

benefit conferred by the Toepfer invention, cannot weigh against the well-settled rules which must govern in construction of the patent. The complainants' bill must be dismissed for want of equity. So ordered.

SMITH v. MACBETH.

(Circuit Court of Appeals, Second Circuit. February 14, 1895.)

No. 35.

1. PATENTS—LIMITATION OF CLAIM—REJECTION AND AMENDMENT.

An applicant who, after rejection of a claim upon reference to an anticipating device, amends the same by adopting language narrower than the reference required, is nevertheless bound by the limitations thus adopted.

2. SAME—INTERPRETATION OF CLAIM—INFRINGEMENT.

In a patent for a magneto-electric machine operated by a rack bar, a claim for a switch arranged in the condensing circuit in the path of the "operating device," and adapted to be opened "by direct impingement of said device thereupon," held to cover a construction in which a shaft attached to the rack bar carried a rigid arm having a stud which impinged upon a latch, and thereby released a spring which then opened the circuit. 64 Fed. 797, reversed.

3. SAME.

The Smith patent (No. 201,296) for improvements in magneto-electric machines construed, as to the first claim, and held infringed. 64 Fed. 797, reversed.

Appeal from the Circuit Court of the United States for the Eastern District of New York.

This was an action by H. Julius Smith against James Macbeth for infringement of a patent relating to magneto-electric machines. The circuit court dismissed the bill on the ground that there was no infringement in the use of defendant's machine. 64 Fed. 797. Complainant appealed.

Leonard E. Curtis and Thomas B. Kerr, for complainant.

James A. Hudson and Arthur S. Browne, for defendant.

Before WALLACE, LACOMBE, and SHIPMAN, Circuit Judges.

SHIPMAN, Circuit Judge. The bill in equity in this cause was based upon the alleged infringement of the first claim of letters patent No. 201,296, dated March 12, 1878, and issued to H. Julius Smith, for improvements in magneto-electric machines. The defendant principally relied upon the proposition that this claim was limited by the proceedings in the patent office to such arrangement or construction of the elements of the combination as to exclude his machine from a just charge of infringement. The circuit court consented to this conclusion, and dismissed the bill. From its decree the complainant appealed to this court.

The object and the details of the alleged invention are described in the specification as follows:

"This invention relates to certain improvements in that class of magneto-electric machines used chiefly for developing an intense current of electricity for firing fuses in blasting, or igniting gas jets, and known as 'dynamo-

magnetic machines.' It is well known that in a machine of this class the electricity is developed and accumulated in the electro-magnets until a sufficient charge to effect the desired purpose has been obtained, the current being automatically shifted at the proper moment from the condensing circuit to a circuit through which the effect intended is to be produced. The intensity of the electric current produced by this and other magneto-electric machines depends upon the rapidity with which the armature is rotated, and the motion has heretofore been obtained by devices giving a uniform motion; but I have found that in order to obtain the best effect, especially in a machine used for firing blast fuses, the armature should have an accelerated velocity of rotation; its speed increasing from the beginning of its movement to the instant of discharge or shifting of the current from the condensing to the working circuit, and it is important that this shifting should occur promptly at the instant the rotating device has reached the limit of play arranged for its assigned culmination of speed. The shifting of the current in machines heretofore constructed has been performed by hand, and by an automatic switch governed and operated by the electric current, the latter means being preferable; but I have still found such switches rather objectionable in use, owing to the complication of the apparatus, and liability to derangement of the parts. It is the object of my invention to overcome the objections which I have mentioned. To this end it consists—First, in the combination, with the operating device of the rotary armature of a dynamo-magneto-electric machine, of a bridge or switch arranged in the condensing circuit of said machine, and in the path of said operating device, and adapted to be opened by direct impingement of said device thereupon; second, in the combination, with the operating rack bar of the rotary armature of a dynamo-magneto-electric machine, of a shunt or bridge consisting of a spring-bar terminal of the condensing circuit and a rigid terminal plate, with which said spring bar is kept in contact by its elasticity, said spring bar being arranged in the path of the rack bar, so as to be struck and moved from the rigid terminal by said rack bar at or near the completion of its armature operating stroke, whereby the condensing circuit of the machine is broken by the displacement of the shunt or bridge, and the whole developed current of electricity required to pass to a working circuit for application, substantially as above set forth; third, in the combination, with the rotating armature of a dynamo-magneto-electric machine, of a loose pinion arranged upon the arbor of said armature, a rack bar gearing with said pinion, and a clutch for engaging with and disengaging from said pinion, causing the arbor and armature to revolve therewith when rotated in one direction, but which disengages therefrom, and permits said pinion to revolve in the opposite direction, independently of the arbor and armature, whereby is secured a rotation of the armature in one direction only, and depolarization of the magnet or magnets prevented."

The patentee also says in the specification that, while he has shown a rack and pinion for operating the armature, it is obvious that the same result can be accomplished by the use of levers, segments of circles, or other devices for producing reciprocating motion.

The first claim is as follows:

"(1) The combination, with the operating device of the rotary armature of a dynamo-magneto-electric machine, of a bridge or switch arranged in the condensing circuit of said machine, and in the path of said operating device, and adapted to be opened by direct impingement of said device thereupon, substantially as and for the purpose set forth."

The predecessor of this improved machine, and the one which most nearly resembled it, was the Siemens and Halske machine for blasting mines, which was described in 1868 in English and Austrian publications, and which was also used in this country to a limited extent. Its operating device was a crank, which

must have two dead centers where the application of force is stopped, and as a consequence the speed of the machine could not be continuously accelerated. The gist of the invention of the patentee was the constantly "accelerated velocity of rotation" of the armature from the beginning of its movement to the instant when the current was shifted, and the mechanical connection of the switch with the operating device by which the switch was opened by direct impingement of such device at the time when the armature was at its highest speed.

The defendant's theory is not that this invention was anticipated by any one pre-existing machine, taken by itself, but that its important features were separately found in two older machines, and could have been combined without the exercise of inventive skill. It is said that anybody could have taken the rack bar of the English patent of 1871, to Geminiano Zanni, for an improvement in magnetic bells, and have substituted it for the crank of the Siemens and Halske machine, and have produced the Smith invention. It is true that anybody could have done this, if he had ascertained the cause of the defect in the Siemens machine, and the kind of motion, and the proper means of applying it, which would obviate the defect; but the defendant's theory, like many theories of a similar character, assumes, what is not apparent, that the cause of the pre-existing defect, and its remedy, were open to the discernment of the skilled mechanic.

Turning now to the question of infringement, the simple mechanism by which the rack bar is made to break the condensing circuit is described in the specification as follows:

"When the rack bar has nearly reached the downward limit of its movement, its lower end strikes upon the free end of the spring bar, H, removing said spring from contact with the bridge or loop, G, and breaking the condensing circuit, upon which, as will be readily understood, the whole current will flow over the working circuit or circuit of application."

The defendant's device is described in Judge Wheeler's opinion as follows:

"In the defendant's machine the armatures are rotated by pulling upward with increased velocity a bar attached to the end of a lever pivoted on a shaft, and moving a toothed segment meshed in the pinion. The switch in the condensing circuit is opened by a stud on a cam pivoted on the same shaft with the lever, which lifts a latch, and lets a spring move it, as the operating bar reaches its upward limit, and the electricity is accumulated to its greatest intensity, and the current is thereby sent by the working circuit to the fuses."

The defendant's rack is segmental, and the handle is not directly attached to it, but is connected with it by a link pivoted on the shaft which is attached to the rack. The handle is pulled up, instead of being pushed down, as in the patented device. The rack bar of the patent directly impinges upon the switch. The shaft of the defendant's machine does not impinge upon the switch, but the arm or cam rigidly attached to it has a rigidly attached stud which strikes and opens a part of the switch. The circuit court was of opinion that this construction did not infringe the first claim, because:

"The switch in the defendant's condensing circuit is not in the path of the operating device, which consists of the bar lever and toothed segment extending from the handle to the shaft on which the lever is pivoted, but is situated beyond the shaft, and outside of the movement of those parts, and it is not opened by the direct impingement of any of those parts constituting the operating device, but indirectly by the shaft moving the cam which carries the stud that lifts the latch."

The first claim requires the switch to be in the path of the operating device, and to be opened by the direct impingement of the device thereon, and was a substitute for a claim rejected by the patent office on account of its vagueness, and because, being vaguely expressed, it was deemed to be anticipated by the general terms of a pre-existing patent to Edward Weston (No. 183,977), dated October 3, 1876, which was for an improvement in dynamo-electric machines to overcome a difficulty when they were used for the purpose of electro-depositions. Although the patentee might have made the language of his claim more broad, and yet have clearly differentiated his invention from that of Weston, he is bound by the terms of limitation which he adopted, and there can be no infringement unless the switch is in the path of the operating device, and is opened by its direct impingement. The question of most importance in this case is in regard to the meaning of the term "operating device." Should it be limited to the rack bar, or to the rack bar and a shaft attached thereto, or can it properly be extended to an arm rigidly attached to the shaft? The circuit court considered the device to be the bar lever, toothed segment, and shaft on which the lever was pivoted, and therefore found that the movements created by the arm were not in the path of the device, and were only indirectly communicated by the shaft. In our opinion the arm was a part of the shaft, and a part of the operating device, and that whatever was in its path was in the path of the device, and that, therefore, its movement was the movement of the shaft. It is less clear that the switch is opened by the direct impingement upon it of the operating device. The stud which opens the latch is rigidly carried upon the arm, but the circuit court evidently did not regard the latch as a part of the switch. Its use is to keep the switch closed, and, when the latch is lifted and the spring is released, the switch is opened. The arm directly impinges upon, and thereby opens, the latch, which is a part of the switch, whereas, in the patented device, the rack bar directly impinges upon and opens the elastic spring-bar terminal of the circuit. We are of opinion that by the defendant's mechanism there is not a substantial departure from the terms of the first claim, and that infringement should have been found by the circuit court. The decree of the circuit court is reversed, with costs, and the cause is remanded to that court, with instruction to enter a decree for the complainant, with costs, in accordance with the foregoing opinion.

DRAINAGE CONSTRUCTION CO. v. ENGLEWOOD SEWER CO.

(Circuit Court, D. New Jersey. March 27, 1894.)

1. PLEADING IN PATENT CASES—DEMURRER FOR WANT OF INVENTION.

Where a patent sued on states that it is predicated upon an improvement set forth in a certain prior patent to the same inventor, this does not bring such former patent into the bill, so as to enable the court to make comparisons between the two upon a demurrer alleging want of invention shown upon the face of the patent. Such prior patent, as part of the prior state of the art, must be proved by legal testimony at the hearing.

2. SAME.

When a bill for infringement is demurred to for want of invention, appearing upon the face of the patent, every doubt should be resolved against the demurrer.

3. SAME—SEWAGE SYSTEM.

The Waring patent (No. 278,839) for an improvement in sewerage and draining towns held not void, upon its face, for want of patentable invention.

This was a bill by the Drainage Construction Company against the Englewood Sewer Company for infringement of a patent relating to sewage and drainage of towns. Defendant demurred to the bill on the ground that the patent, on its face, disclosed no patentable invention.

John G. Milburn, James Buchanan, and George O. G. Coale, for complainant.

Samuel A. Duncan, for defendant.

GREEN, District Judge. The bill of complaint in this case is filed to restrain the alleged infringement by the defendant of letters patent No. 278,839, granted June 5, 1883, to the plaintiff, as assignee of George E. Waring, Jr., for an "improvement in sewerage and draining towns." The bill is in the usual form of such bills, and sets out the invention, the issuing of letters patent to the inventor, the infringement by the defendant, and the other formal parts of a bill for injunction and account. To this bill the defendant has interposed a demurrer, and for cause thereof alleges that "it abundantly appears on the face of the said patent, and from the earlier patent, No. 236,740, referred to and made a part of the specification of said letters patent No. 278,839, that the last-named patent does not disclose any patentable invention." In the specifications of the letters patent which are the subject of the present suit is a reference to a former patent, in these words:

"The Improvement hereinafter described has reference to, and is predicated upon, the improvement in sewerage and draining cities set forth in letters patent No. 236,740, dated January 18, 1881, heretofore granted to me, and to which reference may be had."

And the contention of the defendant is that, if reference be had to the former patent, it will become evident that the present improvement has no patentability, for want of invention. It is settled that such want of patentable invention may be objected by way