

OPINION UNDER SECTION 74A

Patent	EP 1790053 B
Proprietor(s)	Cable Technology Limited
Exclusive Licensee	
Requestor	Barker Brettell Intellectual Property
Observer(s)	IP Consult
Date Opinion issued	18 February 2020

The Request

1. The Comptroller has been requested by Barker Brettell LLP (the Requestor) to issue an Opinion on whether EP (UK) 1790053 B1 (the Patent) is valid with regard to novelty and/or inventive step in light of the following prior art;

- a. D1: GB 263928 A,
- b. D2: JP 2001/128336 A and
- c. D3: US 1885227 A.

2. The Patent was filed as PCT/GB2005/003246 on 19th August 2005 and claims priority from GB patent application number 0418497.4, which has a filing date of 19th August 2004. The Comptroller has additionally been requested to issue an opinion on the entitlement of priority in relation to claims 8, 9 and 10 at least.

3. The Opinion service is however restricted to issues of validity or infringement and priority is only considered when it is necessary to do so to give an opinion on validity. In this case however all the prior art submitted by the Requestor predate the priority date hence it is not necessary to provide an opinion on priority.

4. Observations were received from IP Consult (the Observer) on 16th January 2020 and observations in reply were received from the Requestor 10th January 2020. It transpires that the observations, which were due 27th December 2019, were not correctly addressed to the office. However, the Requestor did receive their copy and acknowledge the receipt date as the 27th December 2019. I see no reason not to accept the observations.

The Patent

5. The patent entitled "An electrical earthing nut" was granted on the 23rd

February 2011. The patent remains in force.

6. The Patent relates to an electrical earthing nut 1 comprising a nut body 2 having an external surface configured for receiving a tensioning device such as a spanner, and an internal thread for receiving a threaded shaft 11. The nut is characterised by having a first threaded aperture 7B extending into the nut body for receiving a grub screw 8C and a second threaded aperture 7A extending into the nut body for receiving a bolt 8A to secure an earth connector 8B.

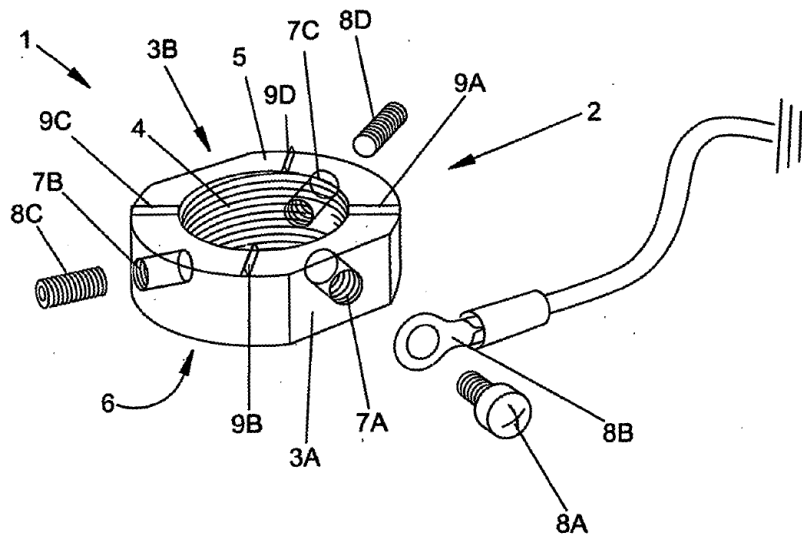


Fig. 1

7. The Patent has 13 claims with independent claims 1 and 12 relating to an apparatus and method respectively, as follows;

Claim 1. An electrical earthing nut (1) comprising a nut body (2) having an internal thread (4) and an external perimeter shaped to receive a tensioning device, such as a spanner, said nut body having opposing generally planar faces (5, 6), comprising: at least one threaded aperture (7C) on the nut body (2), extending into the nut body from the nut body perimeter, to receive a grub screw (8D) to contact a threaded shaft on which the nut (1) is placed, characterised in that there is at least a second threaded aperture (7A) on the nut body (2), extending into the nut body (2) from the nut body perimeter, to receive a bolt (8A) to secure an earth connector (8B) to the nut body (2).

Claim 12. A method of forming an electrical earthing nut (1) comprising the steps of: a) forming a nut body (2) having an internal thread (4) and an external perimeter shaped to receive a tensioning device, such as a spanner, said nut body (2) having opposing generally planar faces; and b) forming at least two threaded apertures (7A, 7B) extending into the nut body (2) from the nut body perimeter.

Claim construction

8. Before I can determine whether the claims of the Patent are valid I must first

construe them. This means interpreting the claims in light of the description and drawings as instructed by section 125(1) which reads:

For the purposes of this Act an invention for a patent for which an application has been made or for which a patent has been granted shall, unless the context otherwise requires, be taken to be that specified in a claim of the specification of the application or patent, as the case may be, as interpreted by the description and any drawings contained in that specification, and the extent of the protection conferred by a patent or application for a patent shall be determined accordingly.

9. In doing so, I must interpret the claims in context through the eyes of the person skilled in the art. Ultimately the question is what the person skilled in the art would have understood the patentee to be using the language of the claim to mean. This approach has been confirmed in the decisions of the High Court in *Mylan v Yeda*¹ and the Court of Appeal in *Actavis v ICOS*².

10. In order to interpret the claims through the eyes of the skilled person, they must first be identified. There seems to be no contention over the identification of the skilled person who is a designer or installer of electrical earthing apparatus, or an electrician.

11. The Requestor argues that the term ‘electrical earthing nut’ is merely a nut formed of a conductive material including most metals but excluding plastic or similar electrically insulated nuts. The Observer does not contest this assertion and I am inclined to agree that any nut permitting a conductive path could be used as an electrical earthing nut.

12. The Requestor argues that the terms “at least one threaded aperture” and “to receive a grub screw to contact a threaded shaft on which the nut is placed” infers that that the threaded aperture provides a through bore. The Requestor further asserts that the through bore is merely *suitable for* receiving a grub screw, observing that the grub screw *per se* is not positively claimed. The Requestor makes a similar assertion in regard to the second threaded aperture. This particular construction is not explicitly contested by the Observer although they do state; “*claim 1 has at least two threaded apertures: one of which receives a grub screw and the other a bolt*”, therefore implying that it is perhaps their understanding that the Patent positively claims the grub screw and the bolt.

13. The language of the claim, in particular the term ‘to receive’ suggests to me that the aperture is *configured* to receive a grub screw or a bolt, and therefore these apertures are merely suitable for receiving such fixings rather than claiming the fixing themselves.

14. As claim 1 requires the first aperture to be suitable for receiving a grub screw to contact the threaded shaft then I am content that this first threaded aperture must be a through bore, however this is not strictly necessary of the second threaded

¹ Generics UK Ltd (t/a Mylan) v Yeda Research and Development Co. Ltd & Anor [2017] EWHC 2629 (Pat)

² Actavis Group & Ors v ICOS Corp & Eli Lilly & Co. [2017] EWCA Civ 1671

aperture of claim 1, or either aperture of claim 12. I would add that neither claim 1 nor claim 12 impose any limitations regarding the size of the apertures, other than in relation to the overall size of the nut, or the pitch or direction of the threads within the apertures..

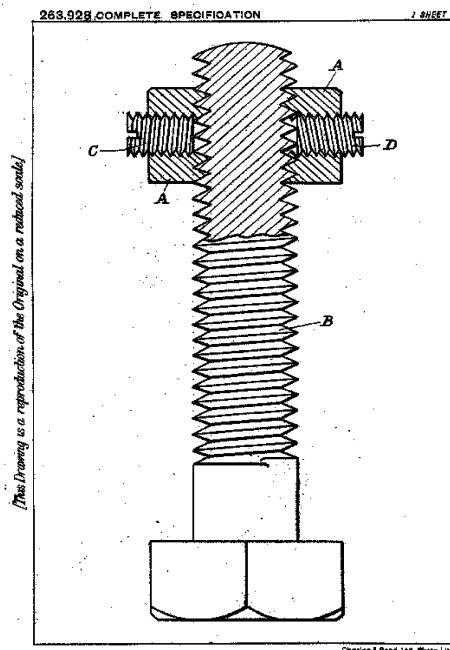
15. There appears to be no contention over the remainder of the claims which, to me, are clear in scope.

Novelty

16. The Requestor argues that claims 1 and 12 lack novelty over D1. In order for a claim to lack novelty, a prior art disclosure must clearly and unambiguously disclose all of the features of the claim. I will begin by considering the independent claims in light of D1.

Claim 12

17. D1 discloses a fastening system comprising a bolt B and a lock nut A, as illustrated in the figure below. The bolt is illustrated as having a hexagonal bolt head and a threaded bolt shaft, as is entirely conventional. The lock nut comprises a nut body having upper and lower planar surfaces and an internal thread extending through the bolt body to receive the threaded bolt shaft. It is implied, by virtue of being a mechanical lock nut, that the nut body has an external perimeter shaped to receive a spanner or the like; typically, this would be hexagonal.



18. The lock nut further comprises two or more threaded holes, preferably opposite one another, extending from the nut body external perimeter to the internal thread. The threaded holes receive grub screws which engage the outer surface of the threaded bolt shaft. The threaded holes are provided as a left-hand and right-hand thread respectively such that any vibration which loosens one grub screw might tighten the other therefore maintaining a locking engagement between the bolt and lock nut.

19. D1 is silent with regard to the material of the lock nut however, particularly in light of the date of the disclosure (1925,) it is highly probable that D1 relates to metal bolts and fasteners rather than non-conductive bolts that may have been available at the time. I note also that the Observer does not suggest that this aspect of the claim is not disclosed by D1. It is understood that the nut and bolt is used in a typical manner wherein a planer surface of the bolt and a planar surface of the nut abut external surfaces of a component to be held therebetween.

20. The Requestor argues that, whilst D1 does not explicitly relate to an electrical earthing nut, or to a specific method of manufacturing, it nevertheless has all the constructional features of the nut *per se* manufactured by claim 12 and therefore the method is known. It is noted that the Observer provides no reasoned argument to the contrary in regard to claim 12 except to generally assert that D1 discloses a lock nut for a construction bolt which is a distinct technical field to the present invention.

21. D1 does not specifically relate to an electrical earthing nut, however it is understood that that this terminology merely conveys some material property used in manufacturing the nut. Additionally, D1 does not specifically relate to a method of manufacturing a nut, however in order to manufacture the lock nut of D1 the method according to claim 12 would be absolutely necessary therefore the disclosure of the method is implicit. Furthermore, it is implicit that the lock nut of D1 would be formed of metal. Therefore, in my opinion, claim 12 is not novel over D1.

Claim 1

22. The Requestor argues that the threaded apertures of D1 would be suitable for receipt of a bolt for threading an earthing wire and therefore claim 1 is not novel or at least is not inventive over D1.

23. The Observer argues that the threaded apertures of D1 are formed of opposite threads therefore installation as an electrical earthing nut would be impractical. The Observer further argues that, in regard to the Patent, whilst the grub screw must be sized to impinge on the threaded shaft extending through the nut body, the bolt must be sized so that it does not impinge on the threaded shaft, implying that this feature is not disclosed in D1.

24. It appears to me that the Observer is relying on limitations beyond those recited by claim 1 in order to distinguish the Patent from D1. The lock nut A of D1 comprises a first and second threaded aperture each of which may clearly receive a grub screw C and D, to contact the threaded bolt shaft B. Each threaded aperture is entirely suitable to receive an earthing bolt which would be configured to secure an earth connector. I appreciate that a shaft of the earthing bolt must be suitably dimensioned so as to not interfere with the threaded bolt shaft, however this is believed to be a property of the earthing bolt, which is not claimed, rather than a property of the nut. Therefore, in my opinion claim 1, is not novel over D1.

Inventive step - General

25. The Requestor argues that there is no synergy between the features provided by the first and second threaded apertures of the Patent, and consequently these, and their specific features recited through claims 2-11 & 13, must be considered as

distinct inventions for the purpose of section 3 of the Act. The Requestor further alleges that Claim 1 and Claim 12 are obvious in relation of D2 and D3.

Synergy

26. The Requestor alleges that the problem of earthing a nut and the problem of locking a nut are distinct problems with separate solutions, and further asserts that these problems are not dependent on one another and therefore have no synergy. The Observer disputes this, alleging that the invention simplifies and quickens a procedure as each aperture may receive either a grub screw or an earthing bolt. It is however noted that the Observer's argument implies that the claim is limited to both apertures being through bores however I do not consider claim 1 to be so limited..

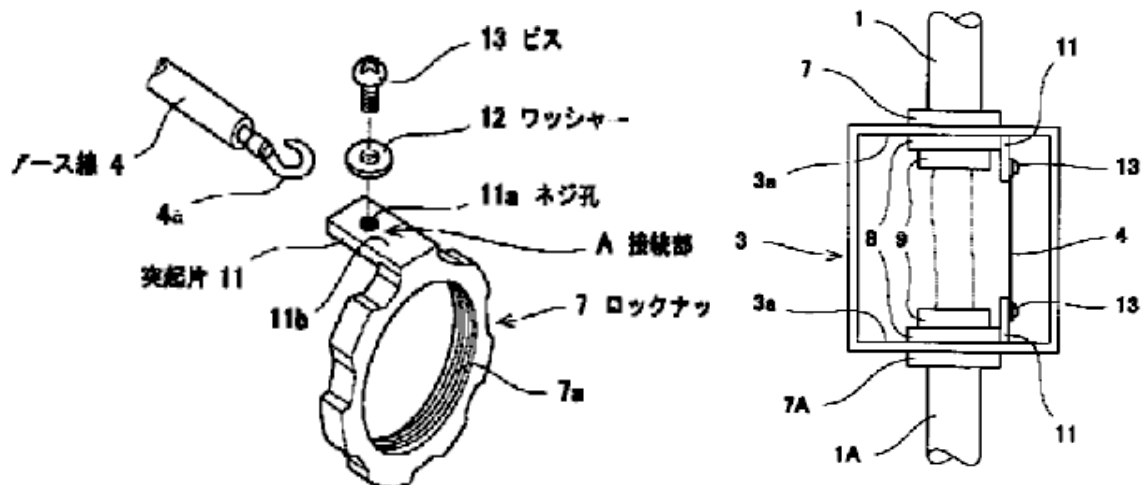
27. A specific object of the Patent is to provide an earthing nut which can replace an existing combination of a nut and banjo washer as typically used with a steel wired armoured (SWA) electrical cable gland. A particular problem with the typical arrangement is that the earth connection may be compromised if the components become loose.

28. The Patent provides a reliable electrical connection between a threaded shaft, for example a cable gland, and the nut body via engagement with a grub screw. Furthermore, the Patent provides a reliable electrical connection between the nut body and an earth connector via engagement with a bolt. These two features in combination provide an improved electrical connection between the threaded shaft and the earth connector over these distinct features taken in isolation.

29. In my opinion there is synergy between the features of the Patent and therefore in considering inventive step I must consider them in combination.

Inventive step with regard to D2

30. D2 discloses a ground wiring appliance for a metal pipe 1 passing through a junction box 3 in a pipe line as illustrated in the figures below. The appliance comprises a first lock nut 7 that cooperates with a second lock nut 8 to secure the metal tube to the junction box via a threaded portion 1a. The lock nut appears to have a knurled main nut body having an internal thread; the knurled main nut body provides an external perimeter and is suitably shaped to receive a tensioning device such as a spanner. The lock nut is further provided with a protrusion 11 which is either welded to the main nut body or formed integrally with the nut body. The protrusion appears to be provided with a threaded aperture 11a for receiving a threaded bolt 13 to secure a ground wire 4 thereto.



31. The Requestor argues that the only difference between D2 and claim 1 of the Patent is that there is no second aperture provided for receiving a grub screw. The Requestor further asserts that providing an additional threaded aperture to receive a grub screw would be an obvious alteration in light of the common general knowledge.

32. The Observer argues that that the embodiments disclosed in D2, with particular regard to the protrusion, would render the ground wiring appliance impractical in confined spaces, such as in a junction box where either planar face abuts a wall of the junction box, or for direct connection to a metallic enclosure.

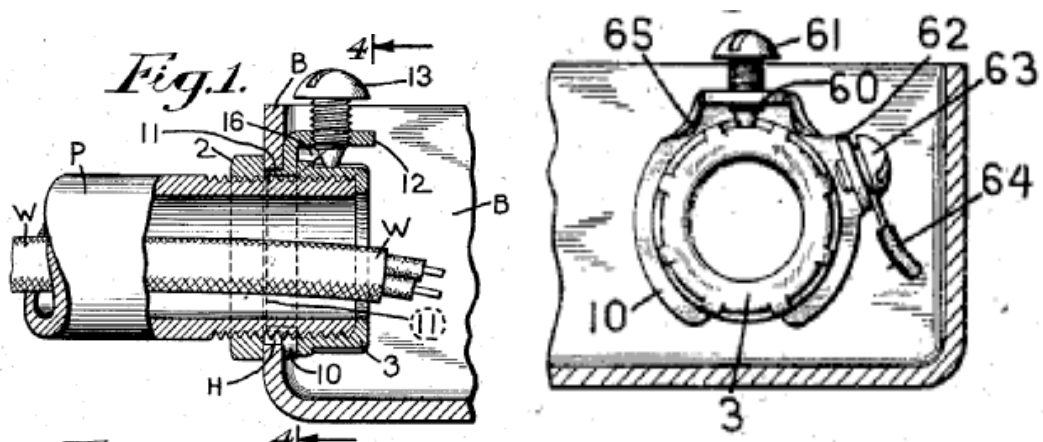
33. The Patent requires a nut body having, amongst other things, opposing generally planer faces. If I were to construe the protrusion 11 as a component of the nut body then the nut body would only comprise a single planar face. If I were to construe the protrusion as being a distinct component to the nut body then the threaded aperture does not extend into the nut body from a nut body perimeter as required by claim 1 of the Patent. Therefore, in addition to the distinction identified by the Requestor, there is a further distinction between the Patent as claimed in claim 1 and D2.

34. Relocating the threaded aperture 11a from the protrusion to the nut body would significantly limit the size of the washer 12 and the bolt 13 used with the ground wiring appliance and would provide additional restriction during installation for, what appears to be, no additional advantage. Therefore, I can see nothing that would motivate the skilled person to relocate the threaded aperture to arrive at the Patent as claimed in claim 1. In my Opinion claim 1 is inventive over D2.

Inventive step with regard to D3

35. D3 discloses a grounding device for general use with an outlet wiring box B, as shown in the figures below. The grounding device comprises a main body on which is provided a first threaded aperture for receiving an operating screw 13, and a second threaded aperture for receiving a wire clamp screw configured to clamp a ground wire 64. The grounding device is anchored to the outlet wiring box via cooperating lock nuts 2, 3 which themselves thread onto a threaded pipe to secure the threaded pipe to the outlet wiring box. The grounding device comprises arms 10

that are forced into engagement with the threaded pipe as the operating screw is screwed into engagement with the lock nut 3.



36. The Requestor concedes that the grounding device is not a nut but argues that it is equivalent to a nut. The Requestor further argues that it would be obvious to adapt the grounding device as a nut provided with the operating screw and the wire clamp screw.

37. The Observer argues that the grounding device of D3 does not disclose a nut body having an internal thread, nor does it disclose an external perimeter shaped to receive a tensioning device and asserts that the grounding device is plainly not equivalent to the Patent. The Observer further argues that the grounding device cannot be transformed into the Patent by any obvious modification.

38. The grounding device of D3 is not a nut. The grounding device straddles a conduit and ring portions 10 are configured to grip the conduit through reaction of the operating screw 13, 61. The purpose of the grounding device, amongst other things, is to provide a fixing that may be used in existing electrical appliances without the need for removing or disconnecting wires. This is primarily achieved by gap 14 which is placed over the wires *in situ*. This alone teaches away from using the grounding device as a nut as it would require disconnection of the wires in order to install the grounding device.

39. Modifying the grounding device in a manner that would meet the patent would negate a fundamental advantage of the grounding device and therefore in my opinion Claim 1 is inventive over D3.

40. The Requestor has made observations on possible obviousness due to the doctrine of equivalents. The matter of equivalents is one of infringement rather than obviousness and, as there is no request to consider infringement, I will not consider the question any further.

Dependent Claims

41. The request argues that all the dependent claims are obvious though in many cases there is little to substantiate the argument other than a brief assertion that the feature in the claim is "well known" or is something that the "skilled person would be

readily capable of making". The observer has sought to respond to these arguments in many cases highlighting the lack of evidence in the request. Given the paucity of argument provided by the Requestor and considering that the opinion service is intended to be a simple and low-cost process, I decline to give any opinion on the dependent claims. I would note however that given my conclusions on the independent claims then the Observer may be minded to seek amendment of the patent in which case it will need to satisfy the examiner that any amended claims are both novel and involving of an inventive step.

Opinion

42. It is my opinion that claims 1 and 12 of the Patent are not novel in light of D1.

43. It is my opinion that claims 1 and 12 of the Patent are inventive over D2 and D3.

Application for review

44. Under section 74B and rule 98, the proprietor may, within three months of the date of issue of this opinion, apply to the comptroller for a review of the opinion.

Sean OConnor
Examiner

NOTE

This opinion is not based on the outcome of fully litigated proceedings. Rather, it is based on whatever material the persons requesting the opinion and filing observations have chosen to put before the Office.