

BETWEEN:

OMARK INDUSTRIES (1960) LTD. PLAINTIFF;

AND

GOUGER SAW CHAIN CO., and TEVIR PRODUCTS LIMITED, sole proprietor of SABRE SAW CHAIN COMPANY and JIMDEB COMPANY LIMITED, HELCHA COMPANY LIMITED, LARGOLD COMPANY LIMITED and NEEROD COMPANY LIMITED, a partnership trading under the name SABRE SAW CHAIN COMPANY and said SABRE SAW CHAIN COMPANY DEFENDANTS.

1962
Nov. 12-16,
20-23,
28-30
Dec. 3-7
1963
Apr. 16-19,
22, 23
1964
Apr. 17

Patents—Infringement—Validity—Significance of commercial success of patented invention with respect to validity—Range of approximation afforded a patentee—Definition of monopoly in claims of patent—Duty imposed on patentee by s. 36(2) is heavy one—Theory of substance or pith and marrow—Determining meaning of claims—Construing the claims of a patent—Comparison of allegedly infringing article to be with the claims of the patent not with plaintiff's product—Verification of plaintiff's product as embodying the claims of the patent—Prior art to be compared with claims of the patent, not with plaintiff's product—Novelty—Anticipation—Obviousness—Lack of invention—Variation from strict wording of claims—Interpretation of meaning of specific words in claims—Object invented may be considered at time subsequent to its manufacture in certain cases—Presumption of validity—Prior use or knowledge available to public—Prior invention genuinely given to public—Prima facie validity of patent does not extend beyond application date—Burden of proving earlier date of invention—Certified copy of prior application for U.S. patent as evidence of earlier date of invention—Documents as evidence of anticipation—Prior use as evidence of anticipation—Experimental use as prior use—Nature of prior use required to defeat patent enjoying great commercial success—Interpretation of claims of combination patent—Combination patent—Textual infringement—Infringement where variations in offending article do not affect substance of the patent—Mechanical or chemical equivalency—Doctrine of taking the substance of a patent—Immaterial whether offending device better or worse than patented invention—Liability of director of company for its infringing acts.

This is an action brought by the plaintiff as owner by assignment of Canadian patent No. 468,826 issued on October 17, 1950 for infringement thereof by the defendants, all of the defendants save Gouger Saw Chain Co. having been added as parties defendant by order under Rule 228 of the Rules of this Court. The defendants claim no infringement and that the patent in suit is invalid because it has been anticipated, lacks inventiveness and the claims are so worded that they describe an inoperable device. The invention relates to the shape or configuration of the tooth of a saw chain particularly adapted for cutting wood.

The evidence established that the plaintiff's saw chain, referred to as the "chipper chain", is superior to any saw chain previously available and 91538-1

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that because of its cutting effectiveness and ease of maintenance in the field it has practically swept the other types of saw chain off the market and has attained tremendous commercial success in Canada as well as in the United States.

- Held:* That it now appears to be accepted in patent matters that a director of a company can be held liable in some cases with and for the company for its infringing acts.
2. That the commercial success of a patented invention has significance with respect to the validity of the patent only if it is shown that the success is due to the invention and not to extraneous matters.
 3. That the law affords a patentee a certain range of approximation providing the language of the claims of the patent and the use to which the invention is adapted so permit.
 4. That the claim or claims in a patent alone define the monopoly where the patentee has a statutory duty and an obligation to state what is the invention he desires to protect.
 5. That although the duty placed on the patentee by s. 36(2) of the *Patent Act*, to claim clearly, distinctly and explicitly that which he claims is his exclusive property, is a heavy one to discharge and should not be allowed to be obscured by the theory of substance or pith and marrow, it must be tempered by adding that the approach of the Court must be to look at what the inventor did and what his invention achieved.
 6. That although the claims define the monopoly, in determining what these claims mean, the specifications at large must be considered and the whole document read.
 7. That when construing the claims of the patent one must divorce one's mind from the prior art and look at what the claims mean by their words and to determine whether there is infringement or not one must compare the defendant's allegedly infringing article not with the disclosure nor with what the plaintiff is doing in the market place but with the claims of the patent. It is an illegitimate approach to compare the defendant's article with the plaintiff's article, unless the latter has been verified as embodying the claims of the patent.
 8. That when considering validity, either from the standpoint of novelty, which is anticipation, or obviousness, which is lack of invention, it is necessary to construe the claims to see what invention, if any, they define, and then the prior art put forward should be considered, but when looking at the prior art one should not compare it with the plaintiff's structure as made and sold in the market place but with the claims of the patent unless the plaintiff's structure has been verified as being in accordance with the claims of the patent.
 9. That the words "substantially at right angles" as used in claim I of the patent in suit must be read in the light of the disclosure and the drawings as they appear in the patent and if that is done it becomes apparent that they cannot mean precisely at right angles, and the evidence that variation in this respect would have no effect on the operation of the saw chain confirms that a relatively wide interpretation should be given to the word "substantially".
 10. That applying the ordinary rules of interpretation as to the meaning of the word "balance" as used in claim I and looking at it from the viewpoint of the competent skilled workman in the art at the date of the patent and the meaning ascribed to that word in the prior art it

can be seen that it is a relative term which means that the tooth is so constructed that it gives stability and smoothness as well as all those things which enable the tooth during the whole of its working life to give a satisfactory performance.

11. That the proposition that the object invented should be considered in its condition at the time of manufacture and not at some later time after it has been used has no application in this case because the saw tooth in question was conceived and described bearing in mind that it was to have a working life during which constant and repeated sharpening would be required, and because of this the condition in which this tooth becomes after use is a very important consideration of the invention. The character of the device at the time of manufacture must be considered in this case, having regard to the object and the use of the invention during its existence.
12. That the saw teeth produced by the plaintiff and sold in the market embody the invention as claimed in the patent in suit, so that the saw tooth manufactured by the defendants may now be compared with what the plaintiff has been selling in the market.
13. That the defendants not only have the burden of setting aside the presumption of validity of the plaintiff's patent as set out in s. 48 of the *Patent Act* and which covers all the requirements of a patent such as novelty, utility and inventiveness, but also, when they allege prior use or knowledge under s. 28(1)(a) of the Act, they must not only establish this prior use or knowledge but also that it was made available to the public as required by s. 63(1)(a) of the Act.
14. That it is not sufficient for one to invoke s. 63(1)(a) of the *Patent Act* to defeat a Canadian patent by alleging prior invention. He must establish that such invention was genuinely given to the public before the application for the patent in suit was filed.
15. That if the patentee seeks to bring his date of invention earlier than the date which appears on the face of his patent and to which he is entitled by the words of the Patent Office he has the burden of so doing and the *prima facie* validity of his patent does not go beyond the application date unless an earlier date is proven by cogent evidence.
16. That when the plaintiff seeks to establish a date of invention earlier than the date of application for the patent in suit, it is sufficient for this purpose for him to introduce in evidence a certified copy of a prior application for a United States patent where such application identifies the inventor by name and address as the same person as the inventor in the Canadian application and both applications deal with the same invention. If the certified copy of the prior U.S. application is not contradicted by evidence, the plaintiff will have succeeded in establishing the date of the U.S. application as the date of first invention.
17. That when documents are brought forward as anticipations, they must be read singly and must in no way be combined together to form a mosaic of extracts.
18. That with respect to evidence of prior use as anticipation, the test should be even stricter than in the case of written publications because in the latter case there is something concrete to go on, a document or a writing, but when dealing with prior use, one is concerned with memory.
19. That fortuitous or experimental use which does not lead to the invention going to the public cannot be accepted as prior use.

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- 20 That in the case of an invention which has realized great commercial success, the evidence of prior use must be of such a character as to leave no doubt in the mind of the Court that it was the invention as invented that was used and no other, and any difference, even of a minor nature, would not be a prior use sufficient to defeat a valuable patent.
- 21 That in the case of a combination patent the claims should be given a reasonably restrictive interpretation allowing them to encompass a reasonable manifestation of the invention, so that it may be possible to find that the invention has not been anticipated without having to limit the substantiality of the invention in protecting it against infringers.
- 22 That in a combination patent it is not permissible to characterize the invention as a series of parts because the invention lies in the fact that they were put together and in the present case, the invention may well reside in the very idea of arranging a saw tooth so that its configuration will allow not only ease of filing and maintenance but also will give excellent cutting.
23. That the apparently trifling change from the prior art which led to the solution of the problems of filing the saw teeth in the field while permitting the saw chain to cut satisfactorily and the considerable commercial success resulting therefrom confirms that the invention in suit was a forward step of great importance in the trade and definitely stamps it as being an invention of great importance.
24. That the claims must be looked at by the competent skilled workman at the date of the patent with "a mind willing to understand, not by a mind desirous of misunderstanding".
25. That the matter of infringement can be considered from two standpoints. The claims having been properly construed according to the canons of construction, is the offending device within the text of the claims. If so, this is called textual infringement and this is the end of the matter. However, if the device is not within the precise wording of the claims, it may nevertheless still be an infringement if the substance or pith and marrow of the invention has been taken on the basis that the property in a patent is not to be taken away by someone making variations which do not affect the substance.
26. That the doctrine of mechanical or chemical equivalency is only one facet of the larger doctrine of taking the substance of an invention and it therefore appears that the substance may be taken when the infringer, using small variations of dimensional details only to distinguish his device from that of the plaintiff, produces a device which performs exactly the same function.
27. That it is immaterial whether a device is better or worse than the invention of the plaintiff, but if there is nothing functionally different, it is an infringement.
28. That the defendant's device will infringe the plaintiff's patent where they both work satisfactorily, there is no difference in the main elements of the structures, none in the operation and both perform the same function in the same way.
29. That the defendants have infringed the plaintiff's rights under the claims in suit.

Practice—Rule 228 of Rules of Court—Joinder of parties defendant—Multiplicity of proceedings—Rule 22A of Rules of Court—Earliest date of

invention relied on by plaintiff includes all dates earlier than application date on which plaintiff to rely—Practice of this Court regarding evidence of tests and experiments conducted pendente lite or ex parte.

Held: That it is in the interests of justice that multiplicity of proceedings be avoided particularly when the subject matter is a wasting asset such as a patent.

2. That the purpose of Rule 22A of the Rules of this Court is to allow the opposite party to know not only the earliest date of invention upon which his opponent intends to rely, but also all the dates upon which he intends to rely, together with "the nature of the acts upon which he intends to rely for the purpose of establishing the same", and this is so in order that he may be fully informed so as to be able to decide whether or not he should contest the proceeding and also to insure that he will not be taken by surprise.
3. That the practice in this Court seems to have been that evidence of tests and experiments conducted *pendente lite* without notice to the other side and an opportunity being given to attend should not be considered, and this is a salutary rule. In any event, tests and experiments conducted even before trial in the presence of the other party are much more probative than if conducted *ex parte*.

ACTION for infringement of a patent.

The action was tried by the Honourable Mr. Justice Noël at Ottawa.

Gordon F. Henderson, Q.C., David Watson and Jean Richard for plaintiff.

Harold G. Fox, Q.C., Donald Sim, Q.C. and Jacques Bonneau for defendants.

The facts and questions of law raised are stated in the reasons for judgment.

NOËL J. now (April 17, 1964) delivered the following judgment:

This is an action for infringement of patent No. 468,826 issued on October 17, 1950, to Joseph B. Cox the inventor, assigned to Oregon Saw Chain Manufacturing Corporation and now owned by plaintiff Omark Industries (1960) Ltd. to which it was assigned on the 2nd day of March, 1962, by a document bearing that date including the right to continue any suits for infringement of the said Canadian patent brought by the assignee under the name of Omark Industries (1959) Ltd. and to all claims for damages or other recovery by reason of the infringement of the said Canadian patent No. 468,826 occurring prior to the effective date of such assignment. The plaintiff Omark Industries (1960)

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Ltd. is a body politic and corporate having its head office and principal place of business at the City of Guelph, in the Province of Ontario. The defendant, Gouger Saw Chain Co. is a sole proprietorship owned and operated by Galt Die and Stamping Company Limited and carried on business at 519 Parkdale Avenue North, in the City of Hamilton, in the Province of Ontario, until sometime in July 1961 when it moved to other premises located at 618 Parkdale, in the same city. The defendant, Sabre Saw Chain Company was a sole proprietorship owned and operated by Tevir Products Limited from February 1, 1961, to October 10, 1961, and then owned and operated by Jimdeb Company Limited, Helcha Company Limited, Largold Company Limited and Neerod Company Limited, all of the City of Hamilton, in the Province of Ontario, from October 10, 1961 to date.

The defendants other than Gouger Saw Chain Co. were all joined as parties defendant to the present action by a verbal judgment delivered by me on November 28, 1962, following a motion made by counsel for the plaintiff on November 23, 1962, requesting that they be so joined, launched pursuant to Rule 228 of the Rules of this Court which allows the adding of parties to an action by the Court even *ex parte* where by reason "of any event occurring after the commencement of an action and causing a change or transmission of interest or liability . . . or for any other cause it becomes necessary or desirable that any person not already a party to the action should be made a party thereto."

My decision to so join the above defendants was based on a number of facts disclosed in an examination for discovery of one John Salvisburg, a former manager of plaintiff's Canadian operations, who had an interest in Gouger, as well as in the other defendants, and was one of their main executive officers. I had authorized this examination to be conducted upon the request of counsel for the plaintiff for the purpose of assessing the situation and determining whether these new defendants should be joined or not.

The facts thus revealed by Mr. Salvisburg, in some cases reluctantly after a lengthy, arduous and at times trying discovery, were of such a nature that I felt the interests of justice would be better served if these parties were joined as defendants.

Indeed, after the taking of the present action against the first defendant Gouger Saw Chain Company, on April 1, 1959, and before the above facts, of which I shall say more later, were revealed, the plaintiff on October 11, 1962, took another action for infringement of the same patent against Sabre Saw Chain Company and the four partner companies, Jimdeb Company Limited, Helcha Company Limited, Largold Company Limited and Neerod Company Limited under No. A-872 of this Court with identical issues and therefore dealing with the same subject matter, the only possible difference, and this would not be of any substance from what I observed, being the consideration of one additional chain "the Sabre" whose structure may not be exactly the same as that made by the defendant, Gouger, in the same manner, however, as the structure of the Gouger tooth may not be exactly identical to that of the plaintiff.

Had the plaintiff, at the time of the taking of the above action No. A-872, known the following facts disclosed by Mr. Salvisburg's discoveries, there is no question in my mind that the plaintiff would have requested they be joined in the present action and the second action would not have been taken.

Indeed, as soon as Gouger, as a sole proprietorship of Galt Die and Stamping Co. Ltd., stopped manufacturing on January 31, 1961, Sabre Saw Chain Company, as a sole proprietorship of Tevir Products Ltd., with Gouger's equipment and staff, carried on its operations in the same premises as Gouger, at 519 Parkdale Avenue North, Hamilton, until July, 1961, when the operations were removed to 618 of the same street in that city, where operations were continued until October 10, 1961, when Sabre Saw Chain became the sole proprietorship of Jimdeb Co. Ltd., Helcha Co. Ltd., Largold Co. Ltd., Neerod Co. Ltd., a partnership trading under the above name and continued the manufacturing of the Sabre tooth with some of Gouger's equipment and all of its staff. The drawings used by Sabre Saw Chain Company, whether as a proprietorship of Tevir or of the four above mentioned corporations were Gouger's drawings and the same people, James Moses, Lawrence Goldblatt and John Salvisburg, were all officers and interested in all the defendants, Salvisburg further admitting that notwithstanding the change of ownership there was a continuity of operations, in that some of the same equipment was used,

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the same trade mark utilized, and the employees of Gouger remained throughout those of the other defendants. He also admitted that Sabre Saw Chain Company was contributing financial assistance to the defence of the present action and that he personally was actively participating therein.

It therefore occurred to me that because of those facts and the similarity of the subject matter, there ought not to be here a multiplicity of proceedings and these new defendants should be joined. By so doing, I felt that dealing as we are here with a patent which is a wasting asset, the decision in the present action of the Sabre issue, as well as that of Gouger, at an early date, would be in the interest of justice and in the event the plaintiff was successful, his costs could be recovered from all of the defendants.

It was on this basis that I allowed these defendants to be joined as such in these proceedings.

I have gone into this matter in some detail because counsel for the plaintiff submitted in his argument that the joining of these defendants went much further than that. Indeed, he urged that I had found in the oral judgment rendered on his motion to join, that Sabre was a successor to Gouger, that for a period of time, from February 1961 to October 10, 1961, Sabre made the chains for Gouger, that Sabre was financing this lawsuit and that there was in general a joint relationship of the parties and that, therefore, Sabre was responsible for the actions of Gouger by reason of the above relationship.

Now there is some authority to the effect that a director of a company can be held liable with the latter for infringement when he personally directs the company's infringing activities.

This rule was applied in the High Court of Justice, Chancery Division in *Reitzman and Another v. Grahame-Chapman and Derustit, Ltd.*¹

This decision is supported by *Halsbury's Laws of England*, 2nd edition, vol. 24, No. 1226, at p. 652, when dealing with the responsibility in some cases of directors of a company for the torts committed by the latter:

Normally the directors of a company are not personally liable for the company's torts, even if they are managing directors or the sole directors and shareholders. In order to make them responsible it must be proved either (1) that they have formed the company for a tortious purpose; or (2) that they have directly ordered or authorised the acts complained of; or (3) that they have so authorised or ordered by implication.

¹ (1950) 67 R.P.C. 178.

This whole matter was well stated by Lord Atkin in *Performing Right Society v. Civil Theatrical Syndicate*¹, citing Lord Buckmaster in *Rainham Chemical Works v. Belvedere Guano Co.*²:

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Prime facie a managing director is not liable for tortious acts done by servants of the company unless he himself is privy to the acts, that is to say unless he ordered or procured the acts to be done. That is authoritatively stated in *Rainham Chemical Works v. Belvedere Guano Co.*, where it was sought to make a company liable for an explosion upon their works in the course of manufacturing high explosives. The company were held liable on the principle of *Rylands v. Fletcher*. It was also sought to charge two directors with liability. They were eventually held responsible because they were in fact occupiers of the works. It was contended that they were liable on the ground that they were managing directors of the company, that the company was under their sole control as governing directors, and that they were responsible for the work done by their servants. Lord Buckmaster said: "I cannot accept either of these views. If the company was really trading independently on its own account, the fact that it was directed by Messrs. Feldman and Partridge would not render them responsible for its tortious acts unless, indeed, they were acts expressly directed by them. If a company is formed for the express purpose of doing a wrongful act or if, when formed, those in control expressly direct that a wrongful thing be done, the individuals as well as the company are responsible for the consequences, but there is no evidence in the present case to establish liability under either of these heads.

Although, as we have just seen, it now appears to be accepted in patent matters that a director of a company can be held liable in some cases with the latter and for the latter, the liability of one corporation for the infringement of another, as suggested here by counsel for the plaintiff is, in my opinion, another matter which appears to be fraught with considerable difficulty.

Now, before going any further in this matter, I might pause to say that if the joined defendants could be held responsible for the acts of Gouger as successors to the latter and as formed for the express purpose of doing a wrongful act assuming, of course, that the defendants have all infringed a valid patent, this responsibility in any event cannot go beyond the date upon which I must assume the new defendants came into existence which, as we have seen, would be February 1, 1961, for Tevir and October 10, 1961, for the four company partnership, i.e., at a time when Gouger was no longer operating.

I might have, under the circumstances disclosed in the discovery and under the above authority, been prepared to

¹ [1924] 1 K.B. 1 at 14.

² [1921] 2 A.C. 465.

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hold the individuals jointly responsible with Gouger for any of the acts committed by the defendants joined herein had they been made a party to these proceedings on the basis that they had expressly directed the tortious acts complained of, which, of course, is why they would be so held liable but to hold Tevir and the four limited corporations which traded under the name Sabre Saw Chain Company, liable for the infringement committed by Gouger, even under the circumstances revealed, including the close association with the first defendant, would not, for the above reasons, seem possible.

It therefore appears that my purpose in adding these new defendants to this action was to determine the rights of all in one proceeding in view of the similarity of the subject matter and also in the event the validity of the patent is upheld and infringement is proven, to allow recovery of plaintiff's costs from the defendants. However, with respect to the matter of damages, the latter will have to be allotted on the basis of the individual responsibility of each defendant.

I now turn to the action proper herein and particularly to the statement of defence and the particulars of objection where, although a large number of matters were raised, they can broadly be narrowed to the following. The defendants have not infringed the patent, and even if they have, the patent is invalid because it has been anticipated, and/or it lacks inventiveness and, finally, the claims are so worded that they describe an inoperable device.

The invention, according to the plaintiff, defined by the claims in suit relates to the tooth of a saw chain particularly adapted for cutting wood although the title of the patent appears as "Power Saw Chains" and the disclosure deals with "saw chains".

The invention dates on which the plaintiff relies go back to May 21, 1947, May 30, 1947, and July 29, 1947, and although I intend to deal with this matter at greater length later in this judgment, it will suffice for the time being to say that the invention date is in dispute on the basis that when the defendant, under Exchequer Court Rule 22A, required the plaintiff to state the date on which he proposed to rely, the latter stated he was going to rely on a date of invention of May 21, 1947, on which date a drawing of the invention was made without mentioning the other two

dates subsequent thereto on which he later, at the trial, stated he relied also; the defendants also contest the evidence adduced to support the above dates.

The invention covered by the patent in suit relates to a particularly conformed tooth on a saw chain. The particular object of the invention is to provide a saw chain that would make wood cutting in the field easier and more productive by providing teeth that could be easily, rapidly and effectively sharpened and maintained in the field on the saw bar even by a non-professional filer by means of a simple operation and with a single round file held in one filing position and not on a vice as most of the saw chains had to be sharpened prior thereto. A saw chain that would provide easy maintenance and sharpening without sacrificing good cutting qualities presented a substantial problem to those engaged in the art. Another object, as stated in the disclosure, was to provide a saw chain in which the cutting edge of each tooth extends for substantially equal distances on opposite sides of the plane of the base plate so that the load during cutting operations of the tooth is substantially balanced upon the opposite sides of the central plane of the tooth plate and by so balancing the tooth load eliminate thereby alternate lateral outward gouging and inward tearing or jerkiness in operation.

A more specific object was to provide a new and improved saw chain in which each cutting tooth is of such configuration and the cutting edge so formed thereon that the load during cutting operation is substantially balanced on the opposite sides of the median plane of the base of the tooth.

This tooth has a particular configuration or shape, with an outwardly curved portion called a shank, a flat toe which extends over the edge of that plate portion and in front of this tooth there is a depth gauge which rides in the bottom of the part of the wood that is cut out by the tooth and which is called the kerf. This shank portion is cylindrical, with the upper end of the plate and extends outwardly, then it is reversely curved and doubled back over itself merging with the flat toe portion; the latter extends from the upper end of the curved shank portion and also across the upper end of the plate on which the tooth is formed and is substantially at right angles to the plate, the forward end of both the shank and the toe portions being provided with a bevel, and the bevel surface which defines the for-

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ward end of the toe and shank portion conforms to a cylindrical surface and the axis of this cylindrical surface extends in a horizontal plane substantially parallel to the plane of the toe portion. Furthermore, each tooth has a top and lateral clearance angle which allows it to operate smoothly in the kerf. There are teeth of this description on each side of the plate left and right and the saw chain can be more fully described as follows: There is a right cutter with a depth gauge and tooth, the tie strap is on the left and the cutter link is on the other side and the drive link with the root portion in between. Then come the two tie straps and the opposite structure with a left cutter, a tie strap on the right and root portion and a number of these left and right cutters are assembled in a chain which fits into a bar by means called the root portion of the drive link. This chain then moves around on a stationary saw bar propelled by a motor.

The depth gauge as we have seen is at the front of each cutter and gauges the depth of the cut. There is a distance between the depth gauge and the tooth and this is of some importance here because there must be sufficient space to allow a file to be inserted to sharpen the teeth. This sharpening of the tooth dealt with in the patent in suit is done by means of a round file and it can be seen that because of this the configuration of the tooth is cylindrical so as to allow the file to nestle in this cylindrical part thereby insuring that there will be no error in filing. The particular configuration of this tooth with a flat toe over the edge of the plate makes it possible to have this cylindrical inner cutting surface and at the same time assists in delimiting the proper insertion of the round file, thereby allowing even the inexperienced filer to properly sharpen the teeth.

In other words, this cutter tooth provides its own guide for filing because there are dimensions which enable one to fit round files into the concave portion. Indeed, the whole bevel conforms with the cylindrical surface of the file so one has a mating of these two units. The flat top gives a guide and prevents the file going upwards or downwards so we have here a mating in different directions by reason of the bevel's lateral movement and by reason of the flat top.

The plaintiff claims that the manner in which the shank portion and the toe portion is cut does not only facilitate

sharpening or maintenance but it also, at the same time, improves the cutting.

The tie straps merely tie the unit together in an articulated way to complete the pivotal chain structure, so that it may move around the chain saw which incidentally is the whole assembly, the motor, the sprocket, the bar and the saw chain as opposed to the latter which, as we have just seen, is the chain proper only.

The cutting links are spaced apart and this gives a saw-dust and chip clearing area whereby both can be eliminated. The patent in suit is called a chipper saw because it actually chips out the wood.

According to the plaintiff it is the combination of the shank portion and the toe portion and the cylindrical surface which gives the advantages which flow from this invention. The better filing is what enables it to be maintained efficiently and this is done without the sacrifice of speed or smoothness.

Evidence was given as to the state of the relevant art by a number of witnesses and exhibits. A simple band saw (Ex. 9) was first dealt with composed of a series of two outwardly disposed slitter teeth which slit the fibre of the wood as one saws. Then we come to the ordinary cross-cut saw which has both slitter and raker or router teeth. The sample before the Court, Ex. 10, has four slitter teeth alternatively left and right followed by a raker tooth down the centre. In this saw the slitter teeth slit the fibre and the raker teeth rake it.

We then come to the scratcher or the cross-cut Oregon chain (Ex. 44) which was an attempt to have slitter and raker teeth in a chain. On this chain the router teeth, which are in the centre, have the root on a link which fits into the saw bar and then there are slitter teeth on the left and on the right, and so on. The sequence of the teeth are as follows: left slitter tooth, centre router, right slitter, left router, left slitter, right router, right slitter, centre router.

There is then the Hassler chain which is sometimes called the Atkins-Hassler chain with a root portion on one drive link that fits into the saw bar and on which link there are slitter teeth to the right and left and a depth gauge on the same tooth. We then have the tie straps and right and left routers or rakers. On the next link there are two slitters

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oppositely disposed to those on the first link. The first ones are right and left and the second ones are left and right. As for the routers, when the first are right and left, the second are left and right.

The next chain saw is the chisel (Ex. 43) which has a chisel tooth. The latter here is at a right angle, the shank portion being straight as well as the toe. There is a clearance angle but the shank portion is straight and at right angles to the toe. It is not outwardly curved.

The next chain is called a number of names such as the half-circle, Merz, demi-lune and the Low-R and the High-R. This chain does not have a flat toe but a half-circle and the depth gauge here is not on the same link as the tooth.

With respect to the scratcher chain, Mr. Carlton, one of the plaintiff's witnesses, explained that in this saw chain the slitter teeth come in contact with the wood first providing the little grooves or the slitting operation of the cross-grain. They are then followed by the router teeth each one taking out its particular section of the kerf requiring three of them to complete the operation of taking out the bottom kerf of the wood. This witness stated that the plaintiff still makes and sells a limited number of scratcher chains because there is only a very limited demand for this saw chain as it is such a difficult chain to maintain. He also added that a flat mill file was ordinarily used to sharpen a scratcher chain. Generally, the procedure in filing a scratcher chain is to file the front faces of the slitter teeth and that is accomplished by holding the file at the angle that is already on the tooth and stroking it at a straight angle. Several witnesses pointed out that although the manufacturer recommends not to touch the top, it is however necessary to file the top also because it gets equally and as quickly dull as the front faces. If one does not do that, a very thin tooth is obtained which, of course, breaks off so it is advisable to file partly from the front and partly from the top.

Now if the top of the slitter teeth is filed, its height becomes lowered and consequently the height of the raker teeth must be correspondingly lowered. In sharpening, the original contour or form must be retained. All the slitter teeth are therefore sharpened around the chain and the latter is then turned around and the other side of those

teeth are sharpened and it is necessary to measure constantly while filing. After sharpening the slitter teeth, the raker teeth are sharpened at the front edge and the height of these raker teeth are then reduced to the same amount as the slitter teeth. There are at least four angles at which these various teeth must be sharpened and Carlton stated that one must be very well experienced to do this.

Although gauges have been provided for assisting in measuring the height of the various teeth, they were, according to this witness, very rough and inaccurate and merely gave an approximation.

Because of the very different elements in this saw chain and because they are filed at different angles and because of the relationship of the height of the slitters to the rakers which has to be maintained, it takes a considerable length of time to file this chain properly. If, for instance, in filing this chain the right slitters were all higher than the left slitters, the chain would "run" and tend to cut in a circle. If the right relationship of raker and slitter is not maintained, the chain will either cut very slowly or not at all because it will jam in the wood and bind up. The evidence is also to the effect that a scratcher chain to be filed properly must be placed in a holding vice because if it is not, or if the base is not level and on the same plane, then it is impossible to obtain the same length for the cutter teeth. This chain saw is almost never sharpened in the field but in a garage or filing shop located close to a city or town and it is not feasible to sharpen a scratcher chain while the chain is held in the saw bar and, therefore, it is very difficult for the average man to maintain it properly.

Mr. Carlton added, however, that in felling with the scratcher he found it did cut very smoothly, although rather slowly, as compared with the other chains. He also found that in the undercutting or notching of a tree, in trying to remove the saw bar from the cut or the kerf, the chain would hang up on the opposite end of the cut. It would indeed gouge into the side walls of the kerf and throw the whole saw out of the cut, thereby endangering the operator and this is characteristic of the scratcher chain when sharp. When it gets dull, however, it is not quite as bad.

Although the scratcher chain is available, it has now gone off the market and both Mr. Lajoie and Mr. DeRoy, experienced Quebec woodsmen, state that the only chain

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that sells in Eastern Canada and particularly in Quebec today is the chipper chain.

As for the Hassler chain, Ex. 12, Carlton states that because it comprises slitter and raker teeth, it has to be filed in two different manners. The slitter teeth are filed in the same manner as the teeth on the scratcher chain, by filing the front edge of the slitter teeth and their top edge around the chain, and their height must be maintained at the same level as the router teeth which must, however, be sharpened from three different angles, downwardly, horizontally and then inwardly. Here also, because of the relationship of the slitter teeth to the raker teeth, it is important that the saw chain be placed on a flat surface and held firmly for filing and that is why it is ordinarily filed in a shop and not in the field. This chain appears to be a hard chain to file even with the instructions supplied with it, Ex. 54, and must be done by an experienced man. A gauge was made to measure the height of the teeth when the chain was new but as soon as the chain has been filed, and the height of the teeth has been reduced, this gauge is no longer useful. If this chain is not properly sharpened, the evidence is to the effect that it is a rough operating chain and one would have difficulty cutting with it. Carlton states definitely that it is a very hard one to maintain and if it is not properly maintained it becomes unusable. As a matter of fact, it is no longer being made today.

Its size also gives rise to a problem of instability and it has a serious weakness in that it has a part that overhangs which has a tendency to break off. This is apparent in Ex. 46 where a break off is evident. Furthermore, although the chain will undercut, it will not bore.

The chisel chain (Cox's model) Ex. 13, also has a special tooth difficult to file because of a difficult critical angle and it can be filed only by a professional with a special file called a "chisel bit file" which looks like a cricket bat. Here it is important that the side wall cutting portion of the tooth or the shank portion be filed at a perpendicular angle and the top at a prescribed angle. To maintain these angles this chisel bit file was developed which, however, to be effective must be precisely stroked by the filer. If the file is tilted up or down too far, or towards the back or front, then a proper cutting edge will not be obtained. Carlton

himself developed this special "chisel bit file" in or around 1954 because he had had so much difficulty filing a chisel chain with a mill file. However, although the new file helped, it did not solve all the problems and it still remained a chain difficult to maintain.

This critical corner particular to the chisel chain was exemplified by Carlton in that when using the flat mill file, the filer had a tendency to let the file file towards the point of least resistance which is the fine edge dropping the file into the side wall thus creating a hook. He also added that even using the chisel bit type file, as the angles are all related, if one holds the file at an improper angle to file the underside of the top plate, an improper angle will be obtained on the side plate of the chisel chain as well. Because this "chisel bit file" files both angles of the cutter at the same time, the change of one angle automatically affects the other which, however, is not true of the flat mill file and, therefore, one can get into more trouble with the chisel bit file than with the flat file. He finally concluded that whatever file was used, the average user in the woods cannot maintain the chisel type of chain and although it should be sharpened by using a vice, he admitted it can be touched up on the bar. This chain today is not sold by any company other than Omark Industries in the United States and only to a very limited extent, "to a group of people who pride themselves as being experts and who are in fact very mechanically inclined and who do a very good job of maintaining it." Furthermore, although there is no patent in Canada on this chain, it is not being sold in this country.

We now come to the R chain which, as we have seen, has been identified in various ways by the witnesses as the half-circle, the demi-lune, the Merz and the C-bit and the Low-R and the High-R.

The R chain is No. 6 as to High-R and No. 7 as to Low-R on Ex. 43 and samples of the chain were produced in Ex. 146 as to High-R and Ex. 147 as to Low-R. The semi-circular appearance of the tooth appears on Ex. 59 which is a document of instructions as to the filing of this chain issued by the manufacturer. Exhibit D-38 is the back-to-back depth gauge which was not successful and it gave way to another type of R chain, Ex. D-40 and the tooth here

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also has the semi-circular tooth in figs. 4 and 5. An examination of Exs. 182 and 185, which are photographs of R chains, discloses that there is no top plate or flat toe on these units.

I will deal at greater length with this saw chain later on the matter of anticipation and it will suffice for the time being to deal with what was being sold to the public as commercial units and to state that the evidence discloses that this chain also, whether the High-R or the Low-R, could not be easily sharpened as this could not be done with any assurance of correctness with a single stroke back and forth because there are no references or guide points to maintain the proper stroking. Thompson, however, a witness of the defendants, stated that he had no difficulty in sharpening such a chain saw although he did so in a manner entirely inconsistent with the instructions of the manufacturer. The instructions indeed taught one to file this tooth by rocking the file which Thompson did not do. Furthermore, this witness, in connection with Ex. D-28 (the tooth with a "V") stated at one point it was a well filed unit. However, later, he stated that whoever had filed the unit was not a very good apprentice. This would seem to indicate that this witness did not know too much about filing particularly with respect to this saw chain. The evidence discloses that the High-R is just a larger cutter than the Low-R and that the difference between the High-R and the Low-R is merely in the radius of curve. Mr. Carlton stated that the Low-R, although rougher than the High-R, was faster cutting.

Mr. Carlton dealing with the inability of the half-circle to be maintained in the field as a smooth working unit stated that it was an "infamously" rough cutting saw and that the Low-R was rougher than the High-R. This witness indeed had this to say at p. 467 of the transcript:

- A. Assuming these chains are maintained or filed by an expert or that they are from the factory and done properly, I would suggest that the scratcher chain and the chisel chain and the Hassler chain and the chipper chain are, you might say, in one category; they are smooth-operating chains and reasonably fast-cutting chains. The only one I would exclude from this category is the half-circle which is infamously rough.

This witness added, however, that if improperly filed, such as they were out in the field all these chains were rough cutting. Two of the plaintiff's witnesses, a Mr. Falleri was also of the opinion that the R chain was rough and Mr. Davison

stated that it could not be filed to work smoothly. Mr. Harvey, one of the defendants' witnesses stated that it was an erratic chain, that when not properly maintained it would run, cut off to one side and bind. The cutting edge would become dull and blunted and it took time and was difficult to maintain.

Mr. Falleri stated that the Low-R was bad to file because there was no well defined plate and if one tried to file the unit in a reciprocating manner, the chain would become rougher adding that in trying to smooth out the R chain, speed was sacrificed and Mr. Carter was of the same opinion. Mr. DeRoy also testified that the half moon is not easy to file.

Mr. Davison stated that the R chain is extremely difficult to bore with and with respect to undercutting, it does not cut properly on an angle in the wood. At p. 1434 of the transcript he stated that the High-R is unpredictable and the Low-R is slow. As a matter of fact, in the test conducted in the basement of the Supreme Court Building, the latter type gave the most vibration. Furthermore, Exs. 159, 158 and 157 which are all Low-R, all had very wide kerfs in these tests.

Mr. Falleri in cross-examination, when comparing the chipper and the Low-R, stated that the chipper does actually what the name implies. The side of the cutter cuts off the end grain in cross-cutting and the plate chips the centre section out. In the Low-R, however, this witness stated that the side of the cutter cuts the end grain and top with a circular cut on the cutter but that there is no defined top plate to take the centre out as a chip. Davison, Falleri and Thompson all admit that the R chain cannot be sold today.

Mr. John Delton Gray, president of the plaintiff corporation since its inception in 1953 stated that the first manager of the Canadian operation of the predecessor of the plaintiff company was Mr. Jack Salvisburg who today is the manager of the defendant, Gouger Saw Chain Company. The Canadian plaintiff company is wholly owned by an American company founded by Mr. Joseph Cox, the inventor of the patent in suit.

Mr. Gray stated that the first manufacturing operation of Mr. Cox was in the basement of his house in Portland, Oregon, sometime in 1947. The American corporation was actually incorporated in July 1947 and it went into busi-

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ness making chains in late 1947. At the beginning, the only people engaged in the business were Mr. Cox and his wife. In March of 1948, the operations moved to a 5,000 square foot garage on North Mississippi Street, in Portland, Oregon, until the summer of 1950, when the operations were moved to another larger building on South East 17th Street also in Portland. During all this time, the company was solely engaged in making Oregon chipper chains. Mr. Gray, who had a general business background, became the sixteenth employee of the American corporation in August of 1948 and has been associated with the company continuously since that time. The principal item sold by the company from its inception has been the Oregon chipper chain and it has today approximately 600 employees.

In the year 1955, the operations were moved to a factory the company built in Portland. At the same time, a new factory was also built in Canada. The Canadian operations, which started in 1953, showed continuous progress in that from eighteen employees in that year, it grew up to 183 in 1962. In December of 1953, Mr. Cox sold the companies to Mr. Gray who has owned them ever since.

Although counsel for the defendants objected to the production of sale figures in the United States, and a decision on the objection was reserved at the time, it would appear to me that the American operations would be relevant provided, of course, the product sold in that country corresponds to a product covered by the claims in suit. It is on this basis that such information, as appears on Ex. 33, "Sale of saw chains in the United States", covering three different types, the scratcher, the chisel and the chipper, is allowed as part of the evidence of this case.

This exhibit indicates that from 50,000 scratcher, 60,000 chisel and 213,000 chipper chains in the year 1948, and through a constant gradation during the intermediate years, 3,555 scratcher, 139,026 chisel and 5,619,658 chipper chains were sold in the United States in the year 1961. The evidence (Ex. 32) also indicates that types other than the chipper are today less than 2 per cent of the market.

Exhibit 175 which indicates the footage of chipper chains manufactured in Canada by Omark Industries (1960) Ltd. shows that from 107,828 feet in 1953, and here also through a constant gradation during the intermediate years, it went to 1,656,629 in 1961 and Ex. 176 shows that the value of

the chipper chain in Canadian dollars manufactured in Canada went from \$218,623 in 1953 to \$2,431,681 in 1962.

Mr. D. Challenger, of Vancouver, British Columbia, president and manager of Power Saw Sales and Services Limited stated that the type of chains predominating in his company's sales today is the chipper type, as it is 95 per cent of its total sales. He also added that a small percentage of chisel is still sold and that the scratcher chain has dropped right out of the picture. Furthermore, to his knowledge, the half circle chain is not in the picture at all. In this witness's opinion, the reason the chipper chain has become his company's best seller and, as he put it, "almost our entire seller, is the fact that it is an easier chain for the average individual to maintain and file and get the best returns or the best production returns from his efforts."

In the eastern part of Canada, and particularly Quebec, Mr. DeRoy, employed by the plaintiff company to instruct wood cutters in Quebec in the proper manner to maintain the plaintiff's chain saws, stated at p. 1017 of the transcript that in the eastern part of Canada the chipper chain was the only chain used today adding that it has become so popular because it is relatively easy to file more so than other types of saw chains including the Merz type or the Low-R or the High-R. At p. 1018 he stated in answer to the following question by the Court:

Q. Pourquoi est-ce plus facile que pour la demi-lune?

R. C'est parce que c'est le dessus qui nous indique, qui est un genre de guide pour envoyer notre lime, on voit le dessus de la dent, on peut tenir la lime.

Q. Cela vous permet de guider . . .

R. Cela permet de guider notre lime et c'est très important.

Mr. Clément Lajoie, of St-Urbain, P.Q., a wood cutter who earns his living cutting wood since 1947 and has used all types of saws starting from the hand saw, the Merz, the chisel and the chipper, stated that he preferred the chipper above all others because as he said at p. 1037:

R. Parce que, à mon avis, c'est une gauge qui s'adapte mieux à la lime, elle s'aiguise mieux et on obtient de meilleurs rendements.

For the witness, the filing and maintenance of the chain is very important as he is paid so much per cord of wood and the more wood he cuts the more money he makes. He also stated to the Court that he filed his saws himself mainly on the bar, in the woods and has experienced no

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difficulty in doing this. He also stated that in his part of the country, the wood cutters all use the chipper chain and that he has seen no others. He also stated that the Merz chain can be filed easily but not as easily as the chipper.

Mr. B. Falleri, of Emeka, California, a salesman since 1953 with Western Chain Saw Company, which sells Home-lite chain saws and who was prior thereto a lumberjack, has travelled in this business throughout California, Nevada, Arizona and New Mexico, visiting the people who sell various types of chains. This area is what is called the big tree area, the heart of the redwoods. He has seen a lot of felling which is the act of cross-cutting at the base of the tree and bucking which is the act of cutting the tree into desired lengths once it has fallen. Falleri's experience goes back to the spring of 1948 when he first tried to use a chisel chain but which he could not use because it was found too hard to file consistently. He then turned to a chipper chain because it was a better chain. Between 1948 and 1953 he used also the chisel chain and the circle R or what was known as the Titan R chain. Of all these chains, he found the Oregon chipper chain to be superior because it easily out-cuts the other chains, bored smoothly and efficiently, was fast to file and was easily maintained. According to this witness, the chain he felt was not too safe was the Titan R chain, as at times, when carrying it, the cutters would slip down and inflict injuries.

This witness is also of the opinion that the Oregon chipper chain, with its well defined plates, makes it easy on a filer to maintain a proper bevel and thereby sharpen the teeth properly.

Mr. Francis Davison, of Corgurllle, Oregon, has a business called Davison's Filing Shed which has been in existence since about 1947, and which deals with the filing of saw chains. He has also had considerable experience in the bush since the year 1929, when he started making railroad ties and felling, bucking, marking, splitting and hewing. From 1945 through 1949 he worked for large logging companies who had filing sheds at their operations where he was the company filer. This man has had considerable experience in filing scratcher, chisel, C-bit which is nearly a half circle, the half-circle, and the chipper chain. He states that the easiest chain to sharpen is the chipper due to the shape of

its teeth which he explains as follows at p. 885 of the transcript:

A. First, the outside edge is the part of the chain that cuts the grain loose. The top of the chain chips it loose, so that the side of the tooth is the most important. However, the top of the tooth controls the action of that tooth, so this angle is not critical; it should be straight up and down. The bevels are not critical, but they should be around 35 thousandths—I mean 35 degrees. They can be more or less.

Q. You say that angle is not critical, it can be more or less, but it should be around 35 degrees?

A. It can be changed for different operations, different woods, Sir. Different cutters have different ways of cutting logs.

This witness demonstrated how the chipper tooth should be filed and it may be of some use to describe this from p. 886 of the transcript:

MR. HENDERSON:

Q. Now, I have given you a chipper chain, which is No. 11AC, and I have also now handed to you Exhibit 61, which is a file. I would now ask you if you would demonstrate to the Court why the shape of the tooth of the chipper chain enables it to be maintained easily as you have already set out.

A. It takes only one bevel, one operation, to maintain this chain properly. I would hold it this way (indicating).

Q. Now, this way you are showing—I'm sorry, I didn't see you.

A. I am filing against the tooth, sir, (indicating).

Q. Yes.

A. One straight stroke (indicating).

Q. When you file that way how efficiently is the tooth filed, how efficiently is it sharpened, when you sharpen it in the way in which you have demonstrated.

A. It will come out practically shaped like this cutter here.

This witness finally concluded by saying that of all the chains the chipper enjoyed a much wider use because most people can learn to maintain it in one or two short periods of instruction and in most cases it can easily be sharpened on the bar whereas the other chains should be sharpened in a vice. As for the C-Bit, which this witness finally identified as either the High or Low R, it is no longer being sold as the cutters will not use it because it does not operate to their expectations. According to this witness, an inexperienced man is not able to file a C-Bit chain and make it work smoothly because of the structure of the cutting edge which is such that it cuts an extremely rough and wide kerf, is difficult to bore with (which is shoving the round end of

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the saw into the wood) and this chain also does not slope undercut easily as it does not cut properly on an angle in the wood. He also pointed out that the chipper chain can bore easily as well as slope undercut and that, as a matter of fact, this slope undercutting started when the chipper chain came on the market and led to this type of cutting. He agreed that farmers began to use chain saws with the advent of the chipper chain, as well as homeowners with fireplaces to cut their own wood. Furthermore, it had a tremendous effect on those wood cutters by the piece or buckers who before the chipper chains came out were cutting by hand making approximately \$25 to \$40 a day. After the chipper chain came out, they got power chain saws and their wages ran up from \$25 to \$100 a day and were able to make about two and a half times more with the chipper chain than with other chains.

Mr. Thompson called by the defendants also admitted that he sells considerably more chipper chains and it predominates.

It therefore appears that the chipper chain, because of its growth, its immediate acceptance, its near total replacement of all other types of chains in the United States, as well as in Canada, its easiness of maintenance and filing in the field, with the consequential increase in use in the field, its increased productivity and its cutting effectiveness, and this was demonstrated in the tests made in the basement of the Supreme Court Building, is a chain saw superior to anything that went on before and consequently solved for the wood cutters whatever problems of maintenance and sharpening existed in that field thereby increasing the productivity of this particular trade. I do not think that it can be contested that whatever existed before was not satisfactory for the ordinary wood cutter and that the chipper chain was the solution to the maintenance and production problems that had existed prior thereto. I might also add that there is a preponderance of evidence indicating that its easiness of maintenance and filing for the purpose of keeping it sharp and smooth has been obtained without any sacrifice of any of its good operating characteristics.

Indeed, it was brought within the reach of the average user, it opened up new areas of use, it is no longer limited to the professional and it can now be used for farm and wood lots. It is a versatile saw, bores and undercuts easily

and because of this it has practically swept the other types off the market and has attained tremendous commercial success in Canada as well as in the United States. Mr. Carlton, I believe, at pp. 382 *et seq.* of the transcript described this invention by saying that it combines best the characteristics that a user of a saw chain needs and wants: ease of maintenance, smoothness of cut, speed of cut, versatility in that it will fell and buck, bore, undercut and limb and can be manufactured at a reasonable price.

This commercial success, however, and this was strongly urged by counsel for the defendants to be significant, and rightly so, must be shown to be due to the invention in suit and not to extraneous means. It would appear to me from the evidence, that extraneous means, if any, had very little to do with the success of the Omark tooth. Indeed, the invention started in 1947, as we have seen, from a modest beginning in the basement of Mr. Cox's home, developed and progressed over the years, to a point where it took over practically the totality of the market against competition so that it must be taken that the popularity of this tooth grew on its own merits and not on the basis of any advertising, which, as a matter of fact, from Ex. 170, does not appear to have been excessive. Exhibit 169 also shows that in the early years of its growth, the advertising was a small portion of the budget in the United States. Now, although it appears from the evidence that the plaintiff did give better service and that it or its licencees own other patents and were able to offer to their customers a better range of parts, including sprockets and bars, which undoubtedly must have assisted somewhat in the sale of the plaintiff's devices, the success of its tooth, in my opinion, is due and attributable mainly to its features and very little else. It must also, however, be shown to be due to the precise improvement of the patent in suit and this is what I now intend to address myself to. The question is, does this tooth, which is enjoying such commercial success, embody the features of the claims in the patent and in order to answer this, it will be necessary to interpret these claims which, for convenience purposes, I intend to insert here, limiting them, however, to those the plaintiff relies on in this action, i.e., claims I, II, III, IV, V, VI, VII and IX, claim VIII being eliminated, as it deals with a special depth gauge which has nothing to do with the present contestation. These claims were

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broken down in their various elements in a number of charts produced by both parties and it might be helpful here to do likewise.

ELEMENTS OF CLAIM I

- 1-3 In a saw chain a pair of longitudinally spaced apart links including sprocket-engaging root portions, a pair of oppositely disposed side plates pivotally joining said links together, one plate of said pair of side plates having a cutting tooth formed thereon and including an intermediate portion extending outwardly in the opposite direction with respect to said links and adjacent an edge thereof.
4. The end portion of said plate extending back over said links substantially at right angles with respect to the plane of said plate.
5. The forward edge of said intermediate and end portions being provided with a chisel cutting edge.
6. The lateral extent of said chisel edge being substantially equal on opposite sides of said plate whereby the cutting load during working of said tooth is substantially balanced on the opposite sides of said one plate.

ELEMENTS OF CLAIM II

1. In a saw chain, a pair of longitudinally spaced apart links including sprocket engaging root portions,
2. A pair of oppositely disposed side plates pivotally joining said links together
3. One plate of said pair of plates having a shank portion extending laterally outwardly in the opposite direction with respect to said links and adjacent an edge thereof
4. A toe portion integral with the end of said shank portion and extending substantially at right angles with respect to the plane of said plate
5. The forward edge of the said shank portion and said toe portion being provided with a chisel cutting edge,
6. The lateral extent of said chisel edge being substantially the same on opposite sides of said plate.

ELEMENTS OF CLAIM III

1. In a saw chain having a pair of longitudinally spaced apart links including sprocket-engaging portions.
2. And a pair of oppositely disposed side plates pivotally joining said links together
3. The invention comprising a cutting tooth formed on one of said side plates, said tooth including a shank portion and a toe portion.
4. Said shank portion extending laterally outwardly from said one plate in the direction opposite said links and said toe portion extending from said shank portion back over the edge of said plate and spaced therefrom
5. The forward edge of said shank and toe portions being provided with a continuous chisel cutting edge.

6. Said shank and toe portions extending laterally substantially equal distances from opposite sides of said plate,
7. The bevelled surface defining the cutting edge on said toe portion being concave and that defining the cutting edge on said shank portion being flat in the direction transversely of said surface.

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ELEMENTS OF CLAIM IV

1. In a saw chain having a pair of longitudinally spaced apart links including sprocket engaging portions,
2. And a pair of oppositely disposed side plates pivotally joining said links together,
3. The invention comprising a cutting tooth formed on one of said side plates, said tooth including a reversely curved shank portion and a toe portion integral with the end of said shank portion,
4. Said shank portion extending laterally outwardly from said one plate in the direction opposite said links and said toe portion extending from said shank portion back over the edge of said plate at substantially right angles with respect thereto and spaced therefrom,
5. The forward edge of said shank and toe portions being provided with a continuous chisel cutting edge,
6. The bevelled edge surface defining the cutting edge on said toe and shank portions conforming to a cylindrical surface with the axis of said cylindrical surface extending parallel with said toe portion.
7. Whereby said cutting edge may be re-sharpened throughout its full extent on both said shank and toe portion by a cylindrical round file reciprocated coaxially with said cylindrical surface.

ELEMENTS OF CLAIM V

1. to 5. In a saw chain having a pair of longitudinally spaced apart links including sprocket-engaging portions, and a pair of oppositely disposed side plates pivotally joining said links together, the invention comprising a cutting tooth formed on one of said side plates, said tooth including a shank portion and a toe portion, said shank portion being reversely curved and extending laterally outwardly from said one plate in the direction opposite said links and said toe portion extending from said shank portion back over the edge of said plate and spaced therefrom, the forward edge of said shank and toe portions being provided with a continuous chisel cutting edge,
6. Said shank and toe portion extending laterally substantially equal distances from opposite sides of said plate,
7. The cutting edge of said shank portion terminating substantially in a first plane normal to the longitudinal direction of the chain,
8. The cutting edge of said toe portion lying in a second plane at right angles to said first plane and extending at a substantially 45° angle with respect to the longitudinal direction of said chain, the bevelled edge surface defining the cutting edge of said toe portion being concavely curved in the transverse direction.

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ELEMENTS OF CLAIM VI

1. In a saw chain, a link plate having a cutting tooth formed thereon,
2. Said tooth including a reversely curved shank portion,
3. And a toe portion extending tangentially from said shank portion substantially at right angles with respect to said plate,
4. The forward edge of said shank and toe portions being provided with a bevelled surface forming a continuous chisel cutting edge on the forward extremity of said shank and toe portions,
5. Said bevelled surface of said shank and toe portions conforming to a cylindrical surface
6. Whereby said cutting edge may be resharpened throughout its full extent on both said shank and toe portions by a cylindrical round file reciprocated coaxially with said cylindrical surface.

ELEMENTS OF CLAIM VII

1. In a saw chain having a pair of longitudinal spaced apart links including sprocket engaging portions,
2. And a pair of oppositely disposed side plates pivotally joining said links together,
3. The invention comprising a cutting tooth formed on one of said side plates, said tooth including a reversely curved shank portion and a toe portion,
4. Said shank portion extending laterally outwardly from said one plate in the direction opposite said links and said toe portion extending tangentially from said shank portion back over the edge of said plate and spaced therefrom.
5. The forward edge of said shank and toe portions being provided with a continuous bevelled chisel cutting edge,
6. The bevel surface defining said cutting edge of said shank and toe portions conforming to a cylindrical surface,
7. The axis of curvature of said cylindrical surface extending at a substantially 45° angle with respect to the plane of said plate whereby said cutting edge may be resharpened throughout its full extent on both said shank and toe portions by a cylindrical round file reciprocated coaxially with said cylindrical surface.

ELEMENTS OF CLAIM IX

1. In a saw chain, a link plate having a cutting tooth formed thereon, said tooth including a shank portion and a toe portion,
2. Said shank portion being reversely curved and extending laterally outwardly from said one plate and said toe portion being substantially flat and extending tangentially from said shank portion back over the edge of said plate and spaced therefrom.
3. The forward edge of said shank and toe portions being provided with a bevel surface forming a continuous chisel cutting edge,
4. Said bevelled surface of said shank and toe portions conforming substantially to a cylindrical surface whereby said cutting edge may be resharpened throughout its full extent on both said shank and toe portions by a cylindrical round file,
5. The cutting edge of said shank portion terminating substantially in a plane normal to the longitudinal direction of the chain.

Before going into each of the elements of the claims however, it may be of some use here to refer to the *Novocol v. MacFarlane*¹ case where at p. 161 it was stated that:

. . . If an important step in advance has been made by an inventor, the law, I think, affords a patentee a range of equivalents commensurable with his invention,

This principle might apply also to a meritorious invention and one might say here, also, that "the law" affords a patentee a certain range of approximation providing the language of its claims, and the use to which the invention in suit is adapted, so permit.

Before, however, dealing with the claims proper, it might also be useful to set out a few fundamental principles which have been urged by counsel for the defendants and which apply to all patent cases.

The claim or claims in a patent alone define the monopoly where the patentee has a statutory duty and has the obligation to state what is the invention he desires to protect. As put by Lord Russel of Killowen in *Electric & Musical Industries Ltd. et al. v. Lissen*²:

The forbidden field must be found in the language of the claims and not elsewhere.

In the *Minerals Separation v. Noranda*³ case Thorson P. stated:

Section 14(1) (which is now s. 36(2)), also requires that the specification shall end with a claim or claims stating distinctly the things or combinations which the applicant regards as new and in which he claims an exclusive property and privilege. By his claims, the inventor puts fences around the fields of his monopoly and warns the public against trespassing on his property. His fences must be clearly placed in order to give the necessary warning, and he must not fence in any property that is not his own. The terms of a claim must be free from avoidable ambiguity or obscurity and must not be flexible. They must be clear and precise so that the public will be able to know not only where it must not trespass but also where it may safely go.

Counsel for the defendants urged strongly that the statutory duty which is placed on a patentee by s. 36(2) to claim clearly, distinctly and explicitly that which he claims is his exclusive property, is a heavy one to discharge and that it should not be allowed to be obscured by the theory of substance or pith and marrow. Now although this is true, it

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¹ [1939] Ex. C.R. 151.² (1939) 56 R.P.C. 23³ [1946] Fox P.C. 175 at 176.

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must, in my opinion, however, be tempered by adding that the approach of the Court must also be to look at what the inventor did and what his invention achieved.

Furthermore, although the claims define the monopoly, in determining what these claims mean, the specifications at large must be considered and the whole document read.

In *Baldwin v. Western*¹ the Supreme Court of Canada, dealing with the manner in which a patent with respect to a meritorious invention should be interpreted or looked at by a Court stated that the entire document must be considered in order to find the pith and substance of the invention "by a mind willing to understand, not by a mind desirous of misunderstanding."

In approaching the question not only of infringement but also of validity, the first duty of the Court is to construe the claims and Blanco White in his book *Patents for Inventions*, at p. 48 sets down the manner in which this should be done:

A patent specification is to be construed like any other document, due regard being paid to the special functions of the claims. As with any other document, questions of construction of a patent specification, arising in legal proceedings, are for the Court to decide as a matter of law; for this purpose the Court must first instruct itself as to the technical matters involved, so as to place itself in the position of one acquainted with the art concerned, in a position, that is, of a person to whom the specification is addressed. Given the necessary knowledge and understanding, however, the question is what the words of the document mean, not what information a man skilled in the art would in fact derive from them; and expert evidence as to their meaning is in general not admissible.

In *Molins et al. v. Industrial Machinery Company*² Lord Green stated:

Now the first thing to do is, of course, to construe this claim, and it must be construed without reference to any document relied upon as an anticipation.

One must therefore divorce one's mind from the prior art and look at what the claims mean by their words and to determine whether there is infringement or not one must compare the defendants' tooth not with the disclosure nor with what the plaintiff is doing in the market place, but with the claims of the patent. It is indeed an illegitimate approach to compare the defendants' structure with the

¹ [1934] S.C.R. 94 at 106.

² (1938) 55 R.P.C. 31 at 39.

plaintiff's structure, unless, however, the latter has been verified as embodying the claims of the patent.

Now, when considering validity, either from the standpoint of novelty, which is anticipation, or obviousness, which is lack of invention, it is also necessary to construe the claims, to see what invention, if any, they define. Once that is done the prior art put forward is then considered which in this case consists of prior documents and prior uses. Here also, when looking at the prior art, one should not look at and compare the prior art with the plaintiff's structure as made and sold in the market place, but with the claims of the patent, unless, as here again, the plaintiff's structure has been verified as being in accordance with the claims of the patent.

I will now proceed to the construction of the claims in suit dwelling, however, for some length on those elements only which I might say could be contentious or which require clarification. My purpose in so doing is to ascertain what the invention defined by the claims is and I shall do this in the light of the common knowledge which persons skilled in this art are assumed to have had at the date of the patent and which is acquired with the aid of the expert evidence on such matters as to the state of the art at the date of the patent, the meaning of technical terms and the working of the invention.

As I have already set out in great detail the claims in issue and their respective elements, it is not my intention to repeat them all again here. I will indeed restrict myself, as I said before, to those elements which might give rise to some problems of interpretation.

The first point of contention with respect to claim I is element 4 of claim I which deals with: "The end portion of said plate extending back over said links substantially at right angles with respect to the plane of said plate,".

The defendants submit that "substantially at right angles" here means to all intents and purposes, a right angle and that on the plain, ordinary meaning of the word "substantially" a deviation of one degree either way is sufficient to make something "not substantially". Such a restrictive interpretation cannot, in my opinion, be accepted here.

The above words "substantially at right angles" must be read in the light of the disclosure and the drawings as they

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appear in the patent in suit, and if that is done, they cannot mean precisely at right angles. Indeed, if one examines figs. 6 and 7 of the drawings of the patent in suit, it can be readily seen that there is an angle there, the purpose of which is explained in the disclosure. On the shank side, it is down, and on the leading edge side, it is up and because of the filing angle, this then will make the two points at the filing angle horizontal or in a plane at right angles with respect to the plane of the plate. By looking at the above figs. 6 and 7 it can be seen that what is intended by the words "substantially at right angles" is that the angle 41 in fig. 7 is such as to have a horizontal cutting edge. I might add that the evidence which discloses that variations in this respect would have no effect on the operation of the saw chains confirms that a relatively wide interpretation should be given to the word "substantially" here.

The defendants also submit that the word "substantially" in element 6 of claim I, i.e., "the lateral extent of said chisel edge being substantially equal on opposite sides of said plate whereby the cutting load during working of said tooth is substantially balanced on the opposite sides of said one plate" cannot be interpreted as meaning a very wide difference of equality.

Here again, however, the words in element 6 must be read as the competent workman would read them, i.e., in relation to the disclosure bearing in mind that the tooth is intended to perform in the field during the whole extent of its life because this tooth will be working not only in its initial stage but also during the whole course of its existence and use. In other words, as the claim deals with a working tooth, it will be working throughout its life. At the initial stage, the patentee's tooth may have deviations from being exactly equal as it is a working article, the configuration of which in the course of use and sharpening will be reduced and altered.

Now, applying the ordinary rules of interpretation as to the meaning of the word "balance" and again looking at it from the viewpoint of the competent skilled workman in the art at the date of the patent and the meaning ascribed to that word in the prior art, such as the Hassler patent for instance, it can be seen that it is a relative term which means that the tooth is so constructed that it gives stability and smoothness as well as all those things which enable the tooth

during the whole of its working life to give a satisfactory performance. This was confirmed by Mr. Carlton at p. 938 of the transcript when, in cross-examination, he explained this in a very clear manner:

WITNESS: We say that the chipper type cutter is balanced on equal sides of the plate and we say that it is balanced when it gives stability to the cutting tooth, and by this we mean that part of the plate is under the chip causing the bottom of the plate to be captured between the bar and the wood. For instance, the depth gauge of the tooth is against the wood and the bottom of the tooth is against the bar so that it is solidly in there. It is stable in the cut. And we say that the plate being extended equal distance on the side of the plate adds to the stability of this cutter.

MR. SIM: Q. I see. If the tooth is formed so that it extends equal lateral distances on opposite sides of the plate that will add to the balance that you spoke of, is that correct, it will contribute to the balance?

A. It will contribute to the balance, yes.

Q. But it is not the determining feature?

A. I couldn't give the amount of importance a particular thing has.

And later this witness admitted that the words stability or smoothness and balance all mean many things coming together to make this chain perform satisfactorily and then stated that it would tend to go out of balance if the lateral extent of the cutting edge is substantially different on opposite sides of the plate.

It would therefore appear from all this that the claims deal with a tooth which is made so that it will be substantially balanced during its working life and that this substantial equality of the lateral extent is one means only of obtaining such balance. This requirement must also be read together with the specifications where the lateral clearance is also explained. In fig. 5 of the patent this clearance angle appears at No. 38 and it is such as to insure also that the working of the tooth throughout its life will be substantially balanced. It is therefore in this context that the meaning of these words must be determined and because of this, it does appear to me that any minor deviations in this regard would not prevent the lateral extent of the chisel edge of the teeth from being substantially equal nor the cutting load during working of said teeth from being substantially balanced.

It might be of some interest here to deal with a proposition advanced by counsel for the defendants and based on *Roger v. Cochrane*¹ that the object invented should be considered in its condition at the time of manufacture and not

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¹ (1908) 25 R.P.C. 762.

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in the condition in which it was found some time later after being used. It does not appear to me that this decision can have any bearing on this particular aspect of the case because, as I had occasion to say before, this tooth was conceived and described bearing in mind that it was to have a working life during which constant and repeated sharpening would be required and because of this, the condition in which this tooth becomes after use is a very important consideration of the invention. Indeed, the character of the device at the time of manufacture must be considered here having regard to the object and the use of the invention during its existence. This is not an accidental change such as took place in the above referred case but a thought out and deliberate change.

As element 4 in Claim II, element 4 in claim IV, element 3 in claim VI is the same as element 4 in claim I and as element 6 in claim II and element 6 in claim III, element 6 in claim V are the same as element 6 in claim I and element 5 in claim IX is the same as element 7 in claim V with all of which I have already dealt, it is not necessary to repeat here what has already been said in connection with claim I. However, before going to element 6 in claim VI, it must be pointed out that element 4 in claim IV, although equated to element 4 in claim I, as we have just seen, contains however a further limitation in that the toe portion must extend from the shank portion back over the edge of the plate. Although this difference must here be pointed out, this element 4 in claim IV would seem to create no problem of interpretation.

Now, element 6 of claim IV reads as follows:

The bevelled edge surface defining the cutting edge on said toe and shank portions conforming to a cylindrical surface with the axis of said cylindrical surface extending parallel with said toe portion.

The defendants urge that here it is not possible from the claims to say where exactly the axis of the cylindrical surface is, nor is it possible to tell from the drawings where this axis is.

It would, however, appear to me that if the toe is horizontal and the axis of the cylindrical surface is to be parallel to the toe, and fig. 5 is examined and particularly the round file 44, it can be seen that in order for the file to nest into the tooth, it must be held in a horizontal position. If it nests

in a horizontal position, then the axis is parallel to the toe as called for in the claim.

We now go to element 8 of claim V which reads as follows:

The cutting edge of said toe portion lying in a second plane at right angles to said first plane and extending at a substantially 45° angle with respect to the longitudinal direction of said chain, the bevelled edge surface defining the cutting edge of said toe portion being concavely curved in the transverse direction.

The term to be determined here is "a substantially 45° angle" and counsel for the defendants submits that none of those angles that vary from a minimum of 31° to a maximum of 40° is substantially 45°.

The question of the essentiality of this feature of the tooth is a matter of course which will depend on the evidence adduced and looking at the words of the claim one can only infer that the word substantially means 45° within certain tolerances although this is a matter with which I intend to deal in more detail on the matter of infringement. I might here merely point out, however, that on Ex. 69, which is the Gouger filing instructions, the defendants themselves have classified this element as non essential by stating in paragraph 3 of these instructions:

3. Maintain proper angle on front of cutter. Have same angle on every cutter. Do not have less than 25° or more than 45°.

On this basis alone, it would appear that a proper interpretation of the "substantially 45° angle" of this element of the claim should also receive a wide interpretation.

Claims I, II, III, IV, V, VI, VII and IX of the patent in suit therefore define an invention of a tooth on a saw chain of a particular configuration or shape which has an outwardly curved portion called a shank, a flat toe which extends over the edge of that plate portion. The shank portion is cylindrical with the upper end of the plate and extends outwardly forming a chisel edge, the lateral extent of which is substantially equal on opposite sides of the plate whereby the cutting load during the working of the tooth is substantially balanced on the opposite sides of the plate and this substantial equality and substantial balance is to be taken to encompass certain variations from precise equality or balance bearing in mind that we are dealing here with a tooth that will be, during its working life, subject to wear and tear. The shank then is reversely curved

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and doubled back over itself and then merges with the flat toe portion; the latter extends from the upper end of the curved shank portion and also across the upper end of the plate on which the tooth is formed and is substantially at right angles to the plate (and this does not mean precisely at right angles), the forward end of both the shank and the toe portions being provided with a bevel, the surface of which defines the forward end of the toe and shank portion and which conforms to a cylindrical surface, the axis of which extends in a horizontal plane substantially parallel to the plane of the toe portion which cylindrical surface together with the flat toe allows a round file to nestle therein and to be guided thereby in performing a simple operation of filing without affecting in any way the efficiency of its cutting properties.

Having thus construed the claims and upon a close examination of the teeth produced by the plaintiff as exhibits and referred to in Ex. 85, which were used to compare with the teeth produced by the defendants, I may now say here without any hesitation that these teeth produced by the plaintiff and sold in the market, embody the invention as claimed in the patent in suit. Having done this, defendants' objection to the production of Ex. 85 (which was reserved at the trial) on the basis that it is illegal to compare what the plaintiff was selling in the market to what the defendants were producing now falls and this document now becomes a very useful one.

I might now address myself to the attacks made by the defendants on the patent based on prior use or prior knowledge and it would be useful, I believe, to point out here that the defendants have the burden of setting aside not only the presumption of validity of the patent which exists under s. 48 of the Act and which covers all the requirements of a patent such as novelty, utility and inventiveness, but they also, when alleging prior knowledge or use under s. 28(1)(a) of the Act, must establish not only this prior use or knowledge but also that it was made available to the public as required by s. 63(1)(a) of the Act.

Section 48 of the *Patent Act* has been interpreted in many cases, however in *McPhar Engineering v. Sharpe Instruments*¹ the Court (Thorson P.) construed it as imposing an onus (that is not an easy one to discharge) on the

¹ 21 Fox P.C. 1.

defendant in showing that there is either no novelty or no utility or no inventive step in the subject matter before the Court or that it may be otherwise invalid.

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Section 28(1)(a) of the Act which deals with the matter of novelty reads as follows:

28. (1) Subject to the subsequent provisions of this section, any inventor or legal representative of an inventor of an invention that was

(a) not known or used by any other person before he invented it,

...

may, on presentation to the Commissioner of a petition setting forth the facts . . . , obtain a patent granting to him an exclusive property in such invention.

The law, however, is not as simple as s. 28 appears, as it is not sufficient for a defendant to invoke it, he must also, as we have just seen, conform to the requirements or conditions laid down in s. 63(1)(a) which provides that "no patent or claim in a patent shall be declared invalid or void on the ground that, before the invention therein defined was made by the inventor by whom the patent was applied for, it had already been known or used by some other person, unless it is established either that,

(a) before the date of the application for the patent such other person had disclosed or used the invention in such manner that it had become *available* to the public."

In the present instance, the date of the application for the patent in suit is December 4, 1948, and it is therefore incumbent upon the defendants to both plead and prove that before that date some other person had disclosed or used the invention in such a manner that it had become available to the public.

This requirement of the law sets out clearly that no one has the right to defeat a Canadian patent unless he has genuinely given the invention to the public before the application was filed. The fact he may have invented it before is not sufficient.

Under s. 28(1)(b) which provides that a patent may be granted if the invention was "not described in any patent or in any publication printed in Canada or in any other country more than two years before presentation of the petition" the material date here would be December 4, 1946, i.e., two years before the filing of the application so before the defendants can seek to attack the validity of this patent on

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the basis of novelty under this section, the first thing they must do is to produce a patent or printed publication printed in any country before December 4, 1946.

With respect to s. 28(1)(c) there is an additional limitation which is that the Court is only concerned with the prior use or sale in Canada which to be effective under this section must have occurred more than two years before the filing of the application or the material date of December 4, 1946.

Now under our Canadian patent law, the date of invention is important and if the patentee seeks to bring his date of invention earlier than the date which appears on the face of his patent and to which he is entitled by the records of the Patent Office he has the burden of so doing.

In the present instance, the patent in suit was applied for on December 4, 1948, which would ordinarily be the date of the invention, unless of course the invention was made earlier than that date and here the inventor or his assignee has the burden or onus of proof to establish an earlier date of invention than his date of application. Indeed, the *prima facie* validity of a patent does not go beyond the application date and if he desires to go beyond this date, he must prove it by cogent evidence.

Furthermore, there is also, as I mentioned at the beginning of this judgment, Rule 22A of the Exchequer Court Rules which permits a defendant in a patent infringement action, by notice, to require the plaintiff to state the date upon which he proposes to rely if he intends to rely upon a date earlier than the date of application and if he does so intend to rely as set down in the above Rule:

. . . he shall furnish to the opposite party, within thirty days after service upon him of such demand, particulars of the date which he proposes to assert and the nature of the acts upon which he intends to rely for the purpose of establishing the same.

As already mentioned, the plaintiff in the present case, in its reply to the demand under Rule 22A stated it was going to rely on a date of invention of May 21, 1947, on which date a drawing of the invention was made. It did not, however, intimate or inform the defendants that it intended to rely on other dates, until at the trial when it proposed to produce, by means of Mr. Gray (p. 178 of the transcript) another drawing dated May 30, 1947, and a U.S. application

for the invention dated July 29, 1947. An objection was immediately made by counsel for the defendants to the acceptance of these two documents, i.e., the drawing of May 30, 1947, and the U.S. application of July 29, 1947, on the basis that they had not been mentioned nor had the acts upon which they were based been stated as required by the above mentioned Rule, which acts we may take it comprise prior uses, disclosure to other persons, written descriptions, drawings and sales.

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In answer to this objection, counsel for the plaintiff asserted that Rule 22A does not request a plaintiff or a party to submit all his dates of invention but merely requests to give the earliest date beyond which the plaintiff will not go. He added that having given the May 21, 1947, date as the earliest date the plaintiff could not go beyond that without leave of the Court but that it could go to a date subsequent even if it had not mentioned it. At the trial, the two documents subsequent to the date of May 21, 1947, were allowed to be entered under reserve of defendants objection and I now intend to deal with this matter.

I am afraid that I cannot agree with the plaintiff in this regard. Indeed, as I had occasion to point out at the trial, the purpose of Rule 22A is to allow the other party in a contestation not only to know the earliest date upon which his opponent intends to rely, but all the dates upon which he intends to rely together with "the nature of the acts (which as we have seen must be widely interpreted) upon which he intends to rely for the purpose of establishing the same" and this, I believe, is so in order that he be fully informed, so as to either be able to decide whether he should or not contest the proceeding and also to insure that he be not taken by surprise.

It would indeed be too easy for a patentee who would want to take an unwarranted advantage over his opponent to give any first date and then rely on the element of surprise of some other date. Furthermore, the burden of a patentee in establishing a date earlier than that which appears on his patent, as we have seen, is a very serious and heavy one indeed, and in my opinion, he would not be discharging it properly if he did not state in response to the above rule all the dates on which he intended to rely together with the evidence necessary to support them and in my opinion this is what the plaintiff should have done.

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This, however, does not dispose of the matter because at the trial counsel for the plaintiff asked for leave to amend the response made by him to the demand made under Rule 22A for the purpose of bringing in also the drawing of May 30, 1947, as well as the U.S. application of July 29, 1947. At that time I entertained the amendment and invited the defendants to state whether because of the reception of these documents at this late date, they had sustained any prejudice in their defence and added that in such a case I was quite prepared to grant them a reasonable delay; the defendants, however, declined to request any such delay and this is not too surprising as in the particulars of the affidavit on production in this case, a certified copy of the file history of the abandoned Cox application, serial No. 764,392, was specifically set out and the defendants, therefore, had access to and were notified of this document long before the trial of this case.

The three documents, the May 21 and 30, 1947, drawings and the U.S. application of July 29, 1947, must therefore be considered and examined for the purpose of determining the date of first invention herein.

They were all subjected to a strong attack by counsel for the defendants. Indeed, with respect to the May 21, 1947, drawing of which Mr. Gray put in a copy, the latter identified Mr. Cox's signature on it and stated that in August 1948, when he joined the company, he found this document among its records. This same witness produced also the drawing of May 30, 1947, where he also identified Mr. Cox's signature. To support the production of these two documents, plaintiff then attempted to produce the company's records of sales of chains dated November 1947, allegedly produced in accordance with the above drawings to which, however, an objection was made by the defendants on the basis that this was hearsay evidence. At p. 736 of the transcript, it does indeed appear from an answer given by Mr. Carlton that these were records that someone told him covered the chains in question, and this being clearly hearsay evidence could not be accepted and consequently, at the time, I ruled it as inadmissible.

The plaintiff also submitted that these dates were supported by Ex. D-4 introduced by the defendants and which is a catalogue showing certain filing instructions. This exhibit indicates that the plaintiff's first saw chain was made

in the inventor's house in the year 1947. As it does not, however, specify what day and month in the year 1947, it can hardly be of any assistance in determining the probative value of the drawings of May 21 and May 30.

Now, although it would not have been necessary, as suggested by counsel for the defendants, that Mr. Cox, the inventor, appear and testify with regard to the drawings (although such evidence would no doubt have been conclusive) because it is not always possible for the assignee of an invention to get the inventor into the witness box, and in some cases he may of course be outside of the jurisdiction, it would seem that more cogent evidence is necessary to establish a date of first invention than what the plaintiff offered here. Indeed, the mere finding of such drawings in 1948, when the witness entered the service of the company, as he stated, and his recognition of Mr. Cox's signature, does not, in my opinion, satisfy the burden the plaintiff has in this regard to satisfy the Court that his earliest invention date is either May 21 or 30 of 1947 because it does not establish conclusively the date upon which the invention was made nor does it satisfactorily establish that it is Mr. Cox's work and I may add that the surrounding circumstances are not, in my opinion, sufficient to give those dates sufficient credence. These two dates, therefore, in my opinion, must fail.

I now come to the July 29, 1947, date upon which a U.S. application was filed and a certified copy of same was filed in this case as Ex. 36. This document was introduced by virtue of s. 14 of the Act which authorizes the production in any action or proceeding respecting a Canadian patent of invention, of a copy of any patent granted in any other country or any official document connected therewith purporting to be certified under the hand of the proper officer of the government of the country in which such patent has been obtained and the copy of such patent or document purporting to be so certified may be received in evidence without production of the original and without proof of the signature or of the official character of the person appearing to have signed the same.

The defendants admit that the seal of the United States Patent Office on this document is proof of the fact that on July 29, 1947, it was filed but submit that there is no proof, however, that this is Cox's work. All that the document

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indicates is that it purports to be an invention made by Joseph B. Cox.

I do not agree with this submission, indeed s. 14 of the Act states that such document may be received in evidence and if it is not contradicted by evidence, it does establish that it is the work of Mr. Joseph B. Cox and it establishes the date as of July 29, 1947. The only matter which might be doubtful is whether the Joseph B. Cox therein mentioned is the same one that invented the patent in suit and a simple comparison of the U.S. application with the Canadian patent in suit clearly indicates that we are dealing here with one and the same person; indeed, the names are identical in both documents, the address at 1707 S.E. 33rd Ave., Portland 15, Oregon is the same and it deals with the same invention. The date of July 29, 1947, therefore succeeds and this is the earliest date to which the plaintiff may refer in the present instance.

I may now deal with the attack made on the patent in suit on the basis of the prior art. Indeed, if the invention in the present instance was known or used by any other person before Mr. Cox invented it, i.e., as we have just seen, before July 29, 1947, in such a way that it had become available to the public, then the patent in suit may be invalidated.

The defendants submitted a number of American and Canadian patents as well as some publications in an attempt to establish that the invention was known and/or used prior to the invention date.

The first submitted was U.S. patent No. 591,039 Harris, October 5, 1897, produced as Ex. D-34. This deals with a circular saw and fig. 2 shows a number of teeth one of which the defendants suggest, the bottom one, shows a curved tooth and a toe portion extending over the blade and it would therefore appear that the general configuration of a tooth with a shank and a toe was known as early as 1897. Although to some extent this may be so, this tooth, however, certainly has not a toe portion on the tooth which extends at right angles, nor has it a cutting edge and the shank portion is in no way similar to that of the patent in suit.

The next one is U.S. patent No. 615,005 (Ex. D-35), F. W. Walquist, November 29, 1898, and this one also is for a circular saw and not for a saw chain, and although at

p. 1, column 2, line 53, it is stated that "The saw is advantageously sharpened by a circular milling tool adopted to be held at an inclination to the plane of the saw and rotated by hand, so that the front of each tooth is formed as a segmental recess", here again, the toe portion of the tooth does not extend at right angles, nor has it a cutting edge and the shank portion in no way resembles that of the patent in suit. It does, however, indicate that in 1898 it was realized that a tooth could be sharpened with a circular milling tool, which is a circular file.

As Ex. D-36, which is U.S. Patent 1,745,090, W. Geithle, July 19, 1927, relates to a ditch digger, which, of course, is an art entirely different from that of the patent in suit, I am disregarding it completely.

With respect to Ex. D-37 which is the J. E. Hassler chain, U.S. Patent 2,326,854, April 1, 1940, there is evidence that this chain went into use and some samples were produced as exhibits (Ex. 46). The tooth, however, here is on the drive link and not on the side plate and it is doubtful that the external extent of the chisel edge is substantially the same on opposite sides of the plate. Furthermore, as pointed out by counsel for the plaintiff, if they were substantially the same on each side of the plate, they would be the same width as the kerf and would bind therein. As a matter of fact, a close examination of Ex. 46 confirms this.

We now come to the square chisel chain and the same commentaries may be made here as for the Hassler tooth; indeed, the tooth here also is on the drive link and not on the side plate and the lateral extent of the chisel edge cannot be substantially the same on opposite sides of the plate as in the patent in suit. There is no patent here and this prior art is based on the evidence of Mr. Harvey that the square chisel chain was manufactured at Mill and Mine at the beginning of November 1945 and was sold for about two years. This chain is a centre link cutter but it is an advance over Hassler in that this is the first chain that has alternate left and right teeth which both cut and rout. Now, although there is some evidence (Mr. Falleri at p. 824 and Mr. Davison at p. 995 of the transcript) that this square chisel tooth can be filed with a round file, there is some doubt as to how easily this can be done, as it would be necessary to form a cylindrical surface on the cutting edge, and, of course, all the guiding elements of the tooth of the patent in

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suit are not on the chisel tooth which would, of course, make it a more difficult tooth to sharpen.

Exhibit D-42, which is Canadian patent No. 515,019, Max Merz, December 19, 1946, is called the High-R Merz. This document, according to the defendants, indicates that this chain saw has side-link cutters, which are semi-circular with an integral depth gauge, however, it does not have the flat right angled to extending beyond the plate nor equal lateral extent on opposite sides. Furthermore, it has no concave surface. The High-R is exemplified in this case also in Ex. D-11 and D-12, two drawings.

Exhibit D-11, dated December 5, 1946, is a drawing of the High-R router tooth with a back-to-back depth gauge construction of which a sample was produced as Ex. D-26 and then a later form of the High-R was produced as Ex. D-28. An attempt was made by the defendants to equate these High-R teeth to Ex. D-11 and Ex. D-13 and Mr. Harvey and Mr. Thompson, two of the defendants' witnesses, stated that the filing method of these teeth remained unchanged for the various forms of High-R and for the Low-R which followed. Indeed, these gentlemen both stated that the filing method was to use a circular file held 45° to the angle of direction of the chain and tilt it down at an angle of 15°. The instructions of Mill and Mine Supply Inc. however, for whom both of them worked, do not coincide with what both of them were doing nor with what they were teaching the users to do, which in itself strikes me as being, to say the least, peculiar. Indeed, these instructions clearly state that the filed cutting edge of the cutter tooth must not be less than 45° and there is no mention at all of tilting it 15° which, of course, means that the axis of the cylindrical surface is down 15° and would not, therefore, conform to that of the patent in suit which extends parallel with the toe portion.

However, on the other hand, if the filing instructions of Ex. 59 were followed, the 45° filing angle would have to be respected and, of course, then the round or circular file could not (unless tilted) fit right in the concavity as demonstrated by Mr. J. Thompson. I might, in passing, indicate here that this contradiction weakens considerably both Thompson's and Harvey's evidence in this respect.

Furthermore, the High-R does not show equilateral extent of the cutting edge on the shank and the toe nor

does it have a toe portion at right angles to the plate and a resulting concavity on the toe and flat on the shank.

We now come to what counsel for the defendants called the Low-R story. He suggests that if one has a semi-circular or half-circle tooth such as the High-R (Ex. D-28) and brings the profile down or reduces the radius of curvature, one is left with an excess of metal at the end which, in his submission, must form and does form a flat toe portion. Mr. Harvey, one of the defendants' witnesses, at p. 2076 seemed to suggest this in re-examination when he said:

A. D-15 is a cutter tooth from the Low R chain. The High R chain, if I may use my hand as an illustration, was a curved chain and if it was beaten and pounded down it would lower it and bring the toe farther out, away from the plate of the tooth, and this was the work that I observed.

According to this same witness, these hand made teeth were then made into a chain and given to salesmen to demonstrate in May of 1947 and one of these hand made samples used for the purpose of demonstration was the subject of the "Dear Bill" letter of May 14, 1947, produced as Ex. D-44 and which purported to be a corroboration of Harvey's evidence.

Indeed, Mr. Harvey stated that this letter was addressed to him, that he was the "Bill" mentioned therein, although later in cross-examination, he had to finally admit that he had stated some few years earlier in other proceedings that the "Bill" mentioned might have been Robert Gillespie's son Bill.

He also testified that the teeth in these hand made samples were made substantially in accordance with the drawing, Ex. 15. Temporary tooling was produced and according to Mr. Harvey and Mr. Thompson, teeth were made not later than June 15, 1947, and one of these temporary tooled teeth went to the Harbour Plywood Company and another, according to Mr. Thompson, went to Alaska in June of 1947 and the manufacture and sale of Low-R chains continued at least until 1951.

With respect to D-15 and the Low-R tooth, the defendants are not here seeking to bring themselves within s. 28(1)(b) or (c) and relying on this as a proper prior publication, but they are rather attempting to show what was known or used by Mill and Mine before the invention

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of the patent in suit and what had been made available to the public before the invention date.

On that basis, the defendants claim that the Low-R in Ex. D-15, or Ex. D-15 itself, or the physical sample dating back to June 1947 taken in conjunction with the evidence, is a complete anticipation of a number of the claims of the patent.

I might say here that I have gone over with great care the evidence of defendants' witnesses Iverson, Thompson and Harvey, particularly with regard to the Low-R, Ex. D-15, and in my opinion, there are several reasons for rejecting Ex. D-15 and whatever teeth or chains these witnesses mentioned as being in accordance with Ex. D-15. Indeed, this drawing, although bearing the date of July 28, 1947, admittedly was revised on July 31, 1947, and therefore is subsequent to the prior date of invention of July 29, 1947. This in itself would be sufficient to set it aside. However, there is more. The three above mentioned witnesses, but particularly Thompson and Harvey, in view of a number of contradictions in their evidence, and bearing in mind the manner in which their memories were refreshed after sixteen years, by the production of drawings such as D-7, D-8, D-9, D-10, D-11, D-12, D-13, D-14 and D-15, without which I am sure they could not have testified, have not succeeded in convincing me that they can, with sufficient certainty, give evidence on these matters.

There is also the absence of any invoice to show when the alleged units were on the market. Furthermore, Thompson and Harvey's evidence with regard to the hand tooled units that went to Alaska and the Harbour Plywood Company, together with the uncertainty of the "Dear Bill" letter, is not of sufficient conclusiveness in my opinion to establish that any unit in accordance with Ex. D-15 became thereby available to the public which the defendants, under s. 63(1)(a) had to establish.

Finally, Ex. D-15, whatever manifestation of the Low-R it may have been or whatever extended toe it might depict never, according to the evidence, found its way on the market. Indeed, none of the defendants' witnesses ever said the Low-R had a flat toe with the possible exception of Mr.

Harvey who spoke of some experimental work that went on at Mill and Mine at p. 2076 of the transcript:

A. D-15 is a cutter tooth from the Low R chain. The High-R chain, if I may use my hand as an illustration, was a curved chain and if it was beaten and pounded down it would lower it and bring the toe farther out, away from the plate of the tooth, and this was the work that I observed.

There is, on the other hand, considerable evidence that the Low-R does not have a flat toe. Both Thompson and Harvey stated that the tooth they were talking about which was in accordance with Ex. D-15 was No. 7 of Ex. 43 which, if observed, shows there is no flat toe. This, it seems, is the only tooth in any manifestation of Ex. D-15 which went onto the market. Furthermore, by looking at the High-R and the Low-R, it can be seen that the cutting edge of both does not extend substantially at equal distance on each side as required by some of the claims but is substantially all on one side.

In my opinion, all these drawings produced by the defendants from Ex. D-7 to Ex. D-15, which all bore corrections and amendments, and particularly Ex. D-10 which showed a little projection of the tooth which might have led to the invention and which was lopped off because it gave bad characteristics, were nothing more than experiments which did not before the date of invention of the patent in suit give way to any commercial tooth on the market. They were for the most part abandoned experiments and in the case of Ex. D-10, as we have just seen, instead of leading to the invention, led away from it.

Having now reviewed the prior art, I may say that the defence of anticipation in this case must fail. Indeed, the requirements for anticipation are well known and were set out clearly by Thorson P. in *The King v. Uhlemann Optical Company*¹:

. . . The information as to the alleged invention given by the prior publication must, for the purposes of practical utility, be equal to that given by the subsequent patent. Whatever is essential to the invention or necessary or material for its practical working and real utility must be found substantially in the prior publication. It is not enough to prove that an apparatus described in it could have been used to produce a particular result. There must be clear directions so to use it. Nor is it sufficient to show that it contained suggestions which, taken with other suggestions, might be shown to foreshadow the invention or important steps in it.

¹ [1950] Ex. C.R. 142 at 157.

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There must be more than the nucleus of an idea which, in the light of subsequent experience, could be looked on as being the beginning of a new development. The whole invention must be shown to have been published with all the directions necessary to instruct the public how to put it into practice. It must be so presented to the public that no subsequent person could claim it as his own.

And of course Lord Dunedin in *Pope Appliance Corporation v. Spanish River Pulp and Paper Mills Ltd.*¹ described the method to find out whether there was anticipation or not as follows:

... Would a man who was grappling with the problem solved by the Patent attacked, and having no knowledge of that Patent, if he had the alleged anticipation in his hand, have said "That gives me what I wish?"

And at p. 56:

Does the man attacking the problem find what he wants as a solution in the prior so-called anticipations?

Furthermore, as set down in the same case, when documents are brought forward as anticipations, they must be read singly and must in no way be combined together to form a mosaic of extracts.

These requirements are difficult to meet and, as I said above, have not been met in the present case.

Now, with respect to the evidence of prior use, the test in my opinion should be even more strict because in a written publication we have at least something concrete to go on, a document or a writing, but when dealing with prior use, we are dealing with memory which someone has defined as a faculty that forgets. This, I believe, explains why the requirements here are more severe.

In *Unipak Cartons v. Crown Zellerback Canada Limited*² it was stated that:

In view of counsel's statement that the two prior uses of the invention referred to by him were not prior uses of exactly the invention described and illustrated in the patent in suit it follows of necessity that the attack based on lack of novelty by reason of prior use fails.

And at p. 42:

Moreover the cases indicate the evidence purporting to show that the invention was anticipated by a prior use of it, "should be subjected to the closest scrutiny"

¹ (1929) 46 R.P.C. 23 at 52.

² (1960) 33 C.P.R. 1 at 41.

In *Christiani v. Rice*¹ Rinfret J., as he then was, said:

. . . Evidence of this character should be subjected to the closest scrutiny. Anyone claiming anticipation on that basis assumes a weighty burden which cannot be satisfied by mere proof of conception—if, indeed, it can be said that conception alone constitutes an anticipating invention.

I might also point out that fortuitous or experimental use which did not lead to the invention going to the public cannot be accepted. cf. *Cluett, Peabody and Co. Inc. v. Dominion Textile Co. Ltd.*² Maclean J. at p. 72.

Finally, in a case such as this, where, as already determined, we are dealing with a product of great commercial success, the evidence of prior use must be of such a character as to leave no doubt in the mind of the Court that it was the invention as invented that was used and no other. Indeed, any difference, even of a minor nature, would not be a prior use sufficient to defeat a valuable patent.

In *Lyon v. Goddard*³ it was stated that:

When a patent, especially one of simple character, has proved a commercial success, evidence of alleged prior user requires and ought to require very careful scrutiny, and evidence of something that was nearly, but not quite, a prior user is not relevant as such to an allegation of want of subject matter in a subsequent patent.

For the reasons already given in dealing with the drawing D-15, I have no hesitation in saying that the prior use here and the evidence in respect thereto is not of a nature such as to have anticipated the patent in suit and therefore the attack made upon the patent on this basis must also fail.

As the defence of anticipation was brought forward as an alternative to the defendants' defence of non infringement, it depended on how the claims would be construed. Indeed, in order to escape the possibility of the application of the doctrine of substantiality to the defendants' teeth, the latter had to submit that the claims should be construed very narrowly so that the invention defined in them be limited to a tooth strictly adhering to the angles or specifications mentioned without extending in any way the meaning of the word, "substantially". If the claims were so construed, then, however, the invention was not and could not be anticipated by any of the prior art cited because the devices disclosed by it were different from the invention defined in the claims if limited as submitted.

¹ [1930] S.C.R. 443 at 452.

² [1938] Ex. C.R. 47.

³ (1894) 11 R.P.C. 113.

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It then, however, followed that if the invention was so limited, since the construction of the defendants' teeth was not precisely the same as those described in the patent in suit, the doctrine of substantiality could not apply to them and the defendants would be free from the charge of infringement. On the other hand, if the claims were not so limited, but were given a wide interpretation, then they were anticipated by the prior art and the defendants would escape liability in either case.

This contention, although impressive at first sight, is, in my opinion, fallacious because it does not assume, as we should here, that we are dealing with a combination patent which permits the claims herein to be given a reasonably restrictive interpretation allowing them to encompass a reasonable manifestation of the invention as I believe I have done when I dealt with the interpretation to be given to the claims of the patent in suit and yet find that the invention has not been anticipated without, however, limiting the substantiality of such a useful invention in protecting it against infringers.

Indeed, we are dealing here with a combination patent and while several of the elements in the combination defined by the claims in suit were old, the combination itself was new. This invention is not a simple aggregation of elements but a combination that was new and useful and produced a new and useful unitary result, namely a simple tooth of a conformation such that it is easy to file without the cutting edge losing any of its cutting properties. Consequently, in order to succeed in their attack, the defendants would have had to show that the combination of the invention in suit with the unitary result referred to above had been disclosed in its prior art, which, as I have already said, they have failed to do.

This now brings me to deal with defendants' attack on the patent in suit on the basis of lack of invention. Counsel for the defendants stated that he did not need Low-R to establish invalidity of the claims of the patent in suit by means of lack of invention. Indeed, he presented a chart on the other prior art in which he made a composite, showing that the elements are present in some and not in others, as the ordinary skilled workman is entitled to do, and that these charts indicate that whatever differences there are

between the patent in suit and that of the prior art are not inventive differences and cannot form the subject of a valid patent.

Here again, I might point out, the defendants are not dealing with the invention of the patent in suit in a realistic manner by dissecting the invention as they have done in the prior art charts. Indeed, as I have already held, we are dealing here with an invention that lies in the combination. The combination here is in relation to a number of elements, the shank portion and the toe portion, and the bevel area or cylindrical surface which enables the unit to achieve ease of maintenance. Now, although it is permissible to mosaic in the matter of inventiveness, great caution should be used in dealing with a combination. In *Albert Wood & Amcolite Ltd. v. Gowshall Ltd.*¹ Lord Justice Green stated:

... The dissection of a combination into its constituent elements and the examination of each element in order to see whether its use was obvious or not is, in our view, a method which ought to be applied with great caution since it tends to obscure the fact that the invention claimed is the combination. Moreover, this method also tends to obscure the facts that the conception of the combination is what normally governs and precedes the selection of the elements of which it is composed and that the obviousness or otherwise of each act of selection must in general be examined in the light of this consideration. The real and ultimate question is: Is the combination obvious or not?

It, therefore, is not permissible to characterize the invention as a series of parts because the invention lies in the fact that they were put together and I might even add here that the invention may well reside here in the very idea itself of arranging a tooth such as that of the patent in suit in a manner where its configuration will allow not only easiness of filing and maintenance, but will also give excellent cutting.

In *Hickton's Patent Syndicate*² referred to in *The King v. Uhlemann Optical (supra)* invention in the idea alone was found sufficient to validate a patent.

In my opinion the mere fact here of flattening the toe and giving it a dimension such as to provide guide posts for filing, would in itself be sufficient to add the attribute of inventiveness.

Now, if we consider that the chain produced in accordance with the patent in suit combines all features of a chain

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¹ (1936) 54 R.P.C. 37 at 40.

² (1909) 26 R.P.C. 339 at 347.

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saw to the best possible advantage (counsel for the defendants admitted that the chipper chain is a better one than any other chain on the market today, although he claims it is not better because of anything mentioned in the claims with which, however, I disagree,) and has, as we have seen, because of this virtually eliminated other types of chains from the market, one must necessarily conclude that the invention of the patent in suit is not only inventive but a very meritorious invention indeed.

I may add here that it might well be that the invention here lies in a combination of the flat toe and the filing angle at 45° with no tip down file at 15° or 20° such as in the D-15 teeth, and that this might be considered as a trifling change from the prior art, but in my opinion this supposedly trifling advance was sufficient to solve a problem of filing in the field and yet allow it to perform satisfactorily from a cutting point of view and, in my opinion, the considerable commercial success of the chipper chain confirms that the invention in suit was a forward step of great importance in the trade and definitely stamps it as being an invention of great importance.

Under these circumstances, it appears to me impossible not to find here the attribute of inventiveness and defendants' attack in this respect must, therefore, also fail.

I now turn to defendants' third attack on the patent in that all the claims therein are for inoperative devices as they all omit mention of a depth gauge and that without it it would not work. They also submit that all the claims in suit read on a saw chain in which all the teeth are on the one side, in which every tooth is a left-hand cutter, or a right-hand cutter and as the evidence shows that the success of this device depends on its operation on an alternative right and left cutter, cutting out a groove to allow the body of the saw chain to go through this also would show an inoperable device.

The defendants then point out that a bad claim cannot be saved by stating that no competent manufacturer would ever make a saw chain with all the teeth left-handed or right-handed and that on the basis of *Eyers v. Grundy*¹ the fact that these things have been shown in the specifications does not excuse the patentee from including every essential element in his claim.

¹ (1939) 56 R.P.C. 253 at 260.

Counsel for the defendants even suggested a proper drafting of the claims which he produced and which would read as follows:

ELEMENTS OF CLAIMS

In a saw chain, a pair of longitudinally spaced apart links including sprocket-engaging root portions, a pair of oppositely disposed side plates pivotally joining said links together, one plate of *each* said pair of side plates having a cutting tooth formed thereon and including an intermediate portion extending outwardly in the opposite direction with respect to said links and adjacent an edge thereof, the end portion of said plate extending back over said links substantially at right angles with respect to the plane of said plate,

alternate teeth being of right and left configuration

the forward edge of said intermediate and end portions being provided with a chisel cutting edge, the lateral extent of said chisel edge being substantially equal on opposite sides of said plate whereby the cutting load during working of said tooth is substantially balanced on the opposite sides of said one plate,

and a depth gauge positioned forwardly of the cutter tooth to limit the depth of the cut made by the cutter tooth.

With respect to the absence of a depth gauge, I believe that the fact, as disclosed by the claims, that the invention here resides in a cutting tooth and not in a saw chain and that the depth gauge is merely an associated element in the chain which is in the disclosure and the drawings is a complete answer to that attack. Indeed, it appears from the specifications at column 7, lines 26, 60, 41, that a depth gauge is contemplated and it says there that its location is immaterial. The depth gauge is disclosed in fig. 14 of the drawings of the patent as not being on the cutter tooth and in fig. 1 at 22 as being on the cutter tooth. Mr. DeRoy stated at p. 1296 of the transcript: "Well if the depth gauge is not on the tooth, I have seen them on the market. In fact, the McCulloch Company had one on the market. The first tooth that I saw of this nature didn't have the depth gauge on the tooth." Mr. Carlton at pp. 1069 to 1070 stated that the chain would work no matter where the depth gauge was located. The depth gauge in fact is not an element of the invention and it is described in the specifications as one of these items that would, in the normal course, be used by anyone skilled in the art for the purpose of making the saw chain and it is not excluded in the claims as was the case in *Leggatt v. Hood*¹ where a back board for a dart game in

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¹ (1951) 58 R.P.C. 3.

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a patent was clearly excluded and found wanting in this respect.

In the present case the patent contemplates that the ordinary operable parts of the saw chain, including the depth gauge, as disclosed in the disclosure and drawings will be used in whatever different location desired.

In *Rodi v. Metalliflex*¹ which dealt with bracelets, the question was whether or not an expanding watch bracelet would remain in use on the wrist without falling apart after use without some means of keeping the parts together and the Supreme Court of Canada, Taschereau J., as he was at the time, held at p. 122 that the holding means were necessary but they were disclosed in the specification and they were external to the invention.

The claims, of course, must be construed with reference to the entire specifications, and the latter may therefore be considered in order to assist in apprehending and construing a claim, but the patentee may not be allowed to expand his monopoly specifically expressed in the claims "by borrowing this or that gloss from other parts of the specifications".

But here, the respondent does not seek to enlarge or expand his monopoly by reference to the specifications, but refers to them to explain the obvious. The monopoly applied for is the combination of three elements, and the particular means by which the parts are to be held together is immaterial. The appellant does not claim a holding means.

The same applies, in my opinion, to the criticism levelled at the claims on the basis that the patentee describes but one tooth on one side or one tooth on the other side. The claims must be looked at by the competent skilled workman at the date of the patent with "a mind willing to understand, not by a mind desirous of misunderstanding." As pointed out by counsel for the plaintiff, a similar criticism can be directed at counsel for the defendants proposed draft. Indeed, his claim has only two teeth or only two links and where is his chain going to reside as he has not mentioned a saw bar.

Indeed, such a precision of language as the defendants' claim cannot be entertained when dealing with a patent, the claims of which are sufficiently well drafted to conform to the requirements of s. 36 of the *Patent Act*, which were well defined in *Watson v. Pott*²:

But in my opinion, my Lords, the principle of the matter can be expressed thus: A patentee must not use language so vague as to enable him to secure a monopoly for more than his real invention and so to

¹ [1961] S.C.R. 117.

² (1908) 25 R.P.C. 337.

invade the rights of free rivals. But, on the other hand, it is permissible to state the real invention in language of such generality as is essential to preserve it and to prevent those rivals from invading the rights of the patentee.

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There is no question, in my mind, that the defendants here were not deceptively misled by the language of the claims and when one reads them with "a mind willing to understand" it is clear that the invention is in relation to a cutting tooth to be placed alternatively on both sides of a chain and the invention has, therefore, in my opinion, been properly defined in the claims.

Furthermore, as stated by Lord Shaw in *British Thomson-Houston Co. Ltd. v. Corona Lamp Works, Ltd.*¹

. . . it is expected that those operating the manufacture will be honestly looking, not for failure, but for success in the range in which the principle is applied.

It, therefore, follows that the attack on the patent on the basis of inoperability must also fail.

Now before leaving the matter of validity, I would like to deal briefly with the matter of utility and following upon the matter of inoperability this would be a good place to do so. I do believe that here the utility of the invention in the patent in suit is manifest. It is indeed clear from the evidence that we are dealing with a most useful device, one that not only has practically displaced all other saw chains but which also has by its ease of maintenance permitted a larger number of people to use saw chains in the field and to obtain from such use accrued monetary benefits.

I find, therefore, that all attacks on the validity of the claims in suit fail and it follows that as between the parties the claims in suit are valid.

The only matter now remaining for determination is whether the defendants have infringed the plaintiff's rights under the said claims.

This involves a consideration of the following exhibits, Ex. 7, the Gouger chain, Ex. 71, the G-58, Ex. 75, the late G-58, Ex. 78, the Citadel and Ex. 50 the Sabre and, I might point out here, that counsel for the defendants admitted at the trial that the Citadel and the Sabre teeth were one and the same thing.

¹ (1922) 39 R.P.C. 49 at 92.

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Exhibit 3 contains samples of those chains but in respect of Ex. 66, Ex. 70 and Ex. 77, we have the actual chains themselves.

Now, the matter of infringement can be considered from two standpoints. The first one is, the claims having been properly construed according to the canons of construction, as we have already done, is the offending device or devices within the text of the claims. If so, this is what is called textual infringement and this is the end of the matter. However, if the device is not within the precise wording of the claims, it may nevertheless, still be an infringement if the substance or pith and marrow of the invention has been taken on the basis that the property in a patent is not to be taken away by someone making variations which do not affect the substance.

And as pointed out by Thorson P. in *Lovell v. Beatty*¹ at p. 71 of his reasons for judgment:

... It is only in such a case the question of the applicability of the doctrine of mechanical equivalency can arise for the doctrine is only a particular application of the general principle that a person who has unlawfully taken the substance of an invention is an infringer.

Now mechanical or chemical equivalency is only one facet of this larger doctrine of taking the substance and it, therefore, appears that the substance may be taken when the infringer using small variations of dimensional details only to distinguish his device from that of the plaintiff produces a device which performs exactly the same function and this in my opinion is what we have here.

However, that this has happened here is not too surprising in view of the inference I must draw from the fact that up to the second last day of the trial, although the defendants had repeatedly been requested before the trial and during the latter to produce a 7/16 or a .404 pitch drawing for their teeth, they failed to do so and produced one of a different pitch i.e. a 0.5 inch pitch instead. This, in my opinion, would indicate that the defendants probably copied the plaintiff's device and would appear from Ex. 85 which is a dimensional comparison of the plaintiff's teeth with that of the defendants. This exhibit which comprises a number of drawings shows that the defendants' devices are substantially the same as the plaintiff's device. They have

¹ (1964) 41 C.P.R. 18.

indeed used the same integers with minor dimensional variations in them and they are, therefore, obtaining the same result by similar means. Furthermore, there is no evidence that these variations were smaller or greater or different because they had to be so which would seem to indicate that they are unintentional differences.

In *McPhar Engineering v. Sharpe Instruments*¹ Thorson P. stated:

It has long been established that if a person takes the substance of an invention he is guilty of infringement even if his act does not in every respect fall within the express terms of the claim defining it.

The authorities in this matter, I believe, are clear, it is immaterial whether it is a better or worse device, but if there is nothing functionally different, it is an infringement.

In the present instance, the only differences between the plaintiff's teeth and those of the defendants' are the dimensions, because the form and the shape of the teeth are the same and the question now remaining is as to whether these differences of dimension are of such a magnitude as to take them out of the ambit of the claims of the patent in suit. It is on this basis only that the defendants can escape infringement.

In *Electrolier Manufacturing v. Dominion Manufacturers*² the Supreme Court of Canada stated:

We also agree with the learned President that infringement has been established.

Infringement is a matter depending on the construction of the claims, for there it is that the inventor is required to state "the things or combinations . . . in which he claims an exclusive property and privilege".

Rinfret J. at p. 443:

What the appellant did—and in that his infringement truly consists—was to take the idea which formed the real subject matter of the invention. It does not matter whether he also adopted the substitution of the two holes for the bar in the pivoting means. The precise form of these means was immaterial. In the language of the patent they could be changed "without departing from the spirit of the invention".

And Rinfret J. at p. 444:

At best, the appellant has borrowed the essence of the patented structure with a small variation in its unimportant features or its non essential elements.

¹ (1961) 35 C.P.R. 105 at 156.

² [1934] S.C.R. 436.

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Mr. Carlton used both the plaintiff's device and the defendants' devices and observed that they all worked satisfactorily, there is no difference in the main elements of the structures, none in the operation and all perform the same function in the same way. This alone would be sufficient to find infringement.

However, there is more. Indeed, Mr. Carlton testified in connection with a number of drawings produced as exhibits 94 to 97 and 97 to 104 to the effect that there is no practical difference between the patented device and the Gouger chains. (Exs. 67, 71, 75 and 78) and Ex. 85 shows how close they come to the plaintiff's device.

There is also, in my opinion, further evidence of infringement in the Gouger filing instructions which for the lack of drawings can be used to obtain some indication of Gouger's intent in this regard.

These instructions sought to keep the leading edge of the shank portion normal to the longitudinal direction of the chain; they have a filing angle which embraces 45° and the file is kept horizontal and as pointed out already by mentioning a range of from 25° to 45°, the defendants recognized that this angle is not essential. They say "make sure front of top plate and side cutting face are hollow ground" which, of course, will give the bevel or cylindrical surface provided in some of the claims of the patented device and also to keep file horizontal. The same terminology is found in Ex. 73. In Ex. 76, which is also defendants' filing instructions, the angle to be kept is between 25° and 35° and the angle for the leading edge must be kept at 90° and they also show how to file to obtain the hollow ground and Ex. 79, which is also filing instructions, appears to be similar to Ex. 76.

Now in order to evaluate the differences between the plaintiff's device and those of the defendants, two documents were submitted by the plaintiff, Ex. 85, with which we have already dealt and E. R. Hilborn's measurements of November 26, 1962, produced as Ex. 141. Exhibit 85 is a number of drawings of Gouger, Sabre and Citadel saw chains compared with Omark saw chains.

I have already rejected defendants' objection to the production of this exhibit on the basis that it is perfectly legitimate to compare the plaintiff's device with the defendants' devices once it is found, as I have, that the plaintiff's device

is clearly the structure found in the drawings and claims and therefore the results obtained from such a comparison can and should be used to evaluate the importance of whatever differences are revealed.

A strong objection was also made by the defendants to the evidence of Eric Ronald Hilborn, a professional engineer employed by the plaintiff, who by means of a Kodak optical comparator which magnifies twenty times, measured the cutting edge angle as effected from the front of the toe portion with respect to the base plate, i.e. the relationship of the toe portion to the base plate on a number of right and left Gouger, G-58, late G-58, Citadel and Sabre teeth, and produced Ex. 141 which lists in the upper section the results he obtained together also with a compilation of the front edge angle to cutter side plate taken from the data which appears on Ex. 85. Mr. Hilborn made a theoretical calculation of the average leading edges of these angles and these appear in the lower part of Ex. 141 under the heading "Average". Exhibit 141 is hereafter reproduced:

November 26, 1962

*Measured Edge Angles to Cutter Side Plate
(from Comparator Tracings)*

	Chain Sample	R. H. Cutter		C. H. Cutter	
		Number	Angle	Number	Angle
"Gouger"	#1	#9	87° 50'	#13	88° 00'
"G-58"	#2 #3	#2	92° 00'	#2	90° 10'
"Late G-58"	#6	#4	92° 20'	#11	91° 20'
"Citadel"	#4	#5	92° 30'	#11	92° 30'
"Sabre"	#5	#28	91° 45'	#15	90° 20'

*Compiled Front Edge Angle to Cutter Side Plate
(from Exhibit 85 Data)*

Chain Model	Chain Sample	Average	Extreme High	Extreme Low	Maximum Difference
Gouger	#1	89° 30'	97° 6'	87° 12'	3° 24' Ground
G-58	#2 & #3	92° 18'	94° 54'	89° 18'	5° 36' Ground
Late G-58	#6	89° 48'	92° 12'	87° 18'	4° 54' Formed
Citadel	#4	93° 12'	94° 12'	92° 12'	2° 00' Formed
Sabre	#5	92° 54'	94° 30'	91° 6'	3° 24' Formed

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By means of tracing sheets and the comparator, Mr. Hilborn traced the outline of the cutter as a shadow or a sheet when it was properly focussed along the cutting edge and

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from this obtained the measurements which appear at the top of the above document. This was done by means of a light projected through a lens and a prism system where the magnification takes place on to a screen where the shadow twenty times magnified is traced.

Defendants' objection to Mr. Hilborn's evidence and his comparison chart was that this was in the nature of a test conducted during trial and that consequently the plaintiff should have obtained permission from the Court to go through this experiment and the defendants should have been invited to attend.

There is no question that the practice in this Court seems to have been that evidence of tests and experiments conducted *pendente lite* without notice being given to the other side and an opportunity to attend should not be considered and I believe that this is a salutary rule. I might also add that in any event tests and experiments conducted even before the trial in the presence of the other party are much more probative than if conducted *ex parte*.

However, in the present instance, we are not, in my opinion, dealing with an experiment or a test but merely with shadowgraph measurements which any of the defendants' engineers could have performed in the same manner with a similar comparator and defendants' objection to Hilborn's evidence and to the production of Ex. 141 is therefore rejected.

Counsel for the defendants, for the purpose of establishing non infringement, prepared a chart, where in regard to those elements of the various claims which showed a difference or a deviation from what they alleged was required by the patent in suit, they set down a number of measurements drawn from both Ex. 85 and Ex. 141.

With respect to element 4 in claim I "The end portion of said plate extending back over said links substantially at right angles with respect to the plane of said plate," counsel for the defendants, set down the measurements taken from Ex. 85 as follows:

For exhibit 67 the 7/16 pitch Gouger, 91°-93° for Ex. 71, the .404 Pitch G-58 96°-98° for Ex. 78 the .404 pitch Citadel, 98°-99°, for Ex. 82 the .404 Pitch Sabre 98°-99° and for Ex. 75 the Gouger late G-58, 97°-94°.

In order to obtain the above degrees, counsel for the defendants took the figures which appear on pp. 11, 12, 13, 14 and 31 of Ex. 85 for the respective teeth. For Ex. 67 for instance, as it appears from p. 11 of Ex. 85 at the lower right-hand part of the drawing in a section indicated as A-A that it is off the vertical by 3 degrees to one degree, he has set down, as we have seen, 91° - 93° for that exhibit and the same applies to the other teeth.

In the second portion of element 4 he has placed those angles measured by Mr. Hilborn on his shadowgraph as follows: $87^{\circ} 50'$ - 88° for right hand and left hand cutter as they appear on Exs. 131 and 132 for Ex. 67 7/16 pitch Gouger; $90^{\circ} 10'$ - 92° as they appear on Exs. 133 and 134 for Ex. 71 a .404 pitch G-58; $92^{\circ} 30'$ - $92^{\circ} 30'$ as they appear on Exs. 137 and 138 for Ex. 78 a .404 pitch Citadel; $91^{\circ} 45'$ - $90^{\circ} 20'$ as they appear on Exs. 139 and 140 for Ex. 82 a .404 pitch Sabre and $92^{\circ} 20'$ - $91^{\circ} 20'$ as they appear on Exs. 135 and 136 for Ex. 75 a Gouger late G-58.

He then entered the average figures determined theoretically by Hilborn on Ex. 141 in the lower section thereof under the heading "Average" as follows:

For Ex. 67, $89^{\circ} 30'$ for Ex. 71, $92^{\circ} 18'$ for Ex. 78, $93^{\circ} 12'$ for Ex. 82, $92^{\circ} 54'$ and for Ex. 75, $89^{\circ} 48'$.

These last figures are a theoretical calculation taken from the dimensions given in Ex. 85 as to what would be the minimum and the maximum dimensions from which he then obtained the above averages.

From this, defendants argue that on the basis of Ex. 141 with respect to the late Gouger G-58 as the extreme low was $87^{\circ} 18'$ and the extreme high was $92^{\circ} 12'$, we have here an actual measurement, $92^{\circ} 20'$, which falls 8 minutes beyond the figure theoretically calculated as being the maximum.

On the Sabre, Ex. 82, there is a figure of $90^{\circ} 20'$ and as on Ex. 141 Hilborn's measurements show an extreme low of $91^{\circ} 6'$ and an extreme high of $92^{\circ} 54'$, we now have here an actual measurement of a tooth which falls below what has been calculated as theoretically the lowest. As in two respects out of twelve, the measurements are outside of what is calculated as the maximum and the minimum, counsel for the defendants submits that no credence should be given to the Hilborn measurements.

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I must say that I cannot agree with this submission. Hilborn's figures in my estimation are most valuable in that they indicate that the calculated variations of the leading edges are even in the case of the defendants' devices differences which should be considered as manufacturing tolerances and the fact that in two instances out of twelve they were slightly outside of the maximum or minimum can in no way detract from their probative value in this regard.

Now the figures from Ex. 85 and those drawn from Hilborn's measurements do not deal with the same thing. In Ex. 85 we are dealing with what appears in fig. 7 of the patent whereas in Ex. 141 we are dealing with the cutting edge as shown in fig. 6 of the patent in suit and this relationship, as I have already stated in interpreting the claims, is explained in the patent.

The measurements taken from Ex. 85 with respect to element 4 of claim I represent fig. 7 of the patent where we have a section cut behind the cutting edge, and Hilborn's figures represent the cutting edge, as in fig. 6, and therefore the measurements are not like measurements so a comparison between the two cannot be made.

Now, as already held, substantially at right angles does not, in my opinion, mean precisely at right angles and what is meant appears from the drawings fig. 6 and fig. 7 where an angle is shown. Indeed, the purpose of this angle is explained in the specifications. On the shank side it is down and on the leading edge side it is up if one cuts directly across it. Now because of the filing angle, this then will make the two points at the filing angle horizontal which is what the devices of the defendants have and which is called for by the specifications.

The defendants indeed have achieved that in the same way as the patentee has achieved it, and therefore have taken what the patentee discloses so that the relationship of figs. 6 and 7 and what is intended by "substantially at right angles" in fig. 6 in that angle 41 is such as to have a horizontal top cutting edge.

By proceeding as indicated above, one obtains the cutting edge at the positions as determined by Hilborn and we therefore have clearly here an infringement of element 4 of claim I.

Indeed, by examining the meaning of element 4 of claim I in the light of the disclosure and by looking at the Gouger Sabre and Citadel devices, it appears to me that the defendants are doing exactly what the patent teaches and Carlton's evidence at p. 361 of the transcript is also to this effect.

I now turn to element 6 of Claim I which reads as follows:

The lateral extent of said chisel edge being substantially equal on opposite sides of said plate whereby the cutting load during working of said tooth is substantially balanced on the opposite sides of said one plate.

Counsel for the defendants on this element took from Ex. 85 the lateral extent of the cutting edge for the toe and the shank on the opposite sides of the plate from Exs. 67, 71, 78, 82 and 75 as being respectively: .0505 toe, .066 shank; .045 toe, .0645 shank, .055 toe, .077 shank; .050 toe, .0765 shank; .0565 toe, .079 shank.

He then calculated the percentage of deviation from being equal between the various sides and arrived at the following result: with respect to Ex. 67 the percentage is 31% for Ex. 71, it is 43½% for Ex. 78, it is 40% for Ex. 82, it is 53% and for Ex. 75 it is 40%.

From this he argues that differences of this magnitude can in no circumstances be said to be substantially equilateral on both sides and that the above percentages indicate how much they deviate from being equal.

Now although the above deviations expressed in percentages appear to be considerable, and although admittedly we are comparing like to like, we are still talking of minute differences of 16/1000 of an inch for Ex. 67, 26/1000 of an inch for Ex. 71, 23/1000 of an inch for Ex. 78, 26/1000 of an inch for Ex. 82 and 22/1000 of an inch for Ex. 75, and, furthermore, as I had occasion to mention when interpreting the claims, we are dealing with a working tooth that will require some substantial balance and a clearance angle during the whole of its working life, and not only at the time it is manufactured.

These differences, as explained by Carlton, exist at the initial stage of the use of these teeth and at a point somewhere approximately half way, through use and sharpening their configuration will be reduced and altered somewhat and will become actually balanced and then there will be a minor difference the other way.

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This indeed is what R. Carlton said at p. 1124 of the transcript:

MR. HENDERSON:

Q. Now, as you cut back, having regard to the clearance angle will you tell the Court what happens in terms of any difference between these two measurements that were drawn to your attention?

A. Because the side plate or the side, there is side clearance on the cutter . . . as you file back, the relationship of the centre line to the outermost cutting edge of the shank to the centre line to the outermost extent of the toe changes because you cut it back.

Q. Do these distances become equal or greater, the differences that were pointed out to you, the differences in measurement?

A. Somewhere on the tooth they become approximately equal.

HIS LORDSHIP:

Q. Is that because of the taper?

A. Yes.

Q. The tapered form of the tooth?

A. Right. This dimension from the plate to the toe all along is generally the same. However, it is not true up here (indicating) of the other side of the clearance. It goes down to a lesser degree, a lesser amount.

MR. HENDERSON:

Q. Is the point intermediate to the end point?

A. It is approximately at the middle point.

Q. Approximately at the middle of the length of the tooth?

A. Yes. We thought it was more reasonable to take it as a center point because the tooth is neither right here nor there (indicating) the front or the back, so we take the centermost point.

HIS LORDSHIP:

Q. A happy medium?

A. Yes.

I might also add that the evidence is to the effect that these small differences or deviations have no practical effect whatsoever on the operation of the saw chains involved.

The clearance angle we have just spoken of can be seen in fig. 5 of the patent in suit at No. 38 and as already pointed out is made so that during the working of the tooth throughout its life it will be substantially balanced. This clearance angle is also described in column 4 at line 40 in relation to the lateral extent of the tooth. Now, looking at the various devices of the defendants, there is no question that this is exactly what the defendants have done and, therefore, element 6 of claim I is also infringed.

Claim II is infringed in exactly the same way as claim I and claim III element 6 is infringed in the same manner as element 6 in claim I.

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In claim IV although element 4 is infringed in a similar manner as element 4 of claim I, there is however a further limitation in element 4 of claim IV in that the toe portion must extend from the shank portion back over the edge of the plate and this additional limitation is also found in the Gouger, Sabre and Citadel teeth, so here also there is infringement.

I now come to element 6 of claim IV which reads as follows:

The bevelled edge surface defining the cutting edge on said toe and shank portions conforming to a cylindrical surface with the axis of said cylindrical surface extending parallel with said toe portion.

Here counsel for the defendants submits that there is no cogent evidence and that the axis therein mentioned cannot be determined.

Now although this axis cannot be determined from the drawings or even the specifications, there is evidence of a bevelled edge surface defining the cutting edge on the toe and shank portions and which conforms to a cylindrical surface and it is stated that this surface extends parallel with the toe portion. Indeed, Carlton at pp. 603 to 606 and at p. 568 of the transcript demonstrated on the defendants teeth how the file did fit in their concave portion and the file then was in a horizontal position. It follows, therefore, that if the evidence, as here, shows that the file nests in the bevelled portion, then the axis of the file is in a horizontal position to the bevel. The same applies when the file is inserted in the plaintiff's devices, there also the axis is in a horizontal position. There are, of course, also the defendants' filing instructions which instruct that "when filing chain keep the file horizontal" and in my opinion, the defendants' devices would not cease to infringe, if the filing, as suggested by Thompson and Harvey, was done a little differently. Indeed, by merely placing the round file into the position of the Gouger, Sabre or Citadel tooth, I find that these teeth all infringe and they therefore meet this element of the claim.

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I now come to element 6 in claim V which should be dealt with in the same manner as element 6 in claim I.

With respect to element 7 of claim V which deals with the 90° angle of attack of the shank portion, it will suffice to say that it can be seen from pure observation of Ex. 85, No. 11, that the angle is 90° and as one looks down at the rivets, the disposition of the tooth is apparent.

This same angle is apparent on the defendants' devices and there is therefore here also infringement of the element of claim V.

I now come to element 8 of claim V which reads as follows:

The cutting edge of said toe-portion lying in a second plane at right angles to said first plane and extending at a substantially 45° angle with respect to the longitudinal direction of said chain, the bevelled edge surface defining the cutting edge of said toe portion being concavely curved in the transverse direction.

Here the defendants have averaged from Ex. 85 this angle in the case of each tooth and these averages are as follows: for Ex. 67, 40°; for Ex. 71, 35°; for Ex. 78, 31°; for Ex. 82, 32½° and for Ex. 75, 32½°; on the basis of these variations, the defendants submit that there cannot be infringement.

Now although these variations from 45° are in some cases considerable, the maintaining of this angle does not appear to me to be essential. Indeed, the defendants themselves, as I already had occasion to point out in their filing instructions, Ex. 69, state: "Maintain proper angle on front of the cutter. Have the same angle on every cutter. Do not have less than 25 or more than 45." By so doing they have, in my opinion, established that this angle is one that has tolerances and, therefore, here also the defendants are within the claim.

Element 3 of claim VI has been dealt with already in element 4 of claim I and element 7 of claim VII has also been dealt with in element 8 of claim V.

Now the various aspects to which the defendants have directed their attacks appear differently in the various claims. The matter of "substantial equal and lateral extent" is a limitation in claims I, II, III and V only. The 45° angle is only in claims V and VII and the axis of the cylindrical surface is only in claim IV. As for the other elements

of the claims, there is no question but that they are infringed. With regard to those pointed out by the defendants as being different and which we have just examined, there is also no question in my mind but that the features of these elements of the claims are present in the offending devices of the defendants and when they have not been taken literally or textually, they have been taken substantially within the meaning of the claims, the only variation of importance being the 45° angle of element 8 of claim V and this angle, as we have just seen, is manifestly a non essential one. The defendants here really took the substance of the invention and achieved the same purpose.

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I find, therefore, that the defendants have infringed the plaintiff's rights under the claims in suit.

There will, therefore, be judgment in favour of the plaintiff as against all the defendants that as between the parties the claims in suit are valid and that they have been infringed by the defendants as contended and that the plaintiff is entitled to the relief sought, except as to damages. If the parties are unable to agree on the amount of the damages or the amount of the profits, if the plaintiff elects an account of them, there will be a reference to the Registrar or a Deputy Registrar to determine the amount of such damages or profits and judgment for the amount found on such reference. The plaintiff is also entitled to recover costs from all the defendants who will all be jointly and severally responsible therefor in view of what I must (from the manner in which the defendants were set up and their inter-relationship) infer were premeditated schemes to escape infringement in which however I hasten to say that both counsel for the defendants had no part whatsoever. The defendants' counterclaims must also be dismissed with costs and the latter shall be recoverable also from all the defendants and in the same manner.

Judgment accordingly.