

BOSTON ELECTRIC CO. *v.* FULLER AND OTHERS.

*Circuit Court, D. Massachusetts.*

December 24, 1886.

1. PATENTS FOR INVENTIONS—LETTERS PATENT NO. 230,590—ELECTRIC GAS-LIGHTING APPARATUS—EARLIER INVENTIONS.

The invention contained in letters patent No. 230,590, granted July 27, 1880, to Geo. F. Pinkham, assignee of Jacob P Tirrell, for electric gas-lighting apparatus, *held* not anticipated by the Tirrell inventions of 1871 and 1872, contained in patents No. 121,802 and No. 130,770, nor by the Cutler patent No. 220,704; none of these prior devices being so constructed that by the action of the electric current the gas-cock is turned by a single impulse and a succession of sparks is produced at the burner tip without further motion of the gas-cock.

2. SAME—INVENTION.

*Held*, also, that this improvement over prior devices constitutes invention.

3. SAME—INFRINGEMENT—DIFFERENCE IN DETAILS.

The patent *held* infringed by defendants' apparatus, although the latter differs somewhat in construction from that described in the patent. The fact that the main features in the patented apparatus, such as the circuit breaker, single circuit, operating the gas-cock directly by the armature, are old, should not limit the patentee to the exact form of mechanism found in the patent.

In Equity. Suit for infringement of patent.

*J. E. Abbott*, for complainant.

*E. P. Payson*, for defendants.

COLT, J. This suit is brought for infringement of the first claim of letters patent No. 230,590, granted July 27, 1880, to George F. Pinkham, assignee of Jacob P. Tirrell, for electric gas-lighting apparatus. The invention relates to apparatus for lighting gas by electricity, in which

the gas-cock is opened and closed by electric action upon a mechanical device connecting with the cock and a battery. The specification says:

“My present improvements consist in the employment of a horizontal swinging arm attached to the lower end of the vertical gas-cock, this arm being forked and straddling an upright bar erected upon the top of a vibrating armature disposed between two pairs of electro-magnets, and caused to vibrate by the closing and opening of an electro-circuit from a suitable battery, the vibration of the armature effecting reciprocation of the lever and cock.

“My invention also consists in connecting the armature with the lower end of the movable electrode or arm in such manner that, as the armature moves in one direction and opens the cock, it causes the movable electrode to separate from the fixed and insulated electrode, thus breaking the electric circuit and producing a spark to light the, gas, while a reverse movement of the armature closes the cock and allows the movable arm to return by the stress of a spring and make contact with the fixed arm. \* \* \*

“It will be seen that the vibrations of the armature are of such extent and its relations to the gas-cock and movable electrode are such that the cock is open before the spark is produced. The purpose of this is to cause a sufficient volume of gas to issue from the burner in advance of the spark to insure its ignition by the latter. \* \* \*

“In the use of this device the pressure on the knob which charges the magnet, H H', should be continued for a few seconds, as this produces rapid intermittent vibrations of the movable electrode and a corresponding number of sparks; the object of this being to insure the lighting of the gas should the first spark fail to do so. In order that these continued vibrations of the movable electrode and armature may be placed without effect upon the gas-cock, I form the notch in the forked end of the lever of sufficient width to permit of the vibrations of the armature without moving such lever.”

Claim 1 is as follows:

“(1) In an electric-lighting gas-burner, a magnet for turning the gas-cock by one electric impulse, combined with a fixed electrode, *a'*; and a movable electrode, *c'*; normally in contact, and mechanism connecting the armature with the movable electrode to break the contact between *a'* and *c'* the instant after the gas is turned on, and create a spark for ignition, substantially as described.”

In gas-burners there is a portion of the tube between the cock and the end of the tube which becomes full of air when the gas is turned off. When the gas is again turned on a little time is required to expel the air from the burner. If only one electric spark is produced at the tip of the burner the instant the gas-cock is turned, the air would not have escaped and the gas may not be lighted. In the patented apparatus the gas-cock is opened by a single impulse, and by pressure on the button a succession of sparks is produced at the burner tip by the intermittent vibrations of the movable electrode and the armature,

and these vibrations occur without further moving of the gas-cock by reason of the notch in the forked end of the lever. In closing the gas-cock no spark is produced at the burner tip. There is evidence that this apparatus was the first which operated successfully: in house lighting, and that it has been extensively used. Now it is apparent that this apparatus was not anticipated by the Tirrell inventions of 1871 and 1872, and contained in patents 121,302 and 130,770, nor by the Cutler patent No. 220,704.

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None of these prior devices were so constructed that by the action of the electric current the gas-cock is turned by a single impulse and a succession of sparks is produced at the burner tip without further motion of the gas-cock. I am also satisfied that this improvement over prior devices constituted invention.

The defendants' apparatus is the same in principle, though its construction differs somewhat from the plaintiff's. The magnets have their cores parallel with the burner, while the magnets in the patent are substantially at right angles thereto; the movable electrode has a vertical movement to break the circuit, while the movable electrode in the patent has a laterally vibrating movement; in defendants' apparatus the armature is horizontal instead of vertical, and the means for breaking the circuit are somewhat different. I am of opinion, however, that the defendants' apparatus embodies the substance of the patented invention, and that changes in the details of construction should not protect them from the charge of infringement. The fact that the main features in the patented apparatus, such as the circuit-breaker, single circuit, operating the gas-cock directly by the armature, were old, should not limit the complainant to the exact form of mechanism found in the patent. The patent covers, an important improvement in the art of lighting gas by electricity, and it should receive a reasonably broad construction, and those should be held to be infringers who accomplish the same result by substantially the same or equivalent means.

Decree for complainant.