

## Patents and Publics: Engaging Museum Audiences with Issues of Ownership and Invention

*James F. Stark\*. Graeme Gooday\*\**

---

### Abstract

It is all very well to note the hyperbole about patents and 'intellectual property' in the recent battles between technology companies such as Apple, Samsung and HTC. But how can museums productively use collection items marked with a patent beyond workaday tasks of identification and cataloguing? We argue that information on patents can enhance visitors' critical engagement with museum displays; complex ownership claims and counter-claims in patent disputes can underpin lively narratives based around museum objects. Asking why some objects and not others were patented, and how historical consumers responded to that status of 'patented' enables us to look at these objects afresh. In particular we analyse the responses of public consultation groups to patenting in the medical trade, as well as the engagement of museum staff with these issues. Such consultation processes offer information that can be used to enhance museum displays with engaging narratives of ownership and invention.

**Keywords;** Patent; invention; intellectual property; ownership; objects.

### Introduction

In the context of museum narratives, it is platitudinous to observe that objects are typically a rich source of information in themselves. Yet they can also point us to other forms of evidence and historical material – such as texts, images and oral histories – that are, in many cases, essential to presenting these objects in informative and engaging ways. One such form of evidence, which has yet to be exploited in the process of object interpretation, is the patent of invention. Numerous devices and instruments are themselves marked as 'patented', 'patent' or even 'patent pending', and these markings, which are in many cases coupled with patent numbers or dates, offer an excellent starting point in constructing rich object biographies and wider narratives built around issues of priority, invention and ownership – key themes in the histories of many museums' collections.

Recent scholarship has focused on the exploration of display styles and presentation strategies which encourage audiences to engage with objects on an aesthetic level as well as an informational one (Arnold and Soderqvist 2011). We suggest that many objects in museums' collections can be reinterpreted in surprising ways by using the lens of intellectual property: a somewhat different approach. Our attempt to show how patents of invention can be used as a way of devising object narratives goes some way to answering the challenges which medical technologies present for museums, providing a new conceptual level on which to engage visitors with objects which might otherwise be dismissed as banal or lacking in display potential owing to their appearance, use, or complexity (Albano 2007). These difficulties apply particularly to medical technologies – our focus here – although we argue that there is wider applicability across historical and contemporary technologies, many of which are otherwise difficult to access intellectually for museum audiences owing to their very nature (Soderqvist, Bencard and Mordhorst 2009). Indeed, we propose that the complexity of patenting processes and many patented objects themselves can be virtuous when used carefully to tell stories underpinned by intellectual property and invention.

Whilst there is an increasing trend focusing on the value of objects as tools of engagement in the digital sphere and continuing debate over the relative benefits of using digital technologies

to present objects in new ways, we aim here to shift the debate back to the objects themselves, the other historical information to which they point, and the interpretative approaches for display which we can glean from the resultant narratives (Hogsden and Poulter 2012).

In this article we examine how information on patents (whether genuine, expired or fictitious) can be used by museums to construct displays and other forms of visitor engagement that reveal new stories about histories of invention and innovation. We explore not only how patents can act as important sources of information for objects' biographies, but also the responses of audience consultation groups, museum staff, and representatives of the medical industry to the issues of patenting, ownership and invention in the history of science, technology and medicine. In doing so, we show how recent historical scholarship in intellectual property can inform museum practices and visitor experiences in tangible ways (Johns 2010). Although at face value, and in their historical and practical origins, patents are complex legally contrived documents, when the relevant information is extracted and made accessible to wider audiences they can reveal further details about devices and the nature of invention that are often otherwise hidden. Priority disputes over ownership of historic inventions that are thereby uncovered can, we show, be made relevant to today's museums audiences by reference to ongoing intellectual property battles between technology giants such as Apple, HTC and Samsung. These high-profile, multi-million dollar conflicts, often only resolved by court cases involving multiple patents, have brought these issues to the attention of wider audiences, offering an opportunity to engage a broad range of museum visitor groups with the nature and character of inventions and inventors. Meanwhile, controversies over the behaviours of 'patent trolls' – holders of patents and serial litigators – continue to fascinate public audiences.<sup>1</sup> Many museums have collections that contain a significant number of patented items, and the information from patents and the objects themselves can be used within museums to add a new dimension to public-facing narratives. This is especially relevant given that audiences engage with material presented in a museum in a variety of different ways (Carnegie 2006).

Museums that deal with issues of patenting and ownership are few and far between. One example is the National Inventors Hall of Fame and Museum, part of the US Patent and Trademark Office Museum in Alexandria, Virginia. As the name suggests, this museum celebrates the lives and inventions of famous figures from the history of innovation. We are interested here in opening up the topic of invention and intellectual property to other classes of museum, thereby engaging new audiences in these subjects.

This work emerged from earlier research on the role of patents, ownership and invention in the histories of agriculture, aeronautics and electrical engineering. From these areas, it was clear that issues of intellectual property were treated in very different fashions across disciplines. Given that electrical technologies became a key aspect of the medical trade around the turn of the twentieth century, exploring the influence of patenting on healthcare seemed like a particularly fruitful avenue. A survey of the collections at the Thackray Medical Museum, Leeds, UK, revealed a large number of patented objects, and the museum's desire to explore the possibility of developing new galleries and strategies for visitor engagement provided the ideal setting to examine how patents might be used in interpretative material. We, therefore, sought to couple recent historiographical advances in the history of medicine and commerce, which have shown the central role of marketing and professionalism in the medical trade, with a public-facing project which aimed to explore possible ways of using patents in the museum and heritage sector (Jones 2010; Ueyama 2010).

The Thackray Medical Museum provided the ideal location to explore how patents and patented objects might be used to convey narratives of invention and ownership in the history of science, technology and medicine. Opened in 1997, the Thackray is one of the largest medical museums in the UK, with a collection of around 47,000 objects and 23,000 books and catalogues, including historic patent documents.<sup>2</sup> The museum is housed in the former Leeds Union Workhouse adjacent to St. James's Hospital, and the collections stemmed from the holdings of the Thackray Company, a major medical supply firm based in Leeds, which manufactured drugs and medical equipment. The Thackray's galleries address topics including the history of public health, childbirth, bacteriology, surgery, anaesthetics, dentistry and others, and the museum draws heavily on its own collections for display. Around 900 of these objects bear markings related to patents and patenting, and this enabled us to draw on a broad range

of medical devices to explore how such information might be used in a museum context.

### Patents as Legal Documents and Historical Sources

Current museological practices of object interpretation do not habitually include the use of patents; yet these legal documents have provided an increasingly rich source of evidence for historians in recent years (Biagioli and Galison 2003; Biagioli, Jaszi and Woodmansee 2011; Gooday and Arapostathis 2013). The wider availability of patents from a large range of countries across broad time periods, largely through resources such as Espacenet at the European Patent Office, has made more accessible important primary materials, allowing historians to offer more nuanced interpretations of 'invention', 'ownership' and 'priority' (MacLeod 2007).<sup>3</sup> Patents themselves vary in their content from country to country and across time periods, yet they are united in providing information about the form of inventions, the date of submission of designs to the relevant patent offices, the name(s) of the claimant, and references to other patented devices.

Contested ownership has been a prominent feature of a number of major inventions. The traditional heritage narratives of a number of different countries claim that various different individuals have been the driving force and principal architects of various innovations. One of the most prominent rivalries for invention is between Thomas Edison and Joseph Swan for the electric light bulb. Edison and Swan fought a number of bitter priority disputes in the courtroom, before eventually collaborating to form the Ediswan Electric Company. Patents formed a key part of the evidence in deciding who might be the 'one and true inventor' of the technology in question, yet they were just part of the story. It is only through using patents as sources that such contestation can be brought to light and used to complement the traditional narratives of the 'one true inventor' and demythologize the role and character of the purported 'lone genius', which pervades the received view of invention. In this way, the inclusion of information derived from patents and other documentary evidence of priority disputes in science, technology and medicine yields new insights into both the collaborative and competitive nature of these disciplines for museum audiences. The case study, which we present here, demonstrates that there is an appetite for such interpretive models from both museum curators and different audience groups.

For museum-based interpreters the real value of patents lies in the scope for coupling the materiality of objects with these sources. Very often objects themselves will give either concrete information about which patents are relevant, as can be seen in the case of the Overbeck Rejuvenator (see Figure 1), or an indication that the object was at least patented. The Rejuvenator was an electrotherapy device dating from the 1920s, which was widely advertised



Figure 1: A list of patents displayed inside the case of the Overbeck Rejuvenator (with thanks to the Thackray Medical Museum)

and marketed by its inventor – Otto Overbeck. Here, the numerous patent numbers, countries and years point us towards further documentation, showing exactly which parts of the device were protected. Although it might seem from a glance at the object itself that the entirety of the Rejuvenator was patented, here we learn that, as in the vast majority of patents, the protection was granted not for a brand new invention, but for improvements to existing devices, in this case ‘an improved appliance for conducting a current of electricity to the body and especially for passing a current from the scalp to any other part through the body.’<sup>14</sup> The only part of the Rejuvenator covered by the British patent was therefore the electric body comb, which was just one element of the overall device (Stark, forthcoming).

The status of the many objects marked ‘patent pending’ or ‘pat. pending’ is more ambiguous, but offers important insight into the reasons behind why manufacturers and inventors might have wanted to style their devices in this way. The complex reasons behind choosing to patent – for profit, to prevent others from using inventions, to establish a monopoly – or not patent – to retain professional status, to make an invention freely available – were also coloured by the nature of the device in question, as well as the state of the marketplace, potential audiences and users, and the inventor(s) themselves. We can learn from the first portion of a British patent specification filed in 1924 by Overbeck, shown in Figure 2, about the nature of the device, the dates of the initial application, final submission and acceptance of the patent, the patent number, and the name, address and nationality of the applicant. Later on in the patent, we find a more detailed description of the invention in terms of its material composition, technical specification and potential uses, as well as drawings showing the electric body combs that Overbeck sought to protect by means of patent rights. Indeed, protecting a device from rivals was just one of the many ways in which patents were used: they were equally employed defensively as a means of preventing a rival from establishing a monopoly in a particular area.



## PATENT SPECIFICATION

Application Date : May 17, 1924. No. 12,182 / 24.

**237,384**

Complete Left : Feb. 17, 1925.

Complete Accepted : July 30, 1925.

## PROVISIONAL SPECIFICATION.

### Electric Multiple Body Comb for Use All Over the Body.

I, OTTO GERHARDT CHRISTOP LUDWIG JOSEPH OVERBECK, Chantry House, Deansgate, Grimsby, in the County of Lincoln, of British nationality, do  
5 hereby declare the nature of this invention to be as follows :—

A multiple comb (electric) consisting of a nonconducting handle carrying a metal rod within, ending on one side with a  
10 ring & being divided at the other end into halves, bent twice at right angles to form a supporting bracket, the second bend (parallel to the handle) being

pierced twice with holes for a bar, ending on one side with a button, and at the  
15 other with a screw and winged nut, to hold superimposed combs interspaced with metal washers. The ring end of the handle is connected with current electricity, thus conveyed to the combs from the  
20 ring in the handle which are used in pairs respectively negatively & positively electrified all over the body & also head.

Dated this 17th day of June 1924.

O. OVERBECK. 25

*Figure 2: Details of the British patent taken out by Otto Overbeck for one key element of the Rejuvenator. The layout, content and wording are typical of patents from this period.*

Clearly there are limitations to the kinds of information that we can take from patent specifications. They are legal documents, drawn up by patent agents in conjunction with the inventor(s), and as such are highly stylized in order to conform to the requirements of patenting procedure and law courts. Patent specifications are, therefore, to a large extent fixed; the lives of patented objects after a patent is granted are not projected in the original document. This is particularly important as patents had, and continue to have, a limited lifespan before expiring – in the UK

prior to World War One, this was 14 years, although this was again variable by country. When we seek to bring out stories about the development of objects and technologies, information on patents offers new ways for audiences to respond to narratives of invention. They provide us with information about the inventor's (or inventors') agendas, a detailed timescale of priority claims over the invention, and a record of exactly what the inventor was claiming in terms of originality. For example, the patent granted for 'Improvements in or relating to Resuscitation Devices', the first portion of which is shown in Figure 3, gives the names of the two inventors, the key dates in the patenting process, and a brief overview of the inventors' claims. Later in the patent specification, which runs to nine pages, we find elaborate details about the device in question (an airway tube), together with highly annotated technical drawings of the claimed invention.<sup>5</sup>

## PATENT SPECIFICATION



DRAWINGS ATTACHED

**900.305**

Date of Application and filing Complete Specification: Aug. 7, 1959.

No. 27156/59.

Application made in United States of America (No. 754,046) on Aug. 8, 1962.

Complete Specification Published: July 4, 1962.

Index at acceptance:—Class 81(2), T4B.

International Classification:—A62b.

### COMPLETE SPECIFICATION

#### Improvements in or relating to Resuscitation Devices

- We, PETER SAFAR, of 4716 Meise Drive, Baltimore, Maryland, United States of America, of Austrian nationality, and MARTIN CONSTANTINE McMAHON, of 207 North Curley Street, Baltimore, Maryland, United States of America, a citizen of the United States of America, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed to be particularly described in and by the following statement:—
- that of the patient. The idea of placing one's mouth on the mouth of an apparently dead victim, particularly where the mouth may be covered with foam, mucus or blood, as is often the case in asphyxia victims, as well as the fear of possible transmittal of disease is revolting to the average person and is difficult to overcome. Since artificial respiration should be started immediately when the non-breathing victim is found, a skilled physician is generally

*Figure 3: Personal information contained in patents can point to numerous other sources, useful for following up both biographical and technical information about inventors and their devices.*

Having established the potential richness of these sources, we now move to consider how three key groups – museum professionals, audience consultation groups, and representatives of the medical industry – have responded to patents in the context of discussions about invention in the history of medicine. We decided to run training sessions for museum staff in order to allow them the opportunity to engage more closely with specific objects in their collection, and to equip them with the specific expertise in searching for and analysing relevant patents: skills essential to incorporating information from patents into object-led displays. In contrast the goal of our discussions with the audience consultation groups was to establish exactly what information derived from patents and stories of invention might be of interest to museum visitors. Similarly, rather than providing medical industry professionals with training about patents, we sought to find out what they considered to be the most important and underrepresented issues in their own lines of work in order to flesh out potential approaches for future exhibits.

### Introducing Patents into the Museum

Although many patent specifications are freely accessible through online databases, libraries (e.g. British Library, local repositories, or specialist holdings at institutions such as the Thackray Museum) or in archival repositories, their esoteric and technical nature still presents

a challenge when we consider how such sources can add to museum displays and narratives. We, therefore, devised two training sessions for five curatorial, education and research staff at the Thackray Medical Museum.

These sessions, each of which lasted two hours, had two major aims: firstly, to introduce patents as important resources for museums, and secondly, to give the Museum's staff the opportunity to undertake some guided patent-based research of their own and critically reflect on how they could use patents in their work. At the outset, all five participants were asked to write down their expectations from the sessions. These included acquiring 'knowledge that can enable us to use [the Thackray's] collections in a more engaging way' and learning how to 'develop interesting aspects of patent devices for visitors.'<sup>6</sup>

During the first session we gave a brief overview of what a patent is and how to find one using Espacenet. We then examined the life stories of an electrotherapy device – the Overbeck Rejuvenator, which we have already encountered – an early electrical hearing aid – the Marconi Otophone – and a light-therapy device – the Hanovia Kromayer UV Lamp. For each of these, we compared how the inventors – Otto Overbeck, Guglielmo Marconi and Ernst Kromayer – used patents in relation to their inventions, and how these different approaches might have affected consumers of these medical products. At the end of the session, staff each chose three patented objects, and were challenged with finding out more about how patents fit in with the device's biography.

The second session began with each participant presenting for two to three minutes on the object that they selected. These included a nineteenth-century clinical thermometer, a district nurse's case and a bullet extractor. From here, we moved to more general discussion about how patents can add to our understanding of objects' histories, and how they can be used when putting together museum exhibitions.

We were able to record the views of all the participants after both the first and second training sessions through feedback forms. The major goals were to find out how they felt that patents could be used to inform museum displays and if there was a place for patent-based research when putting together exhibitions or resources for visitors. The overriding response was that patents had an important role to play in adding further interpretative depth to displays of objects, although one participant did note that using object-driven narratives as a principal method of engaging visitors is itself extremely challenging. Perhaps most importantly, the staff who attended the training sessions felt that patents were now more accessible to them as a historical resource.<sup>7</sup> It is also clear that issues of priority and invention are not limited to high profile, highly technologized artefacts. Rather, some of the objects in the Thackray's collections that attracted the most intensive discussion were everyday items of domestic healthcare, such as Elastoplast, a self-sterilizing toothbrush and the clinical thermometer. Narratives of invention and product development that accompany such objects, therefore, have the potential to show that patenting has not been restricted to complex, mechanical devices but to the most intimately familiar items of bodily care.

In the course of the two staff training events, therefore, we uncovered a number of ways in which patents might be integrated into museum practices, either through informing object biographies, or by constructing narratives based around issues of ownership and invention. Amongst the opportunities offered by incorporating these sources, however, lie challenges. Patents, for example, require extensive interpretation in order to make them, and the stories that they underpin, accessible to audiences. It was, therefore, important to assess the different ways in which two of the major target demographics of the Thackray Museum responded to issues of invention, ownership and patents within the history of medicine. The following section examines the different ways in which audiences engaged with such themes.

### **Patents and Museum Audiences**

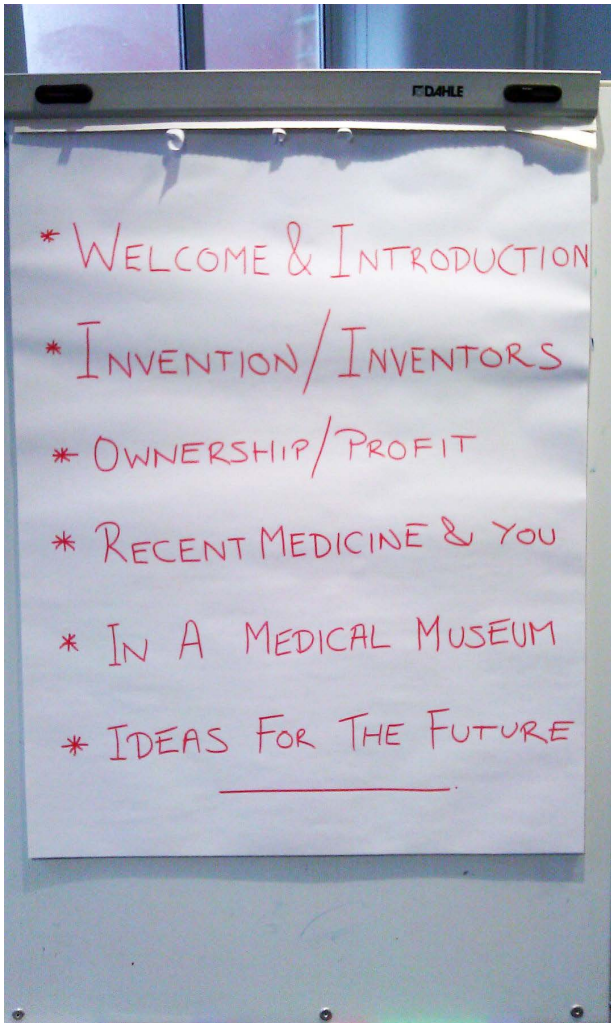
Devising exhibition form and content that is aimed at a coherent target audience or set of audiences is clearly a major concern for museum professionals (Lang, Reeves and Woollard 2006). Whilst discussion with those responsible for creating these displays is therefore important, establishing how expected visitor markets engage with ideas is vital. In the case of the Thackray Medical Museum, there are two core audiences groups, which we wanted to

consider. The first are the regular attendees at the 'Medicine and History' lecture series, who represent a group with a more specialized interest in the history of medicine. The second are families, who make up the majority of visitors during the school holidays and at weekends. Many of the exhibits are tied in with central aspects of the national curriculum in both biology and history, and we therefore sought to include both current and former schoolteachers in the consultation process. Selecting participants in this way also enabled us to compare the needs, expectations and levels of interest between the two groups: lecture attendees and families.

We will first consider the consultation event for lecture attendees. In order to recruit relevant individuals for this group, we asked for volunteers at one of the lectures, and received 20 responses on the day. In order to ensure a balanced final group, we asked potential participants to provide us with information, in addition to their contact details, about their age group, gender, and whether they had been or remain involved with the medical profession in any way, for

example as a nurse, doctor, pharmacist and so on. From these 20, we selected six individuals who represented a balance across these categories: three men and three women, amongst whom there were two teachers – one retired and one current – an occupational therapist, a former pharmacist, and two with no professional connections to either education or medicine.<sup>8</sup>

For this first group, we asked them one week in advance of the session to make a note of any reference to patents that they encountered during their normal daily lives, but otherwise they arrived for the 90-minute session with no indication about what would be discussed. The consultation began by looking more generally at who inventors were and what constituted 'an invention', before moving to consider the nature of ownership, priority and patenting and finally to think about how these issues related to medicine and, more specifically, the history of medicine and a medical museum. Figure 4 shows how the overall session was organized thematically, although there were 11 key questions which underpinned this approach. These included: 'What do inventors do?', 'What is a patent?' and 'Do ownership, invention and patenting have any relevance to medicine and healthcare?' These were posed by a facilitator, who engaged the



*Figure 4: Overall structure of the first consultation session, designed to allow discussion of inventions and ownership before giving participants opportunities to suggest how these ideas might apply in a museum context.*

participants in semi-structured discussion. Despite the fact that we sought intuitive responses to these specific questions, the emphasis throughout was to allow, as far as possible, the six participants to take the discussion to areas that they felt were relevant to such issues.

From the complete transcription of the audio recording of the session, we were able to identify the themes, ideas and perspectives that came across most strongly from our six participants. First and foremost, the group had detailed preconceptions about who inventors were and what they did.<sup>9</sup> 'D', for example, noted that we think of inventors as generally male, and invention as a team activity. These views were echoed by others: 'F' cited the example of James Dyson, who 'was obviously the figurehead and did an awful lot of work, but I bet there was a big team behind him'.<sup>10</sup> One of the key conflicts, which the participants identified, was that of the individual inventor – 'who will potter away in a garage or a back room' – and the large-scale research and development arms of major companies. These two different approaches were mirrored by the views amongst the group that sometimes inventors sat down to tackle a specific problem, and at other times solutions arrived by accident. As 'A' noted: 'there is a difference, of course, between chance discoveries, or chance inventions – discovering penicillin, say – and someone sitting down with a particular idea to develop something.'

The idea of secrecy was also one that the participants were keen to explore, in relation to both individuals and companies. When considering whether an inventor 'owned' their idea(s), for example, 'C' said that 'once it's in the public domain, I don't see how they can', whilst 'E' said of inventors that 'if they are a true inventor, they own it [their invention], patent it and protect it [before it gets into the public domain]'. At the same time, the group were clearly aware of the fact that once an idea or invention was in the public domain it became unpatentable, at least in the UK. These issues quickly led to further discussion on just how original many 'inventions' are. 'C', 'D' and 'E' all agreed that many people who come to prominence as inventors could more accurately be described as individuals who simply perfected a pre-existing idea or device; 'A' described many inventors as standing on the 'shoulders of giants'.

In relation to medicine, the group identified patents as a key part of the business strategy of large pharmaceutical companies almost immediately. One major difference that cropped up between patenting in medicine and in other areas was that 'there can be very few top secret medical devices or treatments', although medical firms 'are not going to want to give their secrets away.' Instead, as 'C' noted, 'they [the firms] are going to want to keep those secrets so they can patent.' Allied to these observations was a keen appreciation for the moral problems associated with patenting. Although they were unsure whether it was right that medical devices, therapies and treatments should be patented (or even patentable), there was lively discussion about the ethics of patenting in medicine. One of the problems, which the participants found the most intriguing, was whether the amount of investment behind a given invention should have an influence on its patentability. For example, there was a general agreement that it is more acceptable for companies to patent and profit from devices which have required a great deal of invention, whilst those arrived at by accident should instead be made freely available. In relation to the practice of medicine, as opposed to medical devices themselves, it is perhaps surprising that our six participants were quite relaxed about doctors making profit, both from treating patients and from developing and selling new medical devices during the course of their work. In the words of 'C', 'why should the fact that you're a doctor make any difference to the fact that you're an inventor?'

The second group, comprising representatives of families, were recruited during the Thackray's Saturday morning drop-in sessions designed specifically for parents and younger children. We selected five participants, one of whom dropped out at short notice. The remaining four again covered broad backgrounds. Although one had graduated in medical sciences some years previously, the other three had no connections with the medical profession and came with their families purely out of interest. Two had been to more than one drop-in session, whilst for two they had been recruited on their first visit. The format of the session mirrored that of the lecture attendees' consultation, although the final section involved consideration of how children of all ages might engage with issues of patenting, invention and ownership (Roberts 2006).

One the strong initial responses of the group to the idea of who an inventor might be was that they would be white and male, paralleling exactly the views of the lecture attendees. Likewise, there was general agreement that inventors worked largely alone, whilst scientists

and doctors tended to be part of larger teams or organizations. As one of the participants put it, 'you imagine an inventor sat in a workshop in quite a primitive way, having off-the-wall ideas, whereas science is very [much] more a disciplined thing.'<sup>11</sup> Interestingly, although the group regarded inventors as solitary, creative individuals, they struggled to name the person who they thought was the most significant inventor of the past two centuries. In contrast, three of the four participants cited antibiotics as the most important medical invention over that period.

Much like the first consultation group, there was a strong feeling that inventors should be allowed to profit from their work, and should not be expected to give their innovations away freely, even if they were of great benefit to humanity. Throughout the discussion, there was a gradual move amongst participants from thinking of inventors as individual, lone creative minds towards collaboration and teamwork. In response to the trustworthiness of patented devices, the group felt that although patents recognized novelty in that particular area, this did not equate with efficacy; as one put it: '[j]ust because something is patented doesn't necessarily mean that it's any good.'

One of the principal sticking points in discussion was if and how patents can be used to engage children in historical narratives. All the participants were of the view that the patents themselves, together with the issues of profit in medicine, would be very difficult to make appealing to children. However, there was a far more positive response to the notions of contested ownership and branding. As B noted, '[t]hey [children] would be interested in things like adverts,' whilst the figure of 'the inventor' could be a very popular way of introducing school groups to ideas surrounding invention and innovation. In line with the views of the first consultation group, all four participants felt that focusing on personalities behind individual inventions and clashes between competing claimants would yield vibrant stories that would be relevant and interesting to children. This was particularly in relation to interactivity, with children possibly set tasks such as adjudicating priority disputes or learning about the motivation behind individuals associated with medical inventions.

Having examined the attitudes of these two groups, drawn from two demographics central to the museum's audiences, we move now to consider how specialists from the medical industry view their own work in relation to historical issues surrounding patents, ownership and invention.

### **Patents, Ownership and the Medical Industry**

One of the principal ways of engaging with audiences about the medical trade is to tap into existing contemporary expertise surrounding the processes of devising, producing and distributing new forms of medical technology. To this end, we invited several companies associated with the medical industry to attend a consultation event examining their own relationship with medicine, patient and user experiences, and the possibilities associated with establishing a gallery centred on these issues.

Building on the material taken from the earlier audience consultation groups we discussed the process of invention and the relationship between medical firms and consumers with three representatives of companies involved in aspects of the medical trade, covering provision of software, disposable plastics and orthopaedic and spinal care surgical instruments. There were three major themes about ownership and invention that emerged from the discussion: the process of product development, the relationship between companies and the end users of their products, and the ethics of profit.<sup>12</sup>

In the case of product development, there was agreement on the part of all the discussants that the process of getting a new medical technology to market was and remains a lengthy, complex and expensive process. In many cases, the first point of contact in the industry is the medical profession: the principal users of advanced medical technologies. As one of the participants noted, 'all our product development is usually done in some formal way with the collaboration of a surgeon', whilst for another, 'only a surgeon would probably be really aware of the limitations' of specific technologies. In this way, although the end users of many products are patients, the specialized nature of medical technologies dictate that the surgeons and practitioners, rather than the patients are responsible for providing feedback on the performance of the majority of devices.

Medical companies, therefore, have a complex relationship with both patents and patients. On the one hand, they are advertising their products to medical professionals and working with the profession to develop new products and refine existing technologies; however, devices such as hip replacements are ultimately used by patients, who are to a large extent absent from the considerations of companies. Indeed, patient experiences of such patented technologies seemingly only reach the medical industry through the lens of the medical profession, showing a continuation in practices from the nineteenth century when medical practitioners commissioned individual manufacturers to put their devices into production.<sup>13</sup>

In line with much of the discussion in the audience consultation groups, representatives of the medical industry felt that the amount of revenue generated by companies in the medical trade was critical in enabling investment in research and development, which would not otherwise be possible by governments and the public sector. On this subject, all three expressed their hope that the complexity of developing a new, or even simply improved, product could be communicated to museum visitors through displays, thereby demonstrating that even a relatively simple device requires very significant investment from medical companies. Whilst potentially fruitful ground for discussion, this is clearly an area which raises significant ethical questions for museum practitioners when considering how to represent the role of corporate interests in the process of invention, though full discussion of the issues at stake is beyond the scope of this particular paper. There may be interesting parallels here with major patent battles in the field of electronics, and using high-profile cases – many of which are accompanied by eye-watering figures and settlements – may be one way of capturing the attention of audiences.

The realm of profit and the process of moving from the idea of a new or improved medical device was therefore of particular interest. Consideration of the relationship between manufacturers and end users was one area in particular which, coupled with patenting strategies might provide the basis for future museum displays which engage audiences in the previously unexamined pathway from invention to product.

### Using Patents in Museums

Patents offer a wealth of detailed information about the development of individual devices and technologies, whilst disputes about ownership centred on the content and interpretation of these documents, often leading to intense battles in the courtroom. The many objects in museum collections labelled as 'patented' or 'patent pending' invite further exploration. Such objects include not just highly technical and complex devices, but also more commonplace, everyday items. Examples of the latter category in the Thackray Museum's collections include bandages, a toothbrush and a medicine chest. In each case, the patented status of the objects represents an important step in determining their histories.

By presenting ideas of patenting, ownership and invention to museum staff and audience consultation groups, we were able to determine how best to use patents in the context of museum displays. From these, we found that three clear themes are especially prominent when considering how various publics might engage with patent-driven narratives. These are: contested ownership, the ethics of patenting, and the figure of the inventor. For the remainder of this article, we will deal with each of these in turn, examining how museums might be able to incorporate these into exhibits and events that engage with invention.

### Contested Ownership

The drama of priority disputes is one of the most colourful aspects of the history of inventions. Classic encounters such as the rivalry between Joseph Swan and his American competitor Thomas Edison about the 'first and true' inventor of the incandescent light bulb in the 1870s to 1880s featured in discussions at both consultation events (Gooday 2008: 93-101, 164-70). Similarly, the venue of the courtroom was suggested by several participants as a possible contextual setting for exhibits about establishing the merits of relative claims to invention. Competition between rival inventors, or groups of inventors, is a major feature of the history of innovation, and patents were at the heart of this practice. They were used in the courtroom and during litigation to add strength to individuals' claims to originality and priority (Gooday and Arapostathis 2013). There was, therefore, a harmony between current historical scholarship and material that appeals to potential museum audiences.

Narratives that focus on the conflict and drama of past disputes over priority in patents can also be made relevant to present day disputes, such as the high-profile cases involving electronics firms such as HTC, Apple and Samsung. The national and international press and internet forums have been alive with debate about these particular disagreements, yet patents remain to a large extent a mysterious and black-boxed element of such discourse. In addition, news coverage of new patents has grown markedly in recent years, particularly in relation to contested and controversial computer hardware and software developments.<sup>14</sup> Museum exhibits that explore the lives and stories of protagonists in historical priority disputes, therefore, have the opportunity to disentangle the complex legal language of patents, and can instead present these as key elements in claims about the often-disputed chronology of medical inventions. Further, patents can be used to show that, in most cases, inventions are not wholly original, innovative flashes of inspiration, but very often represent instead no more than minor changes to existing technologies and devices. In this way, supposedly ground-breaking developments can be seen as evolutionary rather than revolutionary.

### **The Ethics of Patenting**

The case of medical history, devices and therapies offers an ideal opportunity to engage with contemporary debates about the ethics of profit in healthcare. Much of the discussion in both consultation groups moved towards considering whether large medical companies were justified in patenting new drugs or instruments, thereby preventing open access to such innovations, and limiting their availability in the marketplace. Likewise, museum staff took an active interest during the training sessions in the activities of historical medical companies in protecting their inventions. Museums provide the ideal environment to draw parallels between attempts by companies to create monopolies in historical contexts, and modern equivalents. The practice of 'patenting trolling' – taking out patents, not putting them into production, and then aggressively litigating against infringers – is largely seen as a modern one, but cases in the history of invention demonstrate that this was a widespread use of patents.

The juxtaposition of the individual, amateur inventor – seen by members of the consultation groups as archetypal of the pre-twentieth century – and the team-member at large, innovation-heavy companies more reminiscent of the contemporary environment is also a subject which can help audiences to engage with the morality of establishing ownership over and protecting inventions. After all who is the source of creativity: is it the inspired individual, or the creative team?

#### **The Figure of the Inventor**

Often seen as incorporating aspects of both 'the scientist' and 'the engineer', the figure of 'the inventor' was a popular one for discussion in the Thackray's audience consultation events. Without prompting, participants identified the stereotypical inventor as being a white male, in many cases embodying the attributes of 'the mad scientist'. Personal testimony from individuals associated with invention, coupled with patents and other documentary evidence, could usefully be used in order to bring stories of invention to life. Injecting personal narratives reveals the motivations behind invention, and can help to demythologize the inventor; instead of the lone genius, the inventor can increasingly be cast as the collaborative individual, who builds upon and improves existing devices and practices. 'The inventor', therefore, becomes part of a much wider social network of patent agents, marketing, users and consumers, and fellow innovators. Our approach offers an opportunity to rebalance museum audiences' views on who is responsible for invention, moving beyond the lone, white male to consider the role of women and minority groups in invention. In this way, patent-driven narratives will enable visitors to cultivate a wider appreciation for the diverse backgrounds and motivations of inventors.

#### **Conclusion: Strategies for the Future**

Patents are rich sources of historical evidence. They provide detail about the nature of particular inventions, an insight into the purpose and intention of the inventor(s), and a reflection on the relationship between individual inventions and their predecessors. Perhaps most importantly, they can be seen as key, if not essential, components in narratives of invention, ownership and innovation. After all, claims about the status of one or more individuals as the 'first and true' inventor rested more often than not on the content and timing of a patent

submission. Used in novel ways, and in conjunction with both objects and other textual sources, patents can form part of engaging stories for museums, particularly those that deal with scientific, technological or medical topics. Beyond the dry text of patents lie courtroom battles, priority disputes, questionable ethical practices of secrecy and professionalism, and very public conflicts between rival inventors. Using patents in this way enables us to construct entertaining and informative narratives about invention and technologies which will help to educate and engage museum visitors, and enable them to reflect on the role which these issues play in their everyday lives.

Furthermore, whilst modern patent systems appear in the press as inaccessible, highly technical forms of knowledge and invention protection, using patent-driven stories of invention and inventors also allows museums to demonstrate how patenting practices and habits have changed historically. In this regard, medical patenting – laden as it has been with ethical uncertainty and debate – is particularly revealing, and the shifting attitudes of the medical profession towards patenting technologies, drugs and procedures can further illuminate the relationship between healthcare and commerce. This necessary link between past and present patenting practices serves to highlight how different patenting (and non-patenting) strategies have been used. Patents can, therefore, enable us to extract new forms of information from objects, many of which present very great interpretative challenges in curators. By using approaches underpinned by invention and intellectual property, previously hard-to-interpret (and display) historic examples of medical technology are given new significance for different audiences.

We have focused here on how patents can be used in medical and technological museums. However, the issues and opportunities raised by using patent specifications in museum displays have far wider applicability. For example, trademarks can show the development and importance of branding and marketing, copyright of literary, musical and other works can highlight changes in the publishing and circulation of culture and knowledge, and devices named after individuals, such as the Dyson vacuum cleaner, can be used to demonstrate the importance of personal association. These strands can either stand alone as exhibits and displays exploring priority and intellectual property more broadly, or they can be coupled with existing narratives to bring fresh perspectives to museum audiences, informed by the appreciation that invention and ownership are complex, multi-faceted ideas.

Received: 5 November 2012

Finally accepted: 23 August 2014

## Notes

- <sup>1</sup> BBC News, 'Patent Trolls: Tracking Down the Litigious Invention Owners', <http://www.bbc.co.uk/news/technology-23673383>, accessed 21 August 2013.
- <sup>2</sup> Thackray Medical Museum, 'History – Thackray Museum – Leeds Museum', <http://www.thackraymedicalmuseum.co.uk/header-links/about/history/>, accessed 21 August 2013.
- <sup>3</sup> 'EPO–Espacenet', <http://www.epo.org/searching/free/espacenet.html>, accessed 10 August 2012.
- <sup>4</sup> 'Electric Multiple Body Comb for Use All Over the Body', GB Patent Number 237,384, 30 July 1925.
- <sup>5</sup> 'Improvements in or Relating to Resuscitation Devices', US Patent Number 900,305, 4 July 1962.
- <sup>6</sup> Thackray Staff Training Feedback Forms, 20 January 2012.
- <sup>7</sup> Thackray Staff Training Feedback Forms, 31 January 2012.

- <sup>8</sup> In choosing participants for the consultation groups, we considered what kinds of information we required, exactly whose views were most representative of the Thackray's target audiences, and the methods that we would use to record these views. For more on planning consultation groups, see: National Co-ordinating Centre for Public Engagement, 'Methods: Panels and User Groups', <http://www.publicengagement.ac.uk/how/methods/panels-and-user-groups>, accessed 15 February 2012.
- <sup>9</sup> We have anonymised all the participants using the letters 'A' to 'F'.
- <sup>10</sup> Transcription of Audience Consultation Event, 2 April 2012. All subsequent quotations, unless specified otherwise, are taken from this full transcription of the consultation event.
- <sup>11</sup> Transcription of Audience Consultation Event, 30 May 2012. All subsequent quotations, unless specified otherwise, are taken from this full transcription of the consultation event.
- <sup>12</sup> Transcription of Industry Consultation Event, 24 September 2012. All subsequent quotations, unless specified otherwise, are taken from this full transcription of the consultation event.
- <sup>13</sup> Eponymous technologies, such as the Clifford Allbutt Short Clinical Thermometer amongst many others, serve as examples of physicians collaborating successfully with the medical trade. For more on Allbutt, see: Rolleston and Bearn 2007.
- <sup>14</sup> See, for example, Microsoft's recent patent in relation to 3D video gaming, which received much press attention. See: 'Microsoft Xbox 3D-projected games outlined in patent', 12 September 2012, BBC News Website, <http://www.bbc.co.uk/news/technology-19568451>, accessed 12 September 2012.

## References

- Albano, C. (2007) 'Displaying Lives: The Narrative of Objects in Biographical Exhibitions', *Museum and Society*, 5 (1) 15-28.
- Arnold, K. and Soderqvist, T. (2011) 'Medical Instruments in Museums: Immediate Impressions and Historical Meanings', *Isis*, 102 (4) 718-729.
- Biagioli, M. and Galison, P. (eds.) (2003) *Scientific Authorship: Credit and Intellectual Property in Science*, New York: Routledge.
- Biagioli, M., Jaszi, P. and Woodmansee, M. (eds.) (2011) *Making and Unmaking Intellectual Property: Creative Production in Legal and Cultural Perspective*, Chicago: University of Chicago Press.
- Carnegie, E. (2006) "'It Wasn't All Bad": Representations of Working Class Cultures within Social History Museums and their Impacts on Audiences', *Museum and Society*, 4 (2) 69-83.
- Gooday, G. (2008) *Domesticating Electricity: Technology, Uncertainty and Gender, 1880-1914*, London: Pickering & Chatto.
- Gooday, G. and Arapostathis, S. (2013) *Patently Contestable: Electrical Technologies and Inventor Identities on Trial in Britain*, Cambridge, MA: MIT Press.
- Hogsden, C. and Poulter, E. (2012) 'The Real Other? Museum Objects in Digital Contact Networks', *Journal of Material Culture*, 17 (3) 265-286.
- Johns, A. (2010) *Piracy: The Intellectual Property Wars from Gutenberg to Gates*, Chicago: Chicago University Press.

- Jones, C. (2010) 'The Medical Instrument Trade Catalogue in Britain, 1800-1914: Its Changing Form, Role and Significance in Healthcare', PhD Thesis: University of Leeds.
- Lang, C., Reeve, J. and Woollard, V. (eds.) (2006) *The Responsive Museum: Working with Audiences in the Twenty-First Century*, Aldershot: Ashgate.
- MacLeod, C. (2007) *Heroes of Invention: Technology, Liberalism, and British Identity, 1750–1914*, Cambridge: Cambridge University Press.
- Roberts, S. (2006) 'Minor Concerns: Representations of Children and Childhood in British Museums', *Museum and Society*, 4 (3) 152-165.
- Rolleston, H. and Bearn, G. (2007) 'Allbutt, Sir (Thomas) Clifford' in *Oxford Dictionary of National Biography*, <http://www.oxforddnb.com/view/article/30382?docPos=1>.
- Soderqvist, T., Bencard, A. and Mordhorst, C. (2009) 'Between Meaning Culture and Presence Effects: Contemporary Biomedical Objects as a Challenge to Museums', *Studies in History and Philosophy of Science Part A*, 40 (4) 431-438.
- Stark, J. (forthcoming) "'Recharge my Exhausted Batteries": Overbeck's Rejuvenator, Electrotherapy, and Public Medical Consumers, 1924-1937', *Medical History*.
- Ueyama, T. (2010) *Health in the Marketplace: Professionalism, Therapeutic Desires, and Medical Commodification in Late-Victorian London*, California: The Society for the Promotion of Science and Scholarship.

**\*James F. Stark, \*\*Graeme Gooday**

**Dr James F. Stark** is a Research Fellow in the history of medicine at the Leeds Humanities Research Institute. His previous research has focused on the intersection of global and local histories of medicine, culminating in *The Making of Modern Anthrax* (Pickering & Chatto 2013). His current work includes a project on the history of rejuvenation and a historical study of the Leeds Waterworks.

**Professor Graeme Gooday** is Head of School in the School of Philosophy, Religion and History of Science at the University of Leeds. He has published widely on the history of science, technology and medicine, including monographs *Domesticating Electricity* (Pickering & Chatto 2008) and *The Morals of Measurement* (Cambridge University 2004). He is also Director of the Centre for Collaborative Heritage Research and the Culture and Creative Industries Exchange.

Contact Emails: [j.f.stark@leeds.ac.uk](mailto:j.f.stark@leeds.ac.uk) and [g.j.n.gooday@leeds.ac.uk](mailto:g.j.n.gooday@leeds.ac.uk)

James F. Stark  
Leeds Humanities Research Institute  
University of Leeds  
LEEDS  
LS2 9JT  
UK

Graeme Gooday  
School of Philosophy, Religion and History of Science  
University of Leeds  
LEEDS  
LS2 9JT  
UK