Grier Vs. Wilt

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Appellant : Grier

Respondent : Wilt

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Grier v. Wilt - 120 U.S. 412 (1887)
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Grier v. Wilt

Submitted January 24, 1886

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120 U.S. 412

APPEAL FROM THE CIRCUIT COURT OF THE UNITED

UNITED STATES FOR THE DISTRICT OF DELAWARE

SYLLABUS

In view of the state of the art, claim 4 of letters patent No. 190,368, granted to Asa Quincy Reynolds, May 1, 1877, for an "improvement in automatic fruit dryers," namely,

"4. In combination with a fruit dryer, the outer wall of which is made up of the frames of the several trays, as explained, a suspending device, operating substantially as described, and supporting said dryer from a point in or on the lowermost tray thereof, for the objects named,"

is not infringed by an apparatus constructed in accordance with the description in letters patent No. 221,056, granted to George S. Grier, October 28, 1879, for an "improvement in fruit dryers."

In a suit in equity for the infringement of letters patent, prior letters patent, though not set up in the answer, are receivable in evidence to show the state of the art, and to aid in the construction of the claim of the patent sued on, though not to invalidate that claim on the ground of want of novelty when properly construed.

This was a bill in equity to prevent the infringement of letters patent. Decree for a perpetual injunction, from which the defendants appealed. The case is stated in the opinion of the Court.

Page 120 U. S. 413

MR. JUSTICE BLATCHFORD delivered the opinion of the Court.

This is a suit in equity brought in the Circuit Court of the United States for the District of Delaware, by John F. Wilt against George S. Grier, for the infringement of letters patent No. 190,368, granted to Asa Quincy Reynolds, May 1, 1877, for an "improvement in automatic fruit dryers." The specification, drawings, and claims of the patent are as follows:

"Figure 1 is a partial section [p. 120 U. S. 414] and elevation of my improved fruit dryer, showing the same as being located over an ordinary stove, and illustrating a simple means of elevating the machine. Fig. 2 [p. 120 U. S. 415] is a similar

view, showing the dryer as located over a large furnace, as in the most extensive dry houses. Fig. 3 [p. 120 U. S. 416] is a perspective view, illustrating the improved dryer in a position removed from over an ordinary cooking stove. Fig. 4 [p. 120 U. S. 417] is a perspective view of a fragment of a square tray or section, showing more plainly the metallic lining and the sockets and pins, which may be conveniently used in this form of tray. Fig. 5 [p. 120 U. S. 418] is a similar view of a fragment of a round tray or section, showing also the tin or metallic lining. Like letters of reference in all the figures indicate corresponding parts."

"The object of my invention is to simplify the construction of the fruit dryers in common use, both for domestic and factory purposes, reducing the cost, increasing the efficiency, and rendering them easier to be manipulated, and at the same time fire-proof, and capable of being enlarged or constructed at the pleasure of the operator, to accomplish all of which it [the invention] consists in certain details of construction and combination of parts, as will be hereinafter fully described, and then pointed out in the claims."

"In Fig. 1, N is an ordinary stove or heating drum, over which is located the dryer, consisting of a number of trays so constructed as that anyone will receive a similar one above "

Page 120 U. S. 414

image:a

Page 120 U. S. 415

image:b

Page 120 U. S. 416

image:c

"strength to support the weight of fruit. K is the main body of the tray, having a surrounding hoop, L. The several trays being of one size (save the uppermost, to be hereinafter described), it will be observed that each one will form a section of the wall of the dryer, no matter what its position, and that this wall may be increased in height as much as desired or found necessary. "

Page 120 U. S. 417

"A is a crane, and B a rope or chain running over it, and controlled by the windlass O. From the crossbars C, the ropes or chains G depend, and these are made to suspend the dryer through the medium of the handles H H &c.; upon each tray. In order to prevent the dryer from tipping when elevated, three or more handles should be employed in connection with a corresponding number of chains or ropes G."

image:d

"At M is shown an iron ring, supported slightly above the top of the stove N and upon which the lower tray rests. The dryer is built up as follows: fruit having been suitably disposed in a tray, the hooks upon the lower ends of the ropes G are placed under two or more of the handles H H on the lowermost tray of the dryer already over the stove, and the whole is elevated by means of the windlass O a trifle more than the depth of one tray. The fresh tray is then placed upon the ring M and those above lowered upon it, being so guided by the hands that the hoop of the one to which the ropes are attached will fit over the top of the one placed thereunder. In this way the dryer may be built as high as desired by the successive introduction of trays below. The swinging crane and windlass combined is regarded as the simplest means likely to be employed for elevating the dryer."

"As the drying progresses, and the trays are elevated, the fruit therein becomes more and more compact or shriveled up, leaving a comparatively free passage for the heated air through the body of the dryer, in consequence of which very

Page 120 U. S. 418

much of said air would pass off without accomplishing the work intended, and, the partially cured fruit occupying considerably less space than the fresh, it is desirable that one or more smaller-sized trays be provided for its reception. Upon the top of the uppermost of the main series of trays I place a flange F, having a circular opening, with upwardly projecting collar, over which flange is located the tray E, made in all respects similar to those below save as to its size. This flange serves to contract the flue formed by the series of trays below, and if the partially dried fruit be placed in the tray E,"

image:e

"it will partially retard the flow of the air, and thus utilize so much thereof as would otherwise be wasted in the completion of the drying process. Above the flange F, any number of small trays E may be placed, being matched one upon the other in a manner similar to those below."

"Within each tray, I propose to place a metallic lining *t t* (preferably of bright tin), the object of which is to protect the wood of the trays from heat, and prevent moisture from penetrating the same."

"In Fig. 2 the series of trays forming the dry house is shown as located over a large furnace placed below the flooring Q. This form is intended for the larger sizes of dry houses, and is not different, in principle or construction, from that already described, except in that no hoops are illustrated as being placed upon the trays. These may be connected or matched with each other by any desirable and appropriate means. "

Page 120 U. S. 419

"It may be found advantageous to construct the trays in other forms than circular, as indicated in Fig. 4, wherein the pin *p* and socket P are secured at suitable points upon the outside, and arranged to engage with similar sockets and pins upon the trays above and below, after the manner adopted in 'molders' flasks,' and the like."

"With the swinging crane, the dryer may be moved from over the stove, as shown at Fig. 3, when the ordinary cooking operations may be performed, and the dryer returned at pleasure, or, if desirable, the dryer may be elevated above the stove, leaving sufficient space between the two for the cooking utensils, and thus the drying and cooking processes be conducted simultaneously."

"At D, Figs. 1 and 2, is a swivel connection, by means of which the series of trays may be revolved, and thus the drying equalized throughout. As fast as the fruit is thoroughly cured, the trays are removed from the top, and may then be inserted at bottom, after having been charged with a fresh supply."

"In all fruit dryers it is observed that the material is liable to contract of shrivel in such a manner as to open passages for the heated air, in consequence of which the fruit in the trays is unequally dried, the air passing off through these passages without coming in contact with the surrounding fruit. This difficulty has given rise to numerous inventions calculated to obviate it, among the most noticeable of which are revolving trays and revolving covers or shields for said trays. These are found in practice expensive to build, difficult to handle and move, and liable to get out of order, and it is a very important feature of the present invention to do away with all these objections. This I accomplish by the introduction of a fan wheel calculated to retard the ascending currents of heated air and to distribute them uniformly across the whole area of the fruit-containing tray. In Fig. 1, the wheel W, composed of a series of inclined blades, is pivoted between the two bars *g g*, which are attached to the metallic lining *t*, before alluded to. It is sufficiently elevated above the foraminated bottom I as not to interfere with the placing of fruit

Page 120 U. S. 420

upon said bottom, if desired. The inclined blades cause the wheel to be rapidly revolved by the ascending currents of air, and these, meeting with a resistance, are compelled to pass by the blades in a uniform manner, said blades being so cut or separated as that they shall permit the passage of an equal quantity of air at every point below the bottom of the tray placed next above. Any number of these fans may be placed in the series of trays, as is apparent from the construction

above described. They are automatically operated, not liable to get out of repair, and they are found to be very efficient for the purposes intended. If the currents of air be very rapid and strong, the revolutions of the wheels are correspondingly rapid, and thus, under all circumstances, the currents are automatically regulated and always evenly distributed. For the larger sized dryers, the wheel W may advantageously be placed immediately over the funnel mouth S, conducting the heated air from the furnace below, as in Fig. 2. It may be pivoted in any desirable way, and other fans may be distributed throughout the series of trays. When the trays are made in square form, one fan, occupying as much space therein as possible, will be found to work satisfactorily. If the trays be made oblong, then two fans might be introduced, the better to occupy the necessary space. They should, of course, be made to work upon the same level. These wheels have now come to be denominated 'flutter wheels,' and I desire to be understood as not limiting my invention to any particular number to be employed, to any specified location of said wheels in the dryer, or to any particular method or suspending the same, so long as they are made to revolve independently of the trays and to accomplish the results intended."

"Having thus fully described my invention, what I claim as new, and desire to secure by letters patent, is:"

"1. In combination with a series of fruit drying trays, located one above the other, a second or supplementary series smaller than the first, and adapted to operate as and for the purposes explained. "

"2. The plate F, adapted to cover the flue formed by the lower series of trays and to receive and hold the upper series,

Page 120 U. S. 421

the whole being arranged and combined substantially as set forth."

"3. In combination with a fruit-drying tray, a fan wheel operated by the ascending currents of heated air, movable independently of said tray, and adapted to equalize the currents of air in the manner set forth."

"4. In combination with a fruit dryer, the outer wall of which is made up of the frames of the several trays, as explained, a suspending device, operating substantially as described, and supporting said dryer from point in or on the lowermost tray thereof, for the objects named."

"5. In combination with a fruit dryer adapted to be elevated, in the manner described, and suspended above a stove or furnace, a suspending device, substantially as shown, provided with a swivel connection, as and for the purposes set forth."

Infringement of the fourth claim only is alleged, the defendant's apparatus being that described in letters patent No. 221,056, granted to him October 28, 1879, for an "improvement in fruit dryers." The description and drawings of that apparatus, in the specification of that patent, are as follows:

"The nature of my invention consists in the construction and arrangement of a fruit evaporator, as will be hereinafter more fully set forth. In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawings, in which Figure 1 [p. 120 U. S. 422] is a side elevation of my improved fruit evaporator. Fig. 2 [p. 120 U. S. 422] is a sectional view of the same. Fig. 3 [p. 120 U. S. 423] shows the bottom of the dryer. Fig. 4 [p. 120 U. S. 423] is a vertical section of the roof. Fig. 5 [p. 120 U. S. 422] shows one of the boxes with removable trays."

"A represents a bed frame of suitable dimensions, provided with four upright posts B B between which the boxes are placed for forming the walls of the evaporator and holding the trays. In the bottom frame A are two straight bars C C crossing each other at right angles in the center, and dividing the bottom of the evaporator into four equal divisions. In each division is arranged a series of inclined slats *a a* and the "

Page 120 U. S. 422

image:f

Page 120 U. S. 423

image:g

Page 120 U. S. 424

"four series of said slats are inclined outward in the four different directions, whereby, when the evaporator is set over the furnace, the current of hot air, as it ascends, is directed to the sides of the machine. D D represent the boxes which go to form the walls of the evaporator, and which are open at top and bottom. Each box contains one or more removable trays *b* which rest upon cleats *d* on the inside of the box. The upper edges of the side bars of each box D are made V-shaped, while in their under edges are made corresponding grooves, so that the boxes will fit close together and can easily be moved back and forth. The outer sides of these side bars of the boxes have two or more horizontal notches *x x* at each end, into which take pivoted pawls *h h* . These pawls are pivoted to vertically movable posts or uprights I I, which are connected to the stationary corner posts B B by means of rods of bars *m* , attached to each post I, and passing vertically through eyes *i* in a groove on the stationary post B. Each movable upright I is provided with a rack bar *n* , and the two rack bars on the same side of the evaporator are operated by pinions *p* on a horizontal shaft H. The two shafts H H, on opposite sides of the evaporator, are operated by worms J J on a shaft K at one end of the evaporator, said worms taking into gear wheels L L on the ends of the shafts H H. The shaft K is provided with hand wheels M M for turning the same."

"In operation, the first box, having its tray or trays filled with fruit, is pushed in over the heater or furnace, and after being there say about ten minutes, more or less, as desired, it is raised up by the gearing and the pawls *h* , attached to the movable uprights I, and another or second box, similarly filled with fruit, pushed in under the first, and the first lowered down on the second, and so on until twenty or more boxes with trays have been arranged to form the evaporator. It will be

noticed that with my mechanism I lift each box independently of the others, so that I can lift a portion above, leaving the boxes of the lower part stationary, by disengaging the pawls below. This enables the operator to examine any one or more of the boxes by sliding them out while those above are suspended. "

Page 120 U. S. 425

"N represents the cover with central stack O. This cover is put on the first box to cause a draft, and it is raised by resting on the top or first box, so that the evaporator is complete at all times, whether one or twenty or more boxes are inserted. In the cover N is a bottom P which does not extend to the outer edges of the cover, thereby causing the vapor and heated air to be drawn from the middle to the sides to dry evenly, and it also aids in carrying off the fumes of the sulphur when such is used to bleach the fruit. I am aware that a fruit evaporator has been made with upright sliding bars or posts provided with spring pawls, which pass under the trays to support the same, but in such case the pawls are inaccessible, and none of them can be thrown out of the way, whereas in my case the operator can easily disengage anyone or more pawls on each post so as to lift anyone or more boxes, or all the boxes together, as may be desired."

The case was brought to a hearing on pleadings and proofs, the main issue raised by the answer and contested being that of infringement. The circuit court entered a decree in favor of the plaintiff, awarding a perpetual injunction and a reference as to profits and damages, in pursuance of which a final decree was rendered against the defendant for $1,918.97, with interest and costs, from which he has appealed.

The circuit court, in its decision, 5 F. 450, said:

"This patent [the plaintiff's] is for an improvement in automatic fruit dryers, and its peculiarity and novelty consist in mechanical arrangements and devices by which a stack of trays, fitting into each other, the outer edges of which constitute the outer side of the stack of trays or drying house, are moved upwards and suspended by attachments to the lower tray in order that a fresh tray of fruit can be inserted at the bottom, and the process repeated at pleasure, thus building up the

drying house or stack from the bottom. It is not contended that the patentee is the inventor of the movable trays the outer walls of which constitute the drying house. It is admitted that the existence of such trays for such purpose is old in the art, but the complainant contends that the patentee is the originator of an idea, which is a novel and useful

Page 120 U. S. 426

one, of raising the stack of trays from a point on the lowermost tray of the stack, thus making an opening for the insertion of a fresh tray containing fruit, and in this manner building the stack up from the bottom instead of from the top, . . . the object and value of the patent consisting not in the use of any special machinery for elevating the stack for the purposes intended, but the elevation and opening of the said stack at the bottom for those purposes by any machinery best calculated to attain that end. . . . The court is therefore of the opinion that any attempt by defendant or any other person to elevate the stack of trays so constructed as aforesaid, and from a point at or on the lowermost tray thereof, so as to insert new trays at the bottom successively, by any mechanism whatever adapted to accomplish that purpose, and which is a mechanical equivalent to the means employed by the complainant, is an infringement of his patent. . . ."

"The two machines, as will be manifest upon reference to the specifications and drawings in the respective patents, are alike in principle, having a stack in each case composed of sections of trays, fitting upon and into each other, the outer wall of which makes up and forms the exterior of said stack or drying house, and they are also so alike in their purpose and capacity of being moved upward from a point in or on the lowermost tray, and of being suspended in that position so as to admit the insertion of fresh trays in succession. They are unlike in their respective appliances and devices by which these objects are accomplished, and also in the facility by which intermediate trays between the top and bottom can be removed. The devices by which the trays in the complainant's patent are elevated in the manner described for the purposes mentioned are the cord and pulley passing over an upright crane, regulated by a windlass, or wheel and axle, with its ratchet and pawls, . . . the point of suspension . . . being directly over the center of the

stack, and from the ends of the cross-bars to which the rope passing through the pulley is attached depend ropes or chains, which are attached by hooks to handles upon the lowermost tray to be removed, thus contributing both a

Page 120 U. S. 427

lifting and suspending device. . . . The machine embodying the defendant's invention . . . exhibits the following means for effecting the elevation of the stack of trays, and their suspension, for the purpose of allowing new trays to be inserted at the bottom, to-wit, four movable uprights, each having a series of pivoted pawls, and arranged to slide in four stationary posts, secured in a frame, in combination with a series of boxes or trays having notches in their sides, whereby the boxes may be lifted independently of each other or all together. The power is applied through the medium of two worms, situated at each end of a drum or shaft, extending along the side of, and at least the width of, the stack to be lifted. These worms engage into appropriate cog wheels, affixed to two other drums or shafts running at right angles to the first-named shaft, on opposite sides of the stack, and extend horizontally the length of the same. Upon each of these last-mentioned shafts are geared at the ends of the same, small cog wheels, which, in turn, gear into vertical rack bars on the four sliding posts of the machine. The power is applied by means of a crank at the end of the first-named drum or shaft."

"Now here is undoubtedly a contrivance and device by which the novel and useful invention, first patented in the Reynolds patent, . . . of elevating the stack of trays from a point in or on the lowermost tray thereof, so as to permit the insertion of a fresh tray at the bottom, is accomplished. It matters not whether this device has the capacity of lifting the upper trays in the series, so as to open the same for inspection or for any other purposes. So long as it accomplishes the purpose or possesses the capacity of moving up the whole series of trays from a point on the lowermost tray of the same, so as to permit the introduction of a fresh tray, it is in that respect an infringement of the complainant's patent; nor is this conclusion altered because of any supposed advantages gained by the greater facility afforded by the Grier patent in opening the stack at any point above the lowermost tray, for purposes of inspection or otherwise. . . . The court, upon the best

consideration it can give to this subject, has come to the conclusion that the defendant in this cause has used, in the elevation

Page 120 U. S. 428

and suspension of the stack of trays in this dryer, mechanical appliances and contrivances which, while they differ some what in form from those used by the complainant, are mechanical substitutes and equivalents for the same, and in the use of the same for the accomplishment of the same results as those produced by the complainant's invention the defendant has infringed upon the exclusive rights secured to the complainant."

The specification of the plaintiff's patent states that the invention "consists in certain details of construction and combinations of parts." The existence in a fruit dryer of movable trays the outer walls of which constitute the drying house being old, the subject of the fourth claim is the arrangement in a fruit dryer with such trays of a suspending device connected with the dryer in or on the lowermost tray so as to raise that tray, with all the trays above it, and allow the insertion underneath all of a fresh tray, and then lower the trays above it, and couple the suspending device again to the lowermost tray, and so on. This is the effect or result of the mode of operation of the devices. The claim, however, is not for a process, but is only for mechanism. The decision of the circuit court seems to be based on the view that the claim covers all methods of raising the lowermost tray with those above it, if opportunity is given to insert a fresh tray underneath, and that, while the appliances and devices of the plaintiff and defendant are unlike each other, the defendant infringes because he attains the same result, of inserting a fresh tray underneath while the trays before inserted are moved up and held up by a force imparted to the lowermost one of them. The decision describes the invention as consisting in "elevating the stack of trays from a point in or on the lowermost tray thereof, so as to permit the insertion of a fresh tray at the bottom;" and it in effect regards all mechanism for causing such elevation in such manner as a mechanical equivalent for the patented mechanism, because the result is to allow a fresh tray to be inserted underneath. And this is the view urged here by the appellee.

The defendant introduced in evidence three United States

Page 120 U. S. 429

patents -- one to Adam Snyder, No. 48,733, July 11, 1865, for a "fruit dryer;" one to Joseph B. Okey and Ferdinand A. Lehr, No. 108,289, October 11, 1870, for an "improvement in fruit dryers;" and one to Joel Orlando Button, No. 155,286, September 22, 1874, for an "improvement in fruit dryers." Their introduction was objected to by the plaintiff because they were not set up in the answer. But they were receivable in evidence to show the state of the art and to aid in the construction of the plaintiff's claim, though not to invalidate that claim on the ground of want of novelty when properly construed. *Vance v. Campbell,* 1 Black 427, 66 U. S. 430 ; *Railroad Co. v. Dubois,* 12 Wall. 47, 79 U. S. 65 ; *Brown v. Piper,* 91 U. S. 37 , 91 U. S. 41 ; *Eachus v. Broomall,* 115 U. S. 429 , 115 U. S. 434 .

The Snyder patent and the Okey and Lehr patent show, each of them, in a fruit dryer a series of trays, arranged one above another so that the frames of the trays form the wall of the dryer. The Button patent shows a fruit dryer within which is a movable frame, which carries racks that rest upon each other. The racks are inserted through a door immediately above the frame, one by one, and each one is separately elevated on the frame by cam levers till it is held by spring catches, which move back while a rack is being elevated, and as soon as it passes spring out and support it, while the frame is being lowered for another rack. Each rack goes up with the frame, and, having been inserted at the extreme bottom, it carries up the racks above it when it reaches them, and so on until they can be successively taken out at the top. The frames of the trays, which thus rest on each other, constitute, in a measure and to a degree, the walls of a chamber in which the drying takes place.

Movable trays the outer walls of which constituted the drying chambers being old, and apparatus having existed before to raise a tray or rack, and a column of racks above it, and insert a fresh one at the bottom, and the two having been used in connection, the fourth claim of the plaintiff's patent must be limited to the

mechanism described and shown. The circuit court made no reference to the Button patent.

The plaintiff's patent describes and claims "a suspending

Page 120 U. S. 430

device, operating substantially as described." The defendant has no such suspending device. The plaintiff has a crane, with suspended ropes, and his lowermost tray, while being raised, necessarily carries on it the weight of all the trays and fruit above it. In the defendant's apparatus, each tray can be lifted independently of the others, and each tray is supported independently, so that the weight of the series of trays, and of the fruit on them, need not rest entirely on the lowermost tray. This result being different from that in the plaintiff's device, the mechanism is different, and is not an equivalent of that of the plaintiff any more than the plaintiff's is the equivalent of Button's. The fourth claim of the patent, if valid, cannot be construed so as to cover the defendant's apparatus.

The decree of the circuit court is reversed and the case is remanded to that court with a direction to dismiss the bill of complaint, with costs.