

*Copy of Meucci's Note Book.*

STATE OF NEW YORK, :  
: SS:  
NEW YORK COUNTY. :

*105-*

I, MICHAEL LEMMI, hereby certify that the following is a correct translation of the Italian which I have made from a book in Mr. MEUCCI'S handwriting; said book was given to me by Mr. AMOS ROGERS, and contains marks by which I could recognize it to be the same book from which I have made the translation.

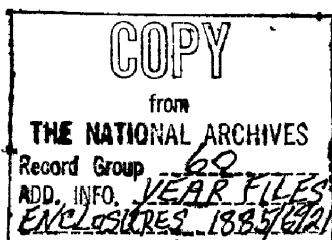
March 7th, 1862.

Cylindrical wooden tubes and pasteboard with animal membrane and copper wire with a cotton wrapper is conductor, but not for a long distance.

Those in tin with raw membrane saturated with Bicromate of potash are the best. If the membrane is made impermeable is better as it prevents being moistened by the breath in speaking.

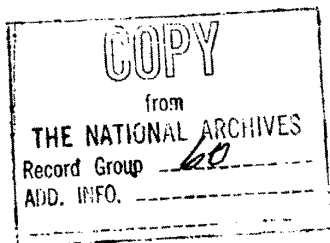
The copper wire wrapped with cotton saturated with salt-water, arabic gum and plumbago is very good, especially at long distance.

Uniting the two extremities of the wire with the earth, it becomes good conductor, taking the electricity of the earth and goes at long distance.



Box 10 230/3146/6

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The cylindrical tubes, filled with natural loadstone having a metallic conductor in the centre, and the two extremities communicating with a metallic disk in the earth, have given a very excellent result, communicating the electricity of the earth from a pole to the other, and it is very simple.

Paper membranes are not very good, being under the influence of the moist produced by the breath.

A good sized wire, surrounded with a thin copper wire, put in the middle of the usual hollow tin tube will be a fine conductor of electricity and can be of good use for families to speak with and in large manufactories, &c. &c.

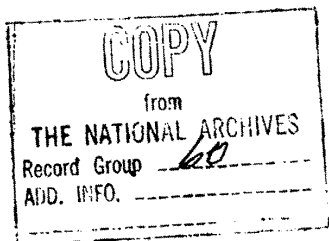
20th, May, 1862.

The wire saturated with any conductive substance is good to transmit the atmospheric electricity at long distance; but if this be helped by some galvanic batteries it will be yet better.

The wire wrapped in hemp saturated with a composition of plumbago, water and muriatic acid, gives a stronger conductor and transfers very well the sound of the voice.

At the centre of the wire, a strong magnetic iron protected by a bobbin do not need any battery at all and is a good conductor of the sound.

The cylindrical tube it is better be made of metal than pasteboard and the best membrane is the animal one saturated with bicromate of potash.



I do not find the DANIEL'S battery so strong and quick as the BUSSEN'S - may be that the latter is so in cause of the charcoal or platine they have in the porous tube.

The circular iron piece made by Mr. CESTER is very good and very magnetic, but if the interior bobbins were made with thinner wire, they would multiply the resistance for many miles more.

August 17th, 1870.

*Manilla  
later than*

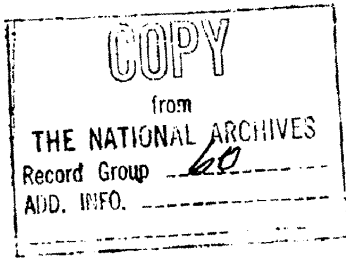
Several kinds of diaphragm Manilla paper, saturated with sulphoric acid and a part of water, stretched upon a tube and after dried, saturating it next with parafine or wax and plumbago, will make a good diaphragm.

The same paper saturated with nitrate of silver and parafine or wax, as the one said before, is good.

Linen, cotton or silk saturated with a solution of nitrate of silver, starch and a mixture of parafine or wax, have proved to me to be good diaphragms; but to use them it is necessary to put a small disk of iron in the centre, in order to have them in contact with the magnetic iron of the bobbin which communicates the electricity by his vibration when the sound pass through.

All these membrane must be kept stretched as the skin in a drum, but I have always remarked that they are too much under the influence of moisture, and by the frequent use they get elastic.

I have used these membranes under the bobbin



putting a twisted wire made of two copper wires, and placing in the centre an iron disk to combine with the magnetic bar of the bobbin.

(Written with pencil) To be adopted, for having long distance bundles of copper wire isolated with cotton or any other kind of wrapper, by this means I have obtained a distance of about one mile. (Here ends the writing with pencil).

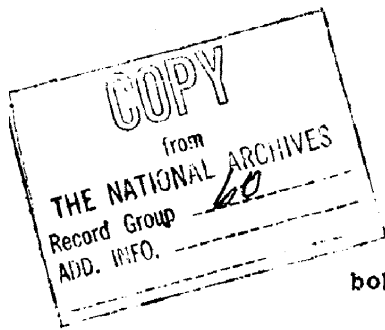
S e p t e m b e r 3 r d , 1 8 7 0 .

*Induction  
Relay*

Put in a tin tube or wooden tube a cylindrical paper envelope filled with cracked loadstone passing the conductor in the centre, I found it to transfer very clearly the sound of the voice, keeping always the two ends of the conductor united to the earth.

I made also the experiment by putting in the middle of said paper tube, some pieces of loadstone, surrounding it with some filed iron - it became strongly magnetic, and it is a fine conductor of electricity, as much as a bobbin. I used always the system of communicating the extremities of the conductor with the earth.

Experiment made the 27th inst. I put at the middle of the conductor, a magnetized horse-shoe, the two bars, that is to say, the two poles N. S. united to the conductor - it gave me good satisfaction, but if the conductor were of copper instead of iron, I think it would be better (to be tried) as to unite to the centre of the conductor a strong bobbin, placing in the centre of said



bobbin a strong magnetic iron bar, or if not placing it before the tube to transmit with one of the poles, the other pole being in contact with the earth.

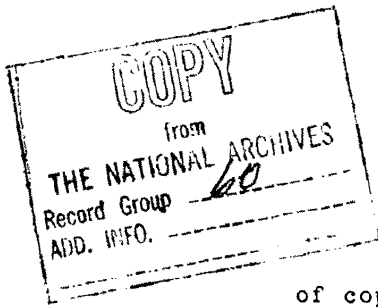
*cuts*

*swires*

The experiments I made by these methods, are all very good, but they want to be tried more practically and I cannot do it for want of the necessary materials.

The best methods are the bobbin or loadstone, but the horse-shoe is better to have it put before the instrument, be it the receiver or the transmitter, as that to receive the earthen electricity, placing the conductor as it is shown by drawing No. 4 which works like if it was helped by a galvanic battery.

If instead of hemp or cotton for wrappers of the conductor it is used a metallic conductor, using the same method above described without any galvanic battery, the result will be the same, but I wish to form a constant dry battery of long durability.



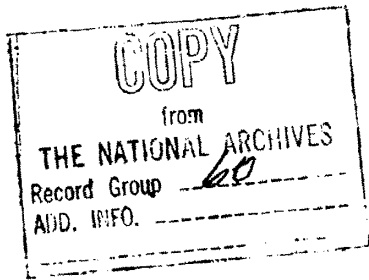
I think that forming some disks with sulphate of copper with 4% of Bicromate of potash as negative pole and as positive pole, those made with sulphate of Zinc with 4% of Bicromate of potash, as the above said, forming like a Volta's Battery between said disks, to separate them a disk of blotting pastboard, this also bathed with a solution of Bicromate or common salt, and all this battery like a column protected by a wrapper of any kind of porous material as linen, pastboard &c. the conductor of the first disk at the bottom will communicate the negative electricity, being of sulphate of copper to a round plate of pure charcoal and that of the sulphate of Zinc to the superior part will communicate his positive electricity will be also made with charcoal or if not the two conductors aforesaid will be in platine.

A n o t h e r .

Made some pastboard disk, from one side a surface of ossid of Zinc diluted in water with some gum in it and a solution of sulphoric acid diluted with plenty water. The other side a surface of soot diluted with water and gum and a solution of Bicromate of potash, water and sulphoric acid.

A n o t h e r .

*Plate*  
Pastboard disks with other disks of Zinc very thin as said and the pastboard disk bathed with a solution of sulphoric acid and water uniting other disks with soot forming the battery.



A n o t h e r.

Pastboard disk bathed with salt-water with a tin disk and other disks with soot.

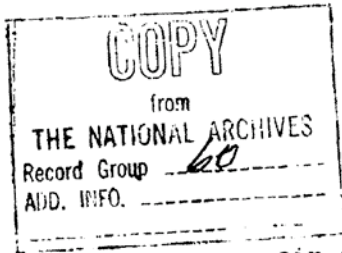
X  
Method for those persons working under water called divers helped by the telephone to speak with. *telegraph portable system*

*Seven*  
This method consist by introducing in the interior of the air pipe two conductors belonging to an electric battery placed on top of the water or other called machine, one of the said conductors, the positive one will communicate to the mask of the Diver where a telephone will be placed and the other negative will discharge on the earth upon the water. With this method he will be able of talking easily with the men that are on deck keeping guard, and that are watching the signals made with the rope, instead with the telephone they will be able of talking easily.

The apparatus on board where are the men on guard for watching the Diver signals is the same adopted for the fog which being placed at a certain distance from the men, the voice of said men will be received by said apparatus and transmitted with great facility to the Diver.

One or two men on board will have placed to their ears an apparatus by means of which to receive without fail, all kinds of signals spoken by the Diver.

The air pipe being of a good size will easily contain the two united conductors which being isolated as ordinarily, they will not be effected by the current of



air which is pumped in, and will be of no obstacle to the electric current of the battery. It is also very easy to use a larger air pipe if it is needed.

At the end of the india-rubber pipe, air will be connected to the conductor, a coil or bobbin having in his centre a magnetic in soft iron or in tempered steel to conduct the permanent electricity to the telephone in the mask of the Diver and to the other extremities of the conductors which are communicating to the apparatus of the ears of the men on board.

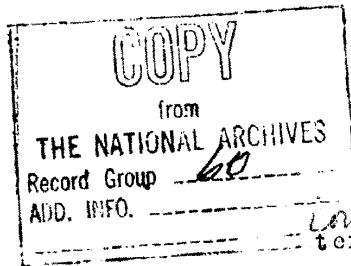
The mask of the Diver being in metal, the telephone which is attached to it must be isolated or of a substance not to communicate the electricity to the mask.

If the natural loadstone works at long distance there is no need of an electric battery.

The battery formed with disks of oxid of zinc do not work well and are no good.

No. 1. forming a cylindrical tube in copper, or pasteboard and loaded with loadstone in small fragments passing through his centre a tempered steel wire, to the top and bottom of the mica's tube it is to be placed a small steel disk to prevent the loadstone to come out, top and bottom to be screwed as to be kept all well locked tight. Around the said tube forming a bobbin in copper wire very thin wrapped in silk or cotton; the two extremities of the <sup>center</sup> hart will be secured under the button of the top of the tube and the bottom to the in-





terior button, and next put inside of the telephone transmitter and receiver, or in other case a steel tube tempered and filled with fragments of loadstone, and kept in order by the two buttons top and bottom screwed to the <sup>center</sup> hart which is passing across the tube as the afore said - which put inside of the telephonic instrument will produce the same effect to the membrane be it of iron or any other material as the drawing here described.

The screw of the central hart is good for a double object, first - to keep in pression the two buttons that are locking the tube, second - to guide the screwing with the purpose of the tube from the membrano and the bottom to connect with the conductor by means of a pressure screw.

But instead of uniting the two conductors of the bobbin to the hart in the centre it can be used the manner of connecting them to the two screws at the bottom of the instrument as usually done, one of the conductors communicating with the earth and the other to the line of transmission.

I, MICHAEL LEMMI being duly sworn say that the

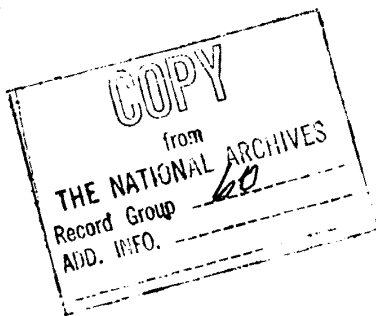
foregoing certificate made by me, is true and the translation is literally correct, and I made the drawings here with as found in the above mentioned book.

New York, 28th Sept<sup>r</sup> 1885.

MICHAEL LEMMI.

Subscribed & Sworn to before  
me this 28th day of September  
A. D., 1885.

Charles Taylor,  
Notary Public, 36,  
(L.S.) New York County.



I, ANTONIO MEUCCI, being duly sworn, state, that the above translation I have read, and it is correct.

That the Book from which said translation was made, is a book that I have owned since 1862, and kept by me for the purpose of noting down ideas of my invention in speaking telegraph from time to time as new or different ideas occurred to me, said Book also contains some notes or some of my other inventions.

That the several dates in the above translation is true, as to years. But as I remember the notes were made at different days in the years mentioned, as they come to me, and that part of the notes referring to Marine Telephone, I wrote in 1872, and occurred to me in consequence of my talking with a Diver, BILL CARROLL, about the wants of a telephone for the use of divers.

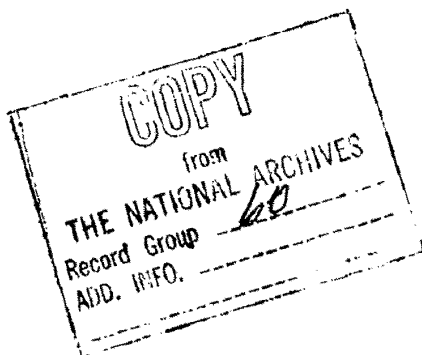
ANTONIO MEUCCI.

Subscribed and Sworn to before me  
this 28th day of September, A.D. 1885.

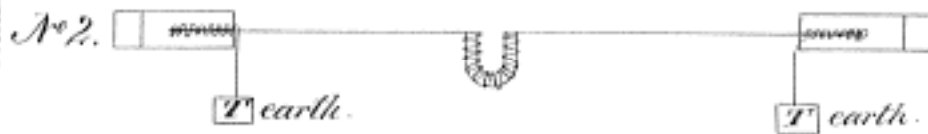
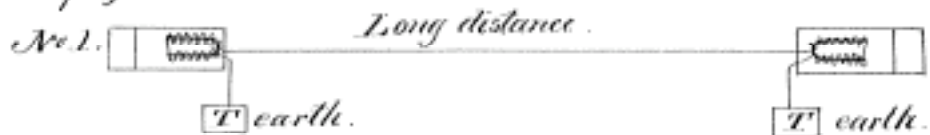
Charles Taylor,

Notary Public,

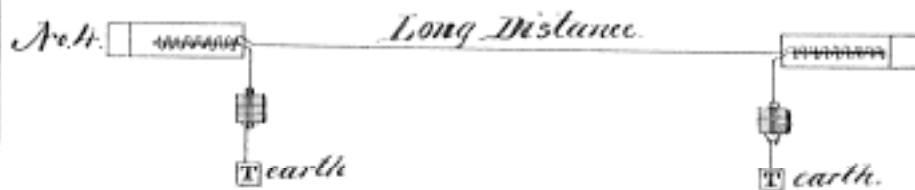
(L.S.) N. Y. County.



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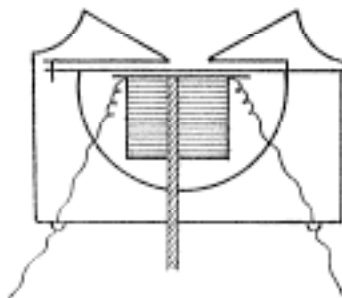
See page 5.



See page 8.



See page 9.



COPY

from  
THE NATIONAL ARCHIVES  
Record Group 62  
AID, I.F.O.

Dept. Cont. Dated March 25, 1886.

Department of Justice.

Number 2099	1886	Received
File No. 6921	1885	March 26, 1886.

From The Secretary.

SUBJECT:

Encs. additional papers in support of application for institution of suit agt. Bell Telephone Co.

Charged to

ACTION:

Ans. Incl. 26/86.

*M.B.A.*

DEPARTMENT OF THE INTERIOR,

WASHINGTON, March 25th, 1886.



The Honorable

The Acting Attorney General,

Sir:

I have the honor to enclose herewith additional papers in support of the application for the institution of suit in name of the U. S. for the purpose of testing the validity of the Bell Telephone patent.

These papers have been in the hands of Mr. Beckwith of counsel for one of the parties to the proceedings and were only recently returned to the Department.

Very respectfully,

*H. P. McClellan*  
*C. C. [unclear]* Secretary. *[Signature]*

4513 - 185  
21 enclosures.  
4633 - 185.  
2 enclosures.

Received of the Department of the Interior the following described papers relating to the Bell Telephone case, some being enclosures accompanying letter of Secretary of Interior to Attorney General dated March 25th, 1886, in re-institution of suit for cancellation of Bell patent.

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4513 - 85.

- Enclosure 1. Communication from D. Humphreys, attorney for the Globe Telephone Company, enumerating the affidavits transmitted.
- " 2. Copy of affidavit of Michael Lemmi, dated September 28, 1885.
  - " 4. Copy of affidavit of Torello Dendi, dated September 18, 1885 .
  - " 5. Copies of affidavits of Esterre Meucci, dated respectively April 2, 1880, and December 17, 1883.
  - " 6. Copy of affidavit of Chas. Bertolino, dated September 18, 1885.
  - " 7. Copy of affidavit of Angelo Bertolino, dated September 18, 1885.
  - " 8. Letters of Antonio Meucci, dated January 12, and

4513 - Continued.

January 19, 1872; also copy of agreement of A. Zilio Grandi, dated September 28, 1885.

Enclosure 9. Copy of affidavit of John Sidell, dated July 21, 1880; copy of affidavit of G. F. Secchi de Casali, dated July 23, 1880; copy of affidavit of Gaetano Negretti, dated July 5, 1880; copy of jurat of J. Schuyler Crosby, U.S. Consul Florence, Italy, dated July 5, 1880, attached copy of article of agreement between Meucci - Tremeschin - Grandi & Breguglio, dated December 12, 1871; copy of certification of same by Angelo Bertolino, N.P. dated December 12, 1871.

" 11. Copies of affidavits of Samuel L. Lewis, dated March 29, 1880; Wm. Bowen, dated March 29, 1880; Nestore Corradi, dated April 3, 1880; Luigi Tartarini, dated April 2, 1880; Fortunato Barbette, dated April 3, 1880; Enrico Bendelari, dated January 13, 1880; Lorenzo Ullo, dated June 19, 1880; Thomas D. Stetson, dated July 21, 1880.

" 12. Copy of affidavit Joseph Conti, dated September 22, 1885.

Enclosure 13. Copy of affidavit of Leonard D. Cunningham, dated October 10, 1885.



Enclosure 14. Copy of affidavit of Mrs Matilda Ciucci, dated  
September 23, 1885.

- " 15. Copy of affidavit of Nicolo Vanni, dated September  
19, 1885.
- " 17. Copy of affidavit of John Fleming, dated September 23, 1885
- " 18. Copy of affidavit of John Biggio, dated September 25,  
1885.
- " 19. Copy of translation of the affidavit of Domenico  
Lorini, by Michael Lemmi, dated October 9, 1885.
- " 20. Copy of affidavit of Maria Gregory, dated October 7,  
1885.
- " 21. Copy of affidavit of Alessandro Panizzi, dated  
September 18, 1885.
- " 22. Copy of affidavit of Frederick Bachmann.
- " 23. Copy of affidavit of Frederic Kassar, dated September  
28, 1885.
- " 25. Copy of affidavit of Domenico Marianna, dated October 22,  
1885.

4633

Enclosure 1. Letter from S.R. Beckwith, dated October 29, 1885.

- " 2. Copy of Meucci's caveat.

John Goode,  
Acting Atty. Genl.