<u>P6 2008</u>

Examiners' Comments

General

The P6 Paper for 2008 (Electrical Terminal) was at root a straightforward I&V paper. The pass rate was just over 41%. In this paper candidates were required to identify the more important points for discussion and to apportion their time appropriately. Those who were able to see the broader picture, the main contentious issues and their effect on the interplay between construction, validity and infringement, scored well. Those who plunged into the detail without pausing to determine the bigger picture generally did not do so well. Candidates are advised to attempt a reasonably broad selection of past papers in their preparation for this examination, so as to gain experience of the differing kinds of problems raised and to practice the different techniques needed to tackle them.

However when discussing novelty, selecting the main points for discussion does not mean just identifying the feature or features of a claim that is/are missing from the cited art. As set out below, candidates should identify where the features of the claim, as construed, are to be found in the prior art, in order to identify those which are missing or not clearly disclosed.

Overall, the Construction and Novelty aspects were reasonably well dealt with. They contributed over 50% of the marks and the candidates who did these sections thoroughly and competently were well on their way to a pass.

A large number of candidates lost some relatively easy marks when they had found novelty or lack of infringement for claim 1 and then did not proceed to consider the sub-claims. Problems with time management in some cases may have contributed to incomplete discussion of obviousness, and a hurried or absent advice section.

As an indication of some possible pitfalls and how to avoid them, a selection of the Examiners' summaries of individual answer scripts is provided in an annex. (The

Examiners mark according to a detailed schedule, but often provide comments summarising each answer script).

Construction (27.5 marks)

Although a separate construction section is used by most candidates (and the Courts), candidates were still awarded marks if the points of construction were included in the analysis of validity/infringement (or indeed elsewhere). A separate construction section may, however, assist in fostering a thorough and consistent approach. Candidates who divided the complete claims into small phrases, identifying the many issues, generally gave the best answers. However as already remarked, it was also important to identify the main contentious points. The best candidates therefore kept in mind an appreciation of the potentially infringing articles and the prior art whilst writing the construction section, so as to be able to identify and devote the appropriate time to the contentious issues; but without allowing this knowledge to skew their construction. The following were possible points for discussion.

<u>Claim 1 (20.5 marks)</u>

"An electrical terminal" -- sets the field – definition of a terminal, e.g. contact for connecting a conductor to further electrical/electronic apparatus such as a circuit board or a complementary electrical connector.

"for" – the terminal must be suitable for the stated purpose, without necessarily being intended for or limited to that purpose.

"insulation piercing connection" – the terminal itself pierces insulation to make an electrical connection.

"of an electrical wire formed by a conductor covered with insulation" -- the electrical wire does not form part of the claimed terminal as such, but the terminal must be capable of interacting with a wire of this form in the manner defined, in use.

"said terminal comprising" -- including, but not limited to, the following integers.

"a rearward wire engaging portion" -- "rearward" implies that there ought to be a forward portion of the terminal as well. None is explicitly defined in the claim. Forward portion = parts of the terminal which do not act to engage the wire? Parts of terminal which make the electrical connection with whatever the terminal has to connect the wire to? The description refers to *a* rearward *insulation gripping portion 12, an* intermediate *conductor engaging portion 14, and a* forward *portion 16 illustratively shown to be a pin engageable in a receptacle (not shown) to form* *complementary parts of 5 a two-part electrical coupling*. [p 5, ll2-5]. The insulation gripping portion is not a feature of this claim.

"comprising" -- including, without being limited to, the following integers.

"a base" -- a lower part of the terminal, or a part to which other parts of the terminal are attached (see next integer). No "base" mentioned in the description. "Terminal floor", p. 5, l. 14?

"and first and second side members connected to edges of said base by respective bends" – there are at least two side members. "Side" requires the members to be away from a central region of the wire engaging portion. This is corroborated by the side members being defined as being connected to *edges* of the base. The first and second side members are each connected to a different one of the edges by a different bend. The base has at least two edges = peripheral parts.

"said side members extending side by side and defining a wire receiving channel" -the side members run next to each other. The side members define a channel in which the wire is received in use.

"Channel"-- At its broadest, the channel could simply be a gap of whatever dimension, bounded by the side members. Must the channel have a substantial length dimension, in which a substantial length of the wire is received? "...*the insertion of* a length of the wire 66 *into the wire receiving channel 30...causes the length to be guided...*." Guiding function of channel: p. 6, ll 7-10.

"Wire receiving" -- receiving the entire wire cross-section, both the conductor and the covering insulation? Or can the channel still be "wire receiving" even if less than the whole wire cross-section is received? Probably, but could be argued otherwise. In the illustrated embodiment "channel" receives entire wire cross-section. "*The normal spacing between the side members 24, 26 is slightly greater than the outer diameter of the wire insulation 68*", page 6, lines 3 and 4. But this feature is not explicitly claimed.

"each of said side members having at least one insulation piercing jaw" -- Page 5, line 15: "Each side member carries forward 32, 34 and rearward 36, 38 jaws respectively. Each jaw is formed at substantially a right angle to its respective side member, to project inwardly into the wire receiving channel 30 toward an opposite jaw." Jaw = a mouth part, usually for cutting or gripping. As claimed, each jaw does not have to project from its respective side member inwardly into the wire receiving channel. The jaw acts to pierce insulation [of the wire] in use. "directed toward a corresponding insulation piercing jaw of the other of said side members" -- the two insulation piercing jaws face or point towards one another.

"each of said insulation piercing jaws having an edge portion" – is this inherent? Is the edge a 1-D or a 2-D feature?

"said edge portion of said one insulation piercing jaw being spaced from said edge portion of said corresponding insulation piercing jaw a distance slightly less than the diameter of said conductor" -- the edge portion spacing is functionally defined with respect to the conductor diameter, which is not part of the claimed apparatus. This spacing will therefore define a minimum conductor diameter with which the terminal is intended to be used.

"Slightly" -- is indeterminate. But the objective is to provide an interference fit, to produce the mechanical and electrical engagement. Page 6, lines 15- 19 "*It should be noted that the forced entry of the wire 66 into the slots 44 causes a force to be distributed outwardly along the jaws 32, 34, 36, 38, and these outward forces tend to deflect the side members 24, 26 outward. The rigidity of the side members 24, 26 ... exerts a direct counter influence through the normally projecting jaws and upon the wire 66." What is the significance? Expert evidence required?*

"and said edge portions piercing through said insulation of said wire" -- the edge portions are the parts of the jaw that pierce the wire insulation in use.

"to establish electrical and mechanical engagement" -- electrical engagement = conductive engagement. Mechanical engagement = at least touching. Defined relative dimensions of edge portion spacing and conductor diameter suggests a degree of gripping retention; see above.

"therewith" -- with the wire conductor, not the insulation [or the wire].

"as a portion of said wire is moved laterally of its axis into said wire receiving channel" -- piercing of the insulation takes place as the wire is moved sideways of its axis, to a position in which a portion of the wire is in the wire receiving channel.

Claim 2 dependent on claim 1 (3 marks)

"each said insulation piercing jaw comprises an end portion bent perpendicular to said respective side member" – is the end portion part of the jaw? => another part of the jaw is not bent perpendicular with respect to its side member? This is inconsistent with specific description. Is the end portion part of the side member? - This is consistent with specific description.

"Perpendicular to" – apply a purposive construction.

Claim 3 dependent on claim 2 (2 marks)

"each said end portion has a material thickness equal to the thickness of said respective side member" -- material thickness = thickness of the material that the end portion concerned is made out of. Does the thickness of the *entire* end portion have to be the same as the thickness of the side member? Or is it sufficient for only a part of the end portion to be of this thickness?

Claim 4 dependent on any preceding claim (2 marks)

"comprising at least one indent formed in each side member" -- part of each beam member is recessed compared to another part.

"through¹ the bend and into the adjacent base portion" -- The indent is also formed in the bend and into the part of the base portion adjacent to the bend.

"the adjacent base portion"-- antecedent

"to increase the rigidity of the wire engaging portion" -- the effect of the indent is to increase the rigidity of the [rearward] wire engaging portion. Page 5, lines 26-28; page 6, lines 17-18. Extension of the indents beyond the bends into adjacent parts of the base portion is not specifically mentioned here, but this is shown in Figs. 2, 2a and 3, for example.

¹ The Paper says "though", but the invigilators explained the typographical error.

Infringement (27 marks)

Claim 1 (17 marks)

"An electrical terminal" -- present. See e.g. page 10, line 6.

"for" -- present. See e.g. page 10, lines 6, 7 and 8.

"insulation piercing connection" -- present. See e.g. page 10, lines 6, 7 and 8.

"of an electrical wire formed by a conductor covered with insulation" -- present. See e.g. page 10, lines 6, 7 and 8.

"said terminal comprising"-- present. See e.g. page 10, lines 6, 7 and 8.

"a rearward wire engaging portion"-- the terminal 10 does have a wire engaging part and another part (tail 31) which is not wire-engaging. The tail is "forward" of the wire engaging part from the point of view of the circuit board. Feature present? "comprising"

"a base"-- present. The trunk 12 of the terminal 10 provides a portion to which other parts of the terminal are attached: page 10, lines 24 and 25.

"and first and second side members connected to edges of said base by respective bends" -- present. The spring arms 14 are on either side of the base and indeed on either side of the entire terminal. They are connected to edges of the trunk 12 ("base") by respective bends, i.e. rounded corners 20. Page 10, lines 24 and 25; page 10, lines 30-31.

"said side members extending side by side and defining a wire receiving channel"--the axes of the spring arms run next to each other to define a channel or gap in which the wire 11 is received. The arms are angled towards each other (page 10, line 31page 11, line 3), but they are still side by side.

-- In the Fig. 2 embodiment, only the slit 18 and jaw parts inward of the bends 22 receive the wire 11. Therefore there is an argument that the Fig. 2 embodiment does not infringe claim 1.

Only the conductor and uncut parts of the insulation are received in the slit 18, not the entire cross-section of the wire 11. Therefore there is a weak argument that neither embodiment² infringes.

²In fact there are 3 embodiments: that of Fig. 2 can have two flanges or only a single flange: page 11, lines 10-13.

-- Does the drawing show the edges of the jaws touching? The description says the edges are spaced from one another: page 10, lines 26-27.

"each of said side members having at least one insulation piercing jaw" -- the portions of the spring arms 16 between slit edge 16 and edge corner 22 act to pierce the wire insulation in use. They are opposed mouth parts which act to grip or cut the wire (see below). Thus they form insulation piercing jaws. Feature present.

"directed toward a corresponding insulation piercing jaw of the other of said side members"-- The above portions face or point towards one another. Feature present.

"each of said insulation piercing jaws having an edge portion"-- Present. Edges 16 of slit 18.

"said edge portion of said one insulation piercing jaw being spaced from said edge portion of said corresponding insulation piercing jaw a distance slightly less than the diameter of said conductor"-- Feature probably present. Page 10, lines 26-28. "Edges 16 are spaced from one another to define a wire-receiving slit 18 which is narrower than the diameter of any wire for which the terminal is designed." The term "wire" appears to be used for the most part in Doc B to refer to the conductor part to which the insulation is applied – see e.g. page 10, line 6, "insulated wire", and lines 13 and 14, "edges of the slit ... make electrical contact with the wire". But this is not absolutely clear cut. Page 11, line 14 refers to "gripping forces exerted by the slit edges 16 on the wire 11 conductor". "Wire conductor" suggests "wire" means conductive core + insulation. However the fact that the slit edges grip the conductor. 'Slightly'- the alleged infringement at least at first blush appears to work in a similar way to the patented device as far as the slicing action of the slot/slit goes.

"and said edge portions piercing through said insulation of said wire"-- Feature present. Page 10, lines 13-14.

"to establish electrical and mechanical engagement"-- Feature present. Electrical contact: page 10, lines 13-14. As slit 18 is narrower than the conductor diameter (see above) gripping engagement and electrical contact are established.

"therewith"-- between the wire conductor and the edge portions of the insulation piercing jaws. Feature present.

"as a portion of said wire is moved laterally of its axis into said wire receiving channel"-- Feature present? Piercing of the insulation takes place as the wire is forced obliquely into the slit 18 – page 11, line 17. This implies oblique movement of the

wire, which would involve movement laterally of its axis. Therefore if the slit 18 meets the definition of the claimed wire receiving channel, the feature is present.

-- If the wire receiving channel has to receive/guide a substantial length of the conductor core and insulation, things are not as clear. In the Figure 1 embodiment, the gap between the two arms might constitute such a channel into which the wire is laterally moved in the claimed manner. But in the Figure 2 embodiment as illustrated, the wire lies between the jaws, without necessarily lying between the arms. "When the wire is fully inserted into the terminal, a major portion always extends over the trunk 12", page 11, lines 17-18. The presence of the trunk hinders insertion of the wire between the arms at that end.

Claim 2 (4 marks)

"each said insulation piercing jaw comprises an end portion bent perpendicular to said respective side member"-- The portion of spring arm 14 extending between trunk 12 and edge 16 being an end portion of the spring arm 14 is not a tenable construction? (See above). But if this were the accepted construction, claim 2 arguably would not be infringed. The "jaws" disclosed in Doc B are substantially straight, unless the rest of the arms can also be construed as part of the jaws. But then there are no side members connected to base sides by bends and *having* jaw members, as required by claim 1.

--The portion of spring arm 14 extending between trunk 12 and edge 16 is an insulation piercing jaw and is perpendicular to the connecting portion 24 to the extent required to slice the insulation and grip the conductor core. However, under a more literal interpretation of "perpendicular", there would be no infringement by the illustrated embodiments. "Greater than about 90 degrees": page 11, line 2, arguably includes 90 degrees. Embodiments where this angle is 90 degrees would infringe, to the extent that claim 1 is infringed.

Claim 3 (2 marks)

"each said end portion has a material thickness equal the thickness of said respective side member"-- "*The portion of spring arm 14 between edge corner 22 and edge 16 is of reduced thickness, so as to more readily penetrate the wire insulation.*" – page 11, lines 6 - 7. Is the corner 22 part of the jaw? Does it have the same thickness as the main straight part of the arm 14? If so, arguable that claim 3 would be infringed to the same extent that claim 2 is infringed.

--The thinned portion could be regarded as the jaw edge portion defined in claim 1, so the above argument still holds good where the entire thickness of the end portion must be equal to that of the side member.

Claim 4 (4 marks)

"comprising at least one indent formed in each side member" Fig. 1 embodiment: the spring arms are flat or rectangular in cross-section, with no indents. No infringement. -- Fig. 2 embodiment (outwardly bent upper or lower edge only): No indent, unless remainder of arm and trunk cross-section is such? No infringement? Fig. 2 embodiment (outwardly bent upper and lower edges): the portion of the arm cross-section between the outwardly bent edges is arguably an indent. Feature present? "through the bend and into the adjacent base portion"-- Fig. 1 embodiment: no indent, no infringement.

-- Fig. 2 embodiment: any indent extends through the bend 20 into the trunk 12 = base portion. Feature present, esp. in upper and lower edges bent embodiment.

"to increase the rigidity of the wire engaging portion"-- Fig. 1 embodiment: no indent, no infringement.

-- Bent edges increase rigidity of terminal 10a: page 11, lines 12-13. Feature present.

Do the bent edged embodiments (especially top and bottom edges) infringe? Fig. 1 embodiment does not infringe.

Novelty (24 marks)

Some candidates considered novelty and inventive step claim-by claim. This is perfectly acceptable, but the more thorough approach (used by the majority) is to consider novelty first and then inventive step. The order in which prior art documents C and D are considered does not matter. Another approach (used below) is to consider the claims element-by-element against documents C and D together. The two approaches can be combined in tabular form but, when doing so, candidates should still ensure that sufficient reasons are given as to whether or not a given element is or is not disclosed by the document concerned.

Claim 1 (17 marks)

"An electrical terminal"—(**Doc** C) Disclosed – e.g. page 14, line 5. "*This invention relates to electrical terminals*". (**Doc. D**) Disclosed – e.g. page 18, line 5. "for"

"insulation piercing connection"

"of an electrical wire formed by a conductor covered with insulation"—C -- Disclosed – e.g. page 14, lines 5-7, "which make electrical contact with an insulated electrical wire by displacing portions of the insulation for engaging the conductor core of the wire"; page 15, lines 21-22, "The edges defining the mouths 18a, 20a are preferably thinned and sharpened, so that they can pierce the insulation as the wire is pressed further into the slots 18, 20". D -- Disclosed – e.g. page 18, line 5 and definition of IDC e.g. at lines 14-15. "The insulation is displaced either by a shearing (slicing or piercing) action or by a crushing action, or by a combination of the two."

said terminal comprising:

"a rearward wire engaging portion"—C -- Disclosed – e.g. page 15, lines 13 - 15, "From the bottom leg 16a an electrical contact 16c is provided as a coplanar extension, which serves as a connection to a complementary electrical connector (not shown)." + Figures. All of terminal apart from pin 16c acts to engage a wire in use. D -- Disclosed – e.g. page 19, lines 20-29. Arms 10, 11 and base link portion 12 form a wire engaging part of the terminal. The lower limbs 16, 17 18 are parts which do not engage the wire: page 20, lines 1-4. comprising:

"a base" – C -- Central hairpin spring 16 arguably is a base to which all other parts of the disclosed terminal are attached. Feature disclosed. -- Or bend connecting hairpin legs = base. D -- Disclosed. Base link portion 12 serves for attachment of other parts of the terminal.

"and first and second side members connected to edges of said base by respective bends"—C -- Disclosed? The end plates 12, 14 are connected to edges of the hairpin spring 16 by respective bends: "Bottom edges of the end plates 12 and 14 are interconnected by a spring portion 16 which is of hairpin shaped section and disposed generally perpendicular and to one side of the end plates 12 and 14" – page 15, lines 4-6. Because the plates are to one side of the hairpin spring part, perhaps they are side members. The plates 12 and 14 are also spaced apart parallel to each other and are therefore to either side of a gap. --C -- Or hairpin legs are side members? They run side by side and are connected to the hairpin bend (= base, see above) by respective bends? D -- Disclosed. In the finished terminal, arms 10, 11 are connected to edges of the base link portion 12 by double bend 23, and are side parts in the blank and in the finished terminal.

"said side members extending side by side and defining a wire receiving channel" C--Plate portions 12, 14 run next to each other and have slots 18, 20, in which a wire is received in use: e.g. page 15, lines 24-25: "*The slots 18 and 20 from the mouths 18a, 20a are of shallow V- and inverted V-shape 25 respectively. As the wire is pushed into these...*". Feature disclosed. C--The slots 18 and 20 do not define a channel which receives a substantial length of the wire. The wire does not run lengthwise in the gap between the plates 12, 14, but runs across this gap. D -- Disclosed. The arms 10, 11 run next to each other and define a channel (notch 13) in which a wire is received in use. E.g. page 19, lines 27-28. It does not matter that the insulation of the wire when so received is at least partially severed. D -- The arms 10, 11 do not define a channel in which a substantial length of the wire / wire with unsevered insulation is received.

"each of said side members having at least one insulation piercing jaw"—C -- Feature disclosed, page 15, lines 21-22. "The edges defining the mouths 18a, 20a are

preferably thinned and sharpened, so that they can pierce the insulation as the wire is pressed further into the slots 18, 20." The open ends 18a, 20a of the slots provide opposed mouth parts which grip and cut into the wire, i.e. jaws. D-- Feature disclosed. Edges of the arms 10, 11 adjacent to the notch 13 form mouth parts which pierce the wire insulation in use. They are opposed mouth parts which grip and cut into the wire. "As will be seen from FIG. 3 the act of pressing the conductor into the notch 13 cuts through the insulation 25 of the conductor, whilst the edges of the notch compress the core 26 to form a satisfactory electrical connection." Page 20, lines 7-9.

"directed toward a corresponding insulation piercing jaw of the other of said side members"—C--Feature disclosed (?) The cutting edges on the open ends 18a, 20a face or point towards each other, albeit that they are slightly offset (being on different parallel plate portions 12, 14 respectively). D-- Feature disclosed. Arms 10, 11 define a notch between them: page 19, lines 9 and 10. Edges on these arms face or point towards each other.

"each of said insulation piercing jaws having an edge portion"—C-- Feature disclosed – see quoted passage, next but one above. D-- Feature disclosed. E.g. "*edges of the notch*", page 20, line 8.

"said edge portion of said one insulation piercing jaw being spaced from said edge portion of said corresponding insulation piercing jaw a distance slightly less than the diameter of said conductor"—C-- As the wire is initially inserted, the V-shaped open ends of the slots 18, 20 are aligned – page 15, line 19. The cutting edges 18a, 20a slice through the insulation. For this to happen, the minimum spacing of the cutting edges 18a, 20a before the wire is pushed further into the slots 18, 20 (Fig. 2) must at least be equal to the conductor diameter, and probably less, to ensure complete cutting edges 18a, 20a move closer together and so at one point will achieve a spacing slightly less than the conductor diameter. Feature disclosed, if not with the terminal in its initial relaxed state, then at one point in use? C-- In the relaxed state of the terminal, the cutting edges overlap and are therefore not spaced at all. When the wire is at the inner ends 18d, 20d of the slots, the cutting edges will be spaced by more than the wire

diameter. (Compare Figs. 2 and 3, and note especially the position of cutting edges 18a and 20a in Fig. 3.) Feature not disclosed? D-- Feature disclosed. Page 20, lines 8 and 9: "the edges of the notch compress the core 26 to form a satisfactory electrical connection" – i.e. an interference fit – i.e. the slot is slightly narrower than the wire diameter.

"and said edge portions piercing through said insulation of said wire"—C--Feature disclosed. Page 15, lines 21-22. D-- Feature disclosed: e.g. page 20, lines 7 and 8. "The act of pressing the conductor into the notch 13 cuts through the insulation of the conductor"

"to establish electrical and mechanical engagement"—C--Feature disclosed. Page 15, lines 24-29. Initial cutting through of the insulation and electrical/mechanical engagement with the wire conductor core apparently takes place with the thinned edges the V-shaped mouths of the slots; whereas final gripping and electrical contact with the conductor core takes place at the inner ends of the slots. D-- Feature disclosed: e.g. page 20, lines 8 and 9, "*the edges of the notch compress the core 26 to form a satisfactory electrical connection.*"

"therewith"—C-- between the wire conductor and the terminal. Feature disclosed. D-- Electrical and mechanical contact is between the conductive core and the terminal – feature disclosed.

"as a portion of said wire is moved laterally of its axis into said wire receiving channel" C-- Feature disclosed. Page 15, lines 24 – 29. D-- Feature disclosed. E.g. page 20, lines 7-8, "As will be seen from FIG. 3 the act of pressing the conductor into the notch 13 cuts through the insulation 25 of the conductor..."

Claim 1 old in view of Doc. C? Possible contentious issues: wire receiving channel; and jaw spacing.

Claim 1 old in view of Doc. D? Possible contentious issue: wire receiving channel.

Claim 2 (2 marks)

"each said insulation piercing jaw comprises an end portion bent perpendicular to said respective side member"—C-- Edges 18a, 20a are formed *in* the plates 12, 14. They are not end portions of these plates. Feature absent? C-- If end plates = jaws; hairpin legs = side members; hairpin bend = base => anticipation. Possible to say that the hairpin legs extend side by side to define a wire receiving channel, and so are side members as claimed? A broad interpretation of "channel" might allow this. D--Feature is arguably disclosed, if side members are read as the portions between the double bends 23 and 24. The part of the first arm 10 between the double bend 23 and the double bend 24 is then the base portion. The free ends of the arms 10 and 11 are bent 90 degrees wrt the side members, i.e. the double bend 23, 24 centre parts. However all this is not a very comfortable fit with the claim language. A robust view could also be taken, that the complete arms 10, 11 have a generally elongate, parallel configuration, and are both "side members" and "jaws".

Claim 2 new in view of Doc. C? Or perhaps not. As in other instances in this paper where opposing arguments could be advanced, well reasoned answers either way gained marks.

Claim 2 old in view of Doc D, but straining the claim language somewhat.

Claim 3 (2 marks)

"each said end portion has a material thickness equal the thickness of said respective side member"—C-- Claim 3 new by virtue of dep on cl 2. No end portion, so additional feature of claim 3 new, too. And end plates 12, 14 are of the same thickness as the hairpin legs (bent from same sheet material). D-- End portions of the arms 10, 11 are bent from, and therefore have the same thickness as, the remainder of the arms 10, 11, including the side members. Claim 3 therefore old to the same extent that claim 2 is old.

Claim 3 new in view of Doc. C.

Claim 3 old in view of Doc. D to the same extent as claim 2.

Claim 4 (3 marks)

"comprising at least one indent formed in each side member"—C-- Absent. Plates 12, 14 do not have indents (apart from possibly the slots 18, 20). D--Absent. No indents formed in the arms 10 and 11 (apart, possibly, from the double bends 23, 24).

"through the bend and into the adjacent base portion" C-- Absent. Even if slots 18, 20 are indents, they do not extend through the bends and into the base/ hairpin spring 16. D--Absent. No indents formed through the double bends 23, 24.

"to increase the rigidity of the wire engaging portion" C--... the slots 18, 20 do not increase the rigidity of the wire engaging part of the terminal. Feature absent. D--Absent. No indents formed through the double bends 23, 24. Page 20 lines 9-11 speaks of the increased length of the arm 10 (resulting from the double bend 24) *lowering* the stiffness of the arm 10.

Claim 4 new in view of Doc. C.

Claim 4 new in view of Doc D.

Inventive Step (11 marks)

There were marks available for discussion of inventive step of each of the claims. Marks are not awarded for simply writing out the *Windsurfer* or *Pozzoli v BDMO* test for inventive step. Marks are awarded for selecting a suitable starting point and applying the test.

One should exhibit extreme caution before advising a client that a patent is invalid because the subject matter is obvious over prior art. Without the benefit of a face to face discussion with the client or an expert it is easy to miss counter-arguments. One should try and put oneself in the position of the patentee and consider what arguments might be put forward to support patentability. However technically simple the subject matter may appear, a finding of obviousness should seldom be reached without consultation with a skilled person. Advice would be better couched in terms of 'There is an (strong) argument that Claim X is obvious, but......'

Claim 1, Docs C or D (4.5 marks)

Difference 1: The slots 18 and 20 in Doc C do not define a channel which receives or guides a substantial length of the wire. Nor do the arms in Doc D define such a channel. There is nothing in docs C, D or the prior art discussed in those documents which suggests providing such a channel.

Difference 2: said edge portion of said one insulation piercing jaw being spaced from said edge portion of said corresponding insulation piercing jaw a distance slightly less than the diameter of said conductor. Partly overlapping jaws of Doc C forced open as the wire is inserted is an important aspect of how the Doc C connector works, particularly in being effective in connecting to a wide variety of conductor core sizes and multi-stranded cores. It is doubtful whether the notional unimaginative skilled person would consider moving e.g. to a notch type contact as discussed in the introduction to Doc D.

Claim 2, Doc C (3 marks)

Difference: each said insulation piercing jaw comprises an end portion bent perpendicular to said respective side member. Such perpendicular bends would interfere with slicing/gripping action of terminal. Therefore not an obvious change to make.

Claim 2, Doc D (2 marks)

If the portions of the terminal between the double bends are too short to constitute the claimed "side members", would it be obvious to increase their length? Possibly – Doc D teaches that varying the length of the arm varies the stiffness of the terminal and might improve reliability of the electrical connection to the wire (page 20, lines 9-11).

Claim 4, Docs C or D (1.5 marks)

Difference: comprising at least one indent formed in each side member extending through the bend. Nothing in other prior art Doc or the acknowledged prior art to suggest such an indent. If not part of common general knowledge for increasing stiffness, then not obvious.

Amendment (3 marks)

Amend claim 1 to specify that jaws extend towards each other from their respective side members. Arguably confers novelty over Docs. C and D and would still be infringed by all embodiments in Doc. B

Should amendment be before the UKIPO or before the Court? A brief discussion of the advantages/disadvantages of each was expected.

Sufficiency (1 mark)

No issues? No other way of providing jaws except extending towards one another from their respective side members?

Advice (6.5 marks)

In this section of the paper marks are awarded for summarising conclusions and giving general advice. The following could/should be mentioned to the client:

- Black Hat's letter appears to be the prelude to an application under s.71 Declaration of Non-Infringement (DNI).
- Client could immediately file an application for amendment under s.27 before the Comptroller. Possible that Black Hat would oppose this. Undue delay may prevent Comptroller from exercising discretion to amend, but cf. EPC provisions. Timely action also needed before Black Hat apply for a declaration of non-infringement.
- If Black Hat apply for DNI, it is likely to be accompanied by revocation proceedings, if it is part of their case that they do not infringe a claim because it is invalid. A DNI does not itself revoke a claim even if it finds a claim to be invalid. Proceedings could be before Comptroller or Court. Any validating amendment would have to be under s.75.
- Client could bring infringement action, seeking interim injunction restraining Black Hat imports. Balance of convenience appears to favour client, as Black Hat are not yet on UK market, but Court may take the view that a speedy trial and damages will suffice.
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- Would the client be prepared to license? Black Hat appears to have a higher profit margin that may accommodate royalty payments. Do the respective products serve different markets? Client to meet with Black Hat and discuss.

Annex – the "real" Examiners' Comments

"Tick-box', rather unthinking, answer. Failed to see some key points."

"Borderline. Little reasoned discussion."

"Difficult to read and follow discussion."

"Good start but deciding A not infringed meant later sections not well tackled."

"No critical discussion. Just juggling claim words around. Insufficient."

"Very good but didn't deal with novelty of cl 2 which resulted in marks lost on IS & Am."

"Went astray on novelty of claim 2 but generally well reasoned."

"Too much time spent on non-issues."

"Good. Novelty analysis a bit strange but not a worry."

Sits on fence too much, analysis of D poor."

"Novelty & inventive step inadequately dealt with."

"Formulaic. Little reasoned discussion. Doc D misread."

"Well reasoned, thoughtful answer. Lost marks on N & IS. Claims 2-4 shortchanged."

"Not convincing on important points i.e. 'channel', 'rearward'."

"Brief in parts."

"Constr. features too divided, not sure understands principles really but well coached."

"I liked inter. of bend in D as being corners between 12 & 10 and 12 & 11."