

STEAM-GAUGE & LANTERN CO. AND  
ANOTHER *V.* MILLER AND OTHERS.

*Circuit Court, D. Connecticut.* September 13, 1884.

1. PATENTS FOR INVENTIONS—IRWIN KEROSENE  
HAND LANTERN—NOVEL PRINCIPLE.

An important and novel principle of the kerosene hand lantern made under reissued letters patent to John H. Irwin, No. 8,598, (original patent No. 89,770,) was the supply of external air to the flame by means of deflectors, which compelled the introduction into the supply tubes, in an irreversible current of air which, but for such deflectors, would blow over and exhaust the tubes.

2. SAME—INFRINGEMENT.

Patent No. 89,770 and reissue No. 8,598 construed, and *held* to describe and claim a structure having conduits which supplied heated air when the lantern was at rest and external air when it was exposed to the wind, and which could also have the assistance, if any there might be, of heated air in introducing a flow of fresh air through the tubes. The defendant's lantern, which is an external air-feeder only, is therefore not an infringement of reissue 8,598.

3. SAME—PATENTS NO. 104,318 AND NO. 151,703.

*Held*, that defendant's lantern infringes the first claim of No. 104,318, and the second claim of No. 151,703, both patents to John H. Irwin.

In Equity.

*E. S. Jenney* and *Benjamin F. Thurston*, for plaintiffs.

*Frederic H. Betts* and *Charles E. Mitchell*, for defendants.

SHIPMAN, J. This is a bill in equity founded upon the alleged infringement of letters patent to A. R. Carihfield, dated April 2, 1867, and of the four following letters patent to John H. Irwin, viz.: Reissue No. 8,611, dated March 4, 1879, of original patent No. 73,012; reissue No. 8,598, dated February 25, 1879, of original patent No. 89,770, dated May 4, 1869; No.

104,318, dated June 14, 1870; and No. 151,703, dated June 9, 1874. The plaintiffs do not ask for a decree except upon claims 1, 2, 3, 4, 5, and 8 of reissue 8,598, claim 1 of No. 104,318, and claim 2 of No. 151,703. The first two patents are for improvements in lanterns which burn kerosene, and the third is for an improvement in the same class of lamps or lanterns.

The views of the court upon the propriety of granting the plaintiff's motion for an injunction *pendente lite* against an infringement of these patents, a description of reissue 8,598, and of the invention which it claimed, were given in *Steam Gauge & Lantern Co. v. Miller*, 8 FED. REP. 314, and in *Same v. Same*, 11 FED. REP. 718. The history of the inventions of Mr. Irwin preceding and including No. 89,770, and the views of Judges DRUMMOND and BLODGETT upon that 515 patent and two prior patents, are contained in *Irwin v. Dane*, 9 O. Gk 642.

The lantern which was made under No. 89,770, and under reissue 8,598, was the first successful kerosene hand lantern which was ever made. It has gone into universal use wherever kerosene is employed for illuminating purposes, and has superseded all previous devices. A characteristic novel principle of this lantern, and the one which, in combination with the other parts of the device, gave it its success, was the supply of fresh or external air to the flame by means of deflectors which compelled the introduction into the supply tubes in an irreversible current of air which, but for such deflectors, would blow over and exhaust the tubes. Previous structures had supply tubes which returned vitiated air to the burner, or which furnished fresh air from protected chambers, or which furnished whatever fresh air would enter through an open funnel or bell mouth, but no previous structure furnished fresh air by the aid of injectors which compelled air, which would otherwise strike the lantern in such a direction as to exhaust the tubes, to enter the tubes

in a continuous and irreversible current. Mr. Quimby, the plaintiffs' expert, correctly states this principle in this way: "The new thing consists in providing the place where the outside air enters with deflecting plates, which will insure the entrance into that place of currents of air which, but for the presence of the deflecting plates, would tend to draw air out of that place." The defendants' counsel, not admitting the value of this peculiarity of the "tubular" lantern, have proceeded, upon their part of the case, upon the theory that the device was but a modification of pre-existing devices which had supply tubes, and was not a primary invention.

While this compulsory introduction of external air into the supply tubes was an important and novel feature of the invention, and the one which gave the lantern its distinctive character, the inventor retained in his structure the tube, H, the common mouth-piece of the supply tubes, and which, as in his older lanterns, furnished, or could furnish, as opportunity offered, a supply of air heated by the burner-flame. This lantern was thus both an internal and an external air-feeder. The defendants' lanterns are external air-feeders, having elevated tubes outside the globe, disconnected with each other, and for the admission of fresh air only, and having injectors at the mouths of the tubes, which will be hereafter described.

When the lantern of reissue 8,598 is at rest, and is not blown upon by the wind, the heated air constitutes the only source of supply. When the lantern is oscillated in a violent wind, the plaintiffs insist that the heated air is necessarily expelled through the ejector, and that fresh air becomes the only source of supply for the flame.

The first question to be decided is as to the construction of the reissued patent, assuming that the lantern, when used out of doors in the ordinary way in which swinging hand-lanterns are used, is an

516 external air-feeder. The claims of the original and reissued patents are substantially recited in 8 Fed. Rep. 314. The first, second, and eighth claims of the reissue are new. The third, fourth, and fifth claims are the same as the first, second, and fourth claims of the original.

The important new claims of the reissue are the first and second. The fourth claim of the reissue, which was the second claim of the original, is the same as the first claim of the reissue, and the fifth claim, which was claim 4 of the original, is the same as the second claim of the reissue, with the exception that each of said old claims has for one of its elements, expressly stated, the tube, H. In the new claims, this tube and the supply tubes, F, F, are called feed conduits, which supply fresh air to the burner. The plaintiffs contend that the tubes, H and F, supply fresh air, and, as occasion requires, nothing but fresh air, to the flame, and therefore that the original was not enlarged by specifying that such was their office. On the other hand, if the intention of the patentee, when the original specification was drawn, was to describe and claim a lantern which was supplied by external air, aided in anywise by an ascensive current or blast of heated air, or which was supplied either from one or the other source alone, as circumstances required; and if the description and claims specified, as the thing invented and patented, a lantern which had this double source of supply,—then the first two claims of the reissue, which was issued 10 years after the date of the original patent, are to be construed in accordance with the original claims, or are to be held to be an undue enlargement of the original patent. The eighth claim specified conduits which receive the “entire supply of fresh air for the interior of the burner.”

Although the inventor said in the specification of the original patent that the deflection of the external

air “would produce a current through the tubes, F, F, in the absence of any other cause,” I think that he meant to describe and claim a structure having conduits which would supply heated air when the lantern was at rest, and external air when the lantern was exposed to the wind, and would also have, in the last-named condition, the advantage, if any there might be, of a current of heated air. He meant that his patented lantern should be a structure having the cumulative advantages of internal and external air-feeding, and that his patent should be for a lantern which had heated air as an assistance in introducing a flow of fresh air through the tubes. This is shown in the following paragraph in his specification:

“It will also appear, from the above description, that there are three separate causes to produce a proper current through the tubes, F, F, to the base of the flame, viz., the ascensive force of the air heated by the burner flame, and the cooling of said heated air within the tubes; the pressure of a moving current deflected towards the mouth of the tube, H; and the centrifugal effect of swinging or oscillating the lantern. And it will be observed that either the second or third causes will always be cumulative with the first, to 517 produce an increased current at exactly the time when an increased supply is demanded in consequence of atmospheric disturbances in the immediate vicinity of the lantern.”

It follows that the defendants' lanterns do not infringe reissue No. 8,598.

It is unquestionable that the lantern described and claimed in patent No. 104,318 is an external air-feeder only. The lantern is very similar in external appearance to that of reissue 8,598. The feeding tubes open at their lower ends into an air-chamber above the oil-pot. At their upper ends these tubes open into “the air-chamber, F,” which is open at bottom and closed at top, and surrounds the upper end of the chimney. This “air-chamber” is an enlarged mouth-piece of the

supply tubes, and is closed at the top so that it shall not receive any of the heated air which passes through the chimney. The chimney is surmounted by a deflecting cap and surrounded by a deflecting plate, which are separated from each other by an annular space. At the bottom of the chamber, F, are two annular deflecting plates, corresponding in diameter and relative disposition with the plates at the top of the chimney.

The first claim of the patent is/for “the annular chamber or fresh-air inlets, F, arranged with a deflecting plate or plates, or their equivalents, in the manner substantially as shown and described.”

The construction of the air-tubes of the defendants' lanterns is correctly described by Mr. Quimby, as follows:

“The upper ends of the elevated air-tubes are each provided with injecting devices or deflecting plates. \* \*  
\* In one of the lanterns a single vertical plate extends upward from the center of the upper open end of each tube. In the other lantern there is at the top of each tube, in addition to this vertical plate, another deflecting plate, which consists of a strip of metal inserted into the upper end of the tube and occupying a plane perpendicular to the first-mentioned deflecting plate. This strip of metal is curved outwardly to the upper outer corner of the first-mentioned deflecting plate, and is then turned horizontally inward along the upper edge of the first-mentioned deflecting plate, and is soldered to the tin cylinder which forms a portion of the top of the lantern. A horizontal plate extends around the top of the lantern, and occupies a plane midway between the upper edge of the first-mentioned deflecting plates and the upper ends of the tubes; this horizontal plate being slotted immediately over the tubes, so that air striking against it is turned toward the vertical deflecting plates, and by them is turned downward into the mouths of the tubes. The metallic

cylinder, which forms a continuation of the top of the globe, is provided with an ejector, which consists of a circular plate supported at some distance above the top of the upper end of the cylinder, and which is of larger diameter than the cylinder. A current of air, blowing laterally against either lantern, enters the space between the upper end of the cylinder and the circular plate, and draws air out of the interior of the globe and ejects it from under the lee edge of the circular plate. At the same time such current of air is turned by the deflecting plates into the upper ends of the air-tubes, and, being thus injected, flows down those tubes into the interior of the cone.”

The question in regard to the infringement of No. 104,318 turns upon its construction. The defendants insist that the patent is limited, 518 in its first claim, to a structure having an annular chamber which receives cold air and transmits it to the tubes, and that this receptacle must be literally a chamber. The words “fresh-air inlets” show that the office of the chamber is to admit fresh air. The receptacle of cold air which the patent calls a “chamber” is simply the common mouth-piece of the two supply tubes; and whereas, in the patent of 1869, this common mouth-piece, which was there called a tube, received both heated and cold air, it now cannot receive heated air, and receives and transmits cold air only. It is annular, because being the mouth-piece of two annular tubes and encircling the chimney, it is naturally annular, also. If this annular common mouth-piece is cut off, and air is admitted through two separate or independent mouth-pieces of two tubes, then there will be two annular chambers. The somewhat fanciful term “annular chamber” does not elevate the thing of which it speaks into anything else than the mouth-piece of two tubes. The two open ends or mouths of the defendants’ tubes operate on the same principle and perform the same function by analogous means (*McCormick v. Talcott*, 20 How. 402)

as the one chamber or common mouth of the tubes of the patented lantern. The defendants' deflectors are another and an equivalent form of the deflectors of the patent.

The improvement in patent No. 151,703 was mainly intended for a house-lamp, and was another application of the principle contained in No. 104,318, of supplying a kerosene lamp or lantern with cold air only, by means of deflectors which shall direct the air into the tubes in an irreversible current. The patent shows how the improvement can be applied to lanterns. In this patent one of two supply tubes are used, the common mouth-piece is dispensed with, and the deflectors are placed over the open mouth of each tube. The patentee says that his invention consisted—*First*, in combining with a lamp-burner or wick-tube a surrounding air-chamber and a draught-tube, extending therefrom to a point detached from the outlet of the chimney-top, and nearly or quite as high above the flame as the outlet for the products of combustion; and, *second*, in combining with said draught-tube an atmospheric injector, to cause the air-currents, in whatever direction moving, to enter said air-tube and descend to the flame." The injector was composed of a number of conical shells, arranged with their bases outward and concentric with the axis of the tube. "Their effect," says the patent, "is to deflect into the tube, E, the atmospheric currents which come in contact with said plates, from whatever direction, and thus insure a current of air through said tube uniformly in one direction."

The second claim is as follows: "In combination with the burner, having the wick-tube surrounded by an air-chamber, and provided with one or more independent draught-tubes, E, the atmospheric injectors, E, at the open ends of said tubes, as set forth."



The main defense against the charge of infringement is that the defendant's 519 injectors do not receive air from whatever direction it may come, but only from some particular directions. This is a secondary patent, being an improvement upon the lantern of No. 104,723, which furnished nothing but unheated external air to the flame, the improvement consisting in placing injectors or protectors at the open upper ends of one or two tubes. I do not, therefore, give the patent the defendant's narrow construction, which is that it is limited to the particular form of protectors or injectors which are described. The defendants' protectors are one of a variety of equivalent forms which could be adopted without departing from the principle of the invention or the claim of the patent.

Let there be a decree for an injunction against an infringement of the first claim of No. 104,318, and the second claim of No. 151,703, and for an accounting, and for a dismissal of so much of the bill as relates to the Carihfield patent, and to reissues Nos. 8,611 and 8,598.

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