

NATIONAL METER CO. v. BOARD OF WATER COM'RS OF YONKERS.

*Circuit Court, S. D. New York.*

April 17, 1889.

1. PATENTS FOR INVENTIONS—CONSTRUCTION OF CLAIM—WATER—METER.

The water-meter described in letters patent No. 211,582, January 21, 1879, to Lewis H. Nash, is adapted from the Galloway rotary engine, which has a piston with projections and a cylinder with recesses more in number than the projections. The only piston described in the specification is one having a side-rocking and rotating movement, which is due to the fewer projections on the cylinder than on the piston. *Held*, that it is such a piston that is referred to in the first claim, and such piston is an element of it, and consequently of claims 3-6 of reissued letters patent, February 8, 1887, to the National Meter Company, as assignee of Nash.

2. SAME.

The meter described in patents to James A. Tilden is adapted from another engine invented by Galloway, (English patent December 14, 1847,) in which the; projections on the piston equal in number the recesses in the cylinder, and the piston has neither the side-rocking nor rotary motion. In the Nash meter the ports for entrance and discharge are in the ends or sides of the piston, the ends of the cylinder act as valves, and the compound movement of the piston opens some and closes Others of the ports so as to equalize the "pressure at right angles to the direction of the piston's movements. In Tilden's meter the ports are in the ends of the cylinder case, so located that the contact of the piston with the cylinder divides each recess into one filling and

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one discharging passage; the piston acts as the valves, and it is essential that there shall be not merely water pressure moving the piston, but additional side pressure. *Held* not the same combination or combination of equivalents.

In Equity.

Suit by the National Meter Company against the board of water commissioners of the city of Yonkers.

*Broadnax & Bull*, for complainant.

*Livermore & Fish*, for defendant.

WALLACE, J. This suit is brought to restrain infringement of claims, 3, 4, 5, and 6 of reissued letters patent granted to the complainant as assignee of Lewis H. Nash, February 8, 1887, for an "improvement in rotary water-meters." The original patent (No. 211,582) was granted January 21, 1879. None of the claims now in controversy were contained in the original patent. The alleged infringing apparatus of the defendant is constructed under patents granted to James A. Tilden, assignor to Hersey Bros., for "rotary fluid-meters," the first of which was granted August 18, 1885. The manufacture of the alleged infringing meters was commenced, and quite a large number of them put upon the market, and they were extensively advertised, prior to the filing of the application for the reissue of the complainant's patent. The defenses are non-infringement and the invalidity of the reissue as to the claims in controversy. The experts on both sides agree that Nash, the inventor of the complainant's water-meter, took one form of the Galloway rotary engine, described in Reuleaux's *Kinematics of Machinery*, (translation of Alex B. Kennedy, published in London in 1876,) and made improvements upon it, which were necessary to adapt it for practical use as a water-meter, and these improvements were meritorious and valuable. At that time it was well known that steam and water engines, whether rotary or reciprocating, could be used as meters to measure the flow of the fluids which pass through them, and various forms of both descriptions had been used as meters. The patent of Nash states that it is contemplated to use the apparatus as a motor (engine) or as a pump. Besides the rotary engine thus described, Galloway patented another form of engine, (English patent to Galloway of December 14, 1847.) The experts agree that Tilden, the inventor of the defendant's water-meter, took the form of the Galloway engine of this patent, and made improvements upon it which were necessary to adapt it to practical use as a water-meter. What each did was to supply the arrangements of ports and discharging spaces necessary for the special form of piston and cylinder-chamber employed in the respective Galloway engines in order to convert the engine into a practical water-meter, adding also a registering device, to operate by attachment to the piston. In the kinematic engine there is a piston with projections, and a Cylinder with recesses, but the recesses of the cylinder are more in number than the projections of the piston; while in the engine of the Galloway patent the piston has the same number of projections as the cylinder has recesses; In the kinematic

engine the piston has a side-rocking movement across the center of the cylinder upon successive bearing, points, made by the contact of a projection on the piston with a recess in the cylinder, or conversely, and the piston rotates upon its own axis, so that each projection visits successively each recess of the cylinder; while the piston of the Galloway engine has neither the side-rocking nor the rotary motion, and each projection of the piston always operates in connection with one particular corresponding recess in the cylinder and never leaves that recess.

The description of the apparatus of the complainant's patent is precisely the same in the original and in the reissue. In the reissue, however, there is a disclaimer of the combination of elements shown in the Galloway patent. In the original patent all the eight claims except the first were for combinations in which: a piston revolving about its center was an element. The disclaimer of the reissue seems to have been inserted upon the theory that the first claim of the original did not specify such a piston and was sufficiently broad to include the combination of the Galloway patented engine. The new claims in the reissue were doubtless intended to cover inventions of which this combination is a part. Although the language of the first claim did not expressly specify such a piston, it does not seem open to fair doubt that such a piston was a necessary element of that claim. A brief reference to the language of the specification suffices to show that such a piston was a necessary element of the first claim of the original patent, and must be read into it and all the new claims of the reissue now in controversy. The piston is described in the specification as

—“Adapted to have an eccentric or side-rocking motion across the center of a cylinder-chamber, to effect its division at two or more points into receiving and discharging spaces. \* \* \* With this eccentric or side-rocking action the piston also revolves around its own center, and both these movements are effected by the relative shape of the piston and cylinder, and by the direct action of the water upon the piston, for, as the piston rocks from one bearing point to another directly across the center of the cylinder it is at the same time revolved to effect the measurement of the water passing into and from the cylinder spaces. \* \* \* The piston, If, is arranged for operation within the cylinder, and the bearing or contacting surfaces of these parts are formed by alternate recesses and projections of such form Or configuration as to allow of the rotation of the piston, not only upon its own axis, but around and across the center of the cylinder; and the space within the cylinder must be of such form, and sufficiently larger than the piston, to allow it to have this compound motion. \* \* \* The compound motion of the piston and the contracting dividing points, are due to the fact that the piston has one or more less points of projection than the cylinder. \* \* \* The function of the valve is to regulate the flow of water in and out of the spaces of the cylinder in such manner as to produce the compound rotation and cross-movement of the piston; and this function can be made operative whether the

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valve be arranged within the piston, as described, or separate from and connected with it; being only necessary that the motion of the valves should be controlled by the compound motion of the piston in any arrangement., \* \* \* I have described that the piston shall have the compound motion described; but it is obvious that the piston may be fixed, and the cylinder made to have the relative compound motion.”

The only piston described in the specification, and consequently the only one which could have been referred to in the first claim of the original, is one having the side-rocking and rotating movement which constitutes the compound motion of the specification, which is due to the fact that the piston has one or more less points of projection than the cylinder. Unless such a piston is an element of each of the new claims of the reissue now in controversy, the reissue as to those claims must be held to be invalid. The defendant's meter does not have such a piston, and therefore does not infringe any of the claims.

It is insisted for the complainant that the Galloway kinematic engine and the Galloway patented engine were well-known equivalents for each other, and that Tilden merely added to the latter the auxiliary devices added to the former by Nash. This proposition does not seem to be correct. The two forms of the Galloway engine are essentially different, and necessitate a different construction and arrangement of the co-operating devices to adapt them to efficient use as Water-meters. The inventions of Nash and Tilden commence upon different lines, and result in a combination having a different mode of operation. The time and order of controlling the valves differ in each, and require a different arrangement of the valve ports with reference to the valves which open and close them. In Nash's meter the ports for both entrance and discharge of water are in the ends or sides of the piston, while in Tilden's the ports are not in the piston, but in the ends or heads of the cylinder case and are so located, that the contact of the piston with the cylinder divides each recess into one filling and one discharging passage. In the former the ends of the cylinder act as the valves; in the latter the piston itself acts as the valves. In Nash's meter the rotary and side-rocking or compound movement of the piston opens some and closes others of the ports in succession, in such a manner as to equalize, the pressure of the water at right angles to the direction of the movements of the piston; In Tilden's meter it is an essential feature that there shall, be not merely water-pressure which moves the piston about the cylinder-chamber, but additional side pressure, which, in Nash's meter, must be avoided, and it is only because it has a pressure of water not found in Nash's meter that it is operative at all. It is unnecessary to dwell upon the other differences between the two meters which might be pointed out. It suffices to say that, notwithstanding the very ingenious exposition of the expert and counsel for the complainant, the theory that the two meters embody the same combination cannot stand. The bill is dismissed.