no evidence laid before the Commissioner of Patents upon the question of interference, so that he must have adjudged the interference upon a comparison of the two specifications; possibly without considering that the only patent which either could obtain would be a patent for his own combination—all the materials of which Mr. Morse's combination consists being old, and not now patentable.

The question is not now whether the claims of Mr. Bain and Mr. Morse interfere as to matters not now patentable, but whether they interfere as to matters *now patentable*; and the only matter now patentable in Mr. Morse's specification is his own combination of machinery and materials. That combination constitutes his machine; and his machine is admitted to be a very different thing, in its form and structure, from Mr. Bain's. Form and structure constitute the identity of machinery. The combination consists in *form and structure*; and the patent, if issued, will, I presume, be issued for the *form and structure* of the instrument.

It being admitted that the form and structure of Mr. Bain's instrument is very different from Morse's, there can be no interference in that respect, and if form and structure constitute the identity of machinery there is no interference in the two instruments; and if the instruments are the combinations, or the result of the combinations, for which patents are now claimed, there is no interference in the two instruments in regard to any matter now patentable.

But it is not necessary to rely alone upon the admission of Mr. Morse's counsel, to show that there is a great difference between the machinery used by the contending applicants to effect the object: i. e. the rapid transmission of intelligence by the power of the electric current. Any one who will compare the two specifications, and drawings and models, will at once perceive the difference.

A patentable improvement is not an interference.

The Commissioner, in his written decision, says: "It appears from the records of the office, that the application by said Alexander Bain, subject of Great Britain, was made April 18, 1848; and upon examination of his claims, it was found that the before-mentioned claim could be *admitted to patent*, no invention of a like character appearing in the public records of the office, nor in any printed publication. Prior, however, to the final issue of the case, the secret archives were consulted; and it was found that an application, filed by Samuel F. B. Morse, January 20, 1848, had been there deposited, in compliance with provisions of law, which presented claims conflicting with those, before mentioned, set up by said Bain."

This shows that but for the supposed interfering claim of Mr. Morse, Mr. Bain was entitled to his patent; and if there be no interference in respect to patentable matter, he is still entitled to a patent for his own combination.

But the counsel for Mr. Morse say: "There is an interference—that Bain's third claim palpably covers the whole of Morse's first claim; and, if granted, Bain could do all that Morse claims an exclusive right to do; he could write Morse's characters precisely as Morse does; and that herein consists the interference."

But the only matter now patentable, and claimed in Mr. Morse's speci-

fication, is *his peculiar combination of material and machinery, as therein described*. All the materials used in that combination are old; and he will not, under this patent, be entitled to the exclusive use of any of them separately, or in any other combination than that which he has described in his specification. There cannot be a patent for a *principle*; nor for the application of a principle; nor for an effect. Two persons may use the same principle and produce the same effect *by different means*, without interference or infringement, and each would be entitled to a patent for his own invention.—*Godson*, 63, 68, 74.

So, in the present case, although the power used by both applicants is the same, and the subject the same, yet, as the effect is produced by means which appear to me so different as to prevent an interference, *the question of priority of invention does not arise*. It is, therefore, not a case under the 8th section of the act of 1836, but under the 7th section of the same act. So that each of the applicants may have a patent for the combination which he has invented, and claimed and described in his specification—provided he shall have complied with all the requisites of the law to entitle him to a patent.

If this were a doubtful question, I should think it my duty to render the same judgment, so as to give Mr. Bain the same right to have the validity of his patent tested by the ordinary tribunals of the country, which Mr. Morse would enjoy as to his patent; and finally, to obtain the judgment of the Supreme Court of the United States upon it. For if the Commissioner and the Judge should reject Mr. Bain's application for a patent, the decision would be final and conclusive against him, unless he could obtain relief by a bill in equity under the 16th section of the act of 1836, and the 10th section of the act of 1839; which, it is said, is doubtful.

I am, therefore, of opinion, and so decide—

That there is no interference in the claims of these applicants, in relation to any matter (contained in their respective specifications) *now patentable*; and therefore that Samuel F. B. Morse is entitled to a patent for the combination which he has invented, claimed, and described in his specification, drawings, and model. And that Alexander Bain is entitled to a patent for the combination which he has invented, claimed, and described in his specification, drawings, and model; provided they shall, respectively, have complied with all the requisites of the law, to entitle them to their respective patents.

I deem it unnecessary, therefore, to decide upon any other points involved by the reasons of appeal.

W. CRANCH.

Washington, D. C., March 12, 1849.

FRANKLIN INSTITUTE.

Proceedings of the Stated Monthly Meeting, June 21st, 1849.

Samuel V. Merrick, President, in the chair.

Isaac B. Garrigues, Recording Secretary.

The minutes of the last meeting were read and approved.