

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

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# Thackray Medical Museum, Leeds 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 –



**INVENTIONS  
FOR  
THE DEAF.**

**The MASSACON  
& ACOUSTICON**  
the latest  
inventions of  
M. R. Hutchinson.

*No instrument genuine not bearing  
Mr. Hutchinson's autograph.*

**The "ACOUSTICON"**  
enables the deaf to hear.

**The "MASSACON"**  
completes the work of the "Acousticon," effecting  
in the majority of cases a complete cure of Deafness.

Call or send for Booklet.  
FREE TRIAL given at

**ACOUSTIC  
PATENTS Ltd.**  
20, Bucklersbury,  
London, E.C.,  
AND  
119, Victoria St.,  
Westminster,  
Or any of our  
Branches.



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



OBSTETRIC FORCEPS,	by Adams ...	...	...
Ditto	by Anderson	...	...
Ditto	curved, by Assilini	...	...
Ditto	straight do.	...	...
Ditto	by Aveling...	...	...
Ditto	... .. by Barnes	...	...
Ditto	with Tractor do.	...	...
Ditto	by Beattie ...	...	...
Ditto	by Blundell	...	...
Ditto	by Bowers...	...	...
Ditto	by Braithwaite	...	...
Ditto	short, by Brünninghausen	...	...
Ditto	long do.	...	...
Ditto	by Churchill	...	...
Ditto	by Clark	...	...
Ditto	by Coles	...	...
Ditto	by Collins	...	...
Ditto	by Conquest	...	...

# 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



**OVERBECK'S  
REJUVENATOR**  
CHANTRY HOUSE,  
**GRIMSBY**

↑

**PATENTED**

GREAT BRITAIN	237384	-1924
AUSTRALIA	23769	-1925
FRANCE	598221	-1925
ITALY	239689/698/43	-1925
NEW ZEALAND	54507	-1925
NORWAY	43229	-1925
CANADA	259547	-1926
UNITED STATES	1638407	-1927
SPAIN	113799	-1929
BELGIUM	362198	-1929
SWITZERLAND	142291	-1929

## 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.

# Leading Aurician: Rein and Co. London

ESTABLISHED 1800.

1850 1851

1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900.

**F. C. REIN & SON,**  
(GOLD MEDALLISTS).

TELEPHONE: GERHARD 5184. 108, STRAND, LONDON, W.C. TELEGRAPHIC ADDRESS: REIN, STRAND.

**THE PARADISE FOR THE DEAF.**

REIN & SON are the only Makers of the real Acoustic Instruments for extreme, and every other degree of Deafness, and solicit an inspection of their Acoustic Repository, 108, Strand, where persons may try them, and Testimonials as to their efficacy may be seen, amongst many others, from one of Her late Majesty's Judges, who used their appliance on the Judicial Bench.

The following are a few Testimonials, but owing to the confidential nature of the business carried on, we omit names and addresses, but the original letters can be seen on application, with many thousands of others, at the above address. Amongst the numerous and distinguished persons who have patronized us may be mentioned H.R.H. the late DUCHESS OF KENT (Great Grandmother of H.M. King George V.) and several members of the Reigning Royal Families.

Dear Sir,  
I thank you so much for the Auricle you recommended me to have. I can hear a knock at the street door, and bells, without trouble. It is quite a Godsend. I can do my hair over it, and it really looks quite nice. I do not know I have it on now I am used to it. Again thanking you for so gr. a benefit.  
I am, dear Sirs,



**F. C. REIN**  
In his Aural Chair, Inventor and Manufacturer of the NEW PATENT AUROLESE and other instruments which have proved so beneficial to the deaf.

Dear Sir,— Very possibly you do not remember my coming in September last to ask your advice about deafness. I did so and in consequence purchased a pair of your Aural Phones. I have been meaning to write for a long time to tell you what a wonderful help they have been to me. In the Studio where I am at work as an Art Student I find them a great comfort. Before, I was really scared at the approach of a master teacher that I should not follow what was said to me, whereas now I am perfectly confident knowing that I shall be able to answer questions reasonably like any other Student not afflicted with deafness. At Church Lectures and Theatres I find them invaluable. I can now follow with interest what was before mere dog-bone show, and what I think gives me greatest pleasure and makes me feel most grateful is that I find my hearing without the help of Aural Phones is much improved, it almost makes me hope for perfect recovery. I have taken and shall take every opportunity of recommending them to other people who are suffering in the same way. With many thanks.  
I am, yours sincerely,

**ACOUSTIC CHAIRS, PULPITS, VASES, CONVERSATION TUBES, AURICLES, MARTINOS, FLEXIBLE WHISPERING PHONES for extreme Deafness.**  
And every variety of Instrument to enable the Deaf to hear a general conversation.  
**ALSO THE VERY LATEST ELECTRICAL AIDS.**

Cutting from "Sunday Con-  
stantin," June 15th, 1913.

"I have frequently read in your 'Editor's Chair,' writes A.F. (London), 'of ladies suffering with deafness keeping away from the worship of God and feeling lonely, etc. I myself am very deaf, but some time ago—last year—I went past a shop in the Strand, 'Messrs. Rein & Son, Paradise for the Deaf,' and obtained an aural phone, which I have worn ever since. It is completely covered with hair, and nobody but my own friends at home know I wear anything. I go to my work as if I had never been deaf. I am a Sunday-school teacher, and conduct a young women's Bible-class in the week-time. I can hear the sermons without any effort. I will not say my hearing is as accurate as a person's who is not deaf, but I am only a little from it. This information may be of service to some of the readers who have written to me about deafness in days gone by."

## THE EVOLUTION OF THE REIN PATENT AUROLESE PHONES.



EARLY NINETEENTH CENTURY Floral Pattern Head Instrument for Ladies, made and invented by the late Mr. Rein.



REIN'S SHELL TYPE AURICLE for men's use of the period of about 1830.



OLD BARREL PATTERN, made by us for Ladies in 1845.



Curious pair of GILT REIN Head Instruments for men that won a Medal Award for us in the Paris Exhibition of 1855.



REIN'S OLD LIE BACK pattern, evoked to suit the mid Victorian type of head-dress.



REIN'S EARLY FLAT TOP Shape of 1888; these were worn on top of the head.



Early blocks showing REIN'S invention of the eighties and design of the period.

A complete set of genuine Instruments in their periods are in our possession to-day. THE ABOVE OBSOLETE STYLES SHOW THE STEPPING STONES TO OUR PRESENT SCIENTIFIC RESULTS.

**WARNING.**— Any Shapes after the above must not be mistaken for our new POWERFUL PATENT AUROLESE INVISIBLE PHONES.



We point out that each of the above types represents a series of roughly ten intermediate designs.

‘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 opportunist patentees sharing information?

THIRD EDITION. ESTABLISHED 1869. PRICE SIXPENCE.

CATALOGUE  
OF  
**Otacoustical Instruments**



TO AID THE DEAF,

INVENTED AND MADE BY

T. HAWKSLEY,



357, OXFORD STREET, LONDON, W.

(Opposite Marylebone Lane).

ACOUSTICAL INSTRUMENT MAKER TO THE PRINCIPAL  
AURISTS IN ENGLAND, SCOTLAND AND IRELAND,  
FRANCE, GERMANY, INDIA, AND THE  
UNITED STATES OF AMERICA.

Also to the MIDDLESEX, GUY'S, and ST. GEORGE'S HOSPITALS,



LONDON:

JOHN BALE, SONS & DANIELSSON, LTD., PRINTERS,  
83, 85, 87, 89, Gt. THORFIELD STREET, W.

(ENTERED AT STATIONERS' HALL)

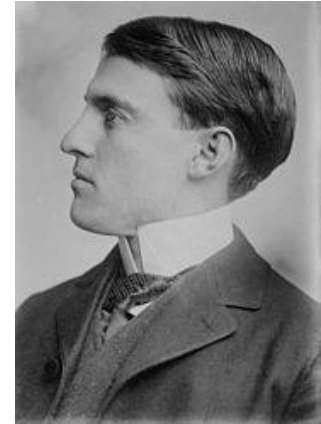
## Hawksley & Co: emotive marketing not patents

“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.”

# 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





**45 YEARS AGO Acousticon Gave HEARING to the Deafened  
by AMPLIFYING Sound Electrically**



**A Deafened Queen  
Is Made to Hear!**

London, 1902—Deeply grateful because she was enabled to hear, Queen Alexandra awarded the Coronation Medal to Acousticon. Queen Alexandra used the Acousticon—first hearing instrument in the world to amplify sound electrically—throughout the Coronation ceremonies.



Acousticon 1906  
Sold by 'Acoustic  
Patents' company  
in London

1948 advertising —  
no patents cited.

**Today Acousticon Gives CLEAR HEARING without  
Strain by CORRECTING Sound Scientifically**



Just Compare The Tiny Acousticon of 1947  
with The Large Acousticon of 1902!

NEW  
**Acousticon Imperial**  
(BATTERY-CONTAINED, ALL-IN-ONE)  
UNLIKE ANY OTHER HEARING INSTRUMENT

Unusual, in the History of Hearing Aids, for Size, Power, Beauty and Form—Giving Hearing Results That Challenge Previous Achievements.

This size reduction is as dramatic as a wrist-watch compared to the grandfather's clock of yesterday.

Yet this slender, jewel-like instrument—barely big enough to cover your palm—contains not only the complete working mechanism but also the complete battery supply of a powerful hearing instrument.

Because of a new electronic tube—used by Acousticon for the first time in a hearing aid—the tiniest 15-volt "B" battery in the world now supplies the necessary hearing power! The bulky 45-volt "B" batteries are no longer needed!

- Greater Hearing Efficiency and Comfort Through New Noise Suppressor Which Tunes Out, By Fingertip Control, Irritating Background Notes As Easily As Tuning Out A Station On Your Radio!

In Queen Alexandra's time, it was considered a miracle for a hearing aid to make sound loud enough, by electrical means, to be heard by those hitherto considered hopelessly deafened.

Today, that amplification of sound, marvel of a half century ago, is no longer news. Now, what every hard of hearing person has a right to expect and receive is something much more vital—the scientific correction of their hearing deficiency. Loudness alone, without that correction, can never solve a hearing problem.

Indeed, soon after 1902, it was discovered that hearing deficiencies were as individual and varied as eyesight deficiencies—and required a hearing instrument that could provide a similar kind of individual correction, in order to give the hard of hearing the necessary comfort and hearing efficiency.

The unceasing forty-five year progress toward this great objective has resulted in the creation of the New Acousticon Imperial.

**The New ACOUSTICON IMPERIAL**  
An Historic Forward Step in Giving You The  
CORRECTION Your INDIVIDUAL Hearing Loss Requires

The Acousticon Imperial features an entire series of magnetic air receivers and bone receivers—each pitched differently. These can be called "Hearing Lenses" because they correct sounds before they enter your ear—as optical lenses correct images before they reach your eyes. This is the correction of sound—possible today—that is such a far cry from the mere amplification of sound in 1902.

Now it is possible to give you the hearing correction you need with an accuracy that approaches the accuracy of results obtained in eyesight corrections. Just think what this means to you—the ability to hear clearly and accurately, without strain or tension—to hear words as truly as they are spoken—to hear music as richly as it is played—to hear all the living sounds of your world the way those about you hear them.



A WORLD-WIDE SERVICE by the  
World's First and Oldest Manufacturer  
of Electrical Hearing Aids  
**Acousticon**  
INTERNATIONAL

For Valuable FREE BOOK, MAIL THIS COUPON TODAY

Acousticon International, Dept. 819  
180 Fifth Avenue, New York 10, N. Y.  
Gentlemen:  
I wish to have, absolutely at no cost or obligation, the  
new book about Personal Analysis of My Hearing Loss  
and How It Can Be Individually Corrected.

NAME .....  
ADDRESS .....  
CITY .....ZONE.....STATE .....



## The Otophone - Marconi's non-patented desk-top hearing aid

Fleming electronic 'valves' from wireless sets (patents expired).

Collaborates with medical authorities & Hawksley company

1923



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

# The Scottish Otological and Laryngological Society, 1937

## **The Hearing Aid and the Insured Patient**

By JAMES KERR LOVE (Glasgow)

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'