

LOCKE V. SMITH ET AL.

Circuit Court, D. Massachusetts.

August 27, 1888.

PATENTS FOR INVENTIONS—INFRINGEMENTS—DAMPER REGULATORS.

Letters patent No. 335,080, granted January 26, 1886, to Nathaniel C. Locke, for an improvement in damper regulators, consists of a combination of a diaphragm motor, a damper motor, and a valve so combined as to produce a damper regulator of great sensitiveness. *Held*, in view of the prior state of the art, that the only novelty is the mechanism of the valve which controls the supply of actuating fluid to the damper motor, the valve being separate and distinct from the piston of the damper motor, and that the patent is not infringed by advice constructed under the Spencer patents of September 29, 1885, and March 28, 1886, in which the valve casing is part of the piston; such piston being double acting, receiving the fluid at its center, and delivering it at either end, with a fluid-controlling valve arranged in its axis.

In Equity. Suit for infringement of patent.

James E. Maynadier, for complainant.

Thomas W. Porter, for defendants.

COLT, J. This suit is brought upon two patents issued to the complainant Patent No. 335,080, dated January 26, 1886, is for improvements

in damper regulators, and patent No. 335,033 bearing the same date, is for an improved form of diaphragm for pressure regulators. The main controversy is directed to the question whether the defendants' apparatus, which is constructed after two patents granted to J. E. Spencer, dated September 29, 1885, and March 23, 1886, embodies the improvements described in the Locke patent for damper regulators. The Locke patent is dated January 26, 1886, but the application was filed April 24, 1883. To determine the question Of infringement, we must see what Locke's invention is, as set forth in his patent. The specification says:

"My invention relates to that class of automatic damper regulators which have a motor with a movable piston connected with the damper, for operating the same, and have a pipe leading to said motor in which is a valve for opening and closing the passage. * *

* The object of my invention is to provide a regulator which shall possess the requisite power to move the heaviest dampers with the least possible variation of steam-pressure in the boilers; and it consists—*First*, in a damper motor operated by fluid under pressure, the flow and exhaust whereof is controlled by a supplemental motor or regulator sensitive to variations of pressure in the generator; *secondly*, in a damper motor actuated in one direction by fluid under pressure, and, on exhaustion thereof, moved in the other direction by a weight, the employment of water as a motive power admitted to the damper operating motor through a suitable valve to be operated by the changing pressure of the steam in the boilers to be controlled, said steam pressure acting upon a suitable motor with which said valve is connected; and, *thirdly*, in a peculiar construction of the said valve, and various other devices and details of construction to be hereinafter described. *

* * Before describing in detail the apparatus shown in the drawings which embodies my invention, I desire, to point out in a general way the mechanical conditions under which these machines are required to operate, and the difficulties heretofore encountered, which are overcome by my invention. *First*, It is required to move the damper through an arc varying from forty-five to ninety degrees, or thereabout, and, as the damper is frequently very heavy, a considerable power and range of motion is necessary. At the same time it is necessary to control the application of this motor power by an apparatus of great sensitiveness, and therefore of short range of motion. * * * I prefer to employ a diaphragm motor subjected to pressure from the generator having a very short range of motion, and with a corresponding sensitiveness. This motor acts upon, and is counterpoised by, the ordinary scale-beam lever, with an adjustable weight. A balance controlling valve is coupled to said scale-beam, preferably at a distance from the motor Connection therewith, so that the motion of said motor will be multiplied at said valve Said valve is placed in the pipe, whereby fluid under pressure is conveyed from its source to the damper motor, and controls the flow and exhaust thereof * * * Heretofore it has been customary to employ flat diaphragms, usually cut from rubber fabric, such as sheet packing. It is a matter of experi-

ence that such diaphragms vary in sensitiveness inversely as the pressure, * * * but I have discovered that by providing the diaphragm with a deep annular corrugation or fold, * * * so that the free parts of the diaphragm constitute two concentric parallel surfaces, with slight space between to be filled and lubricated by the motor fluid, there is no variation in sensitiveness with variation in pressure. * * * I do not claim, as new the operation of a steam damper and motor by an auxiliary valve placed in a line of pipe for the admission of steam to said motor, when said value has no mechanical auxiliary appliance attached thereto for operating the same independent

of the steam-pressure acting directly upon the valve itself. What I claim as my invention, and desire to secure by letters patent, is: (1) The combination, in a draft-regulating mechanism, consisting of a damper and a motor for operating the same, and having a valve controlling said motor, of the supplemental motor, R, attached to said valve, having pipes, G. and K, and pipe, H, and reservoir, F, all substantially as shown and described, and for the purpose specified."

Thirteen other claims for combinations of mechanism described in the specification and shown in the drawings of the patent follow the first claim. The invention of Locke embraced a combination of three general elements, a diaphragm motor, a damper motor, and a valve. These elements were so combined as to produce a damper regulator of great sensitiveness, or one in which a slight motion of the diaphragm produced a much greater movement of the piston of the valve which controls the damper motor. An examination of the prior state of the art makes it clear, as it seems to me, that the only novel feature in Locke's, combination is the construction of the valve. By the admission of his own experts, the diaphragm motor of Locke is substantially the old diaphragm motor of Clarke's patent of 1854, and the damper regulator of Locke is substantially the old and well-known damper motor of Hallock's earlier patent. Livermore, complainant's chief expert, testifies as follows:

"*Cross-Interrogatory 96. Answer.* I do not think that the element cold water is itself patentable; nor does any element of the entire Locke apparatus, except the valve, occur to me, which is, in my judgment, patentable in itself." "*Cross-Int. 39.* Leaving out of consideration, for the present, differences of construction of the parts, do you think the Kipp patent embodies a damper motor; a valve for controlling the supply of fluid to the damper motor, with suitable conduits therefor, and a pressure device for controlling the supply of fluid to the damper motor, in the sense in which such parts are employed in Locke's patent damper regulator? *A. I do.* *Cross-Int. 40.* In so far as relates to the damper motor, Locke has made no advance upon Kipp, except to substitute one old and well-known kind of motor for another, has he? *A. No.*" "*Cross-Int. 43.* In so far as relates to the pressure device, Locke has made no advance upon Kipp, except to substitute a different, but old and well-known, pressure device (diaphragm-motor) for that shown in Kipp's, unless it be in the diaphragm. Is this so, or not? *A.* Regarded merely as a pressure device, independent of its relations to the other parts, he has not."

Nor is there anything new in Locke's method of attachment of the lever of the diaphragm motor to the valve-stem outside the piston, so as to give a multiplied motion to the valve. On this point Locke testifies as follows:

"*Cross-Interrogatory 93.* How long have you known a valve-actuating device, operating like that shown in your patent, the lever, L, of which is attached to the valve outside the piston, to give a multiplied motion to the Valve? *Answer.* I cannot Say precisely; quite a

number of years. *Cross-Int.* 94. State as nearly as you can. A. Perhaps twelve or fourteen years. *Cross-Int.* 95. Have they been in public use during that time? A. They have for certain purposes, but not in connection With damper motors. *Cross-Int.* 96. Has not this kind of valve actuating device been in use during the time you have Specified for actuating valves of both steam and water apparatus? A

They have. *Cross-Int.* 97. Please examine the catalogue or pamphlet now shown you, (put in evidence and marked 'Defendants' Exhibit Locke Catalogue,') and state whether there is not shown, on page 21, a valve-actuating device substantially like that shown in your patent, No. 335,080, A. There is."

He then testifies, from dates contained in the circular, that it was issued prior to 1879, and that the valve-actuating device of the patent performs the same duty as did those earlier devices. It thus appears that, however great the merit of Locke's invention, the elements which go to make up the patented combination were all old, except the valve, B. The valve, B, forms an element of all the claims of the patent which the defendants are charged with infringing. The chief ground of defense is, that the defendants do not use the valve, B, or its equivalent, and it seems to me that this position is sustained by the evidence. Claim 8 is for the combination of mechanism which makes the valve. Locke's expert, Livermore, testifies as follows:

"*Cross-Interrogatory* 25. In your opinion, does the defendants' machine embody the combination specified in said claim 8 of Locke's patent, 335,080? *Answer.* In my opinion, it does not." "*Cross-Int.* 207. Can you find anywhere in your researches in this art a machine substantially resembling Spencer's, which has a cylinder and piston that may be of any desired diameter, according as the resistance of the damper may render desirable, such piston being double-acting, receiving the actuating fluid at its center, delivering it at either end as required, and with a fluid-controlling valve arranged in its axis? A. I can find no machine having the features mentioned."

When Locke himself was asked (*Cross-Interrogatory* 212) to compare his valve with Spencer's, he replied:

"I cannot compare the two—the Spencer patents and the patent of my own referred to—in this respect, because, while in the Spencer patents the valve-casing is part of the piston, in my patents the valve is entirely separate, and distinct from the piston of the damper motor."

This is the evidence of complainant, and it is, of course, reinforced in still stronger language by the testimony of the defendants. Indeed, it is apparent, on comparison, that the combined valve and damper motor of Spencer does not embody the essential features of the Locke valve. It also appears that the operation of the two regulators is quite different. In the Locke machine, when the damper governor acts, it entirely shuts the damper, or nearly so; while in the Spencer machine the damper closes gradually, as the pressure increases. It is only by ignoring the question of the difference of mechanism, and by giving a breadth of construction to the Locke patent which the law does not permit, that the defendants can be held as infringers.

As to patent No. 335,033 for a diaphragm, assuming the patent to be valid in view of the prior state of the art, upon which my mind is not free from doubt, I do not think

the complainant has made out with sufficient clearness the charge of infringement. The defendants now use the Clarke patent diaphragm, and their slight use of the Locke diaphragm seems to have been more experimental than any thing else. And

LOCKE v. SMITH et al.

Upon this point the positive testimony of Spencer that he never used a Locke diaphragm after the Locke patent was applied for is not met or overcome by complainant's evidence. The bill should be dismissed.