

132. What kind of a pace does it travel at?—A tremendous pace. The temperature is 3,900° F.

133. Did you visit the spot where Martin's body was found?—Yes, three times.

134. The position is marked "43" on plan AA?—Yes.

135. Judging from the position of that body, can you say which man ignited the gas and started the explosion?—I am satisfied in my own mind that it was Martin who started the explosion. I would like to say that six days after the explosion I reported to the Under-Secretary for Mines, before that body was found. I said that as the result of my inspection on the 17th and 18th I believed that I had discovered the origin of the explosion and the locality where the gas was ignited. I then thought the next man to Martin had ignited the gas. Previously Mr. Wood discussed the matter with me and I considered that the highest body up the bords was that of the man who had ignited the gas. Subsequently Martin's body was found farther up, and it was then clear to me that it was he who ignited the gas.

136. You sent a report a week previously?—Yes, on the 29th September I reported that I believed I had found the point of origin.

137. In regard to the position of the other bodies, especially in regard to No. 36, do you know where No. 36 was found?—Yes, No. 36 was the man whom I first thought had caused the explosion.

138. It is a remarkable thing for an explosion to take any course—backwards and forwards?—No.

139. Then you cannot take any notice of the course of the explosion—it went both ways?—Yes.

140. But the men further away would get the greatest force?—Yes, most assuredly, unless they were sheltered.

141. Do you know that there was one of the victims in the act of making water—the fly was unbuttoned and the skin burned?—Yes, it may have been.

142. Do you say that according to Redmayne's book the force of the explosion gathers as it travels from the point of ignition?—Yes, that is so.

143. Would it strike as hard in the main haulage-way after it came out of No. 5?—Yes, much greater in the main road. There were the necessary conditions there to cause an explosion of dust.

144. It increases in strength as long as it has got the material to feed on?—Yes.

145. *The Chairman.*] When once the gas has ignited and the concussion has taken place, the explosion of dust would keep on going?—Yes, certainly.

146. To propagate you would not want further supplies of gas?—No. I am excluding the idea of a blown-out shot. Further gas is not necessary after once the ignition has taken place. The concussion raises the dust and the flame travels through it, thus the explosion continues, gathering momentum. I do not think there is a limit to the momentum.

147. What was the height of the bord where Martin's body was found?—11 ft.

148. Is it a uniform height of 11 ft. from where Martin's body was found to where the new fall is, or is it dome-shaped near the new fall?—It is higher there.

149. If that new fall in No. 6 bord took place after the explosion, would that make any difference for gas-testing conditions—the mere fact that there is a fall there, and the fact that you had got a lot of new material [plan discussed with Mr. Wilford by witness]?—The air comes in at the point marked "B" in No. 4 bord on plan AA and goes out at bord No. 6 via the point marked "B"; unless there is something in the nature of stoppings and brattice to direct it or convey it to the south end of those bords, it is natural that it will short-circuit and leave these bords unventilated. How can air go a long journey round these places unless directed?

150. That is absolutely a gas-pocket?—Not only is it a gas-pocket, but the whole panel is a magazine for gas. The whole panel contains stagnant air. It is easy to mislead non-experts, but I would like this settled. [Plan discussed by Commissioners, Mr. Wilford, and witness.] The area enclosed by me with a dotted green line on plan Exhibit DD is absolutely unventilated. This plan is certified by Mr. George Langford, the surveyor to the Taupiri Company, and shows a supposed course of the ventilation of the mine. Upon close inspection of it I observe that a certain section marked by me in dotted green line, containing the point where Martin's body was found, and the old and new falls and several bords, is isolated and constitutes a panel—that is, not being connected by air-courses in the old workings on any side but one—that is, the north-east. Air would traverse the north-east extremity of such panel marked by me in solid green, by which solid line it would short-circuit unless directed up and down the bords including Nos. 4, 5, and 6 and others by means of brattices and stoppings, of which there is not the slightest trace to be found. These bords rise, as shown upon plan AA, towards their blind ends. Bord No. 6, however, had a door which for ventilation purposes is practically a dead end. All gas given off from falls or other sources within that area would find its way to the upper ends of those bords, and there lodge, and would remain stagnant and would accumulate. I think you can see that there is no trace of brattice, or stoppings, or material for directing the air in that section. If there were but one or two of such that would not ventilate the section, because it would require a thorough system of brattice to send the air round. Brattice is always supported by frames. If an explosion had burned the brattice the frames would remain, as I have found in other parts of the mine the frames and also generally the brattices intact. All the conditions, therefore, are favourable for the lodgment here of an accumulation of gas, and also the production of a large volume of inflammable gas, such as would create a disaster in any colliery. There are two possible theories as to how Martin got there. If he got there through the southern end of bord No. 6 a miracle was performed. I will explain how.

151. First of all, the ground is highest there?—Yes. The specific gravity of CH_4 is 0.55, or a little more than half the weight of air, air being 1. Well, the miner always looks for gas on the roof. The ends of these bords are the roof of that panel—the apex of the roof. They filled first. The fire-damp given off at lower points finds its way slowly up like smoke. The fire-damp given off at the fall