Dr. Lee De Forest vs. O. B. Moorhead

By O. B. Moorhead

The subject of Vacuum Tube detectors has been very well covered in the past year and reference to any publication dealing with radio will reveal a mass of technical data covering the operation, circuits and characteristics of the various types of these devices. Therefore I have eliminated all matter dealing with this phase of the subject. A summary of the suit recently heard in the U. S. Federal Court and the Opinion of Judge Van Fleet shall be the subject of the following article.

On the fifteenth day of February, this year, the De Forest Radio Tel. and Tel. Co. filed a complaint against Mr. Hyde and the writer, who are co-inventors of the Electron Relay, alleging infringement upon seven of his patents. The defense of this suit was immediately taken up and local radio experts were called upon to submit testimony in our behalf. Mr. Haller, of San Francisco, filed a lengthy affidavit regarding the action of all types of vacuum detectors. No trouble was spared to collect data for this affidavit. Pages from the writings of authorities on this subject were copied and incorporated in his testimony and the completed deposition largely offset the showing of Mr. John Stone of the De Forest Company. Mr. H. R. Sprado, of San Francisco, prepared a valuable affidavit touching upon the theory of vacuum tube detectors. Mr. Hyde filed evidence covering the manufacture of the Relay, while the writer submitted several depositions on the operation and manufacture of the tube. The firm of White and Prost was retained for the defense and Mr. William K. White prepared an argument which dealt with all types of detectors showing the advance and difference in each.

After this evidence was filed, the De Forest Company brought forth several counter affidavits in which they attempted to show how little radio men upon this coast knew of the subject. It was also charged that the defendants were operating in a secretive manner. This was done to create an unfavorable impression of the defendants. The De Forest Company was partially successful in this, as Judge Van Fleet mentions an unfavorable impression made upon this mind as to the manner in which the defendants practiced their rights in the devices they were manufacturing. The only reason De Forest was successful in this, was due to the fact that we were struggling along with very limited capital and our companies were not well known. However, when our asserted rights were contested we were quick to come forth and defend them.

Of course the prosecution endeavored to surround the question of infringement with so many petty issues that the actual question was hard to decide. Judge Van Fleet made a very fair decision, under the circumstances, by merely requiring a bond from the defendants in order to insure our appearance at the final trial.

John H. Miller, for Plaintiff.

William K. White, for Defendants.

The Court (orally): I fully recognize the value and propriety of the general rule that the question of infringement, if at all close should not be prejudiced by determining it even potentially on a hearing of this kind. I think affidavits, being wholly ex parte, are very inefficient as a medium of reaching the best results on any close question of fact to be deduced from evidence. The introduction of evidence in open court in the usual manner, where the right and privilege of cross examination may be had is much more efficient for bringing out the full truth; that is so essential frequently in determining the somewhat refined questions arising in cases of this character; and

I am inclined to think that the showing here is not such as should induce the court to depart from the protection of that rule, there being here no showing of a former validation of this patent, nor, to my mind, any such general public recognition of its validity as would meet the necessities of the court in the exercise of its discretion in favor of granting an injunction. But as I have doubtless indicated by my suggestions to counsel for defendant in my comments upon some features of this showing, there has been made upon by mind a very unpleasant impression as to the character of some of the circumstances under which the defendants have initiated and practiced the rights they assert to the device complained of. It may be that their claim is the result of perfectly honest discoveries by the defendants who have put forth this alleged infringing instrument.

Now that the aspect of the showing here on the part of the plaintiff has not to my mind been sufficiently met and dissipated by the defendants' showing, and while, for the reasons stated, I do not think it is a case for an injunction, I do think that the case is a proper one to require the defendants to furnish an indemnity bond to the plaintiff, at least until such time as the case under submission in New York may be determined,—that they will respond, should their device be declared an infringement, in any damages that they may cause the plaintiff in the meantime by continuing to put their device upon the market; that is, of course, unless they prefer to let an injunction issue. If the defendants prefer to have an injunction to giving a bond, I will grant the motion. The only difficulty is the amount of the bond. There has been no sufficient showing as to the extent of the traffic. (To Mr. White.) Do you know anything as to the extent of their business?

Mr. White: No, your honor; but I do know that Mr. Hyde makes all of his bulbs himself.

The Court (to Mr. Miller): Have you any basis on which to estimate the extent of the injury that you think you will suffer?

Mr. Miller: Our affidavits show that the damage is very extensive, because the publications of advertisements of these devices and their sale have been very extensive. In one instance there were nearly two hundred sales, nearly all of the defendants' devices, and consequently the sales of our device were curtailed to that extent, and I would refer your Honor on that point to certain advertisements. Here is the "Electrical Experimenter" and on page 282 we find, "New Price. Detector Amplifier and Oscillator $5.25," our price was $7.50 when this litigation started. Now we have had to reduce our price. It is signed at the bottom "Audiotron Sales Company, San Francisco." Then on another page in this same magazine, on page 273, we find the same thing. "Improvement Notice." It says it is an improvement, but the cut shows that it is the same device. "Double filament $5.50; Single filament $4.00." And this is signed the "Pacific Laboratories Sales Company, 534 Pacific Building, San Francisco." That is Mr. Moorhead, the other defendant. After the split up he began manufacturing them under the name of the Pacific Laboratories Sales Company. Then further along, on page 289, we find another advertisement. "Double Filaments"——

The Court: Well, Mr. Miller, this doesn't furnish me with any idea of the demand for the article. What is the demand?

Mr. Miller: Oh, the demand is very great. The demand is mostly for amateur wireless operators. They buy one of these things. They don't last forever, and they have to buy another one. There are thousands of wireless operators. All of them take these papers to see what is coming out every day. I spoke with the attorneys, or conferred with the attorneys, in regard to this matter in case the court should decide that it was most too stringent a course to require a bond, and they said that they thought the bond ought to be $15,000. Apprehending that there might be some questions in regard to the matter, I asked those questions of them and that is the answer they gave. I think a bond in about the sum of $10,000 would be about the right sum to give, because you can get a bond for $10,000 practically as easy as one for $5,000. They would be liable on the bond only in case the court should find there was infringement. If there has been no infringement, as they so confidently assert, they won't be out anything except the premium.

The Court: Of course if there is no infringement they would be enti-

tled to recover the amount of the premium from your client as proper costs or disbursements.

Mr. White: You would have to put up a collateral security to get a bond. To make a large size bond is the same thing as to grant an injunction which I understand the court does not wish to do.

Mr. Miller: A bonding company always requires some kind of a guarantee. You can't expect a bonding company to give a bond without some kind of security to themselves.

The Court: Are these various defendants all offending in the same way?

Mr. Miller: No, but Moorhead and Hyde and Cunningham are all in the same boat.

Mr. White: No; Moorhead sells only the bulbs that he makes himself. Hyde makes the bulbs for Cunningham.

The Court: Well, of course I am bound by the showing as to what the situation was at the time the suit was brought.

Mr. White: Well, at the time the suit was brought there was no connection between Moorhead and Hyde.

Mr. Miller: Why, your Honor. Their own affidavits show that Moorhead and Hyde were the joint inventors.

The Court: If Cunningham sells them for Hyde, he is a sort of secondary infringer.

Mr. White: Mr. Moorhead sells only his own bulbs. Hyde and Moorhead separated in the spring of last year.

Mr. Blum: May I say a few words your Honor, in regard to the other defendants?

Mr. Miller (to Mr. Blum): I was just going to take that up with the court. (To the Court): In regard to the Haller Electric Co. and G. F. Haller. Mr. Blum here represents those two defendants. They have a little retail store down here on Market St. in which they sell Electrical Appliances, and among other things they have secured these bulbs and sold them, and for that reason they are joined in the suit; but I understand that they have discontinued selling the bulbs since this suit was brought, and that they do not intend to sell any more of them until this matter has been determined. I think that as to them a small bond, say in the sum of $500, would probably cover what the court has in mind. But as to the other defendants, Moorhead, Cunningham and Hyde, and the Audiotron Sales Company, I think that the bond against them ought to be in a sufficient amount to show that this is really a serious matter and not a mere matter of paper and insignificance, and I think that a bond of $10,000 would not be excessive, because I really think that we have sustained more damages than that.

Mr. White: If the Court please, as showing the disposition of counsel to ask for excessive bonds, I will say that in the Sherman Clay case counsel asked for a bond of 500,000 dollars, and your honor granted a bond of $5,000.

Mr. Miller: You can't draw analogies of that kind.

The Court: I suppose counsel is merely referring to the general tendency of attorneys to exaggerate.

Mr. Miller: Furthermore, counsel is wholly mistaken in regards to his facts. I consented to the amount of the bond in the Sherman Clay Company case. The case where the $500,000 bond was asked was in the Columbia Graphophone case.

Mr. White: That is all the more favorable to us, because the Columbia Graphophone Company is a larger company and sold millions of devices, and in that case your Honor only required a bond of $5,000. As I say this is a small business carried on by Moorhead and Hyde.

The Court: I will require a bond at the hands of Mr. Hyde in the sum of $4,000, and the same in the case of Mr. Moorhead; and from Mr. Cunningham a bond in the sum of $1,000. I don't think the other calls for a bond,—that is the Haller.

Mr. Miller: I suppose the order will be in the usual form.

The Court: Unless the bonds are given within a certain period, an injunction will issue.

Mr. White: I ask that that period be reasonable time—for five days.

The Court: Very well.

Mr. Miller: In regard to Cunningham, I would like it understood that if I can obtain data showing that our damages will be much larger than the amount of the bond as fixed by the court, that I may make a motion that the amount of the bond be increased.

Mr. White: That is double liability. Cunningham simply handles the

bulbs made by Hyde, and Hyde will be under a large bond.

The Court: That may be understood as to all the defendants. If you can furnish me with data showing that your damages will not be covered by the bonds as fixed, I will entertain a motion to increase the several amounts.

Since the above decision, De Forest has withdrawn the original complaint in which he alleges infringement on all seven patents and has filed a new complaint, in which he asserts infringement on one patent only. Had the case been left in the original form some very interesting questions would have been discussed. Even as it is, a very delicate point is to be decided, that is the difference between a gaseous medium and an Electronic Emission. De Forest says in the patent upon which he claims infringement, "The objects of my invention are to increase the sensitiveness of oscillation detectors comprising in their construction a gaseous medium by means of the structural features and circuit arrangements which are shown herein."

In the Electron Relay we claim a modification of the pure electron current flowing between the hot cathode and the relative cold anode by means of a grid interposed between the cathode and anode.

The difference between the Audion as patented by De Forest and the Electron Relay can be demonstrated practically in this manner:

If a De Forest Audion is exhausted to the degree of vacuua to that which the Electron Relay is carried, the result is that the Audion is so insensitive that it may be called in-operative. The same applies to the Electron Relay when exhausted to the limited degree so as to procure a gaseous medium as patented by De Forest, the Electron Relay in that case being in-operative.

We can produce any number of Relays that display practically the same operating characteristics. This is impossible with the Audion.

In the Electron Relay we have incorporated metals which involve the theory of photo electric discharge. What part this discharge plays in the operation of the tube is exceedingly complex and rather tentative. But, if the plate and grid elements are manufactured of other materials that occupy different positions in the Electro-Chemical series, a great difference in the operating characteristics is observed.

There is no doubt that the Electron Relay and the Audion differ essentially in the mode of operation, but, it is a delicate matter to decide inasmuch as we can detect the electron only by the effects produced by it.

RADIO CONSTRUCTORS LEAVE MARE ISLAND

The radio crews named for installation of the new ejuipments at Point Loma and Eureka Naval Radio Stations will leave Mare Island November 27. Ten men will be sent to equip the Pt. Loma station, while five will be sent to Eureka.

Among the engineers appointed to install the Eureka set, is Mr. G. S. Hubbard, formerly of the Marconi Construction Department in San Francisco and who has been in the employ of the Mare Island Radio Laboratory for many months.

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