'Persuasion. vs. property: the use of patents to market hearing aids'.

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Hearing aid collections
Overall paper themes

• Historically many, but not all, hearing aid designs patented
• Why patent? Many possible reasons for doing so.
• Yet some medical designs unpatented – why not?
• Also: why the sheer variety of hearing aid designs?
  Patent-driven: need novelty to be patentable?
  – Or diverse physiological aetiologies of hearing loss?
  – Or indicative of the diverse experiences of hearing loss
    – acoustics and social status.
  – strategy for marketing, relying on ‘folk’ understanding
    – patent as proxy for trustworthiness, reliability efficacy
Standard hearing aid historiography

Kent State Hearing Aid Museum

Hearing aid eras
1. Pre-electric
2. Electric carbon
3. Vacuum tube
4. Transistor
5. Hybrid
6. Digital

Theme: rise of electronics entails ever smaller hearing aids
Patents are generally not mentioned
Patented hearing aids –

Rein silver plated “Grand Opera Dome” mid-19thC

F. C. Rein Parabolic Reflecting Ear Trumpet (Ear Horn) c.1916.
Telecommunications specialists with patenting practice Childhood hearing loss - did not use or patent hearing aids.

From left top, clockwise:
Oliver Heaviside,
John Ambrose Fleming
Thomas Edison (x2).*
Alexander Muirhead *
* Patented loudspeaking telephones in 1880s
AHRC ‘Owning & Disowning Invention’ Project

• University of Leeds and University of Bristol, 2007-10
• Explore connections between identity, authority & intellectual property in the period 1880-1930:
  3 areas: Aeronautics, agricultural botany, electrical technoscience
• Key differences of IP issues between three disciplines
  Aeronautics - registering design of aeroplane wings
  Agricultural - trademarking of seed types
  Electrical - to patent or not? How to use patents?
• Patenting not universally appropriate, nor always feasible
• So what are the particular reasons for patenting…?
• What alternative understandings than intellectual property? Monopoly, protection, social contract, intellectual capital?
Patenting - Many Rationales

• Patent law introduced by governments as economic tool
  For managing inventors or… restraining capitalism?
• Patenting by inventors has diverse strategic rationales
  – Attempts to monopolise a whole industry (Bell, Marconi)
  – Defence of rights against predatory companies (Lodge)
  – Bargaining ploy with larger company (Fleming)
  – Marketing trustworthiness (aeronautics- Hopwood-Lewis)

Explore the last of these in this paper:
In Anglo-American cultures which allowed medical patents:
Tradition of patent medicine: patenting as mark of efficacy?
Patents as royal bequests => royal curative effect?
Rejection of Patenting by UK physicians

Claire Jones: Gentlemanly physicians don’t patent (1880-1920)

- Eponymity of medical equipment instead: Allbutt thermometer/obstetrical instruments from Weiss & Sons (1889) (c.f. eponymity of laws/theorems for scientists)

But there is a historical shift

C18: ‘Patent medicines’ common, but few such actual patented

Mid-C20: Forced patenting: Anderson *et al.*: prosthetic hip surgeon Charnley has to patent to try to stifle piracy by US rivals

- How do we explain this?
- One transforming force: electrical industries enter medical manufacture
Macaura’s Pulsucon, c.1900-20

• Macaura warned his customers against ‘cheap and worthless imitations’, of his massage device.

His company would ‘not be responsible for any machine which does not bear the Patent No. 13932 stamped upon it’.

• 1914 UK Parliamentary Committee on patent medicines: Macaura’s device exorbitantly priced but medical value.
• Had been imprisoned in France, but £60,000 profit in UK
• Proof that British medical patent laws were inadequate, and new recommendations were made to reform those laws.
Overbeck’s Rejuvenator: Research by Jamie Stark
‘Warning: any shapes after the above must not be mistaken for our new Powerful patent aurolese invisible phones’
‘Swindles on Deaf People’ 1892

- Many complaints of advertising exploiting (partially) deaf. Credentials offered of patents and patient testimony
- **Tit-Bits** Magazine journalist replies to advertisement
- Receives pamphlet for patented ‘artificial ear-drum’, promising full hearing restoration or full refund.
- Completes questionnaire about degree of deafness
- Letter advising deafness is curable by gold-plated device
- Finds it ineffective, so refuses to pay £2 11s 3d purchase
- Despite guarantee, a Court summons demands money
- “How it is I don’t know, but proprietors of other patents have found out I am deaf. I often receive pamphlets and letters...
- Network of opportunistic patentees sharing information?
A deaf person is always more or less a tax upon the kindness and forbearance of friends. It becomes a duty, therefore, to use any aid which will improve the hearing and the enjoyment of the utterances of others without any murmuring about its size or appearance.

The deaf also have a just complaint against many of their friends and public speakers, who render their affliction apparently greater by an indistinct and mumbling utterance.

Hawksley & Co: emotive marketing not patents
Medical and engineering collaboration

• Miller Reece Hutchison - trained in engineering at Alabama Polytechnical Institute (Auburn) & studied aural anatomy at Medical College of Alabama
• Graduated in 1897, developed heavy battery Akoulallion hearing aid c.1895-98.
• Worn by Danish Princess Alexandra at Coronation as Queen Consort of England (in preference to Rein models)
• Acousticon manufactured and patented 1905
• Foundation of Oticon (Denmark)
• Upper classes embrace electric hearing aids
Acousticon 1906
Sold by ‘Acoustic Patents’ company in London
1948 advertising – no patents cited.
The Otophone - Marconi’s non-patented desk-top hearing aid

Fleming electronic ‘valves’ from wireless sets (patents expired).

Collaborates with medical authorities & Hawksley company

The Marconi Company does not intend to market this instrument through the usual trade channels, but proposes to supply it only through the recommendation of the medical profession. A full description of it can be obtained from the Marconi Research Department.

Mr Mollison said that he had only had a week’s experience of the instrument, but already he had found it useful in helping really deaf people to hear.

Sir Charles Ballance (Chairman) said that this was a remarkable instrument. In course of time it would no doubt be greatly improved; it would be a great advantage if outside noises could be suppressed. A great obstacle to its use at present was its weight (16 lb.).

Discussion at Royal Society of Medicine, London Otology section, May 1923
UK National Institute for the Deaf

- Launched in 1923-4 - post-war sympathy for deafened
- Sympathetic physicians invited to advise on technical matters
- From 1927 NID offers advice on reliable hearing aids.
- Medical Committee tests claims of manufacturers
- Committee dares not publish findings for many years
- Rein, Hawksley, Marconi and Acousticon all evidently supported.
- Criticism continues in NID reports and British Deaf Times of opportunists that advertised hearing aids in fraudulent ways.
- University College London/NID develop anechoic chamber
- Rigorous independent tests of hearing aids from 1950s
I REMEMBER some years ago, before these valve aids came along, talking to one of the makers in London and saying, “Why do you tell such lies about these instruments?” “My dear sir,” he said, “unless we exaggerate one hundred per cent. we would never sell a single instrument.” That is the atmosphere my Committee (the Medical Committee of the National Institute for the Deaf) had to face. We created a list of those who should be admitted to our patronage and who were more or less truthful in what they said—chiefly less, I think, but still there were degrees in truth. These approved lists were accepted. It was an ethical Committee. We insisted that every deaf person should have a trial for a fortnight or so before he bought the instrument; that if he were a relatively poor man he should have a certain reduction of price. These were the objects of the Committee. It was not a scientific Committee, it
Conclusions

Patents have complex multi-form role in hearing aid industry
Only partly about proprietary protection (against infringers)

But also informally a matter of signalling to consumers:
  Patent as a mark of being worthy of investment (non-fraud)
  Patent as indication of efficacy in effects, esp healthcare

Respectable mid 20thC firms avoid citing patents in adverts
Testing entrusted instead to physicians and laboratories

Moral: important to recover consumer’s perceptions of patents
More interesting than just seeing patents as ‘property’