Q. That is all we are interested in as far as this particular question is concerned.

MR. WILSON: We are bringing Dr. McLeod down from the University on this point so we don't have to labour it now.

JAMES McMAHON, having been first duly sworn, examined by Mr. Wilson, testified as follows:

Q. Mr. McMahon, you are employed in the Coalhurst mine and you were employed in the Coalhurst mine on December 9th?

A. I didn't work on December 9th.

Q. What is that?

A. I didn't work on December 9th.

Q. You were employed there at that time though?

A. Oh, yes, I had a job.

Q. And you were an assistant to W. McMahon, the last witness?

A. Yes.

Q. Are you an electrician?

A. Supposed to be.

Q. How long have you been working at electrical work?

A. About twelve years.

Q. How long have you been working in this mine?

A. Been working 1920, 1921.

Q. Since 1921?

A. Oh, I have been about fifteen years as an electrician.

Q. And what were your duties at the mine?

A. Repairing.

Q. Repairing electrical...

A. ...apparatus.

Q. And anything that went wrong with the electrical apparatus?

A. Any breakdowns, yes.

Q. You were there to repair it?

A. Yes.

Q. And you would carry out certain repair work in connection with electric safety lamps, would you?

A. Mostly all this last three or four years.

Q. That is, if a cable became broken you would repair it?

A. Yes.

Q. And I suppose the result was that you had a number of patched up cables on your electric light lamps, would that be true?

A. Yes.

Q. How many of them, can you say, had been patched of the ones that were in active operation?

A. I would say about twenty, around there.

Q. About twenty had been patched up at one time or other?

A. Yes. That is, if they are too bad we would put a new cable in. If they could not be patched, if we had to make them too short we just took them out and put a new cable in.

Q. And do you know whether that lid or box containing the battery, even though locked, might be sprung open by striking a projection of some kind in the mine?

A. Oh, yes, sometimes.

Q. That would happen frequently?

A. Oh, yes.

Q. If that lid came open would there be any danger of a spark from that battery?

A. There would be a little, I guess.

Q. How could it spark?

A. Any electric apparatus that breaks connection always leaves a little spark of some kind.

Q. If the poles of that battery became connected with a wire of any kind you would get a considerable spark, wouldn't you?

A. Off a battery?

Q. Yes?

A. I don't think. It would be a small spark off that mine battery.

Q. I think the manager told us that you could get sufficient current through a wire to light a cigarette?

A. Yes, if you short the battery.

Q. And how would you do that?

A. Bring a wire from one of the poles to the outside case of the battery, but when the lamp is lit or you break it there is no short on the lamp.

Q. What I am trying to get at is this, could the forcing open of this lid of a battery cause a spark or a short in the battery in some way?

A. It couldn't cause a short. It might cause a little spark but no short.

Q. How could it cause a spark?

A. Well, if it releases and the lid comes up and it leave

connection it is bound to make a little spark of some kind.

Q. Would that be a very strong spark?

A. I don't think it would be very much.

Q. Not a very strong spark?

A. I don't think so.

Q. Now, there is a prohibition in the Act against miners carrying battery keys into the mine, is there not?

A. Yes.

Q. Is there any method in this mine of keeping a check on battery keys?

A. I don't know.

Q. Who is responsible for the possession of these battery keys?

A. Each lampman.

Q. Are you a lampman?

A. When I am working I am a lampman.

Q. And then there is Sawada?

A. Yes.

Q. There are just the two lampmen in the mine, yourself and Sawada?

A. Yes, there is one on nights and one in the days.

Q. One on nights and one on days, and you and Sawada are responsible for keeping control of these lamp keys, are you?

A. Well, if there is a key we leave it on the bench for the other fellow. One or two keys, they are left on the bench to be carried around.

Q. Will the same key open all the batteries?

A. All the lamps, yes.

Q. You do not take any particular precautions to keep those

keys away from the men?

A. No.

Q. You would leave the key on the bench and when the next man came along he would take possession of it?

A. He could steal it if he wanted to. Oh, the lampman?

Q. That is what I gather from your evidence, the lamp key would be on your bench during the time you were handing out lamps and you would leave it there for the next lampman when he came to work, is that it?

A. Yes, that is right.

Q. Is the lamp cabin locked when no one is in there, when you go away from it?

A. Yes.

Q. Locked?

A. Yes.

Q. And no one has access to that lamp cabin except the lampman?

A. The master mechanic has got a key to get in there.

Q. That would be?

A. William McMahon.

Q. And the two lampmen, are those the only people?

A. And I think the timekeeper has got a key.

Q. The timekeepers?

A. I think so.

Q. But otherwise the cabin would be locked when there was no one there in charge?

A. Yes.

Q. Have you ever known keys to get into the possession of miners? Have you ever missed keys?

A. Oh, we have missed keys all right but we thought they were only lost. They were no good to the miners.

Q. You know, as a matter of fact, that one of the miners who was in the mine at the time of the explosion had in his possession two lamp keys. You know that, do you?

A. No, I didn't know they had two lamp keys.

Q. You hadn't learned that?

A. No.

Q. That in the clothing of one of the miners in the mine was found or had fallen from the clothing two lamp keys for a lamp battery, you didn't know that?

A. No.

Q. Anyway, as far as possible these battery lamp keys were kept out of the possession of the men; they were not supposed to have them in their possession?

A. They weren't supposed to have them in their possession.

Q. Were you shown a lamp key by Mr. deHart and asked if you could identify it?

A. Yes.

Q. Were you able to identify that key?

A. Well, it was like the one that we had in the lamp cabin, had the same markings on it. I couldn't say definite that that was the key.

Q. There were certain markings which were similar?

A. To the one we had.

Q. To one of the keys you had had in your lamp cabin?

A. Yes.

Q. Did you mark those keys yourself? I am showing you here

two lamp keys. Are those keys that you could identify as having come from your lamp cabin?

A. The one I marked was something like that (indicating).

Q. How did you mark it?

A. Two centre-punch marks on the top.

Q. Two punch marks on the top of the key?

A. Yes.

Q. Similar to the two punch marks that appear on this key?

A. Yes.

Q. This one here, you cannot identify that?

A. No. I don't say that is the key.

Q. But the key you had in your lamp cabin had two punches similar to the punches that are on this?

A. Yes.

(Key put in and marked Exhibit Twelve)

Q. Were you present when certain tests were carried out on the signalling system going into the mine? I think there were present Mr. Millar, Mr. Davidson, Mr. Myleson and others?

A. I was down the mine that day but I didn't go inside with them. I stayed out to watch the operation of the light.

Q. You were there watching the operation of the light?

A. Yes.

Q. And do you know the nature of the tests that were being carried out on the signalling wires?

A. I know the nature but I couldn't tell you what tests they come to.

Q. You don't know the purpose of the tests?

A. I don't know the result of the tests.

Q. Do you know the purpose of them?

A. Yes, I know what the purpose was for.

Q. And what was that?

A. For to measure the voltage in the line.

Q. To measure the voltage and amperage on the wires?

A. Onthe line.

Q. But you don't know the result of the test?

A. I don't know the result of the test.

Q. What particular job were you doing when those tests were being carried out?

A. I was in the bottom. They were inside and I was answering the telephone and watching the light.

Q. They asked you to watch the light, did they?

A. Yes, and to answer the telephone when they were inside.

Q. And what was the purpose of watching the light?

A. While these tests were being made to tell them if the bell was ringing when they were testing inside. They had no means of finding out.

Q. They were in the mine carrying out certain tests on the wires and you were...

A. ...In the room in the bottom.

Q. Watching the light and the bell. When the light or bell would ring you would telephone and tell them, is that it?

A. Yes.

Q. But you don't know the purpose or the result of the tests?

A. I don't know.

Q. Do you know how the circuit from the generator was con-

nected up in the mine. Do you know where it was connected up throughout?

A. The signalling system?

Q. The signalling system?

A. Yes.

Q. There is a small sketch here I might ask you to look at and see if this represents the signal system as it was worked out in the mine?

A. That is the way it was traced at the time.

Q. Perhaps you can follow the circuit out for us just to show it. This represents what?

A. This represents the main line.

Q. At the top of this wire or this line is shown a plus sign?

A. Positive wire.

Q. Which represents the positive wire?

A. Yes.

Q. And that positive wire leads down to where?

A. Down to the mine.

Q. Where it is represented on the plan to the mine?

A. Yes, to the mine.

Q. And then will you trace from there the circuit?

A. This bell was not on. This is an extra.

Q. Inside bell not connected?

A. These two wires was just off, the positive and negative wire.

Q. The positive wire comes down to the mine and then where does it go?

A. It is dead. The negative wire comes in through the bell and down into the mine.

Q. The negative wire which is marked with a minus sign at the top goes through the place where it says, "Inside bell not connected"?

A. It doesn't go through there.

Q. It doesn't go through the bell, it goes straight on?

A. Yes, goes straight on.

Q. And then it comes to the outside or to the lamp, does it?

A. Comes to this wire and goes through the bell and the lamp.

Q. Which does it go through first?

A. Goes through the lamp first.

Q. The negative wire then goes through the lamp?

A. The negative wire then goes through the lamp.

Q. And then through the bell?

A. And then through the bell.

Q. And then through?

A. This is a switch. The switch is closed.

Q. Through a switch.

(Chart put in and marked Exhibit Thirteen)

MR. SHAW: No questions.

MR. WILSON: There is another man on the electrical end of it but he will not be here until two o'clock so I will call Mr. deHart.

JOSEPH B. deHART, having been first duly sworn, examined by Mr. Wilson, testified as follows:

Q. Mr. deHart, you are District Mines Inspector of the District of Lethbridge?