

**A DISCOGRAPHY OF VOLTA LABORATORY RECORDINGS
AT THE NATIONAL MUSEUM OF AMERICAN HISTORY**



Patrick Feaster

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INTRODUCTION

The Collections and the Project¹

It was the summer of 1914. Fred DeLand—superintendent of the Volta Bureau which Alexander Graham Bell had founded in 1887 to promote knowledge about deafness—was trying to figure out what to do with an assortment of paraphernalia left behind at the Bureau’s headquarters relating to old sound media experiments. In a letter to Bell, he recommended that the telephone-related materials ought to go to the Smithsonian, where they would complement existing holdings, and in passing he asked whether the phonograph-related materials might belong there too.² Bell replied that the Smithsonian could have whatever it wanted, adding:

There are quite a number of flat graphophone discs of both small and large diameter that I think should be there, as they antedate the flat discs universally employed at the present time. While the old Volta Bureau Associates are very commonly given credit for the wax cylinders employed in phonographs and graphophones it is not so generally known that they also developed the flat disc.³

Back in the early to mid-1880s, Bell and his associates in the Volta Laboratory Association had stood at the forefront of efforts to develop the principle of Thomas Edison’s speaking phonograph into a practically useful technology. It was well known that their work had resulted in the Bell-Tainter cylinder graphophone of 1887, the first phonographic instrument put on the market for such “serious” purposes as business dictation. But many of their other accomplishments were not so widely recognized, having taken place behind closed doors, and Bell supposed that the experimental odds and ends that had been gathering dust in Washington might have value as evidence of these—and particularly of the development of the “flat disc.” Getting them into a safe place could thus help to secure the group’s place in history.

That winter, DeLand gathered up whatever old machines and recordings he could find and dispatched them to the Smithsonian, where they were received as accession number 57,694 with the understanding “that Doctor Bell will call at the Museum to make some explanations regarding this apparatus, and that he will furnish necessary historical data regarding the various objects.”⁴

The following summer, during an inspection of the old Georgetown laboratory across the street from the Volta Bureau’s headquarters, Bell’s representative Arthur Clime found “some additional specimens of Doctor Bell’s early talking machine apparatus which, he thinks, should properly be added to the collection of similar apparatus already send [sic] to the Museum.”⁵ These supplemental objects were received on 23 June 1915 and assigned accession number 58,498. Soon afterwards, Bell wrote from Canada that he would be happy to furnish the Smithsonian with information about what everything was:

But it is very difficult for me to do so, as the apparatus is all old and the experiments were made over thirty years ago. I cannot undertake to do this until after my return to Washington in the Autumn, but I conceive it to be my duty to attempt this task.... I may say that we have at the Volta Bureau a box filled with the notebooks of the members of the Volta Laboratory Association, describing the

¹ This subsection was previously published as part of Patrick Feaster, “Phonographic Treasures of the Smithsonian, Part 1,” *The Antique Phonograph* 30:1 (March 2012): 23-27.

² [Fred DeLand] to Alexander Graham Bell, 15 July 1914, copy, NMAH accession document 50701.001; this and other accession documents were accessed via photocopies in the Division of Work and Industry.

³ Alexander Graham Bell to Fred DeLand, 20 July 1914, NMAH accession document 50701.002.

⁴ George C. Maynard to Walter Hough, 7 December 1914, NMAH accession document 57694.009.

⁵ George C. Maynard to W. H. Holmes, 5 June 1915, NMAH accession document 50701.024.

experiments that were made in detail. This box has not been opened for many years and I would like to ask your advice as to whether it would be a good plan to add these notebooks to the collection.... In which case the future historian of the phonograph and graphophone may be able to find contemporaneous data in the Museum.⁶

In other words, Bell thought his own recollection of the experiments might be hazy after so many years, but he was willing to make some complementary written source material available to help fill the gaps in his memory. It was agreed that the box of notebooks would go to the Smithsonian, and that it would remain sealed there until Bell himself could be present to examine its contents.⁷ If things had gone as planned, we might long since have had a clear and thorough account of the Volta Laboratory's pioneering work in recorded sound, and also of the place of each of the donated recordings within it.

But this was not to be. Bell had DeLand reclaim the unopened box of notebooks for a research project in the spring of 1922,⁸ and he died a couple of months later without ever having identified the objects given to the Smithsonian on his behalf. Curatorial staff assigned the cryptic artifacts catalog numbers ranging from the 287,650s through the 287,900s, wrote up rudimentary physical descriptions, and transcribed whatever inscriptions were readily visible and legible—but with neither the notebooks or Bell's memories available for consultation, the recordings yielded up few of their secrets.

In 1947, some relevant documentation finally became available when the Smithsonian acquired the papers of Charles Sumner Tainter, another member of the Volta Laboratory Association. Included in the gift from Tainter's widow were ten volumes of "Home Notes" and multiple drafts of an unpublished autobiography, which Leslie J. Newville pronounced in 1959 to be the long-awaited "key" to the Volta artifacts deposited four decades earlier.⁹ The Tainter Papers are available for researchers to study in the Archives Center at the National Museum of American History, and past efforts to reconstruct a detailed chronology of experimental work at the Volta Laboratory have focused almost exclusively on them.¹⁰ I suspect historians have found them so attractive in part because they're so easy to use: the "Home Notes" are organized in strict chronological order, with just a couple gaps where individual volumes were lost in a fire, and Tainter's autobiography offers an appealing ready-made narrative.

Meanwhile, the notebooks which Alexander Graham Bell had authorized DeLand to reclaim from the Smithsonian in 1922 eventually wound up (together with other relevant documents) in the Alexander Graham Bell Family Papers at the Library of Congress, where anyone with a reader's card may examine them today in the Manuscript Reading Room. Even so, they're not as easy for the phonograph historian to digest as the Tainter Papers are. The Library of Congress has organized Bell's notebooks into two numbered series, the "Laboratory Notes" and the "Home Notes," but the Volta associates themselves distinguished other categories of notebook, such as "Laboratory Rough Notes," and the original numbering is often at odds with the library's own numbering scheme—for example, the original "Laboratory Notes Vol. IV" is now officially designated "Laboratory Notes Vol. 73." Multiple notebooks were kept open concurrently, such that following an experimental thread typically means needing to skip

⁶ Alexander Graham Bell to Charles D. Walcott, 8 July 1915, NMAH accession document 50701.034-35.

⁷ Alexander Graham Bell to R. Rathbun, 5 August 1915, NMAH accession document 50701.050.

⁸ See e.g. Alexander Graham Bell to [Charles D.] Walcott, 10 June 1922, NMAH accession document [162298].005-6.

⁹ Leslie J. Newville, "Development of the Phonograph at Alexander Graham Bell's Volta Laboratory," in *Contributions from the Museum of History and Technology, Nos. 1-11* (United States National Museum Bulletin 219, Washington, D.C.: Smithsonian Institution, 1959), 69-79.

¹⁰ Steven E. Schoenherr, "Charles Sumner Tainter and the Graphophone," <http://homepage.mac.com/oldtownman/recording/graphophone.html>, revised 10 February 2000; Peter Martland, "The Charles Sumner Tainter History and Laboratory Notebooks," *For the Record* 17 (Spring 2006).

back and forth between two or three different volumes housed in separate boxes. Entries about phonograph-related experiments are intermingled with notes on other subjects ranging from metal detection to animal husbandry. Thus, it's no wonder that past researchers interested in recorded sound have only sampled these notebooks rather than trying to mine them methodically.¹¹

But the Tainter Papers alone—for all their richness—don't yield a complete picture of the Volta group's activities. In 1914, Alexander Graham Bell assumed that “the future historian of the phonograph and graphophone” would also want to study the hundreds of actual recordings preserved at the Smithsonian in conjunction with the “contemporaneous data” of all available notebooks, so that the objects and the writings could complement each other.

And that's what I recently set out to do. For ten weeks between October and December 2011, I carried out an item-by-item study of the early experimental sound recordings at the National Museum of American History, including all those associated with Alexander Graham Bell and the Volta Laboratory Association. At the same time, I gathered together all relevant information I could find in the various series of notebooks and other written documentation at NMAH and the Library of Congress. I gratefully acknowledge the help of curator Carlene Stephens, who spent many hours guiding me through the collections of artifacts; the logistical and financial support of a Lemelson Center Fellowship; and the generous hospitality of David Giovannoni and Kathy Sheram during my stay in Washington.

This Document

One outcome of the project outlined above is the present document: a discographic inventory of the experimental Volta Laboratory recordings at the National Museum of American History. It is being published online to coincide with the opening of an exhibition at the museum, “Hear My Voice: Alexander Graham Bell and the Origins of Recorded Sound,” scheduled to run from January 26 through October 25, 2015.

I've organized the discography by NMAH catalog number so that it may conveniently be used to look up information about any given artifact. Usually this information includes a photograph (which always precedes the description), a physical description, a date (often estimated), a transcription of any written markings, and a citation of any reference to the item I was able to find in laboratory notebooks or other relevant documentation, keyed to the following abbreviations:

- **CBN**: Chichester Bell Notes (Box 27, Alexander Graham Bell Family Papers, LC)
- **HN**: Home Notes (Alexander Graham Bell Family Papers, LC)
- **LN**: Laboratory Notes (Alexander Graham Bell Family Papers, LC)
- **LNM**: Used to designate a book of “Laboratory Rough Notes” from 1892 not found at LC but referenced in inscriptions on some objects.
- **TAT**: Tainter Autobiographical Typescript (“The Talking Machine and Some Little Known Facts in Connection with its Early Development,” NMAH Archives Center)
- **THN**: Tainter Home Notes (NMAH Archives Center)

Inscriptions are often difficult to see, much less to transcribe, and wherever there has been unusual uncertainty about a transcription, I've indicated this through dotted underlining.

¹¹ Raymond R. Wile, “The Development of Sound Recording at the Volta Laboratory,” *ARSC Journal* 21:2 (Fall 1990), 208-225; Jonathan Sterne, *The Audible Past: Cultural Origins of Sound Reproduction* (Durham and London: Duke University Press, 2003), 254ff.

A catalog number followed by a dagger (†) refers primarily to a machine but is being used here to identify recordings that are stored on or with that machine and that have no separate catalog number assigned to them.

A catalog number followed by an asterisk (*) refers to a “missing” object. These “missing” objects haven’t necessarily been lost or misplaced—many have presumably just become disassociated from their original catalog numbers, which weren’t always marked, and, in most cases, these will subsequently have been assigned new numbers (such as **58498.30** or **L**), although in some cases a description in an older inventory doesn’t match any object known to exist in the collection today (for example **287760***). Moreover, existing links between “original” catalog numbers and objects are undoubtedly sometimes in error, particularly when a single number has become associated with multiple objects.

The discography is organized into six parts, as follows:

- I. Items from accession number 57694 (p. 5)
- II. Items from accession number 58498 with catalog numbers in the 287000s (p. 76)
- III. Items from accession number 58498 with catalog numbers starting at 58498.1 (p. 126)
- IV. Items from the sealed deposit of 1881 (p. 147)
- V. Items without catalog numbers (p. 149)
- VI. Items held by other institutions (p. 156)

One question that often arises concerns the total number of items in the Volta collections. It’s not always clear what should count as a “single” item, but (construing these categories rather broadly) I count 189 cylinders, 275 discs or other flat media, and 1 tape reel, or **465 items total**. Of these, **roughly 275 contain recordings** of some sort, though these may sometimes be fragmentary or unrecoverable.

I envision a future version of this discography in which entries are organized chronologically and complementary information from notebooks and other sources is quoted rather than merely referenced, to be presented as part of a larger narrative history of the Volta Laboratory’s pioneering work in recorded sound.

Patrick Feaster
pfeaster@gmail.com
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Part I: Items from accession number 57694

287653† is accompanied by three graphophone cylinders—a fourth cylinder of apparently the same type is found on the graphophone associated with catalog number 1015, donated by the American Graphophone Company.

- *Date:* ca. 1886
- *Documentation:* TAT 83-85 refers to Tainter's development of the graphophone cylinder format after the formation of the Volta Graphophone Company in early 1886, including his introduction of the helically wound cardboard interior, as seen in these examples, in preference to the straight seam.



287653 [1]†

- *Inscription (pencil on interior):* [drawing of hand]
- *Format:* Cardboard graphophone cylinder with helically wound interior, coated with a yellowish wax composition, ~152 mm length, ~32 mm diameter. Recording, if any, very faint. Stored in cylindrical wooden box resembling one illustrated in Franck Z. Maguire, "The Graphophone," *Harper's Weekly* 30 (July 17, 1886), 458-9. Inscription is presumably intended to show the direction in which the cylinder was fitted to the machine during recording.



287653 [2]†

- *Inscription (pencil on interior):* X
- *Format:* Recorded cardboard graphophone cylinder with helically wound interior, coated with a yellowish wax composition, ~152 mm length, ~32 mm diameter. “287653” inscribed across grooved area. Stored in wooden box. Housed in cylindrical cardboard container. Inscription is presumably intended to show the direction in which the cylinder was fitted to the machine during recording.



287653 [3]†

- *Inscription:* may exist, but cylinder was not removed from machine for inspection.
- *Format:* Recorded cardboard graphophone cylinder coated with a light brown wax composition, ~152 mm length, ~32 mm diameter. Stored on graphophone associated with catalog number 287653, which is a close match for that described in U. S. Patent 341,288, filed 4 December 1885, issued 4 May 1886. This may be one of the “six machines” on which work began in August 1885 (TAT 73).



287654.1

- *Date:* 16/17 February 1885
- *Inscription [scratched in center area emulsion]:* **16th Feby 85 | Shaken while turning | wheel. | HGR | make Feby 17th 1885 | “Mary had a little lamb | [row of dots at bottom]**
- *Format:* Glass disc with photographic emulsion, ~350 mm diameter; spindle hole ~7mm; “wide” pitch trace ~10 mm per rotation; light variable width phonogram formed at center of trace with dark band to either side and dark strip between rotations. On emulsion side (up) trace runs counterclockwise from periphery.



287654.2

- *Date:* 1884-85
- *Format:* Glass disc with photographic emulsion, dimensions difficult to gauge because of separation of broken pieces, but ~347 mm diameter; spindle hole ~8mm; “wide” pitch trace ~10 mm per rotation; variable width phonogram with light portion of trace towards center. On emulsion side (down) trace runs counterclockwise from periphery.



287654.3

- *Date:* 25 March 1885
- *Inscription [scratched in center area emulsion]:* “**Exp XVII**” March 25th | 1885 | HGR [ink at periphery] **XVII**
- *Format:* Glass disc with photographic emulsion, ~345 mm diameter; spindle hole ~7 mm; “narrow” pitch trace ~1.6 mm per rotation; variable density phonogram with light strip between rotations. On emulsion side (down) trace runs counterclockwise from periphery.
- *Duplicates:* 287654.6, 287654.10



287654.4

- *Date:* 9 March 1885
- *Inscription [scratched in center area emulsion]:* “**Ex IX**” | 9th March 1885 | HGR
- *Format:* Glass disc with photographic emulsion, ~340 mm diameter; spindle hole ~7 mm also bored through small rectangular piece of paper affixed to non-emulsion side; “wide” pitch trace ~10 mm per rotation; probably a variable width phonogram with light portion of trace towards center, but difficult to tell; on emulsion side (up), trace runs counterclockwise from periphery.
- *Related item:* Box “A”



287654.5

- *Date:* 9 April 1885
- *Inscription [scratched in center area emulsion]:* **March | April 9th 1885 | HGR**
- *Format:* Glass disc with photographic emulsion; ~350 mm diameter; spindle hole ~7.5 mm; “narrow” pitch trace ~1.6 mm per rotation, variable density phonogram with white strip between; on emulsion side (down), trace runs counterclockwise from periphery.



287654.6

- *Date:* After 287654.3 (q.v.)
- *Inscription [center]:* **“Exp XVII” March 25th | 1885 | HGR**
- *Format:* Glass disc with transparent photographic emulsion, diameter ~350 mm, off-center spindle hole ~7.5
- *Duplicated from* 287654.3



287654.7

- *Date:* After 287654.11 (q.v.)
- *Format:* Glass disc with transparent photographic emulsion, diameter ~350 mm, off-center spindle hole ~7 mm
- *Duplicated from* 287654.11



287654.8

- *Date:* 10 March 1885
- *Inscription:* **10 March 85 | “Barometer” Exp X | HGR | with AGB**
- *Format:* Glass disc with photographic emulsion, “wide” pitch trace ~10 mm per rotation; variable density phonogram. Spindle hole through rectangular paper on non-emulsion side. On emulsion side (down), trace runs counterclockwise from periphery.



287654.9

- *Date:* 15 March 1885
- *Inscription:* **March 15th 1885 | HGR**
- *Format:* Glass disc with photographic emulsion, “narrow” trace pitch ~1.6 mm per rotation, with variable density phonogram, spindle hole through rectangular paper on non-emulsion side. On emulsion side (down), trace runs counterclockwise from periphery.



287654.10

- *Date:* After 287654.3 (q.v.)
- *Inscription [center]:* **“Exp XVII” March 25th | 1885 | HGR [at periphery] XVII**
- *Format:* Glass disc, diameter ~350 mm, **duplicate derived from 287654.3** (see also 287654.6). Spindle hole ~7.5 mm is visibly off-center.
- *Duplicated from* 287654.3



287654.11

- *Date:* 11 March 1885 [known only from playback]
- *Format:* Glass disc with photographic emulsion, ~345 mm diameter, spindle hole ~8 mm, also bored through small rectangular piece of paper affixed to non-emulsion side; “narrow” trace pitch ~1.6 mm per rotation, variable density phonogram with white strip between, two separate bands with gap; on emulsion side (up), trace runs counterclockwise from periphery.
- *Duplicate:* 287654.7
- *Playback:* NMAH/LBL/LC collaboration pilot project, released December 2011: “Mary had a little lamb”



287654.12

- *Date:* 11 February 1885
- *Inscription [scratched in center area emulsion]:* **Jet seems to | have turned itself | out of focus— | HGR | 11th Feby 85**
- *Format:* Glass disc with photographic emulsion; typical diameter and spindle hole for type; “wide” trace pitch ~10 mm per rotation, possibly variable width phonogram with dark portion of trace towards center; on emulsion side, trace runs counterclockwise from periphery. Border between light and dark portions of trace is extremely blurry. Irregular edge to emulsion near center.



287655†

- *Date:* 1885
- *Inscription [in wax near center]:* **Killarney | Hot Shot March**
- *Format:* Wax coating on binder's board, typical dimensions for 1885 but not precisely measured, two discrete tracks
- *Documentation:* This disc is shown in a photograph taken in the Volta Laboratory (original glass negative is 287855 [15]; also Smithsonian negative 44,312-F, associated with 287656). It is also shown in two photographs of 287655 (Smithsonian negatives 27656, 27657). As of December 2011, it is still mounted on the machine associated with catalog number 287655. The second composition is presumably T. H. Rollinson, *Hot Shot March* (Boston: Oliver Ditson & Co., 1884).



287665†

- *Date:* ca. 1890
- *Format:* Binder's board disc with ozokerite surface, typical dimensions for 1890 but not precisely measured, most of surface broken away.
- *Documentation:* This disc is shown on the machine associated with catalog number 287665 in a photograph, Smithsonian negative 44,324-A.



287760†

- *Date:* Spring 1885
- *Format:* Tape, ~4.4 mm in width, wound on two reels 200 mm in diameter. Inspection didn't reveal a recording on the visible portion of the tape, but a recording may nevertheless exist.
- *Documentation:* TAT 70-71, giving approximate date and referring to figures 18, 19, and 20 of patent 341,214; format described as "strips of paper coated with the wax mixture we were using at that time."



287666†

- *Date:* Mid-to-late 1885?
- *Format:* Yellow composition cylinder on thin paper interior with straight seam; ~114 mm long, ~13 mm diameter, pitch ~0.7 mm; similar to 287751-287789.
- *Documentation:* The ~13 mm diameter matches the "paper cylinder six inches long and half an inch in diameter" dimensions proposed in AGB to CAB and CST, 14 June 1885; the mandrel in the above photograph is likely about six inches long (for comparison, the base is eight inches in this dimension, according to the catalog card). So "six inches long and half an inch in diameter" may have characterized the largest dimensions of a cylinder that could be accommodated by this particular machine. I hypothesize that cylinders of the 287666 format were used on the "second and smaller sized machine" completed on 6 July 1885 (TAT 72), that Tainter's apparently hazy recollections of its dimensions (pitch and diameter like later graphophone cylinders) were in

error, and that those dimensions were adopted only for the “six machines” of August 1885 (TAT 73). The method of preparation described in TAT 71 and 83-84 was probably used here as well.



287668

- *Date:* 8 November 1881
- *Inscription [in center area, raised mirror image]:* **This Phonogram | was made | Nov 8 – 1881 | S. T.**
- *Format:* Copper electrotype disc bearing raised mirror-image inscription and trace, cemented with plaster of paris to type-metal base with raised outer lip; laterally modulated, with trace raised in very sharp relief; pitch ~1.5 mm per rotation; total diameter ~252 mm; diameter of copper portion ~245 mm; trace runs clockwise from periphery, so “original” would have run counterclockwise from periphery. Intended for direct air-jet playback.
- *Documentation:* THN 3:75-79, 87-89, 93. Content not specified.



287669

- *Date:* 29 December 1881
- *Older description for 287669:* Heavy, 10-3/4-inch metal disk, 1/2-inch thick, lead body, copper face, deep grooved record, with hole and recess in center. Marked, “S. T. December 29, 1881.” Noted as “not found 1937.” However, it was found in 2011 to match an object labeled “287881-B,” which is now presumed to be the same object.
- *Inscription [raised, mirror image, in copper near center]:* **S. T. Dec. 29th 1881.**
- *Format:* Copper electrotype disc cemented with plaster of paris to type-metal base with raised outer lip and spindle hole and other holes at center. Total external diameter ~275 mm; external diameter of copper disc ~268 mm; interior diameter of copper disc ~84 mm; diameter of spindle hole ~22 mm. Trace pitch ~1.3 mm per rotation, raised vertical cut phonogram with recessed

groove between rotations; trace runs counterclockwise from periphery, so “original” would have run clockwise from periphery.

- *Documentation:* THN 5:22-30, 34-36, 46-47. Content (transcribed at THN 5:29): **T-r-r-r.—** “**This record was first made in paraffin-wax by the voice; an electrotype in copper was then taken from it; and this iron phonogram from which the sounds are being reproduced was transferred from the copper electrotype. The original phonogram in the paraffin-wax was made on the twenty-ninth day of December eighteen hundred and eighty one. I am a magnetical Graphophone, what are you? To be, or not to be, that is the question. How is that for high?**” **T-r-r-r, etc.** THN 5:47 reports that this electrotype negative was severely damaged in the process of dubbing it twice to an iron disc (possibly 287670*).
- *Duplicates:* 287860.02; 287898; possibly 287670*. The first two don’t match the experiment for which the disc was originally prepared and are likely to have been created later, perhaps around 1885.

287670*

- *Date:* Possibly January 1882; see below
- *Older description:* “Lead disk, 10-1/4 inches in diameter, 1/4 inch thick. A rough place, somewhat injured.” Noted as “not found 1937.”
- *Documentation:* Based on the description and position in the numerical sequence, this may have been the iron disc with a double-faced mechanical dubbing of 287669 undertaken in January 1882 and described in THN 5:30, 34-36, 46-47.



287671

- *Date:* 18 April 1882
- *Inscription [reversed, raised handwriting around center periphery]:* **Sumner Tainter, April 18th 1882. | Volta Laboratory**
- *Format:* Copper electrotype disc bearing raised mirror-image inscription and trace, cemented with plaster of paris to type-metal base with raised outer lip and complex center architecture (brass ring apparently cemented to surface) with spindle and other holes. Total diameter ~150 mm; outer diameter of copper disc ~145 mm; inner diameter of copper disc ~73 mm; diameter of spindle hole ~20 mm, trace pitch ~1.3 mm per rotation, raised vertical cut phonogram with recessed groove between rotations; trace runs counterclockwise, so “original” would have run clockwise from periphery. Used for mechanical dubbing to a type-metal disc.
- *Documentation:* THN 6:34-37, 40-46. Content (reported at THN 6:43): “My Lord, I have nothing to say, why sentence of death should not be pronounced according to the laws.”
- *Duplicate:* 287673



287672

- *Date:* ca. May 1882
- *Format:* Yellow wax disc in type-metal 'dish' with raised center and outer lip. Total diameter ~149mm; outer diameter of wax disc, ~142 mm; inner diameter of wax disc, ~71 mm; spindle hole ~22 mm; trace pitch ~1.2 mm per rotation, recessed groove, runs clockwise from periphery.
- *Documentation:* Experiments that would have produced discs resembling this one are described in THN 6:48; 7:1-12. At 7:13, a similar disc is described under the date 16 May 1882, but with a diameter of "about 27 cm." Probably 287672, with a diameter more comparable to 287671 and 287673, was recorded before this date.



287673

- *Date:* 21 April 1882
- *Inscription:* [scratched into reverse] **April 21st 1882 | The Phonogram on the | opposite side of this plate was | transferred from a copper electrotype | on the date given above | Sumner Tainter | Apr 21—1882**
- *Format:* Vertical phonogram cut into raised spiral ridge. Outer diameter ~144 mm. Trace runs clockwise from periphery. Trace pitch ~1.3 mm per rotation, spindle hole ~21 mm.
- *Documentation:* THN 6:34-37, 40-46.
- *Duplicated from* 287671



287674

- *Date:* 4-6 June 1881
- *Format:* Type-metal disc with spiral groove; groove filled with wax; phonogram cut in wax groove, and then this phonogram also filled with wax (combined with 'reduced iron'). Trace runs clockwise from periphery. Also two raised ridges around rim with vertical phonograms cut into them. Outer diameter ~112 mm. Spindle hole ~5 mm. Trace pitch ~1.2 mm.
- *Documentation:* THN 2:11-15. Content of raised ridges, recorded 6 June 1881 (THN 2:15): "potato" and "several trilled R's."



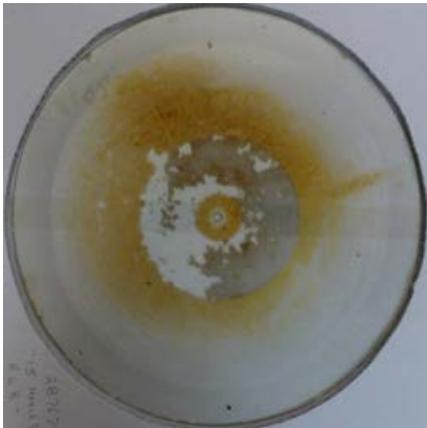
287675

- *Date:* ca. 21-25 October 1881
- *Format:* Irregularly shaped metal (type-metal?) disc with part of a spiral phonogram formed on one face.
- *Documentation:* THN 3:53-55.
- *Duplicated from P*.*



287676

- *Date:* 1-11 March 1890
- *Inscription [in plaster over ungrooved portion]:* **1890 Mar 11 | Agate Cemt used | in Exp. 8 p. 115 L. R. N. | AGB [at center]: [undeciphered]**
- *Format:* Plaster face on brass (?) substrate, with spiral phonogram. Diameter ~170 mm. Card tied on with red tape.
- *Documentation:* LN 29:90-91, “Experiment 7”; LN 29:95; LN 29:110; LN 29:115, “Experiment 8”
- *Duplicated from* 287733
- *Duplicates:* 287728 [“first impression”]; 58498.41 [AD#42; “second impression”]; 287735 [“third impression”]



287677

- *Date:* 15 March 1885
- *Inscription [scratched in center area emulsion]:* **15th March 85 | HGR [may once have been more, lost to flaking]**
- *Format:* Glass disc with photographic emulsion (badly flaking), typical diameter and spindle hole for type; “narrow” trace pitch ~1.6 mm per rotation, variable density phonogram; on emulsion side (up), trace runs counterclockwise from periphery. Distinctive darkened circle surrounding spindle hole (compare 287687).



287678

- *Date:* 16 March 1885
- *Inscription [scratched in center area emulsion]:* **16th March 1885 | HGR | “Exp XVI”**
- *Format:* Glass disc with photographic emulsion, typical diameter and spindle hole for type; “narrow” pitch trace ~1.6 mm per rotation, variable density phonogram; on emulsion side (up), trace runs counterclockwise from periphery.
- *Playback:* Floyd K. Harvey, referenced in “Mementos of Early Photographic Sound Recording,” *SMPTE Mot. Imag J.* 91:3 (March 1, 1982), 237-244



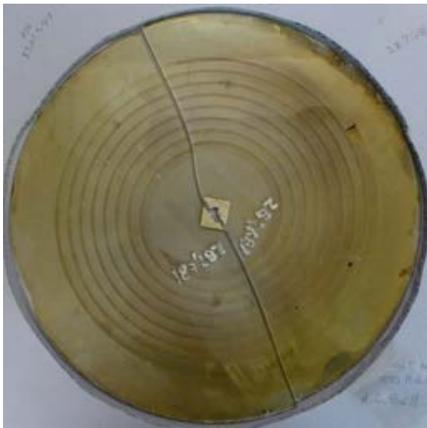
287679

- *Date:* 17 November 1884
- *Inscription [scratched in center area emulsion]:* **Exp [flaked away] Nov 17th 1884 | Style vibrations | word “phonography” | H G Rogers | pyrodevelop**
- *Format:* Glass disc with photographic emulsion, typical size, spindle hole. “Wide” pitch trace ~10 mm per rotation; variable width phonogram with light portion of trace towards center. Emulsion side stored up; trace appears to run counterclockwise from periphery.



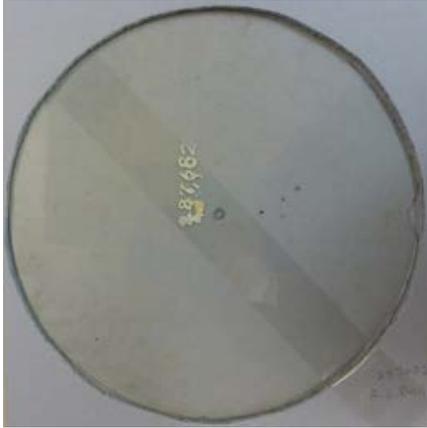
287680

- *Date:* 3 February 1885
- *Inscription [scratched in center area emulsion]:* **3rd February 1885 | H G Rogers | Speed slow. | jet - sulphocyanide of iron | microscope [line] “ee – eh – aw – oh – oo – barometer” | No VII**
- *Format:* Glass disc with photographic emulsion, typical diameter and spindle hole for type; “wide” pitch trace ~10 mm per rotation; variable width phonogram with dark portion of trace towards center; on emulsion side (up) trace runs counterclockwise from periphery. Irregular edge to emulsion near center.



287681

- *Date:* 21 April 1885
- *Inscription: [scratched in center area emulsion]:* **21st April 1885 | HGR**
- *Format:* Glass disc with photographic emulsion, typical diameter and spindle hole for type; spindle hole through rectangular paper affixed to non-emulsion side; “wide” pitch trace ~10 mm per rotation; variable width phonogram with light segment towards center.



287682

- *Date:* 1884-85
- Blank glass disc of typical diameter and spindle hole for photographic recording type of late 1884 and early 1885.



287683

- *Date:* 1884-85
- Blank glass disc with dimensions similar to 287682, but without spindle hole.



287684

- *Date:* 1884-85
- Blank glass ring, external diameter ~342 mm, inner hole diameter ~234 mm.



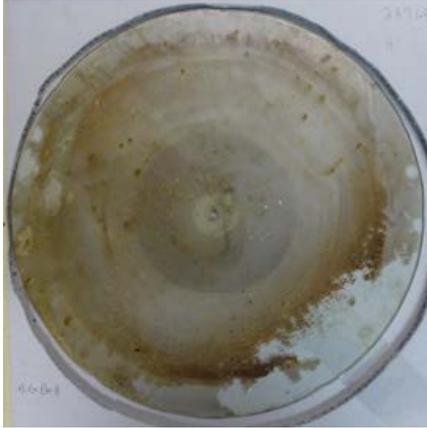
287685

- *Date:* 3 December 1884
- *Inscription:* **No IIIII Dec 3rd | 1884 | HGR | One diaphragm | Style | Enlarged 20 times**
- *Format:* Glass disc with photographic emulsion, diameter ~355 mm, spindle hole ~7 mm; “wide” pitch trace ~10 mm per rotation; variable width phonogram with light portion of trace towards center; on emulsion side (up), trace runs counterclockwise from periphery.



287686

- *Date:* 17 November 1884
- *Inscription:* **Exp III Nov 17th 1884 | Style vibrations to word | “barometer” | H G Rogers | Rotation of plate | from circumference to | center. Speed 60 c/m | per second. | pyrodevelop.**
- *Format:* Glass disc with photographic emulsion; diameter ~328mm (smaller than usual); spindle hole ~25 mm (larger than usual); “wide” pitch trace ~10 mm per rotation; variable width phonogram with light portion of trace towards center. On emulsion side (down), trace runs counterclockwise from periphery.
- *Duplicate:* 287690
- *Playback:* Floyd K. Harvey, referenced in “Mementos of Early Photographic Sound Recording,” *SMPTE Mot. Imag J.* 91:3 (March 1, 1982), 237-244; NMAH/LBL/LC collaboration pilot project, released December 2011: “Barometer”



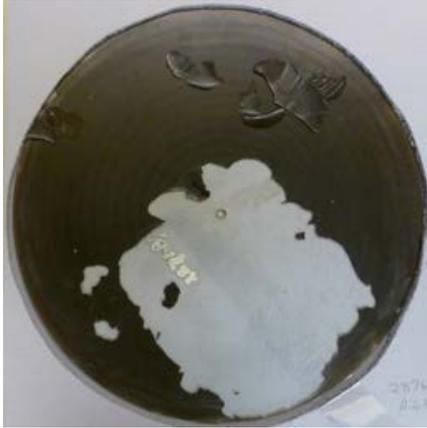
287687

- *Date:* 1884-85
- *Format:* Glass disc with photographic emulsion (badly flaking); “narrow” pitch trace ~1.6 mm per rotation; variable density recording. Distinctive circle around spindle hole (compare 287677)



287688

- *Date:* ca. 1883-84
- *Format:* Glass disc with raised plaster ridges around periphery and center; ~325 mm diameter; spindle hole ~25 mm; diameter of interior ring ~89 mm. Appears that wax was once applied to surface between the plaster ridges but later scraped off. No phonogram.
- *Documentation:* Format appears to be described in CBN 6:5



287689

- *Date:* January (or February?) 1885
- *Inscription:* [scratched in center area emulsion, largely flaked away] [...] **microscope** | [...]
January 1885 | **HGR**
- *Format:* Glass disc with photographic emulsion, typical diameter and spindle hole for type, “wide” trace pitch ~10 mm per rotation; variable width recording, light portion possibly towards center.



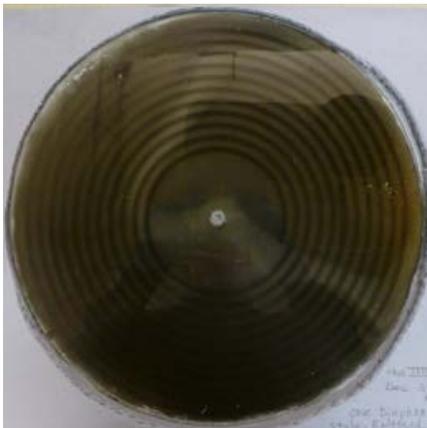
287690

- *Date:* After 287686 (q.v.)
- *Format:* Glass disc with transparent photographic emulsion, diameter ~345 mm, spindle hole ~7.5 mm
- *Duplicated from* 287686



287691

- *Date:* 1885
- *Inscription [in center area]:*[...]85 | [...] VIII
- *Format:* Glass disc with transparent photographic emulsion, diameter ~350mm, spindle hole ~7 mm, “wide” pitch trace ~10 mm per rotation, variable width phonogram with light portion of trace towards center. On side facing up (inscription correct direction), trace runs counterclockwise from periphery.
- *Probably a duplicate*, but no source recording identified.



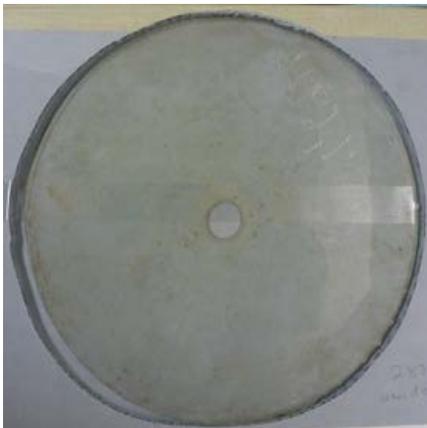
287692

- *Date:* 3 December 1884
- *Inscription [scratched in central area emulsion]:* **No IIIII Dec 3rd | HGR | one diaphragm | style | Enlarged 40 times**
- *Format:* Glass disc with photographic emulsion, diameter ~350 mm, spindle hole ~7 mm; “wide” pitch trace ~10 mm per rotation; variable width phonogram with light portion of trace towards center; on emulsion side (down) trace runs counterclockwise from periphery.



287693

- *Date:* 10 April 1884
- *Inscription [scratched along periphery]:* **No. 26 | April 10 | 1884 | H G Rogers**
- *Format:* Glass disc with photographic emulsion, diameter ~333 mm, no spindle hole but cross-shaped scratch at position where one would be; “narrow” pitch trace ~1.6 mm per rotation; probably a variable density phonogram; circular red residue at center on non-emulsion side, perhaps from adhesive material used instead of a spindle.



287694

- *Date:* possibly 1884
- *Format:* Glass disc with diameter ~285 mm, spindle hole diameter ~26 mm. Lateral trace, possibly etched, pitch ~1.7 mm.
- *Documentation:* If etched, possibly CBN 6:41, which would date the recording to late May 1884. See also 287695.
- *Related item:* Box “A”



287695

- *Date:* possibly 1884
- *Format:* Glass disc with diameter ~268 mm, spindle hole diameter ~26 mm. Lateral trace, possibly etched, pitch ~1.7 mm.
- *Documentation:* If etched, possibly CBN 6:41, which would date the recording to late May 1884. See also 287694. Possibly related to 287713, which has similar dimensions.



287696

- *Date:* 4 February 1890
- *Inscription [in ink on reverse]:* **1890 Feb 4th Volta Laboratory | This surface was obtained by placing the wax on with a brush then smoothing the surface with a hot rod of brass passed across it, guided by two rods of the proper thickness required. | C. W. H. E. | AGB | Feb 4th 1890**
- *Format:* Cardboard disc, diameter ~240 mm, with black material applied (flaking off); spindle hole ~26 mm.
- *Documentation:* LN 30:3

287697*

- *Older description:* “composition disk,” 9-10 inches in diameter, with “pasteboard” back and “wax” face.

287698*

- *Older description:* “composition disk,” 9-10 inches in diameter, with “pasteboard” back and “wax” face.



287699

- *Date:* ca. 1885
- *Inscription [scratched into reverse]:* **Japan**
- *Format:* Binder's-board disc with yellow wax (Japan wax) surface; cardboard ~250 mm; spindle hole ~25 mm. Outer diameter of wax coating ~230 mm; inner diameter ~73 mm. Band at outside recorded with narrow pitch; inside, another band of wider pitch (~1.9 mm per rotation).



287700

- *Date:* ca. 1885
- *Inscription [scratched into reverse]:* **Japan**
- *Format:* Binder's-board disc with yellow wax (Japan wax) surface, cardboard ~255 mm; spindle hole ~25 mm. Outer diameter of wax coating ~232 mm; inner diameter ~75 mm. Three or four discrete groove bands with consistent medium pitch.
- *Playback:* NMAH/LBL/LC collaboration pilot project, released December 2011 (excerpts)



287701

- *Date:* ca. 1885
- *Format:* Binder's-board disc with wax composition surface, cardboard ~260 mm; spindle hole ~25 mm. Outer diameter of wax coating ~227 mm; inner diameter ~70 mm. Two discrete groove bands with consistent medium pitch. Four rim notches.
- *Playback:* NMAH/LBL/LC collaboration pilot project, released December 2011

287702*

- *Older description:* "composition disk," 9-10 inches in diameter, with "pasteboard" back and "wax" face.

287703*

- *Older description:* "composition disk," 9-10 inches in diameter, with "pasteboard" back and "wax" face.
- *Note:* a holder marked with this catalog number actually contained 299692, unrelated to the Volta Laboratory.

287704*

- *Older description:* "composition disk," 9-10 inches in diameter, with "pasteboard" back and "wax" face.

287705*

- *Older description:* "composition disk," 9-10 inches in diameter, with "pasteboard" back and "wax" face.



287706

- *Date:* ca. 1885
- *Format:* Binder's-board disc with wax composition surface, cardboard ~257 mm; spindle hole ~25 mm. Outer diameter of wax coating ~245 mm; inner diameter ~80 mm. Numerous groove bands, narrowish pitch. Intentionally scored section.
- *Inscription [scratched into wax near center]:* **Oxide Zinc | Plate, to Kaolin**



287707

- *Date:* ca. 1885
- *Format:* Binder's-board disc with wax composition surface, cardboard ~240 mm; spindle hole ~25 mm. Outer diameter of wax coating ~229 mm; inner diameter ~75 mm. Numerous groove bands.

287708*

- *Older description:* “composition disk,” 9-10 inches in diameter, with “pasteboard” back and “wax” face.



287709

- *Date:* ca. 1885
- *Format:* Binder's-board disc with wax surface, cardboard ~ 246 mm; spindle hole ~ 25 mm. Outer diameter of wax coating ~ 234 mm; inner diameter ~ 75 mm. Many groove bands.



287710

- *Date:* ca. 1884-85
- *Format:* Extremely thin metal disc, ~250 mm diameter, ~25 mm spindle hole, with some scratched circular lines but no phonogram



287711

- *Date*: 20 February 1885 (underlying disc); 7 February 1890 (present surface)
- *Format*: Black material (1890) on cardboard disc over older (1885) yellow wax surface; cardboard ~214 mm; spindle hole ~25 mm. Several small fragments of spiral phonogram molded separately into the black surface, sometimes with tinfoil layer on top, sometimes not.
- *Inscription [pencil on reverse]*: **20th Feby 1885 | style indirect | HGR**
- *Inscription [scratched on front]*: **Records obtained by pressure | from die made of agate cement | (or Oxychloride) used by dentists | in filling teeth. This was moulded | on an old wax record while semi-liquid—about consistency | of putty. Then allowed to set | the cement | became very | hard—and | we find | it can be | used as | a die | Noted 1890 Feb 7 | Volta Lab AGB | Witnesses | C. W. H. E. [broken section] 90 | Arthur W. McCurdy | Feby 7, 1890**
- *Documentation*: HN 5:22-23



287712

- *Date*: 29 April 1884
- *Format*: Glass disc with photographic emulsion, ~276 mm diameter, “narrow” trace pitch ~1.5 mm per rotation; ~25 mm diameter spindle hole. Probably variable intensity recording.
- *Inscription [in emulsion near edge]*: **29th April 1884 | “Nappe” negative**



287713

- *Date:* ca. 1884-85
- *Format:* Blank glass disc, diameter ~266 mm, spindle hole ~26 mm. Possibly related to 287695, which has similar dimensions.



287714.01

- *Date:* 28 February 1890
- *Inscription [scratched in center]:* **Made | Feb 28th [1890 | AGB]**
- *Format:* Binder's-board disc with black material surface, spiral phonogram, portion missing, ~175 mm diameter
- *Documentation:* LN 29:77-78 describes its initial preparation; see duplicates for documentation of the experiments conducted with it.
- *Duplicate:* 287727; then 287726, during which the original was damaged – missing part of inscription supplied from duplicates



287714.02

- *Date:* 28 February 1890
- *In 2011, the holder was marked “287714 (?) or 287718 (?)”; the number written on the disc itself has 4 and 8 superimposed. Later assigned number 287714.02. It may originally have been 287715.*
- *Inscription [scratched in center]:* **Feb 28 1890 | AGB | C.W.H.E.**
- *Format:* Binder’s-board disc with black and whitish material surface, spiral phonogram, ~162 mm diameter.
- *Documentation:* LN 29:77-78 describes its preparation but not the experiment conducted with it.



287714.03

- *Date:* 2 March 1890
- *The disc itself bears the number “287718,” as did its holder in 2011, and it also matches descriptions of 287718 in old inventories. However, it has since been reassigned number 287714.03, perhaps to avoid further confusion over 287714.02, which had been associated with both numbers 287714 and 287718.*
- *Inscription [over grooved area]:* **1890 Mar. 2 | Exp. 6 Lab. R. N. p. 99 | AGB**
- *Format:* Binder’s-board disc with black material coating and whitish surface; diameter ~170 mm.
- *Documentation:* LN 29:99

287715*

- *Older description:* “Composition disk, 6¾ inches in diameter. Marks not distinguishable.” Not found in inventory, January 1934. May possibly be identifiable with the current 287714.02.



287716

- *Date:* 1 March 1890
- *Inscription [center]:* **This d[is]k | will be used | in making exp | 6 | noted | on p 89 of Lab. | R. N. Mar. 1 1890 | AGB [disc is divided by lines into thirds; left, center] 1 [left, rim] This part brushed with water alone [right, center] 2 [right, rim] This part brushed with plaster alone [top, center] 3 [top, rim] This part not brushe[d] [a]t all**
- *Format:* Binder's-board disc with black material surface, spiral phonogram, cracked surface, piece missing; diameter ~187 mm.
- *Documentation:* LN 29:89, "Experiment 6"
- *Duplicate:* 287724 – missing parts of inscriptions supplied from duplicate



287717

- *Date:* March 1890
- *Inscription [disc is divided by lines into quarters; with the catalog number "up," bottom left rim]:* **no plumbago | not brushed [bottom right rim]: plumbago | not brushed [top right rim]: Brushed | Plumbago [top left rim]: Brushed | no plumbago**
- *Format:* Binder's-board disc with black material surface, spiral phonogram; diameter ~170 mm.
- *Documentation:* LN 29:121
- *Duplicate:* 287721

287718* – see 287714.03



287719

- *Date:* 27 February 1890
- *Inscription [center]:* **Made Feb 27—1890 | C.W.H.E.**
- *Inscription [reverse]:* **Made Feb 27 1890 | See Lab. R. N. | P 70 Exp. 2. | AGB | C.W.H.E.**
- *Format:* “Front” is a plaster disc molded from a spiral phonogram; “reverse” is an ozokerite surface with circular lines imperfectly molded into it; diameter ~150 mm.
- *Documentation:* LN 29:70, “Experiment 2”



287720

- *Date:* 25 February 1890
- *Inscription [center]:* **Exp. #2 | made Feb 25 | 1890 | Page 66 Lab. R. N. | C.W.H.E.**
- *Format:* Plaster disc molded from a spiral phonogram; diameter ~153 mm.
- *Documentation:* LN 29:66, “Experiment 2”



287721

- *Date:* 26 March 1890
- *Inscription [center]:* **March 26th 1890 | Exp #1 P 121 | Lab R. N. C.W.H.E.** [*also, disc divided into quarters, with mirror image inscriptions around the rim matching 287717*]
- *Format:* Plaster disc molded from a spiral phonogram; diameter ~162 mm.
- *Documentation:* LN 29:121-122, “Experiment 1”
- *Duplicated from:* 287717



287722

- *Date:* 24 February 1890
- *Inscription [center]:* **Made Feb. 24 1890 | AGB**
- *Format:* Plaster disc molded from a spiral phonogram; diameter ~150 mm.
- *Documentation:* LN 29:61, “Experiment 1”



287723

- *Date:* 28 February 1890
- *Inscription [center, mirror image] Made | Feb 28 1890 | AGB | C.W.H.E.*
- *Format:* Plaster disc molded from a spiral phonogram; diameter ~162 mm.
- *Documentation:* LN 29:77-78 describes the preparation of the original disc



287724

- *Date:* 1 March 1890
- *Inscription [all in mirror image; center]: This d[is]k | will be used | in making exp | 6 | noted | on p 89 of Lab. | R. N. Mar. 1 1890 | AGB [disc is divided by lines into thirds; left, center] 1 [left, rim] This part brushed with water alone [right, center] 2 [right, rim] This part brushed with plaster alone [top, center] 3 [top, rim] This part not brushe[d] [a]t all*
- *Format:* Plaster disc molded from a spiral phonogram; diameter ~163 mm.
- *Documentation:* LN 29:89, "Experiment 6"
- *Duplicated from:* 287716



287725

- *Date:* 17 March 1890
- *Inscription [center]:* **1890 | Dentists [corrected from “Dentests”] | Plaster | March 17th 1890 | C.W.H.E.**
- *Format:* Plaster disc molded from a spiral phonogram; diameter ~162 mm.
- *Documentation:* Not referenced in the notebooks, but see LN 29:99



287726

- *Date:* 15 March 1890
- *Inscription [center, mirror image]:* **Made | Feb. 28th 1890 | AGB**
- *Inscription [ink on reverse]:* **March 15th /90 | Plaster & lime | more plaster than lime | J F Kennedy**
- *Format:* Plaster disc molded from a spiral phonogram; diameter ~165 mm.
- *Documentation:* LN 29:77-78 describes the preparation of the original disc; duplicate not noted, but see LN 29:98-99. A cylinder mold, 287747, was also created on 15 March 1890.
- *Duplicated from:* 287714.01



287727

- *Date:* 2 March 1890
- *Inscription [center, mirror image]:* **Made | Feb. 28th 1890 | AGB**
- *Inscription [pencil on reverse]:* **1890 Mar 2 | Cast made in Exp. 2 | Lab. R. N. p. 87 | AGB**
- *Format:* Plaster disc molded from a spiral phonogram; diameter ~163 mm.
- *Documentation:* On original recording, LN 29:77-78; on cast, LN 29:87, “Experiment 2,” date given there as 1 March 1890
- *Duplicated from:* 287714.01



287728

- *Date:* 11 March 1890
- *Inscription: [scratched in grooved area towards rim]:* **1890 Mar. 11 | 1st impression | gutta percha percha | see Lab. R. N. p. 116 | AGB**
- *Inscription [molded in center area, mirror image]:* **1890.... [undeciphered but appears to be a fairly substantial inscription]**
- *Format:* Spiral phonogram pressed in tinfoil on black substance (gutta percha?) on binder’s board; diameter ~197 mm.
- *Documentation:* LN 29:116, “Experiment 9”
- *Duplicated from* 287676



287729

- *Date:* 6 February 1885
- *Inscription [pencil on reverse]:* **AGB Feb 6 1885 | H G Rogers | Feb 6th /85 | T.N.G.**
- *Format:* Disc phonogram pressed in tin foil on pitch (?) on thin cardboard; diameter ~229 mm. Possibly similar in method and purpose to 287730.



287730

- *Date:* 5 March 1885
- *Inscription [pencil on reverse]:* **Pitch | March 5th 1885 | T.N.G.**
- *Format:* Disc phonogram pressed in tin foil on pitch on thin cardboard; diameter ~239 mm. Possibly similar in method and purpose to 287729.
- *Duplicated from* 287860.03



287731

- *Date:* 28 February 1890
- *Inscription [scratched into black material on front]:* **Feb. 28 1890 | Ozokerite disk used in | Exp 3 p. 78 L. R. N. | AGB**
- *Format:* Ozokerite on binder's board, diameter ~167 mm.
- *Documentation:* LN 29:78, "Experiment 3"



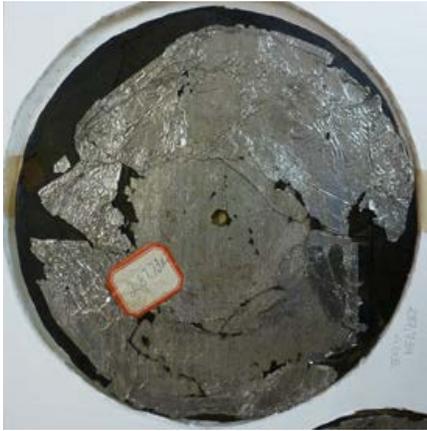
287732

- *Date:* 28 February 1890
- *Inscription [scratched in center]:* **Feb 28 1890 | AGB | Feb 28 1890 | C.W.H.E. | This is the | original from | which plaster cast | has been taken | AGB**
- *Inscription [ink on reverse]:* **Feb. 28 1890 | This record was cut | by the voice this morning. | From it a plaster cast was | taken today and from | the plaster a copy was taken on | another ozokerite disk this evening | but plaster cracked under pressure øt | This is the original used in Exp. 3 | Lab R. N. 1. 78. | AGB Feb. 28 1890.**
- *Format:* Spiral phonogram cut in ozokerite surface on binder's board; diameter ~184 mm.
- *Documentation:* LN 29:78, "Experiment 1."



287733

- *Date:* 11 March 1890
- *Inscription [scratched in grooved area towards rim]:* **1890 Mar 11 | Original record plate | used in Exp. 8. | p. 115 | AGB**
- *Inscription [paper fragment stuck to surface]:* **original ozo[torn] | used in Exp. 8 Lab. [torn] | AG[B]**
- *Format:* Spiral phonogram cut in ozokerite surface on binder's board, severely damaged; diameter ~180 mm.
- *Documentation:* LN 29:115, "Experiment 8"
- *Duplicate:* 287676



287734

- *Date:* 18 February 1890
- *Inscription [at center]:* **Made | Feb 18 1890 | AGB | Style made | like commercial | graphophone | AGB | C.W.H.E.**
- *Format:* Spiral phonogram pressed in tinfoil on ozokerite on binder's board; diameter ~175 mm.
- *Documentation:* LN 29:43-47
- *Duplicated from* an apparently lost oxychloride cast.

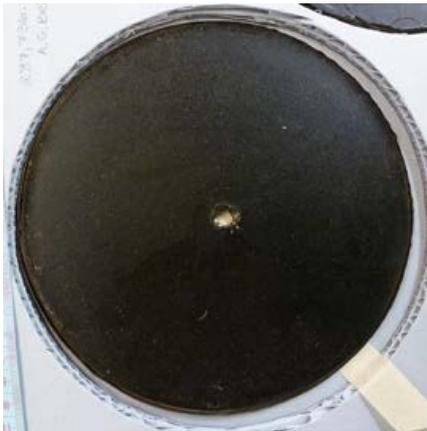


287735

- *Date:* 11 March 1890
- *Inscription [near rim]:* 1890 [broken] | 3rd impr[ession] | [...] p. 117 [...] 11 [...]
- *Format:* Spiral phonogram pressed in tinfoil on ozokerite on binder's board; diameter ~169 mm.
- *Documentation:* LN 29:117, "Experiment 11"
- *Duplicated from:* 287676

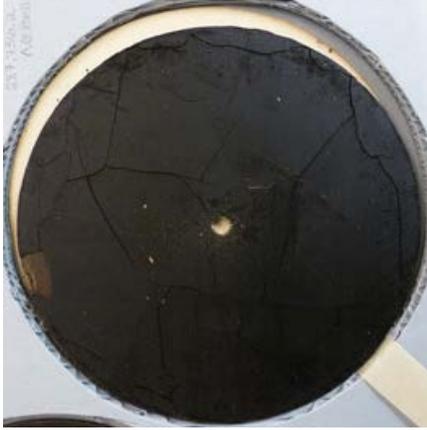
287736 was assigned to thirty-six disc blanks originally stored on a spindle, with paper discs inserted between. Except where otherwise stated, these are ozokerite blanks on binder's-board backing, diameter ~170 mm, spindle hole ~7 mm.

- *Documentation:* Judging from the architecture of 287736.1 and 287736.3, those two discs may date from the work by Tainter referenced in TAT 97 and carried out in early to mid 1887. The others resemble discs made in the spring of 1890 in dimensions, structure, and materials; these may have been blanks prepared shortly before the Volta group ceased experimenting with the disc format.



287736.1

- Ozokerite blank in metal tray with lip, resembling the disc design described in Tainter's patent 385,887, and also mentioned in his patent 385,886. See also 287736.3.

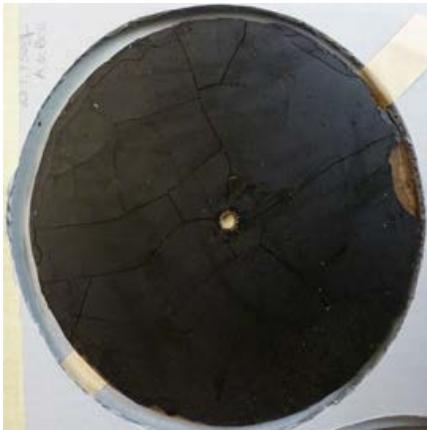


287736.2



287736.3

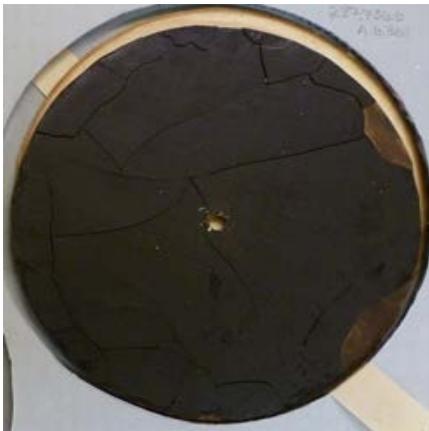
- Blank of same design as 287736.1 (q.v.)



287736.4



287736.5



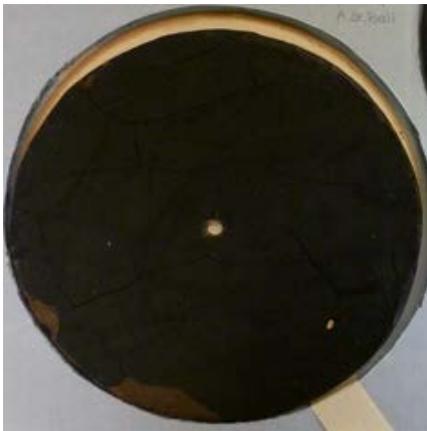
287736.6



287736.7



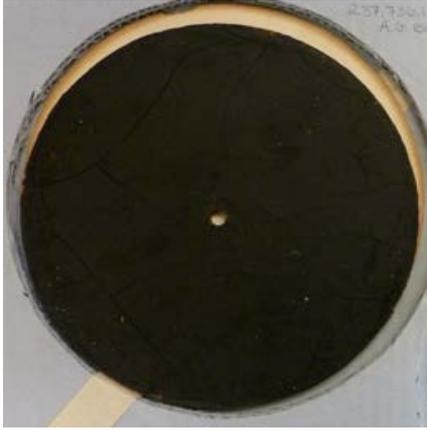
287736.8



287736.9



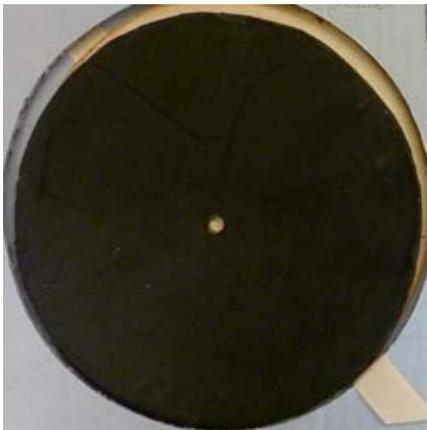
287736.10



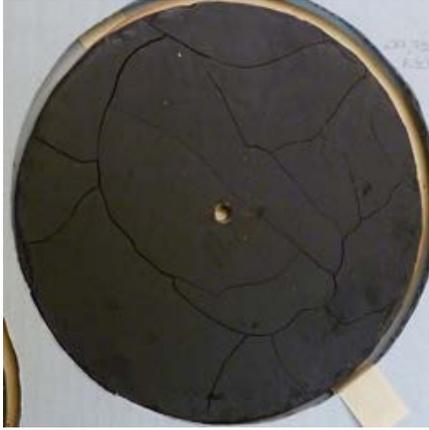
287736.11



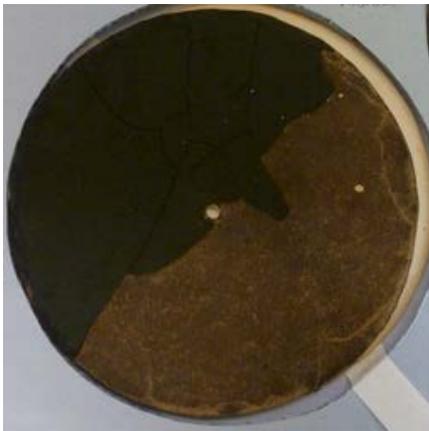
287736.12



287736.13



287736.14



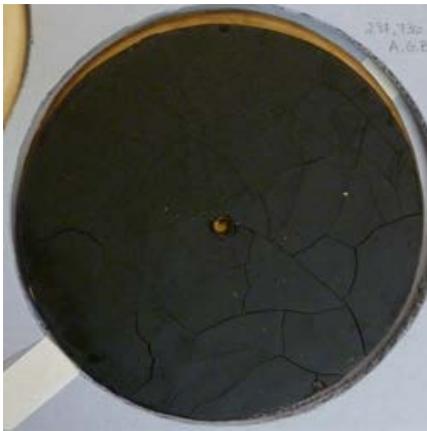
287736.15



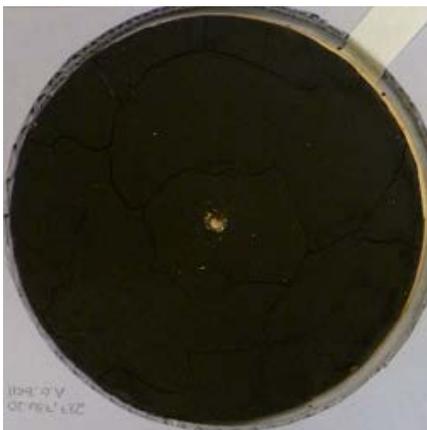
287736.16



287736.17



287736.18



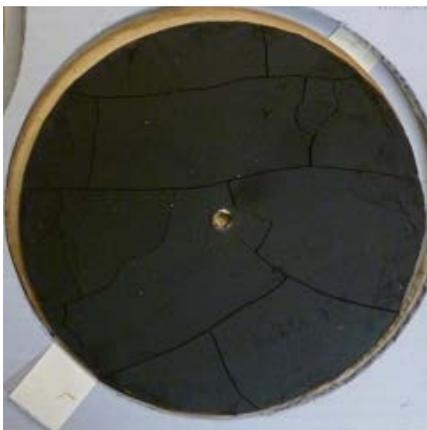
287736.19



287736.20



287736.21



287736.22



287736.23



287736.24



287736.25



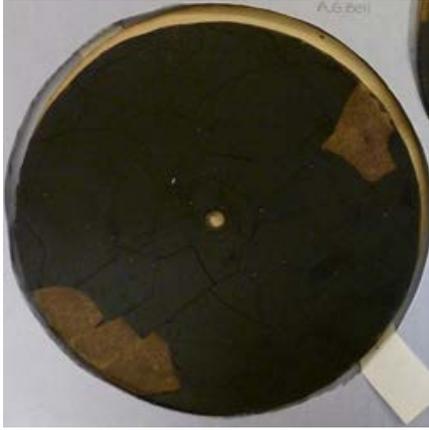
287736.26



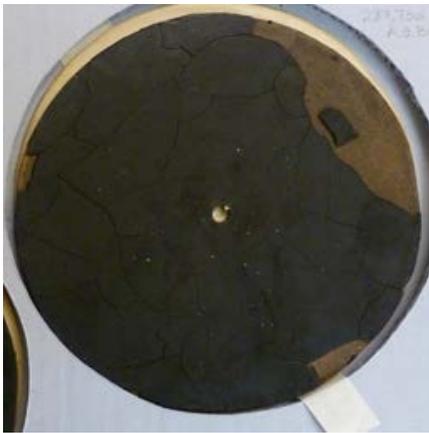
287736.27



287736.28



287736.29



287736.30



287736.31



287736.32



287736.33



287736.34



287736.35



287736.36



287738

- *Date:* 12 February 1890
- *Inscription:* **Original spiral made Wed. Feb. 12th 1890 | AGB | C.W.H.E.**
- *Format:* Interior is a standard commercial graphophone cylinder, reddish printed interior without arrows, with a blank sheet of paper rolled up inside.
- *Documentation:* LN 29:38-39.
- *Related items:* See also 287739, Q.



287739

- *Date:* 12 February 1890
- *Inscription:* **Copy of original spiral | produced by rotating this paper cylinder when blank | on flat hectograph copy of original | Made Feb. 12th 1890 AGB C.W.H.E.**
- *Format:* Interior is a standard commercial graphophone cylinder, reddish printed interior without arrows; see 287738 for more information.
- *Documentation:* LN 29:38-39.
- *Related items:* See also 287738, Q.



287745

- *Date:* 1890?
- *Format:* Plaster mold for standard graphophone cylinder, rough exterior, ~120 mm long, ~34 mm wide
- *Documentation:* May correspond to experiments from March 1890 described in LN 29.



287746

- *Date:* 1890?
- *Format:* Plaster mold for standard graphophone cylinder, smooth exterior, ~145 mm long, ~35 mm wide
- *Documentation:* May correspond to experiments from March 1890 described in LN 29.



287747

- *Date:* 15 March 1890
- *Inscription [pencil, on exterior]:* **March 15th | 1890 | CWHE**
- *Format:* Plaster mold for standard graphophone cylinder, ~120 mm long, ~34 mm interior diameter, ~48 mm external diameter.
- *Documentation:* No specific account of this experiment, but see LN 29:98-99. 287726 is a disc mold bearing the same date.



287748

- *Date:* ca. 1890-92
- *Format:* Brass/copper cylinder with yellowish wax coating, approximate dimensions of a commercial graphophone cylinder, cracked, ~150 mm long, ~26 mm diameter



287749

- *Date:* ca. 1890-92
- *Format:* Solid ozokerite (?) cylinder with a small hole in either end, 137 mm long, 25 mm diameter. Similar holes are found in standard-sized cylinders **287797**, **287798**, **287801**, **287811**, and **287812**.

287750: Three cylinders of a transparent wax composition on a cardboard substrate with straight (non-helical) seam; in all cases, the cylinder has been partially flattened and the coating has more or less flaked away. See also **58498.40**. Diameter ~50 mm, length ~230 mm, pitch ~0.21 mm. The “W” and “P” markings may refer to ratios of wax and paraffin.

- *Date:* probably 1885
- *Documentation:* TAT 71-72: Describes Tainter’s “first cylindrical machine...of the type shown in patent 341,288,” which “had a cylinder 9 inches long, and 2 inches in diameter.... The coating of the paper tubes was effected by several dippings in a bath of the melted wax, while the cylinder was kept rotating at a uniform rate. When the coating of wax became about ¼ of an inch thick, the cylinder was turned off true and smooth in a lathe.... The first cylinder machine I designed for 10 minutes recording and the spacing between the record grooves was 1/120 of an inch.” Tainter was evidently referring to technical drawings and notes from 1885, but I found nothing of this kind in the Tainter papers at NMAH between 1884 and 1897. The dimensions of the cardboard and pitch match Tainter’s description, but the *wax composition* is much thinner than ¼ inch. I suspect Tainter may have been conflating this cylinder type with that of 287666† (q.v.).



287750 [1]

- *Inscription [pencil on interior]:* [...] **Compos[ition]** | $W_1 - P_2$



287750 [2]



287750 [3]

- *Inscription [pencil on interior]:* $W_1 - P_2$ [...]



287751-287789

- *Date:* Mid-to-late 1885?
- *Format:* Yellow wax composition cylinders on thin paper interior with straight seam; ~114 mm long, ~13 mm diameter, some recorded (pitch ~0.7 mm), some not. Thirty-nine numbers total, but 287756, 287789 are both missing, so **thirty-seven** are actually present. For discussion, see **287666†**. Only a few of these cylinders were inspected, so as not to disturb the seemingly original wrappings. Hence it isn't yet known how many specimens contain recordings, or whether alternative groove pitches exist.



287790

- *Date:* March (?) 1890
- *Inscription:* **No 4 | Mifs True** [*written with a hanging s, consistent with how "Miss" was conventionally written in other Volta documents of the period*]
- *Format:* Recorded standard graphophone cylinder, reddish printed interior with arrows, multiple recorded bands.
- *Documentation:* Inscription may refer to Miss Mary H. True, an educator of the deaf. AGB did correspond with her in this period; see e.g. a letter of 29 April 1890, Alexander Graham Bell Family Papers, box 104, letterbook for 7 February 1890 to 8 January 1892, at page 178. "No. 4" might refer to the fourth cylinder of a piece on "Statistics of the Deaf," marked as "dictated graphophonically" on 30 March 1890 and transcribed in HN 7:1-9.

287791

- *Date:* 21 March 1890
- *Inscription:* **Letter to | E. A. Fay | Mch 21 /90**
- *Format:* Recorded standard graphophone cylinder, reddish printed interior without arrows
- *Documentation:* The text of a dictated letter of 21 March 1890 from AGB to Professor E[dward] A[llen] Fay of Kendall Green is found in Alexander Graham Bell Family Papers, box 104, letterbook for 7 February 1890 to 8 January 1892, page 68.

287792

- *Date:* March (?) 1890
- *Inscription:* **Mrs Pratt**
- *Format:* Recorded standard graphophone cylinder, printed interior with arrows.
- *Documentation:* Probably a different letter to Mrs. A. C. Pratt than 287793. Some other correspondence with her is found in the same letterbook cited there.

287793

- *Date:* 30 March 1890
- *Inscription:* **Letter to Gen Saunders | Mrs Pratt Mch 30 /90**
- *Format:* Recorded standard graphophone cylinder, printed reddish interior with arrows, ozokerite flaking off
- *Documentation:* Text of dictated letter of 30 March 1890 from AGB to Mrs. A. C. Pratt is found in Alexander Graham Bell Family Papers, box 104, letterbook for 7 February 1890 to 8 January 1892, page 109, marked “dictated graphophonically.” Text of dictated letter of same day from AGB to Gen. George Saunders, same volume, page 113.

287794

- *Date:* ca. 1890
- *Format:* Recorded standard graphophone cylinder, white printed interior with one arrow; ozokerite flaking off

287795

- *Date:* March (?) 1890
- *Inscription:* **Letter to Mrs Pratt | + Mldre[.] [...]er**
- *Format:* Recorded standard graphophone cylinder, white printed interior with one arrow.

287796

- *Date:* 16 April 1892
- *Inscription on paper found inside:* **1892 | April 16th | Expr 2^d P. 69.**
- *Format:* Recorded solid ozokerite cylinder with larger hole at one end only.
- *Documentation:* LNM 69

287797

- *Format:* Blank solid ozokerite cylinder with smaller hole at both ends (see **287749**).

287798

- *Inscription [in ozokerite]:* **129**
- *Format:* Blank solid ozokerite cylinder with smaller hole at both ends (see **287749**).

287799

- *Inscription [in ozokerite]:* **[...]23 + A N[...] [portions broken off]**
- *Format:* Recorded solid ozokerite cylinder with larger hole at one end only.

287800

- *Inscription in ozokerite:* **A – 9 – 5**
- *Format:* Recorded solid ozokerite cylinder with larger hole at one end only. Paper inside couldn't be removed for inspection, but probably refers to an experiment of April 1892 and a page in LNM.

287801

- *Format:* Blank solid ozokerite cylinder with smaller hole at both ends (see **287749**).

287802

- *Inscription [in ozokerite]:* **1892 | April 30 | P 79 #4 [7 written over 2?]**
- *Inscription [on paper found inside]:* **1892 | April 30th | Expr 4. P. 79.**
- *Format:* Recorded graphophone cylinder on some nonstandard backing (see also “J” and “K”)
- *Documentation:* LNM 79

287803

- *Inscription in ozokerite:* **M.42 A-9-3 | P. 62**
- *Format:* Recorded solid ozokerite cylinder with larger hole at one end only.
- *Documentation:* Possibly LNM 62

287804

- *Inscription in ozokerite:* **May 2^d #6 | 1892 | M 3° | casts | A-B**
- *Format:* Recorded solid ozokerite cylinder with larger hole at one end only.

287805

- *Inscription:* Paper inside couldn't be removed for inspection, but probably refers to an experiment of April 1892 and a page in LNM.
- *Format:* Recorded solid ozokerite cylinder with larger hole at one end only.

287806

- *Inscription [in ozokerite]:* **1892 Feb 27 | Ex 2 Page 36**
- *Format:* Recorded solid ozokerite cylinder with larger hole at one end only.
- *Documentation:* LNM 36

287807

- *Inscription [in ozokerite, from existing transcription]:* **Exp 2 A-9-1**
- *Inscription [on paper found inside]:* **1892 | April 29th | Expr 3^d P 78**
- *Format:* Recorded solid ozokerite cylinder with larger hole at one end only.
- *Documentation:* LNM 78

287808

- *Inscription [in ozokerite]:* **Graphop Cylinder**
- *Format:* Blank solid ozokerite cylinder with larger hole at one end only.

287809

- *Inscription [in ozokerite]:* **A-11-Ex 2 P. 63 | 1892**
- *Inscription [on paper found inside]:* **1892 | April 30th | Expr #2. P. 79.**
- *Format:* Recorded solid ozokerite cylinder with larger hole at one end only.
- *Documentation:* LNM 79

287810

- *Inscription in ozokerite:* **Feb 27th 1892 Expr #2 | Page 37 R.N.**
- *Format:* Blank solid ozokerite cylinder with larger hole at one end only.
- *Documentation:* LNM 37

287811

- *Format:* Blank solid yellow wax cylinder, ~147 mm length, ~30 mm diameter, smaller hole in both ends (see **287749**). Similar to **287812**.

287812

- *Format:* Blank solid yellow wax cylinder, ~147 mm length, ~30 mm diameter, smaller hole in both ends (see **287749**). Similar to **287811**.

287813

- *Inscription [scratched in brass]:* **March 25 1892**
- *Format:* Brass cylinder, ~128 mm long, ~63 mm external diameter, ~32 mm internal diameter; plaster interior, mold for graphophone cylinder.
- *Documentation:* Probably LNM

287814

- *Format:* Brass cylinder, ~138 mm long, ~62 mm external diameter, ~33 mm internal diameter; plaster interior, mold for graphophone cylinder.
- *Documentation:* Probably LNM

287815

- *Format:* Brass cylinder, ~151 mm long, ~50 mm external diameter, ~32 mm internal diameter, plaster interior, mold for graphophone cylinder.
- *Documentation:* Probably LNM

287816

- *Inscription [scratched in brass]:* **1892 | Jan. 25 P 14-15-16-17+11 | Volta R. N.**
- *Format:* Brass cylinder, ~150 mm long, ~37 mm external diameter, ~32 mm internal diameter, nothing inside.
- *Documentation:* Probably LNM

287819: Number assigned to a group of thirty-two discs stored on a spindle; however, two individual discs bear other numbers (287821, 287823). Items are numbered here as found from top to bottom of spindle. All are yellow wax composition on thin cardboard discs, ~80 mm in diameter, ~7 mm diameter spindle hole, ~25 mm diameter uncoated area at center. Only two bear dates, both 15 January 1886.

- *Documentation:* Possibly LN 23:11-14.



287819 [1] = marked 287823 on reverse

- Recorded



287819 [2] = marked 287821 on reverse

- *Inscription [pencil on reverse]: Experiment with | Inertia Recorder | Jan. 15th 1886 | AGB*
- Recorded



287819 [3] = marked 287819 on reverse

- *Inscription [pencil on reverse]: Attempt to use | Inertia Recorder | Jan. 15th 1886 | AGB*
- Recorded



287819 [4]

- Recorded



287819 [5]



287819 [6]

- Recorded



287819 [7]



287819 [8]



287819 [9]



287819 [10]



287819 [11]



287819 [12]

- Recorded



287819 [13]



287819 [14]



287819 [15]



287819 [16]

- Recorded?



287819 [17]



287819 [18]



287819 [19]



287819 [20]



287819 [21]

- Recorded



287819 [22]



287819 [23]



287819 [24]



287819 [25]



287819 [26]



287819 [27]



287819 [28]



287819 [29]



287819 [30]



287819 [31]

- Recorded



287819 [32]

- Recorded

Part II: Items from accession number 58498 with catalog numbers in the 287000s

287830-287850 – Two boxes, with Columbia Phonograph Company labels, containing **nineteen** shaved and partially broken standard Edison phonograph cylinder blanks, individually numbered. One box is marked “to be shaved”; the other, “to be pared.” Probably furnished to AGB with the Edison phonograph put at his disposal in 1889; see e.g. HN 3:131ff.

287850 [A]

- *Labeled “287850” on lid, duplicating a number in the previous range.*
- Box of 15 standard graphophone cylinders, blank

287851

- Box of 15 standard graphophone cylinders, blank

287852

- Box of 15 standard graphophone cylinders, blank

287853

- Box of 13 standard graphophone cylinders, blank

287854

- Box of 13 standard graphophone cylinders, blank

287855

- Box containing 6 solid ozokerite graphophone cylinders with larger hole at one end only. One of the six has a recording on it.

287855 [A]

The number “287855” was also assigned to a wooden box containing photographic glass plates and prints. The group has since been renumbered 287855.01 through 287855.37, but I haven’t been able to verify how the numbers in this range were assigned to specific objects, so for the present I’ve identified the box as “A” and items within it numbered A1, A2, etc., from the front to the back of the substitute container, as they were stored as of 2011. To avoid confusion about the sequence of items, I have included photographic prints and negatives here regardless of whether they contain sound recordings or not.



287855 [A1]

- *Date:* 14 November 1884
- *Inscription [scratched at bottom or "center"]:* **Exp II Nov 14 1884 | HGR**
- *Format:* Photographic glass plate, rectangular portion of spiral phonographic trace, wide pitch, variable width, made with a stylus variably occluding a light beam (method 4 described in patent 341,213), "sawtooth" with light portion of trace towards center.



287855 [A2]

- *Date:* 14 October 1884
- *Inscription [scratched at top or "center"]:* **Oct 14th 1884 | H G Rogers**
- *Format:* Glass photographic plate showing portion of spiral phonographic trace, "narrow" pitch, format not evident.



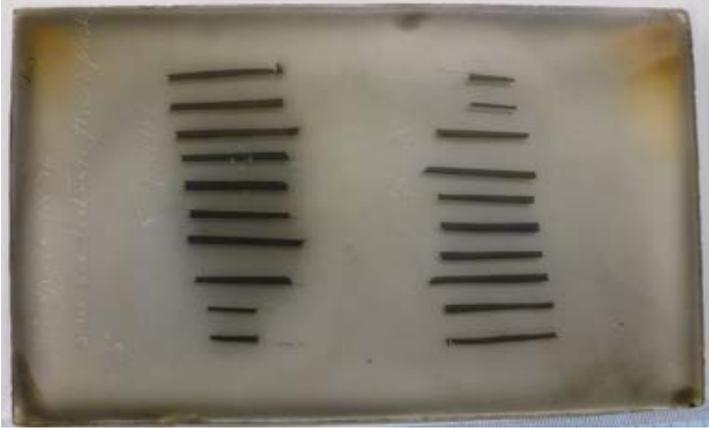
287855 [A3]

- *Date:* 15 April 1884
- *Inscription [scratched at bottom]:* **No 31 -- | jet by 1 spark | April 15th 1884 | H G Rogers**
- *Format:* Glass photographic plate, two images of jets modulated by sound, taken using the light of an electric spark.
- *Print:* 287855 [A33]
- *Documentation:* CBN 6:[33]-34



287855 [A4]

- *Date:* 14 November 1884
- *Inscription [scratched at bottom or "center"]:* **Exp I Nov 14th 1884 | HGR | Style vibrations | Enlarged direct abt. 7 times. | Style with spring.**
- *Format:* Photographic glass plate, rectangular portion of spiral phonographic trace, wide pitch, variable width, made with a stylus variably occluding a light beam (method 4 described in patent 341,213), "sawtooth" with light portion of trace towards center.
- *Duplicate:* 287855 [A18], 287855 [A19]



287855 [A5]

- *Date:* 11 April 1884
- *Inscription:* **XIII | 11th April 1884 | 4 inches distance from Spark | 5 Sparks | 1 Spark**
- *Format:* Photographic glass plate, two sets of images taken with the light of an electric spark, apparently through rectangular holes cut in some opaque material (turned upside-down for the second exposure).
- *Documentation:* CBN 6:[33]



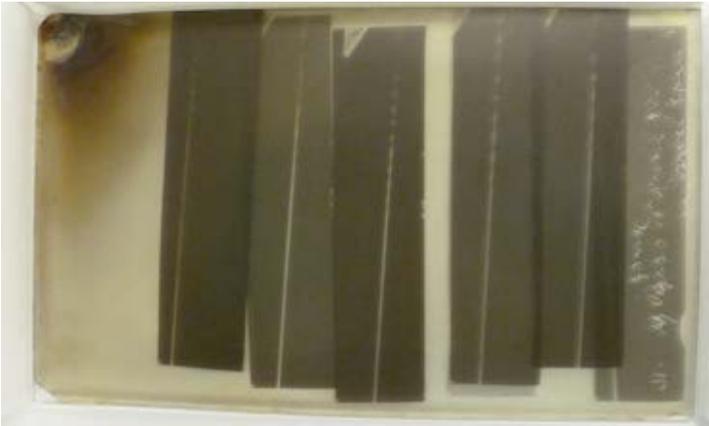
287855 [A6]

- *Date:* 14 April 1884
- *Inscription:* **#30 | No 28 Enlarged 4 times | H G Rogers | 14 April 84**
- *Format:* Glass photographic plate, enlarged detail of spiral phonographic trace, variable density, nappe method (method 1 in patent 341,213).



287855 [A7]

- *Date:* 8 December 1884
- *Inscription:* **Style vib. | 8th Dec 84 – HGR | no**



287855 [A8]

- *Date:* 16 April 1884
- *Inscription:* **31 | spark | H G Rogers 16th April 84 | vowel sound**
- *Format:* Photographic glass plate, five images of jets modulated by vowel sounds, taken with the light of electric sparks.
- *Prints:* 287855 [A31], 287855 [A35]
- *Documentation:* CBN 6:34



287855 [A9]

- *Date:* 19 April 1884
- *Inscription [at bottom left]:* **19th April 84 | H G Rogers**
- *Inscription [at “center”]:* [undeciphered]
- *Format:* Glass photographic plate, transparent emulsion similar to photographic duplicates such as **287654.6** and **287855 [18]**. Rectangular portion of spiral phonographic trace, variable density (presumably nappe method).



287855 [A10]

- *Date:* 10 May 1884
- *Inscription [at “center”]:* **10th May 84 | nappe | slit ¼ inch | from point of jet. | very fine vibrations | H G Rogers**
- *Inscription [upper right corner]:* **Solution Cal. | Bichr. | Potas.**
- *Format:* Photographic glass plate; rectangular portion of spiral phonographic trace, variable density, nappe method.



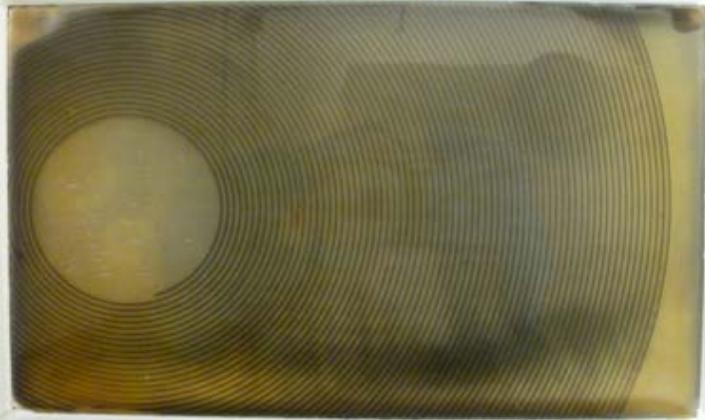
287855 [A11]

- *Date:* 14 April 1884
- *Inscription [bottom]:* **Enlarged 4 times nearly. | AGB | April 14th /84 | No. 25 | Copy | April 10th 1884 | H G Rogers [top upside down]: jet falling before slit**
- *Format:* Glass photographic plate, enlarged detail of spiral phonographic trace, variable width, “jet falling before slit” method (method 2 in patent 341,213).



287855 [A12]

- *Date:* 14 April 1884
- *Inscription [bottom]:* **No 29 | Enlarged 4 times (28) | H G Rogers 14th April 84**
- *Print:* 287855 [A36]
- *Format:* Glass photographic plate, enlarged detail of spiral phonographic trace, variable density, nappe method (method 1 in patent 341,213).



287855 [A13]

- *Date:* 5 April 1884
- *Inscription [“center”]:* **April 5th 1884 | H G Rogers | No 22 | AGB April 14th /84**
- *Format:* Photographic glass plate, rectangular, displaying part of a phonographic spiral trace of variable density (nappe method), narrow pitch.
- *Print:* 287855 [A34]
- *Documentation:* CBN 6:27b-28



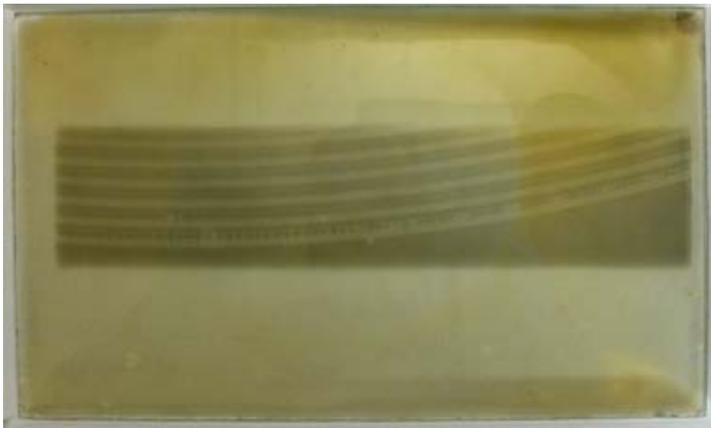
287855 [A14]

- *Date:* ca. March 1885
- *Format:* Glass photographic negative; image of disc recording machine.
- *Documentation:* CBN 7:9-10.



287855 [A15]

- *Date:* ca. May 1885
- *Format:* Glass photographic negative; image of disc recording machine built in March 1885, bearing the disc now found on 287655† (q.v.).
- *Documentation:* CBN 7:9-10; at 7:12 he writes: “I must postpone description of my latest machine until I can get Mr. Rogers to photograph them for me.” One new machine had just been completed, but “them” implies that none of the recent disc machines had then been photographed.
- *Duplicate:* Smithsonian negative 44,312-F is at least from a common source.



287855 [A16]

- *Date:* 14 April 1884
- *Inscription:* **Enlarged 4 times nearly | AGB April 14th /84 | No 27 | April 10th 1884 | H G Rogers**
- *Format:* Glass photographic plate, enlarged detail of spiral phonographic trace, variable density (nappe method).



287855 [A17]

- *Date:* 20 October 1884
- *Inscription:* **20th Oct 1884 | HGR | Style vibrations**
- *Format:* Photographic glass plate, rectangular portion of spiral phonographic trace made with a stylus variably occluding a light beam (method 3 or 4 described in patent 341,213).



287855 [A18]

- *Duplicate of:* 287855 [A4]



287855 [A19]

- *Inscription [ink, on reverse]:* **Copy of Neg Nov 14th**
- *Duplicate of:* 287855 [A4]



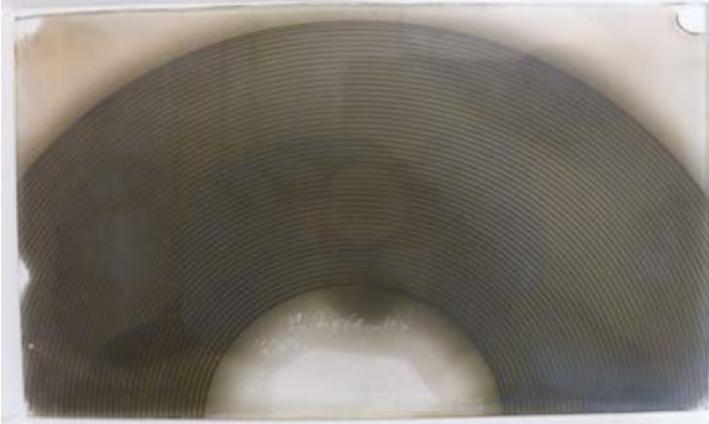
287855 [A20]

- *Date:* 10 May 1884
- *Inscription [bottom or "center"]:* **Made May 10th 1884 with jet [of] Bichromate of Potash | C[flaked away] light | S. T. | May 11th 188[4]**
- *Format:* Photographic glass plate; rectangular portion of spiral phonographic trace, variable density, nappe method.



287855 [A21]

- *Date:* 1 May 1884
- *Inscription:* **1st May 1884 | H G Rogers | apparatus for nappe**
- *Format:* Glass photographic negative; image of nappe recording apparatus, 1 May 1884; figure at side may be Charles Sumner Tainter.
- *Print:* 287855 [A32]
- *Duplicate:* Smithsonian negative 44,312-E is from a common source.
- *Documentation:* CBN 6:38



287855 [A22]

- *Date:* 1 November 1884
- *Inscription:* **1st November | 1884 | Style vibrations | H G Rogers**
- *Format:* Photographic glass plate, rectangular portion of spiral phonographic trace, variable width, made with a stylus variably occluding a light beam (method 4 described in patent 341,213).



287855 [A23]

- *Date:* ca. May 1885
- *Format:* Glass photographic negative; image of disc recording machine.
- *Duplicate:* Smithsonian negative 44,312-D is probably at least from a common source.
- *Documentation:* see notes on 287855 [A15]



287855 [A24]

- *Date:* 11 April 1884
- *Inscription:* [corner] **Nappe** | [center] **April 11th 84** | **H G Rogers** | **No 28** | **AGB** | **April 14th / 84**
- *Format:* Photographic glass plate, rectangular, portion of spiral phonographic trace, narrow pitch, variable density (nappe method)



287855 [A25]

- *Date:* 10 March 1884
- *Inscription:* **No 5** | **10th March 84** | **Sun condenser** | **rubber band on shutter** | **RR 6 x 5** | **Taken Mar. 10th 1884** | **S. T. Mar. 11—1884**
- *Format:* Glass photographic plate, image of jet modulated by sound, taken using sunlight (rather than light from an electric spark, as in later examples).
- *Documentation:* TAT 65-66.



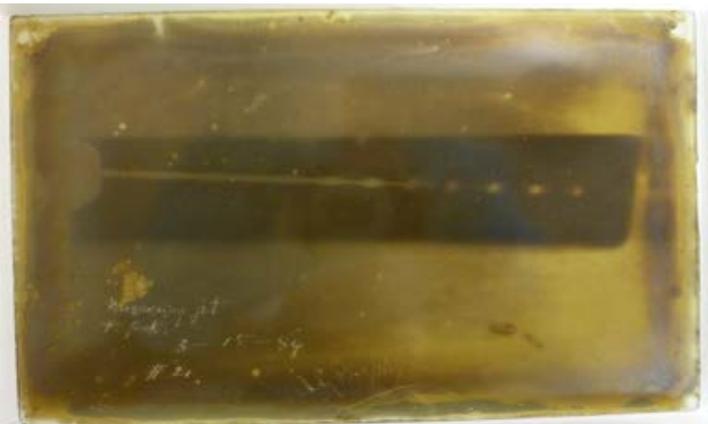
287855 [A26]

- *Date:* 13 May 1884
- *Inscription:* **primary | spark for dynamo. | 13th May 84 | HGR**



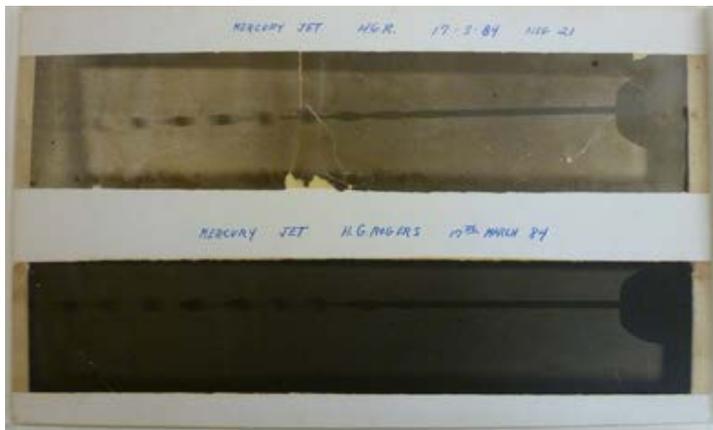
287855 [A27]

- *Date:* 8 December 1884
- *Inscription:* **Style vib. | 8th December 84 HGR**



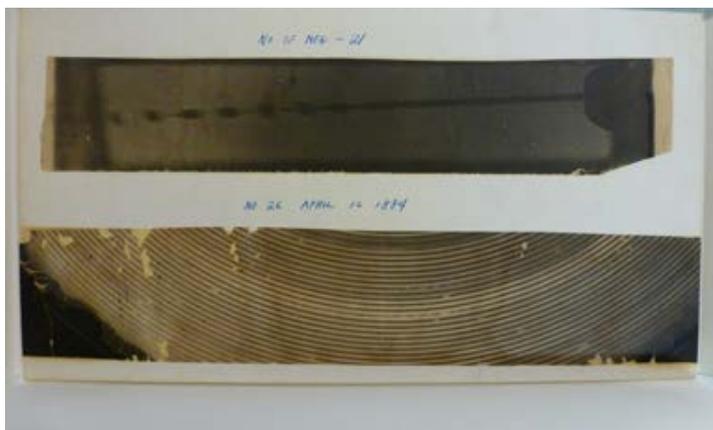
287855 [A28]

- *Date:* 15 March 1884
- *Inscription:* **mercury jet | + fork | 3-15-84 | #21 | H G Rogers**
- *Format:* Glass photographic plate, image of mercury jet modulated by sound of tuning fork.



287855 [A29]

- *Date:* 17 March 1884
- *Inscription [top, ink on paper, seemingly modern]:* **MERCURY JET | H.G.R. | 17-3-84 | NEG 21**
- *Inscription [bottom, ink on paper, seemingly modern]:* **MERCURY JET | H. G. ROGERS | 17TH MARCH 84**
- *Format:* Paper photographic prints, images of mercury jets modulated by sound



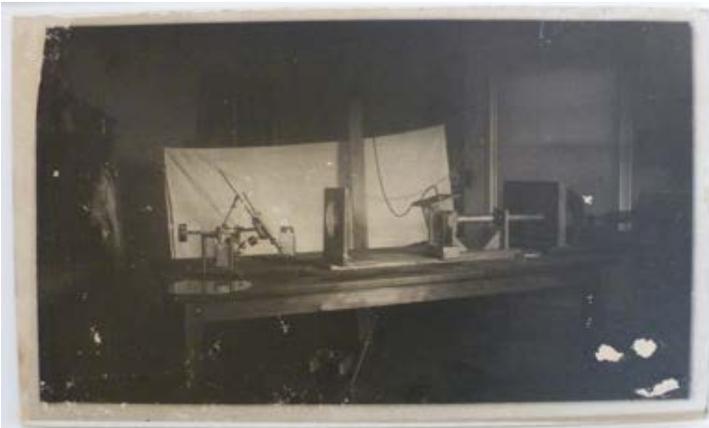
287855 [A30]

- *Date:* Top: ca. March 1884; Bottom: 16 April 1884
- *Inscription [top, ink on paper, seemingly modern]:* **NO OF NEG 21**
- *Inscription [bottom, ink on paper, seemingly modern]:* **NO 26 APRIL 16 1884**



287855 [A31]

- *Print of 287855 [A8]*



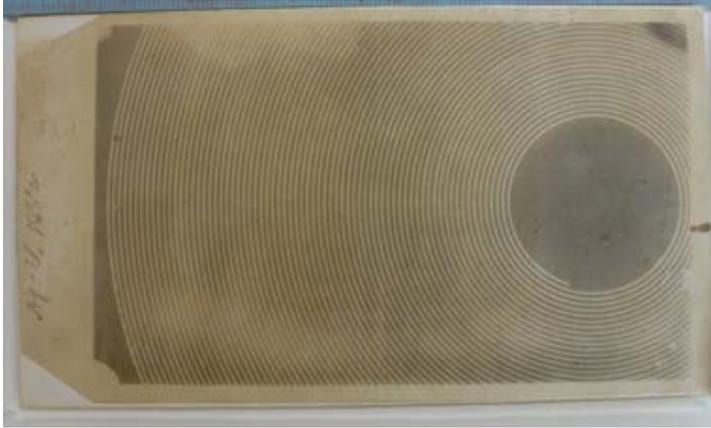
287855 [A32]

- *Print of 287855 [A21]*



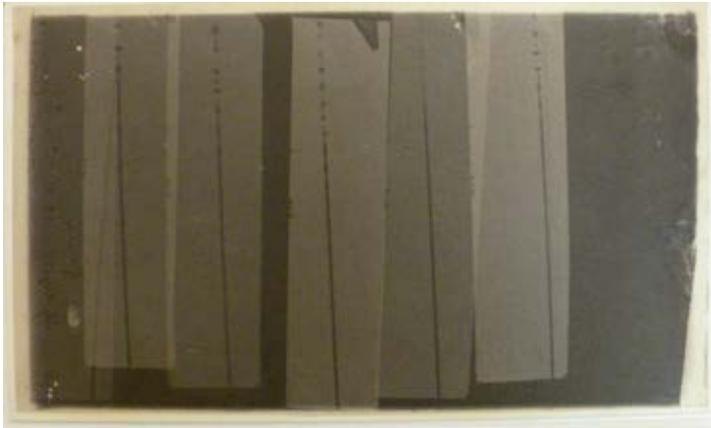
287855 [A33]

- *Print of 287855 [A3]*



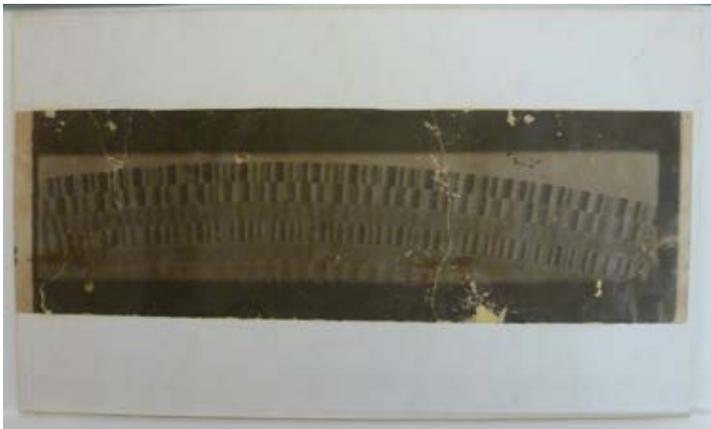
287855 [A34]

- *Print of 287855 [A13]*



287855 [A35]

- *Print of 287855 [A8]*



287855 [A36]

- *Print of 287855 [A12]*

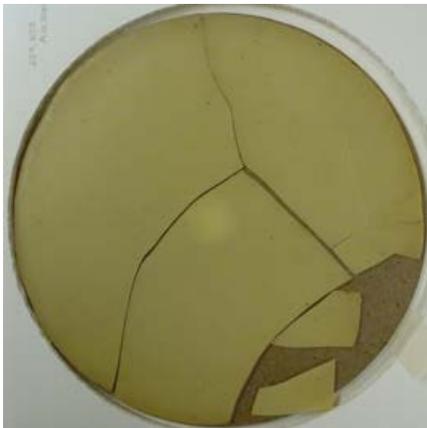
287856*

- *Older description:* Part of a range of “12-inch phonographic disks, made of paper, wax, tinfoil, copper, plaster paris, etc.” Not found in inventory, January 1934.



287857

- *In 2011, the holder identified this item with two catalog numbers: 287857 and 287892. It is now associated with only the first number.*
- *Date: ca. 1885*
- *Format: Yellow wax composition disc without backing and without center area removed, diameter ~230 mm; probably documents a stage in the manufacture of 1885-type discs.*



287858

- *Date: ca. 1885*
- *Format: Yellow wax composition disc, cracked, without center area removed; binder's-board backing with spindle hole; diameter of wax ~240 mm; probably documents a stage in the manufacture of 1885-type discs.*



287859

- *Date:* ca. 1883-84
- *Format:* plaster mold of vertically modulated phonogram, formed in brass ring, ~255 mm diameter; ~67 mm depressed area at center; ~34 mm spindle hole; pitch ~1.7 mm per rotation. Likely dates from before the adoption of cardboard backings in early 1885.



287860.01

- *Date:* mid-1880s?
- *Format:* plaster cast of laterally modulated recording, ~270 mm diameter, pitch ~2 mm per rotation, recessed center area ~70 mm diameter.
- *Related item:* Box "F" associated with catalog number 287860



287860.02

- *Date:* ca. 1885? (from 1881 master)
- *Format:* cardboard with plaster layer and tinfoil surface.
- *Duplicated from:* 287669
- *Related item:* Box “F” associated with catalog number 287860
- *Playback:* NMAH/LBL/LC collaboration, released April 2013.



287860.03

- *Date:* Created in or before March 1885 (see **287730**), perhaps in April 1884
- *Format:* Copper electrotype of a disc with a spiral phonogram—either a variable density phonogram created photographically, with variations in density translated into variations in height, or a vertically modulated phonogram cut with a broad, square stylus. “Narrow” trace pitch ~1.6 mm per rotation; ~260 mm diameter.
- *Duplicates:* 287730, 287861, 287864, 58498.13 [AD#3], 58498.10 [AD#21], 58498.43 [AD#44]; possibly also 58498.27 [AD#22].
- *Documentation:* Possibly CBN 6:27, 31 (describing a copper electrotype of a phonogram cut in wax composition on glass); or 6:[33] (speculation into a method of obtaining an electrotype of a photographically recorded glass disc via a wax impression); see also 6:2 for description of a cut groove that “presented the appearance of a broad line of varying transparency.”
- *Related item:* Box “F” associated with catalog number 287860



287861

- *Date:* 4 October 1884 [or, less likely, 1885]
- *Inscription [in pencil, at center]:* **No 2 | Oct 4th | HGR**
- *Format:* Disc phonogram pressed in paper, similar to 58498.13.
- *Duplicated from:* 287860.03



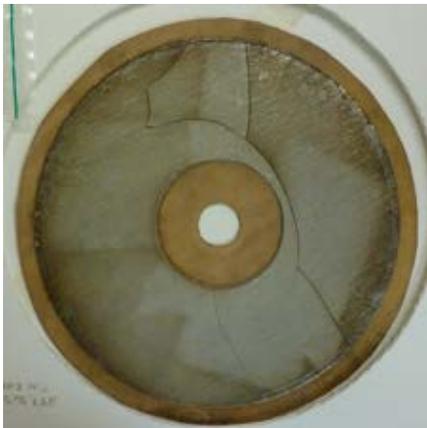
287862.01

- *Date:* 7 March 1885
- *Inscription [pencil, on back]:* **7th March | Glue & Plaster | under foil | HGR**
- *Format:* Negative disc phonogram pressed in tinfoil (now missing except for center area) on plaster on thin cardboard, diameter of impression would have been ~225 mm; recessed area at center ~70 mm; pitch ~1.8 mm per rotation.



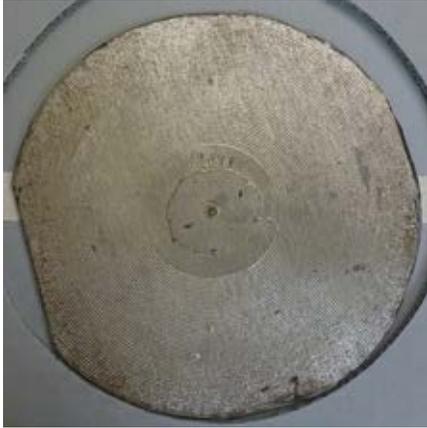
287862.02

- *Date:* ca. 1885
- *Format:* Phonogram in yellow wax composition on thin cardboard. Cardboard ~243 mm; spindle hole ~25 mm; outer diameter of wax coating ~215 mm; inner diameter ~75 mm; pitch ~1.8 mm per rotation. Attached tinfoil may belong to 287862.01. The diameter of the center recessed area differs from that of 287862.01 by ~10 mm, so 287862.01 is evidently not a duplicate of 287862.02.



287863

- *Date:* 18 February 1885
- *Inscription:* **thin | Feb. 18 / 85 | T N Gleeson**
- *Format:* Phonogram (appears at least partly recorded—cut or pressed) in silvery wax composition on thin cardboard. Cardboard ~235 mm; spindle hole ~25 mm; outer diameter of wax coating ~213 mm; inner diameter ~75 mm.



287864

- *Date:* ca. 1885
- *Format:* Pressing of spiral phonogram in aluminum foil over binder's board
- *Duplicated from* 287860.03



287865

- *Date:* ca. 1884-85
- *Format:* Metal spiral disc phonogram, appears to be similar format to **287860.03** (q.v.), and “bleed-through” into area between traces suggests a photographic recording method; trace pitch ~1.8 mm; diameter ~210 mm; center hole ~85 mm.



287866

- *Date:* ca. 1885
- *Format:* Raised ridge appears to be derived from a phonogram similar in format to **287860.03** (q.v.). Pitch ~1.9 mm per rotation, diameter ~214 mm; diameter of center area ~106 mm. Similar to M (q.v.).
- *Related items:* Fragments 58498.8 A B C D may also belong to this item. See also Box "F."



287867

- *Date:* ca. 1885
- *Format:* Wax composition on binder's board; cardboard ~236 mm; spindle hole ~25 mm; outer diameter of wax coating ~215 mm; inner diameter ~70 mm, multiple groove bands and pitches.



287868-A

- *Date:* ca. 1885
- *Format:* Wax composition on binder's board, cardboard ~255 mm; spindle hole ~25 mm; outer diameter of wax coating, ~233 mm; inner diameter ~77 mm, six edge notches, multiple groove bands, well modulated.



287868-B

- *Date:* ca. 1885
- *Format:* Wax composition on binder's board, cardboard ~245 mm; spindle hole ~25 mm; outer diameter of wax coating ~235 mm; inner diameter ~80 mm, multiple groove bands, well modulated.



287869

- *Date:* ca. 1885
- *Format:* Wax composition on binder's board, cardboard ~237 mm; spindle hole ~25 mm; outer diameter of wax coating ~222 mm; inner diameter ~70 mm, cracked surface.



287870

- *Date:* ca. 1885
- *Format:* Wax composition on binder's board; cardboard ~245 mm; spindle hole ~25 mm; outer diameter of wax coating ~229 mm; inner diameter ~72 mm, crazed surface.



287871

- *Date:* 13 April 1885
- *Inscription [pencil, near center]:* **AGB | April 13 1885**
- *Format:* Binder's board, seems formerly to have had a wax layer that is now missing; diameter ~242 mm; spindle hole ~25 mm; diameter of circle scratched near outer edge, ~225 mm; diameter of discolored center area, ~71 mm.
- *Documentation:* CBN 7:12



287872

- *Date:* ca. 1885
- *Format:* Wax composition on binder's board; cardboard ~253 mm; spindle hole ~27 mm; outer diameter of wax coating ~229 mm; inner diameter ~72 mm, crazed surface.



287873

- *Date:* ca. 1885
- *Format:* Wax composition on binder's board, cardboard ~253 mm; spindle hole ~25 mm; outer diameter of wax coating ~228 mm; inner diameter ~71 mm, multiple groove bands.



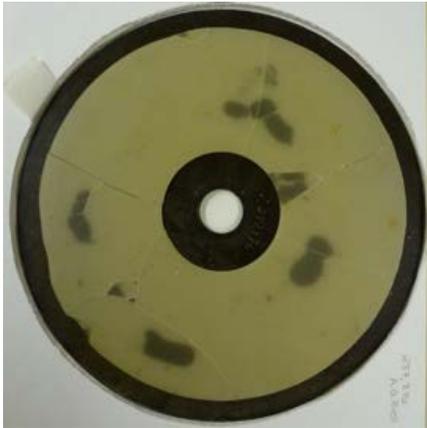
287874

- *Date:* ca. 1885
- *Format:* Wax composition on binder's board, cardboard ~240 mm; spindle hole ~30 mm; outer diameter of wax coating ~226 mm; inner diameter ~73 mm, cracked surface, multiple groove bands.



287875

- *Date:* ca. 1885
- *Format:* Binder's board without wax coating, diameter ~248 mm; spindle hole ~30 mm.



287876

- *Date:* ca. 1885
- *Format:* Wax composition on binder's board, cardboard ~259 mm; spindle hole ~29 mm; outer diameter of wax coating ~233 mm, inner diameter ~74 mm; cracked surface, appears lightly recorded.



287877

- *Date:* ca. 1885
- *Format:* Wax composition on binder's board, cardboard ~240 mm; spindle hole ~29 mm; outer diameter of wax coating ~218 mm, inner diameter ~75 mm; cracked surface, lightly recorded.



287878

- *Date:* ca. 1885
- *Format:* Wax composition on binder's board, cardboard ~250 mm; spindle hole ~25 mm; outer diameter of wax coating ~223 mm; inner diameter ~72 mm, crazed surface, lightly recorded.



287879

- *Date:* ca. 1885
- *Format:* Wax composition on binder's board, cardboard ~240 mm; spindle hole ~28 mm; outer diameter of wax coating ~230 mm; inner diameter ~75 mm, cracked or crazed surface.



287880

- *Date:* ca. 1885
- *Format:* Wax composition on binder's board, cardboard ~260 mm; spindle hole ~25 mm; outer diameter of wax coating ~230 mm; inner diameter ~75 mm.



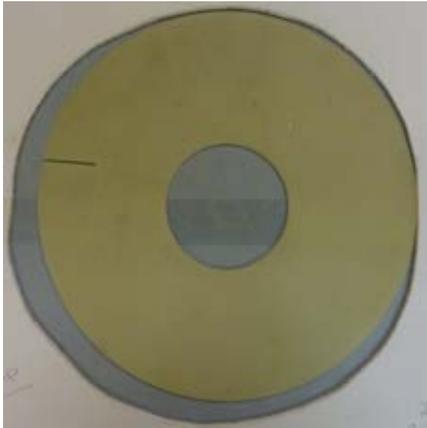
287881

- *Date:* 15 April 1885
- *Formerly labeled 287881-A; however, the previous “287881-B” has been identified conclusively with 287669, so there’s no longer any need to distinguish this disc as “A.”*
- *Inscription [in wax around center]:* **Record made April 15 1885 | AGB and C.A.B. | to test reproduction of numbers. | Disk A. G. B. No. 1**
- *Format:* White or transparent wax composition on binder’s board, cardboard ~243 mm; spindle hole ~25 mm; outer diameter of wax coating ~230 mm; inner diameter ~71 mm cracked surface (was stored upside down when found); single, well modulated groove band.
- *Documentation (287881.02):* A paper is stored in the cabinet with the recordings: **Contents of Disk AGB No 1. | Disk with Numbers | Experiment made April 15th 1885 | 1, 2, 3, 4 &c—to 50 | 10, 20, 30, 40 &c to 100 | 100, 200, 300 &c to 1000 | 1000, 2000, 3000, &c to 10,000 | 10,000; 20,000; 30000 &c to 100,000 | 100,000 200000 30000 [sic] to 1,000,000 | ~~3571 3571~~ 3571 | 3571 123,941 125,873 | 1,945,876 35,900 33878 | 48715 790042 4,530,870 | \$45.½ \$89.73 \$4029.46 | 35 cents. 25 cents 30 cents 50 cents | half a dollar a quarter dollar | 3 dollars & ½ \$5¼ \$7.29 | \$10½ \$3785.56 | This record has been made by Alexander Graham Bell in the presence of Dr. Chichester A. Bell—April 15th on the 15th of April 1885 at the Volta Laboratory 1221 Connecticut Avenue, Washington D. C. In witness whereof—hear my voice | Alexander Graham Bell -- Referenced in Floyd K. Harvey, “Mementos of Early Photographic Sound Recording,” *SMPTE Mot. Imag J.* 91:3 (March 1, 1982), 237-244, as evidence favorable to the existence of a recording of Alexander Graham Bell’s voice; however, Harvey did not make the connection with 287881.**
- *Playback (as “287881-A”):* NMAH/LBL/LC collaboration, released April 2013.
- *Related item:* Box “E”



287882

- *Date:* ca. 1885
- *Format:* Wax composition on binder's board, cardboard ~252 mm; spindle hole ~27 mm; outer diameter of wax coating ~230 mm; inner diameter ~76 mm, six edge notches, multiple groove bands.



287883

- *Date:* ca. 1885
- *Format:* Yellow wax composition disc with center area removed, outer diameter ~230 mm; inner diameter ~75 mm; probably documents a stage in the manufacture of 1885-type discs.



287884

- *Date:* ca. 1885
- *Format:* Yellow wax composition disc without center area removed, broken into two pieces, diameter ~240 mm; probably documents a stage in the manufacture of 1885-type discs.



287885

- *Date:* 16 February (?) 1885
- *Inscription [on back]:* **Same words & | style | 16th Feby | HGR**
- *Format:* Wax composition on thin cardboard; cardboard ~245 mm; spindle hole ~26 mm; outer diameter of wax coating ~220 mm; inner diameter ~76 mm; one groove band, pitch ~1.7 mm.
- *Note:* Date formerly read as “10 July”; it’s definitely “16” but “July” can’t be ruled out; compare **287895**. February better fits a chronology in which binder’s board superseded thin cardboard in April 1885 (see CBN 7:12).

287886* — see **R**

- *Older description:* Part of a range of “12-inch phonographic disks, made of paper, wax, tinfoil, copper, plaster paris, etc.” Missing in 1934.



287887

- *Date:* ca. 1885
- *Format:* Apparent negative impression of spiral phonogram with raised groove, pitch ~1.7 mm, in foil on a wax composition on thin cardboard, diameter ~250 mm; spindle hole notably off center ~25 mm; outer diameter of impression ~217 mm; inner diameter ~80 mm. Most of the wax and foil appears to have separated from the surface.



287888

- *Date:* 5 March 1885
- *Inscription (pencil, on reverse):* **blunt Style | Record taken right | on foil surface | 5th March | 85 | Wax**
- *Format:* Spiral phonogram in foil on a wax composition on thin cardboard; cardboard ~242 mm; spindle hole ~25 mm; outer diameter of wax coating ~212 mm; inner diameter ~78 mm; poor trace with narrow pitch; surface cracks.



287889

- *Date:* ca. 1885
- *Format:* Apparent effort to create a negative spiral vertically modulated phonogram in foil on a wax composition on thin cardboard; cardboard ~235 mm; spindle hole ~25 mm; outer diameter of coated area ~211 mm; inner diameter ~75 mm.
- *Related item:* Box "C"



287890

- *Date:* ca. 1885
- *Format:* Apparent effort to press a surface in foil on a wax composition on thin cardboard, no spindle hole; diameter ~240 mm. No visible recording.



287891

- *Date:* ca. 1885
- *Format:* Yellow wax composition disc without center area removed, diameter ~242 mm; probably documents a stage in the manufacture of 1885-type discs.

287892* – see 287857



287893

- *Date:* 7 March 1885
- *Inscription (pencil, on reverse):* **Pressed into | wax record | 7th-3-85 | Clay Putty | Thick foil;** possible “2” stamped in center area
- *Format:* Negative raised spiral phonogram in tinfoil over reddish clay on thin cardboard, diameter ~233 mm; raised center area ~72 mm; impression of spindle hole ~25 mm; pitch ~2 mm.



287894

- *Date:* ca. 1885
- *Format:* Apparent effort to press a spiral phonogram in foil on a wax composition on thin cardboard, diameter ~239; outer diameter of impression ~214 mm; inner circle ~75 mm; plugged ~25 mm spindle hole.



287895

- *Date:* 18 February (?) 1885
- *Inscription (pencil, on reverse):* **Paraff + wax | Insuff pressure endent | or material too hard | 18 Feby | HGR**
- *Format:* Positive spiral sunken vertically modulated groove phonogram, relatively wide pitch, pressed in tinfoil over a mixture of paraffin and wax on thin cardboard, diameter ~248 mm; outer diameter of raised coating ~222 mm; inner diameter ~76 mm; spindle hole ~25 mm.
- *Note:* Date formerly read as “18 July,” which cannot be ruled out; compare **287885**.



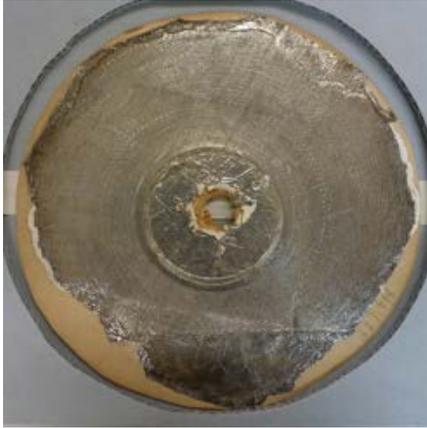
287896

- *Date:* ca. 1885
- *Format:* Wax composition on binder's board; cardboard ~255 mm; spindle hole ~25 mm; outer diameter of wax coating ~225 mm; inner diameter ~72 mm; multiple groove bands.



287897

- *Date:* ca. 1885
- *Format:* Wax composition on binder's board; cardboard ~237 mm; spindle hole ~25 mm; outer diameter of wax coating ~225 mm; inner diameter ~77 mm; crazed surface, multiple groove bands.



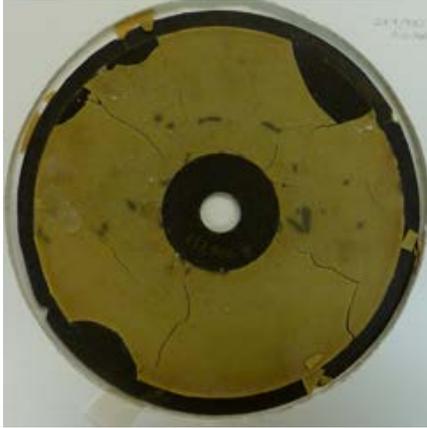
287898

- *Date:* ca. 1885? (from 1881 master)
- *Inscription (pencil on reverse):* **glue + plaster**
- *Format:* thin cardboard with plaster layer and tinfoil surface. Spindle hole bored through center.
- *Duplicated from:* 287669



287899

- *Format:* Spiral phonogram, sourced from an original that in places appears similar in format to **287860.03** (q.v.), pressed in foil on yellow wax composition on thin cardboard; cardboard ~248 mm; raised wax coated area ~220 mm; inner diameter ~80 mm. Spindle hole ~33 mm has a “plug” in it, protruding out underneath.



287900

- *Date:* ca. 1885
- *Format:* Yellow wax composition on binder's board; cardboard ~250 mm; spindle hole ~25 mm; outer diameter of wax coating ~232 mm; inner diameter ~75 mm, four small edge notches, cracked surface, perhaps two or three discrete groove bands



287901

- *Date:* ca. 1885
- *Format:* Wax composition on binder's board; cardboard ~246 mm; spindle hole ~25 mm; outer diameter of wax coating ~233, inner diameter ~75 mm, numerous well-modulated groove bands, pitch ~0.4 mm



287902

- *Date:* ca. 1885
- *Labeled* “287952” on folder in 2011; the correct number is written on the disc itself.
- *Format:* Wax composition on binder’s board; cardboard ~244 mm; outer diameter of wax coating ~230 mm; inner diameter ~75 mm; brass spindle hole adapter (?) at center, numerous groove bands, pitch ~0.4 mm



287903

- *Date:* ca. 1885
- *Format:* Wax composition on binder’s board; cardboard ~246 mm; spindle hole ~25 mm; outer diameter of wax coating ~232 mm, inner diameter ~75 mm, numerous groove bands, minor cracking.



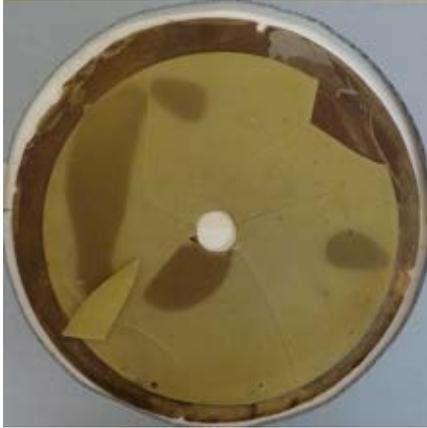
287904

- *Date:* ca. 1885
- *Inscription [pencil on reverse]:* **Wax | Copal**
- *Format:* Apparent pressing of disc phonogram in tinfoil on yellow wax composition on thin cardboard; surface cracked and broken with little grooving visible; cardboard ~248 mm; spindle hole ~25 mm; outer diameter of raised wax coating ~216 mm; inner diameter ~77 mm.



287905

- *Date:* ca. 1885
- *Format:* Thin cardboard permeated with wax composition, diameter ~245 mm; spindle hole ~25 mm.
- *Related item:* Box "C"



287906

- *Date:* ca. 1885
- *Inscription:* There is a “3” inscribed below the “6” in “287906” in the center area
- *Format:* Yellow wax composition on thin cardboard; cardboard ~248 mm; spindle hole ~25 mm; outer diameter of wax coating ~216 mm; surface cracked; *laterally* modulated trace; single groove band with groove pitch ~1.8 mm.



287907

- *Date:* ca. 1885
- *Inscription [wax, at center]:* **AGB & CAB | April 13 1885 | Not | so | good | as usual | AGB | Stock quotations | from Boston Journal | of April 6—taken | from N. Y. letter**
- *Format:* Yellow wax composition on binder’s board; cardboard ~250 mm; spindle hole ~25 mm; outer diameter of wax coating ~225 mm; vertically modulated recording, pitch ~0.6 mm.

287908*

- *Older description:* 9-inch composition disk. Not found in inventory Jan. 1934.



287909

- *Date:* 30 September 1885
- *Inscription [back, in ink]:* **Extract from Boston | Journal made by A. G. B. | September 30th 1885**
- *Format:* Vertically modulated spiral phonogram cut in wax composition on binder's board; diameter ~122 mm; center uncoated area ~24 mm; spindle hole ~6 mm; groove pitch ~0.25 mm.



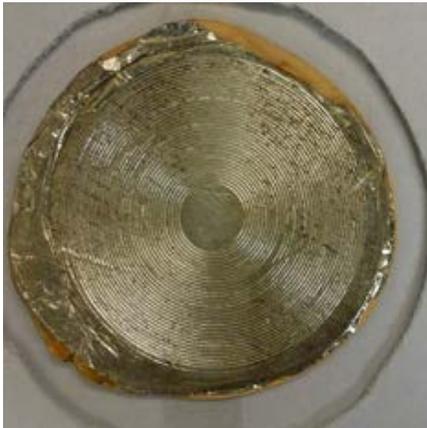
287910

- *Date:* September 1885
- *Inscription [back, in pencil]:* **Speech of N[...]| to the Roman [...]_{ns} | delivered by (1) A. G. B. & (2) C. A. B. | Sept. [...] 1885**
- *Format:* Vertically modulated spiral phonogram cut in wax composition on binder's board; diameter ~124 mm; center uncoated area ~24 mm; spindle hole ~6 mm; groove pitch ~0.25 mm.



287911

- *Date:* 21-25 October 1881
- *Format:* Laterally modulated phonogram pressed into tinfoil over wax on cardboard.
- *Documentation:* THN 3:53-55.
- *Duplicated from P*.*



287912

- *Date:* 21-25 October 1881
- *Format:* Laterally modulated phonogram pressed into tinfoil over wax on cardboard.
- *Documentation:* THN 3:53-55.
- *Duplicated from P*.*



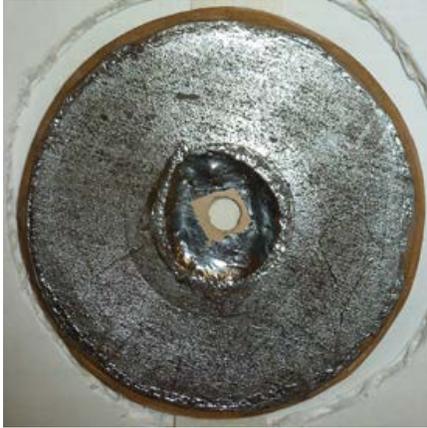
287913

- *Date:* ca. 1885-86
- *Format:* Vertically modulated disc phonogram, yellow wax composition on thin cardboard, ~75 mm diameter, spindle hole ~7 mm; raised center area ~24 mm.



287914

- *Date:* ca. 1885-86
- *Format:* Vertically modulated disc phonogram pressed in tinfoil on wax composition on binder's board, diameter ~75 mm, spindle hole ~7 mm; raised center area ~25 mm.
- *Duplicated from* a mold similar to 58498.4, though this is a less perfect "match" for that source than 287915-287919—the center raised area is smaller and there's no stray groove visible in the center area.



287915

- *Date:* ca. 1885-86
- *Format:* Vertically modulated disc phonogram pressed in tinfoil on wax composition on thin cardboard, diameter ~75 mm, spindle hole ~7 mm, with diamond-shape hole cut in tinfoil around it; depressed center area.
- *Probably duplicated from* 58498.4.



287916

- *Date:* ca. 1885-86
- *Format:* Vertically modulated disc phonogram pressed in tinfoil on wax composition on binder's board, diameter ~75 mm, spindle hole ~7 mm, with diamond-shape hole cut in tinfoil around it; raised center area ~27 mm.
- *Probably duplicated from* 58498.4.



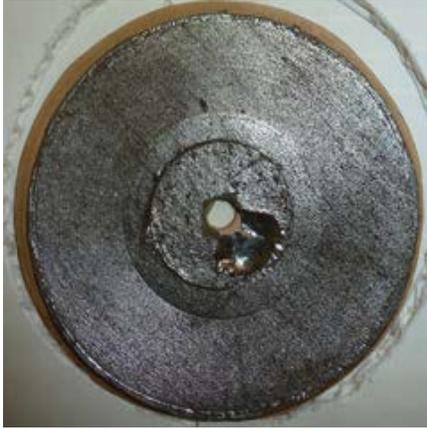
287917

- *Date:* ca. 1885-86
- *Format:* Vertically modulated disc phonogram pressed in tinfoil on wax composition on thin cardboard, diameter ~75 mm, spindle hole ~7 mm, with diamond-shape hole cut in tinfoil around it; raised center area ~27 mm.
- *Probably duplicated from* 58498.4.



287918

- *Date:* ca. 1885-86
- *Format:* Vertically modulated disc phonogram pressed in tinfoil on wax composition on thin cardboard, diameter ~75 mm, spindle hole ~7 mm, with diamond-shape hole cut in tinfoil around it; raised center area ~27 mm.
- *Probably duplicated from* 58498.4.



287919

- *Date:* ca. 1885-86
- *Format:* Vertically modulated disc phonogram pressed in tinfoil on wax composition on thin cardboard, diameter ~75 mm, spindle hole ~7 mm, with diamond-shape hole cut in tinfoil around it; raised center area ~26 mm.
- *Probably duplicated from* 58498.4.



287920

- *Date:* ca. 1883-85, probably 1884
- *Format:* Brass tray with outer lip and internal raised area, coated with a brilliant green wax composition, with a vertically modulated spiral phonogram, diameter ~270 mm; raised center area ~70 mm; spindle hole ~25 mm; pitch ~1.6 mm.
- *Documentation:* Probably CBN 6:4-9 (describing brass discs with wax), 22-23 (describing the use of Fuchsine or other materials to color wax for enhanced visibility).
- *Playback:* NMAH/LBL/LC collaboration pilot project, released December 2011

Part III: Items from accession number 58498 with catalog numbers starting at 58498.1

These catalog numbers were assigned in late 2011 to previously unnumbered objects, mostly discs. They were first assigned provisional numbers by Annie Dobberteen—"AD#8" and so forth—and subsequently given more permanent numbers of the form "58498.1." Some of these objects may correspond to "missing" numbers noted earlier in this document.



58498.1

- *Date:* ca. 1885
- *Formerly AD#8*
- *Format:* Apparent positive pressing of vertically modulated phonogram in binder's board impregnated with wax composition, with residual traces of a tinfoil layer. Diameter of impression ~215 mm; center area ~77 mm; spindle hole ~26 mm, pitch ~0.2 mm. Sourced from an original that in places appears similar in format to 287860.03.



58498.2

- *Date:* ca. 1885
- *Formerly AD#17*
- *Format:* Partial unbacked negative copper electrotype shell made from a vertically modulated spiral disc phonogram. Groove pitch ~1.6 mm; diameter would have been ~215 mm. Traces of gilt or something similar.



58498.3

- *Date:* 21-25 October 1881
- *Formerly AD#18*
- *Format:* Laterally modulated phonogram pressed into plaster, probably “modeling compound.”
- *Documentation:* THN 3:53-55.
- *Duplicated from P*.*



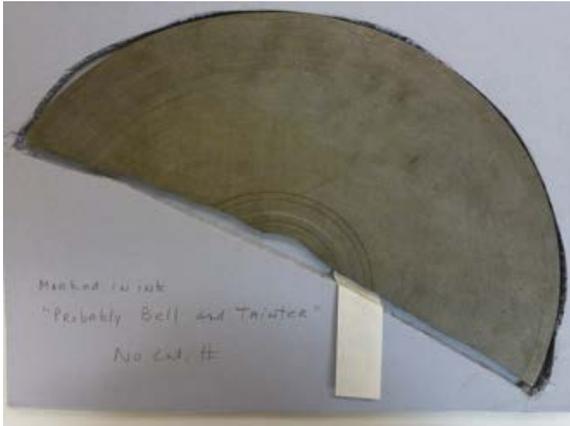
58498.4

- *Date:* ca. 1885-86
- *Formerly AD#20*
- *Format:* Copper electrotype negative of vertically modulated spiral phonogram, on thick type-metal (?) backing. Diameter ~75 mm; ungrooved center area ~38 mm; center hole ~26 mm; groove pitch ~0.25 mm.
- *Duplicates:* Probably 287915, 287916, 287917, 287918, 287919, 58498.9. Possibly also 287914, but that is a less perfect match and may be derived from a similar but different stamper.



58498.5

- *Date:* ca. 1885
- *Formerly AD#27*
- *Format:* Negative copper electrotype of vertically modulated spiral phonogram, pitch ~0.5 mm. Diameter ~205 mm; ungrooved center area ~90 mm; center hole ~83 mm. No backing.



58498.6

- *Date:* possibly mid-1880s
- *Formerly AD#2*
- *Format:* Broken half of tray of metallic material with raised lip around circumference, diameter ~360 mm, no apparent phonogram—status as a Volta Laboratory item appears to be in question, but it could be half of a support for the glass discs of 1884-85.



58498.7

- *Date:* 21-25 October 1881
- *Formerly AD#16*
- *Format:* Laterally modulated phonogram pressed into tinfoil over wax on paper.
- *Documentation:* THN 3:53-55.
- *Duplicated from P*.*



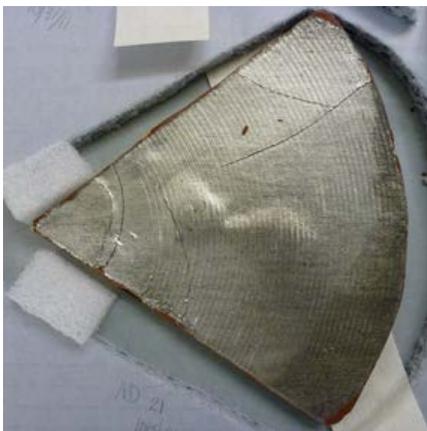
58498.8 A B C D

- *Date:* ca. 1885
- *Formerly AD#24 A B C D*
- *Format:* Broken fragments of plaster cast of disc phonogram, pitch ~2 mm per rotation.
- *Related item:* These fragments may belong to 287866 (q.v.).



58498.9

- *Date:* ca. 1885-86
- *Formerly AD#19*
- *Format:* Phonogram pressed in tinfoil on wax on thin cardboard, diameter ~73 mm, spindle hole ~7 mm, with diamond-shape hole cut in tinfoil around it; raised center area ~24 mm.
- *Probably duplicated from 58498.4.*



58498.10

- *Date:* ca. 1885
- *Formerly AD#21*
- *Format:* Wedge, partial pressing of disc phonogram on tinfoil on some red material on thin cardboard
- *Inscription [on back]:* lime
- *Duplicated from 287860.03*



58498.11

- *Date:* ca. 1885
- *Formerly AD#11*
- *Format:* Wax composition on binder's board. Cardboard ~256 mm; spindle hole ~25 mm; outer diameter of wax coating ~226 mm; inner diameter ~75 mm. Three narrow pitch groove bands and then, towards center, one wider pitch groove band. Minor surface cracks.



58498.12

- *Date:* ca. 1885
- *Formerly AD#13*
- *Format:* Wax composition on binder's board. Cardboard ~245 mm; spindle hole ~25 mm; outer diameter of wax coating ~228 mm; inner diameter ~87 mm. Center uncoated area is *raised*, comprised of two thicknesses of binder's board—not sunken as in other cases. Five narrow-pitch groove bands. Minor surface cracks.



58498.13

- *Date:* 4 October 1884 [or, less likely, 1885]
- *Formerly AD#3*
- *Inscription:* **No 3 | Oct 4th | HGR**
- *Format:* Disc phonogram pressed in paper, similar to 287861.
- *Duplicated from:* 287860.03



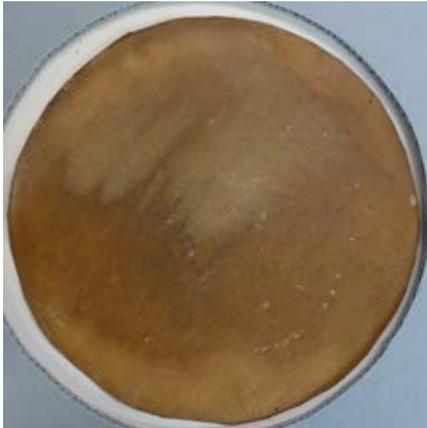
58498.14

- *Date:* ca. 1885
- *Formerly AD#4*
- *Format:* Binder's board disc, diameter ~238 mm; spindle hole ~25 mm. Scored and darkened areas may reflect a missing wax layer or preparation for the application of a wax layer.



58498.15

- *Date:* ca. 1885
- *Formerly AD#5*
- *Format:* Wax composition on binder's board. Cardboard ~233 mm; spindle hole ~25 mm; outer diameter of wax coating ~215 mm; inner diameter ~73 mm. Three groove bands.



58498.16

- *Date:* ca. 1885
- *Formerly AD#37*
- *Format:* Thin cardboard disc permeated with wax composition, diameter ~245 mm.

58498.17* — number not assigned



58498.18

- *Date:* 2 April (or 4 February?) 1885
- *Formerly AD#23*
- *Inscription (scratched into wax on back):* **2-4-85 | Foil pressed into | wax under a warm | ball of guttapercha | Found that did not get | rid of air bubbles | It would seem expedient | to use a ball of vulcanized | rubber (cold) | H. G. R.**
- *Format:* Tinfoil on yellow wax composition disc, diameter ~235 mm, outer diameter of impression ~210 mm; inner diameter ~76 mm; spindle hole ~26 mm plugged with a different wax composition; pitch ~1.6 mm.



58498.19

- *Date:* ca. 1885
- *Formerly AD#6*
- *Format:* Copper electrotype negative of vertically modulated spiral phonogram, probably cut in a wax composition. No backing. Diameter ~225 mm; inner hole ~75 mm, pitch ~1.8 mm.



58498.20

- *Date:* ca. 1885
- *Formerly AD#12*
- *Format:* Yellow or transparent wax composition on thin cardboard; cardboard ~247 mm; spindle hole ~25 mm; outer diameter of wax coating ~220 mm; inner diameter ~79 mm; multiple groove bands.



58498.21

- *Date:* ca. 1885
- *Formerly AD#14*
- *Format:* Yellow or transparent wax composition on thin cardboard; cardboard ~242 mm; spindle hole ~25 mm; outer diameter of wax coating ~218 mm; inner diameter ~77 mm, wide pitch, some surface cracking.
- *Inscription [on back, in ink]:* **wax paraff 1 | wax — 1 | thin** [and then in pencil:] **Equal Speed | The Cabinet met at noon** [possibly more text; difficult to read]



58498.22

- *Date:* ca. 1885
- *Formerly AD#7*
- *Format:* Thin cardboard disc infused with wax composition, diameter ~245 mm.



58498.23

- *Date:* ca. 1885
- *Formerly AD#9*
- *Format:* Copper electrotype negative of vertically modulated spiral phonogram, probably cut in a wax composition. No backing. Outer diameter (disregarding irregularities) ~230 mm; diameter of inner circle ~76 mm; pitch ~1.6 mm.



58498.24

- *Date:* ca. 1885
- *Formerly AD#10*
- *Format:* Copper electrotype negative of vertically modulated spiral phonogram, probably cut in a wax composition; outer diameter ~215 mm; inner diameter ~78 mm; pitch ~1.6 mm. No backing.

58498.25

- *This number has reportedly been assigned to a wax cylinder and may correspond to an item listed below in Part V.*

58498.26* — number not assigned



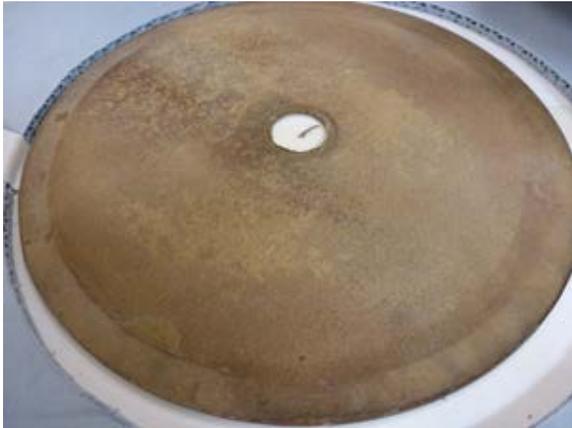
58498.27

- *Date:* ca. 1885
- *Formerly AD#22*
- *Format:* Wedge with portion of spiral phonogram pressed in foil on black material (pitch?) on thin cardboard.
- *Duplicated from 287860.03, or possibly from another source of similar format.*



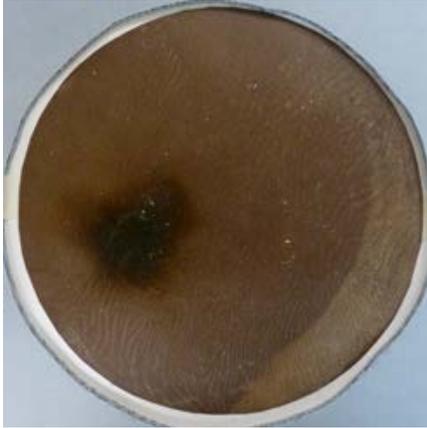
58498.28 A

- *Date:* ca. 1885
- *Formerly AD#15A*
- *Format:* Yellow wax composition on binder's board; cardboard ~255 mm, spindle hole ~25 mm; outer diameter of wax coating ~220 mm diameter wax coating; inner diameter ~36 mm.



58498.28 B

- *Date:* ca. 1885
- *Formerly AD#15 B; found stored underneath 58498.28 A.*
- *Format:* Disc of binder's board, residue from lost wax composition coating, dimensions roughly the same as 58498.28 A.



58498.29

- *Date:* ca. 1885
- *Formerly AD#29*
- *Format:* Thin cardboard disc infused with wax composition, diameter ~250 mm.



58498.30

- *Date:* ca. 1885
- *Formerly AD#30*
- *Format:* Dark or transparent wax composition on binder's board, ~187 mm diameter; ~25 mm spindle hole; ~75 mm uncoated center area. Multiple recorded bands, narrow pitch.



58498.31

- *Date:* 23 March 1889
- *Formerly AD#31*
- *Inscription on envelope:* **First Experiment with the Hand Graphophone | A G Bell | 1889**
- *Format:* Yellow wax composition on rectangular paper sheet, 268 mm × 188 mm, grooves ~4.4 mm apart, badly cracked, portions missing.
- *Documentation:* LN 28:119-121, 124-130
- *Content:* Voice of C. J. Bell, but supposed to have been an unsuccessful experiment.



58498.32

- *Date:* ca. 1885
- *Formerly AD#32*
- *Format:* Wax composition on binder's board; cardboard ~252 mm; spindle hole ~25 mm; outer diameter of wax coating ~237 mm; inner diameter ~75 mm.



58498.33

- *Date:* ca. 1885
- *Formerly AD#33*
- *Format:* Wax composition on binder's board; cardboard ~260 mm total diameter; ~25 mm spindle hole; outer diameter of wax coating ~230 mm; inner diameter ~72 mm.



58498.34

- *Date:* ca. 1885
- *Formerly AD#34*
- *Format:* Wax composition on binder's board, with irregular or unfinished edges to coating; cardboard ~240 mm; spindle hole ~26 mm; outer diameter of wax coating ~212 mm; inner diameter ~70 mm.



58498.35

- *Date:* ca. 1885
- *Formerly AD#35*
- *Format:* Wax composition on binder's board, with six edge notches; cardboard ~252 mm; spindle hole ~25 mm; outer diameter of wax coating ~226 mm; inner diameter ~75 mm; one groove band, wide pitch.



58498.36

- *Date:* ca. 1885
- *Formerly AD#36*
- *Format:* Wax composition on binder's board, with six edge notches; cardboard ~259 mm; spindle hole ~25 mm; outer diameter of wax coating ~232 mm; inner diameter ~78 mm; two groove bands, ~0.4 mm pitch.



58498.37

- *Date:* ca. 1885
- *Formerly AD#38*
- *Format:* Wax composition on binder's board; cardboard ~242 mm; spindle hole ~25 mm; outer diameter of wax coating ~215; inner diameter ~75 mm; multiple groove bands and pitches. Reverse displays a set of guide-rules for cutting discs from cardboard that has shifted slightly and so doesn't line up with the actual edges of this disc.



58498.38

- *Date:* ca. 1885
- *Formerly AD#39*
- *Format:* Thin cardboard disc infused with wax composition and with some material adhering to it; diameter ~248 mm.



58498.39

- *Date:* ca. 1885
- *Formerly AD#40*
- *Format:* Thin cardboard disc; diameter ~248 mm.



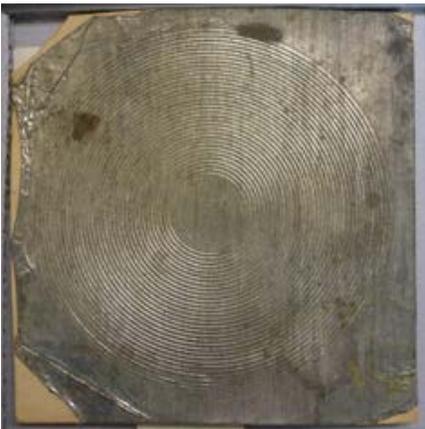
58498.40

- *Date:* 1885
- *Formerly AD#41*
- *Format:* A fourth cylinder of the same type as 287750 (q.v.)



58498.41

- *Date:* 11 March 1890
- *Formerly AD#42*
- *Inscription [top in black material]:* **1890 Mar. 11 | 2d impression** [see **L. R. N.** [broken]]
- *Inscription [rim of disc impression]:* **1890**
- *Inscription [center of disc impression]:* [undeciphered]
- *Documentation:* LN 29:116, "Experiment 10"
- *Format:* Spiral phonogram pressed in rectangular sheet of tinfoil on ozokerite on binder's board backing.
- *Duplicated from:* 287676



58498.42

- *Date:* 21-25 October 1881
- *Formerly AD#43*
- *Format:* Laterally modulated phonogram pressed into rectangular sheet of tinfoil over wax on paper backing.
- *Documentation:* THN 3:53-55.
- *Duplicated from* P*.



58498.43

- *Date:* 5 March 1885? (compare 287730)
- *Formerly AD#44*
- *Format:* Rectangular partial pressing of disc phonogram on tinfoil on a reddish composition on thin cardboard
- *Inscription [on back]:* **Dentis[...]** | **5th Mar[...]**
- *Duplicated from* 287860.03

58498.44* — not officially assigned, but see R

Part IV: Items from the sealed deposit of 1881

Members of the Volta group deposited three sealed packages with the Smithsonian Institution on 28 February 1880, 6 April 1880, and 20 October 1881 respectively. These were first opened together during a widely publicized event in 1937. Their contents seem to have been emptied out onto a table together, and the Smithsonian kept no official record of the proceedings,¹² with the result that some confusion seems to have arisen over which objects were in which packages, 312119 becoming misassociated with the 28 February 1880 deposit.



312119 [1]

- *Date:* Between 17 and 20 October 1881.
- *Format:* Negative electrotype of laterally modulated phonogram cut in paraffin-wax composition, ~95 mm diameter, unrecorded center area ~31 mm diameter; pitch ~0.65 mm.
- *Documentation:* THN 3:51, notes accompanying Volta Laboratory sealed package of October 1881.
- *Playback:* NMAH/LBL/LC collaboration pilot project, released December 2011, partial only (outer rotations in damaged portion of disc not included)

¹² See the press photograph of which prints are regularly available from seller khiramaddie on eBay under the name “1937 photo Boxes placed in Smithsonian in 1881 by telephone inventor opened f g2”; Charles G. Abbott to R. T. Barrett, 2 November 1937, NMAH accession document 162298.044.



312119 [2]

- *Date:* On or just before 17 October 1881
- *Format:* Negative electrotype of concentric circles scratched in paraffin-wax composition. No phonogram.
- *Documentation:* THN 3:47-4.



312123

- *Date:* Final recording made September 1881. Machine was in use for similar experiments throughout the preceding summer.
- *Format:* Edison phonograph with widened groove filled with wax and cut with a vertical recording.
- *Inscription (in ink, on attached card):* **The following words and sounds are recorded upon the cylinder of this Graphophone: “T-r-r—T-r-r—There are more things in heaven and earth Horatio, than are dreamed of in our philosophy—T-r-r—I am a Graphophone and my mother was a Phonograph.**
- *Documentation:* THN leading up to 3:44, Notes accompanying Volta Laboratory sealed package of October 1881. “This record, I [Tainter] believe, was dictated by Prof. A. Melville Bell, on Sept. 25th, 1881....” (TAT 25). “When I [Tainter, quoted by a journalist] had a model ready, we recorded a quotation from Shakespeare, spoken by Prof. A. Melville Bell, father of Alexander Graham Bell” (“Phonograph Said Perfected by San Diego Man, Not Bell,” *San Diego Union*, 29 October 1937).
- *Playback:* NMAH/LBL/LC collaboration, released April 2013.

Part V: Items without catalog numbers

A-K: UNNUMBERED CYLINDERS IN BOX 41, ACCESSION NUMBER 58498



A

- *Date:* 30 April / 2 May 1892
- *Inscription in ozokerite:* **May 2nd #5 | 1892**
- *Inscription on paper found inside:* **1892 | April 30th | Expr 3^d P. 79**
- *Format:* Recorded solid ozokerite cylinder, type with larger hole at one end, broken
- *Documentation:* LNM 79

B

- *Date:* ca. 1890
- *Format:* Blank standard graphophone cylinder, reddish printed interior with arrows

C

- *Date:* 24 May 1890
- *Inscription in ozokerite, top:* **AGB May 24 1890 C.W.H.E.**
- *Inscription in ozokerite, bottom:* **Page 176. May 24 1890 A**
- *Inscription in pencil inside:* **Arthur W McCurdy | May 24 1890 | J. H May 24 | 1890**
- *Format:* Recorded standard graphophone cylinder, reddish printed interior without arrows
- *Documentation:* LN 29:174-176
- *Content:* “numerals in Mr Ellis’ voice” (LN 29:175)
- *Significance:* First graphophone cylinder from which a molded duplicate was made that would play for its entire length.

D

- *Date:* ca. 1890
- *Format:* Recorded standard graphophone cylinder, reddish printed interior without arrows

E

- *Date:* 6 (?) December 1889
- *Inscription in ozokerite:* **Graphophone Record Made Dec 6 1889**
- *Format:* Recorded standard graphophone cylinder, reddish printed interior without arrows
- *Documentation:* The “6” is very uncertain; if actually 9 December 1889, this would likely correspond to HN 4:3, LN 26:71ff
- *Content, if above is valid:* “A good phonogram was taken which reproduced well in ordinary way (a letter from C. J. Bell)” (LN 26:73)

F

- *Date:* 29 May 1890
- *Inscription:* **May 29th 1890 Made at temp 101° Far. AGB. p. 189. [broken]**
- *Format:* Recorded standard graphophone cylinder, reddish printed interior with arrows
- *Documentation:* Probably LN 29:189-190
- *Content:* Probably “Procrastination is the thief of time &c” (LN 29:189)



G

- *Date:* 16 (or 11?) April 1892
- *Inscription in ozokerite:* **1892 | April 16 | Ex 2^d P 69**
- *Format:* Recorded half standard graphophone cylinder, reddish printed interior without arrows, ~73 mm long
- *Documentation:* LNM 69

H

- *Date:* 15 April 1892
- *Inscription in ozokerite:* **Ex 3 | Page 67 | April 15 | 1892**
- *Format:* Recorded half standard graphophone cylinder, reddish printed interior without arrows, ~75 mm long
- *Documentation:* LNM 67

I

- *Date:* 16 (?) April 1892
- *Inscription [in ozokerite]:* **Expr 3^d P 69 | April 16 | 1892**
- *Format:* Recorded half standard graphophone cylinder, whitish printed interior without arrows, ~70 mm long
- *Documentation:* LNM 69

J

- *Date:* 29 April 1892
- *Inscription in ozokerite:* **Print April 29th J. 190° F** [*“J” could be read as “at” from context, but it doesn’t look convincingly like it.*]
- *Inscription on paper found inside:* **1892 | April 29th | Expr 2^d P. 78.**
- *Format:* Recorded half ozokerite graphophone cylinder with nonstandard backing, like 287802, ~70 mm long
- *Documentation:* LNM 78

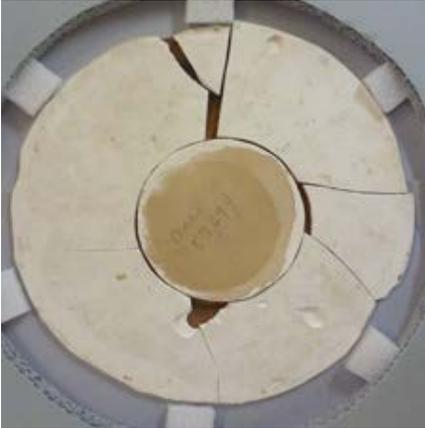
K

- *Date:* 29 April 1892
- *Inscription in ozokerite:* **1892 Apr 29 - Yum 185° F Ex 3** [*“Yum” could be read as “Tem” from context, i.e., “temperature,” but it doesn’t look convincingly like it*]
- *Inscription on paper found inside:* **1892 | April 29th | Expr 3^d P. 78.**
- *Format:* Recorded half ozokerite graphophone cylinder with nonstandard backing, like 287802, ~75 mm long
- *Documentation:* LNM 78

L: UNNUMBERED CYLINDER FRAGMENTS IN SEPARATE BOX**L**

- *Date:* 28 March (?) 1892
- *Inscription [in ozokerite, from existing transcription]:* **1892 –ch 28 P 5**
- *Format:* Broken fragments of solid ozokerite cylinder, apparently all belonging to the same cylinder
- *Documentation:* Probably LNM 5

M-O: UNNUMBERED DISCS IN VARIOUS LOCATIONS



M [AD#1]—in Box 1

- *Date:* ca. 1885
- *Format:* Broken plaster surface over copper electrotype shell made from vertically modulated disc phonogram, diameter ~220 mm. Plaster portion similar to **287866** (q.v.).
- *Note:* Unlike other “AD” items, this did not receive a catalog number in the 58498 series because it is marked as belonging to accession number 57694.



N – Stored in same folder with 314300 [1]—a Joseph Jones stamper—but unnumbered.

- *Date:* Somewhat resembles Volta experimental discs of 1890
- *Format:* Cardboard disc with fragments of translucent coating; diameter ~174 mm.



O, in same holder with 287714.02

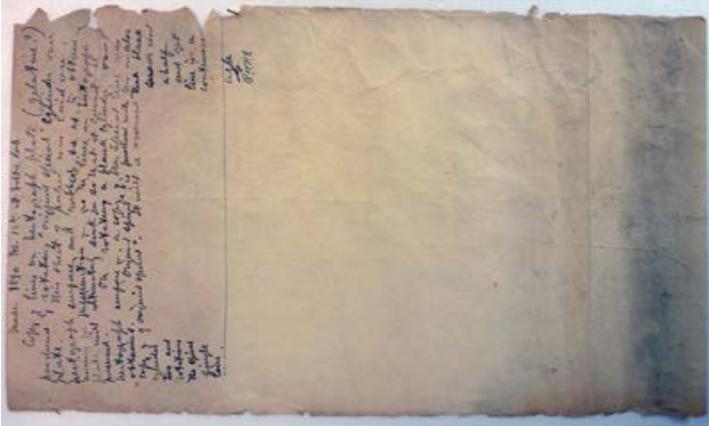
- *Date*: 28 February 1890
- *Inscription [scratched in center]*: **Feb 28 1890**
- *Inscription [ink on reverse]*: **Feb 28 1890 | Ozok. disc described on | p. 81 of Lab. R. N. also p. 82. | AGB**
- *Format*: Binder's-board disc with black material surface, spiral phonogram, ~167 mm diameter
- *Documentation*: LN 29:77-78 describes its preparation; LN 29:81-82.

P: ITEM NOT FOUND IN NMAH COLLECTION

P*

- *Date*: 21-25 October 1881
- *Format*: Copper electrotype negative of laterally modulated phonogram originally cut in paraffin wax composition (appears to have been a laterally cut recessed groove within a recessed groove). Diameter would have been ~95 mm in diameter. Trace would have run counterclockwise from periphery. Trace pitch ~1.05 mm. Diameter of innermost spiral ~20 mm.
- *Documentation*: THN 3:53-55.
- *Duplicates*: 287675, 287911, 287912, 58498.7 [AD#16], 58498.3 [AD#18], and 58498.42 [AD#43].

Q: EMBOSSED PAPER SHEET



- *Date:* 12 February 1890
- *Inscription:* Made 1890 Feb. 12th at Volta Lab. | Copy of lines on hectograph plate (gelatine?) produced by rotating “original spiral” cylinder over plate. This sheet of paper was laid on hectograph surface and rubbed so as to obtain tracing for preservation—as the lines on hectograph plate will ultimately sink in so that it cannot be preserved. On rotating a blank cylinder over hectograph surface—a copy of the spiral line was obtained. “Original spiral” is preserved with this—also “copy of of [sic] original spiral”. It will be observed that blank cylinder made about two and a half rotations and yet the spiral line is a single continuous line. | AGB | C. W. H. E.
- *Format:* Sheet of paper with embossed lines in unscripted rectangular area.
- *Documentation:* LN 29:38-39.
- *Related items:* See also 287738, 287739.

R: DISC LABELED 287,886



- *Date:* ca. 1885
- *Inscription of catalog number (scratched faintly across grooves):* **287,886**
- *Formerly AD#28 (see Part IV).* According to my notes, this disc was later assigned the number 58498.44. However, it is explicitly labeled 287886, so there may have been some effort to reconnect it with its original number. In any case, neither number is currently linked to an inventoried object, so this item should still probably be regarded as uncataloged.

- *Format:* Yellow wax composition on thin cardboard; cardboard ~248 mm; wax layer broken and partly detached; its outer diameter would have been ~217 mm; inner diameter ~77 mm.

BOXES (SEPARATED FROM OBJECTS THEY ONCE CONTAINED)

- A. Round cardboard box, diameter ~360 mm, labeled **Negatives** and **4 – 13³/₄**, marked with catalog numbers **287694** and **287654.4**.
 - B. Round cardboard box, diameter ~275 mm, labeled **Wax surfaces on pasteboard disks | AGB**
 - C. Round cardboard box, diameter ~275 mm, labeled ~~March 1885 | foil pressed with wax record~~ | **Records (1) Stock quotations &c | (2) Nursery rhymes and quotations**. Discoloration suggests it once contained seven ~75 mm discs with small spindle holes (perhaps **287913-287919**). Slip of paper apparently associated with this box states: **287889, 287905 and several wax discs w/ no cat. #**
 - D. Round cardboard box, diameter ~308 mm, labeled **Wax disks—AGB | glass surfaces | Ready Disks**
 - E. Round cardboard box labeled ~~Pasteboard disks showing stages of manufacture~~ | **Disk No 1 | Numbers** – the latter evidently refers to 287881.
 - F. Round cardboard box labeled **Impressions obtained by pressure on record.** | **AGB** – possibly also other faint writing. Note inside states: **In this Box 287866 | 287860 | 287859**
- Slip associated with one of the boxes, but unclear which: **No cat #s for All R this w records. Box marked with statement on back**

Part VI: Items held by other institutions

The vast majority of Volta experimental recordings that are known to survive today are held by the National Museum of American History. However, I've located one single disc in the Recorded Sound Reference Center at the Library of Congress, stored in a "cabinet of treasures" there that also contains a Berliner gramophone recording dated September 6, 1887:



- *Date:* 27 February 1890
- *Inscription [in wax at center]:* **Made | Feb. 27, 1890 | over | AGB**
- *Inscription [in ink on reverse]:* **Feb 27th 1890. | Cutting edge of style vertical | to surface of record as in | Exp. 5 – page 73 of Lab. R. N. | AGB**
- *Format:* Spiral phonogram cut in ozokerite surface on binder's board, cracked and partially delaminated.
- *Documentation:* LN 29:73.

Susan Boswell also confirms in an email of May 2013 that the archival collection of the Alexander Graham Bell Foundation contains "wax discs with unspecified recordings." Given that description, these are likely to be other experimental recordings of the 1880s or 1890s that remained at the Volta Bureau after 1915. The foundation's archives are managed by the History Factory, but I have no further information about these materials at this time.