Patent Search For Engineers and Lawyers
Prof. Shreya Matilal
Rajiv Gandhi School of Intellectual Property Law
Indian Institute of Technology, Kharagpur

Lecture – 04
Patentability – Novelty – II

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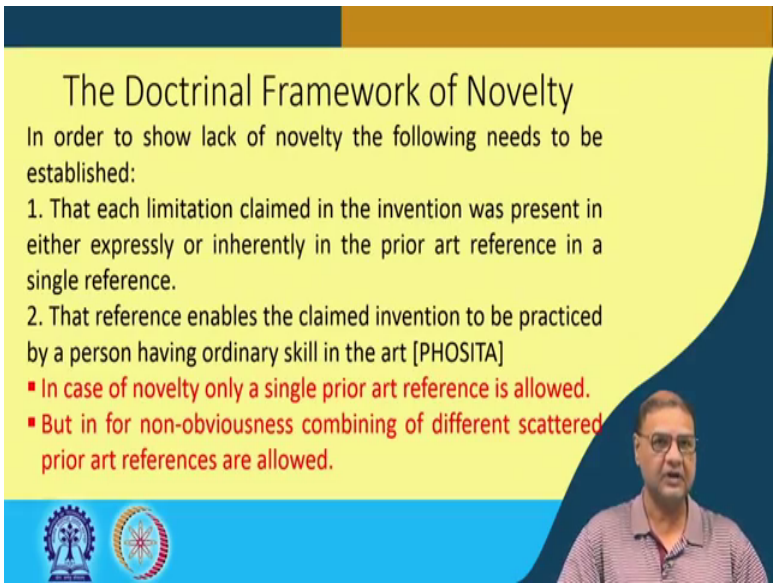

This is a continuation of my earlier lecture on Novelty. And, in the last slide of the last lecture we have seen, the prior art reference that should be taken into consideration for the purpose of for the for the purpose of understanding whether an invention is novel or not. In this part, we will be looking into the tech doctrinal framework the legal framework of novelty. We have seen that novelty is the heart of patent law.

Now, the principles of the doctrinal framework of novelty is basically it can be explained in two the, it has two element. Number 1; first of all the most important understanding is this each limitation claimed in the invention must be present either expressly or inherently in the prior art reference in a single reference. To be very precise we are not allowed to combine two different publication or one patent and one publication for the purpose of defeating novelty.

The limitation which has been claimed by the patent applicant must be present in a single prior art. It can be present either expressively it can be all it can also represent inherently, but it should be one single prior art. And, secondly, the reference must be something the

which enables the claimed invention to practiced by a person having ordinary skill in the art.

So, the prior art reference which has been referred for the purpose of defeating or holding novelty must not be something which is obscure. So, it must be something which actually by reading the prior art a person knowledgeable in the respective field of the technology would be able to basically practice that invention that is very very important for the purpose of novelty.

Now, here at the outset we also need to understand the fundamental distinction between the concept of novelty and the concept of non-obviousness. When it comes to novelty only one prior art has to be referred and he actually he we are not allowed to combine different prior arts for the purpose of defeating the novelty, but when it comes to non-obviousness in non-obviousness inquiry there a combination of different scattered prior art references are allowed. However, there are rules that how to actually combine prior arts and when will be discussing the non-obviousness requirement will be coming to that part.

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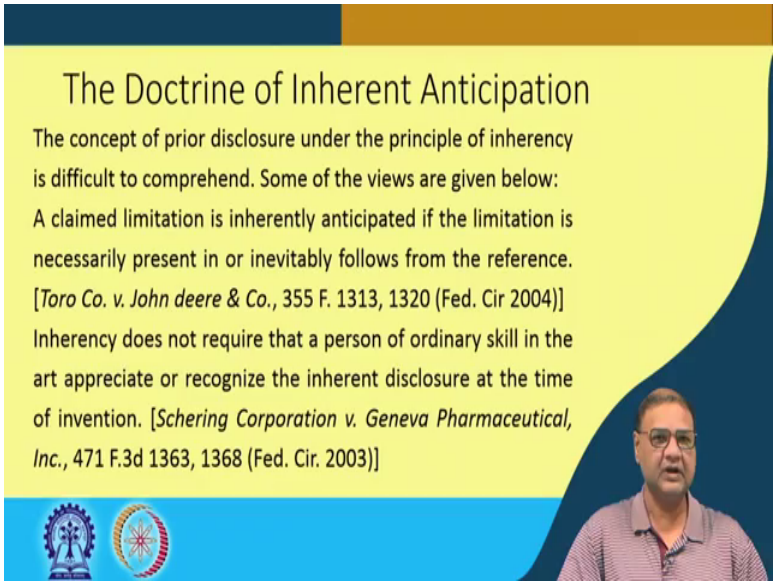

Now, as I have said that the most important factor in novelty is this that it may be present expressly. So, directly mentioned in a prior patent anticipation, directly mentioned in a prior publication it is something which is which is being the which is being sold in the market for a long time or it is something which forms part of the traditional knowledge

of the society that is one. But, the most complex doctrine here is the doctrine of inherent anticipation.

Now, the concept of prior disclosure under the principles of inherency is very very difficult to comprehend and see first of all the courts are also divided what is the exact scope of the doctrine of inherency. And a claim limitation the court is saying I am quoting a court case where the court has said: A claimed in limitation is inherently anticipated if the limitation is necessarily present in or inevitably follows from the reference.

Then the in another case the court says that inherency does not require that a person of ordinary skill in the art appreciate or recognize the inherent disclosure at the time of the invention. So, all these basically principles of law we will try to understand with the help of an example.

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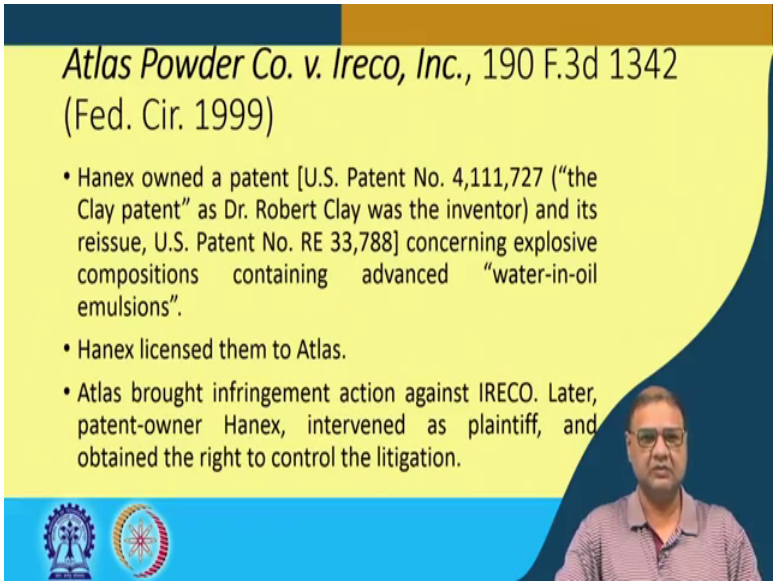

Now, here I we will be looking at actually an example and the example was regarding an explosive. Now, the as you see if in this slide the case name is Atlas Powder versus Ireco. What has happened here that actually there was an inventor his name is Doctor Robert Clay. He has actually invented a kind of explosive by using advanced type of water in water-in-oil emulsions.

Now, after this actually he was a part working with Hanex and then Hanex was having the ownership therein. And, later on Hanex actually issued a license to Atlas and Atlas was a licensee and Hanex was the licenser. Then, what has happened when after obtaining the license Atlas the plaintiff of the first plaintiff in this case they filed an infringement action in against Ireco, and later after the filing of the case the Hanex itself the original licensor joined the litigation and they have also obtain the controlling right of the litigation.

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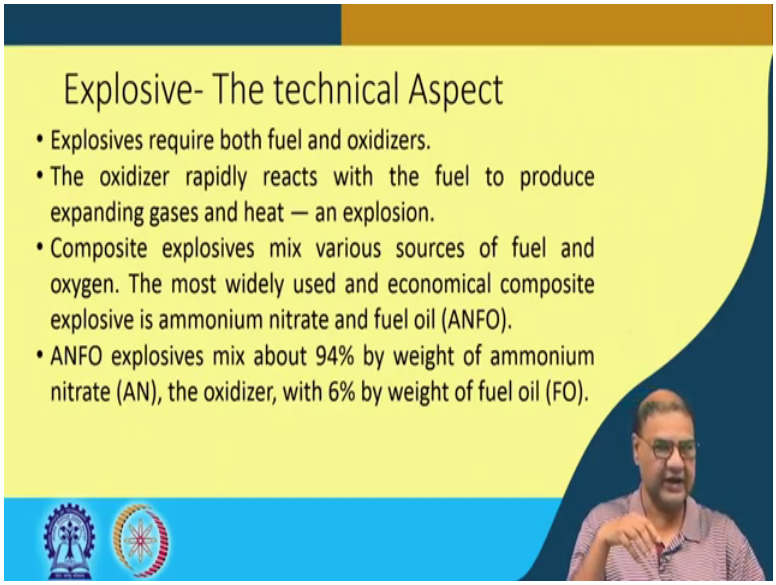

Now, we will look into the explosive technology first and then we will try to find out that what are the new contributions which have been made by Hanex and or Doctor Clay in the in this regard and then we will try to understand the court decision in this perspective.

Now, as we know that any explosive requires two things. First of all there has to have a fuel and there has to have oxidizers. Now, this oxidizers actually they react very rapidly with the flow fuel to produce expanding gases and heat and then when the oxidizer reacts with the fuel and it produce gas and heat we call it an explosion.

Now, to be very precise, composite explosives it may contain various sources of fuel and oxygen. However, the most commonly used and the most economical composite explosive is called is actually we know this is called Ammonium Nitrate and Fuel Oil ANFO. Now, what does it do? The ammonium nitrate fuel oil it mixes about 94 percent of ammonium nitrate with the oxidizer, 6 percent of what you call the fuel oil.

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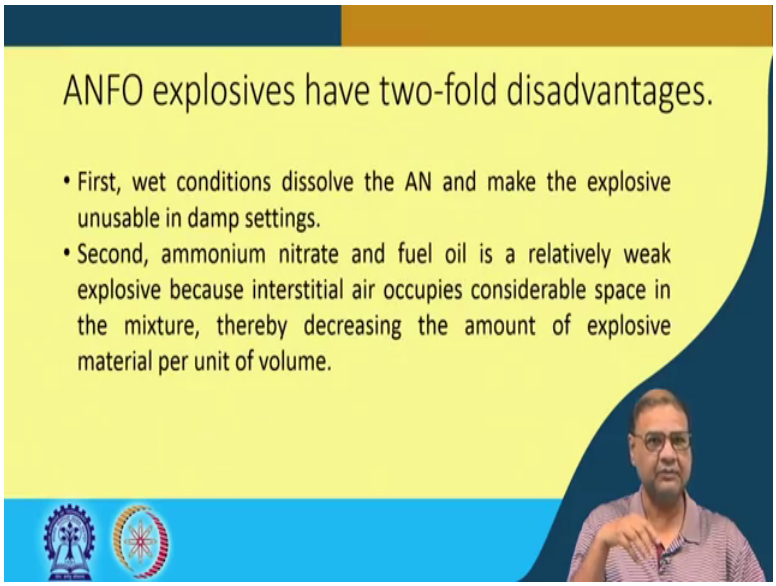

Now, there are certain problems with this ANFO explosives. So, what are the problems? Number 1: if the weather is wet and the wet condition that what will happen? It will dissolve the ammonium nitrate and it will as a result of that since water dissolves ammonium nitrate and then it will make the explosive unusable. When someone wants to use these explosive because of the damp and what you call wet weather condition ammonium nitrate is basically it would be, it would not be working.

Secondly, there is another problem. The another problem with this ANFO explosive is this; this ammonium nitrate and fuel oil is very weak explosive because the interstitial air occupies considerable space in the mixture. And, as a result of this air what happens? The explosive material actually it is what is happened what happens that it decreases the amount of explosive material per unit of volume. Because of the air inside; because of the air inside what happens the explosive is the amount of explosive per unit volume is very less.

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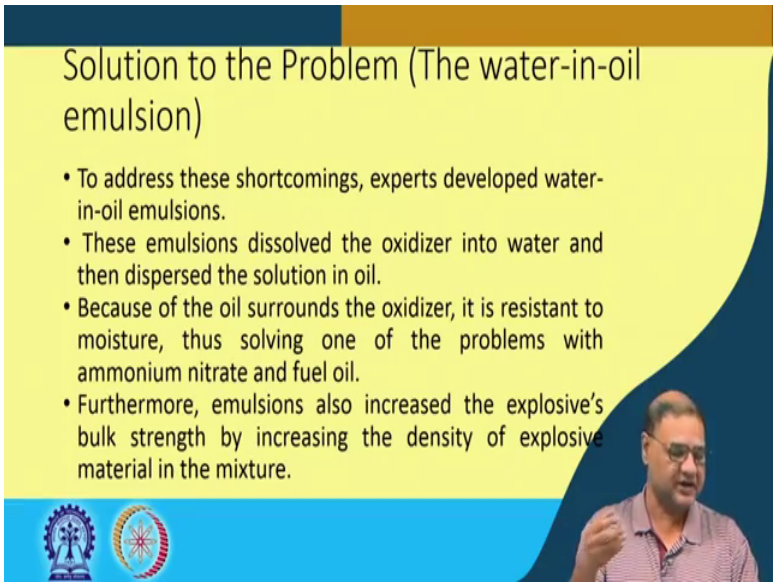

And, in order to address these two problem there are the they experts they come out with solutions. What kind of solutions they come out with? The solution is numb is a very simple solution. First of all what they will do? They will the solution is water-in-oil emulsions. Water-in-oil emulsion what it does? He dissolves these oxidizer into water and then it actually spread it to the oil dispersed it to the solution in the oil.

And, now what is happening? The solution is now surrounded by the oil and as a result of that it is actually moisture would not be able to creep into the mixture the oxidizer. And, thus actually it solves the problem of damp weather; it solves the problem of wet weather. There is one more thing we have also seen that because of the air inside the volume is volume decreases and as a result of this emulsion what has happened what happens actually it increases the explosives bulk strength by increasing the density of the explosive material in the mixture.

So, the weak explosive because of this what you call the oxidizer dissolved in water and that solution is actually dispersed over the oil and as a result of that the volume has increased and because of the increased volume now this is no longer and weak explosive, but it becomes stronger explosive.

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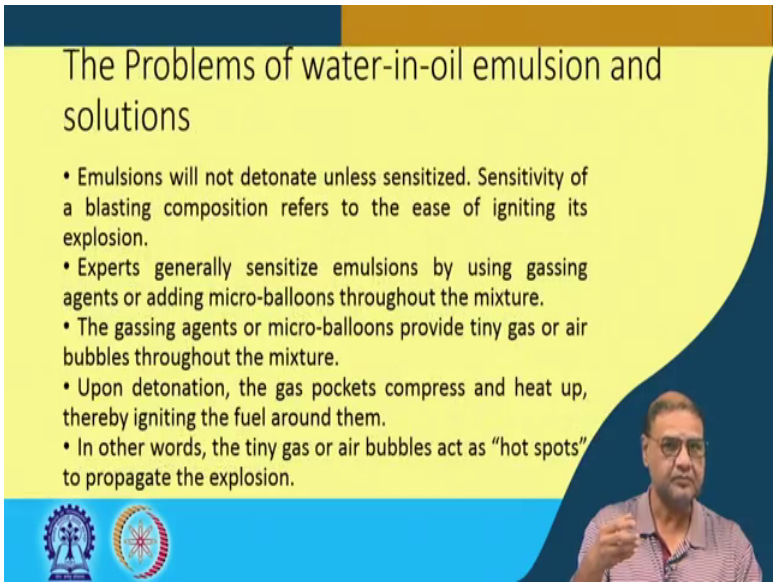

Now, however, this water in oil emulsion also does have certain difficulties and demerits. So, what are the demerits and what you call the difficulties or disadvantages of this oil in emulsion? First of all this emulsion it would not detonate very easily, it is not that sensitive. And, to be very precise sensitivity here means the sensitivity as I have mentioned in this slide, sensitivity of a blasting composition refers to the ease of igniting its explosion, how easy to what you called ignite the explosion and because this emulsion is although it is a strong what you call because of the increased volume it is strong explosive, but it is not very easy to sensitize the explosion.

And, then what we need to do in order to actually make it experts what they do to sensitize the emulsion, to increase the capability of ignition what they do? They actually use gassing agent and they sometime use micro-balloons throughout the mixture and what does this balloons micro-balloons and gassing agents they do? They these micro agents and gassing agent they there are air bubbles throughout the mixture and upon declination what has happened the gas pockets the gas pockets which are have been created by adding gassing agents or micro balloons come they compress and then heat up and thereby they ignite the fuel around them.

In other words what happen these actually here the places where air bubbles existing, these act as hotspot to propagate a powerful explosion. So, this is the problem in the water oil emulsion and the solution which have been provided by the experts.

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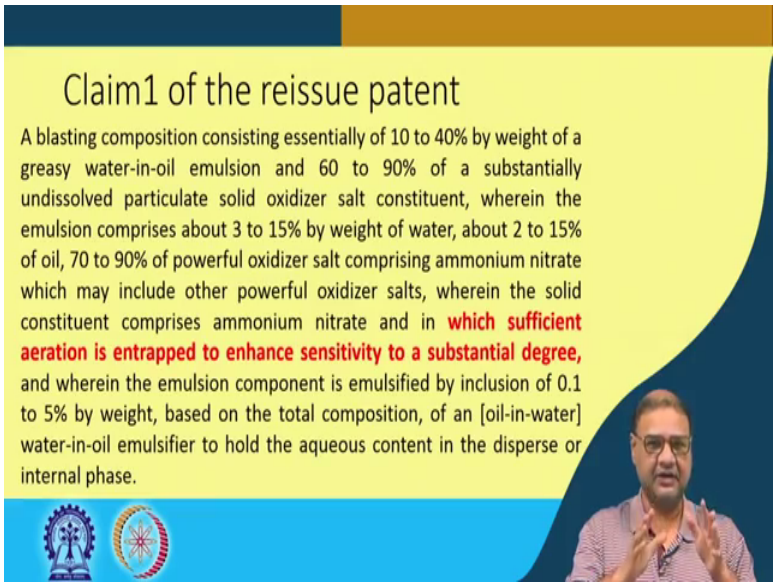

Now, we will come to the claim one of the reissue patent and I will read to understand the contribution the so called contribution which has been made by doctor Clay and with the patent which is owned by what you call by Ireco now sorry which is which is basically the clay the patent which is held by the licenser and which has been licensed to the to Ireco.

Now, I will read out. A blasting composition consisting essentially 10 to 40 percent by weight of the greasy water-in-oil emulsion and 60 to 90 percent of a substantially undissolved particulate solid oxidizer salt constituent, wherein the emulsion comprises about 3 to 15 percent by weight of water, about 2 to 15 percent of oil, 70 to 90 percent of powerful oxidizer salt comprising ammonium nitrate which may include other powerful oxidizer salt.

Wherein the solid constituent comprising comprises ammonium nitrate and in which sufficient aeration is interrupt to enhance the sensitivity to a substantial degree and wherein the emulsion component is emulsified by inclusion of 0.0 0.1 to 5 percent by weight based on the total composition of oil of an oil-in-water emulsifier to hold the aqueous content in the disperse or internal phase. What is what now what has happen?

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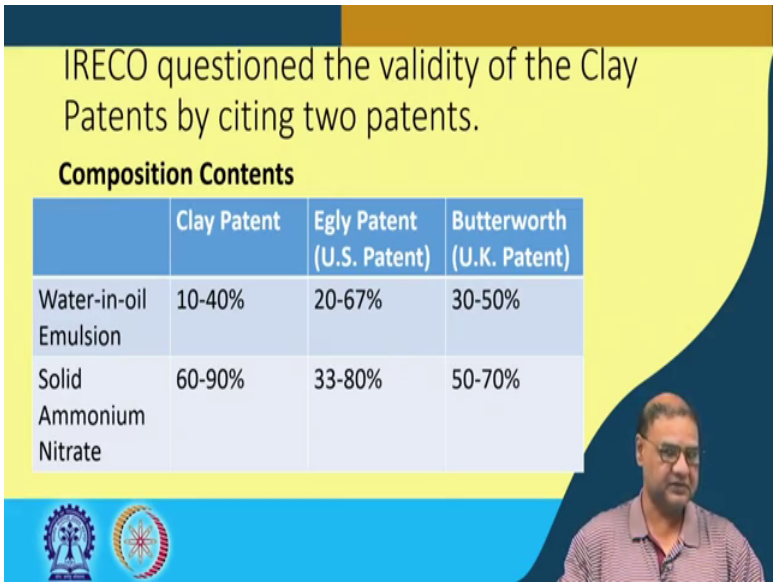

Then when this suit was file the defendant that is Ireco they questioned the validity of this patent and in order to they are questioning that whether this is novel at all. So, in order to defeat the novelty of Atlas Powders patent which they hold in the capacity of the licensor they have cited two different patent; one for the US and the other from the UK.

Now, here in this slide I will be giving a comparative chart between the patent; the patent of the plaintiff and the patents which are being cited by the defendant. Now, let us look into the composition of contents in the patent.

Now, first of all Clay patent means the plaintiffs patent and Egly patent means the patent which is the US prior art and the Butterworth patent is the patent which is the UK prior art. Now, when it comes to composition contain water in oil emulsion in the plaintiffs patent is 10 to 14 40 percent whereas, in the US prior art it is 20 to 67 percent. And, when it comes to the UK prior art as you can see it is 30 to 50 percent.

Now, let us come to the other component this solid ammonium nitrate composition. In in the plaintiffs actually patent it is 60 to 90 percent, in the US prior art it is 33 to 80 percent and when it comes to the UK prior art it is 50 to 70 percent.

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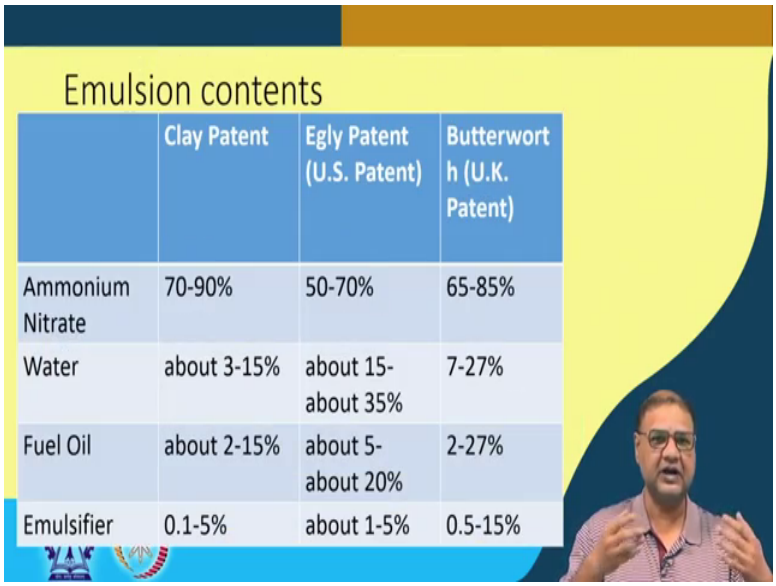

Now, let us look into the other element, the emulsion contents. Now, this comparative chart again tells us actually we find that when it comes to the plaintiffs Clay patent ammonium nitrate is 70 to 90 percent; when it comes to the US prior art we find it is 5 to 70 percent, and when it comes to the UK prior art it is 65 to 85 percent.

Now, the next component to water in the plaintiffs patent it is 3 to 15 percent; in the u US patent it is 15 to about 15 to about 35 percent; in UK patent it is 7 to 27 percent and in when it comes to fuel oil in plaintiffs patent is 2 to 15 percent and then when it comes to the US patent it is 5 to 20 percent and then in UK patent is 2 to 7 27 percent.

Emulsifier in Clay patent it is 0 to 1.5; in US patent it is 1 to 5 percent and then in the UK patent is 0.5 to 15 percent. So, as we can see the from this comparative chart this slide and the next slide that the ranges which are being mentioned by the plaintiff is also available in the in these two prior art and more or less the ranges are almost same and similar.

However, as we will we see in the patent claim the claim number 1, this sufficient aeration entrapped to enhance the enhanced sensitivity to a substantial degree this part was not present in the cited to prior arts. And, in respect of this actually the plaintiffs the plaintiffs had claim novelty and as a result of this a patent was granted.

And, when they filed the patent infringement so, the defendant objected that how come this is patented because this these two prior art the they sufficiently disclose the invention which is mentioned in the plaintiffs patent.

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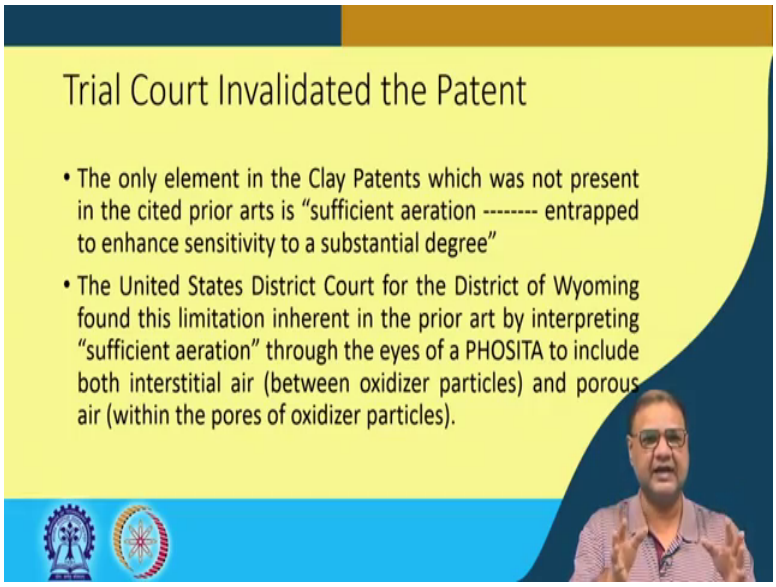

The plaintiffs says now that this what you call what we have seen that the sufficient aeration interrupt to hence enhance the sensitivity to a substantial degree this was not present and this is the novel part of the prior this is the novel part of the plaintiffs invention which was not present in the two cited prior arts.

The United States District Court for the District of Wyoming found this limitation inherent in the prior art by interpreting that sufficient aeration any anyone who is having the knowledge about explosive he or she would read it he or she would read it in the prior art although it has not been expressly mentioned in these two prior arts.

So, this interstitial air between the oxidizer particle and the porous air between the oxidizer particle anyone who is having knowledge about those explosive they will be constrained that this is existing although this was not expressly indicated in the prior to prior art preferences.

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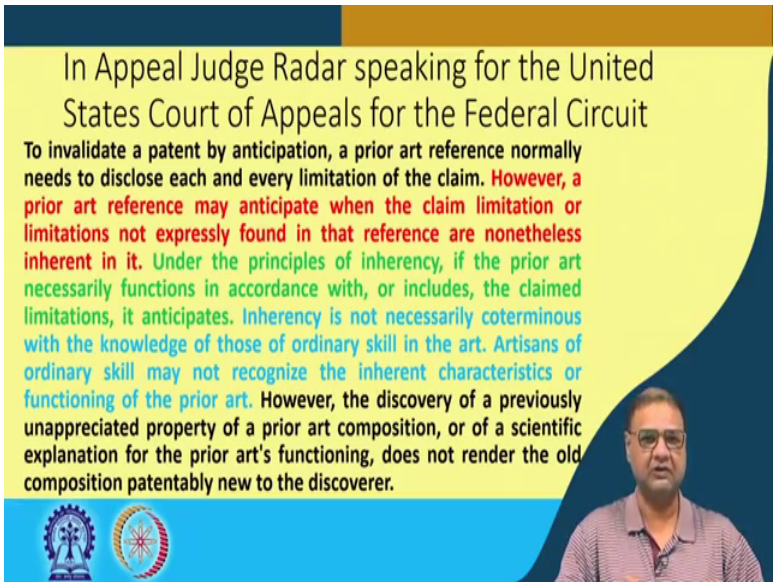

Now, when the district court said that the plaintiffs the plaintiffs patent is invalidated. The plaintiffs filed an appeal before the federal circuit court of appeal and if this in this regard I just want to tell mention here that here they do have in United States a specific court of appeal that deals with all patent appeal and they have a jurisdiction throughout United States.

Suppose, a case actually from a particular district in India will go to the particular high court say for example, if a dispute arises in the district of Paschim Medinipur, the whether it is a patent dispute or whether it is a trademark dispute or a dispute relating to family issues it would go to the High Court at Calcutta. But, in in USA also the provision is same when it relates to other issues, other federal issues it would go to the respective circuit court of appeal.

For example, if something happens in in in ew York city the and if it is a matter relating to the federal laws in that case New York district court would be trying it and from there appeal would lie to the second circuit court of appeal. But, if it is a matter involving say patent in that case the trial would take place in the district court or Southern District Courts say Southern District Court of New York, but the appeal would go to Washington DC where the Federal Circuit Court of appeal the specialized patent appellate court is situated.

Now, it the from the trial judgment the case goes to the Federal Circuit and which is; obviously, manned by technical experts, those who are having understanding of technology and as well as law they become judge of that specialized appellate court. Now, here in appeal also the Federal Circuit Court of appeal they upholds the they uphold the decision of the District Court.

And, and to be very precise in this case this judgment was written by one of the famous American patent judge Justice judge Randall Radar and here he said that where the district court has said that the although the limitation was not specifically mentioned in the prior art, but it was inherently a part of the prior art. This actually this holding of the trial court was a upheld by the appellate court.

Now, here the court place down the principles of anticipatory and in inherency by the doctrine of anticipation and this is one of the most important legal principle in patent law. Now, first this is actually a part the operative part of the judgment I will read it out and then I will explain the points mentioned here.

Now, we have seen this is I will read it out first to invalidate a patent by anticipation, a prior art reference normally needs to disclose each and every limitation of the claim. However, a prior art reference may anticipate when they claim limitation or limitations not expressly found in that reference are nonetheless inherent in it. Under the principles of inherency, if the prior art necessarily functions in accordance with, or includes, the claimed limitation, it anticipates.

Inherency is not necessarily coterminous with the knowledge of those of ordinary skill in the art. Artisans of ordinary skill may not recognize the inherent characteristics or functioning of the prior art. However, the discovery of a previously appreciated property of a prior art composition, or of a scientific explanation for the prior art's functioning, does not render the old composition patentably new to the discoverer.

So, this is the principle of inherency we will try to understand. First of all, the court has emphasized that there can be an inherency, and these inherency in respect of the of those part which has not been expressed is stated in the prior art reference. The court emphasized on the fact whether actually a person knowledgeable in the art by reading the prior art, whether he or she is able to anticipate that or not is not the issue.

The issue is this that the artisans of ordinary scale may not recognize they may not recognize the inherent characteristics of the functioning of the prior art, but still it may be something which is underlying the prior art which has not been explicitly stated therein. Now, this is the principle of inherency which is very very important in patent law at the outset therefore, we must remember that the claim limitation must not be present in a prior art either in explicit format or in what we call dormant format or in a format which is not expressed.

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Now, in addition to that the court also actually come out with the other logic to diff to afford the trial court decision and we will be discussing this in an elaborate manner when we discuss the principle of novelty, but at least try to understand it this point before we conclude this class.

Now, what is actually this is called the teaching away irrational and teaching in and teaching away irrational is more frequently used in the non-obviousness doctrine. But, what has happened? That if one reads the patent specification and the patent application of the US prior art the Egly patent there is a mention and this is the express line which has been mentioned in the patent specification, fill all spaces in between each particle to give added density.

So, if a expression like this fill all spaces in between each particle to give added density is mentioned in a prior art, is it not referring to the air bubble or what you call micro-

balloon creation? Micro-balloon creation and air bubble creation to basically to sensitize the explosive is it not a part, is it not actually in a tacit way, is it not been mentioned in the prior art?

Therefore, the prior art is not actually the teaching the others teaching the subsequent developers not to venture into that area, rather than it is actually teaching them away from that and they are saying that if you have any other alternative solution please go for the because this solution is something which is a part of my patent which is a part of the prior art. With this, I conclude today's lecture.