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## Document (1)

1. [Georgia-Pacific Corp. v. United States Plywood Corp., 258 F.2d 124](#)

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## *Georgia-Pacific Corp. v. United States Plywood Corp.*

United States Court of Appeals for the Second Circuit

December 12, 1957, Argued ; July 1, 1958, Decided

No. 127, Docket 24656

### Reporter

258 F.2d 124 \*; 1958 U.S. App. LEXIS 5961 \*\*; 118 U.S.P.Q. (BNA) 122 \*\*\*

GEORGIA-PACIFIC CORPORATION, Plaintiff-Appellee, v.  
UNITED STATES PLYWOOD CORPORATION,  
Defendant-Appellant

**Disposition:** The court's reversed and remanded the judgment because the patent claimed that an invention that was properly described with sufficient definiteness, which the accused product infringed, and the remaining patents were never in issue in the district court.

### Core Terms

patent, grooves, plywood, invention, ply, checking, surface, stresses, depth, grain, striation, edge, panels, fir, infringement, shingles, specification, certiorari denied, prior art, striated, plies, width, decorative, veneer, ribs, incising, gouging, skilled, Moray, deep

### Case Summary

#### Procedural Posture

Defendant, an assignee, appealed from a judgment of the United States District Court for the Southern District of New York, which in an action for a declaratory judgment of invalidity and non-infringement, dismissed defendant's counterclaims of infringement and unfair competition and held defendant's patents invalid for lack of invention.

#### Overview

Three patents were attacked in a declaratory judgment action for invalidity and noninfringement. Since defendant claimed infringement of only one patent, the others were not properly before the district court. The remaining patent was directed toward reducing edge effects and checking by grooving the face ply of plywood. The presumption of the validity of a patent was entitled to particular weight when the file wrapper disclosed careful consideration before issue. Further, in a prior case, it had been held that the patent was valid and infringed. Those judgments were entitled to weight on appeal. Commercial success was viewed in the light of the long-

continued public acquiescence in the validity of the patent. Such a volume of sales not only raised the inference that the plywood was a product of invention but also led to pressure on competitors to imitate the product and thus appropriate part of a profitable market. That the striation was not anticipated and constituted invention, rather than an obvious change in the application of a known art, was because the use of fir and like woods posed distinct problems which were met in a new and nonobvious fashion.

#### Outcome

The court's reversed and remanded the judgment because the patent claimed that an invention that was properly described with sufficient definiteness, which the accused product infringed, and the remaining patents were never in issue in the district court.

### LexisNexis® Headnotes

Patent Law > Statutory Bars > Abandonment & Forfeiture Bar > General Overview

[HNI](#) **Statutory Bars, Abandonment & Forfeiture Bar**

Although further exploitation founders on ineffective public demand, a prior patent must be considered as part of the prior art.

Patent Law > Nonobviousness > Elements & Tests > General Overview

Patent Law > Anticipation & Novelty > General Overview

[HN2](#) **Nonobviousness, Elements & Tests**

It is unrealistic to reason that an inventor did nothing more than might be expected of the skilled mechanic, when neither the owners of such prior art patents nor any member of the public after their expiration discovered that their teachings were worth reducing to practice.

Patent Law > Anticipation & Novelty > General Overview

Patent Law > Nonobviousness > Elements & Tests > General Overview

Patent Law > Nonobviousness > Elements & Tests > Prior Art

### [HN3](#) Patent Law, Anticipation & Novelty

A patent is not obvious where the prior art patents teach little about solving problems which the patent solves without loss of other features.

Patent Law > Anticipation & Novelty > General Overview

### [HN4](#) Patent Law, Anticipation & Novelty

A conclusion that a patent involves a matter of degree rather than a change in kind is inevitably in essence a peculiarly personal judgment that the patented discovery does not require the level of intellectual effort and perception which entitles it to statutory protection. The question always is whether the inventive act is of sufficient magnitude to justify the extension of a legal monopoly for the matter covered by the claims.

Patent Law > ... > Defenses > Inequitable Conduct > General Overview

Patent Law > Anticipation & Novelty > General Overview

Patent Law > ... > Specifications > Enablement Requirement > General Overview

Patent Law > ... > Utility Patents > Process Patents > Principles & Results

Patent Law > Utility Requirement > General Overview

### [HNS](#) Defenses, Inequitable Conduct

A patentee cannot arbitrarily select a range in a known progressive change and maintain a patent monopoly on the products falling within that range on the ground that the designated range produces optimum results. Such a selection of ranges ordinarily involves merely pedestrian skills. Benefits incidentally and accidentally accruing in the products of the prior art do not necessarily negate invention in a change in degree when the purpose is different and the results new and useful. If the product must be physically changed, it can be a proper subject of a valid patent, and nothing is easier in patent litigation than to confuse a trifling physical change with the ingenuity demanded for its discovery.

Patent Law > Jurisdiction & Review > Standards of Review > General Overview

Patent Law > ... > Defenses > Patent Invalidity > Presumption of Validity

### [HN6](#) Jurisdiction & Review, Standards of Review

From the issuance of a patent by the U.S. Patent and Trademark Office (Patent Office) flows a presumption of validity, a presumption which is perhaps too often minimized in the courts. Expertness and experience in passing upon patents lie primarily in the Patent Office and these important factors are only partially offset by the greater concentration and the additional relevant evidence which can be brought to bear in any particular patent litigation in the courts. The presumption of validity is entitled to particular weight when the file wrapper history discloses a careful consideration in the Patent Office before issue.

Patent Law > Infringement Actions > Burdens of Proof

Patent Law > Anticipation & Novelty > General Overview

### [HN7](#) Infringement Actions, Burdens of Proof

Commercial success must be viewed in the light of the long-continued public acquiescence in the validity of the patent. Such a volume of sales not only raises the inference that the product was an invention; it also understandably leads to pressure on competitors to imitate the product and thus appropriate part of this profitable market.

Patent Law > Infringement Actions > Burdens of Proof

Patent Law > Anticipation & Novelty > General Overview

Patent Law > ... > Utility Patents > Product Patents > Manufactures

### [HN8](#) [↓] **Infringement Actions, Burdens of Proof**

It is highly unlikely that a firm in a competitive industry would commit itself to pay large royalties if there was a substantial likelihood that the rest of the industry could manufacture the product free of the patent.

Patent Law > Nonobviousness > Elements & Tests > General Overview

Patent Law > Anticipation & Novelty > General Overview

### [HN9](#) [↓] **Nonobviousness, Elements & Tests**

An invention recognizes, attacks and successfully solves a problem, achieving new, unobvious and unexpected results in a manner not suggested or disclosed to one skilled in the art.

Patent Law > ... > Specifications > Definiteness > General Overview

Patent Law > ... > Specifications > Description Requirement > General Overview

Patent Law > ... > Specifications > Description Requirement > Standards & Tests

Patent Law > ... > Specifications > Enablement Requirement > General Overview

Patent Law > ... > Specifications > Enablement Requirement > Standards & Tests

Patent Law > Claims & Specifications > Invention Theory

### [HN10](#) [↓] **Specifications, Definiteness**

The patent statute, 35 U.S.C.S. § 112, requires that the specification must describe the invention in full, clear, concise, and exact terms as to enable any person skilled in the

art to make and use the same, and there must be claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Patent Law > ... > Specifications > Definiteness > General Overview

### [HN11](#) [↓] **Specifications, Definiteness**

An invention must be capable of accurate definition and must be accurately defined to be patentable, and the requirement of the Patent Act, 35 U.S.C.S. § 1 *et seq.*, for definiteness in the statement of claims must be strictly construed. Such general statements, however, must be viewed in the context of circumstances. Objectionable indefiniteness must be determined by the facts in each case, not by reference to an abstract rule. If the subject matter of the patent is such that the patentee cannot verbalize his invention comprehensibly or is incapable of ascribing reasonable limits to his claims, regardless of intrinsic merit, his invention cannot be patented. Likewise, the patentee is required to draft his specifications and claims as precisely as the subject matter permits, and his failure to do so may result in judicial invalidation of his patent.

Patent Law > ... > Specifications > Enablement Requirement > General Overview

Patent Law > ... > Specifications > Definiteness > General Overview

Patent Law > ... > Specifications > Description Requirement > General Overview

### [HN12](#) [↓] **Specifications, Enablement Requirement**

Patentable inventions cannot always be described in terms of exact measurements, symbols and formulae, and the applicant necessarily must use the meager tools provided by language, tools which admittedly lack exactitude and precision. If the claims, read in the light of the specifications, reasonably apprise those skilled in the art both of the utilization and scope of the invention, and if the language is as precise as the subject matter permits, the courts can demand no more. That an area of uncertainty necessarily exists in such a situation cannot be denied, but the existence of an inescapable area of uncertainty is not sufficient justification for denying to the patentee the fruits of his invention.

Patent Law > ... > Claims > Claim Language > General Overview

Patent Law > Infringement Actions > Doctrine of Equivalents > General Overview

### [HN13](#) [↓] **Claims, Claim Language**

In the administration of the patent statutes, uncertainty has been introduced by express judicial creation. It has often been stated that the scope of the patent is limited by the language of the claims. Where, however, an infringer has attempted to appropriate the essence of the invention while remaining outside the language of the claims, courts have not hesitated to apply the doctrine of equivalents, whereby the essence of the invention is protected. In such situations the patentee is protected even though he has been more precise than the subject matter of the invention permits or requires.

Patent Law > US Patent & Trademark Office Proceedings > Filing Requirements > Drawings

Patent Law > ... > Claims > Claim Language > General Overview

### [HN14](#) [↓] **Filing Requirements, Drawings**

Inevitable imprecision is not fatal. A claim must be read in the light of the specifications and drawings which reasonably indicates to the industry the teachings and the scope of the patent.

Civil Procedure > Discovery & Disclosure > General Overview

Patent Law > US Patent & Trademark Office Proceedings > Filing Requirements > Drawings

Patent Law > ... > Claims > Claim Language > General Overview

Patent Law > ... > Specifications > Definiteness > Relative Terms

### [HN15](#) [↓] **Civil Procedure, Discovery & Disclosure**

A discovery may be patentable in the face of an attack that it constituted no more than a change in degree over the prior art.

Further, certain words, such as "substantial" and "high" are not too indefinite inasmuch as they are necessitated by variations in the practice of the patent and because those skilled in the art, in view of the drawing and their knowledge of the prior art, can understand the scope of the patent.

Patent Law > ... > Claims > Claim Language > General Overview

Patent Law > ... > Specifications > Description Requirement > General Overview

Patent Law > ... > Specifications > Description Requirement > Means Plus Function

### [HN16](#) [↓] **Claims, Claim Language**

Where both the specification and the claim to some extent interrelate a description of configuration and function, and the latter merely aids in understanding the scope of the patent, the patentee is not attempting to claim the function of stress relief, and all the manifold ways of obtaining it, thus claiming more than his invention.

Patent Law > ... > Claims > Claim Language > General Overview

### [HN17](#) [↓] **Claims, Claim Language**

Where it is impossible to suppose that anyone who really wished to respect a patent would have any difficulty in identifying what the claim covered, the claim is not indefinite.

Patent Law > Infringement Actions > Doctrine of Equivalents > Fact & Law Issues

Patent Law > Infringement Actions > Doctrine of Equivalents > General Overview

### [HN18](#) [↓] **Doctrine of Equivalents, Fact & Law Issues**

Courts have not permitted infringement to be avoided by immaterial changes. Often even with the most sympathetic interpretation the claim cannot be made to cover an infringement which in fact steals the heart of the invention; no matter how auspiciously construed, the language forbids. It is then that the doctrine of equivalents intervenes to disregard the theory that the claim measures the monopoly and ignores the claim in order to protect the real invention.

Patent Law > Infringement Actions > Doctrine of Equivalents > General Overview

## [HN19](#) **Infringement Actions, Doctrine of Equivalents**

A patentee is entitled to protection against an infringer's obvious variation.

**Counsel:** **[\*\*1]** John Vaughan Groner, New York City (Charles B. Smith and Fish, Richardson & Neave, New York City, on the brief), for plaintiff-appellee.

William O. Heilman, New York City (James M. Heilman, and Heilman & Heilman, Washington, D.C., on the brief), for defendant-appellant.

**Judges:** Before MEDINA, LUMBARD and WATERMAN, Circuit Judges.

**Opinion by:** LUMBARD

## Opinion

**[\*\*\*124]** **[\*126]** Defendant, assignee of Deskey patent, No. 2,286,068, and Bailey patents Nos. 2,363,492 and 2,363,927, appeals from a judgment by Judge Herlands, Southern District of New York, entered in an action for a declaratory judgment of invalidity and non-infringement of the three patents. Two counterclaims, one for infringement of the Deskey patent and another for unfair competition, were interposed in the suit. The district court held that all three patents were before the court, that all claims were invalid for lack of invention, that the specifications of the Deskey patent were fatally vague and indefinite and its claims did not distinctly claim the subject matter of the alleged invention, that the accused product did not infringe any of the three patents, and that there was no proof of unfair competition. **[\*\*2]** Accordingly, Judge Herlands dismissed the two counterclaims and entered a declaration of invalidity and non-infringement. [148 F.Supp. 846](#).

We cannot agree with the district judge in several respects. Claims 1 of the Deskey patent claims an invention which was properly described with sufficient definiteness, and the accused product infringes this claim. We thus reverse the judgment of the district court and direct that judgment be entered in favor of United States Plywood Corporation declaring claim 1 of the patent valid and infringed and granting an injunction and such further relief as is appropriate against Georgia-Pacific Corporation. Moreover, in our view

the Bailey patents were never in issue in the district court.

The Deskey patent, issued on June 9, 1942, is central to this litigation. The general subject matter of the patent is plywood panels, which consist of an odd number of thin plies of wood veneer with the grain in the adjacent plies crossed at right angles to each other. Since veneer is weak along the grain but relatively strong across the grain, the cross plies in plywood result in a wood product of considerable strength in relation **[\*\*3]** to its weight and dimensions. The more inexpensive woods, however, such as Douglas fir, present a flat, wide-grained appearance with limited appeal for use by the public when esthetic qualities are important. Further, the defendant claims that Douglas fir and like woods have two tendencies which militate against their use as decorative panels. The first is that the face ply has a tendency to expand and shrink under changing moisture conditions, resulting over a period of time in unsightly cracks between abutting panels. Also, defendant contends, because of the peculiar graining of these woods, changing moisture conditions will cause the face plies to check or open up surface cracks on the exposed panel. These contentions will be dealt with more fully when we discuss the issue of patentability. It is enough to say at this point that the Deskey patent is by its disclosures directed **[\*127]** toward reducing edge effects and checking by grooving the face ply. The result is a striated panel with multiple and alternating ribs and grooves cut to a substantial depth in the face ply but not as deep as the glue line, across the entire panel and running the length of the **[\*\*4]** face ply. By striating defendant contends that stresses created by the difference in moisture content on the surface and within the ply are localized within and across the ribs, thus reducing the incidence of checking and the tendency of abutting panels to draw away from each other.

### The Bailey Patents

The Bailey patents, one for a product and the other for a process, are directed toward another problem. If only one face ply of a panel with face plies of equal thickness is striated by the cutting **[\*\*\*125]** away of wood, the striated panel is somewhat thinner than the reverse face. The resulting imbalance causes the entire panel to warp. The Bailey patents purport to teach the art that balance may be achieved by using a heavier ply for the exposed face. The grooving of this heavier face brings the panel into balance and this eliminates the tendency to warp. Both the Deskey striation and the Bailey balancing patents are used in Weldtex, defendant's trademarked product.

The plaintiff, Georgia-Pacific Corporation, first manufactured its accused panels in February 1955 and in March delivered a sample to defendant's manager in Newark. Immediately

thereafter Sol W. Antoville, [\*\*5] defendant's president, wrote a brief letter to plaintiff threatening vigorous action to protect its patent rights. It is this letter which provides the basis for the action for a declaratory judgment:

'March 11, 1955

'Dear Owen:

'While imitation is supposed to be the sincerest form of flattery, I must confess to a different reaction when I learned that you are imitating Weldtex.

'As you know, Weldtex is covered by U.S. Patents which have been recognized by the industry for more than thirteen years. Under the circumstances, we will of course take vigorous action to protect our patent rights and are turning the matter over to our counsel for appropriate action.

'Sincerely 'Tony'

The district judge held that this letter raised a justiciable controversy respecting not only the Deskey patent but both Bailey patents as well. We cannot agree. Only the Deskey patent had 'been recognized by the industry for more than thirteen years.' Of more importance is the nature of the accused product. Georgia-Pacific's competing product is a striated plywood. Its balance is achieved, however, not through the use of face plies of unequal thickness but through the cutting of wide [\*\*6] channels at regular intervals in the reverse ply. Consequently, there could not have been even a colorable claim that the accused product infringed the Bailey patents. That there was no intention to charge infringement of the Bailey patents is supported by the express testimony to that effect by Antoville and the use in the letter of the phrase 'imitating Weldtex.' That phrase clearly indicates a preoccupation with the similar appearance caused by striation. Since defendant did not claim infringement of the Bailey patents, there was no controversy concerning them and they were not properly before the district court. [Tremmond Co. v. Schering Corp., 3 Cir., 1941, 122 F.2d 702.](#)

#### Patentability

We turn now to the issue of patentability, necessitating a discussion of the Deskey patent in the light of the prior art.

Patents cited against the Deskey application in the Patent Office or cited in this litigation fully disclose that striation of wood products is old in the art. During the decade and a half following the [\*128] First World War several patents were issued which concerned imitation cedar shakes, i.e. sawed shingles grooved to resemble old-fashioned [\*\*7] hand-split shingles, then becoming popular, particularly in the

Northwest. Putman No. 1,577,150 (imitation shake shingles), Melby No. 1,634,789 (shingle grooving machine), Melby No. 1,764,412 (imitation shake shingles), Putman No. 1,780,097 (shingle grooving machine), Craft No. 1,820,445 (shingle grooving machine), Gilmer No. 1,910,895 (shingle grooving machine), Gilmer No. 1,943,597 (process for grooving shingles), and Putman (Canadian) No. 302,038 (grooved lumber) all disclosed to those skilled in the art at least the decorative effects of grooving solid wood products. Abbott No. 1,610,233 also dealt with shingles and specifically referred to coniferous woods. In the Abbott patent, however, the surface was abraded by wire brushing or sand-blasting rather than gouged by a cutting tool, the abrasion removing the softer wood in the grain.

Striating or grooving was also used at a prior time for decorative effect in the plywood field. For instance, Melby produced a plywood product (Moray), the panels being superficially grooved so as to simulate moire cloth. Defendant urges that this Moray plywood was an abandoned experiment and thus not part of the prior art. As [\*\*8] the district judge found, however, Moray plywood was a finished article which required no further experimentation, was commercially exploited, and was used in at least three different buildings. [HNI](#) [↑] Although further exploitation foundered on an ineffective public demand, due at least in large measure to the advent of the depression, the Moray plywood must be considered as part of the prior art. [Picard v. United Aircraft Corp., 2 Cir., 1942, 128 F.2d 632, 634, certiorari denied 317 U.S. 651. 63 S.Ct. 46, 87 L.Ed. 524.](#)

Other relevant patents are Hansen No. 1,433,077; Maurer Nos. 2,202,109, 2,202,110, and 2,244,426; Elmendorf Nos. 1,819,775 and 2,018,712; Morden No. 1,773,695 [\*\*\*126] and Gram No. 2,090,529. Hansen No. 1,433,077 taught that the warping of veneer panels could be substantially reduced by incising the face of the veneer with a pattern of short slits. This was a cutting, rather than a gouging operation, and no wood was removed. Incising also was central to the three Maurer patents. The subject matter of Maurer No. 2,202,109 was a wood [\*\*9] finishing process designed to simulate hardwood grains in the less expensive woods by incising the surface and then filling the perforations. Maurer No. 2,202,110 disclosed a machine for performing the incision process and Maurer No. 2,244,426 covered another incision machine, this one for use with laminated panels. The latter patent does not in terms state that the object is to simulate graining, although this obviously was one purpose. The practice of this patent could result in a grooved panel, the grooves being formed by incising or indenting the face of the panel with small discs having V-shaped peripheral edges, but the ribs would be formed largely through compression.

Warping and curling were attacked in another way by Elmendorf No. 1,819,775. A very thin veneer (as commercially practiced by U.S. Plywood in its product Flexwood, 1/85") is broken up into small strands of wood fibers by bending the veneer over an edge and the ruptured veneer is mounted on a flexible backing. The result is a flexible veneer which can be applied like wallpaper. A variation of this basic idea is found in Elmendorf No. 2,018,712, where a thicker panel is ruptured along the grain [\*\*10] and then mounted on an elastic plastic substance which fills the cracks and binds the strands.

Morden No. 1,773,695 attempted to solve a different problem in wood technology, one which is intimately related to the problems which Deskey seeks to solve. The patent discloses a method for concealing the visibility of joints in composite boards by grooving so as to mask the edge separation. Further, the individual boards are locked on metal strips, thus reducing movement caused [\*\*129] by shrinkage and expansion of the boards which would ordinarily cause edge separation and cracks between the boards. The masking of joints is accomplished in another manner by Gram No. 2,090,529, which is directed to laminated wallboard, especially fir. Here the panel is grooved at uniformly spaced intervals on the face of the panel and a grooved batten is inserted at the joints. The overall effect is that of a series of abutting boards, since the battened joints are indistinguishable from the grooved sections on the face of the panel.

In the light of prior art, it is clear that grooving wood and related products for decorative effect both by destroying the flat grained surface and [\*\*11] masking joints was well known and that those skilled in the art were familiar with incising as a means of graining and incising and rupturing as a means of controlling warping. It is against this background of knowledge that we must evaluate the Deskey patent and decide whether a plywood so striated is a significant and unobvious contribution to the art.

Basic to the Deskey patent is the fact that plywood panels covered by the claims are to be used where an esthetically pleasing appearance is essential. This emphasis on appearance raises several problems. A pleasing surface appearance is accomplished by striation, which breaks up the grain, a fact long known to the art. Striation also serves to mask the line between abutting panels, and any gouging pattern obscures defects on the surface of the wood. It does not purport to have a significant effect on warp control. Indeed, unless the panel is balanced by such procedures as channeling the reverse face, as done by Georgia-Pacific, or using an initially thicker ply on the exposed face as taught by the Bailey patents, the striation increases the tendency of the entire panel to warp or curl.

Any contribution of the [\*\*12] Deskey patent must lie beyond the area of those problems and their past solutions. Defendant contends that the Deskey striated plywood is a useful, novel, and inventive concept because it meets and goes far in solving the problems of edge separation and checking in softwood panels in a manner not suggested by the prior art. Indeed, the file wrapper history shows that it was a demonstration of the effectiveness of the Deskey patent in meeting these two problems which caused the Patent Office to issue the patent.

As indicated by the district judge, checking and edge separation are problems general to the wood industry and to plywood in particular. Changes in moisture conditions cause the surface of wood, here the face ply, to expand and contract. As abutting face plies expand, the abutting edges press upon each other, compressing the wood cells along the edges beyond their limits of elasticity. Shrinkage of the face plies to their prior size opens up unsightly cracks, which are widened by further contraction when plies become drier. Since plywood panels are considerably wider (generally 4' X 8') than boards or shingles and since expansion and contraction stresses [\*\*13] accumulate [\*\*\*127] across the whole face of the panel, the edge separation problems in plywood are obviously more acute.

Checks are hairline cracks which are opened up on the surface of the panel by internal stresses in the wood. We are told that moisture changes are again a major, although not the sole determinate of the incidence of checking. As the moisture content varies between the surface and the interior of the ply, internal stresses are created which cause wood cell separation. In plywood the face ply is tightly bound to the other plies by glue, thus restraining the elasticity of the whole sheet and confining the stresses and their relief to the thin veneer.

Both problems are accentuated in plywood made from Douglas fir and similar woods. Fir has a high co-efficient of expansion relative to other woods. In addition, fir has two pronounced growth rings each year, a soft spring growth and a harder summer and fall growth. Also, a veneer log is rotary peeled in [\*\*130] much the same way as paper is taken off a roll. Since no log is perfectly rounded, the amount of a particular growth ring picked up by the peeler in the plane of any panel will vary. As a result, [\*\*14] a typical ply will contain areas of both wide and narrow grain and these grains will be alternately hard and soft. The irregular graining and alternating densities both contribute to producing stresses in fir plywood.

The Deskey patent attempts to meet the problems of edge separation and checking by striation. Relief of facial stresses due to the changes in moisture content is accomplished by



gouging out a multiplicity of narrow grooves across the face of the panel, lengthwise to the grain, leaving relatively narrow ribs or bands separated by the grooves. The grooves must be considerably more than surface scratches, many of them necessarily extending beyond the median of the ply so as to break up the hard summer and fall grain which wanders through and in and out of the plane of the face ply. Surface stresses, instead of accumulating across the face of and through the ply, are localized and dissipated in the ribs, which can accommodate these pressures.

Plaintiff contends, and the district judge agreed, that the patent covers nothing more than a decorative panel and that the alleged solution by Deskey of problems relating to edge separation and checking is an attempt **[\*\*15]** artificially to create and solve a problem in an effort to impart an aura of invention to an otherwise familiar concept by claiming for it a spurious utility. Further it is argued that even if edge separation and checking do cause some trouble in the plywood industry, the Deskey approach of cutting deeper grooves in plywood is an obvious application of the old art of striation, not rising to the level of invention.

Considerable evidence demonstrates that the Deskey striation attacks an old and very real problem in the Douglas fir plywood industry. The validity of the checking problem is indicated by a 1955 report of the Douglas Fir Plywood Association, a producers' organization primarily concerned with quality control and marketing. The report, which studies the factors affecting the face checking of plywood, states flatly, 'The face checking of Douglas fir plywood has been a major problem of the industry for a long time,' and Cornelius Reckers, laboratory chief of and the expert witness for Georgia-Pacific, conceded that checking was a 'fairly serious problem.' Testimony indicates that the seriousness of the problem has been increasing in recent years, since the **[\*\*16]** exhaustion of the better grade logs has required the progressive use of poorer timber. The evidence also establishes that the industry has never guaranteed untreated plain fir plywood against checking. Indeed, the defendant for years expressly noted on its invoices that such plywood could not be warranted against checking. Over the years checking has also been a continual source of complaints from users and retail lumber dealers. Although the district judge felt that the volume of complaints was insufficient to establish that the checking problem was significant, the number of complaints must be evaluated in the light of the generally understood industry practice that the risks of checking fall on the user. The testimony of experts and numerous affidavits of lumber dealers reinforce the conclusion that checking caused considerable and continuing concern to the fir plywood industry. The edge separation difficulty, which the lower court found was accentuated in plywood and especially in fir

plywood, is attested to by the Morden patent, where composite boards were striated to mask the cracks, and also by testimony although the evidence suggests that it is a considerably **[\*\*17]** less serious problem than checking.

That the Deskey striation was an effective solution cannot be denied. In a series of experiments, the report of which played a significant part in the successful Patent Office prosecution of the application, Prof. Bror L. Grondal of the University of Washington College of **[\*131]** Forestry, an expert in wood technology with long experience and a national reputation who testified at the trial below, discovered and reported that the Deskey striation had 'a pronounced **[\*\*\*128]** 'edge effect,' very substantially reducing the tendency for visible and actual cracks to appear between abutting panels,' and reduced or prevented 'surface checking, not merely by hiding the checks due to the presence of grooves, but by relieving the stresses that cause such checks to appear in plywood with solid faces.' Plaintiff attacks the accuracy and methodology of these experiments and the validity of the conclusions drawn from them. The fact remains, however, that experience has substantially demonstrated the validity of those conclusions, particularly that regarding checking. The defendant has been able to warrant Weldtex against checking and indeed has used **[\*\*18]** this feature as an essential element of its commercial promotion. Contrary to the experience with plain fir plywood, neither checking nor edge separation has been a source of complaints from users of Weldtex. Over a sixteen year period (1940-1956) the produce has enjoyed an amazing success, with total sales in the United States exceeding \$ 56,000,000. Although it is undoubtedly true that the decorative appearance of Weldtex and the effectiveness of grooving in masking edge effects and checking have contributed toward this commercial success, we believe that the advantages stressed in the Deskey patent have played a significant role in the widespread and continued public acceptance of the product.

If, then, the Deskey striation does have a very real utility, is it a novel and an inventive advance over the prior art? We think the question must be answered in the affirmative. Decorative striation is old in the art, but its use was previously confined primarily to shingles and other solid lumber products where its efficacy in relieving stresses was minimal and even that minimal relief was generally unrecognized. Gilmer No. 1,910,895, it is true, commented that a fluted **[\*\*19]** shingle would 'be more resistant to rot and would not check or warp as readily due to the longitudinal flutings affording a greatly increased dispersion of the shrinking and expansion strains. \* \* \*' This offhand statement, however, taught no one that deep grooving of plywood was a solution to an industrial problem. [HN2](#)<sup>[↑]</sup> It is unrealistic to reason that (the inventor) did nothing more than might be expected of the skilled mechanic,

when neither the owners of such prior art patents nor any member of the public after their expiration discovered that their teachings were worth reducing to practice.' [Artmoore Co. v. Dayless Mfg. Co.](#), 7 Cir., 1953, 208 F.2d 1, 4, certiorari denied 347 U.S. 920, 74 S.Ct. 518, 98 L.Ed. 1075. See also [Ric-Wil Co. v. E. B. Kaiser Co.](#), 7 Cir., 1950, 179 F.2d 401, 404, certiorari denied 339 U.S. 958, 70 S.Ct. 981, 94 L.Ed. 1369. The other shingle patents were equally ineffective in suggesting that such striation would control edge separation and checking. Indeed, Prof. Grondal testified that he was skeptical [\*\*20] about the claimed advantage of the deep striation until these claims had been borne out by experimentation. Grooving of shingles did suggest superficial grooving of plywood for decorative effect, as the Moray panels bear witness, but no one until Deskey realized that this decorative effect could be turned to a utilitarian advantage by cutting deeper into the surface of the plies. Melby, producer of the Moray panels, himself inferentially supports the view that the Moray product did not anticipate Weldtex as on deposition he recognized his right to produce Moray without license but testified that he had sought a Weldtex license and on its refusal did not attempt to produce the patented product.

Morden recognized the utility of superficial striation in masking joints. Instead of grooving well into the surface to reduce edge effects produced by expansion and shrinkage, however, he tried to meet the same problem by an elaborate arrangement of locking metal strips. If the Deskey concept was obvious to most, it was not obvious to Morden. Nor was [\*132] it obvious to Gram, who used grooving to mask battens which were inserted to conceal the abutting edges. Hansen [\*\*21] and Maurer incised veneer, thereby creating artificial checks either for the purpose of simulating a grain or for preventing warping; Elmendorf ruptured the wood fibres to prevent warping or curing. That products produced according to the teaching of those patents necessarily relieved stresses is of little moment; these patents called for introducing checks by cutting or splitting and none suggested gouging out wood from the surface. The practice of Maurer No. 2,244,426 could, it is true, result in a grooved panel, but the grooving is not by gouging but by indentation and consequent compression, thus obviously creating rather than relieving stresses. [HN3](#)[↑] The prior art patents teach little about solving problems which Deskey solves without loss of other features. See [Samson-United Corp. v. Sears, Roebuck & Co.](#), 2 Cir., 1939, 103 F.2d 312, certiorari denied 307 U.S. 638, 59 S.Ct. 1039, 83 L.Ed. 1519.

The district judge believed that the teachings of the Deskey patent are limited to showing that a slight change in degree in a process old in the art would [\*\*22] produce somewhat more favorable results. Both superficial grooving of plywood and the striation of solid lumber tend to relieve stresses even

if the tendency is not so marked as it is under [\*\*\*129] the Deskey patent. Hence, it concluded that the patent involves no more than an obvious application of prior knowledge differing only in degree and not in kind. [HN4](#)[↑] This conclusion that a patent involves a matter of degree rather than a change in kind is inevitably in essence a peculiarly personal judgment that the patented discovery did not require the level of intellectual effort and perception which entitles it to statutory protection. See [Kirsch Mfg. Co. v. Gould Mersereau Co.](#), 2 Cir., 1925, 6 F.2d 793. 'The question always is whether the inventive act is of sufficient magnitude to justify the extension of a legal monopoly for the matter covered by the claims.' [Helence Curtis Industries, Inc. v. Sales Affiliates](#), 2 Cir., 1956, 233 F.2d 148, 152, certiorari denied 352 U.S. 879, 77 S.Ct. 101, 1 L.Ed.2d 80.

It is true that [\*\*23] [HN5](#)[↑] a patentee cannot arbitrarily select a range in a known progressive change and maintain a patent monopoly on the products falling within that range on the ground that the designated range produces optimum results. [Kwik Set v. Welch Grape Juice Co.](#), 2 Cir., 1936, 86 F.2d 945. Such a selection of ranges ordinarily involves merely pedestrian skills. Here, however, we have concluded that the Deskey striation has a very real utility which arises primarily from the deep grooving, a utility which was insubstantially present in the prior art and at most, if at all, only dimly perceived. Benefits incidentally and accidentally accruing in the products of the prior art do not necessarily negate invention in a change in degree when the purpose is different and the results new and useful. [Eibel Process Co. v. Minnesota & Ontario Paper Co.](#), 1923, 261 U.S. 45, 66, 43 S.Ct. 322, 67 L.Ed. 523. If the plywood must be physically changed, it can be a proper subject of a valid patent, [Gillman v. Stern](#), 2 Cir., 1940, 114 F.2d 28, 30, certiorari denied 311 U.S. 718, 61 S.Ct. 441, 85 L.Ed. 468, [\*\*24] and 'nothing is easier in patent litigation than to confuse a trifling physical change with the ingenuity demanded for its discovery. \* \* \*' [Refractolite Corp. v. Prismo Holding Corp.](#), 2 Cir., 1941, 117 F.2d 806, 807. Nevertheless, in view of the careful and comprehensive opinion below, we would hesitate to dispute the district court's conclusions if our opposing views were supported only by the fact that numerous patents had attempted to deal with related and unrelated problems in the wood industry by incising, grooving and rupturing, but none had hit upon deep striation as a solution to checking and edge effects.

There are other factors, however, which we must consider. One is that plaintiff is attacking a patent duly issued by the Patent Office. [HN6](#)[↑] From this flows a [\*133] presumption of validity, a presumption which is perhaps too often minimized in the courts. Indeed, since the passage of the 1952 Act, 35 U.S.C.A. § 1 et seq., we have had occasion

to comment on the fact that restrictive judicial views of inventiveness developed [\*\*25] in cases where duly issued patents were declared invalid departed from the more liberal standards pertaining at a prior time and forced a Congressional reinvigoration of the standards. *Lyon v. Bausch & Lomb Optical Co.*, 2 Cir., 1955, 224 F.2d 530, certiorari denied 350 U.S. 911, 76 S.Ct. 193, 100 L.Ed. 799. Expertness and experience in passing upon patents lie primarily in the Patent Office and these important factors are only partially offset by the greater concentration and the additional relevant evidence which can be brought to bear in any particular patent litigation in the courts. The presumption of validity is entitled to particular weight when, as here, the file wrapper history discloses a careful consideration in the Patent Office before issue. The two Melby patents, Gram and Putman were all cited in the Deskey application as prior art references, the Craft-Putman-Melby shingle patents being those which plaintiff most strongly urges upon us now to support the finding of invalidity.

The presumption of validity is reinforced by the history of previous litigation and two decisions of Judge Pierson M. Hall in the District Court for 1292 \*25 [\*\*26] the Southern District of California. In that action for infringement by U.S. Plywood Corp., against an interrelated group of individuals and companies, Judge Hall was faced in 1949 with the same question of the validity of the Deskey patent. He had before him at that time not only the file wrapper history but also the Hansen, Morden and Elmendorf patents, Gilmer patent No. 1,943,597, and the Moray panels. A number of exhibits and over 100 depositions and affidavits were introduced, and the oral argument during the injunctive relief proceedings covers over 350 pages. Although a final judgment on the merits was never entered because the defendants in that case consented to a decree adverse to them, on both applications for a preliminary injunction Judge Hall held that the Deskey patent was valid and infringed and granted equitable relief. *United States Plywood Corp. v. Zeesman Plywood Corp.*, D.C.S.D.Cal.1949, 84 F.Supp. 78; Id., D.C.S.D.Cal.1950, 92 F.Supp. 336. These considered [\*\*\*130] judgments are entitled to weight on this appeal.

There are two other factors of very [\*\*27] great significance. The first is the commercial success enjoyed by Weldtex. Despite severe wartime restrictions on production, over 340,000,000 square feet of Weldtex were sold from 1940 to 1956 in the United States alone, a wholesale volume totalling \$ 56,000,000 for those years.<sup>1</sup> During this period another 50,000,000 square feet have been marketed in Canada through a licensee and Weldtex is also being produced in

<sup>1</sup> Because of these wartime restrictions sales during 1940-1945 totalled less than \$ 190,000.

other countries. As we pointed out before, this commercial success may in considerable measure be due to the decorative appeal of Weldtex and the effectiveness of the striation in masking joints and checks. It seems obvious, however, that effective relief of stresses substantially contributed to that success because striation was recognized as a novel and inventive solution to old problems, meeting a long standing need. Such commercial success is an important factor in a doubtful case. *Technical Tape Corp. v. Minnesota Mining & Mfg. Co.*, 2 Cir., 1957, 247 F.2d 343, 347, certiorari denied 355 U.S. 952, 78 S.Ct. 537, 2 L.Ed.2d 529; *City of Grafton, W. Va. v. Otis Elevator Co.*, 4 Cir., 1948, 166 F.2d 816, 819. [\*\*28]

The HNZ[↑] commercial success of Weldtex must be viewed in the light of the long-continued public acquiescence in the validity of the patent. Such a volume of sales not only raises the inference that the plywood was a product of invention; it also understandably leads to pressure on competitors to imitate the product and thus appropriate part of this profitable market. Indeed, Cornelius [\*134] Reckers, Georgia-Pacific's laboratory chief, testified that plaintiff began the manufacture of striated plywood because it was 'extremely advantageous from a profit standpoint.' It is most significant, therefore, that the only plywood manufacturers to contest the defendant's statutory monopoly prior to the present litigation was an interrelated group of persons and firms in California in 1949, and, after two injunctions had been issued against it, it consented to an adverse decree. Thus Georgia-Pacific was the first producer to litigate fully the Deskey patent, and this attack was not initiated until 13 years after the patent issued.

This unwillingness in an industry to engage in extensive [\*\*29] patent litigation can sometimes be explained in terms unrelated to the validity of the patent: the limited commercial appeal of the product may make even successful litigation unprofitable or the industry may be composed of such small producing units that no single one of them is able to undertake the burden and expense of a big litigation. Here the record shows that the plywood industry was comprised of many relatively large units, and the large profits to be made as a result of the strong commercial appeal of a product like Weldtex were well recognized. A recent compilation which was in the record disclosed that 38 units each had estimated sales exceeding \$ 5,000,000 annually of 3/8' plywood alone and that 98 mills had an aggregate annual sales volume in that product of over \$ 400,000,000. It should also be noted that the defendant has paid out to Deskey in the period 1940-1956 over \$ 533,000 in royalties. HN8[↑] It is highly unlikely that a firm in a competitive industry would commit itself to pay such royalties if there was a substantial likelihood that the rest of the industry [\*\*30] could manufacture the product free of the patent. See *Coltman v. Colgate-Palmolive-Peet*

*Co., 7 Cir., 1939, 104 F.2d 508, 511*, certiorari denied 308 U.S. 598, 60 S.Ct. 129, 84 L.Ed. 500.

Deskey [HN9](#)<sup>[↑]</sup> 'recognized, attacked and successfully solved (the problems of checking and edge effect), achieving new, unobvious and unexpected results in a manner not suggested or disclosed to one skilled in the art. \* \* \* *Application of McKenna, 1953, 203 F.2d 717, 721, 40 C.C.P.A., Patents, 937*. Hence, we conclude that the Deskey striation is not anticipated and constitutes invention.

#### Indefiniteness

We have been discussing whether the Deskey striation is capable of being patented and have concluded that it is. [HN10](#)<sup>[↑]</sup> The patent statute, however, requires more: the specification must describe the invention in 'full, clear, concise, and exact terms as to enable any person skilled in the art \* \* \* to make and use the same. \* \* \*' and there must be claims 'particularly **[\*\*31]** pointing out and distinctly claiming the subject matter which the applicant regards as his invention.' 35 U.S.C.A. § 112. We turn first to the seven claims of the patent. <sup>2</sup> **[\*\*46]**

<sup>2</sup> 1. As a new article of manufacture, a plywood panel having a face ply of rotary-cut wood having pronouncedly different hard and soft growth, and consequent 'wild' graining when rotary-cut, the exposed surface of said face ply having a plurality of substantially continuous grooves of random depth over the surfaces, but each groove being of the same depth throughout its length, frequent grooves being of material depth to pass through any hard growth layer encountered, said grooves extending substantially lengthwise of the grain in said ply, and generally across its width, and being sufficiently closely spaced to localize within the individual ribs or groups of ribs the normal stresses arising from shrinking, expanding and the like, and to prevent accumulation of such stresses across any appreciable width of the ply, and also to largely destroy the normal grained effect.

2. As a new article of manufacture, a plywood panel having a multiplicity of grooves in the exposed surface of at least one of the face plies thereof, frequent grooves being of substantial average depth relatively to the thickness of said face ply, and each groove being relatively narrow and disposed closely adjacent other grooves, all of such grooves extending substantially lengthwise of the grain of the wood, the depth of said frequent grooves and their frequency being such as to prevent stresses, normally arising from shrinking and expanding from accumulating across any appreciable width of the grooved ply.

3. As a new article of manufacture, a plywood panel having a multiplicity of grooves in the exposed surface of a face ply, said grooves being each sufficiently deep to prevent stresses, normally arising from shrinking and expanding, from accumulating across any appreciable width of the grooved ply, and of uniform depth throughout its length, but of random depth relatively to other

**[\*\*131]** **[\*135]** In the specification of the Deskey patent, before the district court, and again on appeal, it has been urged that the Deskey striation meets a problem peculiar to the Douglas fir plywood industry. Edge separation and checking do arise in any plywood to a limited extent, but the problem in other woods is minimal. We have concluded that deep grooving is an inventive concept rather than merely an obvious change in degree in the application of a known art only because we are convinced that the use of Douglas fir and like woods poses distinct problems which are met in a new and unobvious fashion. The superficial grooving of the Moray panels does not anticipate because it has no substantial functional utility in relieving stresses; its purpose and effect is primarily decorative. By the same token, since panels made from wood dissimilar to Douglas fir have little tendency to check or separate at the edges, deep striation of such panels serves no utilitarian function **[\*\*32]** of stress relief. Consequently, we conclude that claims covering all types of plywood are beyond the scope of the Deskey invention.

Only one of the claims is properly limited to the scope of the Deskey invention. That is claim 1, which claims 'a plywood panel having a face ply of rotary-cut wood having

grooves, and each groove being relatively narrow, and disposed closely adjacent other such grooves, and all such grooves extending substantially lengthwise of the grain of the wood.

4. A plywood panel as in claim 2, wherein the exposed surface of each face ply is provided with grooves as specified.

5. As a new article of manufacture, a plywood panel having a multiplicity of grooves in the exposed surface of one face ply extending substantially parallel to one edge of the panel and substantially lengthwise of the grain of the wood, said grooves being each of substantially uniform depth throughout its length, and of such depth as to prevent stresses, normally arising from shrinking and expanding, from accumulating across any appreciable width of the grooved ply, but of random depth relative to other grooves, and being each of a width not appreciably exceeding its depth, and spaced without material interval from adjoining grooves.

6. A grooved plywood panel as in claim 5, wherein certain deeper grooves are of a depth approaching or exceeding half the thickness of the grooved face ply.

7. A plywood panel having across the exposed surface of a face ply, a multiplicity of grooves, extending substantially lengthwise of the grain in such face ply, the grooves being each of substantially constant average depth throughout its length, but of random depth as compared to adjoining grooves, and being each narrow and deep, and closely adjacent other grooves, certain such grooves being so deeply cut that their bottom is closer to the glue line than to the outer surface, and such grooves of all kinds being of sufficient frequency and narrowness, and sufficiently closely spaced, across the panel, to localize stress accumulation within the width between grooves, and within the width between such deeply cut grooves.

pronouncedly different hard and soft growth, and consequent 'wild' graining when rotary-cut. \* \* \* Claims 2 to 7 are not so limited, and therefore we agree with Judge Herlands that they are invalid. It has often been stated that the scope of claims should be limited in light of the specifications if necessary to uphold the patent, see e.g. *Westinghouse Electric & Mfg. Co. v. Quackenbush*, 6 Cir., 1931, 53 F.2d 632, 634, but that doctrine will not avail defendant U.S. Plywood here. The rule applies only if the claims are ambiguous and it cannot serve to save claims which were intentionally drafted to obtain a statutory monopoly broader than seems to be justified. *Aluminum Co. of [\*136] America v. Thompson Products*, 6 Cir., 1941, 122 F.2d 796. Here the defendant not only referred to other woods in the description but carefully limited [\*33] claim 1 to woods having the characteristics specifically defined in the claim, which are aptly descriptive of fir. Limitations in some claims in a series will not be read into the others. *Western States Machine Co. v. S.S. Hepworth Co.*, 2 Cir., 1945, 147 F.2d 345, 350, certiorari denied 325 U.S. 873, 65 S.Ct. 1414, 89 L.Ed. 1991. [\*\*\*132]

The district judge, however, went further, holding that the description in the specification of the patent is fatally vague and indefinite and that none of the claims, including claim 1, particularly points out and distinctly claims the subject matter which the applicant regards as his invention. These conclusions appear to be predicated upon the lack of objective measurements both in the specification and claims and the inability of expert witnesses precisely to delimit the scope of the Deskey claims.

We think that the district court was too rigorous in applying the requirement of precision. This requirement serves two primary purposes: those skilled in the art must be able to understand and apply the teachings of the invention and enterprise and experimentation must not be discouraged by the creation of an [\*34] area of uncertainty as to the scope of the invention. On the other hand, the policy of the patent statute contemplates granting protection to valid inventions, and this policy would be defeated if protection were to be accorded only to those patents which were capable of precise definition. The judicial function requires a balancing of these competing considerations in the individual case.

It is true that the Supreme Court has stated that *HNII*[↑] 'an invention must be capable of accurate definition, and it must be accurately defined, to be patentable,' *United Carbon Co. v. Binney & Smith Co.*, 1942, 317 U.S. 228, 237, 63 S.Ct. 165, 170, 87 L.Ed. 232, and this Court recently stated that ' \* \* \* the requirement of the Act for definiteness in the statement of claims must be strictly construed,' *Helene Curtis Industries, Inc. v. Sales Affiliates*, supra, 233 F.2d at page 160. Such

general statements, however, must be viewed in the context of circumstances. Objectionable indefiniteness must be determined by the facts in each case, not by reference to an abstract [\*35] rule. *Chicago Pneumatic Tool Co. v. Hughes Tool Co.*, 10 Cir., 1938, 97 F.2d 945, 948, certiorari denied 305 U.S. 643, 59 S.Ct. 146, 83 L.Ed. 415. If the subject matter of the patent is such that the patentee cannot verbalize his invention comprehensibly or is incapable of ascribing reasonable limits to his claims, regardless of intrinsic merit his invention cannot be patented. Likewise, the patentee is required to draft his specifications and claims as precisely as the subject matter permits, and his failure to do so may result in judicial invalidation of his patent.

On the other hand, *HN12*[↑] patentable inventions cannot always be described in terms of exact measurements, symbols and formulae, and the applicant necessarily must use the meager tools provided by language, tools which admittedly lack exactitude and precision. If the claims, read in the light of the specifications, reasonably apprise those skilled in the art both of the utilization and scope of the invention, and if the language is as precise as the subject matter permits, the courts [\*36] can demand no more. See *Lever Bros. Co. v. Procter & Gamble Mfg. Co.*, 4 Cir., 1943, 139 F.2d 633, 639; *H. H. Robertson Co. v. Klauer Mfg. Co.*, 8 Cir., 1938, 98 F.2d 150, 153. That an area of uncertainty necessarily exists in such a situation cannot be denied, but the existence of an inescapable area of uncertainty is not sufficient justification for denying to the patentee the fruits of his invention.

Indeed, *HN13*[↑] in the administration of the patent statutes uncertainty has been introduced by express judicial creation. It has often been stated that the [\*137] scope of the patent is limited by the language of the claims. Where, however, an infringer has attempted to appropriate the essence of the invention while remaining outside the language of the claims, courts have not hesitated to apply the doctrine of equivalents, whereby the 'essence' of the invention is protected. See *Claude Neon Lights v. E. Machlett & Son*, 2 Cir., 1929, 36 F.2d 574, 575, certiorari denied 281 U.S. 741, 50 S.Ct. 347, 74 L.Ed. 1155. In such situations [\*37] the patentee is protected even though he has been more precise than the subject matter of the invention permits or requires. It would be anomalous if this Court was to strike down a patent because the inevitable area of uncertainty was created by the language of the specifications and claims rather than by judicial application of equivalency doctrine. See *Philip A. Hunt Co. v. Mallinckrodt Chemical Works*, 2 Cir., 1949, 177 F.2d 583, 585.

To turn to the Deskey patent, the specification in general terms describes the invention:

I have found it possible to eliminate these stresses, and the deleterious effects thereof, by gouging the surface or surfaces of the panel with a multitude of closely spaced grooves, extending generally parallel to the grain, and preferably of uneven, irregular, and random depth, following no recurring pattern, but sufficiently closely spaced, and having, at sufficiently close intervals, sufficient depth as to cut through the recurring grain layers, and to break up each individual layer and the surface of the panel generally into narrow widths or ribs of uncut wood. Within these narrow widths the stresses which cause the shrinking, [\*\*\*133] [\*\*38] cracking, checking and swelling may not accumulate to such an extent that they may not be relieved within the grooves in the surface.

The grooves need not conform, in cross-section, to any particular form, but may be V-shaped, rounded, or individually of different contours. Whatever the instrumentality used, each individual groove should be reasonably continuous and of the same depth, from end to end, through soft spring growth and hard summer and fall growth, for any material discontinuity or variation in continuity, particularly over an appreciable width or area, will leave an area wherein stresses are cumulative.

The essential of this invention is that the grooves are of such depth, relative to the thickness of the face ply, and are closely enough spaced, that the ribs are of slight width, and the stresses in the gouged surface areas of the face ply are relieved, and can not accumulate to any appreciable extent. Preferably the grooves do not extend to or through the glue line ('glue' meaning any adhesive such as is used or is suitable for use in plywood manufacture) but more or less frequently recurring grooves may extend almost to the glue line, with intervening [\*\*39] grooves of lesser and irregular depth. The grooves vary in depth, as the sample and photographs show, from mere surface scratches to grooves of a depth to extend to or past the neutral plane of the grooved face ply (halfway through the ply), some being of a depth approaching the thickness of the ply itself.

The outer surface of the face ply being thus made discontinuous, the fibers in and just beneath the original surface are separated from other fibers at either side and the grain laminas are severed and cut through; stresses arising from shrinkage can not possibly be transmitted nor built up cumulatively in lateral directions. The most they can build up is across the base of each rib, and each such stress is minute; if they are sufficiently deep [\*138] grooves, sufficiently closely spaced, the cumulative build-up of lateral stresses to an excessive value is very effectively prevented. \* \* \*

We think both the essence of the invention and the reasons

why it cannot be more precisely described reasonably appear from the above paragraphs which are a portion of the specification. The patent covers a striated plywood surface formed by gouging out 'a multitude of [\*\*40] closely spaced grooves,' a varying but considerable number of which must extend to or through the median of the ply. The number of grooves, their size and configuration, the size of the ribs, and the depth of the grooving are all variable within limits, and the infinite permutations of variables preclude a definite statement of these limitations.

This [HNI4](#) [↑] inevitable imprecision, however, is not fatal. Claim 1, <sup>3</sup> read, as it must be, in the light of the specifications and drawings (H. [H. Robertson Co. v. Klauer Mfg. Co., supra](#); [Chicago Pneumatic Tool Co. v. Hughes Tool Co., supra](#); [Raytheon Mfg. Co. of Newston, Mass. v. Coe, 1938, 68 App.D.C. 255, 96 F.2d 527](#)) reasonably indicates to the industry the teachings and the scope of the patent. It is as definite as the patent application covering the accused product, as Elmendorf No. 1,819,775, upheld in [Flexwood Co. v. Matt G. Faussner & Co., 7 Cir., 1944, 145 F.2d 528](#) against a similar attack, and as other patents cited against it. Although the two drawings of the patent are [\*\*41] concededly diagrammatic rather than to scale, they convey a visual perspective which aids in the interpretation of the claim.

This case has considerable similarity to [Eibel Process Co. v. Minnesota & Ontario Paper 1292 \\* 39 Co., 1923, 261 U.S. 45, 43 S.Ct. 322, 67 L.Ed. 523](#), where the Court upheld an improvement patent in the paper industry. The patentee discovered that by increasing the height or pitch of an element of a machine the speed of the flow of paper could be increased so as to increase production and eliminate or minimize certain problems which had previously plagued the industry. The Court, pointing to the general adoption of the discovery, held [HNI5](#) [↑] the discovery patentable in the face of an attack that it constituted no more than a change in degree over the prior art. Further, the words 'substantial' and 'high' were held not to be too indefinite inasmuch as they were necessitated by variations in the practice of the patent and because those skilled in the art, in view of the drawing and their knowledge of the prior art, could understand the scope of the patent. [\*\*42] See also [Lever Bros. Co. v. Procter & Gamble Mfg. Co., supra](#).

[HNI6](#) [↑] Here both the specification and the claim to some extent interrelate a description of configuration and function, but we think the latter merely aids in understanding the scope of the patent. The patentee is not attempting to claim a

<sup>3</sup> See footnote 2.

function, stress relief, and all the manifold ways of obtaining it, thus claiming more than his invention. See [Philip A. \[\\*\\*\\*134\] Hunt Co. v. Mallinckrodt Chemical Works, supra](#). Rather, his claim, as amplified by the specification, is restricted to striation, and the functional aspects of the description are a suitable supplementary means of indicating the breadth of the patent grant.

Nor does it seem that the industry has had any difficulty in understanding the meaning of the patent or its general scope. The long continued acquiescence in the defendant's unilateral and highly successful promotion of a striated panel strongly suggests that those skilled in the art considered the Deskey patent not only inventive but also sufficiently definite to withstand judicial [\*\*43] scrutiny. We think it may truly be said, [HN17\[↑\]](#) 'It is impossible to suppose that anyone who really wished to respect the patent would have any difficulty in identifying what the claim covered.' [Musher Foundation v. Alba Trading Co., 2 Cir., 1945, 150 F.2d 885, 889](#), certiorari denied 326 U.S. 770, 66 S.Ct. 175, 90 L.Ed. 465.

#### [\*139] Infringement

Plaintiff contends that the accused product does not infringe the Deskey patent because the grooves are of equal rather than random depth. We think this variation is insufficient to escape infringement. Plaintiff's plywood does escape the literal language of claim 1 by gouging to a uniform depth. [HN18\[↑\]](#) ] Courts have not, however, permitted infringement to be avoided by such immaterial changes. '\* \* \* Often even with the most sympathetic interpretation the claim cannot be made to cover an infringement which in fact steals the heart of the invention; no matter how auspiciously construed, the language forbids. It is then [\*\*44] that the doctrine of equivalents intervenes to disregard the theory that the claim measures the monopoly and ignores the claim in order to protect the real invention. [Claude Neon Lights v. E. Machlett & Son, 2 Cir., 36 F.2d 574](#); [Otis Elevator Co. v. Atlantic Elevator Co., 2 Cir., 47 F.2d 545, 547](#); [Oates v. Camp, 4 Cir., 83 F.2d 111, 116](#).' [Keith v. Charles E. Hires Co., 2 Cir., 1940, 116 F.2d 46, 48](#).

The specification of the Deskey patent states that the grooves be 'preferably of uneven, irregular, and random depth. \* \* \* without restricting them as the claim might otherwise indicate. It is true that claim 2 was amended to include in terms grooves of equal depth and claim 1 was not so amended, but it is clear from the correspondence with the Patent Office that the amendment was intended only to make explicit in one claim that which was implicit in all: that random depth striation was considered only to be preferable and not essential to the practice of the patent. We think that [HN19\[↑\]](#) ] the defendant is entitled to protection [\*\*45] against

plaintiff's obvious variation, see [Musher Foundation v. Alba Trading Co., supra, 150 F.2d at page 887](#), and that the Georgia-Pacific product infringes.

In view of our conclusion that claim 1 is valid and infringed, we need not pass upon the unfair competition issue.

Reversed and remanded for further proceedings in accordance with this opinion.

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