

and statute, amount to an invention or discovery." *Lock Co. v. Greenleaf*, 117 U. S. 554, 6 Sup. Ct. 846; *Gardner v. Herz*, 118 U. S. 180, 193, 6 Sup. Ct. 1027; *Kelly v. Clow* (by this court, July 26, 1898) 89 Fed. 297, and cases cited. In none of these claims is it possible to find anything of a mechanical and operative or functional character which did not exist before in similar relations and combinations, and in none of the many differences of form pointed out is it possible to find evidence of invention or discovery. In the language of the opinion in *Hollister v. Manufacturing Co.*, 113 U. S. 59, 5 Sup. Ct. 717, the claims are for combinations the conception of which involved "only the exercise of the ordinary faculties of reasoning upon the materials supplied by a special knowledge" of the existing art. The decree below is reversed, with direction to dismiss the bill.

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BATES MACH. CO. et al. v. EXCELSIOR HEATER CO.

(Circuit Court of Appeals, Seventh Circuit. October 3, 1898.)

No. 499.

PATENTS—FEED-WATER HEATERS.

In the improved feed-water heater and purifier described in the Ferreira patent, No. 400,319, the separation of the oil from the exhaust steam used for heating purposes by means of the steam chamber, which permits the expansion of the steam in its passage, is an incidental function only, and not covered by the patent, being performed in a similar manner by the heaters described in earlier patents, notably that of Crighton, Wills, and Rastetter, No. 65,547.

Appeal from the Circuit Court of the United States for the Northern District of Illinois.

This appeal is prosecuted by the Bates Machine Company and Thomas J. Cookson from a decree of injunction forbidding infringement of the second, third, and eighth claims of letters patent No. 400,319, granted on March 26, 1889, to Charles E. Ferreira, assignor of the appellee, the Excelsior Heater Company, for an improvement in feed-water heaters and purifiers. The claims read as follows:

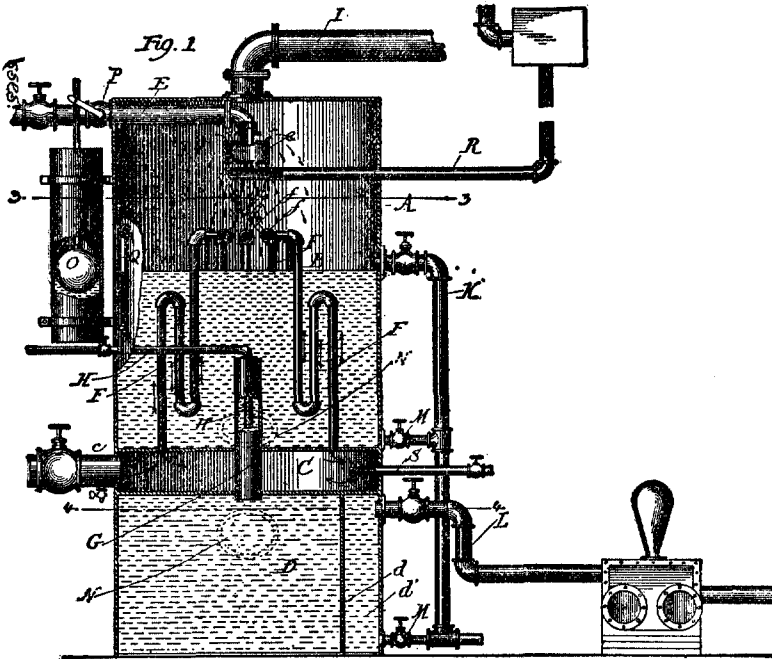
(2) In a feed-water heater, the combination of a water chamber provided with a water inlet, a steam chamber provided with a steam inlet, a pipe communicating with the steam chamber and extending into the water chamber for conducting steam through the water, a settling chamber, a pipe communicating between the water chamber and the settling chamber for conducting the water into the settling chamber, and an outlet for drawing off the water, substantially as described.

(3) In a feed-water heater, the combination of a water chamber provided with a water inlet, a steam chamber under the water chamber, provided with a steam inlet, a pipe communicating with the steam chamber and extending into the water chamber for conducting steam through the water, a settling chamber under the steam chamber, a pipe communicating between the water chamber and the settling chamber for conducting the water into the settling chamber, and an outlet for drawing off the water, substantially as described.

(8) In a feed-water heater, the combination of a water chamber provided with a water inlet, a steam chamber provided with a steam inlet, a pipe communicating with the steam chamber and extending into the water chamber for conducting steam through the water, a settling chamber under the steam chamber provided with a vertical partition perforated in its lower portion, a pipe communicating between the water chamber and the settling chamber, terminating at its upper end at a point in the water chamber be-

tween the surface and bottom of the water, and an outlet for drawing off the water, substantially as described.

Figure 1 of the drawings is here reproduced:



The technical description of the parts is as follows:

A is the shell or sides of the heater; B, a water chamber; C, a steam chamber, and c, an inlet for introducing exhaust steam; D, a settling chamber; d, a vertical partition in the settling chamber perforated at or near its bottom, and d', space separated by such partition; E, an inlet pipe for introducing water into the heater, and e, the inner perforated end thereof; F, a pipe for conducting steam into the water chamber and through the water, and f, the nozzle thereof; G, a pipe for conducting the heated water to the settling chamber; H, a pipe for introducing live steam into the pipe leading from the water chamber to the settling chamber; I, a relief pipe for the escape of surplus steam; K, an overflow pipe; L, the suction pipe of the feed pump; M, drain valves, and N, manholes for cleaning out the chambers; O, a float in a side chamber to open or close a valve, P, in the water-inlet pipe; Q, a gauge or indicator to show the water level in the water chamber; R, an inlet pipe for introducing condensed steam from a trap or traps when desired; and S, an inlet pipe for introducing live steam into the steam chamber when exhaust steam is not to be used.

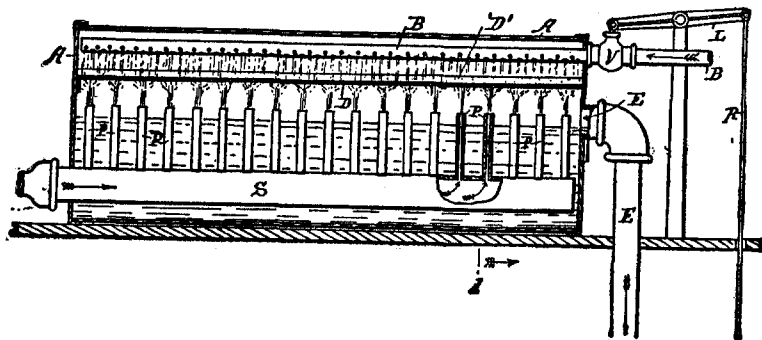
The specification contains also the following statements:

As now generally constructed, feed-water heaters are not capable or economically heating the water to the high temperature necessary to precipitate the impurities or scale-forming matter to the extent necessary to fully purify the water. My invention is intended to overcome this objection to a greater or less extent, and to secure other advantages not obtained by the feed-water heaters now in general use. \* \* \* Passing up from the settling chamber to any height desired in the water chamber is a pipe intended to conduct the heated water into the settling chamber, and a pipe for the introduction of live steam may enter or be connected with this water pipe at any con-

venient point. I prefer to turn the end of this steam pipe, and run it down in the water pipe a short distance, and to have its end closed by plugging or otherwise, and the sides of its turned-down portion perforated to distribute the steam laterally. By means of this pipe, live steam may be introduced directly into the comparatively small quantity of outflowing water, so as to commingle therewith, and thus superheat it or greatly increase its temperature. In this way the water can be heated to any temperature required before or as it enters the settling chamber, and, the temperature being sufficiently high, of course the impurities or scale-forming matter are immediately precipitated in the settling chamber. I prefer and consider it important to have the live steam thus introduced at a temperature sufficiently high to cause the impurities or scale-forming matter to be rapidly and fully precipitated. I also prefer to have this pipe for the outflow of water at the center, and its upper end at a point about halfway between the surface and bottom of the water, so as to draw off the water without scum, oil, or other floating matter, and with as little as possible of the heavier impurities. \* \* \* Some of the advantages of my invention are that it provides for heating and purifying water by the use of either live steam or exhaust steam; that it also provides for heating and purifying water by the use of both live steam and exhaust steam; that it also provides for an unusually large heating surface in and under the water; that it also provides for drawing off the heated water without taking any of the floating impurities or many of the precipitated impurities; that it also provides for introducing live steam directly into the outflowing water, so as to superheat it or greatly increase its temperature, and thus cause the remaining impurities, which require a higher degree of heat, to be precipitated into the settling chamber; that it also provides for a water level high enough to facilitate the pumping of boiling water, and thus to obviate the necessity of elevating the heater; and, generally, that it is simple, efficient, and economical both in construction and use. Although my invention is thus capable of producing many important results, it will, of course, be understood that I do not intend to limit myself to a construction in which all of them or any particular number of them are obtained; nor do I wish to be understood as limiting myself to minor features or details of construction, or to the particular way or mode of operation described.

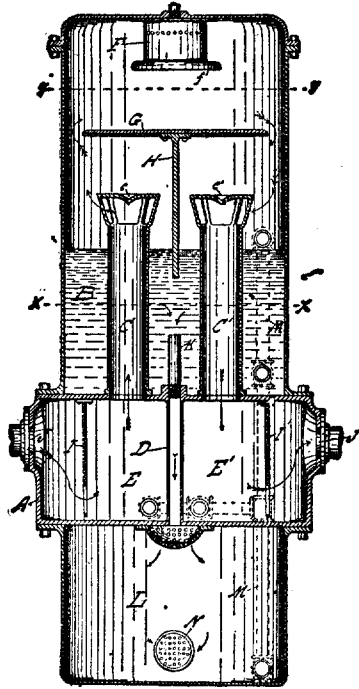
The prior art in evidence consists of the following letters patent: No. 65,547, to Crighton, Wills, and Rastetter; 75,163, to J. S. Horton; 3,618, reissue, to E. R. Stilwell; 132,170, to R. K. McMurray; 141,517, to Sadler and Volmar; 169,332, to W. J. Austin; 178,932, to G. F. Jasper; 179,966, to S. A. Shoaff; 207,337, to W. J. Austin; 250,995, to C. Stewart; 273,084, to J. J. Hoppes; 313,287, to D. Cochrane; 384,540, to William Oliphant; and 385,769, to James Miller.

The following is Fig. 1 of the Miller patent, except the settling chamber and adjuncts at the lower ends of the pipe, E, and rod, R.



The heaters of the appellants were constructed according to letters patent No. 542,331, issued to the appellant Cookson, of which Fig. 1 and the description are as follows:

A represents the steam chamber; B, the water chamber; C, C', the pipes leading from one to the other; D, the hollow partition dividing A into two compartments, E and E'; F, the water inlet; G, the table upon which the water falls; H, the partition by which the steam is prevented from passing directly from C into C'; I, I', the baffle plates; J, J', the feed and exhaust ports; K, the water-outlet pipe; L, the filtering chamber; M, the overflow or waste pipe; and N, the water outlet. The operation of my invention is as follows: The steam, passing through in the direction of the arrows, first strikes upon the baffle plate, I, where it is deflected downward, and the oil and water precipitated into the compartment, E; thence up through C, into the water chamber, where it comes in contact with the spray from the water inlet; thence down through C', into E', where it strikes the baffle plate, I', which further purifies and dries the steam, and then exhausts through J'. The water entering at F is sprayed into the chamber, B, where it comes in contact with the steam, and, falling upon the table, G, spreads out and runs over its edges, where it is again mixed with the ascending and descending flow of steam, and thoroughly heated. The sprinkler, F, has a pan or collar, f, upon its lower edge, to spread the water into a thin sheet. The table, G, extends out over the top of the pipes, C, C', in order to prevent the water running down them. C and C' are also provided with caps, c and c', for the same purpose. The partition, H, extends from the table, G, down to a point below the water level, which seals the lower edge of it to the passage of the steam, compelling the steam to go up and around the table, G. The outlet pipe, K, draws the water off from B at a point a short distance below its surface, conducting it into the hollow partition, D, and from thence it runs into the filtering or settling chamber, L. Thus, it will be seen the water is first thoroughly mixed with the steam, and heated, in the upper portion of the chamber, B. It then settles into the lower portion, where it is further heated by coming in contact with the pipes, C, C', part of the impurities being precipitated and removed by settling, and further heated in the hollow partition, D, which is heated to a high temperature by the steam upon both sides of it. The chamber, L, is preferably filled with a filtering substance, by which the remaining impurities are removed from the water before it is drawn off at N. The impurities which have settled in the different chambers, B, E, E', and L, are drawn off through the waste pipe, M. I have shown the steam as passing through the heater from the port J to the port J', but it is obvious that, from the similarity and symmetrical disposition of the parts, the result will be the same if the direction be reversed. This gives to my heater the advantage of being adapted to be set up upon either side of the boiler or engine, or in various positions, and the connections easily made. The baffle plates, J, J', are corrugated in order to present a larger surface to the steam, and the corrugations extend from a middle line diagonally downward to the edges, in order to drain off the water and oil to the sides.



J. W. Munday, for appellants.  
Thomas A. Banning, for appellee.

Before WOODS and SHOWALTER, Circuit Judges, and BUNN, District Judge.

WOODS, Circuit Judge, after making the foregoing statement, delivered the opinion of the court.

The result of the briefs and of the argument at the hearing, as well as of the opinion of the court below, is that the steam chamber, operating as an oil separator, is the one feature to be considered in determining whether any of the claims in suit cover a patentable combination which has been infringed. It has long been well understood that exhaust steam, when it comes from a cylinder, is charged with more or less lubricating oil, and, when the steam is employed for the purpose of heating water intended for use in steam boilers, it is important that the oil shall not go with the water into the boilers; and it is clear upon the evidence in the record that, as exhaust steam passes through the chamber of a heater constructed according to the patent in suit, the oil is to some extent separated therefrom and remains in the chamber, and consequently a less quantity is carried to the chamber above, to commingle with the water. The evidence also shows that any form of enlargement in the passageway of the steam will cause a separation of the oil from the steam, more or less complete according to the character of the enlargement or chamber. The separation may be aided by the use of baffle plates upon which the current of steam strikes as it enters the chamber; and such plates, though not shown or suggested in the patent, have been inserted for that purpose in the steam chambers of the heaters manufactured by the Excelsior Heater Company. The controlling question is whether Ferreira was the first to embody in a heater a steam chamber, or its equivalent, which, without a baffle plate, was adapted to separate to a useful extent oil from the passing steam. It is evident that he had no such thought when his application for the patent was prepared. The specification gives no hint of it, though other and less important functions of the chamber, supposed to result from its location between the water chambers above and below, are carefully explained; and, while other minute and commonplace features of construction are illustrated or specified, the drawings show no outlet for the oil from the bottom of the steam chamber. On the contrary, it was manifestly the understanding and intention of Ferreira that the oil should float upon the surface of the water, and pass off through the overflow pipe, K; the pipe, G, for conducting the heated water to the settling chamber, being so adjusted "as to draw off the water without scum, oil, or other floating matter." It is, of course, true that the patent is not to be deemed invalid or of less scope because the oil-separating function is not mentioned in the specification; but, when it is considered that in the first heater manufactured under the patent the patentee caused a baffle plate to be inserted in the steam chamber for the purpose of producing or of aiding in producing there a separation of oil from the steam,

the reasonable inference is that he did not regard the separation so effected (with or without a baffle plate) as a characteristic of his invention. Indeed, he testified that the results accomplished by his device depend "on the exact combination and location of these three chambers"; and the attempt made in another part of his examination to attribute to the solicitor who prepared the application for the patent the responsibility for omitting any reference to the oil-separating function of the steam chamber,—a function which in no degree depended on the relative location of that chamber,—in view of all the circumstances, is not convincing.

But, whatever his own belief on the subject, Ferreira was not, in fact, the first to introduce into a water heater an enlargement in the passageway of the exhaust steam, which, by permitting a reduced velocity and expansion of the steam, was, in respect to the function of separating the oil, the equivalent of the steam chamber of the patent. Unmistakable instances of anticipation in that particular are found in the patent of Crighton, Wills, and Rastetter, No. 65,547, and that of Miller, No. 385,769, and less clearly, perhaps, in the patent of Oliphant, No. 384,540. One of the experts, speaking of the Miller patent, said that he did not regard the steam pipe, S, as a steam chamber; that it was not so described in the patent; that, while somewhat larger than the exhaust pipe, the difference was not enough to enable it to perform successfully the function of separating the oil; that there is no evidence either in the drawing or specification that it was intended to perform that function; and that no means is shown for removing the oil in case it should be separated. All this, except that the pipe is not called a steam chamber, is no more true of Miller's heater than of Ferreira's; and that the pipe in Miller's construction would in fact separate the oil from the steam in considerable measure is demonstrated by the proof offered by the appellee of the efficiency in that respect of a mere enlargement of the pipe through which the exhaust steam is conducted to the heater in use at 116 Dearborn street, Chicago. If it is to be supposed that Miller's pipe did not successfully or completely separate the oil from the steam because not large enough, it required no invention to make the pipe larger. In neither patent is the function mentioned, and there is no direct evidence that without a baffle plate the chamber of the one would separate the oil and steam more successfully than the enlarged pipe of the other. The difference, if any, it is evident, can be only in the degree of efficiency. The heater of Crighton, Wills, and Rastetter has a steam chamber immediately under the water chamber, and only needs a settling chamber below to embody the exact combination and location of chambers on which, according to Ferreira, the results accomplished by his device depend. The use of a second receptacle or settling chamber for the heated water, however, is of frequent occurrence in the earlier devices; and to add one to a heater composed of a single water chamber at the date of Ferreira's application was certainly not an achievement of inventive or creative power. Besides, it is to be observed, no claim of the patent in suit requires the exact combination and location of the three chambers

illustrated in the drawings. The second claim is for the three chambers with connecting pipes, but there is no requirement that one chamber be above or below or in contact with another. By the third claim the steam chamber is under the water chamber, but it need not be in contact, and no location for the settling chamber is specified; while by the eighth claim the settling chamber is under the steam chamber, but not necessarily in contact, and the relative location of the water chamber is not specified. Manifestly, therefore, if the patentee was right in respect to the beneficial results, he was mistaken if he thought the exact combination and location of the three chambers were required by any of the claims of his patent, or were in fact new and patentable. It would be obviously absurd to attribute patentability to changes in the relative locations of the chambers unless a distinctly new and useful result were produced; and in respect to the single function material to be considered, of separating oil from the exhaust steam, it is not pretended or conceivable that the location of the steam chamber can affect the operation. In respect to that function, no witness has testified or declared a belief that the steam chamber of Crighton, Wills, and Rastetter is not quite as well adapted as that of Ferreira to effect the separation; and that it is in fact better adapted for that purpose seems clear, because it is quite equal in size, and, as constructed, its walls and angles must have in a degree the effect of baffle plates. The decree of the circuit court is reversed, with direction to dismiss the bill.

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H. W. JOHNS MFG. CO. v. ROBERTSON et al.

(Circuit Court, S. D. New York. August 24, 1898.)

**1. PATENTS—PRIORITY—PRESUMPTION FROM NUMBERS.**

Where two patents are issued to the same person on the same date, covering practically the same invention, there is no presumption from the numbers as to which was issued first, and neither will be held an anticipation of the other; but the patentee or owner may elect upon which he will rest, and the other will be declared inoperative.

**2. SAME—ANTICIPATION—COVERING FOR STEAM PIPES.**

The Pierce reissue, No. 10,376, as to claim 1, for "a covering for pipes, boilers, etc., consisting of layers of paper so secured together at intervals as to form air spaces," was not anticipated by prior inventions in which porous or fibrous materials were used, nor by the Reed patent, No. 171,425, for a paper covering, but without air spaces.

**3. SAME—CANCELLATION OF PATENT.**

The Pierce reissue, No. 10,375, for a covering for steam pipes, being for practically the same invention as No. 10,376, issued on the same date to the same patentee, and which is herein sustained, *held* inoperative, and its assignment or sale prohibited.

This is a suit in equity for infringement of a patent. On final hearing on pleadings and proofs.

Edmund Wetmore, for complainant.

Hugh C. Lord, for defendants.