Patents Act 1977 **Opinion Number** **04/20**

OPINION UNDER SECTION 74A

Patent	GB 2414601
Proprietor(s)	Babcock Networks Limited
Exclusive Licensee	
Requester	Slingco Limited
Observer(s)	
Date Opinion issued	15 May 2020

The request

1. The comptroller has been requested to issue an opinion as to whether GB 2414601 (the patent) would be infringed by a roller assembly product, referred to in the request as the Catch Block, which the requester states they are interested in selling in the United Kingdom.

2. No observations have been received from the patent proprietor.

The patent

3. Filed as a Patent Cooperation Treaty application on 27 February 2004 with a priority date of 4 March 2003, the patent was granted with effect from 10 May 2006 and remains in force.

4. The invention is entitled "*Apparatus and method for replacing an overhead conductor*" and relates, as the opening part of the description explains, "*to the field of overhead electrical power transmission systems in which electrical conductors ("overhead conductors") are supported between towers, masts or other structures.*". As the specification goes on to explain "*In such systems it may be necessary, from time to time, to replace one or more of the electrical conductors, for example because the original conductor has become worn or damaged owing to lightning, corrosion or other reasons.*".

5. Several embodiments of the apparatus for performing the invention are described. Figures 7 to 16 show the embodiment which is described in most detail. These show a roller assembly 10 which "*comprises a pair of upper rollers 11 and a pair of lower rollers 21. Each pair of rollers comprises an axle 12, 22 having a flanged roller 13,14, 23,24 at each end thereof. The pair of upper rollers 11 is mounted directly vertically above the pair of lower rollers 12, preferably so their flanges are almost touching and*

the upper and lower pairs of rollers are retained in this position by means of locking plate assemblies 15A, 15B.", see for example figure 7 below. Variants are also described with just one upper roller and one lower roller.

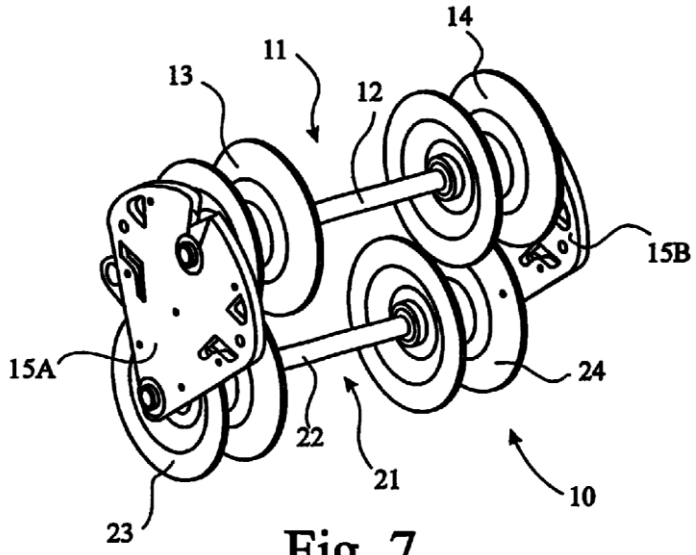


Fig. 7

6. In use the upper rollers 11 can be released from the lower rollers 21 in order that a conductor can be placed in each cavity defined between the flanges of the upper and lower roller pairs as the upper rollers 11 are replaced. Each roller assembly 10 is connected in use to adjacent roller assemblies 10 by means of straps 20, the end of one of which is shown in figure 11.

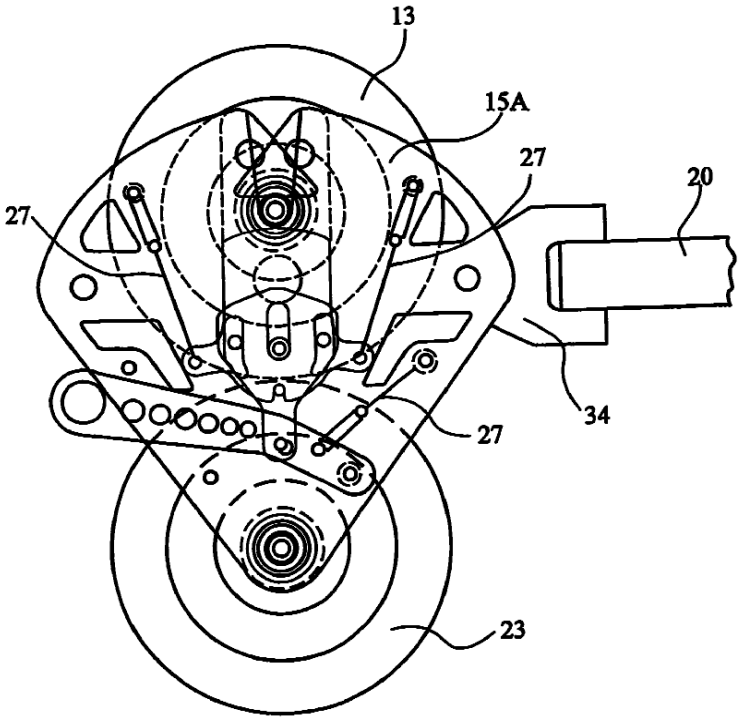


Fig. 11

7. The apparatus can be used in a method of replacing an old conductor with a new conductor shown in figures 1 to 6. In this a motorised spacer chair 3 can be sent out onto the conductor 1 from Tower A towards Tower B in the direction indicated by the arrow in Figure 1. As each roller assembly 10 leaves Tower A, an operator attaches it to the conductor 1, as follows: firstly he needs to remove the pair of upper rollers from the roller assembly, as described above. Then he aligns the individual conductors 1A, 1B within the cavities between the flanges of the roller pairs. Finally, he replaces the pair of upper rollers so that the conductor 1 (comprising twin conductors 1A, 1B) is captured within the roller assembly 10.

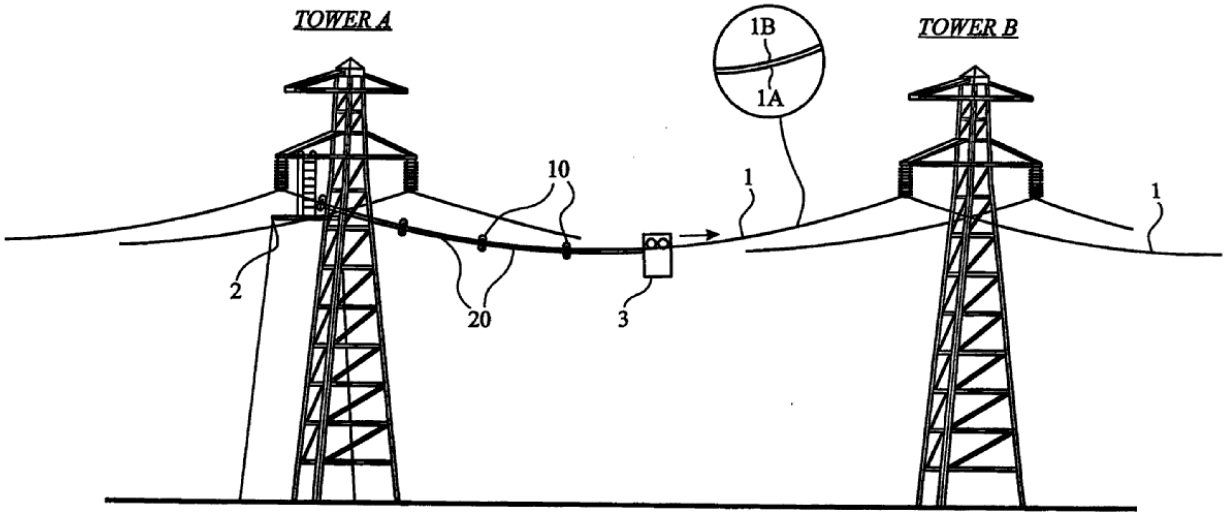


Fig. 1

8. When the motorised spacer chair 3 has reached Tower B, the conductor 1 is located within the cavities of each roller assembly 10, as illustrated in Figure 3. The conductor support system is then anchored at Tower B.

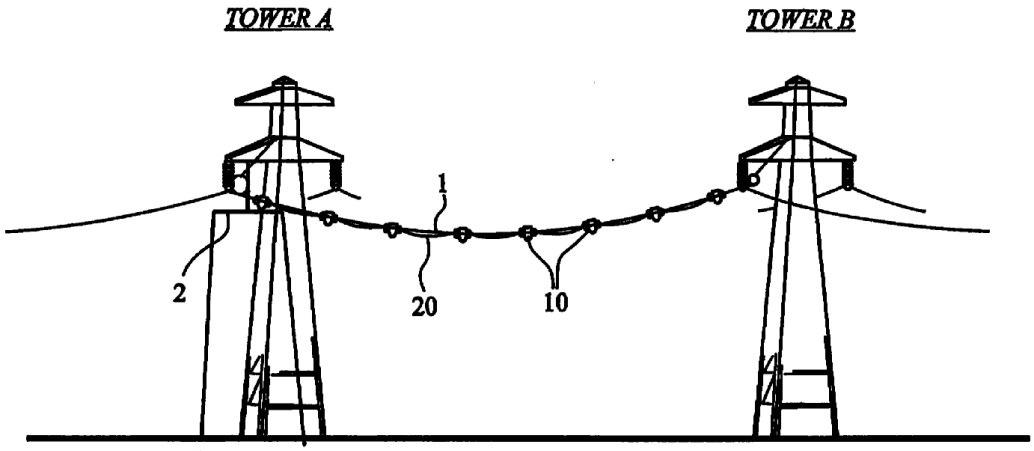


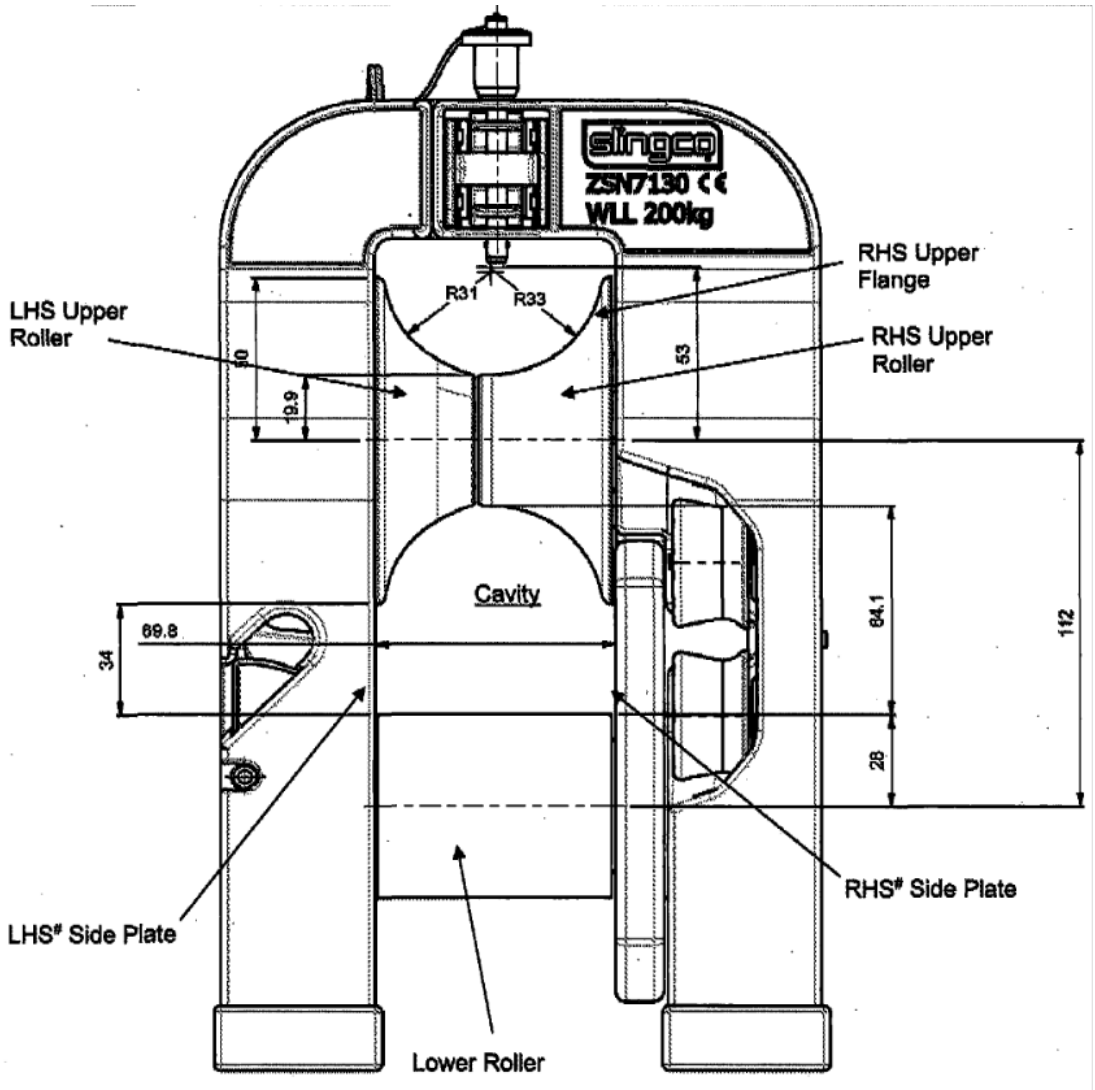
Fig. 3

9. Once the old conductor and the conductor support system have been sag matched, by adjusting the tension of the old conductor and/or the straps between roller assemblies, one end of the new conductor is connected to one end of the old conductor and the old conductor is pulled through the roller assemblies. Eventually, the old conductor has been completely removed from the section between Towers A and B and the new conductor extends between the towers in its place and is similarly captured by the roller assemblies.

10. The tension of the new conductor is adjusted appropriately in order for it to meet a desired sag profile. Once the desired sag profile for the new conductor is reached and the new conductor anchored in place, the conductor support system is then pulled in from Tower A and an operator at platform 2 sequentially removes the roller assemblies 10 from the new conductor.

The potentially infringing product

11. The Catch Block is described in the request as based on a catenary block which is intended to replace overhead conductors suspended between two towers. The Catch Block is shown in this figure:



12. The Catch Block is said to include an upper roller assembly formed from a left roller and a right roller together with a flat lower roller having a substantially constant cross sectional diameter. There is a substantial 34mm gap between the lower roller and the flanges of the upper rollers. In order to emphasise that this gap is substantial the request explains that it is not small enough to prevent the conductor from touching side plates of the Catch Block.

Claim construction

13. Firstly I need to construe the claims of the Patent, that is to say I must interpret it in the light of the description and drawings as instructed by Section 125(1). In doing so I must interpret the claim 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.

14. Section 125(1) of the Act states that:

> *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.*

15. There are claims to both method and apparatus. Claims 1 to 5 concern a method of replacing an old conductor with a new conductor between a pair of supporting towers and claims 6 to 17 are directed to a roller assembly for use in such a method, although these claims do not refer explicitly to the method of claims 1 to 5. Finally claims 18 to 22 also relate to an apparatus for use in such a method, the apparatus comprising a plurality of spaced apart roller assemblies connected by straps. The roller assemblies are explicitly required to be as claimed in claims 6 to 17 (apart from omnibus claim 22). Once again claims 18 to 22 do not explicitly refer to the method of claims 1 to 5.

16. Although the request comments upon all of claims 1, 6 and 18, the focus is placed upon claim 6. This is because, as the request rightly says, if the Catch Block does not infringe claim 6 it also does not infringe claims 1 or 18. For the reasons set out in the request I will not consider the omnibus claims, claims 5, 17 and 22.

17. Much like the request, I will consider first the broadest claim of the patent, claim 6, which reads as follows:

> *6. A roller assembly for use in a method of replacing an old conductor with a new conductor between a pair of towers, the roller assembly comprising an upper flanged roller and a lower flanged roller which, when assembled together, form a cavity defined by the flanges in which a conductor can be captured, such that, in use, said flanges substantially encircle the conductor and substantially maintain the orientation of the upper roller in its upper position relative to the lower roller and the conductor.*

18. It is conventional to take "*for use in*" as "*suitable for use in*" and I see no reason to depart from that convention here.

19. The rollers are referred to in claim 6 as flanged. In all of the embodiments each roller includes two flanges projecting in a direction away from the axis of rotation of the roller, but the claims do not include such a limitation. This begs the question whether the claim should be construed to include rollers having more than two flanges or fewer than two. According to the request "*the term 'flanged roller' should be construed to mean 'a roller having projecting flanges extending at either side of the roller'*" for the reason that "*nothing seems to turn on the issue*" (see paragraph 29). As the request rightly observes the flanged rollers are not described in the patent in any great detail. It seems to me that the skilled reader would understand that both upper and lower rollers must be flanged, but that beyond that the only limitation on the flanges is that, when the rollers are assembled together, they should be capable of forming a cavity to capture a conductor and substantially encircle the conductor. I believe that this capability could be achieved by rollers having at least one flange.

20. Since the only form of roller disclosed in the patent includes two flanges there may be a question of whether the patent discloses the invention "*in a manner which is clear enough and complete enough for the invention to be performed by a person skilled in the art* " so as to allow the invention to extend to rollers having at least one flange. To my mind the skilled addressee would need little assistance to perform the invention using rollers having a single flange and I believe that the patent is sufficient to support my construction of each roller having at least one flange. I note that the request accepts that a combination of two upper rollers as used in the Catch Block falls within the meaning of "*an upper roller*" as used in claim 6.

21. I agree with the requester that the terms upper and lower have no special significance in relation to the rollers in claim 6.

22. When assembled together the rollers are required to "*form a cavity defined by the flanges in which a conductor can be captured, such that, in use, said flanges substantially encircle the conductor*". This is expanded upon within the description on page 6 lines 16 to 23: "*The fact that the flanges substantially encircle the conductor, in use, means that there is no risk of the roller assemblies becoming inadvertently unhooked during the method of replacing the conductor. By "captured" and "substantially encircled", it is meant that any gap between the flanges of the upper and lower rollers is smaller than the diameter of the conductor so that it is impossible for the conductor to pass therethrough.*". In the embodiments of the invention this gap is very small and in the description of the embodiments it is said that the rollers are mounted "*preferably so their flanges are almost touching*" (page 11 line 13) and that "*The flanges of the upper and lower rollers need to be almost touching i.e. so that any gap between them is smaller than the diameter of the conductor which is to be captured in the cavities.*" (page 11 line 23 to 26).

23. The request notes that "*the flanges*" which define the cavity have no antecedent with the claim. I think this is perhaps a little unreasonable since the claim has introduced upper and lower flanged rollers and required them to form the cavity which is defined by the flanges. There is nothing that I can find within the specification which might lead the skilled reader to suppose that "*the flanges*" might be found somewhere in

the assembly other than on the rollers.

24. I think it is clear that the result to be achieved by the invention is "*that there is **no risk** of the roller assemblies becoming inadvertently unhooked*" and "*it is **impossible** for the conductor to pass* [through any gap between the flanges]" (emphasis added). The patent teaches nothing about the size of the conductor and in the absence of such information it seems to me that the skilled reader would conclude that the only way to achieve the rather emphatic result is for the flanges of the rollers to be "*almost touching*". There is no indication in the patent how the invention might be worked with any other arrangement, e.g. how any other appropriate gap to give "***no risk***" might be calculated by a skilled worker. Consequently I take it that that "*substantially encircle the conductor*" should be construed to mean that a conductor should not be able to pass through the gap irrespective of the size of the conductor and that the flanges of the rollers must be "*almost touching*" with no appreciable gap. I also note that on page 11 the description of the embodiments tells the skilled reader that "*The flanges of the upper and lower rollers **need** to be almost touching*" (emphasis added).

25. Two possible alternative constructions are provided in the request for this requirement that the rollers "*form a cavity defined by the flanges in which a conductor can be captured, such that, in use, said flanges substantially encircle the conductor*". These depend on the size of gap covered by the requirement and are referred to in the request as the touching construction and the protruding construction. According to the first construction "*the flanges are arranged to be as close together as possible whilst allowing the two rollers to rotate without interference with each other*" (see paragraph 36 of the request) and according to paragraph 38 of the request the second means that "*the flanges encircle the conductor wherein any gap is small enough to prevent the conductor from protruding*". It seems to me that the first construction is the correct one.

26. The final clause of claim 6 requires that "*said flanges … substantially maintain the orientation of the upper roller in its upper position relative to the lower roller and the conductor.*". I agree with the request that this is a little problematic. There is nothing disclosed regarding the flanges that explains how they might maintain the orientation of the rollers relative to one another and the conductor. The request submits that this feature is sufficiently unclear that it should be construed as placing no restriction on the scope of the claim. Method claim 1 does include a requirement for "*substantially maintaining the orientation of the upper roller in its upper position relative to the lower roller and the conductor*", but does not refer to the flanges in this regard or indeed specify how the result is to be achieved. From the specification as a whole it seems to me that person skilled in the art would have understood the patentee to mean that the relative orientation of the rollers and the conductor should be maintained, but would understand that it is not the flanges that achieve this result. Since maintaining the orientation of the rollers and the conductor would be unsurprising to the skilled reader this virtually amounts to the submission in the request that no restriction is placed on the scope of the claim.

27. The claims other than claim 6 raise no issues regarding construction for either me or the requester.

Infringement

28. Section 60 Patents Act 1977 governs what constitutes infringement of a patent; Section 60(1)(a) and (b) in particular concerns direct infringement where the invention is a product or a process and reads:

> *Subject to the provision of this section, a person infringes a patent for an invention if, but only if, while the patent is in force, he does any of the following things in the United Kingdom in relation to the invention without the consent of the proprietor of the patent, that is to say -*
> *(a) where the invention is a product, he makes, disposes of, offers to dispose of, uses or imports the product or keeps it whether for disposal or otherwise;*
> *(b) where the invention is a process, he uses the process or he offers it for use in the United Kingdom when he knows, or it is obvious to a reasonable person in the circumstances, that its use there without the consent of the proprietor would be an infringement of the patent;*

29. Section 60(2) deals with indirect or contributory infringement:

> *Subject to the following provisions of this section, a person (other than the proprietor of the patent) also infringes a patent for an invention if while the patent is in force and without the consent of the proprietor, he supplies or offers to supply in the United Kingdom a person other than a licensee or other person entitled to work the invention with any of the means, relating to an essential element of the invention, for putting the invention into effect when he knows, or it is obvious to a reasonable person in the circumstances, that those means are suitable for putting, and are intended to put, the invention into effect in the United Kingdom.*

30. In the Supreme Court in *Actavis v Eli Lilly*[1] Lord Neuberger stated that the problem of infringement is best approached by addressing two issues, each of which is to be considered through the eyes of the notional addressee of the patent in suit, i.e. the person skilled in the relevant art. Those issues are:

> *(i) does the variant infringe any of the claims as a matter of normal interpretation; and, if not,*
>
> *(ii) does the variant nonetheless infringe because it varies from the invention in a way or ways which is or are immaterial?*

31. If the answer to either issue is “yes”, there is infringement; otherwise there is not.

32. In *Actavis* the questions of Hoffmann J in *Improver Corporation v Remington Consumer Products Ltd* [1990] FSR 181, were reformulated as follows:

> *(i) Notwithstanding that it is not within the literal meaning of the relevant claim(s) of the patent, does the variant achieve substantially the same result*

[1] *Actavis UK Limted and others v Eli Lilly and Company* [2017] UKSC 48

in substantially the same way as the invention, i.e. the inventive concept revealed by the patent?

(ii) Would it be obvious to the person skilled in the art, reading the patent at the priority date, but knowing that the variant achieves substantially the same result as the invention, that it does so in substantially the same way as the invention?

(iii) Would such a reader of the patent have concluded that the patentee nonetheless intended that strict compliance with the literal meaning of the relevant claim(s) of the patent was an essential requirement of the invention?

33. In order to establish infringement in a case where there is no literal infringement, a patentee would have to establish that the answer to the first two questions was "yes" and that the answer to the third question was "no".

34. Obviously the Catch Block product in itself would not infringe directly the method of claims 1 to 5 and as shown in the request it would not infringe directly the apparatus of claims 18 to 21 since a single Catch Block is shown with no connecting straps. The Catch Block might infringe claims 1 to 5 or 18 to 21 indirectly by virtue of Section 60(2). I have already agreed with the requester that the Catch Block does not infringe claims 1 or 18 if it does not infringe claim 6. I will therefore only need to consider indirect infringement of claims 1 to 5 or 18 to 21 if I come to the view that the Catch Block infringes claim 6.

35. Taking the requirements of claim 6 in turn it is clear that the Catch Block forms a roller assembly and the request acknowledges that it is suitable for use in a method of replacing an old conductor with a new conductor between a pair of towers. In my view there is an upper flanged roller irrespective of whether the requirement should be construed as a roller with at least one flange, as is my view, or two flanges as the requester believes. There is also a lower roller, but plainly it lacks any flanges, and the orientation of the upper roller is maintained relative to the lower roller and to the conductor by implication.

36. The absence of flanges on the lower roller already means that the answer to the first of Lord Neuberger's questions above is "no" and there would be no direct infringement. I must now consider Lord Neuberger's second question. It seems to me that the answer turns on whether the rollers of the Catch Block form a cavity defined by the flanges in which a conductor can be captured, such that, in use, said flanges substantially encircle the conductor. If they do form such a cavity then I think the answer to Lord Neuberger's second question is "yes" and if they do not form such a cavity then the answer is "no".

37. I have already concluded that the specification teaches the skilled reader that "*captured*" and "*substantially encircle the conductor*" should be construed to mean that the flanges of the rollers must be "*almost touching*" with no appreciable gap. This is not true of the Catch Block and the variation is not to my mind immaterial. Nor to my mind does the variant in the Catch Block "*achieve substantially the same result in substantially the same way as the invention*". Depending on their diameter, some conductors would be unable to pass through the gap between the rollers of the Catch Block, but obviously this is not true of conductors irrespective of the diameter

and is not achieved by means of no appreciable gap between the rollers.

38. Hence the answer to Lord Neuberger's second question is also "no" and the answer to the first reformulated *Improver* question is "no" and there is no potential infringement of claim 6 nor of claims 1 or 18. It follows that there could be no infringement of the remaining claims.

Opinion

39. In my opinion the Catch Block would not infringe any of the claims of the patent if it were it to be sold in the United Kingdom.

Application for review

40. 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.

Karl Whitfield
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.