From these claims, and a description of both patents as contained in the respective specifications, it appears that the purpose of both patents is the same, viz. to produce an embossed picture or photograph, and that the principal parts or functions of both methods are for the most part substantially similar. The only material difference between the two is that by complainants' method, as covered by the Taber patent, the picture to be embossed is transferred to a block, and then carved out in the block, while by the defendant's method, as covered by his patent, the outline of the picture is cut on the block, and the picture is then carved out, following the picture, which is set up in front of the carver. This difference in the two methods of transferring the pictures upon the blocks for the purpose of carving them out is, in my opinion, sufficient to distinguish the two patents, and to defeat any claim for infringement. It is true that the result accomplished, viz. an embossed picture, is the same with both methods. But infringements are not determined by the result accomplished. It is the means by which that result is attained which is determinative and controlling upon a question of infringement. Carver v. Hyde, 16 Pet. 513, 519; Le Roy v. Tatham, 14 How. 156; Corning v. Burden, 15 How. 252; Burr v. Duryee, 1 Wall. 531; Fuller v. Yentzer, 94 U. S. 288; Knapp v. Morss, 150 U. S. 221, 14 Sup. Ct. 81. To constitute infringement, there must be identity in means, not merely in purpose, function, or effect. 3 Rob. Pat. p. 46, § 893, and cases there cited. Besides, the patent issued to the defendant, the complainants' assignor (the Taber patent), not being a pioneer invention, is entitled to a prima facie presumption in favor of its patentability. Boyd v. Hay-Tool Co., 158 U. S. 260, 261, 15 Sup. Ct. 837; Putnam v. Bottle-Stopper Co., 38 Fed. 234; Ney Mfg. Co. v. Superior Drill Co., 56 Fed. 152; Kohler v. George Worthington Co., 77 Fed. 844. It does not appear that the defendant has infringed by using or following the method covered by the Taber patent, and in this view of the case it would seem to be unnecessary to pass upon the question whether either Taber or Marceau invented anything, inasmuch as both are restricted, as above stated, to the exact and specific devices or methods claimed by them, and the complainants have failed to show that the defendant has used the particular method to which they may be deemed entitled. From these views, it follows that the bill must be dismissed, and it is so ordered.

AMERICAN GRAPHOPHONE CO. v. LEEDS et al.

(Circuit Court, S. D. New York. June 18, 1898.)

1. PATENTS—ANTICIPATION—GRAPHOPHONES.

A recording cylinder for a graphophone, consisting of a blank made of a pliable substance, covered with tin or metal foil, on which indentations are made by a rigid indenting point, is not an anticipation of a cylinder of a waxy substance from which the metal foil is omitted, and upon which an engraved record is made.

2. SAME.

Where a patentee has made an actual living invention, which the public are able to use, the court is not called upon to struggle to decipher an an-

ticipation in the unfinished work and the surmises of earlier students of the same subject.

3. SAME—PATENTABLE COMBINATIONS.
The combination of a loosely mounted reproducer of a graphophone with the grooved tablet or cylinder, or other body having a sound record engraved thereon in the form of a groove in a waxy substance, is a true and patentable combination.

4. SAME—INFRINGEMENT.
The so-called "metallic soap record" for graphophones, which consists substantially of a mixture of stearic acid or stearin and ozocerite, paraffin, and ceresin, and is a cohesive, wax-like material, without fiber, is within the claims of a patent describing a sound record formed of a waxy or amorphous or slightly cohesive substance, which can readily be cut and readily be removed in chips or shavings.

5. SAME—CONTRIBUTORY INFRINGEMENT.
One who makes and sells the loosely mounted sound reproducer of the patent alone, with intent that it shall be used with sound records made and sold under a patent covering a combination of the record and reproducer, is guilty of infringement.

6 SAME.
The Bell & Taintor patent, No. 341,214, for improvements in recording and reproducing speech and other sounds, construed, and *held* valid and infringed as to claims 19, 20, 21, 22, 23, and 24, and invalid for want of invention as to claims 37 and 38.

This was a suit in equity by the American Graphophone Company against Loring L. Leeds, James H. White, and Leroy W. Baldwin for alleged infringement of a patent for an improvement in recording and reproducing speech and other sounds.

Philip Mauro, for complainant.
William Houston Kenyon and A. Parker Smith, for defendants.

SHIPMAN, Circuit Judge. This bill in equity relates to the alleged infringement of claims 19, 20, 21, 22, 23, 24, 37, and 38 of letters patent No. 341,214, dated May 4, 1886, issued to Chichester A. Bell and Sumner Taintor for an improvement in recording and reproducing speech and other sounds; in other words, for the instrument now known as the "Graphophone." These claims are as follows:

"(19) The combination, with a reproducing style, of a mounting therefor, which leaves said style free to move laterally, and thereby adjust itself automatically to a sound record, substantially as described. (20) The reproducer loosely mounted on a suitable support, so that the reproducing style is capable of a lateral movement, and may, in consequence thereof, adjust itself automatically on the record, substantially as described. (21) The reproducer mounted on a universal joint, and held against the record by yielding pressure, substantially as described. (22) The combination, with a grooved tablet or other body having a sound record formed therein, of a reproducer having a rubbing style loosely mounted, so that it is free to move laterally, and thus adjust itself to the groove, substantially as described. (23) The combination, with the tablet or other body having the sound record formed therein as an irregular groove with sloping walls, of a reproducer having a style for rubbing over said record, and mounted on a universal joint, substantially as described. (24) The combination, with a sound record formed in wax or a wax-like material, of a reproducer having a rubbing style for receiving sonorous vibrations from said record, substantially as described." "(37) The reproducer mounted on a hinged arm, and provided with a sound conveyer extending lengthwise of said arm, substantially as described. (38) The reproducer mounted on a hinged arm, and provided with a sound conveyer

extending lengthwise of said arm, and connected at the hinge with an exterior sound conveyer, substantially as described."

Prior to the patent in suit there had appeared the French patent to Charles Cros, No. 124,213, dated May 1, 1878; an article in Le Rappel, dated December 14, 1877, in regard to the Cros device; an article in the Journal Cosmos, in December, 1878, describing the phonograph of the Abbe Carbonel; and articles in 1879 describing Lambrigot's phonograph; and there had also appeared Edison's phonograph, described to some extent in his United States letters patent dated February 19, 1878.

The French devices were complicated, and, outside of experimental and scientific investigation, were of no value as practical instruments. From the Edison phonograph much was anticipated. It came into public use in about 1879, but in actual service it disclosed radical defects, and it ceased in 1880 to have a position as an article of ordinary use. The record was made by indentation upon a surface of yielding material, such as paper saturated or coated with something like paraffin, and a sheet of metal foil, or tin foil, over the underlying sheet. The tin foil received an impression from a rigid diaphragm having an indenting point secured to its center. The great difficulty arose from the pliable character of the material upon which the record was attempted to be made. As stated by Mr. Taintor, the indenting point bent the tin foil down and around the point of contact, and distorted the indentations. The record was perishable, was easily obliterated, and was easily injured when removed from the machine, and after a short trial the tin-foil indenting process fell into disuse. The experiments of the patentees of the patent in suit commenced in 1881, and resulted in the abandonment of any process of indentation, or of embossing, upon a pliable material, and in the substitution therefor of the cutting or the engraving the record in the form of a groove with sloping walls in a waxy substance, without fiber, and slightly cohesive, in which a clean cut could be made. It was found necessary that the material should be cut or engraved at the point of the blade, and that it should be capable of being readily removed in chips or shavings. The rigid reproducer was also abandoned, and a loosely mounted reproducer was substituted in its place, so loosely mounted that, resting against the recording material by gravity, it was guided by the record, and followed all the elevations and depressions in the groove. The material of the record and the reproducer are each necessary parts of the invention. Either part without the other would be ineffectual, but in combination both tend to make an operative and successful instrument. Judge Grosscup, who did not think that the reproducer by itself was patentable, attributed great value to its combination with the waxy record. He said in the Amet Case:

"The substance upon which the record is cut, and the reproducer thus loosely mounted, by which it is enabled to follow the undulations of the groove, together constitute an effective portion of the mechanism. Either, without the other, would be useless for the purpose of a graphophone or phonograph.

Together they bring about a successful result. They therefore constitute a patentable combination." 74 Fed. 789.

This peculiarity of the dual invention of the material for an engraved record and the reproducer, and the fact that the latter was brought into being to make the former of practical value, is of much importance in the proper construction of the quoted claims of the patent, if it should be held that the reproducer alone, though novel, is not patentable. The defenses are numerous, and extend to the details of the specification.

The first position in regard to the claims in suit is that any claim based upon the originality of the new sound record, and especially claim 24, is void, because sound records formed in wax, or wax-like material, were old in the art of reproducing speech, and stress is laid upon Edison's experiments. Mr. Edison did experiment upon almost every material, and undoubtedly experimented upon wax, and discarded one material after another, until, in his completed phonograph, he used a yielding material, and required that it should be covered with tin or metal foil. In his British patent No. 1,644, of 1878, which contained his ideas, both completed and crude, he describes the material to be indented as follows:

"The material upon which the record is made may be of metal foil, such as tin, iron, copper, lead, zinc, cadmium, or a foil made of composition of metals. Paper or other materials may be used, the same being coated with paraffin or other hydrocarbons, waxes, gums, or lacs, and the sheet so prepared may itself be indented, or the material, say paper, may be made to pass through a bath of hot paraffin and thence between scrapers. Thin metal foil is now placed on the material, and the sheet passed through rollers, which give it a beautiful smooth surface. The indentation can now be made in the foil and the paraffin or similar material, and the indenting point does not become clogged with the paraffin in consequence of the intervening foil."

He did not use, unless experimentally, a blank made of wax, or of a waxy substance, which was to become, by itself, the sound record to be used for reproduction. It is unnecessary to describe the theories of the French scientists in regard to the material for recording, because, while they used wax or stearin or paraffin upon the surface of a recording cylinder made of metal or of glass, none of them attempted to reproduce the sounds from a wax or paraffin or stearin record, but the reproduction was from the metal surface. The declaration in the specification that "no one has reproduced sounds from a wax record by rubbing a style or reproducer over it" is true; and it is furthermore true that this combination first shown in the patent in suit, either in method of operation or in the character of its results, converted the noteworthy, but short-lived, instrument of Edison into a machine of widespread use and of permanent utility. Each member of the combination was new, the result was new, and was not attained by the application of an old device to a similar subject. Pennsylvania R. Co. v. Locomotive Engine Safety Truck Co., 110 U. S. 490, 4 Sup. Ct. 220.

The defendants, upon the theory that claims 19, 20, and 21 relate merely to a loosely-mounted reproducer, are of the opinion that a reproducer capable of automatically adjusting itself to the record

groove, and loosely mounted, after the general plan of the patented invention, was disclosed in the Edison British patent of 1878. This patent contained some of the suggestions and sketches of various sorts and kinds which Mr. Edison had thought of or had made during his experiments upon a subject novel, intricate, and scientific, which required manifold and delicate experiments, and in which he took a great interest. Some of his surmises and beliefs in regard to what could be or might be done were thrown into this patent. The defendants' expert, with manifest consciousness of the difficulties in the text, translates the language of the descriptions of Figs. 27, 34, and 37 to mean that Edison had in his mind a gravity reproducer, or to show that such a reproducer can be inferred from the language. These descriptions are confessedly vague, and it is confessedly difficult to know the interpretation which the writer placed upon some of the words which he uses. Bell and Taintor made an actual, living invention which the public are able to use, and a court is not called upon to struggle to decipher an anticipation in the unfinished work and the surmises of earlier students of the same subject.

Having ascertained in what the invention of the patentees consisted, it is necessary to know whether it was aptly described in the claims. The two improvements of importance with respect to claims 19 to 24, inclusive, are the new material for a sound record upon which vertically undulating grooves with sloping walls were engraved by a cutting style; and the reproducer which rested upon these grooves by gravity, and moving along them, "imparted to a second diaphragm the vibrations incident to the elevations and depressions of the bottoms of the groove." A leading, and perhaps the only, novel element in this gravity or "floating" reproducer is the universal joint, and Judge Grosscup was not disposed to regard its adaptation to a new use as a patentable invention. He thought that while that element, separately considered, was not invention, the combination which included it with the new record was patentable, and called the combination "the mechanical means whereby the art of recording and reproducing speech and sounds is first made practically effective. To deny to it the dignity and quality of invention would be to deny the patentability of every first great mechanical success."

I think it may be that the improvement in the reproducing style was more than the mounting of an old style upon a universal joint, and that the reproducer may be patentable itself, because the style needed, not only the lateral motion produced by a universal joint, but also an elastic and yielding pressure against the record; but, if the reproducer is not patentable by itself, I fully agree with Judge Grosscup's idea of the patentable character of the combination which appears in these claims, and concur with him that any device which combines the reproducer described in claims 19 to 24 with the grooved tablet, or other body having a sound record as described in the patent, and especially in claims 22 and 24, is an infringement of the patent in suit. It is stated that claim 23 was not in the Amet Case. This construction is not so broad as that which the solicitor for the patentees apparently hoped for, but it limits the claims to the improve-

ments which, in combination, created the new machine, and which are abundantly described in the specification.

Infringement is denied because their apparatus is not intended for use "with a sound record formed in wax or a wax-like material," but with the sound record now commonly in use, and called a "metallic soap record," which is said to have been the invention of Mr. Edison, and to have been patented in 1890. The material which is described in the patent is a waxy or amorphous or slightly cohesive substance, which can readily be cut, and can readily be removed in chips or shavings. The metallic soap blank is substantially a mixture of stearic acid or stearin and ozocerite, paraffin, and ceresin, and is a cohesive, wax-like material, without fiber. Mr. Edison in two patents, Nos. 484,583 and 484,584, in speaking of the phonogram blanks in use in 1892, says: "The surface is ordinarily of wax, or a stearate or hard metallic soap or other wax-like material or composition." The criticism in regard to the material is not well founded.

The defendants' machine is simply for the purpose of reproducing the customary wax-like sound records of the patent, which are cut in a groove with sloping walls. These records are made by the owner of the patent, and sold separately for reproduction. The reproducing device "consists of a reproducing point on one end of a glass tube, the other end of which is loosely mounted on the frame of the machine. When a sound record is on the mandrel, the reproducing point rests by gravity upon the record, and with a yielding pressure, which is rendered adjustable by means of the adjustable coiled spring. The mounting of the reproducer tube or hollow arm is a free or universal mounting, so that it can swing laterally or in a longitudinal plane at the same time that the reproducing point rises and falls in following the sinuosities of the sound record. In operation, the reproducer is allowed to rest, with its free end carrying the reproducer point, on the record cylinder. As the record cylinder revolves, the reproducer swings laterally, being guided solely by the fine sound groove, and being kept in place by the sloping walls thereof."

So far as the reproducing device is concerned, there is no substantial controversy in regard to infringement, but it is said that the defendants do not infringe claims 22, 23, and 24, because they neither make nor sell the sound records, but simply sell this reproducing device, to be used as the purchaser chooses. It is well known that the complainant makes many records, embodying pieces of music, addresses or other speech, and sell them to be used by the owners of a graphophone. The defendants' device is an economical infringement of one element of the claim, which is sold for the purpose of being used in connection with the other element. The design of the defendants' machine, and their intent in selling it, are to have it used in connection with the engraved sound record of the complainant. There was a very little hearsay, but no proof, that the defendants' device was used with a celluloid record, and it sufficiently appears that its only actual use was in connection with the patented record. Infringement of the combination of claims 22, 23, and 24 is the legal result.

I do not think that the improvement described in claims 37 and 38 possesses the element of patentable invention. It is an obvious method of construction, when the reproducer is mounted in a hinged arm.

Let there be an interlocutory decree against an infringement of claims 19, 20, 21, 22, 23, and 24, and for an accounting, which will be drawn substantially in the form settled by Judge Grosscup in the Amet Case, and printed in 74 Fed. 1008.

THOMSON-HOUSTON ELECTRIC CO. v. UNION RY. CO. et al.

(Circuit Court, S. D. New York. June 11, 1898.)

1. PATENTS—INVENTION.
An improvement which consisted in pivoting the contact arm of an underrunning trolley system to a rotating support on the top of the car, to which the spring which presses the arm upward is also attached, rather than to the car itself, so that the arm may be swung from one end of the car to the other, required only mechanical skill.

2. SAME—CONTACT DEVICES FOR ELECTRIC RAILWAYS.
The Van Depoele patent, No. 495,383, for improvements in overhead contact devices for electric railways, is void, as to claims 11, 12, and 13, for want of patentable invention.

This was a suit in equity by the Thomson-Houston Electric Company against the Union Railway Company and the Walker Company for alleged infringement of the Van Depoele patent for improvements in overhead contact devices for electric railways.

Frederic H. Betts, for complainant.
Charles E. Mitchell, for defendant.

SHIPMAN, Circuit Judge. This is a bill in equity based upon the infringement of claims 11, 12, and 13 of letters patent No. 495,383, applied for on June 20, 1888, and issued on April 11, 1893, to the administrators of Charles J. Van Depoele, for improvements in overhead contact devices for electric railways. The application for the patent was sworn to by Van Depoele on November 15, 1887. The three claims which were infringed are as follows:

"(11) In an electric railway, the combination of a car, an overhead conductor, a standard on the car, a rotating support thereon, an inclined contact-carrying arm hinged upon said support, and a tension spring secured so as to rotate with the support, and acting upon the said arm, for holding the contact device in position. (12) In an electric railway, the combination, with a car, of a standard on the car, a rotating support thereon, an arm hinged upon said support, and provided with a grooved or flanged contact device for engaging with a suspended conductor, and a tension spring secured so as to rotate with the support, and acting upon the said arm, for holding the contact device in position. (13) A reversible contact device for an electric railway vehicle, consisting of a standard, a rotating support thereon, a contact-carrying arm hinged upon said support, and a tension spring secured so as to rotate with the support, and acting upon the contact-carrying arm, for holding the contact device in position."

The inventor said in his specification that it related to improvements upon the invention which formed the subject of a prior ap-