Case No. 11,241.

POILLON v. SCHMIDT.

{6 Blatchf. 299; 3 Fish. Pat. Cas. 476; 37 How. Prac. 77; Merw. Pat. Inv. 321.}[1]

Circuit Court, S. D. New York. Jan. 30, 1869.

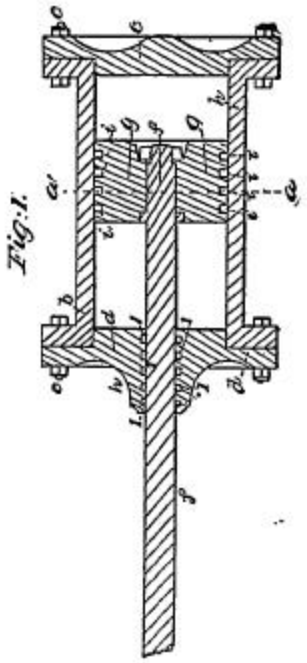
PATENTS—VALIDITY—CONSTRUCTION OF CLAIM—ANTICIPATION—"AN ART OR PROCESS."

1. The letters patent granted to Peter Poillon, July 21st, 1857, for "means for rendering joints steam-tight," are valid.
2. The claim of that patent, to "the method, herein described, of causing steam to become a packing to itself, in steam cylinders or other parts of steam machinery, by allowing the steam to act in one or more grooves, substantially as specified," does not claim the use of such grooved surfaces in themselves, or in connection with air, instead of steam.
3. The patentee having discovered the fact that steam might he made self-packing, when introduced into small grooves in one of two contiguous surfaces not actually in contact with each other, his patent is not invalidated by the fact that air had previously been made self-packing in an air engine by the use of like grooves.
4. The claim of such patent is a claim to an art or process.
5. The case of Le Roy v. Tatham, 22 How. {63 U. S.} 132, cited and applied.

This was an action at law {by Peter Poillon against Joseph Schmidt} for the infringement of letters patent {No. 17,855} granted to the plaintiff on the 21st of July, 1857, for a new and useful "means for rendering joints steam-tight." The invention was made by William S. Gale, and assigned to the plaintiff. The specification spoke of the invention as "a substitute for all known means of packing pistons or other steam joints." It consisted of a grooved or a corrugated surface, with an opposing smooth or plain surface. The grooves could be made in the surface of the piston, or in the interior surface of the cylinder, as preferred. The specification described as follows the working of the structure:

The steam, as it is let into the cylinder, rushes in between the piston and cylinder, and fills up the grooves and the intervening space between the piston and cylinder, where it practically forms a complete packing. The steam which fills the grooves and intervenes between the piston and cylinder, also acts as a cushion to partially relieve the piston and cylinder from contact and friction. The grooves may be one or many, at more or less distance apart, more or less wide or deep, and they may be perpendicular, or more or less oblique to the moving surface and of any sectional form. The best method is to groove one moving surface and leave the opposing surface smooth, to make the grooves thin and frequent, and the corresponding ribs or flanges of the same, or about the same, thickness as the width of the grooves. The grooves need not be deep. From one-quarter to one-half inch will answer. The piston can be of any ordinary size and dimensions now in use, or a trifle larger. It should fit easy, and does not require to be in actual contact with the cylinder. To cut the grooves perpendicular to the axis of the joint or to the moving surface, and in the sectional form of a parallelogram, is the better way, and sufficient for all purposes, and is the most simple and cheap in construction. See representation in the accompanying drawing.

{Drawing of patent No. 17,855, granted July 21, 1857, to W. S. Gale. Published from the records of the United States patent office.}



"It will be apparent that my grooves and intervening ribs may be used on any joint between two surfaces subject to the operation of steam under pressure, to cause steam to become self-packing. The particular point of my invention and discovery, and its importance, will be perceived from the following. Since the introduction of steam as a motive power, it has always been supposed that two contiguous surfaces could only be rendered steam-tight by actual contact. Hence, every steam engine that has heretofore been made, has depended upon smooth surfaces in contact, or else upon some character of elastic packing that would set steam-tight against its adjacent surface. To accomplish this, great varieties of metallic and other packing have been devised, and vast expenses incurred to make the pistons and other moving joints steam-tight; and this course has heretofore been universally pursued. I believe myself, therefore, to be the original and first inventor or discoverer of the fact that steam, when introduced into small grooves, in one of the contiguous surfaces, will itself form a packing, without said surfaces actually being in contact I, however, wish

it to be understood, that I do not claim the grooved surfaces in themselves, as these have heretofore been used for other purposes, and have been used in connection with air engines."

The claim was to "the method, herein described, of causing steam to become a packing to itself, in steam cylinders or other parts of steam machinery, by allowing the steam to act in one or more grooves, substantially as specified." The case was tried before the court without a jury.

Frederick H. Betts, for plaintiff.

Samuel D. Cozzens, for defendant.

BLATCHFORD, District Judge. If the patent be valid, the infringement is not denied. The defence is put upon the ground of a want of novelty in the invention. What is adduced to defeat the patent is, a publication in a work in German called the "Schauplatz," published at Weimar, in Germany, in 1847. The text of the publication is accompanied by a drawing, and is this, as translated: "Mr. Cavé uses for his blowing machines a very ingeniously arranged piston, whereby the leather packing becomes unnecessary, which is perfectly air-tight, has no friction, does not become heated, and requires no cost for keeping it in order. This piston consists of a hollow cast-iron ring, which has a diameter about two or three millimeters less than the cylinder, and whose outer surface has the greatest practicable number of annular and square sectioned depressions a, b, c, d. If now, for example, a piston arranged in this way goes upward and compresses the air which is found above it, and then this air, in part, presses in between the walls of the cylinder and the outer wall of the piston, having reached a, it freely expands, so that it compresses the air therein contained, and then loses for once a part of the force by which it had been pressed in, by which its motion is hindered, and there is opposed to it on the other side, to which it tends to go, a certain

resistance. It follows from this, that the air pressed into a works backward, one after another, into the grooves, b, c, d, with a force which constantly decreases and which, for a sufficient number of grooves can become zero. Therefore, theoretically considered, the number of grooves must stand in direct proportion to the pressure. Mr. Cavé has employed these pistons for very many blowing cylinders, and even, too, for one of three metres in diameter. He has made careful experiments with this contrivance, and the results obtained agree in all respects with the theory. An essential condition for the employment of this piston is a perfect centricity of the cylinder, a condition which we can now easily obtain by means of the vertical boring machine."

The first question to be decided is—what is the proper construction of the plaintiff's patent? If it claims merely the arrangement of the grooves in one of the two surfaces, one of the two surfaces being a moving surface, then, undoubtedly, the arrangement of Cave is an answer to the patent. But the specification says, that the inventor does not claim "the grooved surfaces in themselves." Nor does he claim the use of the grooved surfaces in connection with air, for, the specification states that they have "been used in connection with air engines." The inventor, from the language of his specification, may fairly be said to have had in view the apparatus of Cave, which used grooved surfaces, in an air engine. He puts his invention, however, on an entirely different point, and claims that, notwithstanding Cave, he has made a patentable invention. He says that he has discovered the fact that steam may be made to pack in, and of, itself, or to become what he calls "self-packing"; that, prior to his invention, it had always been supposed, ever since steam had been introduced as a motive power, that two contiguous surfaces could be rendered steam-tight only by actual contact; that, consequently,

all steam engines had depended, for steam-tight moving joints, on the contact of smooth surfaces, or on elastic packing set steam-tight against its adjacent surface; that, in carrying out this idea, great varieties of packing had been devised at great expense; and that he first discovered the fact that steam, when introduced into small grooves in one of two contiguous surfaces, will itself form a packing without the surfaces being actually in contact. It is not attempted to be shown, on the part of the defence, that these allegations of the specification are not true, otherwise than by introducing the description and drawing of the Cavé apparatus. But it is 908 insisted, that air, the elastic fluid used in the Cavé apparatus, operated therein in the same manner, in connection with the grooves, as steam, the elastic fluid used in the plaintiff's apparatus, operates therein in connection with the grooves; and that, the grooves and the grooved surfaces being alike in the two, and the air and the steam, as used, being equivalents for each other, there is no patentable novelty in using the grooves in connection with steam, but that it is merely the application of an old apparatus to a new use. Opposed to these suggestions is the fact, that, until this patent was issued, the idea was not promulgated that steam could be made self-packing, and the publication in the "Schauplatz," that air could be made self-packing in an air engine, remained before the world ten years prior to the patenting of Gale's invention, without that being suggested which is now asserted to be so obvious, in view of the apparatus of Cave. The invention, as set forth in the specification, is a highly meritorious and useful one, and one which a court will desire to sustain, if consistent with the principles of law.

The claim is to "the method, herein described, of causing steam to become a packing to itself, in steam cylinders, or other parts of steam machinery, by allowing the steam to act in one or more grooves,

substantially as specified." It is not possible to mistake the tenor and purport of this claim, when it is read in connection with the rest of the specification. It is a claim to an art or process. It is not a claim to the grooved surfaces. But it is a claim to the process of the self-packing of steam, used in steam machinery, when effected by allowing the steam to act in one or more grooves, as described in the specification. Gale, undoubtedly, was the first to discover that steam could be made to pack itself, and that it could be made to do so by causing it to act in the way described, in one or more grooves. The grooves, used in an air engine were, indeed, old. But it by no means followed, because air would work successfully in the apparatus of Cavé, that steam could be made to pack itself, or to do so by means of grooves, or to do so in the apparatus of Cavé. There was zoom for experiment as to the capability of steam to act in that way, and as to the character of the grooves to be used, and as to what space might or might not be left between the contiguous surfaces. And it does not detract from the novelty or patentability of the invention, that, in carrying it out in practice, the use of grooves like those in Cavé's apparatus was found beneficial. The claim is not to all methods of causing steam to become a packing to itself, in steam machinery, but to the method described in the specification, whereby the property of steam discovered by Gale is made to subserve a useful purpose, by being carried into effect in a practical mode. The newly discovered property of steam, and the practical adaptation of it to a useful end, by the means described, is the invention made and claimed.

It is difficult to distinguish this case from that of the Hanson patent for making lead pipe, which was sustained as a valid patent, by the supreme court, in Le Roy v. Tatham, 22 How. {63 U. S.} 132. The Hansons discovered that lead, when recently set and

solid, but still under heat and extreme pressure, in a close vessel, would reunite perfectly after a separation of its parts. Availing themselves of this property in lead, the inventors succeeded in making by machinery, at a reduced expense, lead pipe of a better quality than had before been known. The claim of the patent was to the combination of machinery employed, "when used to form pipes of metal under heat and pressure, in the manner set forth, or in any other manner substantially the same." The machinery used was shown to be, in principle, substantially the same with machinery which had before been used to make maccaroni, and with machinery which had before been used to make clay pipe. The claim was stated by the court to be a claim to the machinery only when used, to form pipes of metal under heat and pressure; and it was sustained by the court, against the objection that it only claimed the application of an old machine to a new use, or to produce a new result. The claim in the Hanson patent would have been the same, to all intents, if it had claimed the method of causing lead to separate and reunite, at a welding heat, under pressure in a close vessel, by the use of the machinery described, to form lead pipe, in the manner set forth. The claim of the Gale patent would be the same, in effect, if it were to claim the arrangement of the grooves, substantially as specified, when used in connection with steam, to cause the steam, by acting in the grooves in the manner described, to become a packing to itself in steam machinery.

I am satisfied that the Gale patent is valid, that the claim is sustainable, that the invention claimed is new and useful, and that the plaintiff is entitled to a verdict for $50, on the two machines proved to have been used by the defendant, the license fee fixed by the plaintiff being shown to be $25 on each machine.

[1] {Reported by Hon. Samuel Blatchford, District Judge, and by Samuel S. Fisher, Esq., and here compiled and reprinted by permission. Merw. Pat. Inv. 321, contains only a partial report.}