

## OVERMAN WHEEL CO. v. ELLIOTT HICKORY CYCLE CO.

(Circuit Court, D. Massachusetts. March 24, 1892.)

## PATENTS FOR INVENTIONS—INFRINGEMENT—PLEADING.

Under Rev. St. § 4886, providing for the issuing of a patent where, *inter alia*, the invention has not been patented or described in any foreign country before the date of the invention, a bill for infringement of a patent is demurrable which does not allege such facts.

In Equity. Suit by the Overman Wheel Company against the Elliott Hickory Cycle Company for infringement of a patent. Heard on demurrer to the bill. Demurrer sustained.

*Chamberlin, White & Mills*, for complainant.

*William A. Redding*, for defendant.

COLT, Circuit Judge. Upon inspection of the patent granted to A. H. Overman, April 14, 1885, numbered 315,537, for improvements in rubber tires for wheels, I am not prepared to say that it is invalid for want of patentable novelty. Taking this view, it seems to me it would serve no good purpose to enter into a discussion of the patent at this stage of the proceedings. The first three grounds of demurrer are therefore overruled.

The fourth special ground for demurrer is that the bill does not aver that the alleged invention shown and described in said letters patent had not been patented nor described in any printed publication in this or any foreign country before the date of said alleged invention. An allegation of this character appears to be necessary, under the provisions of the statute, and the courts have so held. Rev. St. § 4886; *Consolidated Brake Shoe Co. v. Detroit Steel & Spring Co.*, 47 Fed. Rep. 894; *Coop v. Institute*, Id. 899. Upon this ground I shall sustain the demurrer, with costs, with leave to the complainant to amend its bill within 10 days.

Demurrer sustained.

NORTON *et al.* v. JENSEN *et al.*

(Circuit Court of Appeals, Ninth Circuit. March 10, 1892.)

## 1. PATENTS FOR INVENTIONS—EXPERT EVIDENCE.

While the opinions of experts in patent cases are entitled to weight, as the judgment of persons skilled in the particular matter under investigation, yet they are not binding upon the court, and will be rejected if they do not appear reasonable and satisfactory.

## 2. SAME—CONSTRUCTION OF PATENTS.

It is the duty of courts to construe a patent by a reference to the language of its claims, and an examination of the specifications and drawings accompanying the same.

## 3. SAME—ORIGINAL INVENTORS—INFRINGEMENT.

Original inventors have the right to treat as infringers all persons who make devices or machines operating on the same principle and performing the same functions by analogous means, or equivalent combinations, even though the infringing machine may be an improvement of the original, and patentable as such.

## 4. SAME.

If the patentee's ideas are found in the construction and arrangement of the subsequent device, no matter what may be its form, shape, or appearance, the parties making or using it are deemed appropriators of the patented invention, and are infringers. An infringement takes place whenever a party avails himself of the invention of the patentee, without such a variation as constitutes a new discovery.

## 5. SAME—COMBINATION CLAIM—EQUIVALENTS.

When a combination patent covers a new arrangement of old elements, producing a new and useful result, the same may be protected by invoking the doctrine of equivalents, as against the substitution for any particular element of a different device known at the date of the patent as a means of performing similar work; and the fact that the substitute performs some additional functions does not prevent it from being an infringement.

## 6. SAME—INFRINGEMENT.

There cannot be any infringement of a combination claim unless every element of the combination, or a mechanical equivalent of an omitted element, is used.

## 7. PATENTS FOR INVENTIONS—CONSTRUCTION OF CLAIMS—PRIMARY INVENTION—CAN-HEADING MACHINES.

Letters patent No. 267,014, issued November 7, 1883, to Edwin Norton, for a "machine for putting on the ends of fruit and other cans," cover an invention of a primary character, and its claims are entitled to a broad and liberal construction; and the fact that a subsequent machine is an improvement thereon in some respects will not prevent infringement, if it operates on the same principle and performs the same functions by analogous means or equivalent combinations.

## 8. SAME—INFRINGEMENTS—DIFFERENCES OF CONSTRUCTION.

Claim 1 of said patent claims, in a can-heading machine, "the combination of a device for sizing the exterior diameter of the can body to conform to the interior diameter of the can head, and holding the same so sized while the head is applied, said sizing and holding device having its end enlarged to fit the exterior diameter of the can head, so as to leave an annular space between it and the can body for the reception of the flange of the can head with a device for forcing the can head into said annular space, and thereby applying the can head outside the can body, substantially as specified." In the specifications the patentee says that he does not limit his invention to the particular mechanism employed, and suggests variations involving the same principles. *Held*, that the claim is infringed by the "Jensen machine," which is made under letters patent No. 376,804, and which operates on the same principle, though it is so arranged that only one end is capped at a time, the can head is delivered sidewise, and the can body endwise, to the mold, and the can body is moved towards the can head, while in the Norton patent both ends are capped, the can head is delivered endwise, the can-body sidewise, and the can head is moved towards the can body.

## 9. SAME—COMBINATION CLAIM—EQUIVALENTS.

Claim 2 of the Norton patent covers a combination of the foregoing devices, with "a chute or device for delivering the can bodies to the machine," and "a chute or device for delivering the can heads to the machine." In these chutes the parts are delivered by force of gravity. *Held*, that these elements were infringed by the Jensen machine, though the parts did not deliver themselves, but were moved along by a traveling belt and a reciprocating feeder, since these, being well-known devices, served merely as substitutes or equivalents of the chutes.

## 10. SAME.

In letters patent No. 274,363, issued March 20, 1883, to Norton & Hodgson, claim 6 covers "the combination of the can body, clamping device or mold, with a chute for the can heads, a reciprocating head or piston at the base of said chute for automatically feeding the can heads to the mouth of the mold, and applying the same to the can body, and a spring pin or device for holding the can head in position at the mouth of the mold." *Held*, that this claim was infringed by the Jensen machine, there being evidence showing that the spring-pin device, sometimes used therein, operated in substantially the same way to hold the can head in position at the mouth of the mold, and was combined with the mold, piston, and can-head chute.

## 11. SAME.

Claim 7 of the same patent covers "the combination of the delivery chute wheel having half molds upon its periphery, reciprocating half mold, chute for the can heads, piston for applying the same to the can bodies, and discharging chute substantially as specified." *Held*, that this claim is infringed by the Jensen machine, since the evidence shows that the reciprocating and revolving bar and fingers of the latter are merely an equivalent of the can-body feeding wheel, and that in both machines there is a reciprocating half mold mounted on the frame of the machine.

**12. SAME—EXTENT OF CLAIM.**

Letters patent No. 294,065, issued February 26, 1884, to Norton & Hodgson, is for an improvement on the can-heading machine, as before described, and in claim 14 covers a combination therewith of "mechanism for heading and compressing into a seam the flanges uniting the can head and body, substantially as specified." *Held* that, as this patent shows the first combined can-heading and crimping machine, the claim is entitled to a liberal construction, and is therefore infringed by the Jensen machine, although the latter employs a rotary crimper, while the former use a squeezing jaw crimper, both being well-known devices.

**13. SAME.**

Letters patent No. 322,060, issued July 14, 1885, to Edmund Jordan, which covers an improvement on the original Norton machine, consisting mainly in the method of mounting the mold, and of delivering the cans and can heads to it, is also infringed by the Jensen machine.

**14. SAME—INVENTION—SUCCESSFUL MACHINE.**

Letters patent No. 307,197, issued October 28, 1884, to Edmund Jordan, for a can-heading machine, having "a segmental clamp-chuck," is not infringed by the Jensen machine, which has many features of likeness, as the evidence shows that the Jordan machine is too slow and cumbersome in its operation to be a practical machine for heading cans of the size required for putting up fruits, vegetables, meats, fish, etc., and that the Jensen machine will do such work successfully and at reasonable cost. **HAWLEY**, District Judge, dissenting.

**15. SAME.**

Letters patent No. 307,491, issued November 4, 1884, to Norton & Hodgson, covers substantially the same machine as that described in patent 274,363, to the same inventors, with the additional feature that it is so arranged as to hold the can at an incline instead of horizontally, so as to operate upon filled cans. *Held*, that this arrangement, and the necessary adjustment of the feeding devices, scarcely involved inventive genius; and, it appearing that the machine is only partially successful, while the Jensen machine, in operating on filled cans, is completely successful, there is no infringement. **HAWLEY**, District Judge, dissenting.

Appeal from the Circuit Court of the District of Oregon.

Bill by Edwin Norton and Oliver W. Norton against Mathias Jensen and John Fox for infringement of a patent. Decree for complainants. Defendants appeal. Modified and affirmed.

*C. W. Fulton and Wheaton, Killoch & Kierce*, for appellants.

*John W. Munday and Edmund Adcock*, for appellees.

Before **HANFORD, HAWLEY, and MORROW**, District Judges.

**HAWLEY**, District Judge. This is a suit in equity for the infringement of certain letters patent. The circuit court entered a decree adjudging that the defendants have infringed claims 1 and 2 of letters patent No. 267,014, dated November 7, 1882, granted to Edwin Norton, for a "machine for putting on the ends of fruit and other cans;" claims 6 and 7 of letters patent No. 274,363, dated March 20, 1883, granted to Edwin Norton and John G. Hodgson, for a "can-ending machine;" claim 14 of letters patent No. 294,065, dated February 26, 1884, granted to E. Norton and J. G. Hodgson, for a "can-ending and seaming machine;" claim 1 of letters patent No. 307,197, dated October 28, 1884, granted to Edmund Jordan for a "can-ending machine;" claims 1, 2, 3, 8, and 9 of letters patent No. 307,491, dated November 4, 1884, granted to Edwin Norton and John G. Hodgson, for a "can-ending machine;" and claims 1, 2, 6, 7, 11, 12, and 13 of letters patent No. 322,060, dated July 14, 1885, granted to Edmund Jordan, for a "heading-machine." The inventions specified in these letters patent were designed to produce cans having tight exterior fitting heads, and relate to the particular operation in the manufacture of sheet-metal cans which

consists in putting the exterior tight-fitting heads on the cylindrical portion of the can. It is admitted that no machine exactly like the drawings in letters patent No. 267,014 has ever been constructed, but machines have been built embodying the essential principles outlined in this patent. The other letters patent are for various improvements to the primary patent.

Appellants claim that the state of the art at the time of Norton's first invention is represented by letters patent No. 235,700, dated December 21, 1880, granted to George H. Pierce, for "mechanism for placing and soldering heads and cans." This machine seems to have been constructed for an entirely different character of work from that performed by any of appellees' patented machines, and to be essentially different in its mechanism and modes of operation. The patent specifies a mechanism for making cans, the body of which is flared outwardly at their ends, in order to enable a loose inside fitting head to be dropped or placed on and within such outwardly flared body, and then soldered in place. But there is another reason why the Pierce patent has no particular bearing upon any of the inventions or machines in controversy. The testimony clearly shows that Norton's original invention was prior in point of time to Pierce's application for letters patent. Norton testifies that he never saw or heard of Pierce's patent until after he considered his invention, and built and used experimentally his first experimental can-heading machine, which was made and used by him for the purpose of experiment alone as early as July 15, 1880; that his invention of the machine, as claimed in claims 1 and 2 of letters patent No. 267,014, was, in fact, made prior in time to the date of the Pierce patent, and to the date of filing of the application for the Pierce patent; that, after making his experimental machine, he, in the early part of 1881, made a complete set of working drawings for the patterns of a machine like the drawings of patent No. 267,014; that before his machine was completed Mr. Hodgson and himself had made further improvements, as shown in letters patent No. 274,863, and that for this reason the first complete and working automatic machine was made like the drawings and specifications of said patent, instead of like the drawings in the patent No. 267,014. The first complete machine was made and put in public use in 1882. Norton's invention must therefore be considered as being of a primary character, standing at the head of the art, as the first machine ever invented for applying tight exterior fitting can heads to can bodies automatically, and appellees are entitled to a broad and liberal construction of the claims of their patent.

"Where an invention is one of a primary character, and the mechanical functions performed by the machine are, as a whole, entirely new, all subsequent machines which employ substantially the same means to accomplish the same result are infringements, although the subsequent machine may contain improvements in the separate mechanisms which go to make up the machine." *Machine Co. v. Lancaster*, 129 U. S. 273, 9 Sup. Ct. Rep. 299. Appellants contend that Jensen's invention was brought about by the necessities of the salmon canning industry; that his ma-

chine is specifically adapted to putting the final heads on cans filled with fish or other substance; that it is the only machine for heading cans that can practically be used for this purpose; that the Norton machines cannot be successfully used to accomplish this result; that the Jensen machine carries the can and heads it in a vertical position; that its claim to superiority over all other heading-machines is the peculiarity of its construction, so as to head hand-made cans, which are used almost exclusively in the salmon canning business; that appellees have not been injured by the Jensen machine, because it has simply met a want that Norton's machine did not, and could not, supply. It appears from the testimony that Jensen, prior to the construction of his machine, visited Norton's factory in San Francisco, and saw and examined his machines. There is some controversy in the testimony as to whether or not appellee's machines will operate successfully upon hand-made cans. Mr. Norton testifies that the automatic can-heading machine manufactured under his patents "will work successfully upon hand-made cans," that he worked them exclusively upon hand-made cans for nearly two years prior to building his automatic can-body machines, and that they worked "with perfect success." The fact that Jensen's machine, as constructed, is an improvement, in some respects, upon appellees' machines, must be admitted; but this does not relieve it of the character of an infringing machine. Norton being the original inventor, he, and those claiming under him, would have the right to treat as infringers all persons who make devices or machines "operating on the same principle and performing the same functions by analogous means or equivalent combinations, even though the infringing machine may be an improvement of the original, and patentable as such." *McCormick v. Talcott*, 20 How. 405. See, also, *Wells v. Gill*, 1 Ban. & A. 77; *Kendrick v. Emanons*, 2 Ban. & A. 208; *Turrell v. Spaeth*, 3 Ban. & A. 458; *Coll v. Arms Co.*, 1 Fish. Pat. Cas. 108; *Winans v. Railroad Co.*, 4 Fish. Pat. Cas. 2; *Whipple v. Manufacturing Co.*, Id. 29; *Fruit Co. v. Curran*, 7 Sawy. 270, 8 Fed. Rep. 150.

The real question to be determined is whether or not the Jensen machine—letters patent No. 376,804, dated January 24, 1888, granted to Mathias Jensen for a "can-crimper and capper"—contains the several inventions and improvements covered by the several claims of appellees' patents, as heretofore enumerated, and thereby infringes the same. Before proceeding to review the several claims in the respective patents which the decree finds to have been infringed, it is proper to notice some of the general differences which it is claimed exist between the elements and methods of construction in appellees' machines from the Jensen machine.

First, as to the mold found in all the patents. It is claimed by appellants that the Jensen mold is vitally different from the mold of the other patents; that it is not only different in form, but that its mode of operation, as well as construction, is different, and that it acts upon entirely different principles. On the other hand, the contention of appellees is that the mold found in all the patents, though different in

construction, is substantially identical in principle; that the mode of operation is the same; and that the differences existing in the Jensen mold from appellee's machines are of the most formal and immaterial character. Upon the oral argument of this case, models of the respective molds—as well as of other portions of the machinery—were brought into court, by means of which the respective counsel were enabled to fully and clearly illustrate and explain their views as to the construction, purpose, operation, and effect of the different molds. The conclusions to be arrived at in this case depend, to a great extent, upon the proper solution of this question, and necessarily involve the careful consideration and weighing of the voluminous evidence offered by the respective parties, which, in this case, in several of its features, presents many questions of much embarrassment and difficulty. The testimony upon both sides is principally that of experts skilled in the science and operation of machinery which they were called upon to explain, and in their testimony they not only state the facts concerning the difference in the construction of the respective machines, but give their opinions whether or not there is any difference in the operation of the machines, or in the effects produced thereby. Expert testimony is admissible to explain the several drawings, models, and machines that are exhibited upon the trial, their operation, purpose, and effect, and the differences which exist in the various devices involved in their construction. The opinion of an expert is, in certain cases, admissible in evidence, but it is not conclusive upon the courts. It is to be considered as the judgment and opinion of a person who has had extensive practice, education, and knowledge in relation to the particular subject upon which his testimony is given. If the reasons given by the expert witness are deemed reasonable and satisfactory, the court may adopt them, but, if they are unsatisfactory, the court will discard the testimony, and act upon its own knowledge and judgment. It is always the duty of the courts to construe the patents by a reference to the language of the claims and an examination of the specifications and drawings accompanying the same. It satisfactorily appears from the evidence that Norton discovered that, by rounding and sizing the can body by external pressure and by centering and guiding the can head accurately in line with the can body, the entire circumference of the can body could be entered simultaneously into the can head by forcing its two parts squarely together. His invention, which embodied this mode of operation, consisted in a device designated as a mold, which was adapted, as stated by appellees' counsel, to receive and encircle the can body and can head, to size and true up the can body, and to register and guide the head and body together when thus held and guided by the mold. The mold was constructed of two diameters, having a difference between them of the thickness of the tin; the smaller one corresponding to the interior diameter of the can-head flange to the exterior diameter of the can body; the larger one corresponding to that of the exterior of the can-head flange. The function of the larger diameter is to give room for the annular flange of the can head outside of the can body in the mold, and to center the can head ac-

curately in line with the can body, as the head and body are forced together by the piston. The function of the smaller diameter is to size and round the can body by external pressure. The can head and the can body are both simultaneously contained in this mold, and are brought together by a square linear movement, by means of a piston, so that the tight-fitting exterior head is applied with precision, all sides at once, the entire circumference passing to place simultaneously. The mold is then opened to discharge the headed can by a lateral separation of its segments or parts.

The first claim of letters patent No. 267,014 reads as follows:

"(1) In a machine for applying to can bodies heads fitting outside the same, the combination of a device for sizing the exterior diameter of the can body to conform to the interior diameter of the can head, and holding the same so sized while the head is applied, said sizing and holding device having its end enlarged to fit the exterior diameter of the can head, so as to leave an annular space between it and the can body for the reception of the flange of the can head, with a device for forcing the can head into said annular space, and thereby applying the can head outside the can body, substantially as specified."

The Jensen mold, though different in form, possesses all the general features of the Norton mold, which we have mentioned, and is in all respects substantially the same in principle as the Norton mold. The mode of operation is certainly the same. True, the Jensen machine puts on only one head at a time, and the plunger or piston in his machine is placed in such a manner as to move the can body towards the can head, instead of the can head towards the can body, as is the case in the Norton machine. Jensen cut a slot or notch in the end of his mold, so that the can head could be slipped in sideways, instead of at the end of the mold. In the Norton machine the can body is delivered into the mold laterally or sideways, and the can head endwise with the mold, while Jensen, having cut the notch in the end of the mold for the purpose of delivering the can head in laterally or sideways, delivers the can body to the mold endwise.

There are other minor differences in relation to the molds that were discussed by counsel, which we deem it unnecessary to here refer to in detail. It is sufficient to state that after a careful examination of all the testimony, the specifications and drawings, and an inspection of the molds, our conclusion is that the differences pointed out between the respective molds are mostly formal, and do not present any substantial difference in the principle of the operation of the respective machines. The patentee in his specifications refers to the fact that changes may be made in the form without departing from the essential characteristics of his invention:

"I have shown duplicate chutes for the can caps and pistons at each end of the molds. It will be understood that the invention may be used to cap one end at a time, or both ends, as desired. Nor do I wish to be limited to arms, C, arranged in pairs, nor to the precise manner of opening the molds, nor to the precise operating mechanism therefor, because these features may obviously be varied in many respects. \* \* \* I do not wish to limit myself

to any particular form of construction of can mold, or means of operating said mold to clamp or release the can, nor to any particular devices for forcing the can end upon the can body when secured in said mold, as all these features or devices may be greatly varied without departing from the principle or essential characteristic of my invention. It may also be observed that the molds may be mounted upon a reciprocating slide, or an endless belt or other device, instead of the revolving wheel shown in the drawings."

No one can avoid infringement simply by means of ingenious diversities of form and proportion, presenting simply the appearance of something unlike the patented machine. It is well settled that a copy of the principle or mode of operation described in the prior patent is an infringement of it. If the patentee's ideas are found in the construction and arrangement of the subsequent device, no matter what may be its form, shape, or appearance, the parties making or using it are deemed appropriators of the patented invention, and are infringers. An infringement takes place whenever a party avails himself of the invention of the patentee without such a variation as constitutes a new discovery.

Judge NELSON in *Blanchard v. Beers*, 2 Blatchf. 416, said that—

"The sure test, and one the jury should be guided by in all cases of this kind, is whether or not the defendant's machine, whatever may be its form or mechanical construction, has incorporated within it the principle, or the combination, or the novel ideas which constitute the improvement to be found in the plaintiff's machine. If it does, then, no matter what may be its mechanical construction or its form, it is an infringement, an appropriation of the ideas of another, simply in a different form."

The same learned judge in *Tatham v. Le Roy*, 2 Blatchf. 486, said:

"Formal changes are nothing,—mere mechanical changes are nothing; all these may be made outside of the description to be found in the patent, and yet the machine, after it has been thus changed in its construction, is still the machine of the patentee, because it contains his invention, the fruits of his mind, and embodies the discovery which he has brought into existence and put into practical operation."

See, also, *Winans v. Denmead*, 15 How. 343; *Potter v. Schenck*, 1 Biss. 518.

Claim 2 of the Norton patent No. 267,014 reads as follows:

"In a machine for applying to can bodies heads fitting outside the same, the combination of a chute or device for delivering the can bodies to the machine, with a movable device for clamping the can body and sizing its exterior diameter to conform to the interior diameter of the can head, said clamping and sizing device having its end or mouth enlarged to leave an annular space between the same and the can body clamped therein for the reception of the flange of the head, a chute or device for delivering the can heads to the machine, and a device for forcing the can head into said annular space at the end of said clamping and sizing device, substantially as specified."

The elements contained in this claim, in addition to claim 1, are a chute or device for delivering the can heads to the machine, and a device for forcing the can head into the annular space at the end of the clamping and sizing device. These elements are not limited either by the claim or the specifications of the patent to a can-head feed chute, but cover any equivalent or form of feed device that is suitable for conveying



the can head to the machine. In the Norton machine the arrangement is such that the can bodies will move along by their own gravity. The Jensen machine contains a chute or device for delivering the can bodies to the machine arranged in such a manner that the can bodies will not propel themselves by their own gravity, but it contains a supplemental device for moving the can bodies along the same. The essential fact is the existence of the chute or device in the Jensen patent for delivering the can bodies to the machine. This can-head pusher found in the Jensen machine is simply an addition to the can-head feed chute of the Norton patent.

As Norton was the first inventor to produce a machine having the combination with the can mold, having a recess or enlarged diameter at its end, and the piston with a can-body feed device, and a can-head feed device, he is certainly entitled to claim it in its entirety. The witness Dayton testifies that the Jensen machine employs the same means, to-wit:

"A chute for delivering the can heads and a strictly equivalent means for delivering the can bodies. The traveling belt and a rotary or reciprocating feeder, both of which are used by Jensen to carry in the can bodies, have long been well known for such purposes, and seem to have been selected by Jensen from a wide range of familiar mechanisms adapted to set on the can while standing in an upright position. The addition of the feed fingers at the lower end of the can-head chute in the Jensen machine, for pushing the can heads into place with respect to the clamp mold, was also within the range of well-known mechanical means for such purposes."

Claims 6 and 7 of the Norton & Hodgson patent No. 274,363, for a new and useful improvement in can-ending machines, read as follows:

"(6) The combination of the can-body clamping device or mold with a chute for the can heads, a reciprocating head or piston at the base of said chute for automatically feeding the can heads to the mouth of the mold and applying the same to the can body, and a spring pin or device for holding the can head in a position at the mouth of the mold, substantially as specified. (7) The combination of the delivery chute wheel having half molds upon its periphery, reciprocating half mold, chute for the can heads, piston for applying the same to the can bodies, and discharging chute, substantially as specified."

The spring device mentioned in claim 6 constitutes an important element in the machine. There is some controversy with reference to its use in the Jensen machine. It is not described in the specifications or drawings of the Jensen patent, and Jensen, in his testimony, denies that he now uses it or any equivalent device. Norton testifies that it was in the Jensen machine which he examined. Jensen admits that it was placed in a few of his machines, but claims that when used it was for an entirely different purpose from that in the Norton & Hodgson machine. The action of the circuit court in finding an infringement of claim 6 is justified by the testimony of appellees' witnesses to the effect that the spring pin or device in appellees' machine and in the Jensen machine, when used, performs substantially the same functions, and operates to hold the can head in position at the mouth of the mold,

and is combined in both machines with the mold, piston, and can-head chute. The action of the court in finding an infringement of claim 7 is justified by testimony showing that the reciprocating and revolving bar, F, having the fingers, H, as shown in Fig. 3 of the Jensen patent, is an equivalent for the can-body feeding wheel of the Norton & Hodgson patent. The testimony shows that in both machines there is a reciprocating half mold mounted on the frame of the machine.

Appellants contend that, inasmuch as the claims of this patent are for improvements upon combination claims, the patentees should be restricted to the particular form of their improvements, and that they are not entitled to invoke the doctrine of equivalents. This same contention is relied upon as an answer to the charge of infringement to most of the claims in all of the subsequent patents. Mr. Justice CLIFFORD, in delivering the opinion of the court in *Imhaeuser v. Buerk*, 101 U. S. 655, clearly states the principles of law upon this subject, as follows:

"Equivalents may be claimed by a patentee of an invention consisting of a combination of old elements or ingredients, as well as of any other valid patented improvement, provided the arrangement of the parts composing the invention is new, and will produce a new and useful result. Such a patentee may doubtless invoke the doctrine of equivalents, as against an infringer of the patent; but the term 'equivalent,' as applied to such an invention, is special in its signification, and somewhat different from what is meant when the term is applied to an invention consisting of a new device or an entirely new machine."

In explanation of the term "equivalent," after citing illustrations, he says:

"Patentees of an invention consisting merely of a combination of old ingredients are entitled to equivalents, by which is meant that the patent in respect to each of the respective ingredients comprising the invention covers every other ingredient which, in the same arrangement of the parts, will perform the same function; if it was well known as a proper substitute for the one described in the specification at the date of the patent. Hence it follows that a party who merely substitutes another old ingredient for one of the ingredients of the patented combination is an infringer if the substitute performs the same function as the ingredient for which it is so substituted, and it appears that it was well known at the date of the patent that it was adaptable to that use."

The mechanical substitute "may perform some other functions, but this does not prevent it from being an infringement." *Norton v. Can Co.*, 45 Fed. Rep. 638.

In *Carter v. Baker*, 1 Sawy. 516, Judge SAWYER defines an "equivalent" in the following language:

"When, in mechanics, one device does a particular thing, or accomplishes a particular result, every other device known and used in mechanics, which skillful and experienced workmen know will produce the same result, or do the same particular thing, is a known mechanical substitute for the first device mentioned for doing that thing or accomplishing that result, although the first device may never before have been detached from its work, and the second one put in its place. It is sufficient to constitute known mechanical substitutes that, when a skillful mechanic sees one device doing a particular

thing, he knows the other devices, whose use he is acquainted with, will do the same thing."

. See, also, *Seymour v. Osborne*, 11 Wall. 556; *Machine Co. v. Murphy*, 97 U. S. 125; *Wicke v. Ostrum*, 103 U. S. 469.

Keeping in view these principles of law, and also bearing in mind that there can be no infringement of a combination claim unless every element, or a mechanical equivalent of an omitted element, is used, we proceed to a consideration of the claims in the subsequent patents.

Claim 14 of the Norton & Hodgson patent No. 294,065, for a new and useful improvement in can-ending and seaming machines, reads as follows:

"(14) The combination, with a can-body clamping mold, of a chute or device for delivering the can bodies thereto, a chute or device for delivering the can heads at the mouth of said mold, mechanism for applying the can head to the can body, and mechanism for bending and compressing into a seam the flanges uniting the can head and body, substantially as specified."

This patent shows the first combined can-heading and crimping machine which operated to automatically apply the can heads to the can bodies and to crimp the same. The patentees are, therefore, certainly entitled to claim the combination of the devices which enabled them to accomplish these purposes, as set forth in the claim under consideration. The can-heading device in this patent is substantially the same as in appellees' other patented machines, with the mechanical addition providing for crimping the heads while the can is still held in the clamping mold. The can-body chute is also substantially the same as in the other patents. The drawings accompanying this patent have the squeezing jaw form of crimper. The Jensen machine employs the rotary form, and for this reason, among others, it is claimed that it does not infringe claim 14; but the testimony of both parties shows that both forms of crimpers are old and well known, and could readily be used one for the other. As the substituted device in the Jensen machine is the well-known mechanical equivalent of the device used in this patent, the combination remains the same under the law, and the use of the substituted device must be treated as an infringement of the prior machine.

Claim 1 of the Jordan patent No. 307,197, for an improvement in can-ending machines for automatically putting the ends of sheet-metal cans onto the bodies, reads as follows:

"(1) In a machine for automatically putting the ends of sheet-metal cans on the bodies, a segmental clamp-chuck, and mounted, to be capable of performing the following operations: *First*, to receive and retain a can end; *second*, to grasp and hold the body of the can in a proper position; *third*, to force the end of the can on the body of the same; *fourth*, to release the end and body of the can when these operations are completed, combined with suitable means for actuating the same to effect these operations."

Appellants earnestly argue that this claim has not been infringed by them. They contend that, whatever views may be entertained as to the claims of certain other patents, this claim for the segmental clamp-

chuck or mold must be limited to the particular form of the improvement in the machine as shown in the drawings accompanying the patent; that appellees cannot, under this claim, invoke the doctrine of equivalents; that the machine itself has never been used, and is impracticable; that the underlying principle of the Jensen machine is, in every respect, essentially different from this patent, and does not, in any respect, accomplish its work by the same mode of operation; that the elements of each machine are essentially different, and the mode of operation clearly distinct. A majority of the members of this court are of opinion that this claim has not been infringed, for the reasons given by them in a separate opinion. I shall therefore, with reference to this claim, only express my individual views.

The contention of appellants with reference to the limitation of this claim is directed, to some extent, to the particular method of mounting the mold as shown and described in the Jordan patent, by which the mold is made to swing first to one side and then to the other, so that the can heads and can bodies may be delivered into it. This particular feature of the Jordan patent, as to the vertically moving and horizontally swinging manner of mounting the mold, is covered by claims 2 and 3 of the Jordan patent, which are not claimed to have been infringed by the Jensen machine. The essential improvement of the Jordan patent covered by claim 1 is in the construction of the mold itself. This claim, it will be observed, is not limited to any particular method of mounting the mold. The claim is for "a segmental clamp-chuck, and mounted, to be capable of performing the following operation," etc. By an examination of the specifications, it will also be seen that the patentee did not limit himself to the particular method of mounting the mold, as shown in the drawings accompanying the patent:

"At present, my invention relates to and is employed in a machine, the features of which are fully shown in the accompanying drawings, and described in this specification, but is adapted to and can be operated in a press or machine of any suitable construction."

Under the rules already announced, it is clear to my mind that the patentee is entitled to the doctrine of equivalents. Norton testified that he had one of the Jordan machines in one of his factories fitted up for several sizes of cans; that it was not at present running, but that it had run successfully, and was a successful and operating machine. This testimony, in my opinion, disposes of the objections raised as to the alleged impracticability of the machine.

What is the proper construction to be given to the patents under consideration? Do the molds of each machine, notwithstanding their difference in construction, perform substantially the same function, in substantially the same way, to obtain the same result, or do they perform different functions, or operate in a different way, producing substantially a different result? In *Machine Co. v. Murphy*, *supra*, as well as in the other cases heretofore quoted from, or referred to, the supreme court of the United States very clearly lays down the rule by which all courts should be governed in determining questions of this character. It is there de-

clared that in all cases, except where form is of the essence of the invention, it is not—

“Safe to give much heed to the fact that the corresponding device in two machines, organized to accomplish the same result, is different in shape or form the one from the other, as it is necessary in every such investigation to look at the mode of operation or the way the device works, and at the result, as well as at the means by which the result is attained. Inquiries of this kind are often attended with difficulty, but if special attention is given to such portions of a given device as really does the work, so as not to give undue importance to other parts of the same which are only used as a convenient mode of constructing the entire device, the difficulty attending the investigation will be greatly diminished, if not entirely overcome. *Cahoon v. Ring*, 1 Cliff. 620. Authorities concur that the substantial equivalent of a thing, in the sense of the patent law, is the same as the thing itself; so that if two devices do the same work in substantially the same way, and accomplish substantially the same result, they are the same, even though different in name, form, or shape. *Curt. Pat. 310.*”

Jensen, after speaking in relation to the difference in the mounting of the respective molds, which has been already noticed, testifies that the can mold in his machine also differs from the segmental clamp-chuck in the Jordan machine, in this: that it is so constructed that it has one passage for receiving the can head, and another passage for receiving the can body, so that the can head may be entered therein, while the can body is shaped and rounded, guided and forced, into the can head with one and the same stroke, without any performance whatever with the can mold, as all these operations take place while the can mold is closed and at rest, and that his machine differs from the combination in claim 1 of the Jordan patent, in having omitted the segmental clamp-chuck with but one passage. These differences, in addition to others previously noticed, are relied upon to establish the fact that there has been no infringement of this claim.

The testimony upon the part of appellees is very lengthy, and in some respects materially in conflict with the testimony of Jensen. From an examination of all the testimony bearing upon the question under consideration, and the principles of law applicable thereto, my conclusion is that Jensen obtained the idea and copied the feature of feeding or inserting the can head in the recessed mouth of the mold before the can body is inserted in the mold, and of forcing the body endwise or longitudinally into the mold, after the mold has been closed to support the can head in the recess of the mold, from the Jordan patent. That he likewise copied the feature of beveling or tapering the lower mouth of the mold so as to facilitate the endwise insertion of the can body in its sizing or clamping mold. That these features of the machine are covered by the claim under consideration, and that the element of this claim is found in the Jensen machine. That, although the clamp-chuck in the Jordan patent is divided into six parts or segments, and the mold in the Jensen machine is only divided into two parts, the molds in both machines open and close substantially in the same manner and for substantially the same purpose. That the purpose of the Jensen mold,

as well as the segmental clamp-chuck in the Jordan patent, is—*First*, to hold and retain the can head in the recess of the mold; *second*, to grasp and size up the can body; *third*, to force the can body longitudinally into the mold, and apply the head to it; and, *fourth*, to release the end and body of the can. That the Jensen mold is specially adapted to accomplish these purposes, and is combined with suitable mechanism for operating it, so as to bring about the results above mentioned; and that, notwithstanding the differences in the mode of construction, the dissimilar contrivances and devices for actuating the parts in the two machines, and the improvements in the Jensen machine, as testified to by the respective witnesses, and pointed out by counsel in the oral argument, it contains the invention of Jordan as set forth in claim 1, and therefore, under the principles of the law as hereinbefore announced, infringes the same.

Claims 1, 2, 3, 8, and 9 of the Norton & Hodgson patent No. 307,491, for a new and useful improvement in can-ending machines, read as follows:

"(1) Combination of an inclined clamp or mold for holding the can, with a reciprocating piston or device for applying the head or cover thereto while held in such inclined position, substantially as specified. (2) The combination of an inclined clamp or mold for holding the can with a plate or support for the bottom of the can to rest against, and a reciprocating piston or device for forcing the head upon the can, substantially as specified. (3) The combination of an inclined clamp or mold with a plate or support at the lower end of said mold, an inclined chute for delivering the can heads at the mouths of said mold, and a reciprocating piston for applying said heads to the can, substantially as specified. (8) The combination of an inclined device for holding the can with an inclined chute for delivering the cans thereto in an inclined position, and a device for applying the cover or head to the can while held in such inclined position, substantially as specified. (9) The combination of an inclined device for holding the can with an inclined chute for delivering the cans thereto in an inclined position, and a device for applying a cover or head to the can while held in such inclined position, and a spirally twisted or curved discharge chute to receive the can in an inclined position, and deliver it in a horizontal position to the carrier, substantially as specified."

The machine described in this patent is substantially the same as the machine in patent No. 274,363, with the exception that it is so arranged as to hold the can at an incline instead of horizontally, for the purpose of operating on filled cans. It will be noticed that each of the claims refers to the incline. This patent, with these improvements, stands at the head of the art, as providing for the first machine to automatically put the final head upon a filled can. The essentials of a machine to accomplish this purpose are—*First*, some means for taking the can into the machine and into the mold in such an upright position as that the contents of the can will be retained; *second*, a mold for applying the head to the can while in this position; and, *third*, some suitable means for discharging the can after it is headed, which will cause it to turn down into the proper position to roll through the solder bath, with the head applied undermost. These elements are

found in both machines. The only point seriously urged against the infringement of the several claims in this patent is that the Jensen machine holds the can at an angle of 90 deg., while in the machine described in this patent the can is held at a less angle. With reference to this patent, a majority of the members are of opinion that the claims thereof have not been infringed. My individual views, briefly expressed, are that, if the inclination is sufficient to prevent the spilling of the contents of the can, it does not make any essential difference in what particular angle it is employed. If the angle employed in the Norton and Hodgson machine safely accomplishes the result of preventing the spilling of the contents of the can,—and the testimony of appellees' witnesses is that it does,—then it seems to me clear that appellants cannot avoid infringement upon the ground that their machine operated at a greater angle.

Claims 1, 2, 6, 7, 11, 12, and 13 in the Jordan patent No. 322,060, for a new and useful invention in heading machines for automatically applying the heads on the bodies of sheet-metal cans, read as follows:

"(1) In a can-heading machine, the combination, with two reciprocating part molds, of a reciprocating device for conveying the can body to a position between said part molds, and holding it there while said molds move forward to clamp the can body, substantially as specified. (2) The combination, with two part molds, of a reciprocating device for covering the can body to a position between said part molds, and holding it there until clamped thereby, substantially as specified. (6) The combination, with a pair of molds, for clamping the can body, of a plunger head and a slide to adjust the can head opposite the mold, substantially as specified. (7) The combination, with a pair of can-body clamping molds, of a plunger head, a reciprocating slide to move the can head opposite the mold, and a chute for delivering the can heads to said slide, substantially as specified. (11) The combination, with a pair of can-body clamping molds, of a chute for the can heads, a slide for moving the can head opposite said molds, and a lever and can for operating said slide, substantially as specified. (12) The combination, with two part molds, of a can-head chute, a slide to move the can head opposite the mold, a lever and can for operating said slide, a plunger and plunger head, and a can and lever for operating said plunger, substantially as specified. (13) The combination, with two part molds, of a reciprocating conveyor to convey to and hold the can body between said molds, and a can and lever for reciprocating said conveyor, substantially as specified."

This patent is simply for an improvement upon the original Norton machine. The mold is substantially the same in both patents, the principal difference between the patents being in the manner of mounting the mold, and in feeding the bodies and heads of the cans to the mold. If we are correct in the conclusions reached as to the infringement of the other patents, it necessarily follows that these claims have been infringed, and it would serve no useful purpose to again discuss the points, and reiterate the reasons for our conclusion. In my opinion, the decree of the circuit court should be affirmed.

HANFORD, District Judge, (*concurring.*) The opinion in this case, written by Judge HAWLEY, is concurred in by Judge MORROW and my-

self, and adopted as the opinion of the court as to the principal invention of Mr. Norton, of a "machine for putting on the ends of fruit and other cans," and the several improvements and combinations of the parts of said machine with additional devices for doing all the work of bringing together cylindrical can bodies, and the disks or caps for closing the ends thereof, and joining them by a series of harmonious automatic movements, covered by the several patents issued to E. Norton, Norton & Hodgson, and Edmund Jordan, respectively, and numbered 267,014, 274,363, 294,065, and 322,060. We are of the opinion, however, that for some kinds of work the machine contrived by the appellant Jensen is an improvement upon any machine previously constructed, and a very useful invention; and that it is not an infringement of any rights of the appellees under the patent issued to Edmund Jordan, No. 307,197, or the Norton & Hodgson patent No. 307,491. While we are willing to protect the complainants to the full extent of their lawful claims under the patent laws, we have not failed to notice that, by his own testimony, Mr. Norton has manifested a disposition to restrict the use of his patented machinery to the heading of cans manufactured by a particular corporation, thereby imposing a grievous burden upon important industrial enterprises, from which they cannot escape unless other machinery can be lawfully employed. For this reason we are not inclined to enlarge their rights by any strained construction of the law, nor by presuming in their favor facts not clearly proven by legal evidence. We hold that the Jordan "can-ending machine" patent No. 307,197, by reason of being cumbersome and slow in its operations, is not a practicable machine for putting heads on tin cans of the size required for use in putting up fruits, vegetables, meats, fish, and similar materials for individual and family use; and therefore it cannot be infringed by the use of a different machine, which will do such work well, at a reasonable cost. It is true that Mr. Norton has testified that a Jordan machine set up in his factory has been operated successfully. But this is only the conclusion of an interested witness. It states no particulars as to the time during which the successful operation of the machine continued, nor the number of cans, whether one or a dozen or more, that were successfully operated upon; and he does not say whether or not the expense attending the successful operation was or was not the cause of discontinuing the same; and, besides this, same witness admits that this machine is too slow in its operation to be profitably employed in heading cans of the size required in the largest numbers. The most that he claims for it is that it is a splendid working machine for putting covers on gallon or other large cans, a class of work for which, so far as the evidence discloses the facts, the Jensen machine has not been used. Mr. Jordan is not the inventor of the mold or discoverer of the principle of the segmental clamp described in the specifications for his patent. His invention consists of a new use of these appliances in combination with others to produce certain results. This is a sufficient reason for limiting the patent to the particular use mentioned in the specifications. The "can-ending machine" described in patent No. 307,491



is simply the machine covered by the patents Nos. 267,014, 274,363, and 322,060, tilted up, by being bedded upon a table the top of which is an inclined plane of about 45 deg. from an horizontal, combined with a spirally twisted discharge chute, so constructed as to receive cans in the inclined position in which they are held by the clamp when the heads are applied, and deliver the same in an horizontal position. The object of setting the machine in such inclined position is to make it operate upon filled cans. It is obvious that to move and operate upon well-filled cans, especially of liquid or semi-liquid substances, the cans must be in true vertical positions, and the movement must be so free from jarring or concussion as to not disturb the contents; whereas one of the essentials of the "can-ending machine" is a carrier or feeding chute so constructed as to bring the cans into such a position that, by force of gravity, they will drop into the half molds upon the periphery of the intermittently revolving wheel. The machine will not operate upon filled cans in an upright position without some additional device or substitute for gravity to force the cans into the revolving half molds, for the clamp or mold has no attraction for the cans or means of seizing them without the aid of an extraneous force. The contrivance of setting the can-ending machine in an inclined position, and the adjustment of the feed and discharge chutes to work with it in that position, can scarcely be considered to involve the exercise of inventive genius, or anything more than ordinary mechanical skill; and being, at best, but partially successful in the accomplishments of its object, we cannot, under the law as we understand it, hold that any rights of the patentees have been infringed by the Jensen machine, which the evidence shows to be in its operation upon filled cans a complete success. The patent laws were not designed for the benefit of the man who attempts to originate a useful thing, but rather to reward the one who first achieves success in the production of it. It would be a perversion of the law to hold a machine which can do certain kinds of work to be an infringement of a patent for a different machine, which cannot do the same work. The decree of the circuit court should be so modified as to declare that the patents Nos. 307,197 and 307,491 are not infringed by use of the Jensen machine, and in all other respects affirmed, and it is so ordered.

**Costs of the appeal are awarded to the appellants.**

## KINSMAN v. CHINA MUT. INS. CO.

(District Court, D. Massachusetts. December 7, 1891.)

## MARINE INSURANCE—INSURABLE INTEREST—TOTAL LOSS.

Where it appeared that libelant had an insurable interest in a vessel by reason of advances exceeding the amount of the policy sued on, and that the vessel had sustained damage from perils of the sea, and could not be made seaworthy except at an expense exceeding her value when repaired, thus constituting a total loss, within the meaning of the policy, *held*, that libelant was entitled to recover against the insurance company the amount of the policy.

In Admiralty. Libel to recover on policy of marine insurance.

*Eugene P. Carver*, for libelant.

*John D. Bryant*, for respondent.

NELSON, District Judge. The libelant, as managing owner, had, at the date of the policy of insurance, an insurable interest in the barque *Eliza White*, by reason of his advances made on account of the vessel. The protest of the master and mate and the surveyor's certificates are competent evidence in the case, and, with the testimony of *Darling*, are sufficient to prove that the injury suffered by the *Eliza White* from perils of the sea, previous to her arrival at *Nassau*, a port of distress, were so great that she could not be repaired so as to make her a seaworthy vessel, except at an expense exceeding her value when repaired, and this constituted a case of actual total loss, within the meaning of the policy of insurance. The testimony of the libelant is sufficient to prove that his advances exceeded \$1,000, the amount insured by the policy, and that the defendant had notice of the loss in September, 1883, and waived all further proof of the loss. Decree for the libelant for \$1,000, and interest from December 1, 1883, and costs.

## THE FROGNER.

## GULLICKSEN v. CHICORA FERTILIZER Co. et al.

(District Court, D. South Carolina. February 23, 1892.)

## FREIGHT—CARGO "INTAKEN"—AMOUNT—INTENT OF PARTIES.

Where a charter-party provides for a certain rate of freight on "about 1,500 tons" of iron ore "intaken,"—the original word "delivered," in the charter-party, being stricken out, and the word "intaken" written in,—and the master, at the port of loading, being without opportunity of weighing, demanded 1,575 tons, which amount was promised him, and a bill of lading made out therefor, and assurance given the master that he had that amount, and the ship, after a safe voyage without incident, delivered only 1,500 tons, no question of short delivery being raised, but only the question whether freight should be paid on 1,575 tons or on the amount delivered, *held*, that the parties had agreed at the port of loading as to the number of tons on which freight should be paid, viz., 1,575 tons.

In Admiralty. Libel to recover balance of freight.