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DEVON LAMMAS ASSIZE

NISI PRIUS COURT

[BEFORE MR. JUSTICE COLERIDGE]

CAUSE LIST

Plaintiff's Attorney	Plaintiffs		Defendant	Defendant's Attorney
Vandercom & Co	Bickford (S.J)	v	Skewes, younger	Blower and V,

IMPORTANT TRIAL.

MONDAY-The Court opened at nine. The first case was BICKFORD and ORS. v. SKEWES, the younger-a question of infringement of patent, which was brought from the sister county of Cornwall. There were for the plaintiff Mr. MONTAGUE SMITH, Mr. CROWDER, and Mr. ERLE. For the defendant, Mr. Serjeant BOMPAS and Mr. BUTT.

All the witnesses were ordered out of Court. The case was in effect an issue out of the Court of Chancery. Plaintiff got an injunction in that Court to distrain defendant from pirating his patent safety fuse. Defendant subsequently moved the Court to discharge the injunction when the Chancellor directed the injunction to be continued, but directed the plaintiff to bring an action to try the question and in pursuance of that order this action was brought.

Mr. M. SMITH opened the pleadings. The declaration stated that W. Bickford obtained by letters patent the sole right and authority to make, use, exercise, and vend his safety fuse within England & Wales and the Colonies of this Empire, for the term of 14 years - provided that he should specify the patent within six months. The declaration then stated that Bickford did duly state the specification. It then stated that an assignment was made by Bickford of one quarter of the patent right to Thomas Davey, and three-fourths to the other plaintiffs. The declaration then alledged that the defendant made and sold divers of the said fuses in imitation of the said patent fuse - to which he had pleaded, first, that he was not guilty; second, that Wm. Bickford was not the inventor; third, that it had before been publicly used and exercised before Bickford took out the patent; and the fourth, stated that the specification was not clearly set forth.

Mr. ERLE now addressed the Jury. Gentlemen of the jury: I appear before you on behalf of the plaintiffs in this case, Messrs. Bickford, Smith, and Davey, who are now proprietors of a patent taken out in 1831, by Mr. Wm. Bickford, who was the inventor of a very important instrument used for the purposes of mining. He took Davey as his partner in his life time, and the other plaintiffs were his legatees. For the purpose of understanding the value of this patent, I will draw your attention to the uses to which it was applied, and the instruments that had been in use before. The instrument is that which I hold in my hand [a small coil of rope.] It is called the "miner's patent safety fuse." It is a rope: in the centre of this there runs a small stream of gunpowder, which goes through the whole length. You cut off a piece, and lighting the top of it the fire is conveyed any length that you may require. The instrument is used for blasting rocks, and probably many of you may have seen it performed. The miner is required to work in the rock a chamber, in which a sufficient quantity of powder is placed, and the hole leading to the chamber is then filled up with a substance rammed in very tightly, without which the powder would fail to effect the object required. This operation is called "tamping" and the substance is driven in with an instrument called a "tamping iron". If the hole were entirely filled up there would be no means of conveying the fire to the chamber. For a long time the process

adopted to get the fire down to the chamber was by leaving a small bar of iron or copper in the hole, which rested on the powder at the bottom, and was drawn out when the process of tamping was finished, and a small passage was left into which a *rush* was placed which being set fire to burned down to the chamber, and the explosion took place. Now there was very great danger and uncertainty about this process, for it often happened that the metal needle being left in whilst the process of tamping was going on, became very hot and an explosion would frequently take place attended with fatal consequences, mutilations of limb or death. The inconvenience was great, and the operation uncertain, for if the continuity of the stream of powder was broken the fire would not run into the chamber, and the explosion would not take place, and the miner had to go through the whole process again. In addition to this the miner had to work in wet weather when the powder would frequently become damp through the wet getting into the hole, and the whole process had in this instance also to be performed over again. Attention was paid to these facts for the purpose of making some improvements in the process of mining, for civil and military purposes - for blasting rocks in roads, or for the purposes of quarrying, and many attempts were made to improve the instrument, which should convey the fire to the chamber in the rock. One step had been gained by the introduction of *quills* into the process of tamping, instead of leaving a metal needle in the hole. The quills having the ends cut off, and inserted one into another, formed a continuous tube, which being filled with powder, was an improvement so far in effecting the explosion, and averted the danger of a sudden explosion. This instrument was liable to objection. If it became bent it would destroy the train, and further improvement was sought. Attempts had been made to form a tube with paper rolled up, but in the course of tamping this also would often get out of the straight line and become broken, or it would go out, and the fire would not then be communicated with the powder in the chamber. Mr. William Bickford had turned his attention to the matter, and in the year 1831 he completed the invention which is now before you, and for which he took out a patent. The coil which I hold in my hand is called the miner's patent safety fuse, and the mode of making it is shown by the model on the table. [The learned Counsel then explained the manufacture of the coil-which was effected by the twisting of twelve threads, in the centre of which, supplied by a funnel, a stream of gunpowder was very ingeniously inclosed along the whole length of the coil. It was very like the ordinary process of rope-making, but a stream of powder was kept up through the centre of the rope. After this twisting, the fuze had to go through one or two operations to make it fit for the purposes of the miner. It had to be fastened, to prevent its unravelling and the powder coming out, and this operation was called "countering." It had next to be made perfectly water-proof, which was done with tar or varnish, and then it was passed through a powder of some kind, to make it perfectly dry on the surface, so that it might be rolled up like a common rope.] This was the invention of Mr. Bickford ; and I am told by those acquainted with mining, either in civil or military matters, that it is an instrument of very great service indeed - that there had been many persons attempting to remedy the inconvenience for many years, and from the time of its invention, it had been constantly used amongst miners, and has superseded all the methods that were before in use, having been most highly approved of, and generally adopted. From 1831 to 1837, no one disputed Mr. Bickford's patent right, nobody questioned that he was the inventor - no one said that it had been in public use before. It answered all the purposes required, for it could not be broken by deviating from the right line, as it contained a stream of powder all the way down, it burned gradually, and there was no fear of a sudden explosion - the miner might cut off any quantity he pleased, and adapt it to the length of a hole that he had bored. It was used by his partner and his children three years after his death, without being questioned at all. The manufactory of it was at Camborne, in Cornwall; defendant is a cabinet maker of the same village - he had no pretence to be connected with mining in any respect; but as this was a very profitable invention, Mr. Skewes wished to have a share of it, and if the law would allow him to do so, there could be no objection. But the person who had a patent invention, was protected by the law in the exclusive use of it for 14 years, but there was a great desire generally displayed to share the profits, by persons who coveted a portion of the benefits, which were generally supposed to belong to patent rights. Patentees were constantly compelled to guard against the invasion of their rights; about the middle of 1837, defendant prevailed upon one of the workwomen in the employment plaintiff, to communicate to him the mode by which the safety fuze was manufactured, and he then commenced making a fuze of the same materials, and the same construction as Mr. Bickford made. Bickford having heard of it, caused a person to buy one of the fuses of defendant, and brought this

action against him, and the jury are now summoned in the adjoining county of Devon, to say whether the plaintiff was entitled to this patent. The first plea was, that defendant had not infringed this right - I do not think that you will be detained much on that. For the other pleas I believe he means to deny that his instrument is the same as Mr. Bickford's. In all cases where the right of a patentee is disputed, the party opposing him, endeavours to prove that he has not complied with the specification - the purpose of which was to give a man the right use of it for 14 years. He was bound to give a specification, so that when the 14 years were elapsed, any working man of common skill wild be able to make the instrument. The object of this was to perpetuate valuable inventions. Now the first objection that the defendant makes is, that you have taken out your patent for a miner's patent safety fuse. He says, in reading your specification, I do not know whether you mean to claim your patent for a fuze, or the instrument by which it is made. The Learned Counsel then went through the objections to the specifications, and stated that he understood that the originality of the invention would be attacked by a statement that an unknown Irishman had gone into that neighbourhood with a similar fuse, and that he had sold the secret to defendant, and also that it was in use for 30 years before. He should show that there was no pretence for these statements, and that the plaintiff were entitled to the protection of the law.

William Vyvyan examined by Mr. CROWDER - I have been a civil engineer many years I know the safety fuse, and have seen and examined the drawings and model, and the specifications.

Mr. Serjeant BOMPAS objected to the production of the drawings till they had been proved.

Mr. Henry Shepherd Maule produced an examined copy of the specification and drawings - I examined them very carefully - they were made by a person employed purposely for this cause.

Mr. Vyvyan - I have seen the specifications, and looked at the model, it represents the machine by which the patent safety fuse is to be made. There is no difficulty in making the machine by which the fuse could be made - according to these drawings. He then described the machine by the specification. I should have no doubt about the material - any thing that could twist.

Cross-examined - I was called upon to examine the specifications and the drawings, to see whether a workman could make the machinery therefrom - but I have never worked at this manufacture - I have seen the machinery at work many times during the last four years - I do not know that the machine is precisely the same as that of the model, but I cannot tell you the precise nature of the alteration. The character of the machine is precisely the same but there is a difference in the position of the threads - instead of being under the box they are over it - a matter of no consequence I should think. I do not mean to say that in every substantial thing they work in the same manner, but I mean to say I think that hair would do for other materials - I have seen hair rope - I have never seen other material tried - grass will spin.

The Learned JUDGE interfered with the cross-examination of the Learned Serjeant, who was “spinning” out and “twidting” up the witness rather too lightly for the ends of justice. His Lordship said that he was a mechanic and not an engineer.

The assignment was put in.

Mary Davey - I am in the employ of plaintiffs, at Tucking Mill, in Camborne. We have store houses, steam engines, and powder magazines, and about 32 persons all employed about this manufacture. When I first came into the factory the fuses were made by a machine similar to this. Within the last two years an alteration has been made in the reels of thread, which are now put on the top instead of under. Alice Hocking was in the manufactory with me, and was employed in making these fuses. She was able to see how the whole of them were made. She left in 1837 - I cannot tell that she is the wife of the defendant, I was told that she lived with him. [Mr. Serjeant BOMPAS admitted the fact that the infringement was made in 1837.] I never knew of any infringement before Alice Hocking left. I never

saw any fuses manufactured by Skewes before she left. I have seen her coming from the factory - a great many months after left my master.

Richard Lego was called to prove the purchase of the coil in 1837, but the fact being admitted, he was not examined.

Charles Thomas - I have been a mine agent for 34 years, and have been acquainted with the mode of blasting rocks. In the old method of blasting rocks, we bored a hole down to the place where we wanted to put the powder. It was then necessary to ram down a hard substance with a "tamping iron,' and we used to leave an iron needle in the hole, and drove the tamping materials hard up against the needle. Then we pulled out the needle and put down a "rush" of gunpowder in the hole left the needle - then we put fire to a “snop” made of touch paper, and the men retired whilst it burned to the rush. It frequently happened that the powder took fire whilst driving in the tamping iron. Sometimes the needle powder would get bent, and being drawn out with difficulty, the powder would take fire, and serious accidents would take place. Afterwards it was customary to introduce a series of quills, which were liable to be open one from the other - there was a degree of uncertainty connected with the quills, and a barrel of quills occupied some time in making and filling with powder. The mode also was expensive, and the quill was sometimes injured in the tamping. I first saw the patent safety fuse at Dolcoath mine. I have seen it used in a number of instances - it was very much less liable to be injured in the course of "tamping:" it was scarcely liable to be injured at all by tamping and conveyed the fire to the charge more perfectly. You could calculate on the time the fuse would occupy. Miners used frequently to lose their lives by the instantaneous explosion of the “rush." The quills were "slower," but this was the best plan for the blasting of rocks in my opinion that I have ever seen. As far as I could judge it was a new invention. The mine agents are alive to all improvements; they frequently meet together, and if such an instrument as this had been in common use I think it would have been impossible that I should not have known it. I think that the expence of the fuse is about one half of the quills, including powder. If the expence were equal I should prefer the fuse. I never saw it miss fire. I have heard but rarely that it has. If the quills missed fire we had to take out the tamping or abandon the hole.

By the Learned JUDGE - If there was a failure in this the same consequences would ensue - we must either take out the tamping or abandon the hole. I have known tin tubes used in cases of wet ground, but never else.

Cross-examined by Mr. BOMPAS - I was agent of Dolcoath mine 4 years, 21 out of the 24 below ground. When we let a piece of ground the men execute it as they please. These fuses have been used at Dolcoath for six years - generally for the last two years. But some of the men occasionally use the rush up to the present day. They get more into use every year. I suppose you know human nature as well as I do, and like the rest of mankind it is very hard to make them adopt improvements; and even to this moment there are a few who use the rush. A few of the "rushans" will run the risk of being blown up rather than abandon the rush.

The Learned JUDGE remarked that there were more accidents in the North since the invention of the Davey lamp than before. Mr. Serjeant BOMPAS added, Because they go into more dangerous places than they did before.

I have not seen them generally in use in other mines, but in Stray Park, for the last two years.

Re-examined - I have not been in the habit of going into other mines much till the last two years, because I had been ill three or four years previously.

Henry Andrer Vyvyan, mining agent for 20 years, said that the fuse was not attended with danger, not uncertain and cheap. The rush is grown on moors; they slit it and take the pith out of it, and put in gunpowder. It closes when it is put in.

John Walters, Nicholas Trevernan, Ferdinand Williams, Isaac Barrow, James Holman, James Sprague and others, miners, and mine agents, were examined, and proved that till Bickford's fuse came into operation, they had never met with anything of the kind.

Edward Deneyon, surgeon of Camborne, and adventurer in mines, said, before the introduction of the safety tubes, deaths from bursting were very frequent. Since the introduction, not more than one in 20.

Col. Julian Jackson was in the artillery. The patent fuse bears no resemblance to the port fire used in the army. The port fire is for sudden discharge, the fuse for gradual. I think the fuse is well adapted for blasting rocks. Simple gunpowder will do for filling up the cavity in the rock. *Cross-examined.* The port fire is made of sulphur, gunpowder reduced to a finer powder, and nitre or saltpetre. The safety fuse is gunpowder alone. *Re-examined.* The port fire is contained in a tube of cartridge paper. Both the materials in which it is contained are different. The powder bears no resemblance.

Colonel Charles William Pasley - I am a Colonel in the Royal Engineers; I have been many years in that corps - since the year 1798. I was about six months in the artillery previously. In the year 1812 I was appointed by the government as director of the establishment at Chatham for the purpose of instructing the junior officers and sappers and miners in military mining. I have been among other things from that time very conversant with military mining matters. I have directed my attention a good deal for 14 years to firing gunpowder under water, till at last I succeeded in producing a method for effecting it in 1827. It is not a matter of considerable difficulty to get gunpowder ignited under water, but very simple when known. My plan was to make a very small hose about three sixteenths inches in diameter to reach the powder, which was to be exploded under water in a tin or metallic cylinder, and to have a patent leaden pipe to contain the hose; the leaden pipe it was necessary to buoy up in the water by a buoy, which occasioned great difficulty in a tide-way. We were obliged to secure it at every six inches by a wire. I know Bickford's safety fuses. They were referred to me in April, 1832, by the Master General of the Board of Ordnance, and having tried them I was to make a report on them as to their capability for military purposes. I examined them particularly, and tried them in various ways. I had never seen anything of the kind before, and I am confident that nothing of the kind could have been used in military mining before. I think I must have known it if there had been, but at the same time nothing is absolutely impossible. It is a great advantage in firing under water, it dispenses with the leaden tube, and it dispenses with the buoy. It is certain for ten feet, but cannot be depended on beyond that length as there are always flaws which admit the water at every 30 or 10 feet--but for ten feet they may be used at any depth. In blowing up two vessels in the Thames last summer which attracted a considerable degree of attention, I used my own method for the large charges, and used Bickford's fuse for the small. It went down burning to the bottom. I recommended them very strongly both in the Royal Engineering Department and the Company's service - I recommended them to be sent round to all the parts wherever there were rooks to be blown under water - to Portsmouth, Devonport, and Gibraltar. The hon. and gallant Colonel then proceeded to detail the former mode adopted, and also to speak to the specifications on which he was cross-examined at some length by the learned Serjeant for the purpose of showing that the wording of the specifications as to the other materials that might be employed in lieu of the gunpowder was not clear and intelligible as the law required it. His evidence tended to support the specification.

The Learned Sergeant took an objection to the specifications, which being overruled the case for the plaintiff was now closed.

Mr. Sergeant BOMPAS addressed the jury for the defendant. This case bad already occupied a considerable portion of the time of the jury, and would for some hours longer, but he hoped that the jury would give him credit for not having unnecessarily occupied their time by long cross-examinations of the witnesses. If his learned friend had felt it necessary to call so many witnesses, he (the learned Sergeant) had not increased the infliction by cross examining them. His friend opened this case by telling them that it was not uncommon, when a party took out a valuable patent, that some persons anxious to share the profit, came in and questioned their right to the patent, for the purpose of depriving the patentee of the profits, to which by his skill and ingenuity he was entitled. That was one side of the case. He admitted that the right of the patentee was not unfrequently attacked. There are other cases also, in which patentees are called to prove their right, and that was when patents were taken out, not by the

inventor, but by those who have got hold of the invention of another party, and are holding a monopoly of that to which by law and justice they were not entitled. He admitted that those who were really the inventors of any useful instrument, were entitled to a full monopoly of the profits, so long as the term of the patent held, but at the same time he had no hesitation in saying, that the man who was not the inventor, but who from circumstances, lays hold of an invention, and gets the profits which ought to belong to another - that person had no right to protection - and the real question which the jury would have to decide between these two parties was - was Mr. Bickford the inventor of this instrument? He knew that in many instances patents were called in question, where juries ought to decide against the patentee. He knew that a man brought an action for the protection of his patent, when it was actually proved that the plaintiff in the case he was alluding to, actually saw the thing in the window of the defendant, and went and took out a patent for it before the other had perfected his invention. That surely was a case in which the patentee did not deserve protection. There were two sides to a question in all these cases, and the question which they would have to decide was - did this invention belong to a case in which the patentee did not deserve protection. There were two sides to a question in all these cases, and the question which they would have to decide was - did this invention belong to the plaintiff? His learned friend had occupied a considerable time in endeavouring to prove that the fuse was a good deal better than the old rush. He admitted it, and could not understand why he had spent so much time in proving that which he (the learned Sergeant) had admitted from the outset, and confirmed by his cross examination. The value of the invention was not in issue - it was not upon the record, and if he had attempted to show that it was not worth a farthing it would not be available, for that was not in issue. But why had he done this? Because he would get the feeling of the jury in behalf of the valuable inventor of so valuable an instrument, which had saved the lives of half the people in Cornwall. But the question which the jury must keep in mind was not the value of the invention, but was he really the inventor? The fact that it had got widely into use since Mr. Bickford's name had been attached to the fuse was no proof that he was the inventor, for he had taken the most effective steps to get it noticed in the quarter where a favourable notice would ensure success. In the hands of a person less skilled in getting it noticed, it might have lingered for years without being generally adopted; for they had it in evidence that although the safety fuse was as cheap as the rush, yet there were miners in Dolcoath who would still stick to rush; for men accustomed to danger all their lives were never driven by accidents into caution, as was evident to every observer of persons following dangerous avocations. Mr. Bickford, however, took the earliest means of getting it into notice: his patent was obtained in September, and by the beginning of March he had applied to the government, who referred it to Col. Pasley, when meeting with his approval, he sent it round to all the ports of the kingdom - to Devonport, to Portsmouth, to Gibraltar. Hence it was at once known. But supposing it had been the invention of some poor miner, among his fellow miners it might have remained hidden for years. Setting aside the value of the invention, it would be his duty to direct their attention to the circumstances under which he asked their judgment in favour of his client and upon the ground that the person from whom the plaintiff claimed was not the inventor of the fuse. He would not go through the witnesses to them in classes. He would not attempt to show that any thing analogous to it had been in use in Cornwall. How slowly a useful thing got into general use would be admitted by all who had observed mankind, and had been proved by the witnesses in the case, many who, though practical miners, had only known the fuse about five years; and if the fuse had not been aided by the strong recommendation of Col. Pasley, and its introduction by the mine agents, it would have been years hence before it would have got into general use. The law did not require that the instrument should be generally known to set aside the patent; but it must be publicly known. If a person makes a thing in his own room, and never tells a human being of it, and if another person makes the same thing, and takes out a patent for it - it is no bar to his right that the other had done it without making it known - it is no answer to the man who took out the patent, that some one knew it before - that is sound sense. But if, on the other hand, a person makes a discovery public to all around - if he makes no secret of it - uses it himself, though very little, that is quite evidence enough to set aside the patent. The learned sergeant then proceeded at some length to detail the kind of evidence which he should lay before the jury. He should prove that about the year 1830 a poor Irishman was down in the mining districts of Cornwall, making and selling a safety fuse, having all the properties and characteristics of Bickford's patent safety fuse; that it was made of the same materials, and that he sold the secret, being very poor, to Mr.

Bickford, who was a porter merchant, for twenty shillings. He should bring respectable evidence to prove that the Irishman's fuses were tried in every way, and underwent all the tests to which the patent fuse was submitted that it was in every respect the same, and therefore that the verdict must be for the defendant, if this evidence were substantiated.

[Several witnesses were called to prove the existence of a similar invention, prior to the appearance of Bickford's, having been hawked about Cornwall by a poor Irishman. We have only space for a few. The Court adjourned at seven till Tuesday.]

TUESDAY. - The Court sat at eight o'clock.

Stephen Litcher, a miner, on being called required that his expences should be paid. Mr. Serjeant BOMPAS assured him that he should be paid his expences, but he hesitated and hung fire. The Learned JUDGE assured him that he should be paid - he then assented to it, saying, with a patronizing & confiding air - thank you, sir, I will take your word for it - (*a laugh*). He was examined respecting the fuse of the Irishman, which he had brought to him eleven years ago. It was made of hemp and band - there was a bandage over it, and then it was bound with twine, and pitched over with tar or pitch - "trade" that would stick to our hands very much. I handled several pieces of it. I saw it put in the vice. They had some pieces like a trace about the breadth of his finger - there was tin or lead about it. I carried it down the mine and put it into a hole, but it was so limp that it would not stand. I put a rod of quills by the side of it and set fire to both. I had never seen anything like the round thing in mining before that. Lately we use the safety. All the difference I have seen between the safety of the Irishman and that of Bickford's, is that Bickford's has some flour or white stuff about it. But I don't know any difference between them. *Cross-examined* - I had never seen the Irishman before that I know of, and I don't think I have seen him since. Twelve months ago Mr. Skewes came and asked me about it, and about three or four days after that I went to be examined. I did not try the round one - because it was not our fancy to do it. I will swear that there were three or four took down in the shop, but I will not swear that any one took Dare down into the mine. From the time that I saw them with the Irishman, I did not see them again till three or four years afterwards. Never heard that it was Bickford's till one or two years ago when I was examined on it. The Irishman's rod was about as thick as your pen - it might be a little more. I'll tell you what was said by the other pearty - but this was stopped.

By the COURT.-The flat one had a thin floating of lead or tin at the outside of the hemp and trade. It was put there to keep out the wet.

William Trengrove - I am a miner. I worked in Poldice Mine about ten or eleven years ago. I saw a man who called himself an Irishman - he had a rod, paper outside, then tin or lead, and powder inside. You could not call it flat or round. I saw him afterwards with a round one, which was just like that we are using now. It was turned in the mine in the presence of a man who went his way afterwards, and I went mine. *Cross-examined* - It was in 1829. I will swear to that. I cannot tell the particular time I cannot tell anything that happened. [After considerable hesitation] - I was not married then. I have been married & at Gwennap church. What was the woman's name - [after much hesitation] - "Prudence," [hesitation] "Bray," she lived at Gwennap. This marriage was in 1828. How do you know it was 28 - [very quickly] - 29. Was it the May month? - the spring time. Where did you go to after you were married - (great laughter). What time of year - who was present at the marriage - [no answer]. Have you got a son or daughter - [no answer].

The JUDGE - You must know that answer. I have a son - seven years of age.

[*Examination resumed.*] – It was something about Christmas, I was married. Skewes spoke to me about it, a year and four months ago. I cannot read, I cannot write. I swore to something, and signed to it. I have a brother of the name of John - he did not work with me at that time. I saw the rod tried, it "smiddered" away powder through the pitch

and tar - Richard Bennett was with me at the time, my comrade, when it was burned. There was with me at the time, my comrade, when it was burned. There were several men about, but I have not seen him a long time.

John Mitchell, of Redruth - I am a smith; I have lived there as as long as I can mind. In 1830, I saw a man with some rods or fuses in my brother's shop - he was an engineer; I was foreman there; I recollect the Irishman bringing a safety fuse, it was like Bickford's, one and the same thing as near as I could see: I could not tell what it was made of; I fitted up some iron work for him, just as he directed; I recollect his bringing a piece of fuse, and we screwed it up lengthwise in the vice, and set fire to it: it burned right through - he said that was to prove that it would go through any hard substance; I screwed the vice up; I saw him come into the shop with a boy whom he called his son; he had some of these fuses in a basket, they were like those I had seen before. [A question as to whether he had applied to witness to have them sold. was not put, the Court deciding that it was not evidence.] - *Cross examined* - I have not seen him since he came with the basket; I have been examined in Chancery - I cannot say how long it was before that, I was asked about the Irishman; I never saw anything more. *By the* COURT - The Irishman looked like a man nearly broke down - he had a white hat on - (a laugh). The work we did for him was about seven inches high, with a flange at the bottom of it; I cannot tell what he paid for it, nor where he lived; I recollect it was 1830, because I made a grate for Joe Bray, who kept a beer house - he asked me to go and fit him a kitchen range, and when I measured the chimney, he asked me to go up stairs - I went up, there were three rooms up-stairs, and in the middle room I saw some of these fuses and powder, on a board over the door -that was on the 17th of November, 1830, I know, because I booked it. The Irishman had been staying there.

John Jenkins, Tinman. I recollect seeing the Irishman with the safety fuses, some coiled, and some he had got straight. I had been used to making the tin tubes for firing in damp ground. I was called out of my shop by a neighbour of mine to see it. I made my living by the tin fuses, and I was very sorry to see it. I spoke to him about it. I saw them burn - they were like Bickford's. *Cross-examined.* It was about 1829 or 30. He looked very poor hind mean. Bickford's fuse has been in general use 6 or 7 years. Bickford's fuse has taken away all my trade, but I have no ill feeling to the party. *By the* COURT. I called him an Irishman on account of his dialect.

John Budge, a friend - was examined on his affirmation. I am the executor of the late Mr. Bickford - I have no agreement among my papers, between Mr. Bickford, and another person, regarding some safety fuses. *Cross-examined* - I am a Quaker - Nancarrow is not of our society. *Re-examined* - He is not secretary of any society, of which I am a member - by no means: he lives in the house of the Institution - his wife brushes out the rooms, and lights the fires, but he has nothing to do with it. It is an institution for literary purposes, in Camborne - Sir C. Lemon, and Mr. Pendarves, are patrons of it. There is a standing committee, but I am not a member - two of the plaintiffs are members of it. *By the* COURT - I never had any paper but the probate of the will.

Richard Bray - I am a brass-founder, living at Redruth; I knew Mr. W. Bickford; I saw old Mr. Bickford at the New Inn, in St. Day; I saw the landlord Mr. Treweek, who has been dead some three or four years; I saw a man also, who told me he was an Irishman; Bickford and the Irishman talked about a safety fuse, to be used by miners; and then Mr. Bickford fancied it from his statement, and said he would purchase it. There was some little altercation about the price ; the Irishman wanted two pounds for it; Mr. Bickford said it was very heavy, for he was but a poor man, and would gladly give him one for it; he said it was too little, it was well worth trying, and he had made an improvement on the other; he showed it to me, and the persons present, and I examined it; Mr. Bickford purchased it, he gave 10s. as a deposit, and had an agreement; we returned to another room, in the same house, and Mr. Bickford drew up an agreement in my presence, and I signed it - because there was to be a certain time in future, when it was to be proved; Mr. Bickford put his name to it; the Irishman could write very badly, and he put a cross to it; I forget the contents of it, but I was bound, I remember, to see it proved by the Irishman, to Mr. Bickford's satisfaction, before the remainder was paid. The only thing that I can recollect more, was, that he was to keep it a profound secret - not to teach anybody, or cause them to be taught; Mr. Bickford took the agreement; I was not present on the day that it was to be proved, having particular business to attend to; I saw him afterwards, and expressed a regret that I was

not present, and asked him how he had got on with the Irishman - he said, very well; I hoped it was to his satisfaction - he said it was, and he had paid him the other ten shillings. When I first saw it, he asked me if I had ever seen anything of this kind before - I opened it and found it was hemp and twine, there was gunpowder in it - he said it was a fuse for blowing with. There was varnish outside. He said that was his last improvement, as it prevented the water getting at it. He explained how he made it, and told me that he would teach Bickford in about an hour to make them as well as himself. He had a model he said that he was going to show Mr. Bickford that would make them perfectly. I have seen a great number of Bickford's fuses. I know no difference between them and the Irishman's - I believe them to be exactly the same. *Cross-examined* - I am a master tradesman if you will allow the term - I have a man and a boy working for me. I have two shops, one at the house where I live, and the other opposite. I made a memorandum of the month that I was at St. Day with Mr. Bickford - "I put down August, 1830" - that is all because I knew the business - that is the whole of the memorandum - it was in an account book - I cannot tell the reason for putting it down - it was a fancy - I had a reason at the time, but what it was I don't know, because it escaped my recollection. I cannot swear that it was not 3 years after. Skewes first spoke to me about the case just before he commenced the action. I did not find the memorandum in the book till lately - about a fortnight ago. I was not told to look into my book - but I had to look after some old accounts that I had, and then found it - It was "August, 1830," no other words. There is no other memorandum in the book - I am not in the habit of making memorandums - I cannot tell what made me do it - I used to go to St. Day, perhaps once or twice a week, to buy pots - I should think we had been talking two hours before we went into the other room - I sat and smoked my pipe - I had a pint of beer, I might have had two pints. The Irishman put the cross to it himself - I did not think him a broken down gentleman, far from it, he was very meanly dressed - I did not write "witness," but the word was there - I have always recollected that it was a pound that was given for it - I have said so to scores before ever Mr. Skewes had any thing to do with it - It struck Mr. Bickford amazingly - he said this is the thing I have been trying to get at a long time - I made an impression on him - It was better than twelve months after that I heard of Mr Bickford's fuses. I have seen them from time to time ever since - I cannot say how many times I was sworn to this matter in the Court of Chancery - I was not present in the court - I think I have sworn to three or four affidavits - Cyrus Penrose lodged at my house, and showed me one of the fuses - soon after I heard of Bickford's patent - he was manager of a mine, and it was sent for him to try. *Re-examined* - I could not distinguish any difference between the Irishman's fuse and the one sent for Penrose - I talked to him about it. I had business at St. Day to call me there with Mr. Harvey - it is a wholesale place where they sell things belonging to my trade.

Jane Phillips remembers a person called an Irishman - used to cook and wash for him, and help to make his safety fuse - bought four sorts of twine and tar for him, also gun powder - cannot name any shop where she used to buy either. He had only one shirt, and no money. Her evidence established the fact that he was poor enough to be a very great genius.

By the COURT - The owner of the house is alive - I know Joseph Bray - he lived in the house after this Irishman left - he gave me something to keep for him till he came back, because he had not paid me - He said he should go and fetch his wife and family - the things were two cups and saucers, two milk jugs, and two plates - I knew him for three months - I never heard his name the whole time - So far as I knew he had but one shirt. Mr. Blamey, the landlord of the house, is up here, but he did not come up with our party.

William Clements, a miner of Camborne, had bought the safety fuse of the Irishman before the patent ones appeared - had since had the patent fuse - they were nearly the same as the Irishman's. - *Cross-examined* - I recollect that it was ten years ago from the place I worked in - We used no quills in trying it.

Geo. Nancarrow, a witness, whose name had run throughout the whole of the proceedings on the part of the plaintiff, in anticipation of some statements which he would make, was put into the box, and took the affirmation of a Quaker. Mr. Sergeant BOMPAS declined to put any questions to him, but asked the other side to examine him if they wished--who however, declined.

This closed the case for the defence.

The Foreman of the Jury expressed a wish to return the verdict at once, as the jury were quite satisfied.

The Learned JUDGE begged them to hear it out, for there were many points on both sides, which really required consideration. These points were not obvious, and much was to be said, not whether it was a new invention, but as to whether it had been made public before.

Mr. ERLE then addressed the jury in reply. He should be very sorry to intrude upon their time - the two questions which they would have to decide was, whether or not Mr. Bickford was the first inventor, or whether this instrument was in public use before he took out his patent. Now for the early part of the case : - he had listened to his learned friend's opening, because he knew there would be this redoubtable would-be Quaker brought before them, and because, in anticipation of his appearance, he (the learned counsel) had, on the part of the plaintiff, called a great many witnesses, who had worked with him in various places in Pontypool, in Crowland, and in other mines, and had sworn that there was never any other process known but that of the needle and rush, the spire and the quill - he had called these witnesses on till his Lordship was tired of them. To the end of his case his learned friend had said all this has been tried before another Judge, and we come before an Exeter Jury to have their verdict upon the merits of the case. What the witnesses have sworn in the Court above they are ready to repeat here, and I will not flinch from calling Nancarrow before you. But when he (the learned Serjeant) had put Nancarrow before them, he had not ventured to ask him one word. He had therefore literally abandoned the question on which he first stood. The question (said his learned friend) was not whether Mr. Bickford was the first inventor, but was it not known before. The parties who were represented by Mr. Skewes in this action - for he was not the real defendant - but was set up by a party who wished dishonestly to get hold of the profits of this useful invention - and was now in prison for the interlocutory costs - these parties now said we do not stand upon this third plea, that it had not been publicly used, but they stand on the second plea that Mr. Bickford was not the first inventor of this valuable invention. Contrast the two parties. Mr. Bickford appeared to be a substantial man - he had turned his attention to this subject according as he had sworn on oath - in Sept. 1831, he swears that he is the first inventor of this important invention - on the following year the very skilful officer Col. Pasley, who had had his attention for fourteen years turned to this subject, and had been labouring to find some process that would answer the end, but without effect - had this question referred to him, and he pronounced it to be a highly useful invention that had long been sought for. Was it possible that the discovery of a safety fuse could have existed without his knowledge? It was not. He had his attention constantly directed to military mining and the teaching of military miners-and here where there was the greatest skill, talent, and experience, it was impossible that there could have been ignorance of the existence of an instrument for which the military and civil engineer had both been looking with so much anxiety. He had shown that there was no knowledge of the existence of the instrument in this quarter - he had called before them practical men engaged in the operations of mining, working miners whose business called them below ground to peril their lives on their daily avocations, and mine agents who had the superintendence of their operations, and neither the one nor the other had ever heard a word of the safety fuse till Bickford's invention had been brought out six or seven years ago. And yet they wanted to rob him of the credit and give it to this unknown Irishman, whose poverty he would not willingly sport with, but who was selling some fuses composed of paper and lead, which did not answer, and left the country in a state of wretched poverty. But who was this Irishman - he might have been King of one of the provinces of Ireland, but driven forth by our tyranny, his golden crown displaced for the white hat which one of the witnesses cited as a proof that he had not a genteel appearance, and who so far from being a man of any marked abilities was not even able to write his own name. After commenting on the evidence and contrasting the various points in his own keen penetrating style, the learned gentleman concluded by saying after the intimation which they had given him, he was ashamed to have occupied the time of the Jury, fully satisfied that he should have their verdict without.

The Learned JUDGE summed up with much perspicuity and conciseness, drawing out the various points of evidence in strong contrast, and with extraordinary clearness. His Lordship said he had thought it right not to stop the case,

because he thought it was of the utmost importance to both parties that the Jury should hear it throughout. He did not mean to say that they had not taken a right view of it. But great expences had been already incurred, and nothing was more likely to increase these expences than by summarily stopping a case before it was gone through - which would be very strong ground for the Court above sending it to another Jury - if they had reason to conclude that the jury had taken a hasty view of it, or decided upon the testimony of a particular set of witnesses. His lordship did not mean to say that they had taken a wrong view of it, but he wished it to be manifest before they decided, that they had fully considered the whole of the case. Much had been said on one side and the other, and unless they watched the operations of their minds, it would be impossible to escape prejudice. It was for the persons who represented the plaintiff, to represent how common it was, and how very hard that those who had the merit of discovering some useful invention, should be robbed of the reward which the law gave them, of a monopoly for a certain period of the profits of an invention - a reward to which they were fully entitled, for without the exercise of their ingenuity and labour, society would never have had the benefit of the article for which the patent was granted. On the other hand it is contended that here is a person having no merits of his own, but who avails himself of the talent of an ingenious mechanic - who has no title to the merit of the discovery, and is a monopolist in attempting to get the reward. That in opposing the pretensions of such a person, they would be standing between the public and a monopolist. The jury were to assume who was original inventor. If they assumed that Bickford was the inventor then all that his counsel had argued was perfectly true. If they assumed that Bickford was not the inventor, then that was assuming the whole of the case for the defendant. Now the plaintiff had certainly made out a strong prima facie case, and the principal part to decide was the consideration of these pleas upon the issue. He would state the pleas because it was not enough to give a verdict generally -- they must give an answer upon each question. His Lordship then went through the pleas and specification, laying down the law in the latter case. In doing this he adverted to the evidence of Col. Pasley, whose testimony was the highest authority that could be got on the subject of the combustible materials specified. That gallant officer had spoken only of the general principles of the science not having, as he said, turned his attention to that particular branch. But this mode of expression was an illustration of the modest way in which great men frequently expressed themselves, when in fact the world knew that they were of the modest way in which great men frequently expressed themselves, when in fact the world knew that they were possessed of the fullest knowledge just as Lord Eldon would have declined to speak on a point of common law before the Judges, whilst in fact he would probably have decided it better than any man on the Bench. His Lordship having taken the evidence of the gallant Colonel as conclusive for the correctness of that part of the specifications to which he spoke, then took the other portion of the evidence - his observations on which we have not space to give. He had no doubt that there was such a person as the "Irishman," but as to his connection with the invention, he left that for the Jury to decide.

The Jury immediately found a verdict for plaintiff on all the issues.

The trial lasted nearly two days.