

**THE JOINT EXAMINATION BOARD
PAPER P6
INFRINGEMENT AND VALIDITY**

**5th NOVEMBER 2003
10.00 a.m. - 2.00 p.m.**

*Please read the following instructions carefully. Time Allowed – **FOUR HOURS***

1. Please note the following:
 - Write on one side of the paper only, within the printed margins using a **BLACK** pen.
 - Enter the Paper Number, and your Examination Number in the appropriate boxes at the top of each sheet of paper.
 - **DO NOT** use coloured pens or highlighters within the answer – they will not photocopy.
 - **DO NOT** staple or join pages together in any way.
 - **DO NOT** state your name anywhere in the answer.
2. **NO** printed matter or other written material may be taken into the examination room. **ALL** mobile phones and electronic aids **must be** switched off and stored away.
3. Answers **MUST** be legible. If the examiners cannot read a candidate's answer no marks will be awarded. Number the pages of your paper sequentially.
4. Candidates are reminded that marks are awarded for the **reasoning** displayed and the points selected for discussion rather than conclusions reached.
5. **NO WRITING OF ANY KIND WILL BE PERMITTED AFTER THE TIME ALLOTTED TO THIS PAPER HAS EXPIRED. At the end of the examination assemble your answer sheets in page number order and place in the WHITE envelope provided.**

Document checklist :-

Client's letter: (2 pages)
Document A: Client's Patent GB 2000000- (5 pages)
Document B: Sketch DIY Kit - (1 page)
Document C: Extract from US Patent No. 5678910 - (2 pages)
Document D: Transcription of Internet Brochure - (2 pages)

This paper consists of 13 pages in total, including this page.

CLIENT'S LETTER

A new client writes to you as follows:

Dear Sir,

Re: Anti-frost protection.

Trace heaters have been known for many years, and they have been used in a variety of industries. Their main purpose is to provide heat to installations where there is the likelihood of adverse effects from low temperatures. In other words they keep whatever it is that needs to be heated, at a controlled temperature, usually up to about 65°C. They are particularly useful in situations where ducting passes through an environment that is significantly colder than the temperature maintained in the interior of the duct.

My firm manufactures hoses specifically for motor vehicles, some reinforced and some not depending on what the hose is to be used for. Reinforced hoses are used for air, water and fuel lines in motor vehicles where the fluid is under pressure. Hoses for windscreen washers do not normally require reinforcement at all, even though water is pumped to the nozzles which direct the water onto the windscreen. I learnt about trace heaters some ten years ago and it occurred to me that my industry was very suited to their use.

As a motorist myself, I am only too aware of the problems of driving in winter when, having cleared condensation and frost from my windscreen, I get onto the road only to find that my windscreen washers are frozen solid and may remain like that through the whole of the journey. In those circumstances, either I make the best of it (which is not safe), or I stop every now and again to clear my windscreen. It seemed like a good idea to produce a form of heating for the frozen water in the hose so that it could be melted to allow the windscreen washer to function properly. I tested the idea in principle by freezing a hose filled with water, wrapping a heating coil around the frozen hose and passing an electric current through the coil. I found that it worked.

I then developed a hose that included a heater. I adapted the trace heater principle and incorporated this into a hose and tried it out on my own car and it worked very well. The heater is a coiled wire that runs up the length of the hose up to the windscreen washer nozzle and is encased in an outer sleeve that runs the full length of the hose.

CLIENT'S LETTER

It worked so well that my company applied for a patent in 1998 on the heated hose concept and the patent has now been in force for about two years. A copy of my patent is enclosed (GB 2000000). The drawings in my patent show the heater system product I supply to several motor vehicle manufacturers and sales this year have reached over a million systems. You can see that the patent is very important to my business.

In the past four or five months, I have become aware that a competitor of mine is also supplying heated water hoses to motor vehicle manufacturers. Their hoses are identical to mine except that the electrical wire is completely embedded within the rubber of the hose and it does not have the braided metal sheath or outer reinforced rubber sheath, which I use to provide protection against wear and tear.

I have also discovered that my local garage supplies simple heater strips, wiring and switches with instructions to motorists as to how to fit them (although the garage will fit them too), and that these heater strips when applied to the hose do a very similar job to my hoses. I bought a kit from my garage and note that these are also supplied by the competitor I mentioned above. I have enclosed the instructions for this DIY kit.

My solicitor wrote to my competitor who came back immediately saying that my patent was invalid because the principle was not new and that, even if it was, it was totally obvious over the trace heater principle which was well known. My solicitor suggested that I should contact you to help with this issue.

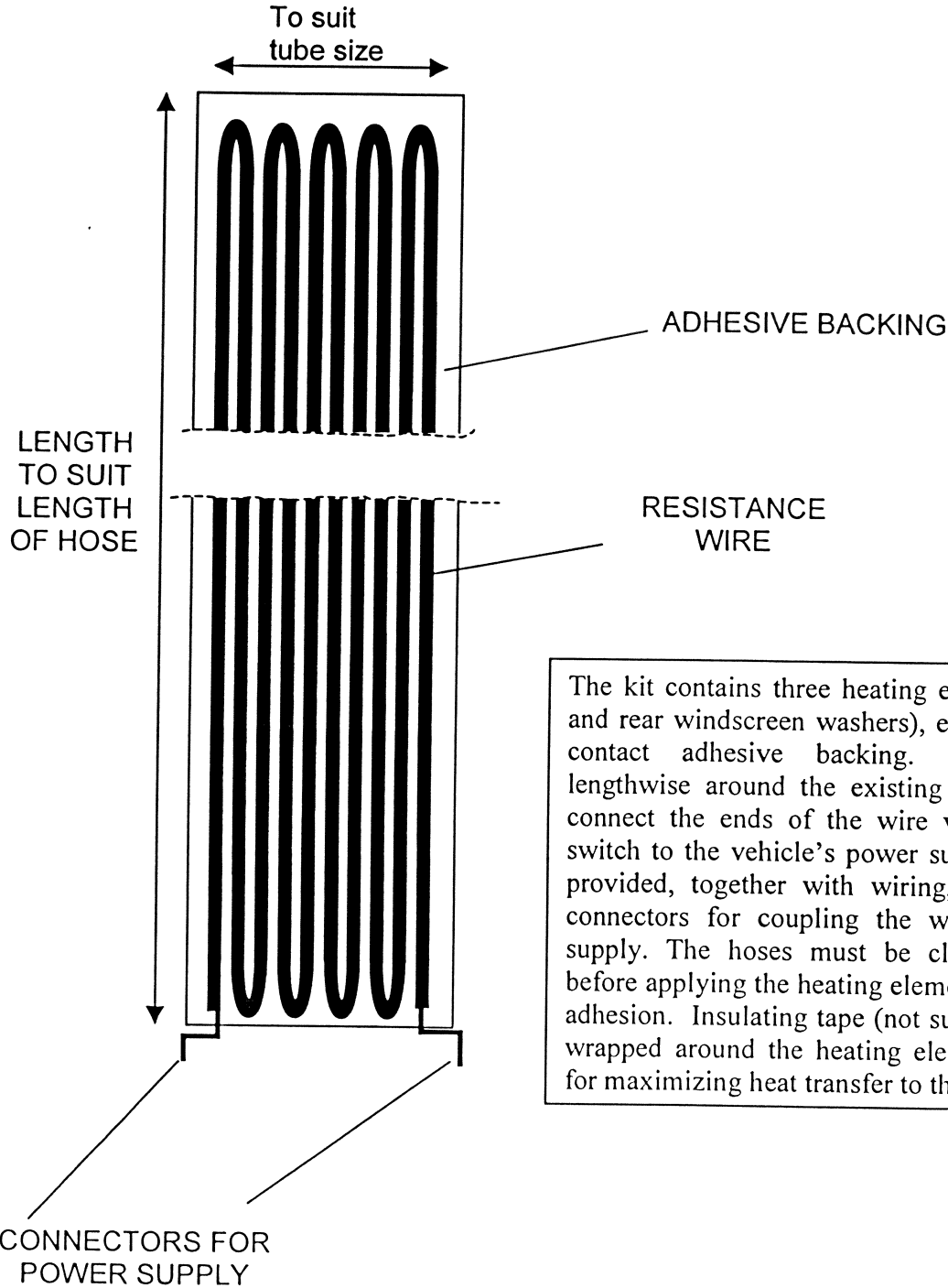
Is my patent valid? If the competitor is correct, can my position be improved at all? Can I enforce my patent against anyone mentioned above?

ooOoo

Write a letter of advice to your client.

You consult the file history and find that a US patent owned by Trace Heating Inc. issued in 1996 was cited against the client's application as a category A document and you carry out an internet search and find an electronic brochure bearing a 1997 copyright notice that describes trace heaters. You confirm that this document was originally published in 1997.

HOSE HEATER KIT



The kit contains three heating elements (for front and rear windscreen washers), each mounted on a contact adhesive backing. Wrap the wire lengthwise around the existing washer hose and connect the ends of the wire via the dashboard switch to the vehicle's power supply. A switch is provided, together with wiring, thermostats and connectors for coupling the wire to the power supply. The hoses must be cleaned thoroughly before applying the heating element to ensure good adhesion. Insulating tape (not supplied) should be wrapped around the heating element on the hose for maximizing heat transfer to the hose.

GB 2000000

Filed : 5 February 1998

Granted : 17 October 2001

This invention is concerned with water heaters and is particularly concerned with heaters for water conducting hoses in motor vehicles, especially those that conduct water from a reservoir or windscreen washer bottle to vehicle windscreen washer nozzles.

Every motorist who drives in a climate where low temperatures are likely to exist will recognise the experience of having frozen windscreen washers when driving conditions require the washers to work. Frozen windscreen washers may be due to frozen water in the reservoir, frozen water in the hose leading from the bottle to the nozzle on the front and/or rear of the vehicle, or frozen water in the orifice in the nozzle through which the water is directed at the windscreen.

Usually, once the vehicle engine has heated up, radiated heat from the engine or associated conduits warms up the reservoir or hose sufficiently to melt the frozen water. However, in very cold conditions where outside temperatures are below zero, this may take a long time or may not happen at all. This renders driving hazardous.

The aim of the present invention is to provide a heating system for de-freezing hoses, particularly water conducting hoses in motor vehicles.

Accordingly, the present invention provides a heated windscreen washer system comprising a reservoir for windscreen wash, a washer nozzle, and a length of hose there between in which the hose is provided with a heat conducting means, means of securing the heat conducting means to the hose, a means of protecting the heat conducting means from environmental conditions, and means of connecting the heat conducting means to an electrical power supply.

The present invention may be put into practice in a number of ways, among which is that an electrical heating element can be wound around the hose in a helical manner at least along a part of the hose adjacent that end connected to the water reservoir. Alternatively, but this is not preferred, the heating element can be arranged so that one length extends along the hose and then is bent round so that another length extends back along the hose in parallel spaced relationship to the first length, and so on.

The present invention also provides a method of manufacturing hose for connecting a windscreen washer reservoir to a windscreen washer nozzle on a vehicle, the method comprising providing a length of tubing with a heat conducting means, means of securing the heat conducting means to the tube and a means for protecting the heat conducting means from environmental conditions.

The electrical heating element is of course thermostatically controlled so that it does not overheat.

An example of a length of hose according to the invention is described hereinafter with reference to the accompanying drawings in which Figures 1 to 3 show in partially cut-away form the stages of manufacture of the hose.

Referring firstly to Figure 1, the illustrated hose is shown to comprise an inner tube 10 which is formed typically of synthetic rubber such as ABS, or a natural rubber. Such tubes and the materials from which they are manufactured are well known in the motor industry.

The tube 10 typically has an external diameter of 5 mm or less, and is of any length which is required to extend from the washer bottle to the nozzle(s) which, in a motor car, are mounted in the bonnet or body of the car, adjacent the windscreen. When the windscreen washer is activated by the driver of the vehicle, water is pumped from the reservoir to the nozzles via the hose or hoses to exit the nozzle(s) to the windscreen.

The tube 10 has a heating element 12 wound around it as a coil in the form of a helix of resistive wire that extends from one end of the hose to the other and extends straight back again (as shown in dotted line at 13 to the same end of the tube as the other end of the wire along the surface of the tube) so that the free ends of the wire can be connected by suitable connectors to the power source of the vehicle.

During manufacture, and using a natural rubber tubing, the heating element can be wound around the tube while the rubber is uncured so that subsequently passing an electric current through the wire to heat the wire also cures the rubber with the wire partially embedded in the outside of the tube. The coils of the wire are thus fixed equidistant from each other and the wire is prevented from slipping when the hose is bent to the desired position in the vehicle. If

desired, a similar technique can be used where thermoplastic extrudable materials are employed.

The tube 10 and heating coil 12 are enclosed in an electrically insulating sleeve 14 which can be made from any non-conducting material, such as PTFE, including insulating tape.

Around the exterior of the insulating sleeve, a braided metallic sheath 16 can be provided to give a protective layer against wear and tear on the hose, and the braided sheath can itself be covered by an outer skin 18 of reinforced rubber or the like.

Though not shown in the Figures, the heating element is connected by a switch to the vehicle's power supply and the switch is normally mounted on the vehicle dashboard or close to the driver's position within the vehicle so that the heater can be activated when required. Within the circuit to the heating element, a thermostatic control is provided so that the heating element does not overheat.

Within a typical motor vehicle having both front and rear windscreens, all washer hoses, including for example those for headlights, can be fitted in accordance with the invention.

CLAIMS

1. A method of manufacturing hose for connecting a windscreen washer reservoir to a windscreen washer nozzle on a vehicle, the method comprising providing a length of tubing with a heat conducting means, means of securing the heat conducting means to the tube and a means for protecting the heat conducting means from environmental conditions.
2. A method according to claim 1 wherein the heat conducting means is an electrical wire.
3. A method according to claim 1 or 2 wherein the heat conducting means is provided in a coiled arrangement along at least part of the hose adjacent the end connected to the reservoir.
4. A method according to claim 2 or 3 wherein the heat conducting means is partially embedded in the tubing.
5. A heated windscreen washer system comprising a reservoir for windscreen wash, a washer nozzle, and a length of hose there between in which the hose is provided with a heat conducting means, means of securing the heat conducting means to the hose, a means of protecting the heat conducting means from environmental conditions, and means of connecting the heat conducting means to a power supply.
6. A system according to claim 5 wherein the hose is manufactured by the method of claims 2 to 4.
7. A method, system or hose substantially as described herein with reference to the accompanying drawings.

FIG.1

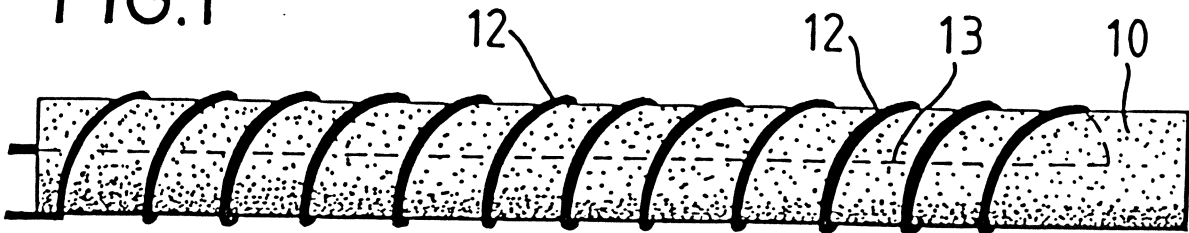


FIG.2

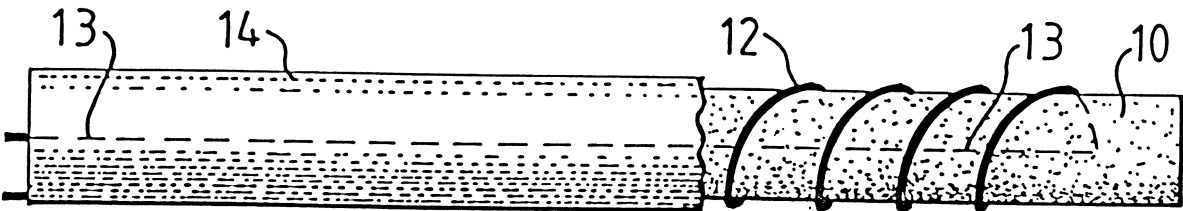
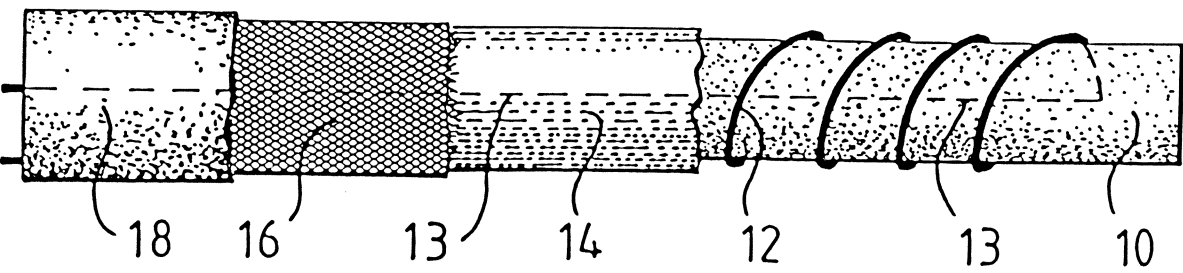


FIG.3



**EXTRACT FROM
UNITED STATES PATENT NO. 5678910**

Issued : 05 November 1996

Assignee: Trace Heating Inc.

TRACE HEATERS FOR GASEOUS CONDUITS

This invention is concerned with heated conduits for maintaining the temperature of a gas being ducted by the conduit.

In many situations, both in research and in manufacturing, it is important to be able to maintain the temperature of a gas as it passes from one location to another. For example, it is useful to prevent a gaseous material from condensing on the interior surface of the conduit where it passes from one temperature-controlled location to another but through a cooler environment.

The present invention relates to a heated conduit comprising a length of conduit having a heating element embedded therein. The heating element extends generally along the length of the conduit and is connectable to a heating source for supplying heating current to the heating element.

One form of the conduit particularly suited to use in the laboratory environment is one in which the conduit is formed of glass and the heating element comprises a longitudinal or helical tube formed within the glass through which heated fluid passes, e.g. steam or water. The conduit can be provided with an insulating foam jacket to prevent heat losses to the atmosphere.

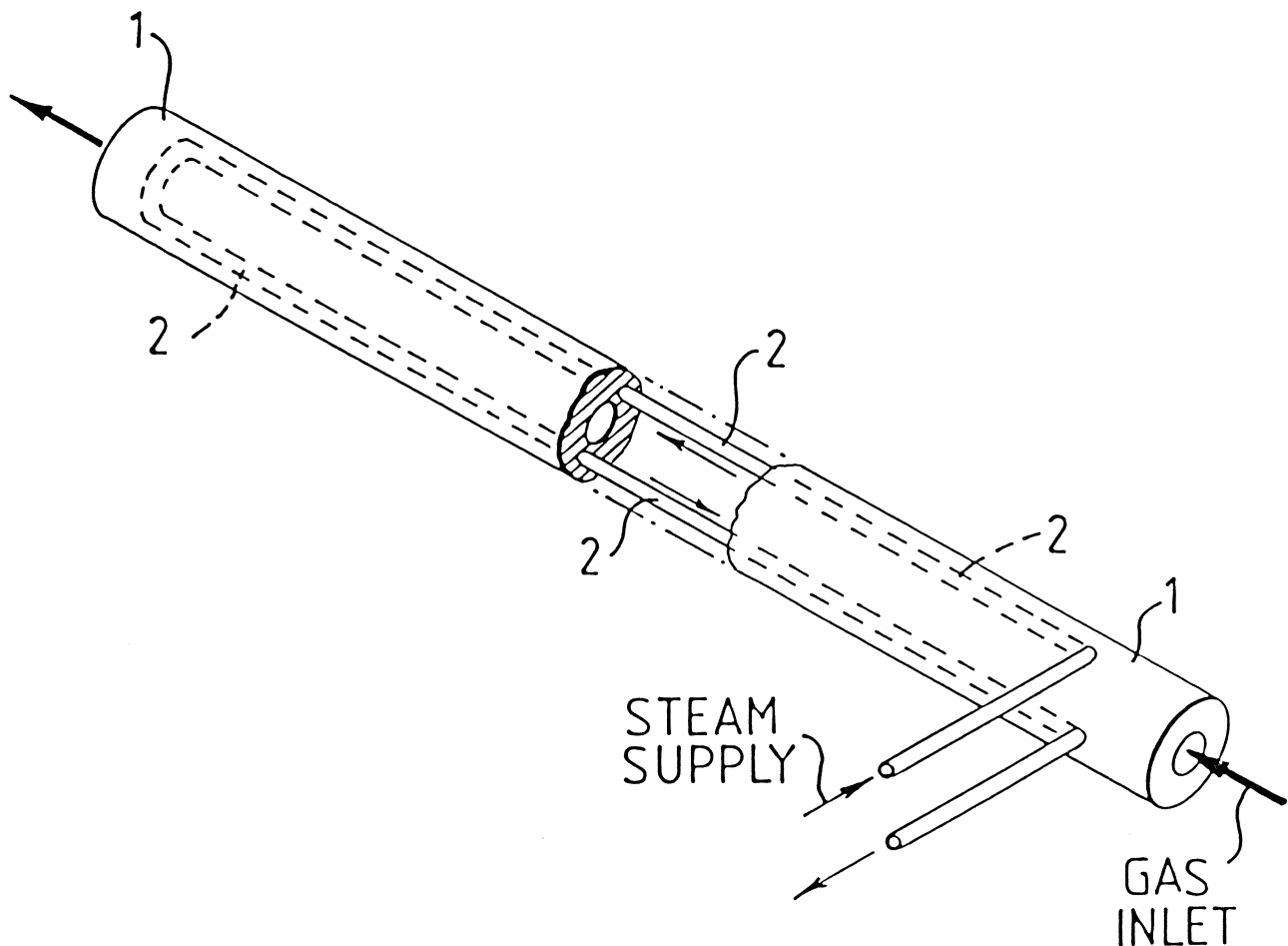
Another form of the conduit comprises a tube and an electrical conducting wire, which is tightly wound around the tube, in effect forming an outer tube. The wire is connected to an electrical power supply and the temperature of the gas can be closely controlled by varying the current flowing through the wire according to the rate of flow of gas in the tube.

The tube may be formed of any suitable material for transporting gases, such as glass or synthetic rubber or plastics material provided the tube has an inert liner if necessary, which is not porous to, or reactive with, the gas being transported.

An exemplary embodiment of the present invention is hereinafter described by reference to the accompanying drawing, which illustrates a conduit in accordance with the present invention. It is to be clearly understood that this embodiment has been selected for description to illustrate the invention only by way of example.

The conduit shown in the drawing comprises a tube 1 made of glass. The tube 1 is provided with an internal longitudinal tube 2 formed completely within the glass tube 1. The tube 2 is connected to a supply of steam, which constantly flows through the internal tube 2

On the outer face an insulating jacket (not shown) is provided over the area where the internal tube 2 is positioned.



ELECTRICAL SURFACE HEATING PROJECT SPECIALISTS FOR A WIDE RANGE OF APPLICATIONS AND INDUSTRIES

TRACE HEATING INC.

ELECTRICAL TRACE HEATING FOR THE WATER INDUSTRY

The term "trace heating" describes a method of application of heat to the surfaces of all types of conduits, pipelines (including both water and oil), tanks, vessels containers and similar items, whether continuously or intermittently, to raise and/or regulate temperature around and inside those items. The term "surface heating" is also sometimes used.

Electrical trace heating will protect your operations from damage due to frost, raise the temperature of your product storage and flows where required, maintain temperature of products within pipelines, tanks, vessels etc during manufacture, and generally ensure that all vital product flows are kept moving and/or stored at the required temperature.

In principle at least, there are very few operations, factories or large buildings in the UK, or indeed worldwide, which could not benefit from some form of electrical trace heating.

DESIGN ISSUES

Our products may be sited in flameproof areas, in locations below freezing point, or high ambient temperature locations. Trace heating tapes with suitable flame proofing can be installed together with their terminations and thermostat controls etc.

There are many types of trace heating tapes, wires and cables available on the market ranging from: self regulating heater tapes whose outputs vary dependent on the temperature of the product being heated; heater tapes which are fixed wattage regardless of the length and basically comprise a new circuit every one metre; heating cables constructed from rubber, copper, or stainless steel which cope with high temperature work in dangerous environments and corrosive environments.

RECOMMENDATION FOR THE WATER INDUSTRY

Most applications in this industry relate to frost protection and therefore we recommend use of the trace heater tape shown below in Figure 1. This trace heater tape can be either wound helically or placed longitudinally in sections along water pipes. The temperature of the tape is controlled by means of air thermostats. One thermostat can protect up to approximately 300 metres of small-bore pipe-work from temperatures down to -6°C. In addition, we can also trace heat water pipes in which water is to be maintained at temperatures significantly above freezing, and this normally comprises a trace heater tape with an outer insulating jacket.

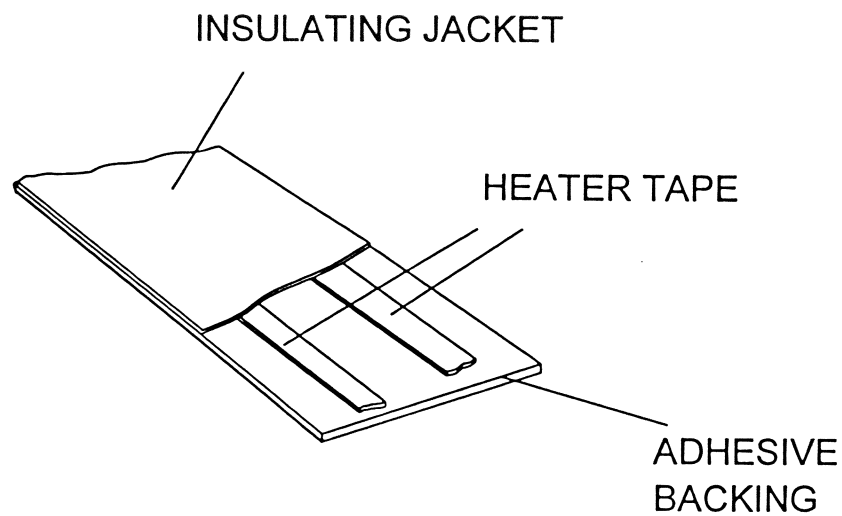


Figure 1

EXAMINERS' COMMENTS
P6 2003

General Comments

Candidates are reminded every year that marks are given for displaying the **REASONING** leading to their conclusions concerning each of the sections of the answer. The reasons for the conclusions are generally much more important than the conclusions. This is because in any case of infringement, which goes to litigation, there will be more than one way of interpreting particular features, and therefore, the reasons for the conclusions ultimately will be what determines the strength of the case and the outcome. At the stage at which a candidate passes P6 there should be a demonstrable ability to conduct an analysis of a relatively simple case and present the outline of the reasons for the outcome the candidate expects to achieve for the client in court.

In order to give the candidate a situation in which reasoning can be displayed, the question will always set up a number of potential scenarios and the candidate is required to analyse the statements given and provide a reasoned explanation for the conclusion reached for their client. A simple yes or no answer does not demonstrate the candidate's ability to reason - irrespective of whether the candidate has the ability to reason.

In order to demonstrate the ability to reason under examination conditions, it is vital that candidates put sufficient time and effort into their preparation for this paper. The preparation should include past papers obviously, and in repeating past papers, it is vital that candidates strictly time themselves under examination conditions, which includes practising concentrating for four hours and writing solidly for at least two hours. Furthermore, in this age where the majority of candidates use computers or dictation machines for drafting documents, handwriting for any length of time is unusual. It is important that you can write reasonably swiftly and legibly for at least 2 hours (different from other questions where there is a break for reading between answers). As ever there are a number of candidates with poor handwriting but more particularly who write in note form in a way, which makes it difficult for the Examiner to see the reasoning. The results of not practising writing for a couple of hours are reflected we think in the difficulties a number of candidates have each year with finishing the paper. There is no alternative to thorough preparation.

It is likely that the majority of candidates have had little or no experience of actual infringement/validity proceedings. This is not a requirement of taking this paper, so do not feel disadvantaged if that is the case. What is required is an ability to look at a patent and determine the scope of the claims, this is a basic requirement of being a patent attorney. Then that information is used to determine whether the claims are infringed and/or valid. Much of this is common sense along with an understanding of how to determine the scope of the claims. The latter is practice and almost everything done as a patent attorney requires an understanding of the scope of claims, for example, drafting, responding to an official action, amending claims in view of the art, etc. Interpretation of claims is in many ways the reverse of drafting claims. Candidates should develop the habit of analysing claims they draft or respond to actions, as this will develop interpretation skills.

The approach to answering the paper depends considerably on the pressure the candidate is under at the time. In particular, it is not essential to have addressed every claim for infringement, novelty and inventive step. It is certainly possible and it frequently happens, that candidates pass this examination without having addressed all the claims for all matters. For example, many candidates having found claim 1 novel, and thereby all claims dependent thereon are novel, continue with an analysis of the remaining claim integers and indicate whether or not a feature of the claim is present in the prior art. This will likely gain a couple of marks but may be time consuming and lead the candidate to lose marks elsewhere by writing a poor inventive step argument or not writing the letter to the client or missing some amendment points. It is perfectly acceptable to address the independent claims first, before sub-claims or to deal with the claims the candidate thinks at the time would be most important.

There is rarely a 'right' answer to any point. Under examination conditions, do not waste time worrying over whether you have made a 'correct' interpretation, just make sure that you actually make and use

the interpretation and demonstrate it being used to the Examiner. On the other hand, it is perfectly acceptable to change your interpretation at any time in your answer as long as you make sure you return to the previous uses of the interpretation and amend accordingly. The examiners are also looking for consistency of application of the interpretation.

If you give your answer in note form, try to do it in a way that the Examiner can make sense of it and that actually demonstrates your reasoning and not just your conclusion.

The marks for each section of this paper fell into the usual pattern with 21 marks available for interpretation, 24 marks available for infringement, 18 marks available for novelty, 24 marks available for inventive step, 3 marks for sufficiency, 3 marks for amendment and 7 marks for advice to the client.

Interpretation

As is mentioned every year in the Examiner's comments, features and words in the claims always have greater or lesser importance in terms of their construction. A read through all of the documents should indicate to candidates that every day words like 'partially', 'embedded', 'coiled' and 'wire' were particularly important words to assign a meaning. Certain words are not difficult to give a meaning to but the candidate must realise that it is important to give the meaning.

For example, does the word 'partially' include 'totally or completely', or does partially mean 'at least in part'? What is a 'wire', can a wire be flat? What is a coil? If the word 'arrangement' follows 'coil', is that broader than a traditional coil? For example, the candidates that interpreted 'coiled arrangement' in terms of a series of circles one above another, missed the possibility that the DIY Kit included a 'coiled arrangement' of wire, particularly when it was wound laterally around tubing.

Equally, it was important to assign a scope to all the different 'means'. Candidates who adopted particularly narrow interpretations didn't do themselves any favours because it left them very little to discuss on certain points. Remember that reasoning is important. Therefore, if you construe heat conducting means to mean electrical wires - then there is clearly going to be very little to say about electrical tapes and other heat conducting means.

As another example, it was important to determine whether means for securing were also able to be means for protecting. It was not obvious on the face of the patent that this was necessary and so candidates could make their interpretation when it became obvious that it was needed. However, it should have been obvious from the first read of the documents that the competitor's hose did not have the outer sheaths, which the client had used to provide protection against wear and tear. Thus, candidates could have provided this interpretation in the interpretation section or in the infringement section of their answer.

Remember that it is perfectly acceptable to select certain words for construing on the basis of the disclosure of the potentially infringing product and the prior art. It is not acceptable to use the disclosure of the potentially infringing product or the prior art to come to make the interpretation. This has to be done using only the patent document, *i.e.*, the claims, description and drawings including the preamble and sometimes prior art mentioned in the preamble to the description.

There was a good understanding amongst candidates of the effect of a phrase defining a feature as being 'for' meaning 'suitable for' but some candidates went too far and suggested the phrase had no limiting effect at all. Others did not really explore the scope of claim in view of this definition. For instance, some candidates thought that the pipes described in Document D couldn't anticipate claim 1 because the 'pipes' were not specifically described as hoses and therefore, would not be suitable for connecting the reservoir to the nozzle. But Document D did describe a method of manufacturing for 'all types' of conduits ... (water) ... to raise and/or regulate temperature. There was nothing in Document D to suggest that the method of manufacturing was not suitable.

'Partial embedding' was very relevant to infringement and validity and very few candidates explored whether or not an otherwise totally embedded wire having its ends protruding amounted to partial embedding. It depended entirely on the construction adopted by the candidate.

Candidates are reminded that method/process claims also protect the direct product of the process.

A true dependent claim incorporates all of the features of the claim from which it depends. Therefore if the independent claim is novel by virtue of including as an essential integer a feature not disclosed in an item of prior art, a claim depending from that claim cannot be anticipated by that piece of prior art. Similarly if a putative infringement does not fall within the scope of a particular claim, it cannot fall within the scope of a claim dependent from such a claim.

Candidates are required to explain the scope of a multiple dependent claim. In this exam, there were some less than simple dependencies. For instance claim 4 depended from claim 2 or 3, but not directly from claim 1. Since claim 3 did not necessarily include the features of claim 2 this meant claim 4 was not restricted to electric wires as the heat conducting means.

The omnibus claim should be interpreted narrowly depending on how the claim is phrased. In this case, the interpretation was based on the description and the drawings and therefore rather limited to what it specifically found in the drawings.

Infringement

For a claim to be infringed, an infringement or infringing act must involve each of the integers or features of the claim.

In this paper, one of the potentially infringing products was described by the client by comparing it to his own commercial product which in turn was described by reference to the drawings of the patent. Many candidates simply presumed the competitor's product fell within the scope of the claim merely because of its similarity to the preferred embodiment. This was an inadequate use of the information, leading to failure to find out the facts that were available and point to gaps that needed to be filled. It is not unknown for some of the embodiments in a description not to be covered by the claims (although of course the pre-grant examination is meant to check that the claims are supported by the description and this would be a ground for rejection). It was expected that the features of the infringing product would be analysed, and a determination made as to whether this analysis indicated that all the essential features of the claim were present in the product, whereby a conclusion could be drawn as to whether the claim was infringed or not.

There was little or no evidence in the paper as to what the 'competitor' was doing and where. Practical suggestions to make further investigations regarding his activities and where these were being conducted gained marks.

The following are three examples of use of interpretation for determining whether there was infringement by the Competitor (not the DIY Kit). We have provided these examples to show how reasoning makes a difference to the marks gained with actually very little extra effort by the candidate.

- A:** The following is an example of an inadequate use of interpretation for both the DIY kit and the Competitor infringement. No coherent reasoning whatsoever is presented because the candidate has not used their interpretation. Reference back to paragraphs in the interpretation section of the answer is not sufficient to show the examiner why a feature in the claims is actually present. This example gets less than 50% of the marks available.

Claim 1

...hose (yes, 2nd sentence and 1A) for connecting w/w reservoir to w/w nozzle (Yes, implicit in 1st sentence) on a vehicle (Yes, 2nd sentence) ...comprising ...length of tubing (Yes, 1A and 2nd sentence) ...h/c and producing means (Yes, IJ and 5th and 6th words of 1st sentence) ...means for securing (Yes, IK, adhesive backing) ...means for protecting (Yes, IL and IN, insulating tape)...environmental conditions (implicit in disclosure – inevitable result of applying insulating tape).
Therefore, kit falls within Claim 1.

Therefore Competitor falls within Claim 1 too.

- B:** In the following example the candidate has used their interpretation only once, in respect of the means for securing the heat conducting means to the tube. This is barely adequate to obtain 50% of the infringement marks for claim 1 on the Competitor's product.

Claim 1

- hose ✓ - suitable for ...evidently ✓
 - length of tubing – hose ✓
 - heat conducting means = embedded electrical wire ✓
 - means of securing heat conducting means – under my interpretation making the heat conducting means integral to the tubing is equivalent to a securing means *i.e.* the outer layer of the tubing acts to secure ✓
 - means for protecting – ditto, tubing acts to protect from environmental conditions ✓
- = all integers present.

So claim 1 is infringed by competitor manufacturing hose.

- C:** The following is a reasonable example of use of interpretation to explain why the features of the Competitor's product are in present in Claim 1 and therefore it is infringed. It is not perfect but certainly would get most of the available marks.

Claim 1

Competitor (or other firm) must be making the hoses they supply to the vehicle manufacturers, which are being used to connect a windscreen washer reservoir to a windscreen washer nozzle on a vehicle, the method comprising providing a length (under my construction this is any length required to connect the reservoir to the nozzle and capable of carrying the windscreen washer see 1.3-1.5), with a heat conducting means (in this case an electrical wire, same as my clients) means of securing the heat conducting means to the tube (completely embedding the coil serves to secure the heating means to the tube see 1.8) under my construction which covers any method for securing the heating means, and a means for protecting the heat conducting means from environmental conditions (by totally embedding the electrical wire in the tube it is therefore protected from environmental conditions, my construction of protecting is not limited to sheaths or braids (see 1.9)

Manufacture of the competitors product has all the features of claim 1. Claim 1 is therefore infringed.

Clearly the candidate that adopts approach A throughout the answer will fail. The candidate who adopts approach B may fail or may pass, but the candidate that adopts approach C or better throughout their answer should pass without any problem.

This is why it is a waste of time to always write to a standard which doesn't get more than 50% of the available marks at any point. It may be marginally quicker to write an A answer, that is debatable, but it is not the difference between finishing and not finishing the answer which matters, it is the quality of the answer that matters. Therefore, it is clearly better to not quite finish the paper with C-type answers throughout than to complete the paper with A-type answers.

Novelty

The comments for infringement with respect to use of interpretation apply equally to the novelty section of your answer. Again, candidates that interpreted the 'means' narrowly ended up with short answers. Similarly, whether either Document C or D described 'hose' which was suitable for the purpose of claim 1 was often narrowly determined.

For a prior art document to anticipate a claim, it must disclose each integer of the claim, and must disclose these integers specifically in combination. In this paper, Document C disclosed two embodiments, one of which comprised some of the essential integers in combination, and the other of which disclosed a different combination of integers. It was important to point out there was no disclosure of an embodiment combining all of the essential integers of claim 1.

Document D was significantly closer to the client's patent claims. Much hinged on the interpretation of hose, and whether the candidate considered the pipes or conduits to be suitable for the car industry.

As previously mentioned, many candidates having found claim 1 to be novel, for example, over Document C – carry on to establish whether the features of the remaining dependent claims are found in Document C. This may be a useful exercise for the candidate, but it is meaningless in terms of any conclusion of novelty regarding those claims since they are always novel, and will only pick up at most a couple of marks. If you are under any significant time constraint – don't do this, move on to the next place where a significant marks can be achieved, for example, novelty over Document D.

Inventive Step

As can be seen from the mark allocation, inventive step is an important aspect of validity, Judging

from the quality of the answers, many candidates still appear to leave too little time for dealing with this section of the answer.

In addition, if you found that claim 1 lacked novelty, which quite a large number of candidates did, there were still marks for addressing inventive step of claim 1.

As with the infringement and novelty sections, it is important to explain conclusions. However, in this case it doesn't mean using your interpretation, but putting forward an argument as to why you consider a particular feature imparts inventive step or lacks inventive step.

Windsurfer or problem/solution approach? Candidates are not penalised in this paper for adopting a problem solution approach but it is rarely used in specific terms by the UK courts which consider that the structured approach of *Windsurfing v Tabur Marine* [1985] RPC 59 at 73-4 is often helpful. The steps are summarised :

- (1) Identify the inventive concept of the claim;
- (2) Identify the common general knowledge;
- (3) Identify the difference(s) between the prior art and the alleged invention;
- (4) Decide whether those differences would have been obvious steps.

There were two published documents as prior art, one an extract from a patent. There were also the comments of the client as to the common general knowledge, *i.e.*, that trace heaters were known for many years and used in a variety of industries. Therefore, while Documents C and D date to shortly before the client's patent was filed, trace heating was already at that time common general knowledge.

Document C while referring to the primary embodiment of glassware contained the principle of embedding the heating means inside the tube except the tube was glass. The heating means was therefore secured to the glass tube. There was also a second embodiment of a tube and an electrical conducting wire where the tube could be synthetic rubber or plastics provided it had a liner which prevented reaction of or leakage of the gas. All the features of claim 1 were present in Document C, with the exception that the fluid to be transported was a gas rather than water.

Many candidates run through all the possibilities for attacking inventive step, it would in fact be better to provide a single good approach rather than several poorly argued approaches. It is perfectly acceptable to consider first Document C alone with CGK, followed by Document D alone with CGK and then the combination of C and D. However, many candidates obviously rush this and do it badly. The candidate only needs to assess which is the closest art and then just deal with that alone and if necessary - in combination.

Which document was the closest prior art depended very much on the candidate's interpretation of hose and tubing, since neither document related specifically to the car industry. On most interpretations, albeit for a variety of reasons, each document disclosed heat conducting means, means of securing the heat conducting means to the tube and a means of protecting the heat conducting means. So the differences between claim 1 and the art depended on whether either document disclosed hose suitable for connecting a windscreen washer reservoir to a windscreen washer nozzle on a vehicle. Again, this was highly dependent on the interpretation given to 'hose' and whether the candidates considered Document C or D disclosed flexible tubing. Thus, the real question was whether the skilled man would have considered Document D as capable of being applied to hoses for the car industry. It is of course a matter for expert evidence but there were hints given in the letter from the client as to how he was immediately aware the trace heating could be applied in his field. A number of candidates made a distinction between the client's invention being for defrosting but the art being for maintaining a fluid at a particular temperature. This was to some extent an

artificial distinction because it wasn't a feature of the claim and because once defrosted, the hose would be being maintained at the required temperature.

Additional tests candidates could have referred to are 'the right to work test' in which the test was whether the skilled man should have the right to apply the trace heating principle from Document D to any water carrying means, be it a pipe, a tube, or a hose. Alternately there is the 'obvious to try' test, *i.e.*, on the balance of probabilities 'would' (not 'could') the skilled man have tried the trace heating principle on water carrying hoses. Again, the preliminary evidence of the client was a hint for the candidate.

A possible inventive step approach for claim 1 would have been Document D and common general knowledge/expert evidence. For claims 2 and 3, again Document D and common general knowledge, Document D discloses trace heating wires and helical winding on pipes. For claim 4, Document C discloses non embedded and totally embedded heat conducting means – so would the skilled man have combined Document C with D and CGK to arrive at claim 4? Claims 5 and 6 would have involved Document D, CGK and expert evidence, these claims effectively required the same treatment as claim 1. Claim 5 contained the additional feature of means of connecting the heat conducting means to a power supply. Document D disclosed 'terminations' so together with expert evidence, this feature was an obvious requirement. Claim 7 required the same treatment as for claim 4.

Therefore, in this question, a time efficient approach would have been to consider Documents C and D for which is closest prior art, then taking the selected closest prior art, work through the claims and what would need to be added to address each additional claimed feature.

Sufficiency

There were only 3 marks for candidates who pointed out that that some of the claims might be insufficient as overly broad covering potential embodiments which wouldn't work.

Amendments

Again, there were only 3 marks for amendment on this paper. Suggestions for amendment obviously depended on the conclusions reached in the novelty and inventive step sections of the paper. However, the more 'obvious' novel and inventive amendments were claim 4 and claim 7.

Some candidates suggested an amendment which would have broadened the scope of the claims. This is a fundamental error and an unnecessary one to make when in this question the disclosure of the patent really gave little more in the way of information and features than were in the claims.

Advice

The advice to the client is the easiest section of the paper. In this case there was 7 marks for summarising the situation for the client, setting out the potential infringement and which of the claims are valid, remarking about whether the client should seek amendment of his patent, and what the problems are if he doesn't seek amendment. The client really wants to know whether to start court proceedings and whether there is a possibility of a preliminary injunction, so the candidate can discuss what the balance of convenience would be in this case.

Candidates can also suggest the client attempts to settle the matter before commencing court proceedings since modern practice is towards negotiation before litigation and a suggested negotiating position would be appropriate advice for the client. Candidates often proposed seeking 'injunctions' when they should have explained that the discussion related specifically to interim injunctions. Warnings about threats and the expense, lengthiness and uncertainty of litigation are relevant to suggestions to seek some form of settlement.

Suggestions for further searches for prior art and possible overseas patent protection are not usually relevant to the immediate problem.

The advice to the client does not need to be lengthy and it is something a candidate can be particularly well prepared for so that everyone should do this section irrespective of the state of the rest of their answer.