

WESTINGHOUSE *ET AL.* V. CHARTIERS VAL. GAS CO.

*Circuit Court, W. D. Pennsylvania.*

August 28, 1890.

1. PATENTS FOR INVENTIONS—NATURAL GAS LINES—WANT OF NOVELTY.

Claims 1 and 2 of letters patent No. 345,463, dated July 13, 1886, granted to George Westinghouse, Jr., assignee of Morris S. Verner, relating to pipe joints and lines for conveying liquids and gases, and, more particularly, natural gas, namely: "(1) The combination of a pipe-line composed of sections of pipe connected at the joints by couplings, with a separate gas-tight chamber surrounding a single joint there of, adapted to receive any leakage therefrom, and a vent pipe leading from such chamber, substantially as and for the purpose set forth. (2) In combination with a main pipe-line composed of sections of pipes connected at the joints by couplings, Independent gas-tight chambers inclosing, respectively, single joints thereof, and a vent pipe or pipes leading from such chambers, substantially as and for the purpose set forth,"—were destitute of patentable novelty, and, moreover, do not, upon any allowable construction, cover the defendant's device.

2. SAME—INVENTION—EVIDENCE.

In a suit for infringement, upon the issue whether the plaintiffs' assignor was the original and first inventor of the thing alleged to be within the claims of the patent in Suit, a prior and still pending application of a third person for letters patent is competent evidence.

In Equity.

*George H. Christey and J. Showden Bell*, for plaintiffs.

*James I. Kay, George Harding, and Francis T. Chambers*, for defendant.

ACHESON, J. This is a suit in equity by George Westinghouse, Jr., and his licensee, the Philadelphia Company, against the Chartiers Valley Gas Company, for the infringement of letters patent No. 345,463, dated July 13, 1886, granted to Westinghouse as assignee of Morris S. Verner, the inventor. Verner's invention was made in July, 1884, about the 15th of the month, and his application for letters patent was filed August 6, 1884. But in fact he had not then reduced the invention to any practical use, and he never did so. Pending his application, on February 2, 1885, he assigned his rights to Westinghouse. The invention "relates to pipe joints and lines for conducting liquids and gases, and more particularly to those used for conveying natural gas." The specification recites letters patent No. 301,191, for improvements in

systems of conveying and utilizing gas under pressure, which had been granted to George Westinghouse, Jr., on July 1, 1884, and points out certain superior advantages which appertain to Verner's invention over, Westinghouse's system as set forth in that patent. To understand, then, what Verner's improvement really was, it is necessary to refer to the specification of the Westinghouse patent, No. 301,191. Mr. Westinghouse therein states that, owing to the high pressure under which natural gas is conveyed through pipes, it makes its way through comparatively tight joints, and through pores, cracks, and other minute openings, and, being extremely subtle, and usually destitute both of color and odor, its leakage is difficult of detection; and the gas, when mixed with atmospheric air, being highly explosive, such leakage, in addition to the waste which it entails, subjects life and property in the vicinity of the line of conveyance to the risk of serious accidents, against which it is very important, particularly within city limits, to provide an efficient safeguard. It is further stated that the employment of the gas for household and light manufacturing purposes is desirable and practicable only at pressures practically constant, and materially lower than that which is exerted in the main line of the conducting pipe. To meet these requirements is the declared object of Mr. Westinghouse's invention, which consists (his specification sets forth) in inclosing the high-pressure conducting pipe or main within a tight protecting casing of larger diameter, so as to form around the main a chamber or receptacle which receives and retains for use any leakage from the main, and which is also designed to be continuously charged with gas at low pressure, delivered from the main by means of communicating pressure regulating valves. It is stated that said chamber or receptacle is, by preference, made in "separate sections," "of any desired or convenient length," thus forming a series of "independent chambers," each inclosing a series of the connected sections of the main, and each compartment or chamber being provided with "a vent or escape pipe" leading therefrom to a point at which gas may be discharged into the atmosphere, said vent-pipe being closed by a safety-valve which is loaded so as to open upon any excess of pressure above a determined point. The Verner specification, while admitting that Westinghouse's outer casing, if properly made, will suffice to prevent the escape of gas, suggests two objections to his form of conduit, viz.: *First*, "that the outer pipe prevents access to the inclosed high-pressure main, except at long intervals, where the latter is exposed between the compartments;" and, *secondly*, the great cost involved in providing an exterior pipe so large in diameter as would be necessary, and so long. The declared object of Verner's invention is to provide an efficient and inexpensive pipe joint and conduit, whereby the escape of gas from the high-pressure main into the ground may be prevented, and, if desired, the gas leaking from its joints may be retained in a small low-pressure parallel pipe for utilization, or be permitted to escape into the air at "suitable determined points," while direct connections may be made with the high-pressure main at all points along the conduit. The specification then proceeds thus:

“To this end my invention, generally stated, consists in the combination with a main pipe-line, of a gas-tight chamber surrounding a single joint of said line, and a vent-pipe leading out of said chamber, and also in the combination, with the main pipe-line, of a series of such chambers, each surrounding a joint of the line, and a supplemental pipe-line formed of sections of fulling communicating with the chambers surrounding the joints, thus constituting a low-pressure line, from which connections can be made for any desired purpose, or from which gas may be allowed to escape at determined points.”

By Verner’s construction, as described with minute detail in his specification, and illustrated by the accompanying drawings, his supplemental pipe is connected with the several chambers surrounding the joints of the high-pressure main either directly, at each end of each chamber, or through the intermediation of T joints, the vertical member thereof opening out of each chamber into the supplemental pipe, and no other vent-pipe leading out of the chamber is described or shown. After explaining how gas at low-pressure may be drawn for use from the supplemental pipe, the specification adds: “Or from which, at suitable intervals pipes may be led to points above the surface of the ground to allow the escape of gas.” Again it is stated:

“As all the chambers communicate with the supplemental pipe-line, *m*, a substantially uniform pressure is maintained therein, whether all the joints, leak, or only some of them, and the chambers around the joints form reservoirs to store the gas at low pressure. In case sufficient gas does not escape into the supplemental line, suitable valve connections may be arranged between the two lines to maintain the required pressure therein.”

The patent in suit has five claims, but the only ones the defendant company is alleged to infringe are the first and second, which are as follows:

“(1). The combination of a pipe-line composed of sections of pipe connected at the joints by couplings, with a separate gas-tight chamber surrounding a single joint thereof, adapted to receive any leakage therefrom, and a vent-pipe leading from such chamber, substantially as and for the purpose set forth. (2) In combination with a main pipe-line composed of sections of pipe connected at the points by couplings, independent gas-tight chambers inclosing, respectively, single joints thereof, and a vent pipe or pipes leading from such chambers, substantially as and for the purpose set forth.”

The sections of the defendant company’s natural-gas main are not united by the screw couplings shown and described in the Verner patent, but by the well-known bowl and spigot joint made tight by a lead packing, outside of which is placed a ring or sleeve with plaster of Paris packing between it and the pipes. There is thus formed a small annular cavity around the lead-packed joint to catch any leakage therefrom that may possibly occur, and an escape orifice is formed in the ring, and a vent-pipe is connected therewith, leading above ground into the open air, without connecting with any low-pressure pipe, but simply for the free discharge of any leakage of gas. This venting device is used at

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each joint of the defendant's main, and constitutes the alleged infringement of the Verner patent. In this connection it is a fact worthy of mention that the first practical application ever made of a freely-vented joint casing

was upon the defendant's lines. This was in January, 1885, when David E. Adams, by the company's leave, placed, and for some time kept, on its gas-conducting main, a device consisting of a jacket tightly fitting around each joint, with a vent-pipe therefrom leading into the open air. Adams was an original inventor, but his invention was not made until about November, 1884.

Two questions lie on the surface of the case, viz.: (1) Whether the claims of the patent here involved disclose any patentable subject-matter in view of the prior state of the art; and (2) whether the defendant's device comes within the scope of those claims upon any allowable construction of the same. These questions are closely related, and, under the proofs, are to be considered rather together than apart. Now, avowedly, Verner was an improver upon Mr. Westinghouse's system for the conveyance and utilization of natural gas, as set forth in his letters patent of July 1, 1884, and, upon a careful examination of Verner's entire specification, even in the form which it finally took after numerous amendments, it is not difficult to see that his substantial invention consisted in dispensing with the enveloping casing along the body of the high-pressure main, and confining the inclosing chambers to the several joints of the main, and in providing an auxiliary parallel low-pressure pipe communicating with those chambers. The venting into the open air, of the leaking gas, was a mere incident of the improvement, while the important matter of the ascertainment of the exact location of a leak is not mentioned at all in the specification. I do not overlook the opening clause of the general statement of the invention hereinbefore quoted at length. But the language there employed, especially when read, as it must be, in connection with the context, does not disclose nor suggest a system in which a vent-pipe leads from each inclosing chamber directly to the open air. Verner illustrates the application of his invention with different forms of chambers by no less than eight drawings or figures, but not one of them shows any vent-pipe leading out of the chamber other than the supplemental low-pressure pipe itself, or the small perpendicular pipe of the T joint, which opens into the supplemental pipe. Unmistakably Verner's invention contemplates the venting of the inclosing chambers through the supplemental low-pressure pipe, and not otherwise. According to his described method, the gas leaking from the joints, if not utilized, is to be permitted to escape into the air, not at points where the joints of the main occur, but at "suitable determined points." As already seen, after describing the supplemental pipe, and stating its function as a low-pressure supply line, the specification adds: "Or from which gas can be allowed to escape at determined points." And elsewhere it is said: "From which, at suitable intervals, pipes may be led to points above the surface of the ground, to allow the escape of gas." Again, in a passage above quoted it is stated that, as all the chambers communicate with the supplemental pipe-line, the pressure therein is substantially the same "whether all the joints leak or only some of them." Thus is it

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manifest that, in the practice of Verner's invention, as he conceived and describes it, the leakages from all the

joints pass, in the first instance, into the low-pressure line as a common conduit for use, if needed; but if not, then to be vented into the open air by pipes leading from that line to the surface of the ground "at suitable determined points." It follows, then that unless the patentee is to be accorded rights broader than the invention disclosed by the patent, the first and second claims must be so construed as to restrict them to a system, in which the casings or chambers surrounding the joints of the main are vented through a supplemental pipe-line, substantially as set forth in the specification.

But the necessity of so limiting those claims, if they are to be sustained at all, becomes the more evident when we look, beyond the patent, and, regard the prior state of the art. As already noticed, Mr. Westinghouse's patent of July 1, 1884, provides efficient means against the escape of the gas into the ground, and the consequent dangers therefrom, by surrounding the Conducting main with a tight casing made in compartments, or "independent chambers," each of which is furnished with a "vent or escape pipe" leading therefrom to a point above ground, at which (to quote the language of the specification) "gas may be discharged, without injury or inconvenience, into the atmosphere." True, inasmuch as in this system the leaking gas is to be utilized as part of the low-pressure supply, Mr. Westinghouse's vent-pipe is kept closed, ordinarily, by a loaded safety-valve, which will open only to a pressure beyond a determined point. But it can scarcely be asserted, seriously, that it would involve invention to unload the valve, and permit the free escape of the gas leakage, into the atmosphere if this should be thought advisable. Indeed, the language just cited from the specification suggests, that very idea. But, besides the prior patent just referred to, letters patent No. 306,566. for an invention of means whereby the particular joint of the main which is leaking may be determined, and each joint independently vented, were granted to George Westinghouse, Jr., on October 14, 1884. The application for this patent was filed after Verner's application, namely, on August 21, 1884; but it is an admitted fact that this invention by Westinghouse preceded that of Verner. The declared object thereof is the ready detection of the existence, location, and extent of leaks from a gas-main, to the end of preventing accidents by explosions; and, as set forth in the specification and claim of the patent, it consists in the combination, with an Under-ground gas-main, of bodies of packing composed of loose fragments of solid material, such as broken stones, small scrap metal, or the like, surrounding the several joints of the main, and inclosed by the ground in which the main is laid, and a series of detector pipes, each leading from one of said bodies of packing to a point above ground, so that, in the event of a leakage at the joint of the main, the escaping gas will permeate the interstices of the loose packing, and pass therefrom up through the detector pipe, and out into the air. It is within common knowledge that the earth is rammed hard around a gas-main in the trench in which it is laid, and as these bodies of packing are connected respectively with the atmosphere by open pipes, there would be no pressure to cause the leaking



gas to work its Way through the ground, but it would pass up freely through the pipes into the open air. Now, with these two Westinghouse inventions already occupying the field, (even if they were the only prior ones,) Verner was necessarily restricted to his specific mechanical construction, and it was not open to him to set up any broad claims which would embarrass other independent improvers, and subject them to tribute. *Railway Co. v. Sayles*, 97 U. S. 554, 556. Moreover, what invention would be involved in reducing a compartment of the exterior casing of Mr. Westinghouse's first patent to a size adapted to cover only a single joint of the mainland substituting each casing for the surrounding body of packing of his second patent? Edward S. Renwick, the plaintiffs' expert, states that the Westinghouse patent of October 14, 1884, "undoubtedly contains the germ of the Verner invention." But that patent is much more than this language imports. It discloses a practical system for locating leaks at the joints of a gas-main, and for the safe and free escape of the leaking gas into the open air, by surrounding each joint with an incasement with which a separate vent-pipe is connected. Upon this system a skilled mechanic or engineer might ingraft improvements, but they could scarcely rise to the plane of invention. At any rate it may be safely affirmed that Verner's method of venting through an intermediate supplemental pipe-line, would not amount to a patentable improvement.

But again, on February 17, 1885, letters patent No. 312,470, for improvements in systems for distributing gas under pressure, were granted to William A. Hoeveler and Thomas J. McTighe upon an application filed August 28, 1884, Which was 22 days after Verner's application Was filed. There is, however, satisfactory evidence to Show that the invention of Hoeveler and McTighe was earlier in date than Verner's invention. In their specification and accompanying drawings they show and describe two separate parallel pipes or conduits, one for the conveyance of gas under high, and the other under low, pressure, these conduits being connected at intervals by pipes having automatic pressure regulating valves. In their specification the inventors state:

"We also inclose the joints of the high-pressure conduit in casings or boxes which are connected to the pipes leading to the low-pressure conduits, or directly to the latter, whereby any leakage of the joint is utilized as a source of supply for the low-pressure conduit."

And again:

"At each of the high-pressure conduits, A, we place boxes, I, which entirely surround said joints, and are packed carefully So as to guard as much as possible against leaking, and we connect each of the boxes by a pipe, *i*, with the low-pressure conduit, B, to as to lead off any gas which may escape through the joints of the high-pressure pipe."

The patent has no claim for the box or casing, I, by itself, but it has a claim for a combination of which the rasing, I, is a constituent. Furthermore, this patent shows a lamp-post connected to the low-pressure conduit by a small pipe, to which is attached a



weighted valve to allow the gas to flow to the burner of the lamp-post when the pressure in the

low-pressure conduit passes a determined point. Certainly, then, we find in the Hoeveler and McTighe patent everything which appertains to Verner's apparatus except express provision for the free escape of the leaking gas into the air when it is not to be utilized. Here is a tight chamber surrounding a single joint of the high-pressure main to receive any leakage therefrom, with an open pipe from the chamber leading into a low-pressure conduit. Now, in the face of this prior invention, how is it possible to sustain Verner's far-reaching pretensions? In my judgment, it would not be patentable change to disconnect Hoeveler and McTighe's pipe, *i*, from the low-pressure conduit, and provide for the free escape of the gas from the box or casing, *I*, into the open air.

Once more, on January 10, 1884, John Nicholson, Jr., filed in the patent-Office an application for letters patent for an improvement for gas-pipe protection. In the specification accompanying this application, and constituting part thereof, the invention is described as consisting in combining with a gas conduit pipe an exterior pipe, box, case, or cover in which to collect such gas as may escape from the conduit pipe proper, such outer box, case, or cover being provided with vent-pipes extending up through the surface of the ground to carry off the escaping gas. After a particular description of his structure, the specification contains the following language:

"I do not limit myself to a construction in which the outer pipe, box, or case extends continuously through the entire length of a gas conduit pipe, since it will be within my invention to apply this system or method of protection to any desired portions Of such pipe, whether the same be long or short, or even by separate chambers properly vented to the separate joints of the gas conduit pipe since at the joint the greatest danger of leakage exists."

Such proceedings were had in the patent-office that an interference was declared between Nicholson and Verner, and others; and on December 26, 1885, as between Nicholson and Verner, judgment of priority of invention was rendered in favor of Nicholson, from which there was no appeal. But letters patent have not yet actually issued under Nicholson's application.

The plaintiffs contend that the Nicholson application is inadmissible as evidence. Is this a sound position? That a rejected or withdrawn application is not a prior publication, within the meaning of the statute, nor of itself a bar to a patent to an independent inventor, is settled. *Lyman v. & R. Co. v. Lalor*, 12 Blatchf. 303; *Northwestern Fire Ex. Co. v. Philadelphia Fire Ex. Co.*, 60. G. 34; *The Corn-Planter Patent*, 23 Wall. 181. But it by no means follows that Nicholson's application is not to be received for any purpose. It has neither been withdrawn nor rejected. Abandonment by him cannot be alleged. In the interference proceeding he was awarded priority of invention over Verner. That he was prior to Verner is indisputable under the proofs before the court. The utility of the device in question is demonstrated. It would then be most extraordinary if Nicholson's applica-

tion could not be shown as affecting Verner's title to the monopoly here set up against the defendant and the public. I think the cases of *Northwestern Fire Ex. Co. v. Philadelphia Fire Ex. Co.*, *supra*,

and *The Corn-Planter Patent, supra*, are direct authorities to show that the Nicholson application is competent evidence as bearing on the question whether Verner was in fact the original and first inventor of the thing alleged to be within the first and second claims of his patent. And I have only to add that, in my opinion, Nicholson's application clearly described the identical mechanical construction or combination here Claimed to be covered by the Verner patent.

But much stress is laid upon the fact that Verner's inclosing chambers are made "gas-tight," and the plaintiffs' expert, Mr. Renwick, finds in this feature, which he assumes to be peculiar to Verner's construction, an essential distinction between his device and Nicholson's. As a matter of fact the term "gas-tight" was first brought into Verner's specification and claims by an amendment made June 23, 1886, when it was certainly too late to enlarge their scope, in view of what other improvers had been doing. *Railway Co. v. Sayles, supra*. But I do not deem this amendment as of any special importance, for it is to be supposed that it was the intention of Verner from the start to make his chamber sufficiently gas-tight to answer the purpose for which it was designed. And the same reasonable presumption is to be entertained in behalf of others who had devised protecting casings or boxes to catch the leaking gas. In Mr. Westinghouse's earlier patent, his enveloping or outer pipe is described as "tight casing," commenting upon which Verner in his specification says: "The pressure in the pipe being comparatively low, the ordinary joints, when properly made, will suffice to prevent the escape of gas therefrom." For the same reason, and because of the open vent-pipe, even the earthen walls of the incasements of Mr. Westinghouse's second patent are sufficient to hold the leaking gas. However and McTighe describe their boxes or, casings which surround the several joints as "packed carefully so as to guard as much as possible against leaking." And Nicholson says that if the inclosure is made of wood it may "be packed or luted at the joints." After all, the quality of tightness to restrain the leaking of gas from the inclosing chamber is a mere matter of degree, and a variation in that regard would not amount to a patentable difference.

About the time of Verner's application for a patent, before and afterwards, a number of persons were engaged, simultaneously and independently of each other, in devising safely appliances against leakage in pipes used in the then comparatively new business of conveying natural gas long distances, and the remarks of Judge BRADLEY, in *Atlantic Works v. Brady*, 107 U. S. 192, 199, 2 Sup. Ct. Rep. 225, apply with great force to the present case:

"The process of development in manufactures [says that learned and experienced jurist] creates a constant demand for new appliances, which the skill of ordinary head workmen and engineers is generally adequate to devise, and which, indeed, are the natural and proper outgrowth of such development. Each step forward prepares the way for the

next, and each is usually taken by spontaneous trials and attempts in a hundred different places. To grant to a single party a monopoly of every slight advance made, except where the exercise of invention somewhat above ordinary mechanical or engineering

skill is distinctly shown, is unjust in principle and Injurious in its consequences.”

And now, it only remains for me to state, as the result of my examination and study of the proofs bearing upon the questions I have here treated, that, in my judgment, the device Used by the defendant company does not infringe either the first or second claim of the patent in suit, upon any construction of those claims which is permissible; and I am further of the opinion that said claims are destitute of patentable novelty. These conclusions end the case, and I am thus relieved of the necessity of considering some other questions which the counsel for the respective parties discussed with so much zeal, and with such signal ability. Let a decree be drawn dismissing the bill of complaint, with costs.