



PATENTS ACT 1977

APPLICANT Zebra Technologies Corporation

ISSUE Whether patent application GB2000219.2 complies
with section 1(1)(b) of the Patents Act 1977

HEARING OFFICER Phil Thorpe

DECISION

Introduction

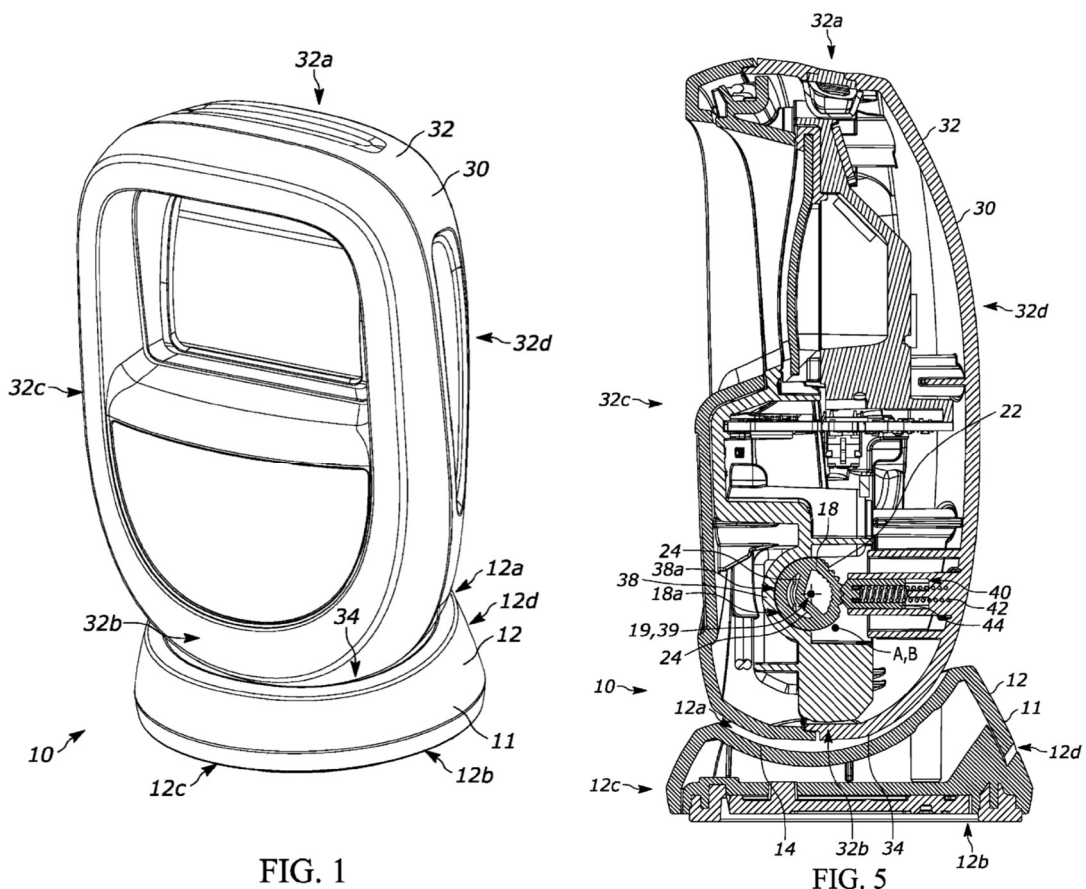
1. Patent application GB2000219.2 has a filing date of 8th January 2020, claims an earliest priority of 11th January 2019, and was published as GB 2583803 A on 11th November 2020.
2. The application was searched by the European Patent Office (EPO) under the terms of a Working Agreement on search cooperation between the European Patent Organisation and the Intellectual Property Office (IPO). Items IV, V and VIII of a Written Opinion produced by the EPO were adopted as a first examination report. The claims were considered to relate to two separate inventions and a request for search of the second invention was fulfilled by the IPO.
3. Despite detailed correspondence between the examiner and the applicant's attorney, the applicant has been unable to satisfy the examiner that the application has met all the requirements of the Patent Act 1977 (the Act). Although there remain outstanding issues around clarity, the core issue is that the examiner considers that the application does not involve an inventive step.
4. As such, the matter came before me in a Hearing which took place on 11th May 2022. At the hearing the applicant was represented by Mr Peter Lucas of LKGLOBAL. In advance of the hearing, Mr Lucas provided a skeleton argument for which I am grateful.

The Invention

5. The invention relates to a barcode scanning device that captures images within a given field of view (FOV). To aid in positioning the FOV, such devices typically include a mechanism for rotationally positioning a portion of the device relative to another portion. One problem that may arise with such devices is exposure to the elements resulting in dirt and grime interfering with

operation of the positioning mechanism. A further potential problem is that of a user's hand becoming pinched in gaps when portions of the device are moved relative to each other.

- The invention seeks to address these problems by providing a barcode scanner assembly comprising a base and a scanner enclosure having curved surfaces for nesting together with only a small clearance between the scanner enclosure and base. More specifically, the base 12 has a top surface that is generally spherically shaped about a base centre point A and the scanner enclosure 30 has a bottom surface that is generally spherically shaped about a scanner enclosure centre point B.



- The claims under consideration were filed on 13th April 2021. Claim 1 reads as follows:

A barcode scanner assembly for capturing at least one image of an object appearing in a field of view (FOV), the barcode scanner assembly comprising:

a base including a first generally spherically shaped surface portion being spherical about a base center point, the base having an upper portion and a lower portion opposite to the upper portion, the lower

portion of the base being generally flat so as to accommodate placement on a substantially horizontal surface;

a scanner enclosure being mechanically coupled to the base, the scanner enclosure including a top portion and a bottom portion opposite the top portion, the bottom portion of the scanner enclosure being positioned proximate to the upper portion of the base, wherein the bottom portion of the scanner enclosure includes a second generally spherically shaped bottom surface portion being spherical about a scanner enclosure center point, wherein the first generally spherically shaped surface is one of concave or convex, and the second generally spherically shaped surface is the other one of convex or concave;

wherein the base center point and the scanner enclosure center point are one of concentric or positioned within approximately 5mm of each other.

8. Claim 6 is a further independent claim to a barcode scanner assembly. I am satisfied that claim 6 stands or falls with claim 1.

The Law

9. Section 1(1) states (with added emphasis): A patent may be granted only for an invention in respect of which the following conditions are satisfied, that is to say –

(a) the invention is new;

(b) it involves an inventive step;

(c) it is capable of industrial application;

(d) the grant of a patent for it is not excluded by subsections (2) and (3) or section 4A below;

10. Section 3 then sets out how the presence of an inventive step is determined. It says:

An invention shall be taken to involve an inventive step if it is not obvious to a person skilled in the art, having regard to any matter which forms part of the state of the art by virtue only of section 2(2) above (and disregarding section 2(3) above).

11. It is well-established that the approach to adopt when assessing whether an invention involves an inventive step is to work through the steps set out by the Court of Appeal in *Windsurfing*¹ and restated by that Court in *Pozzoli*². These steps are:

¹ *Windsurfing International Inc. v Tabur Marine (Great Britain) Ltd*, [1985] RPC 59

² *Pozzoli SPA v BDMO SA* [2007] EWCA Civ 588

- (1)(a) Identify the notional “person skilled in the art”;
- (1)(b) Identify the relevant common general knowledge of that person;
- (2) Identify the inventive concept of the claim in question or if that cannot readily be done, construe it;
- (3) Identify what, if any, differences exist between the matter cited as forming part of the “state of the art” and the inventive concept of the claim or the claim as construed;
- (4) Viewed without any knowledge of the alleged invention as claimed, do those differences constitute steps which would have been obvious to the person skilled in the art or do they require any degree of invention?

(1)(a) Identify the notional “person skilled in the art”

12. The applicant and examiner appear to agree that the person skilled in the art is a designer of barcode scanners.

(1)(b) Identify the relevant common general knowledge of that person

13. The applicant and the examiner seem to be broadly in agreement regarding the common general knowledge of the skilled person, with the applicant considering that the skilled person would know about conventional barcode scanners with moving parts and the examiner noting that their common general knowledge would include familiarity with common barcode scanner designs. Mr Lucas agreed that the common general knowledge would extend to a recognition that the likelihood of dirt getting into gaps between the components increases with increasing size of the gaps.

(2) Identify the inventive concept of the claim in question or if that cannot readily be done, construe it

14. Guidance on identifying the inventive concept was given by Jacob LJ. comments in *Pozzoli* where he noted:

[17] What now becomes stage (2), identifying the inventive concept, also needs some elaboration. As I pointed out in Unilever v Chefaro [1994] RPC 567 at page 580: ‘It is the inventive concept of the claim in question which must be considered, not some generalised concept to be derived from the specification as a whole. Different claims can, and generally will, have different inventive concepts. The first stage of identification of the concept is likely to be a question of construction: what does the claim mean? It might be thought there is no second stage – the concept is what the claim covers and that is that. But that is too wooden and not what courts, applying Windsurfing stage one, have done. It is too wooden because if one merely construes the claim one does not distinguish between portions which matter and portions which, although limitations on the ambit of the claim, do not. One is trying to identify the essence of the claim in this exercise.’

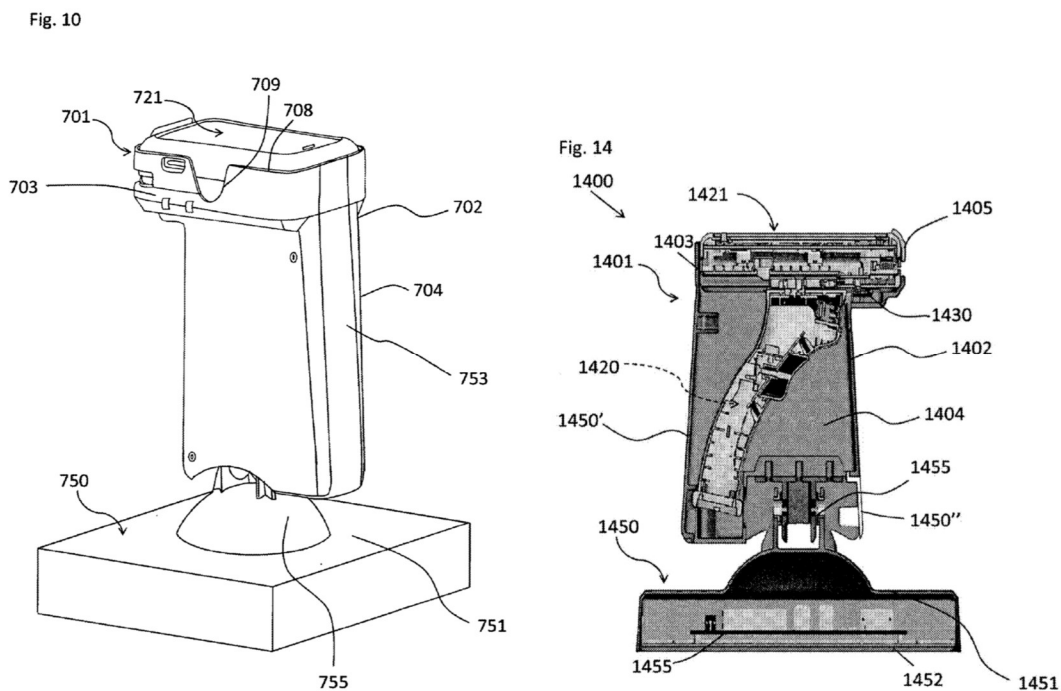
[18] So what one is seeking to do is to strip out unnecessary verbiage, to do what Mummery LJ described as make a precis.

15. The examiner considers the inventive concept to be the invention as defined in claim 1. The applicant defines the inventive concept more specifically as the positioning of the spherical surface portions of the base and scanner enclosure such that their centre points are concentric or within approximately 5mm of each other, in order to achieve the desired aims of minimising dirt ingress and reducing the risk of a user's fingers becoming pinched or trapped. Mr Lucas summarised the applicant's definition of the inventive concept as being the recognition that positioning the centre points of the complementary spherical shapes at a close distance allows for the advantageous prevention of dirt ingress.
16. I noted that minimising the distance between the two centre points will only minimise the gap between the two spherical surfaces if the diameters of the spheres are the same or approximately same, which is a feature not explicitly disclosed in the specification. Mr Lucas pointed out that it would not be possible to position spheres of greatly varying diameter to have concentric centre points, as a mismatch would result with the centre points being away from each other. While claim 1 might be interpreted to encompass the possibility of the spheres having different diameters, this interpretation is not one that the skilled person would consider.
17. There is one further issue of construction which is what is meant by "generally spherical"? The application is silent on a precise definition for this term. It does however refer to the surfaces being cylindrical rather than spherical though such arrangements would be outside of the scope of the claim 1 above. The description notes also that only a portion of the surface needs to be generally spherical. In its skeleton argument the applicant argues that "generally spherical" means "not necessarily perfect, given manufacturing tolerances". I am not persuaded that the term is that narrow. Instead in the absence of any indication in the application to the contrary, I believe the skilled person would give the term "generally" a slightly broader definition such that the surface is more or less spherical.
18. With that qualification I am therefore content to accept the applicant's interpretation of the inventive concept albeit it in the proper context. Hence the inventive concept is:

A barcode scanner assembly comprising a base including a first generally spherically shaped surface portion, a scanner enclosure being mechanically coupled to the base, the scanner enclosure including a generally spherically shaped bottom portion positioned proximate to the first generally spherically shaped surface portion of the base, wherein the centre points of the generally spherical portions of the base and scanner enclosure are one of concentric or positioned within approximately 5mm of each other.

(3) Identify what, if any, differences exist between the matter cited as forming part of the "state of the art" and the inventive concept of the claim or the claim as construed

19. Two prior art documents are considered by the examiner to form separate starting points for assessing the inventiveness of the claims. Document US 2016/0203455 A1 was filed on 24th March 2016 and published on 14th July 2016. Document US 2016/0357999 A1 was filed on 28th August 2015 and published on 8th December 2016. Each document discloses a barcode scanner assembly comprising a base and a scanner enclosure mechanically coupled thereto.
20. Considering first US 2016/0203455 A1, there appears to be some disagreement between the applicant and the examiner around the disclosure of this document. The examiner asserts in their pre-hearing report that the document provides for all the features of claim 1, with the exception of the base centre point and the scanner enclosure centre point being one of concentric or positioned within approximately 5mm of each other.
21. The applicant points out that the assembly of document US 2016/0203455 A1 comprises a base housing assembly (labelled 750 in figure 10 reproduced below) which includes a tilting and rotational mechanism (755) connecting the base housing assembly to an upper housing assembly (701). They assert that neither the base housing assembly nor the body 704 of the upper housing assembly have generally spherically shaped surfaces.



22. Considering figure 14 of US 2016/0203455 A1, I note that it would be difficult to argue that the tilting and rotational mechanism is not spherical, and Mr Lucas agrees that it may have a spherically shaped surface. However, he contends that the base housing assembly appears to have flat surfaces and the bottom portion of the body appears to have a generally cylindrically shaped portion, and so the difference between the apparatus of document US

2016/0203455 A1 and the inventive concept of claim 1 extends to the shape of the base and the scanner enclosure.

23. It seems to me that the tilting and rotational mechanism 755 could be considered to form part of the base portion, in which case the requirement of the assembly comprising a base including a generally spherically shaped surface portion being spherical about a base centre point would be met. However, I am in agreement that the bottom portion of the scanner enclosure does not appear necessarily to be generally spherically shaped. I consider the differences between the assembly of document US 2016/0203455 A1 and the inventive concept of the claim to lie at least in the shape of the bottom portion of the scanner enclosure and in the relative positioning of the base and scanner enclosure centre points.

24. Mr Lucas agreed that document US 2016/0357999 A1 forms a stronger starting point for the construction of an inventive step objection.

25. The examiner considers there to be two differences between the teaching of document US 2016/0357999 A1 and the inventive concept of claim 1. The first difference is the absence of a base centre point and a scanner enclosure centre point that are either concentric or positioned within approximately 5mm of each other. The second difference is the lower portion of the base not being generally flat so as to accommodate placement on a substantially horizontal surface.

26. The applicant notes firstly that the document does not explicitly define the shape of scanner enclosure (housing 600 of the figures reproduced here) or the interior surface of the base (100). Whilst they concede that the scanner enclosure appears to have a truncated sphere shape, the applicant asserts that the interior surface of the base appears to have a shape that is more ovoid than spherical. It suggests that this may be the reason why the spherical-type shape of the housing is truncated.

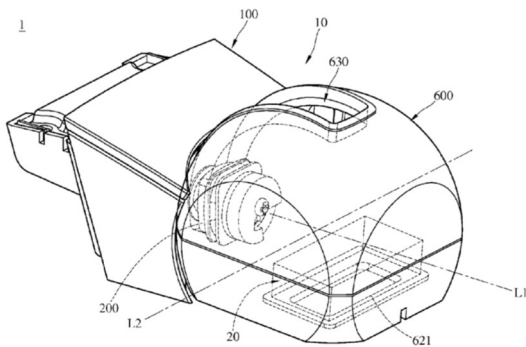


FIG. 11

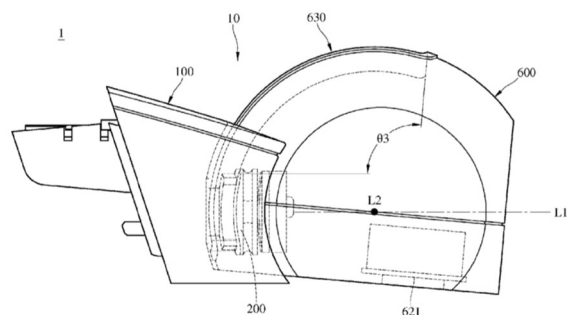


FIG. 12

31. I accept however that in the absence of any specific disclosure, it is not possible to say whether the axes are “one of concentric or positioned within approximately 5mm of each other” as required by the claim.
32. As noted, US 2016/0357999 A1 does not disclose a flat base however that is not something I consider to be part of the inventive concept. It is a limitation in the claims that in my opinion does not matter. Hence the only difference between the assembly of document US 2016/0357999 A1 and the inventive concept of the claim is the absence of a clear disclosure that the axes are “one of concentric or positioned within approximately 5mm of each other”.

(4) Viewed without any knowledge of the alleged invention as claimed, do those differences constitute steps which would have been obvious to the person skilled in the art or do they require any degree of invention?

33. Mr Lucas notes that everyone seems to be in agreement that the skilled person could make modifications to the scanner assembly of document US 2016/0203455 A1, but it is a question of motivation. Mr Lucas asserts that the skilled person would not be motivated to make the multiple modifications required to reach the invention of claim 1. I agree.
34. However, I think the position is different with regards to US 2016/0357999 A1.
35. This document does disclose the two generally spherically parts positioned such that the gap between them is small. Whether these parts are “one of concentric or positioned within approximately 5mm of each other” is not clearly disclosed. However even if it is not disclosed then it would be an obvious option for the skilled person looking to minimise ingress of dirt and to prevent a user’s hand from being pinched. I would add that even if I am wrong and the base is not “generally spherical”, I would still have reached a similar conclusion since the walls of the base are such as to present a small and consistent gap with the housing and it is that gap, rather than the overall shape of the base that is important in preventing ingress of dirt and the user’s hand being pinched.
36. I also discounted the feature of the flat base from the inventive concept considering it an unimportant limitation to the claim. Even if it was a part of the inventive concept then that too would not change my conclusion on inventiveness. There is no clear synergy between that feature and the more significant features of the relative positioning of the two generally spherical parts. Mr Lucas accepted to his credit Mr Lucas that if I conclude that the only difference between US 2016/0357999 A1 and the inventive concept lay in the absence of a flat base, then this would not be considered to be inventive. I think the same holds true even if there is an added difference relating to the precise disposition of the generally spherical parts.

Clarity objections

37. I noted that independent claim 6 is somewhat unclear in scope, to which Mr Lucas responded that claim 6 would be omitted if claim 1 were to be found allowable.

Conclusion

38. Having carefully considered the arguments of the applicant, I find that the invention as currently claimed does involve an inventive step having regard to document US 2016/0203455 A1. However, I find that the invention is obvious in view of the disclosure of document US 2016/0357999 A1.

39. Mr Lucas noted that the ratchet mechanism is already protected by a granted divisional application and so would not form the basis of a possible saving amendment. One possible amendment route is the incorporation of the feature of the centre points being located in the base into claim 1. This feature is not present in document US 2016/0357999 A1. Not least in view of the presence of the slot for facilitating rotation, it may not be obvious for the skilled person to move the centre points of the apparatus of document US 2016/0357999 A1. **I will therefore allow the applicant a period of 2 months to file amendments.** The allowability of any amendments will first be considered by the examiner who will then report to me to decide if they do overcome any objections.

Appeal

40. Any appeal must be lodged within 28 days after the date of this decision.

Phil Thorpe

Deputy Director, acting for the Comptroller