

PATENTS ACT 1977

IN THE MATTER of an application
under Section 72 by Glaverbel for the
revocation of Patent No 2035524 in the
name of Coal Industry (Patents) Limited.

INTERIM DECISION

Revocation is sought on the grounds that the invention of the patent in suit is not new and lacks an inventive step having regard to cited UK, Belgian and French patent specifications and two research reports, and that the specification does not disclose the invention clearly enough and completely enough for it to be performed by a person skilled in the art.

Evidence filed for the revocation proceedings on behalf of the applicants for revocation consists of four affidavits by Mr Léon Mottet, an affidavit by Mr Pierre Robyn, an affidavit by Mr Pierre Deschepper, three affidavits by Mr Alexandre Zivkovic, all employees of Glaverbel, an affidavit by Mr Alan Furness, director of a specialist consultancy, two affidavits by Mr Cornelius van Wingerden, an employee of a Netherlands Research Laboratory, an affidavit by Mr Roger de Bontridder, a European Patent Attorney, an affidavit by Mr Antony Tebbit, a Chartered Patent Agent, and various exhibits including a video tape. Evidence on behalf of the patentees consists of two statutory declarations by Mr Leslie Tucker, an employee at British Coal Corporation's Coal Research Establishment, a statutory declaration by Mr David Bell, an employee of British Ceramic Research, and various exhibits including a video tape.

At a preliminary hearing on 16 November 1989 I found that an affidavit by Mr Mottet and a statutory declaration by Mr Tucker and its accompanying exhibits were not part of the revocation proceedings.

At the substantive hearing before me on 4, 5 and 8 July 1991 Mr George Hamer appeared as counsel for the patentees and Mr Andrew Waugh as counsel for the applicants. I also had the advantage of hearing cross-examination of Messrs Tucker, Mottet and Furness, viewing two video tapes and inspecting two bricks involved in experiments.

The patent in suit is entitled "Flame spraying refractory material" and relates to a method and apparatus for repairing refractory brickwork or other substrates in situ in hot ovens or furnaces.

As described in the specification of the patent, a powder mixture is supplied in a carrier gas to a lance and oxygen is separately supplied to the lance. The powder mixture comprises one or more finely divided refractory oxides and one or more finely divided metal or metalloid elements which are easily oxidisable to refractory oxides. The spray of powder and gas issuing from the lance outlet is ignited by contact with the hot oven wall, possibly assisted by a flame, and becomes a flame spray in which the oxidisable elements oxidise and the refractory particles melt, at least in part due to the heat evolved on oxidation. The patent in suit is said to overcome the problems of flash back and lance tip blockage.

Claim 1 as granted reads as follows:-

A method of flame spraying refractory material which method comprises supplying to the lance a mixture comprising one or more finely divided refractory oxides and one or more finely divided metal or metalloid elements which are easily oxidisable to refractory oxides, dispersed in a carrier gas itself incapable of supporting oxidation of said element(s) and supplying oxygen to the lance adjacent its outlet.

The patent in suit includes ten other claims of which claims 2-6 are appendant to claim 1 and claims 7-11 are apparatus claims.

In correspondence preceding the hearing the patentees indicated that they did not intend to pursue the apparatus claims. As a result there was no discussion of these apparatus claims at the hearing, both sides proceeding on the assumption that claims 7-11 will be deleted and other consequential amendments made.

In the circumstances I will issue an interim decision on the matters brought before me and allow the patentees leave to submit amendments to the Patent Office for consideration.

Prior to the preliminary hearing unconditional amendments were offered by Coal Industry in their counterstatement under rule 75(3). These amendments were formally opposed by Glaverbel and subsequently the offer to amend was withdrawn. These amendments included deletion of the apparatus claims, amendment of claim 1 and of various passages in the description.

Before dealing with the grounds for revocation it is necessary to construe the patent and in particular claim 1. Claim 1 includes three key phrases, namely "flame spraying", "itself capable of supporting oxidation" and "adjacent its outlet", which need to be considered in order to ascertain the limits of the invention. In accordance with section 125 of the Patents Act 1977 an invention shall be taken to be that specified in a claim as interpreted by the description and any drawings contained in the specification.

The first key phrase "flame spraying" is stated in the body of the specification to involve "spraying molten or sintered refractory particles from a lance into the oven or furnace and onto the area of wall region requiring repair where it builds up". It is further specified that the spray issuing from the lance is "ignited by contact with the hot wall of the oven or furnace or by contact with a flame". Thus the phrase "flame spraying" clearly involves ignition of the material being sprayed from the lance. Both parties have discussed their meanings of the term "flame spraying". Mr Mottet, the applicants' main

witness, stated both in written evidence and when cross-examined that he prefers to use the expression "ceramic welding" for a higher temperature process such as that under consideration in the patent, in which use is made of solid fuel particles, in particular metal or metalloid particles, and the refractory particles become fused together to form a coherent refractory weld mass. He would use the phrase "flame spraying" to denote refractory repair processes in which the refractory particles are sprayed through a flame resulting from the burning of a gaseous or liquid fuel. However it seems clear to me that in the method of the patent in suit a flame is produced and spraying takes place, and therefore the term "flame spraying" is fair, clear and not misleading.

The second key phrase "itself incapable of supporting oxidation" is used to define the carrier gas. The body of the specification states that "air is the preferred carrier gas and that experimental work has shown that "the mixture of refractory and oxidisable element(s) does not combust in air." Claim 3, which is appendant to claim 1, specifies that the carrier gas is air. Mr Tucker, the main witness for the patentees, acknowledges in his written evidence that "Any reader will be aware that powdered metal will oxidise in time, even with a small percentage of oxygen in an otherwise inert gas. Clearly since the specification describes the use of air, he would not construe the words 'incapable of supporting oxidation' in the strictest sense." Moreover, during cross-examination Mr Tucker admitted that claim 1 "shows unfortunate wording which is incorrect, because we do cite air as a carrier gas". I consider nevertheless that a skilled reader construing the claim in the light of the entire body of the specification would include air as a suitable carrier gas. Mr Hamer put it to me that a skilled man only has to stop supplying oxygen to the lance and see if it still burns to know whether a particular carrier gas falls within the terms of claim 1 and I would agree that this test is the one to be applied. Mr Hamer drew my attention to No Fume Ltd v Frank Pitchford Co Ltd 52 RPC 231, and it seems to me that claim 1 is

no less well defined than the claim in No Fume since the carrier gas of claim 1 of the patent in suit can be directly and positively verified by an experiment adequately specified in the description and involving nothing more than trial and error, the test held to be valid in the No Fume case. Thus a skilled man would know where he is with regard to other carrier gases than air by simply stopping the oxygen supply and seeing if combustion continues.

The third key phrase "adjacent its outlet" specifies the position at which the oxygen is supplies to the lance. Mr Hamer suggested that "adjacent" meant, in the context, "at or near", and I have heard no reason to differ from that. Mr Hamer also observed that, by specifying that the oxygen is fed adjacent the outlet, the claim may be said to be unnecessarily narrow, but that is what the patentees have chosen. I will return to further analysis of these three key phrases at a later stage.

I turn now to the grounds for revocation and will deal with them in the order of novelty, obviousness and finally unclear and insufficient disclosure.

The prior art cited under novelty against claims 1 and 2 was Belgian patent 864722 (CRM and Cockerill) ("722"), which was discussed throughout in translation, and GB 2019988 (Cockerill) ("988"). I was provided with confirmatory evidence that 722 was published on 3 July 1978, before the priority date 24 November 1978 of the patent in suit. 988 is in the section 2(3) field, being published on 7 November 1979 but taking a priority date from 722 and a further Belgian patent.

Both 722 and 988 disclose a process for the repair of refractory material in which powder containing at least one refractory oxide is sprayed onto a refractory wall using a lance, the temperature of the refractory powder being not lower than that of the wall. Three variants are disclosed in both patents. In the first variant the temperature increase of the powder is carried out by

physical means and is put into operation by means of a lance having two co-axial ducts, the central duct serving to convey pure oxygen and the peripheral duct serving to convey a refractory powder in a combustible gas. In the second variant the temperature increase is obtained by chemical means, by burning in the vicinity of the wall one or more powdered metals exhibiting highly exothermic combustion and constituting part of the powder, the powder being conveyed by an oxidising support gas and sprayed by means of the "above mentioned lance". The second variant does not tell us how many ducts the lance must have or what is in each duct, merely that the powder contains powdered metal and is conveyed in an oxidising support gas. No mention is made in this variant of a supplementary supply of oxygen. The reference to the "above mentioned lance" caused much dispute at the hearing because as well as the reference in the first variant to a lance having two coaxial ducts there is an earlier reference in the consistory clause to a spraying lance "provided with suitable ducts" and an even earlier reference in the prior art acknowledgement of spraying of the guniting type, ie where a refractory product is mixed with a binding agent and water, to a lance of "suitable shape and dimensions". Mr Furness, a witness for the applicants, when cross examined by Mr Hamer, said that he considered the "above mentioned lance" to be the lance of the first variant and thus to have two coaxial ducts. Moreover, he said that it had never occurred to him that there was any other arrangement. I do not concur with this view and would agree with Mr Hamer's contention that the likeliest antecedent for the "above mentioned lance" is the lance of the consistory clause rather than that of the first variant or the guniting prior art lance. Mr Hamer also pointed out that the claims do not lead towards the use of a two co-axial duct lance in the second variant and that the description of the second variant appears to embrace the use of only one duct.

I am not persuaded by Mr Waugh's view that if a single duct lance had been intended to be embraced by the consistory clause then the clause would necessarily have specified a lance provided with

"one or more ducts" or "at least one duct". Rather I would agree with Mr Hamer that the consistory clause refers to "suitable ducts" because one variant, the first, requires more than one duct. A sensible interpretation of the consistory clause lance would give a lance having one or more ducts depending upon the material which it is required to convey.

If the second variant is difficult to construe then the third variant, which involves putting the second variant into operation with the first variant, is even harder to interpret. The first variant involves a combustible gas as the carrier gas for the powder while in the second variant the powder materials are conveyed by an oxidising support gas. I am not convinced by Mr Mottet's arguments that, since oxygen can be regarded as an oxidising support gas, this combination of variants would give a powder mixture of refractory oxide and combustible metal conveyed in a combustible gas through one duct with oxygen through the other duct. I would agree with Mr Tucker that since the second variant clearly teaches that the metal is conveyed in an oxidising support gas one cannot ignore this teaching and convey the metal only in a combustible gas as put forward by Mr Mottet.

Neither side questions that in the first variant oxygen is supplied adjacent the lance outlet so the question of whether or not either of the second or third variants, the only ones using metal powder, anticipates the patent in suit hangs on the nature of the carrier gas and the provision of a separate supply of oxygen to the lance.

With regard to the carrier gas required by claim 1 of the patent in suit, Mr Tucker in his written evidence states that the phrase "itself incapable of supporting oxidation of said elements" was intended to be a generic description of a whole range of gases including air, nitrogen, argon, propane, acetylene, and mixtures thereof. However, when cross examined by Mr Waugh, Mr Tucker stated that he now understands from the inventor, Mr Codman, that

it was not intended that the carrier gas should include the combustible gases. Mr Waugh put it to me that what the inventor intended to embrace is irrelevant and that what the patent teaches must be what it suggests to a skilled reader, such as Mr Tucker. I have to agree with Mr Waugh on this, and accordingly construe claim 1 to include combustible gases. As previously mentioned the use of air as a carrier gas is taught, and the description also teaches the use of an inert gas such as nitrogen. Oxygen is clearly excluded from being the carrier gas since oxidation and combustion could occur without the addition of supplementary oxygen.

I find that the second variant does not anticipate claim 1 on two accounts. It does not clearly disclose a separate supply of oxygen to the lance neither does it teach the use of a carrier gas which falls within the terms of claim 1. The "oxidising support gas" of the second variant is not defined. A skilled man might consider using oxygen, but that does not meet the requirement of the claim.

The third variant remains the only possible anticipatory variant, but I conclude that it is impossible to construe it with sufficient degree of certainty. I would agree with Mr Waugh's submission that were the description of the third variant such that it was capable of two or more readings and one of these readings gave an anticipation of claim 1, then the third variant could be held to render claim 1 not novel. But we are not in this situation. I find myself unable to construe the third variant with any confidence, as regards the nature of the carrier gas and the supply of oxygen, in a manner that is wholly consistent with the teaching of the first two, which it purports to combine. I have found no way satisfactorily to combine all the teachings of them both. Accordingly, in the circumstances I cannot safely hold that the third variant anticipates claim 1 on novelty grounds.

I therefore find that the applicants have failed to establish the ground of lack of novelty in relation to 722 and 988 as regards the method claims.

Turning now to the question of obviousness, I was referred to a large number of documents but will briefly review only those which featured significantly in the arguments put before me. These were the previously mentioned 722, a further Belgian patent 606632 (Plibrico) ("632") and two GB patents, 1330894 (Glaverbel) ("894") and GB 1313986 (Donetsky) ("986").

I will first deal with the previously mentioned Belgian patent 722. Mr Waugh put it to me that a skilled man presented with so much information would at the very least think it obvious to try including metal powder in the second peripheral duct of the first variant. I can find nothing in the document which would lead a skilled man to try out including metal particles in the second duct and in view of the uncertainty surrounding the interpretation of the variants I am not sure that any way forward is obvious. The second variant teaches metal powder being conveyed in an oxidising support gas and this gives a sign post in the wrong direction as far as the carrier gas is concerned.

The citation which featured most prominently in the obviousness discussions was 894. This patent is acknowledged in the patent in suit and it discloses a process for forming refractories involving projecting a powder mixture of refractory and metal particles onto a surface to be repaired and combusting the particles, the heat of combustion melting the particles to give a coherent mass. The description states that the combustion "may take place in air or some other oxygen containing mixture. Preferably however the said combustion takes place in air alone." The description goes on to state that according to an optional feature "the combustion supporting gas, preferably oxygen alone, is used to project the fine oxidisable particles towards the substrate to be coated." In the particular description the carrier gas is oxygen.

In their rule 75 statement the applicants interpret these statements to mean that the use of air as a carrier gas is comprehended, and I concur with this view. 894 also states that "In any event the use of substantial excess oxygen is advantageous if complete combustion of the fine oxidisable particles is required." The applicants further contend in their statement that this would lead a skilled man, if using air as the carrier gas, to supply excess oxygen at the outlet region of the lance. I consider that the disclosure in 894 is not such as to lead a skilled man to supply supplementary oxygen to the lance, adjacent the lance outlet or elsewhere. The passage concerned with the use of excess oxygen reads directly onto the statement that the combustion may take place in air, and would in my opinion lead a skilled man to consider causing combustion to take place in a gas containing more oxygen than does air. There is no mention in the 894 of feeding in any supplementary gas to the lance itself, and I must therefore look elsewhere to see whether this feeding of supplementary oxygen to the lance is an obvious step for a skilled man to take.

There would have to be a reason for a skilled man to want to alter the teachings of a patent. The patent in suit states that the Glaverbel patent process involves an ever present danger of flash back. 894 itself teaches that when using oxygen or a gas with a high oxygen content certain accident hazards are involved, and it is preferable to use apparatus having a special safety means which operates automatically in response to operative conditions involving a risk of flash back. Much evidence was provided by the patentees to show that there have been flash back incidents with the 894 process. These incidents were disputed by Mr Mottet although he acknowledged that he had made no investigations to ascertain the incorrectness of the patentees' evidence. Regardless of these incidents, I consider that flash back was a known problem since otherwise there would seem to be no need to provide a special safety feature. This being so I would expect a skilled man to consider ways of overcoming the flash back problem without the provision of a special safety

means. Accordingly, my next step is to consider what features the skilled man would think it obvious to alter or add.

Mr Waugh referred me to two other citations in support of his claim that it is very well known to feed supplementary oxygen to the lance adjacent its outlet. 632, discussed throughout in translation, discloses a lance used for the repair of refractory structures in which a stream of oxygen is fed through a duct adjacent the lance outlet, and particulate refractory material and a fuel, which may be liquid, gaseous or powdered solid fuel such as powdered coke, in a carrier gas, such as air, through another duct. Neither side disputed that 632 discloses a supplementary supply of oxygen being fed into the lance adjacent the lance outlet. 986, referred to by Mr Waugh, discloses a lance with four co-axial ducts, a powder fuel mixture being fed along the central duct, oxygen along the next duct and cooling water along the remaining two ducts. The actual outlet arrangement of the ducts is not described or shown in the drawings but there is nothing to indicate that they are other than co-planar and near the lance outlet.

Thus I would agree that it was known at the time of filing the patent in suit to feed supplementary oxygen to a lance adjacent its outlet. Whether a skilled man would have chosen to make use of this known feature would have depended upon whether it was also known to be relevant to the problem under consideration, namely safe lance usage.

The nearest 632 comes to mentioning safety is in connection with providing cooling water ducts or forming the nozzle of special material to prevent the outer walls of the lance being damaged when the temperature is very high. 986 also mentions water cooling ducts but makes no mention to safety. Thus although both these two patents show that feeding oxygen to the lance is known, the oxygen is not so fed for any reason associated with safety. When faced with the problem of safety, and in particular flash back, I consider that a skilled man would not think it obvious

to overcome flash back problems by feeding oxygen to the lance but would instead consider altering another parameter. Both Mr Hamer and Mr Waugh acknowledge that many parameters are involved such as particle size, flow rate or temperature of the lance.

So far I have viewed the obviousness grounds as if starting from the 894 Glaverbel process and this is how Mr Hamer considers it should be viewed. However, Mr Waugh put it to me that it is justifiable to start from either 894 or the Plibrico 632 process. For the applicants Mr Robyn and Mr Deschepper, who were both fully acquainted with ceramic welding in 1978, gave identical written evidence that a skilled man would consider it obvious to substitute metal particles for the solid fuel particles of 632. Mr Mottet also takes this view, although he acknowledges that he did not come into the ceramic welding field until 5 years later. Reading 632 I can see no reason why a skilled man would want to replace the solid fuel particles, which as previously mentioned constitute merely one of several types of fuel specified in the patent, with other particles.

Mr Hamer pointed out that replacing solid fuel particles by metal particles would be a large step, since one gives a gaseous product with oxidation occurring all the way along the line and the other gives a solid product with intense heat and light sent out by burning metal. I would agree with this view.

Various other less pertinent documents were brought to my attention in the form of written evidence, but they do not assist with or alter my finding that the applicants have failed to establish that any of the method claims of the patent in suit fail for obviousness.

I have already touched upon the final ground for revocation, that the specification does not disclose the invention clearly enough and completely enough, in construing claim 1 of the patent in suit. Mr Hamer agreed with Mr Tucker's statement, already

referred to, that the claim was not well drafted, but put it to me that the claim can nevertheless be construed. I have to consider the specification as a whole in deciding whether or not the invention can be construed.

The Court of Appeal in Genentech Inc's Patent [1989] RPC 147 has made it clear that while a patent may be revoked under section 72 if the specification of the patent does not disclose the invention clearly enough and completely enough for it to be performed by a person skilled in the art, it is not a ground for revocation that the claims are not supported by the description. Thus, if a skilled man can construe the claims in the light of the description, then the patent should not be revoked even if the wording of the claims is not wholly supported by the description.

It is the applicants' view that the three phrases which I have already described as "key" render claim 1 unconstructable. Although the fact that I have been able to construe claim 1 sufficiently to enable me to determine the issues of novelty and obviousness suggests prima facie that the applicants face a substantial hurdle in order to establish this third ground, I must address the arguments presented in their submissions. Following the applicants' submission, I will again consider each of the key phrases.

I have said that I regard "flame spraying" to be a fair description of the process in question. The phrase "flame spraying" indicates that some ignition must take place in order for a flame to be produced, and the body of the specification makes quite plain that the spray issuing from the lance becomes the flame spray. In other words, there is a flame between the lance outlet and the hot wall. Moreover, it is clearly specified in the patent in suit that a very strong bond between the oven or furnace wall and the built up refractory material occurs on oxidation of the metal particles, the built-up material being a

very hard solid and there being no separation or cracks due to thermal shock.

The applicants produced evidence in the form of a videoed experiment carried out by Mr Zivkovic to show that when air alone is used as carrier gas, with no supplementary oxygen being supplied to the lance, a build up of material occurs on a brick within a furnace. I have viewed this video and inspected the brick and its deposited material, now separated from the brick. No analysis of the deposited material was made, but I found that I could easily mark it with my finger nail and accordingly I doubt that it could properly be called "a very hard solid". Moreover, Mr Mottet agreed that the video appeared to show no flame between the lance outlet and the wall. Thus the process shown in the video would not seem to be a flame spraying process as required by the patent in suit, and its outcome does not therefore assist me in determining whether the specification describes the invention clearly and completely enough.

Moving to the phrase "itself incapable of supporting oxidation of said element(s)", the applicants' video purports to show that oxidation of the elements can occur in air alone, contrary to what is stated in the patent in suit. In fact the patent in suit states that "As a result of experimental work by the applicants it was found that the mixture of refractory and oxidisable elements does not combust in air". I note that the term "combust" has been used rather than "oxidise", although these terms are not synonymous. It is perhaps another example of weak drafting. The applicants' video does not clearly show combustion occurring since no intense heat in the form of light or flame is seen before the spray impinges on the wall. Possibly some oxidation of the particles occurs but since no analysis of the deposit was made I am unable to be certain on this point.

The phrase "incapable of supporting oxidation" cannot be considered in isolation from the rest of the claim, and thus the flame spraying aspect of claim 1 must be borne in mind when

interpreting the phrase. Since flame spraying indicates combustion occurring in order to produce a flame and combustion must include oxidation, even if oxidation does not necessarily include combustion, it seems to me that I must construe the phrase to mean incapable of supporting both combustion and oxidation.

My attention was drawn by Mr Hamer to British Thompson - Houston Company Ltd v Corona Lamp Works Ltd 39 RPC 49 and in particular to the principle summarised in the headnote in the following terms: "The fact that knowledge and skill, and even some experimental tests, are necessary in putting an invention into practice is not sufficient to invalidate a patent if the nature of the invention is adequately described." The claim of this British Thompson - Houston patent included the subjective adjective "large", and it was held to be valid. Similarly, I consider that in the patent in suit the phrase "itself incapable of supporting oxidation" does not invalidate the patent since the phrase can be adequately interpreted in the body of the specification and must be taken to include air. A skilled man knows whether he is using a carrier gas which is inside or outside the terms of the claims by turning off the supplementary oxygen and seeing whether combustion and thus oxidation continues.

Mr Waugh directed me to "Terrell on the Law of Patents" (13th edition) which, under "Degree of sufficiency required", reads "The directions given must be such as to enable the invention to be carried into effect without an excessive number of experiments". In the patent in suit an excessive number of experiments is not required, merely the turning off of the oxygen.

I also viewed a second video, provided as evidence by the patentees, which aimed at showing that air alone will not work. There was much discussion at the hearing of flames in the repair area, of flaring of reactive components away from the repair area

have let the experiment go on longer until the whole thing had cooled down. Mr Waugh made the point that combustion still occurred after the oxygen supply was turned off, although Mr Tucker claimed that what was seen was flaring, not a reaction between the nozzle and the repair area. I found this video, like that of the applicants, unhelpful and inconclusive. Neither video alters my view that the phrase "incapable of supporting oxidation" can be construed adequately in the light of the description.

The last phrase that I need to consider is "adjacent its outlet". Claim 1 is narrower in this respect than the original disclosure since the apparatus claim 7 specifies that oxygen is fed to the lance "adjacent the first feed tube (ie the tube for the powder and carrier gas) outlet", and the first feed tube outlet is not specified in claim 7 as being adjacent the lance outlet. Mr Waugh criticised the patentees' video for showing an experiment in which the oxygen was introduced into the butt end of the lance rather than adjacent the outlet, as required by claim 1. Mr Hamer in reply stated that since the point of the video was to show that you do not get combustion if you convey in air without adding oxygen, it does not matter where the oxygen is coming from. I accept that the patentees now wish to limit the position of introduction of the oxygen to adjacent the lance outlet, thus achieving the maximum path between the powder store and the oxygen input.

In construing the phrase "adjacent its outlet" I have to consider all the teachings of the patent. In a preferred embodiment described and shown in the drawing accompanying the patent the oxygen feed pipe is connected to an annular manifold around the first feed pipe so that the material dispersed in the carrier gas emerges from the lance with a surrounding skin of oxygen. The description also states that other gas flow configurations may also be used. I thus interpret the phrase to include not only the oxygen being fed into the lance directly adjacent the outlet but also at a point somewhat further back, the oxygen then

passing through an annular manifold surrounding the tube or pipe through which the powder and carrier gas flows until a point adjacent the lance outlet.

To sum up I would agree that claim 1 was not very well worded but I find, nevertheless, that the invention defined by the claim as interpreted by the description is disclosed clearly enough and completely enough for it to be performed by a person skilled in the art.

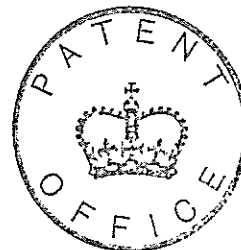
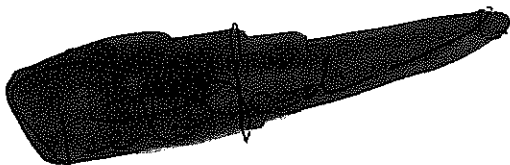
I thus find that the applicants have failed to establish any of the three grounds upon which they seek revocation, at least in regard to claims 1 to 6.

I have considered this application for revocation without any regard to the apparatus claims since it is the stated intention of the patentees not to pursue these claims. Neither party addressed me at the hearing on the question of whether, if the patentees were to make an application to amend the specification by deletion of claims 7-11, I should exercise my discretion to allow such amendment. I therefore allow the patentees a period of one month from the date of this decision in which to submit amendments to the Patent Office by way of deletion of the apparatus claims and any consequential changes in the description. I invite them at the same time to submit arguments in writing as to my discretion to allow the amendments. The applicants for revocation will then have one month from receipt of any such amendments and submissions to submit their own comments, and if dispute arises on the papers the patentees will be given a further period of one month within which to reply. I will then determine the matter and issue a final decision.

I defer consideration of costs until the final decision.

The period within which any appeal against this decision should be lodged is 6 weeks from the date of the decision.

Dated this *2nd* day of *September* 1991



DR P FERDINANDO

Superintending Examiner, acting for the Comptroller

THE PATENT OFFICE