Intellectual Property Office

BL O/325/19

07 June 2019

PATENTS ACT 1977

APPLICANT	Google LLC
ISSUE	Whether patent application GB 1715687.8 complies with section 14(3)
HEARING OFFICER	Dr C. L. Davies

DECISION

Introduction

1 Patent application GB 1715687.8 (“the application”) entitled “Identifying consumers in a transaction via facial recognition" was filed on 28 April 2016, with an earliest declared priority date of 30 April 2015. It was published as GB 2552119 A on 10 January 2018.

2 Prior to substantive examination taking place, the claims were amended in line with the granted claims of the US equivalent, US 9619803 B2. However, following a number of rounds of correspondence between the examiner and the applicant's attorneys, the examiner remains of the view that the claimed invention is excluded from patentability under section 1(2); does not involve an inventive step; and is insufficient by excessive claim breadth. Whilst the examiner has deferred full substantive examination, including updating of the search, at this stage, she has raised a minor clarity issue which remains outstanding.

3 With the position unresolved the applicant asked to be heard. The issues before me were set out in the examiner’s pre-hearing report of 10 January 2019. Upon consideration of the pre-hearing report prior to the hearing I decided it would be more efficient to split the issues to be heard. The issue of insufficiency by excessive claim breadth has led to two lines of argument for excluded matter i.e. one for the current broader claim and one narrower claim overcoming the insufficiency issue. This along with the possibility of any amendment to overcome the insufficiency objection having an effect on the excluded matter and inventive step objections led me to consider deciding on the issue of insufficiency only in the first instance to be the most efficient approach. Therefore, following consultation with the applicant’s attorney, it was decided that at the hearing I would hear argument relating to the issue of insufficiency by excessive claim breadth only and subsequent to this decision I would hear the remaining unresolved issues at a further hearing if necessary. Thus, the matter came before me at a hearing conducted via video conference on 1 April 2019. The applicant was represent at the hearing by attorney

Mr Mike Williams of Marks & Clerk LLP. The examiner Ms Becky Lander was present and I was assisted by Mr Marc Collins.

The invention

4 The invention relates to identifying a user at a particular location. In the application the invention is described in an embodiment concerning a transaction between a customer (user) and a merchant. Figure 1 is reproduced below. A merchant and a user 101 register with a payment processing system 160, which establishes a facial template based on a user image. The user signs into a payment application via a user computing device 110, which receives an identifier from a merchant beacon device 120 to transmit to the payment processing system. The payment processing system transmits facial templates to the merchant camera device 140 for other users who are also signed in to the payment application in range of the merchant beacon device. The merchant camera device compares a captured facial image against the received facial templates to identify the user. A merchant POS device operator 102 selects an account of the user. The merchant POS device 130 transmits transaction details to the payment processing system, which processes the transaction with an issuer system. The payment processing system receives an approval of the transaction authorization request and transmits a receipt to the merchant POS device.

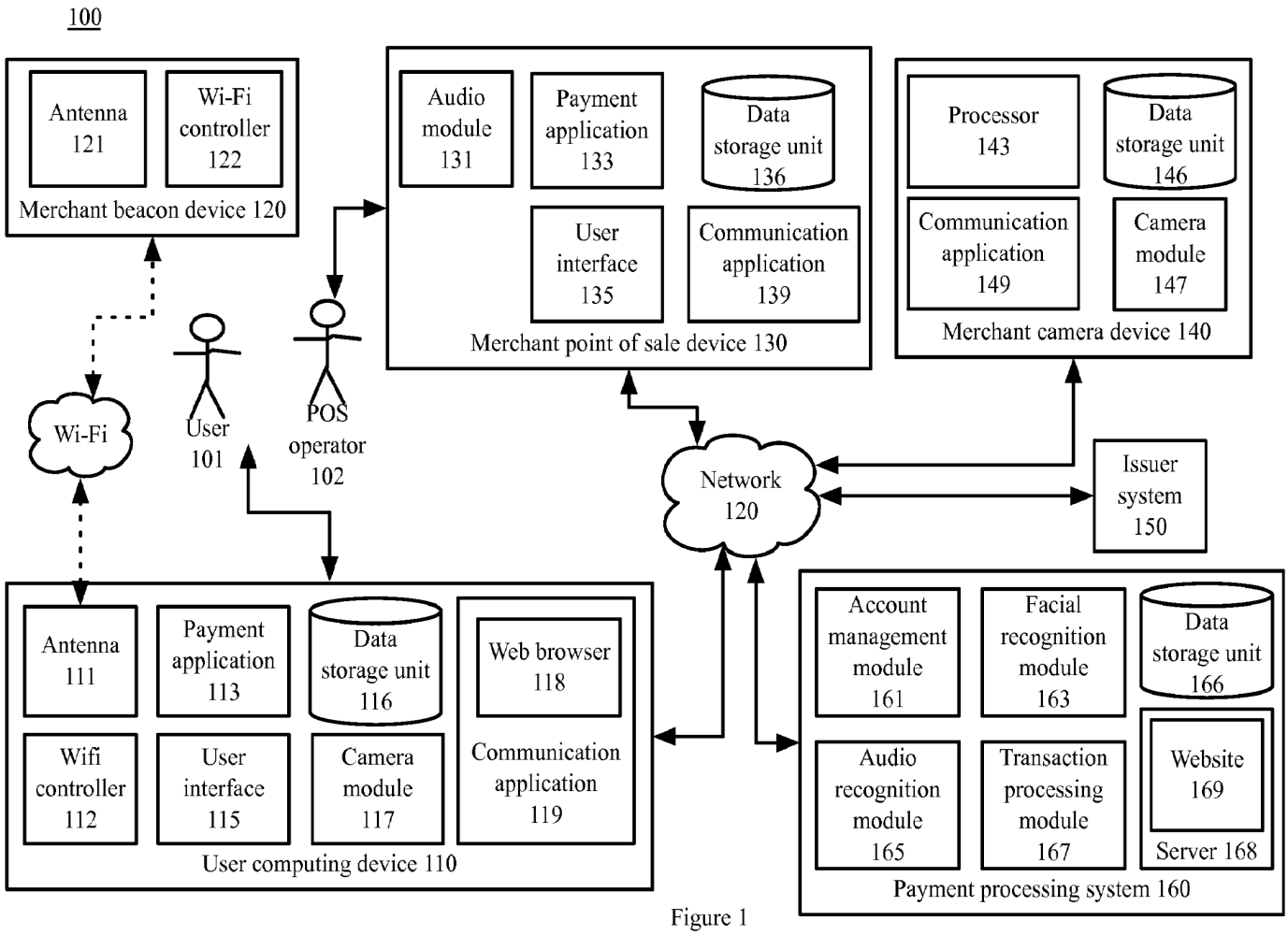

Figure 1

5 The latest set of claims filed on 28 September 2017 has twenty claims including four independent claims – claims 1, 7, 12 and 17. The independent claims are set out below:

> *1. A computer-implemented method to identify users at locations by comparing facial imaging of users against facial templates of users known to be at particular locations, comprising:*
>
> *broadcasting, by a computing device, an identifier associated with the computing device at a location;*
>
> *receiving, by the computing device and from one or more other computing devices, one or more facial templates, each facial template associated with a corresponding user associated with a corresponding user computing device that received the broadcasted identifier at the location and retransmitted the identifier to the one or more other computing devices, each facial template comprising a representation of a respective facial image of the respective user;*
>
> *storing, by the computing device, the one or more received facial templates;*
>
> *capturing, by a camera module of the computing device, a video feed of an environment external to the computing device;*
>
> *extracting, by the computing device, a facial image of a particular user from the video feed;*
>
> *generating, by the computing device, a facial template of the particular user based on the facial image of the particular user, wherein the facial template of the particular user is a representation of the facial image of the particular user;*
>
> *determining, by the computing device, a similarity between the generated facial template of the particular user and each of the one or more stored facial templates;*
>
> *identifying, by the computing device, a particular stored facial template as corresponding to the generated facial template of the particular user based on the determined similarity between the generated facial template of the particular user and the particular stored facial template exceeding a threshold value indicating that the stored facial template corresponds to the generated facial template of the particular user;*
>
> *transmitting, by the computing device, a response to a request to identify a user comprising an indication of the identified particular user.*
>
> *7. A computer-implemented method to identify users at locations by comparing facial imaging of users against facial templates of users known to be at particular locations, comprising:*
>
> *receiving, by one or more computing devices and from a particular user computing device, an account identifier of an account associated with a particular user associated with the particular user computing device and a beacon device identifier, wherein the particular user computing device retransmits the beacon device identifier received via a network from a beacon device at a location associated with the beacon device identifier;*
>
> *retrieving, by the one or more computing devices, a facial template associated with the account of the particular user based on the account identifier of the account associated with the particular user;*

identifying, by the one or more computing devices, the location associated with the beacon device identifier;

adding, by the one or more computing devices, the facial template associated with the account of the particular user and the associated location to a current customer log comprising facial templates corresponding to user computing devices that retransmit the beacon device identifier received from the beacon device at the location associated with the beacon device identifier;

transmitting, by the one or more computing devices and to a computing device at the location, the current customer log comprising the facial template associated with the account of the particular user, wherein the computing device identifies the particular user based on identifying the facial template associated with the account of the particular user from the current customer log as being similar to a facial template of the particular user generated from a facial image of the particular user captured by the computing device.

12. *A computer program product, comprising:*

a non-transitory computer-readable medium having computer-readable program instructions embodied thereon that when executed by a computer cause the computer to identify users at locations by comparing facial imaging of users against facial templates of users known to be at particular locations, the computer-readable program instructions comprising:

computer-readable program instructions to broadcast an identifier associated with the computing device at a location;

computer-readable program instructions to receive, from one or more computing devices, one or more facial templates, each facial template associated with a user associated with a user computing device that receives the broadcasted identifier at the location and retransmits the identifier to the one or more computing devices, each facial template comprising a representation of a respective facial image of the respective user;

computer-readable program instructions to store the one or more received facial templates;

computer-readable program instructions to receive a request to identify a user;

computer-readable program instructions to capture, by a camera module, a video feed of an environment external to the computer;

computer-readable program instructions to extract a facial image of a particular user from the video feed;

computer-readable program instructions to generate a facial template of the particular user based on the facial image, wherein the facial template of the particular user is a representation of the facial image of the particular user;

computer-readable program instructions to retrieve the one or more stored facial templates associated with one or more corresponding user computing devices that retransmitted the identifier broadcasted at the location;

computer-readable program instructions to determine a similarity between the generated facial template of the particular user and each of the one or more stored facial templates;

computer-readable program instructions to identify a particular stored facial template as corresponding to the generated facial template of the particular user based on the similarity between the generated facial template

of the particular user and the particular stored facial template exceeding a threshold; and

computer-readable program instructions to transmit a response to the request to identify the user comprising an indication of an identity of the particular user.

17. A system to identify users at locations by comparing facial imaging of users against facial templates of users known to be at particular locations, comprising:

a storage device; and

a processor communicatively coupled to the storage device, wherein the processor executes application code instructions that are stored in the storage device to cause the system to:

receive, from a particular user computing device, an account identifier of an account of a particular user associated with the particular user computing device and a beacon device identifier, wherein the particular user computing device retransmits the beacon device identifier received via a network connection from a beacon device at a location associated with the beacon device identifier;

retrieve a facial template associated with the account of the particular user based on the account identifier of the account of the particular user;

identify the location based on the beacon device identifier;

add the facial template associated with the account of the particular user and associated location to a current customer log comprising facial templates corresponding to user computing devices that retransmit the beacon device identifier received via the network connection from the beacon device at the location associated with the beacon device identifier; and

transmit, to a computing device at the location, the current customer log comprising the facial template associated with the account of the particular user, wherein the computing device identifies the particular user based on identifying the facial template associated with the account of the particular user from the current customer log as being similar to a facial template of the particular user generated from a facial image of the particular user captured by the computing device.

The law

6 The examiner has raised an objection under section 14(3) of the Patents Act 1977 that the application is insufficient. The relevant provisions of this section of the Act are shown in bold below:

Section 14(3)

The specification of an application shall disclose 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.

7 The purpose of section 14(3) of the Act is to prevent an applicant laying claim to products or processes which the teaching of the patent application does not enable the skilled addressee to perform. In other words, does the patent application provide

enough information for a person with a reasonable knowledge and understanding of the technical area described in the application to be able to carry out the invention?

8 In *Eli Lilly*[1] at [239] Kitchin J gave the following summary of the relevant principles, to be applied when assessing whether an application satisfies this section of the Act:

> *"The specification must disclose the invention clearly and completely enough for it to be performed by a person skilled in the art. The key elements of this requirement which bear on the present case are these:*
> *(i) the first step is to identify the invention and that is to be done by reading and construing the claims;*
> *(ii) in the case of a product claim that means making or otherwise obtaining the product;*
> *(iii) in the case of a process claim, it means working the process;*
> *(iv) sufficiency of the disclosure must be assessed on the basis of the specification as a whole including the description and the claims;*
> *(v) the disclosure is aimed at the skilled person who may use his common general knowledge to supplement the information contained in the specification;*
> ***(vi) the specification must be sufficient to allow the invention to be performed over the whole scope of the claim;***
> *(vii) the specification must be sufficient to allow the invention to be so performed without undue burden."*

9 Whilst there is only one provision under the Act, it is now settled law that sufficiency in terms of the disclosure being clear and complete enough for the invention to be performed by the person skilled in the art is approachable in three different ways:

> *(1) Classical insufficiency*
> *(2) Insufficiency by ambiguity*
> *(3) Insufficiency by excessive claim breadth*

In this instance the examiner considers the disclosure to be insufficient by excessive claim breath.

Insufficiency by excessive claim breadth

10 The disclosure of an invention must be sufficient to enable the invention to be performed to the full extent of the monopoly claimed. In contrast to the situation where a patent or application is classically insufficient, there may be an enabling disclosure for some portion of the invention, but not for the full breadth of the claims. It therefore follows that restricting the scope of the claims to that which is enabled can overcome the objection.

11 The House of Lords in *Biogen Inc*[2] held that for the purposes of s.14(3) and 72(1)(c) the disclosure must be sufficient to enable the whole width of the claimed invention to be performed, and the disclosure of a single embodiment will not always satisfy the requirement regardless of the width of the claim. Insufficiency arising from a disclosure which does not enable the invention to be performed across the entire

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[1] *Eli Lilly v Human Genome Sciences [2008] RPC 29*
[2] *Biogen Inc v Medeva plc [1997] RPC 1*

claim width is thus sometimes referred to as “Biogen insufficiency”. However, this principle is not confined to chemistry and biotechnology patents.

Arguments and analysis

12 The examiner maintains that the disclosure is insufficient by excessive claim breadth. Her position is set out most recently in her pre-hearing report. Detailed arguments against the examiner's position are contained in the applicant's responses to the examination reports and in the skeleton argument filed prior to the hearing through their attorney. These arguments were elaborated clearly and helpfully at the hearing by Mr Williams. At the hearing Mr Williams put forward additional argument not covered in his skeleton argument. I invited Mr Williams to submit the additional argument in writing following the hearing should he wish to do so. Mr Williams subsequently filed further submissions in his letter dated 8 May 2019. Taking all these arguments into account, I must determine whether the application lacks sufficiency under section 14(3).

13 In her argument the examiner refers to MoPP Section 14.156 which states that:

> *“if the entire contents of the application are such as to convey the impression that a function is to be carried out in a particular way, with no intimation that alternative means are envisaged, and a claim is formulated in such a way as to embrace other means, or all means, of performing the function, then objection arises.”*

14 The examiner believes this is relevant to the application as there is an issue of insufficiency by excessive claim breadth. She argues there does not appear to be any disclosure within the application which meets the sufficiency requirements for the scope of the claim to encompass a method of identifying users which is not tied into use in authenticating a transaction.

15 The examiner considers the description to refer only to transactions between a customer and a merchant, such transactions being of a financial or business nature. The invention is described as relating to “improving user convenience in transactions by identifying user accounts for use in transactions based on facial recognition of users by a payment processing system”. The description and drawings only refer to payment processing devices and merchant devices acting as the computing device of the claims. It is the examiner’s view that in order to be considered sufficient the claims would need to be restricted in scope to reflect the disclosure provided by the description.

Is the objection improperly founded?

16 The attorney contends that the examiner’s objection is improperly founded and shouldn’t have been raised in the form that it has. The objection is based on the fact that the application contains a single exemplary embodiment and that the claims are not limited to that single embodiment. Mr Williams explained that there is no such objection in the UK Patents Act according to the case law that says you must limit your claims to the specific embodiment recited in the description.

17 Mr Williams argues that the examiner has made no reference to what the skilled person would or would not be enabled to do by the teaching of the description. He does not consider the examiner to have given consideration to the substantive issue.

18 Mr Williams draws attention to MoPP 14.79 which summarises the decision of the House of Lords in *Biogen Inc.* As discussed above in paragraph 10, the House of Lords held that for the purposes of s.14(3) and 72(1)(c) the disclosure must be sufficient to enable the whole width of the claimed invention to be performed, and the disclosure of a single embodiment will not always satisfy the requirement regardless of the width of the claim. He explains that given a single embodiment "will not always" be sufficient, it is necessarily the case that a single embodiment will often (or at least sometimes) be sufficient.

19 The attorney argues that the objection has focussed exclusively on the second part of the of the above summary taken from MoPP 14.79, whereas the legal test requires consideration of the first part i.e. whether the claimed subject matter is or is not enabled. One must consider what the skilled person is actually enabled to do and is not merely an exercise in counting the number of exemplary embodiments in the description. The number of exemplary embodiments is not determinative as to whether or not the claims are enabled. The question is what would the skilled person be enabled to do?

20 Mr Williams then proceeded to discuss the principle of general application. He explained that the objection does not indicate what general principle the claim recites and provides no reasoning as to why any general principle would not be workable by the skilled person in view of the example embodiment provided in the description.

21 I find myself in agreement with the attorney on this point. As Mr Williams has argued the number of embodiments is not determinative as to whether or not the claims are enabled across the whole scope and there will be circumstances when a single embodiment will provide enablement for a claim not limited to the features of the single embodiment. I also agree that the objection should have outlined what the skilled person is enabled to do by the specification and why the skilled person would not be enabled to work the full scope of the claim in light of the disclosure.

22 However, despite the fact there are shortcomings with how the objection has been formulated, the question raised by the examiner as to whether the disclosure is sufficient to enable the skilled person to work the full scope of the claims remains.

Is the disclosure sufficient?

23 For the invention to be sufficiently disclosed I must consider whether the invention has been sufficiently disclosed such that a suitably skilled person would be able to put it into practice. The concept of the skilled person is that of the uninventive, but technically competent person (or team) who is considered for the purpose of assessing inventive step. As stated by Aldous J in *Mentor Corporation*[3] (at page 561):

[3] *Mentor Corporation v Hollister Inc. [1991] FSR 557*

"The section requires that the skilled man be able to perform the invention. Such a man is the ordinary addressee of the patent. He must be assumed to be possessed of the common general knowledge in the art and the necessary skill and expertise to apply that knowledge. He is the man of average skill and intelligence, but is not expected to be able to exercise any invention. In some arts he may have a degree, in others he will be a man with practical experience only. Further, in circumstances where the art encompasses more than one technology, the notional skilled addressee will be possessed of those technologies which may mean that he will have the knowledge of more than one person."

24 However, although the phrase "person skilled in the art" is construed in the same way when considering sufficiency and inventive step, for the purposes of s.14(3) the skilled person is seeking to make the patent work and does so with the common general knowledge at the time the patent was filed. In contrast to the situation for inventive step purposes, the skilled worker has the patent in front of them, and thus is "trying to carry out the invention and achieve success,...not searching for a solution in ignorance of it." (see *Zipher Ltd*[4] at page 50).

25 The examiner has defined the skilled person in her pre-hearing report. I have no issue with her definition other than I would not limit the location of the user to being at a merchant location. In this instance I consider the relevant skilled person (or team) to be a designer or manufacturer of software used for identifying users at a specific location. The skilled person would have skills and common general knowledge in the field of known identification means, including facial recognition. The skilled person would also have knowledge of common proximity sensing mean, such as via the use of Bluetooth® low energy beacons. Furthermore, the skilled person would be aware of the different conventional ways in which identification and transaction data can be captured, generated, stored, transmitted and received.

26 In discussing the principle of general application, Mr Williams drew attention to *Biogen* in which Hoffman LJ stated:

"Thus if the patentee has hit upon a new product which has a beneficial effect but cannot demonstrate that there is a common principle by which that effect will be shared by other products in that class, he will be entitled to a patent for that product but not for the class, even though some may subsequently turn out to have the same beneficial effect... On the other hand, if he has disclosed a beneficial property which is common to the class, he will be entitled to a patent for all products of that class (assuming them to be new) even though he has not himself made more than one or two of them."

27 Mr Williams also discussed *Kirin-Amgen Inc*[5] where Lord Hoffmann held that "a principle of general application" was simply an element of the claim stated in general terms. Such a claim was sufficiently enabled if it could be reasonably expected that the invention would work with anything falling within the general terms. He then went

[4] *Zipher Ltd v Markem Systems Ltd [2009] FSR 1*
[5] *Kirin-Amgen Inc v Hoechst Marion Roussel [2005] RPC 9*

on to highlight the decision in *American Home Products Corp.*[6] at paragraph 40 which states:

> *"There is a difference between on one hand a specification which requires the skilled person to use his skill and application to perform the invention and, on the other, a specification which requires the skilled person to go to the expense and labour of trying to ascertain whether some product has the required properties. When carrying out the former the skilled person is trying to perform the invention, whereas the latter requires him to go further and to carry out research to ascertain how the invention is to be performed. If the latter is required the specification would appear to be insufficient."*

28 Therefore, as Mr Williams explained, the description is insufficient if the skilled person has to make onerous or burdensome enquiries as to whether or not they could get the benefits of the principle of general application in other contexts other than that which are exemplified by the specific description.

29 In this case, Mr Williams considers the principle of general application which the skilled person can use across the whole scope of the claims to be the orchestration of different devices in order to enable the user to be identified hands free. The user broadcasts a message to cause the user devices at the location to request that the trusted other device send a template to the computing device so that the computing device can make a comparison with the contemporaneously obtained image from the camera device. I find myself in agreement with Mr Williams' definition of the principle of general application in this case.

30 Mr Williams argues the skilled person would understand that the general principle would work at a merchant location or any other location where there is an interest in identifying a user such as in an airport or a hospital. There's nothing particular in the features of the claimed method which would suggest that they would only work at a merchant location and would fall down at any other location. Should the skilled person wish to implement the method at a different location all they need do is implement the method, there are no changes needed to the method to make it work in any other context.

31 The skilled person is taught by the embodiment described that the general principle can be implemented at a merchant location. The question to be asked is does the skilled person have to make any onerous or burdensome enquiries to determine whether they would get those benefits in any other application? Mr Williams has argued that the answer is clearly no. I agree.

32 Again, I agree with Mr Williams. In my view the skilled person would not consider the general principle to be limited to only working at a merchant location. Should the skilled person wish to implement the claimed method at a non-merchant location where identifying a user is required, the skilled person would simply implement the claimed method in the context of their choice and get the benefits of the general principle. There would be no undue burden placed upon the skilled person in using his skill and knowledge to perform the general principle of the claimed invention at

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[6] *American Home Products Corp. v Novartis Pharmaceuticals UK Ltd [2001] RPC 8*

any other such location. Therefore, the claimed invention is sufficiently described by the single embodiment in the application as filed.

Conclusion

33 I find the disclosure in the application as filed to be sufficient under section 14(3) and the skilled person is enabled to work the invention across the full breadth of the claims.

34 I will now remit the application back to the examiner to re-consider and review the outstanding issues of excluded matter and inventive step in light of this decision on sufficiency. Should the excluded matter and inventive step objections remain outstanding in the examiner's view, the pre-hearing report will be updated and re-issued to the applicant prior to a further hearing being arranged.

Appeal

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

C. L. Davies

Deputy Director, acting for the Comptroller