

IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF DELAWARE

COMPLETE GENOMICS, INC., )  
)  
Plaintiff, )  
v. )  
)  
ILLUMINA, INC., ) C.A. No. 19-970-MN  
)  
Defendant. )  
)  
ILLUMINA, INC. and )  
ILLUMINA CAMBRIDGE LTD., )  
)  
Counterclaim- )  
Plaintiffs, )  
)  
v. )  
)  
COMPLETE GENOMICS, INC. )  
BGI AMERICAS CORP., and )  
MGI AMERICAS INC., )  
)  
Counterclaim-Defendants. )

**THE COURT'S PROPOSED FINAL JURY INSTRUCTIONS**

## TABLE OF CONTENTS

I.	GENERAL .....	1
A.	INTRODUCTION .....	1
B.	BURDENS OF PROOF .....	2
II.	PATENT JURY INSTRUCTIONS .....	4
A.	THE PARTIES' CONTENTIONS .....	4
B.	SUMMARY OF PATENT ISSUES .....	5
C.	THE CLAIMS OF A PATENT .....	6
D.	INFRINGEMENT – GENERALLY.....	9
E.	DIRECT INFRINGEMENT .....	10
F.	INDIRECT INFRINGEMENT – GENERALLY .....	12
G.	INDUCED INFRINGEMENT.....	13
H.	CONTRIBUTORY INFRINGEMENT .....	14
I.	WILLFUL INFRINGEMENT .....	15
J.	INVALIDITY – GENERALLY .....	16
K.	PRIOR ART – GENERALLY .....	17
L.	EFFECTIVE FILING DATES OF CGI'S ASSERTED PATENTS .....	18
M.	PERSON OF ORDINARY SKILL IN THE ART .....	19
N.	INVALIDITY – ANTICIPATION GENERALLY .....	20
O.	INVALIDITY – ANTICIPATION BY PRIOR INVENTION.....	21
P.	INVALIDITY – ANTICIPATION BY WRITTEN PRIOR ART .....	24
Q.	INVALIDITY – OBVIOUSNESS.....	25
R.	INVALIDITY – LACK OF ENABLEMENT .....	28
S.	INVALIDITY – WRITTEN DESCRIPTION .....	30
III.	DAMAGES.....	32
A.	DAMAGES – GENERALLY.....	32
B.	REASONABLE ROYALTY .....	34
C.	REASONABLE ROYALTY – RELEVANT FACTORS TO THE HYPOTHETICAL NEGOTIATION.....	35
D.	REASONABLE ROYALTY – APPORTIONMENT .....	37
E.	REASONABLE ROYALTY – TIMING.....	38
F.	REASONABLE ROYALTY – AVAILABILITY OF NON-INFRINGEMENT ALTERNATIVES.....	39
IV.	DELIBERATIONS AND VERDICT .....	40

A.	DELIBERATION AND VERDICT – INTRODUCTION .....	40
B.	UNANIMOUS VERDICT .....	41
C.	DUTY TO DELIBERATE .....	42
D.	SOCIAL MEDIA .....	43
E.	COURT HAS NO OPINION .....	44

**I. GENERAL**

**A. INTRODUCTION**

Members of the jury, now is the time for me to instruct you about the law that you must follow in deciding this case. Please listen very carefully to everything I say. In following my instructions, you must follow all of them, including the ones I gave you on Monday at the start of the case and the ones I have given during trial, and not single out some and ignore others. They are all important.

You will have your written copy of these instructions, as well as my preliminary instructions, with you in the jury room for your reference during your deliberations. You will also have a verdict form, which will list the questions that you must answer to decide this case.

I will start by reminding you of the respective burdens in this case, and then I will instruct you of the positions of the parties and the law you will apply in this case. Then we will hear the closing arguments. After that, I will explain the rules that you must follow during your deliberations in the jury room, and the possible verdicts that you may return.

## **B. BURDENS OF PROOF**

In any legal action, facts must be proven by a required standard of evidence, known as the “burden of proof.” In a patent case such as this, there are two different burdens of proof. The first is called “preponderance of the evidence.” The second is called “clear and convincing evidence.” I told you about these two standards of proof during my preliminary instructions to you and I will now remind you what they mean.

This is a civil case in which CGI is the owner of two patents that it alleges Illumina infringes, and Illumina is the owner of three patents that it alleges CGI infringes. A party asserting patent infringement has the burden of proving infringement, whether that infringement was willful, and the amount of monetary damages by a preponderance of the evidence. That means the party asserting infringement has to produce evidence that, when considered in light of all of the facts, leads you to believe that what that party claims is more likely true than not. To put it differently, if you were to put the parties’ evidence on opposite sides of a scale, the evidence supporting the claims of the party asserting infringement must make the scales tip somewhat on its side. If the scale should remain equal or tip in favor of the alleged patent infringer, you must find for the alleged patent infringer.

As I noted earlier, Illumina contends that CGI’s Patents are invalid, and CGI contends that Illumina’s Patents are invalid. A party challenging the validity of a patent has the burden of proving by clear and convincing evidence that the asserted claims are invalid. Clear and convincing evidence means that it is highly probable that the fact sought to be proved by the evidence is true. Proof by clear and convincing evidence is thus a higher burden than proof by a preponderance of the evidence needed to prove infringement.

Some of you may have heard the phrase “proof beyond a reasonable doubt.” That burden is a higher burden of proof that applies only in criminal cases and has nothing to do with a civil case like this one. You should therefore not consider it in this case.

## **II. PATENT JURY INSTRUCTIONS**

### **A. THE PARTIES' CONTENTIONS**

This case was filed in May 2019 by CGI, alleging patent infringement against Illumina. In July 2019, Illumina filed counterclaims, alleging patent infringement against CGI. You have heard evidence regarding the two CGI patents and three Illumina patents in this case.

CGI is the owner of United States Patent Nos. 9,222,132 and 10,662,473, which have been referred to as the '132 and '473 patents, or the "CGI Patents." CGI alleges that Illumina infringes claims 1 through 4 of CGI's '132 patent and claims 1, 2, 3 and 5 of CGI's '473 patent. Illumina denies that it has infringed the asserted claims of the CGI Patents and contends that the asserted claims of the CGI patents are invalid on various grounds.

Illumina is the owner of United States Patent Nos. 9,217,178; 9,303,290; and 9,970,055, which have been referred to as the '178, '290, and '055 patents, or as the "Illumina Patents." Illumina alleges that CGI infringes claims 1, 6, and 14 of Illumina's '178 patent, claims 1, 7, and 15 of Illumina's '290 patent, and claims 1, 2, and 17 of Illumina's '055 patent. CGI denies that it has infringed the asserted claims of the Illumina Patents and contends that the asserted claims of the Illumina Patents are invalid on various grounds.

## **B. SUMMARY OF PATENT ISSUES**

You must decide the following issues in this case according to the instructions that I give you:

1. Whether CGI has proven by a preponderance of the evidence that Illumina infringes one or more of the asserted claims of CGI's '132 and '473 patents;
2. Whether Illumina has proven by clear and convincing evidence that one or more of the asserted claims of CGI's '132 and '473 patents are invalid;
3. Whether CGI has proven by a preponderance of the evidence that Illumina willfully infringed one or more of the asserted claims of CGI's '132 and '473 patents;
4. Whether Illumina has proven by a preponderance of the evidence that CGI infringes on or more of the asserted claims of Illumina's '178, '290, and '055 patents;
5. Whether CGI has proven by clear and convincing evidence that one or more of the asserted claims of Illumina's '178, '290, and '055 patents are invalid; and
6. Whether Illumina has proven by a preponderance of the evidence that CGI willfully infringed one or more of the asserted claims of Illumina's '178, '290, and '055 patents.

If you decide that Illumina infringes any claim of the CGI Patents that is not invalid, you will also need to decide any money damages to be awarded to compensate CGI for that infringement. Likewise, if you decide that CGI has infringed any claim of the Illumina Patents that is not invalid, you will need to decide any money damages to be awarded to compensate Illumina for that infringement.



### **C. THE CLAIMS OF A PATENT**

Before you can decide many of the issues in this case, you will need to understand the role of patent “claims.” The patent claims are the numbered sentences at the end of a patent. The claims are important because the words of a claim define the scope of the patent right. The figures and text in the rest of the patent provide a description and/or examples of the invention and provide a context for the claims, but the claims define the extent of the patent’s coverage.

Here, you will need to understand what each of the asserted claims covers in order to decide whether or not that claim is infringed and to decide whether or not that claim is invalid.

Patent claims may exist in two forms, referred to as independent claims or dependent claims. An independent claim does not refer to any other claim of the patent. Thus, it is not necessary to look at any other claim to determine what an independent claim covers. For example, claim 1 of CGI’s ’132 patent is an independent claim.

A dependent claim refers to at least one other claim in the patent. A dependent claim includes each of the limitations of the other claims or claims to which it refers, as well as the additional limitations of the dependent claim itself. Therefore, to determine what a dependent claim covers, it is necessary to look at both the dependent claim and the other claim or claims to which it refers. For example, claim 2 of CGI’s ’132 patent is a dependent claim. To determine what dependent claim 2 of CGI’s ’132 patent covers, the words of that claim and the words of independent claim 1 of the ’132 patent must be read together.

It is my job as a judge to define the terms of the claims and to instruct you about the meaning. It is your role to apply my definitions to the issues that you are asked to decide.

In this case, I have determined the meaning of the following terms of the asserted claims of the CGI Patents and the Illumina Patents:

**For CGI's '132 Patent:**

- “detection position” means “a position in a target sequence for which sequence information is desired”
- “nucleic acid templates” means “nucleic acid molecules derived from target nucleic acid(s) that may include one or more adaptors”
- “for each of a plurality of said single-stranded nucleic acid templates, determining the identity of nucleotides at detection positions in the nucleic acid template in multiple cycles of a sequencing-by-extension reaction” means “for each of a plurality of said single-stranded nucleic acid templates, determining the identity of a nucleotide at a detection position in the nucleic acid template in each of multiple cycles of a sequencing by extension reaction”
- “a [first / second] fluorescent signal” means “light emitted by a fluorescent molecule or molecules that is detected within a defined wavelength range”

**For CGI's '132 and '473 Patents:**

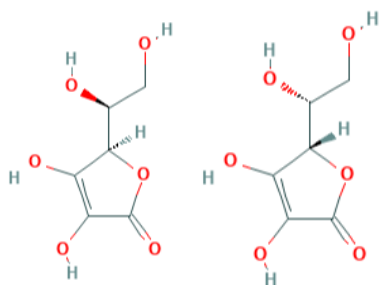
- “sequencing-by-extension” means “sequencing by synthesis”

**For CGI's '473 Patent:**

- “polynucleotide template[s]” means “nucleic acids derived from target nucleic acid(s) that may include one or more adaptors”
- “amplicons” means “products of one or more polynucleotide amplification reactions”
- “detecting a fluorescent signal at the [first / second] wavelength” means detection at the first or second individual wavelength

**For Illumina's '178, '290, and '055 Patents:**

- “ascorbic acid” means “an organic compound with the chemical formula  $C_6H_8O_6$  and one of the following structures



You must accept my definition of these words as being correct. It is your job to take these definitions and apply them to the issues that you are deciding, including the issues of infringement and invalidity.

For any words in the claim for which I have not provided you with a definition, you should apply their ordinary meaning in the field of the patents. You should not take my definition of the language of the claims as an indication that I have a view regarding how you should decide the issues that you are being asked to decide, such as infringement and invalidity. These issues are yours to decide.

#### **D. INFRINGEMENT – GENERALLY**

The United States' patent law gives the owner of a valid patent the right to exclude others from importing, making, using, offering to sell, or selling the patented product or method in the United States during the term of the patent. Any person or company that has engaged in any of those acts without the patent owner's permission infringes the patent.

In order to prove infringement, a patent owner must prove that the requirements for direct and indirect infringement are met by a preponderance of the evidence that all of the requirements of direct and indirect infringement have been proved.

Infringement is assessed on a claim-by-claim basis. Thus, each patent owner bears the burden of proving by a preponderance of the evidence that each of the asserted claims of its asserted patents is infringed. Therefore, you, the jury, must determine infringement for each patent and each claim separately.

I will now explain each type of infringement in more detail.

## **E. DIRECT INFRINGEMENT**

In order to prove direct infringement, the patent owner must prove by a preponderance of the evidence, that the other party has made, used, sold, offered for sale, or imported into the United States the invention defined in at least one claim of one of the asserted patents.

As I just told you, you must determine, separately for each asserted claim, whether or not there is infringement. There is one exception to this rule. If you find that a claim on which other claims depend is not infringed, there cannot be infringement of any dependent claim that refers directly or indirectly to that claim. On the other hand, if you find that an independent claim has been infringed, you must still separately decide whether the accused products meet additional requirements of any claims that depend from the independent claim to determine whether the dependent claims have also been infringed. Remember, a dependent claim includes all the requirements of any of the claims to which it refers plus additional requirements of its own.

To determine infringement, you must compare the accused products and/or methods of using the accused products with each asserted claim to determine whether each and every one of the requirements of that claim is satisfied. A patent claim is infringed only if the product or method of use of a product includes each and every limitation in that patent claim. If the accused product or accused method of using a product does not contain one or more elements or steps recited in a claim, there is no infringement. The presence of other elements or additional steps in the accused product or accused method beyond those claimed, however, does not avoid infringement, as long as every claimed element is present.

One may directly infringe a patent unknowingly – that is, without knowledge that what one is doing is an infringement of the patent. One may also infringe while believing in good faith that

a particular action is not an infringement of any patent. One's product may also infringe even if they obtained their own patent covering their product.

## **F. INDIRECT INFRINGEMENT – GENERALLY**

In addition to direct infringement, a party may also be liable for indirect infringement. There are two types of indirect infringers. First, there are those who encourage or induce others to infringe a patent; this is known as “inducing infringement.” Second, there are those who contribute to infringement by, for example, supplying them with components used in the patented invention; this is known as “contributory infringement.”

## **G. INDUCED INFRINGEMENT**

Each party alleges that the other is liable for infringement by actively inducing others to directly infringe the patents in suit. A party induces patent infringement if it purposefully causes, urges, instructs, aids, or encourages another to use a product in a manner that infringes an asserted claim. In order to find a party to have induced infringement, there must be direct infringement of an asserted claim; if there is no direct infringement by anyone, there can be no induced infringement. Inducing infringement cannot occur unintentionally.

A party is liable for active inducement only if the patent owner proves by a preponderance of the evidence that a party induced the acts of direct infringement, meaning:

1. the party aided, instructed, or otherwise acted with the intent to cause acts by others that would constitute direct infringement of the patent claim(s);
2. the party was aware of the patent, or showed willful blindness to the existence of the patent, at that time; and
3. the party knew, or showed willful blindness, that the actions of the infringing party would directly infringe at least one claim of the patent.

To find willful blindness you must find that (1) the accused party subjectively believed that there is a high probability that a patent existed covering the accused product(s) or method(s), and (2) took deliberate actions to avoid learning of the patent.



## H. CONTRIBUTORY INFRINGEMENT

A second form of indirect infringement is contributory infringement. Contributory infringement can occur when a party supplies a part that is used to infringe one of the patent claims. In order to find contributory infringement, there must be direct infringement of an asserted claim; if there is no direct infringement by anyone, there can be no contributory infringement. As with induced infringement, to establish contributory infringement, the patent holder must prove by a preponderance of the evidence that the alleged infringer had knowledge of both the patent and direct infringement of that patent.

Specifically, to prove contributory infringement, one must prove each of the following by a preponderance of the evidence:

- (1) the alleged infringer sold, offered for sale, or imported within the United States a component of the infringing product or apparatus for use in the infringing method;
- (2) the component or apparatus is not a staple article of commerce capable of substantial non-infringing use
- (3) the component or apparatus constitute a material part of the claimed invention; and
- (4) the alleged infringer knew that the component was especially made or adapted for use in an infringing method or product.

A “staple article of commerce capable of substantial non-infringing use” is something that has uses other than as a part or component of the patented product or other than in the patented method, and those other uses are not occasional, farfetched, impractical, experimental, or hypothetical. All of these things must be proven by direct or circumstantial evidence before you may find contributory infringement.

## **I. WILLFUL INFRINGEMENT**

If you find that either party infringed a valid claim of the other party's patents, then you must also determine whether or not such infringement was willful.

To show that infringement was willful, a patent holder must prove by a preponderance of the evidence that the other party knew of the patent and intentionally infringed at least one asserted claim of the patent. To show willfulness, you must find that a party has engaged in conduct evidencing deliberate or reckless disregard for the patent-holder's patent rights. However, you may not find that infringement was willful merely because a party knew about the other party's patent, without more. In determining whether either party has proven that the other party's infringement was willful, you must consider all of the circumstances and assess the infringing party's knowledge at the time the challenged conduct occurred.

If you determine that any infringement was willful, you may not allow that decision to affect the amount of any damages award you give for infringement.

## **J. INVALIDITY – GENERALLY**

I will now instruct you on the rules you must follow in deciding whether or not either party has proven that the asserted claims of the other parties' patents are invalid. As I previously told you, to prove that a claim of a patent is invalid, the party challenging validity must persuade you by clear and convincing evidence.

Like infringement, you must determine whether each asserted claim is invalid on a claim-by-claim basis. As I instructed you earlier, there are independent claims and dependent claims in a patent. A dependent claim recites all the requirements of its independent claim and adds additional requirements. This means the scope of the dependent claim is narrower than the scope of the independent claim from which it depends. Finding the broader independent claim to be invalid does not mean the narrower dependent claims are also invalid. However, if you find a narrower dependent claim to be invalid, you must find the broader independent claim from which it depends is also invalid.

## **K. PRIOR ART – GENERALLY**

In order for someone to be entitled to a patent, the invention must actually be “new” and not obvious over what came before, which is referred to as the prior art. Prior art is considered in determining whether the asserted claims are anticipated or obvious. Prior art may include items that were publicly known or that have been used or offered for sale, or references, such as publications or patents, that disclose the claimed invention or elements of the claimed invention.

## **L. EFFECTIVE FILING DATES OF CGI'S ASSERTED PATENTS**

The inventors of the CGI Asserted Patents filed “provisional” patent applications on January 28, 2008 and January 29, 2008. You must determine whether the asserted claims of the patents are sufficiently supported by the provisional applications. CGI contends that the asserted claims of the CGI asserted patents are entitled to the filing date of the provisional application(s), while Illumina contends that the asserted claims are not.

CGI may rely on the filing date of their provisional application to establish the effective filing date if the application teaches one of ordinary skill in the art to make and use the claimed invention of the asserted patents, and to do so without undue experimentation. The provisional application must also disclose each and every element of the asserted claims of the asserted CGI patents. Additionally, the disclosure in the provisional application must reasonably convey to those of skill in the art that as of the claimed priority date the inventor was in possession of the later claimed subject matter.

If you determine that CGI has shown by a preponderance of the evidence that the asserted claims of the CGI patents are entitled to the filing date of the provisional application, then Illumina must prove by clear and convincing evidence that they are not.

If you find that CGI is entitled to an effective filing date that is the same date as the filing date of one of the provisional applications, then that filing date (in this case, either January 28, 2008 or January 29, 2008) is the effective filing date of the asserted patents for purposes of validity and the prior art.

## **M. PERSON OF ORDINARY SKILL IN THE ART**

The question of invalidity of a patent claim is determined from the perspective of a person of ordinary skill in the art in the field of the invention at the time of the named inventors' invention date. Thus, prior art must be evaluated from the perspective of one of ordinary skill in the field of the invention as of the time of invention.

You must determine the level of ordinary skill in the field of the invention. In deciding what the level of ordinary skill is, you should consider all the evidence introduced at trial, including but not limited to:

1. The levels of education and experience of the inventor and other persons actively working in the field;
2. The types of problems encountered in the field;
3. Prior art solutions to those problems;
4. Rapidity with which innovations are made; and
5. The sophistication of the technology.

## **N. INVALIDITY – ANTICIPATION GENERALLY**

An invention must be new relative to the prior art to be entitled to patent protection under the U.S. patent laws. If an invention is not new, it is said to be anticipated.

To anticipate a claim, each element in the claim must be presented in a single item of prior art or in a prior invention by another and arranged or combined in the same way as recited in the claim.

## O. INVALIDITY – ANTICIPATION BY PRIOR INVENTION

There are two types of anticipation at issue in this case. The first is based on prior invention by another. If the invention defined in a patent claim was invented by someone else before it was invented by the patent owner and the prior inventor did not abandon, suppress or conceal his or her invention, then the invention is “anticipated” by the prior invention. The alleged prior invention must include each and every element of the claimed invention; if there is an element missing from the alleged prior invention, then the prior invention cannot invalidate the claimed invention by anticipation.

In this case, Illumina contends that **Claims 1, 2 and 3** of CGI’s ’132 Patent and **Claims 1, 2, and 3** of CGI’s ’473 Patent are invalid because the invention defined in these claims was invented by Illumina’s former employee, Mr. Robert Kain, before the filing date of CGI’s patents. Illumina must prove separately, for each claim, that Mr. Kain was the prior inventor of the claimed methods. Illumina also contends that Claim 5 of the ’473 Patent is obvious based on its prior invention of the remaining claims of the ’473 Patent. Obviousness will be discussed in greater detail below.

To prove prior invention, Illumina must show by clear and convincing evidence that: (1) Mr. Kain conceived of the claimed invention before the filing date of CGI’s patents and (2) exercised reasonable diligence in reducing the invention to practice from the time just before CGI sought its patent until the time that Mr. Kain reduced the invention to practice.

Conception is the formation in the mind of the inventor of a definite and permanent idea of the complete and operative invention, as it is thereafter to be applied in practice. Conception requires a showing that the inventor possessed every feature recited in the claims, and that every limitation of the claimed invention was known to the inventor at the time of the alleged conception.



A claimed method is reduced to practice when all of its elements are successfully performed and has been shown that it will work for its intended purpose, or when it is fully described in a patent application filed with the Patent Office.

To establish diligence between conception and reduction to practice, Illumina must show that Mr. Kain exercised reasonably continuous diligence throughout the critical period, which is from the time just before CGI sought its patent until the time that Mr. Kain reduced the invention to practice. Under this standard, Illumina is not required to show that there was work on reducing the invention to practice every day – periods of inactivity within the critical period do not automatically destroy a claim of reasonable diligence. Interruptions necessitated by the everyday problems and obligations of the inventor or others working with him or her do not prevent a finding of reasonable diligence. That being said, the period during which diligence is required must be accounted for by either affirmative acts or acceptable excuses. The diligence inquiry is to determine whether the invention was abandoned or unreasonably delayed. If an alleged prior inventor does not diligently reduce his or her invention to practice, then he or she loses the right to invalidate a patent of another inventor who may have conceived later but filed for the patent earlier.

The oral testimony of the alleged prior inventor is not by itself enough to prove that he or she conceived of the claimed invention and was diligent in reducing it to practice. An inventor's testimony concerning conception and diligence of a prior invention must be corroborated by independent evidence. Evidence of diligence includes development efforts and work of non-inventors. Corroboration is determined by a rule of reason, whereby all pertinent evidence is examined to determine whether the alleged prior inventor's testimony is credible.

Conception, reduction to practice and diligence must occur in the United States.

If you find that Illumina has proven by clear and convincing evidence that Mr. Kain was the first to conceive of the methods claimed in CGI's patents and exercised reasonable diligence in reducing those to practice, you must then decide whether he abandoned, suppressed or concealed his invention. Abandonment, suppression, or concealment may be shown by proof of the prior inventor's active efforts to do so or may be inferred based upon the prior inventor's unreasonable delay in making the invention publicly known.

## **P. INVALIDITY – ANTICIPATION BY WRITTEN PRIOR ART**

The second type of anticipation in this case is based on written prior art.

If a device or process has been previously invented and disclosed to the public, then it is not new, and therefore the claimed invention is “anticipated” by the prior art. To prove anticipation, the alleged infringer must prove that the claimed invention is not new by clear and convincing evidence.

In this case, CGI contends that Claim 1 of Illumina’s ’290 patent and Claims 1 and 2 of Illumina’s ’055 patent are anticipated. You must determine what is the prior art that may be considered in determining whether each of these claims is new or anticipated.

To anticipate a claim, each element in the claim must be presented in a single item of prior art and arranged or combined in the same way as recited in the claim.

In determining whether every one of the elements of the claimed invention is found in the prior publications and patents identified by CGI, you should consider what a person of ordinary skill in the art would have understood from his or her review of the particular publications and patents.

## **Q. INVALIDITY – OBVIOUSNESS**

A claimed invention is invalid as “obvious” if it would have been obvious to the person of ordinary skill in the art at the time the invention was made. The issue is not whether the claimed inventions would have been obvious to you as a layperson or to me as the judge, or to a genius in the relevant field, but whether it would have been obvious to one of ordinary skill in the art at the time the invention was made.

In this case, each party contends that the asserted claims of the other party’s patents are invalid for obviousness.

Obviousness can only be found if you find that a reason existed at the time of the invention to combine the elements of the prior art to arrive at the claimed invention, and there would have been a reasonable expectation of success for doing so. In determining whether the claimed invention was obvious, consider each claim separately.

In determining whether an asserted claim is obvious, you must first consider the level of ordinary skill in the pertinent field that someone would have had at the time the invention was made, the scope and content of the prior art, any differences between the prior art and the asserted claims, and, if present, objective evidence or secondary considerations. You must determine what is the level of ordinary skill according to the instruction I gave you earlier.

Second, you must determine what is the prior art that may be considered in determining whether the asserted claims are obvious. A prior art reference may be considered if it discloses information designed to solve any problems or need addressed by the patent or if the reference discloses information that has obvious uses beyond its main purpose that a person of ordinary skill in the art would reasonably examine to solve any problem or need addressed by the patent.

Third, you must decide what difference, if any, existed between the claimed invention and the prior art.

In deciding obviousness, you must avoid using hindsight; that is, you should not consider what is known today or what was learned from the teachings of the asserted patents. As I instructed you earlier, you must put yourself in the place of a person of ordinary skill in the art at the time the invention was made.

In considering whether a claimed invention is obvious, you should consider whether, at the relevant time, there was a reason that would have prompted a person having ordinary skill in the field of the invention to combine the known elements in the prior art in a way the claimed invention does, taking into account such factors as (1) whether the claimed invention was merely the predictable result of using prior art elements according to their known function(s); (2) whether the claimed invention provides an obvious solution to a known problem in the relevant field; (3) whether the prior art teaches or suggests the desirability of combining elements claimed in the invention; (4) whether the prior art teaches away from combining elements in the claimed invention; (5) whether it would have been obvious to try the combinations of elements, such as when there is a design incentive or market pressure to solve a problem and there are a finite number of identified, predictable solutions. To find it rendered the claimed invention obvious, you must find that the prior art provided a reasonable expectation of success.

Finally, in determining whether the claimed invention is obvious, you should consider any of the following factors (called “secondary considerations”) that you find have been shown by the evidence:

- a. Whether the claimed invention was commercially successful as a result of the merits of the claimed invention;
- b. Whether others had tried and failed to make the claimed invention;

- c. Whether others copied the claimed invention;
- d. Whether the claimed invention satisfied a long-felt need;
- e. Whether others in the field praised the claimed invention;
- f. Whether persons having ordinary skill in the art of the invention expressed surprise or disbelief regarding the claimed invention;
- g. Whether the claimed invention achieved unexpected results;
- h. Whether others sought or obtained rights to the patent from the patent holder;  
and
- i. Whether the inventor proceeded contrary to accepted wisdom in the field.

When evidence establishes the presence of one or more of these secondary considerations, it tends to prove the inventions were not obvious. These factors should be considered along with all the other evidence in the case in determining whether the asserted claims would have been obvious. In considering this kind of evidence, you should consider whether the secondary consideration was attributable to the features of the asserted claims as opposed to features already found in the prior art.

## **R. INVALIDITY – LACK OF ENABLEMENT**

A patent must disclose sufficient information to enable or teach persons of ordinary skill in the field of the invention as of the effective filing date of the claimed invention to make and use the full scope of the claimed invention without undue experimentation. This requirement is known as the enablement requirement. If a patent claim is not enabled, it is invalid.

In this case, Illumina contends that the asserted claims of CGI's patents are invalid for lack of enablement. As the party challenging validity, Illumina bears the burden of establishing, by clear and convincing evidence, that the specification fails to satisfy the enablement requirement.

In considering whether a patent complies with the enablement requirement, you must keep in mind that patents are written for persons of ordinary skill in the field of the invention. Thus, a patent need not expressly state information that persons of ordinary skill would be likely to know or could obtain, such as what was well known in the art and what would have already been available to the public. Nor does the patent need to disclose step-by-step instructions or guidance for its claims to be enabled. In addition, the patent disclosure need not enable persons of ordinary skill to make a commercially viable product or to otherwise meet the standards for success in the commercial marketplace.

The fact that some experimentation may be required for a person of ordinary skill to practice the claimed invention does not mean that a patent claim is not enabled.

Factors that you may consider in determining whether persons of ordinary skill in the field of the invention would require undue experimentation to make and use the full scope of the claimed invention include:

1. the quantity of experimentation necessary and whether that experimentation involves only known or commonly used techniques;
2. the amount of direction or guidance disclosed in the patent;

3. the presence or absence of working examples in the patent;
4. the nature of the invention;
5. the state of the prior art;
6. the relative skill of those in the art;
7. the predictability of the art; and
8. the breadth of the claims.

No one or more of these factors is alone dispositive. Rather, you must make your decision about whether or not the degree of experimentation required is undue based upon all of the evidence presented to you. You should weigh these factors and determine whether or not, in the context of this invention and the state of the art at the time of the effective filing date, a person having ordinary skill would need to experiment unduly to make and use the invention from the disclosures in the patent coupled with information known in the art.



## **S. INVALIDITY – WRITTEN DESCRIPTION**

A patent must contain a written description of the method claimed in the patent. The written-description requirement helps ensure that the patent applicant actually invented the claimed subject matter. To satisfy the written-description requirement, the patent specification must describe each and every limitation of a patent claim, in sufficient detail, although the exact words found in the claim need not be used. When determining whether the specification discloses the invention, the claim must be viewed as a whole.

In this case, each party contends that the asserted claims of the other party's patents are invalid for failure to satisfy the written-description requirement. The party challenging validity bears the burden of establishing by clear and convincing evidence that the specification fails to satisfy the written-description requirement.

The written description requirement is satisfied if persons of ordinary skill in the field of the invention would recognize, from reading the patent specification, that the inventor possessed the subject matter finally claimed in the patent. The written-description requirement is satisfied if the specification shows that the inventor possessed his or her invention as of the effective filing date of the claimed invention, even though the claims may have been changed or new claims added since that time.

It is unnecessary to spell out every detail of the invention in the specification, and specific examples are not required; but enough must be included in the specification to convince persons of ordinary skill in the art that the inventor possessed the full scope of the invention. In evaluating whether the specification has provided an adequate written description, you may consider such factors as:

1. the nature and scope of the patent claims;

2. the complexity, predictability, and maturity of the technology at issue;
3. the existing knowledge in the relevant field; and
4. the scope and content of the prior art.

If you find that a party has proven by clear and convincing evidence that any of the asserted claims of the other party's patents do not contain adequate written description for the inventions recited in the asserted claims, then you must find that the claim(s) are invalid.

### **III. DAMAGES**

#### **A. DAMAGES – GENERALLY**

I will next instruct you on damages. You must not take these instructions as implying that either party is entitled to recover damages. Instructions regarding the measure of damages are given for your guidance in the event you find that Illumina or CGI has infringed one or more valid patent claims.

If you find that either Illumina or CGI is liable for infringement of one or more of the asserted claims, by making, using, selling, or offering for sale any of its accused products, and you find the asserted claims not invalid, you must determine the amount of money damages to be awarded to the patent holder. On the other hand, if you find that each of a party's asserted claims is invalid or is not infringed, then you should not consider damages for that party in your deliberations.

The patent holder has the burden of proving damages by a preponderance of the evidence. Although the patent holder is not required to prove the amount of its damages with mathematical precision, it must prove the amount of damages with reasonable certainty. You may not award damages that are speculative, damages that are only possible, or damages that are based on guesswork.

Damages are awarded on the sales of products that you find infringe (*i.e.*, that use the patented methods in the United States). Damages may also be awarded on sales of products that practice the patented methods in their normal intended use outside of the United States if, for those products, you find that (1) the infringement in the United States was a substantial cause of the sale of that product and (2) the infringing party made or sold the product within the United States.

If proven by the patent holder, the amount of damages must be adequate to compensate the patent holder for the infringement. The damages award cannot in any event be less than a reasonable royalty. You may not add anything to the amount of damages to punish an accused infringer or to set an example. You also may not add anything to the amount of damages for interest.

## **B. REASONABLE ROYALTY**

CGI and Illumina are each seeking damages in the amount of a reasonable royalty. A royalty is a payment made to a patent holder in exchange for the right to make, use, or sell the claimed invention. A reasonable royalty is the royalty payment that would have resulted from a hypothetical negotiation between the patent owner and the alleged infringer just before the infringement began. In considering this hypothetical negotiation, you should focus on what the expectations of the patent holder and the infringer would have been if they had entered into an agreement at that time, and if they had acted reasonably in their negotiations. In determining this, you must assume that both parties to the hypothetical negotiation believed the patent was valid and infringed and that both parties were willing to enter into an agreement. The reasonable royalty you determine must be a royalty that would have resulted from the hypothetical negotiation, and not simply a royalty either party would have preferred.

### **C. REASONABLE ROYALTY – RELEVANT FACTORS TO THE HYPOTHETICAL NEGOTIATION**

In determining the amount of a reasonable royalty, you may consider evidence on any of the following factors. This is not every possible factor, but it will give you an idea of the kinds of things to consider in setting a reasonable royalty.

1. Any royalties received by the licensor for the licensing of the Asserted Patents, proving or tending to prove an established royalty.
2. The rates paid to license other patents comparable to the Asserted Patents.
3. The nature and scope of the license, as exclusive or non-exclusive, or as restricted or non-restricted in terms of its territory or with respect to whom the manufactured product may be sold.
4. The licensor's established policy and marketing program to maintain its right to exclude others from using the patented invention by not licensing others to use the invention, or by granting licenses under special conditions designed to preserve that exclusivity.
5. The commercial relationship between the licensor and the licensee, such as whether or not they are competitors in the same territory in the same line of business.
6. The effect of selling the patented product in promoting other sales of the licensee; the existing value of the invention to the licensor as a generator of sales of its non-patented items; and the extent of such collateral sales.
7. The duration of the Asserted Patents and the term of the license.
8. The established profitability of the product made under the Asserted Patents; its commercial success; and its popularity.
9. The utility and advantages of the patented invention over the old modes or devices, if any, that had been used for achieving similar results.
10. The nature of the patented invention; the character of the commercial embodiment of it as owned and produced by or for the licensor; and the benefits to those who have used the invention.
11. The extent to which the licensee has made use of the invention; and any evidence that shows the value of that use.
12. The portion of the profit or of the selling price that may be customary in the particular business or in comparable businesses to allow for the use of the invention or analogous inventions.

13. The portion of the profit that arises from the patented invention itself as opposed to profit arising from unpatented features, such as the manufacturing process, business risks, or significant features or improvements added by the alleged infringer.
14. The opinion testimony of qualified experts.
15. The amount that a licensor and a licensee would have agreed upon (at the time the infringement began) if both sides had been reasonably and voluntarily trying to reach an agreement; that is, the amount which a prudent licensee—who desired, as a business proposition, to obtain a license to manufacture and sell a particular article embodying the patented invention—would have been willing to pay as a royalty and yet be able to make a reasonable profit and which amount would have been acceptable by a patentee who was willing to grant a license.
16. Any other economic factor that a normally prudent business person would, under similar circumstances, take into consideration in negotiating the hypothetical license.

No one factor is dispositive, and you can and should consider the evidence that has been presented to you in this case on each of the factors. You may also consider any other factors that in your mind would have increased or decreased the royalty the infringer would have been willing to pay, and the patent holder would have been willing to accept, acting as normally prudent business people.

#### **D. REASONABLE ROYALTY – APPORTIONMENT**

The amount you find as damages must be based on the value attributable to the patented invention, as distinct from unpatented features of the accused product or other factors such as marketing or advertising, or the patent holder's size or market position. A royalty compensating the patent holder for damages must reflect the value attributable to the infringing features of the product, and no more. The process of separating the value of the allegedly infringing features from the value of all other features is called apportionment. When the accused infringing products have both patented and unpatented features, your award must be apportioned so that it is based only on the value of the patented features, and no more.

If the claimed patented features are not the sole driving factor for customer demand for the accused infringing product, then you must perform what is called apportionment. When damages must be apportioned, the amount you find as damages must be based on the value attributable to the patented invention, as distinct from unpatented features of the accused product or other factors such as marketing or advertising, or the patent holder's size or market position. Put differently, when apportionment is required, a royalty compensating the patent holder for damages must reflect the value attributable to the infringing features of the product, and no more.

On the other hand, if demand for the entire accused product depends only on the claimed feature(s), then apportionment is not necessary even though the accused product includes non-patented features.



#### **E. REASONABLE ROYALTY – TIMING**

Damages are not based on a hindsight evaluation of what happened, but on what the parties to the hypothetical license negotiations would have agreed upon at the time of the hypothetical negotiation. Nevertheless, evidence relevant to the negotiation is not necessarily limited to facts that occurred on or before the date of the hypothetical negotiation. You may also consider, for example, evidence of usage after infringement started, profits earned by the infringer, and non-infringing alternatives.

## **F. REASONABLE ROYALTY – AVAILABILITY OF NON-INFRINGING ALTERNATIVES**

In determining a reasonable royalty, you may also consider evidence concerning the availability and cost of acceptable non-infringing alternatives to the patented invention. A non-infringing alternative is a way of providing the same or comparable functionality or achieving the same or a comparable result that does not require using the asserted claims in the United States. You may consider whether a party had the necessary equipment, know-how, and experience to implement the alternative and the time and cost to the party of implementing the alternative. An acceptable substitute must be a product that is licensed under the patent or that does not infringe the patent. An acceptable alternative must be a product that is licensed under the patent or that does not infringe the patent.

#### **IV. DELIBERATIONS AND VERDICT**

##### **A. DELIBERATION AND VERDICT – INTRODUCTION**

Now let me finish up by explaining some things about your deliberations in the jury room, and your possible verdicts.

Once you start deliberating, do not talk to the jury officer, or to me, or to anyone else except each other about the case. If you have any questions or messages, you must write them down on a piece of paper, sign them, and then give them to the jury officer. The officer will give them to me, and I will respond as soon as I can. I may have to talk to the lawyers about what you have asked, so it may take me some time to get back to you. Any questions or messages normally should be sent to me through your foreperson, who by custom of this Court is Juror No. 1.

One more thing about messages. Do not ever write down or tell anyone how you stand on your votes. For example, do not write down or tell anyone that you are split 4-4, or 6-2, or whatever your vote happens to be. That should stay secret until you are finished.

## **B. UNANIMOUS VERDICT**

Your verdict must represent the considered judgment of each juror. In order for you as a jury to return a verdict, it is necessary that each juror agree to the verdict. Your verdict must be unanimous.

It is your duty, as jurors, to consult with one another and to deliberate with a view towards reaching an agreement, if you can do so consistent with your individual judgment. Each of you must decide the case for yourself, but do so only after an impartial consideration of the evidence with your fellow jurors. In the course of your deliberations, do not hesitate to reexamine your own views and change your opinion, if convinced it is erroneous. But do not surrender your honest conviction as to the weight or effect of evidence solely because of the opinion of your fellow jurors, or for the purpose of returning a verdict. Remember at all times that you are not partisans. You are judges of the facts. Your sole interest is to seek the truth from the evidence in the case.

A form of verdict has been prepared for you. I will review that document with you in a minute.

You will take this form to the jury room and when you have reached unanimous agreement as to your verdict, you will have your foreperson fill in, date and sign the form. You will then return to the courtroom and my deputy will read aloud your verdict.

### **C. DUTY TO DELIBERATE**

Now that all the evidence is in and the arguments are completed, you are free to talk about the case in the jury room. In fact, it is your duty to talk with each other about the evidence, and to make every reasonable effort you can to reach unanimous agreement. Talk with each other, listen carefully and respectfully to each other's views, and keep an open mind as you listen to what your fellow jurors have to say. Try your best to work out your differences. Do not hesitate to change your mind if you are convinced that other jurors are right and that your original position was wrong.

But do not ever change your mind just because other jurors see things differently, or just to get the case over with. In the end, your vote must be exactly that—your own vote. It is important for you to reach unanimous agreement, but only if you can do so honestly and in good conscience.

No one will be allowed to hear your discussions in the jury room, and no record will be made of what you say. So, you should all feel free to speak your minds.

Listen carefully to what the other jurors have to say, and then decide for yourself.

#### **D. SOCIAL MEDIA**

During your deliberations, you must not communicate with or provide any information to anyone by any means about this case. You may not use any electronic device or media, such as the telephone, a cell phone, smart phone, iPhone, blackberry or computer, the internet, any internet service, any text or instant messaging service, any internet chat room, blog, or website such as Facebook, Instagram, TikTok, WeChat, WhatsApp, Snapchat, MySpace, LinkedIn, YouTube, or Twitter, to communicate to anyone any information about this case or to conduct any research about this case until I accept your verdict. In other words, you cannot talk to anyone on the phone, correspond with anyone, or electronically communicate with anyone about this case. You can only discuss the case in the jury room with your fellow jurors during deliberations.

**E. COURT HAS NO OPINION**

Let me finish up by repeating something that I said to you earlier. Nothing that I have said or done during this trial was meant to influence your decision in any way. You must decide the case yourselves based on the evidence presented.