SARGENT *v.* BARRY *ET AL.*

Circuit Court, S. D. Iowa, E. D. February 21, 1890.

PATENTS FOR INVENTIONS—INFRINGEMENT—TRAPS FOR WATER-CLOSETS.

The third claim of letters patent No. 199,582, for an improvement in traps for water-closets, issued January 22, 1878, describes an enlargement of the drain or waste pipe, or terminal of the traps, so as to form a chamber with an air-vent, and provides for a discharge for the downward or eduction limb of the traps nearly on a level with the bottom of the trap and its seal, so that a column of water of sufficient length to overbalance the seal cannot accumulate in the downward opening limb of the trap, and no, siphonic action can occur. Defendants manufactured a trap in which, at the upper bend of the S-shaped trap they placed an air-pipe, for the purpose of securing a pressure of air on the upper bend of the siphon, thus preventing

siphoriic action when the water in the discharge pipe overbalanced that in the trap. The insertion of this air-pipe caused a slight enlargement of the upper bend of the S-shaped pipe. *Held,* that defendants' trap was not an infringement of plaintiff's patent.

In Equity. Bill to restrain infringement of patent.

This is an action in equity, brought by James Sargent against Nicholas Barry and others, to restrain defendants from infringing letters patent No. 199,582, for an improvement in traps for water-closets.

Banning & Banning & Payson, for complainant.

F. H. Alexander and *James H. Pierce,* for defendants.

SHIRAS, J. On the 22d of January, 1878, letters patent No. 199,582 were issued to complainant for "an improvement in traps for water-closets," etc. In the specifications the purpose of the invention is described as follows:

"My invention relates to that class of drain-traps known as the 'siphon trap' or 'water seal;' and its object is to prevent the water from being drawn from the seal by siphonic action, as is now frequently the case when the pipe is flushed, and the seal becomes overbalanced by water closely filling the trap and drain-pipe below or beyond it for a distance greater than the length of the intermediate limb, or the seal, of said trap. When this occurs, the water of the seal is so reduced below its effective level as to allow a free passage of air through the trap, and poisonous gases and foul air rising from the sewers are permitted to escape into the house through the traps and basins, and the atmosphere within the house becomes contaminated thereby, and engenders disease among the occupants. To this end my improvement consists—*First,* in the combination with a siphon-trap or water-seal of a drain or waste pipe of an enlarged chamber or swell formed in said pipe downward, beyond the seal thereof, and an air ventilating pipe or passage leading from said chamber or swell; *second,* in the combination with the said trap and enlarged chamber or swell of a ventilating pipe and a flue or wall ventilating passage, with which said air-pipe is connected, whereby the sewer gases are carried off from the drain or waste pipe, and a constant supply of air furnished thereto; *third,* in a new article of manufacture, consisting of a siphon trap or water seal, combined with an enlarged chamber or swell, arranged at or near the eduction terminal thereof, and adapted for connection to a ventilating pipe, whereby said chamber or swell may be constantly supplied with air."

The third claim of the patent is as follows:

"(3) The improved water trap or seal herein described, consisting of the tubular limbs, b, b^1, b^2, of the reversely-bent pipe, B, and the enlarged chamber or swell, C. formed in one piece therewith, and adapted for connection to a ventilating pipe, substantially as described, and for the purpose set forth."

The bill charges an infringement of the third claim of said patent, and it appears in the evidence that the defendants manufacture and use a trap of S-shape, constructed with a

downwardly-flaring vent, arranged directly over the inverted curve or crown of the trap, having attached thereto, a vent-pipe. This form of construction results in an increase in the size of the pipe, forming a trap at the crown thereof; and, the vent-pipe being connected therewith, air is thereby readily conveyed into the flaring vent, and thereby siphonic action is prevented. On behalf of

complainant, it is claimed that a trap thus constructed performs all the functions of a trap arranged according to complainant's patent, and that it falls literally within the language of the third claim thereof. On behalf of complainant, it is further claimed that he is not limited to any particular form or position of the swell or chamber, so long as the same is placed on the eduction side of the trap.

The evidence shows that before the date of Sargent's invention the use of ventilating pipes connected with the trap was common. Such use appears in the patent issued January 10, 1860, to W. G. Mackay, and in various forms appears in other patents antedating that issued to complainant. It also appears in the evidence that it had been the custom to attach the ventilating pipe to the crown of the trap, but experience had shown that this mode of inserting the ventilation pipe was open to the objection that it formed a rough spot, or slight obstruction, at the crown of the trap, and tended to interfere with the free passage of the material coming from the closet. It also appears that the use of a chamber greater in diameter than the pipe of the trap into which the eduction end of the trap emptied itself antedated the Sargent patent; different forms thereof appearing in the Schmitz patent, of September 12, 1876, and in the Mackie patent, of March 20, 1877. It was also well known that the ordinary S and other traps were liable, through siphonic action, to be emptied of the water that should remain therein, and thus the foul air might pass into the house; and various devices were in use to obviate this difficulty. In the Mackie patent it was sought to prevent siphonage by placing above the crown of the trap an air chamber connected with the crown of the trap, and another air chamber which received the eduction end of the trap, and was connected with the discharge pipe. When, therefore, the complainant entered this field of invention, he was not the first to attempt the prevention of the known defect of siphonage in water traps by the use of air chambers, nor was he the first one to put in use a vent at the crown of the siphon. As stated in the specifications, the object of the invention "is to prevent the water from being drawn from the seal by siphonic action, as is now frequently the case when the pipe is flushed, and the seal becomes overbalanced by water closely filling the trap and drain-pipe below or beyond it for a distance greater than the length of the intermediate limb, or the seal, of said trap." The difficulty sought to be remedied, according to this statement, is siphonic action caused by the eduction or discharge end of the trap being so much longer than the induction end that the column of water in the former extends so much below the bottom of the water in the trap that by its greater weight it runs rapidly out when the closet is flushed, and thus creates siphonic action. Two general modes are resorted to for the prevention of siphonic action: One is to provide for the free access of the air at the crown of the siphon; the other is to shorten the eduction leg of the trap, so that the column of water therein does not materially overbalance that in the induction leg. The complainant followed the latter mode, as appears from the statement in the specifications, that—

By enlarging the drain or waste pipe, or the terminal of the trap, so as to form the chamber or swell, C. I provide a discharge for the downward opening or eduction limb, b^1, of the trap, at or nearly on a level with the bottom of said trap and its seal, so that a column of water of sufficient length to overbalance the seal cannot accumulate in said downward opening limb of the trap, and consequently no sipnonic action will occur to impair the efficiency of the seal, as will be readily understood from a knowledge of siphonic action."

In other words, siphonic action is to be prevented by keeping the eduction leg of the trap so short that it will, not act as a siphon. To do this, and yet not interfere with the proper carrying away of the material passing through the trap, complainant provides for the discharge of the eduction leg of the trap into a chamber of larger diameter than the trap, and which is connected with the air by a ventilating and air pipe, and also with the discharge pipe passing into the sewer. To prevent siphon-age, the chamber or swell must be so located that the eduction leg of the trap is not of sufficient length, as compared with the induction leg, to create a siphon. The object aimed at by complainant was to prevent siphonage by providing a chamber or swell to receive the discharge from the eduction leg of the trap, so arranged that the education leg would not have length sufficient to create siphonic action. This is clearly shown by the statement that—

By enlarging the drain or waste pipe, or the terminal of the trap, so as to form the chamber or swell, C, I provide a discharge for the downward opening or eduction limb, b^1, of the trap at or nearly on a level with the bottom of said trap and its seal, so that a column of water of sufficient length to overbalance the seal cannot accumulate in the said downward opening limb of the trap."

In the drawings attached to the patent are found a number of different forms, showing how the invention can be applied; but in them all the chamber or swell is located near the level of the bottom of the seal, and all are formed to receive the discharge from the eduction leg of the trap. In the Sargent combination, therefore, it is clear that the chamber or swell, C, is intended to form a reception chamber for the purpose of receiving all matter passing through the trap, and its location is intended to be at the end of the eduction leg of the trap. By connecting therewith the air pipe or vent, there is insured the presence of air in the chamber or swell, which is necessary to complete the breaking of the eduction leg of the trap, and also there is provided ventilation, or a means for the escape of foul air through the vent-pipe and wall chamber with which it is connected.

The essentials of the combination are a chamber or swell to receive the discharge from the eduction leg of the trap, connected with a vent-pipe to secure admission of air to the chamber; the eduction leg being kept sufficiently short to prevent siphonic action. Are these essentials found in the Barry construction? As already stated, there is found therein a vent-pipe connected with the crown of the trap by a flaring connection which enlarges the pipe at this point; and the contention of complainant is that this enlargement is the

counterpart of the swell or chamber of his combination. It is not intended, however, in the Barry

combination, that this enlargement shall receive the discharge from the eduction leg of the trap, as is its purpose in the Sargent combination, nor, in fact, to receive the discharge of the matter passing through the trap. Its purpose, so far as siphonage is concerned, is to secure free communication of the air to the column of water at the crown of the trap; and the less the enlargement is filled with water, the more certainly will it prevent siphonic action. The enlargement is not, therefore, intended to receive the discharge from the eduction leg of the trap, nor from the induction leg, but to secure the pressure of the atmosphere upon the column of water at its highest point, where such pressure will act upon both the induction and eduction legs of the trap. The rounded or curved form of the enlargement is given it to prevent the point of junction acting as an obstruction to the passage of the water and other matter through the trap. Siphonic action is prevented without receiving into the enlargement any of the contents of the trap, whereas in the Sargent combination the swell or chamber is intended to receive into it the entire matter passing through the trap, and by so doing to shorten the eduction leg.

The differences in the location, purpose, and mode of action of the swell in the Barry combination, as compared with that of the Sargent patent, are such that the former cannot be held to be an infringement of the latter; and consequently complainant's bill must be dismissed at his own costs.