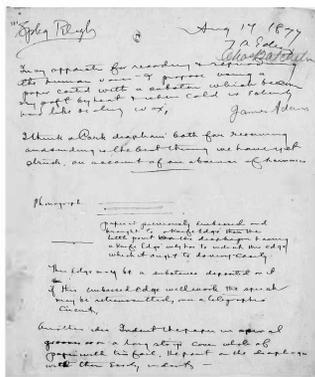


**Technical Note:  
Phonograph and  
Telephony**

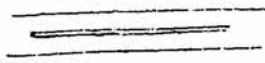


**Spkg Telegh.**

In my apparatus for recording & reproducing the human voice—I propose using a paper coated with a substance which becomes very soft by heat & when cold is extremely hard like sealing wax.<sup>1</sup>

I think a Cork diapham both for receiving and sending is the best thing we have yet struck, on account of an absence of harmonics<sup>2</sup>

**Phonograph.**

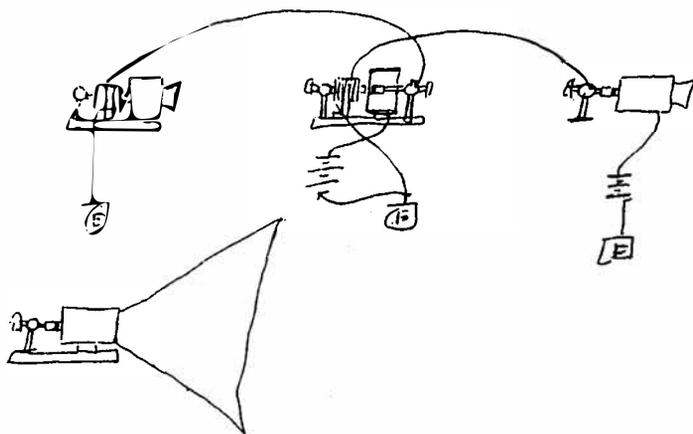


Paper is previously embossed and brought to a knife edge: then the little point ison the diaphragm having a knife edge only has to indent this edge which it ought to do very easily.

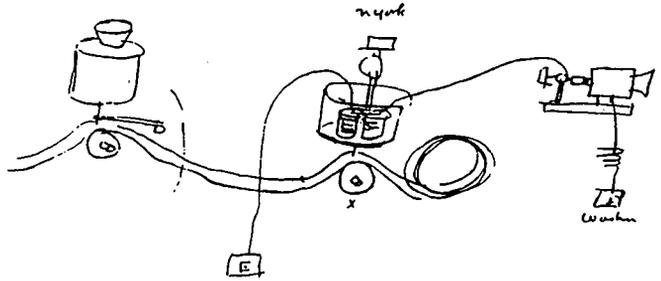
This edge may be a substance deposited on it the if this embossed edge will work the speech may be retransmitted. over a telegraphic circuit.

Another idea Indent the paper in spiral grooves or on a long strip cover whole of paper with tin foil. The point on the diaphragm withll then easily indent—

**Repeater for talking Telegh**

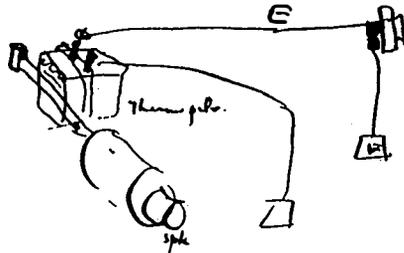
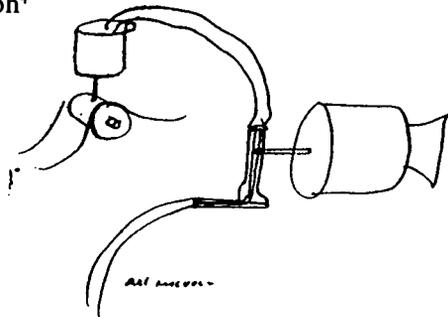


**Transmitter by which one can carry on a Communication anywhere in a room**

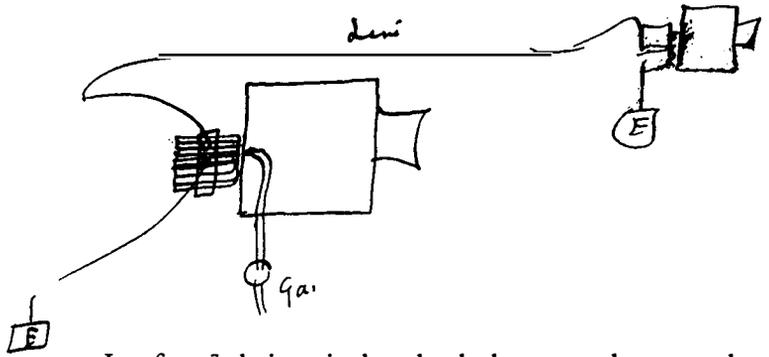


Reproduce in NY<sup>2</sup> the talking recorded on X by slowing up speed so as allow copyist to copy Record the talking by indenting.<sup>3</sup>

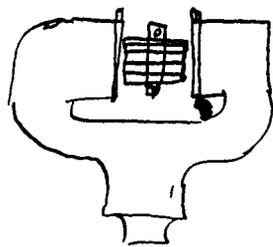
Phonograph<sup>4</sup>



X soft rubber<sup>5</sup> in spkg it stretches & heats & in regaining normal positn it becomes colder its only thing I know that loses heat instantly hence its movement by a diaphragm would generate heat waves & these acting of Thermopile would generate electric waves; & these acting in magnet & diaphragm at other end would be reproduced=<sup>6</sup>

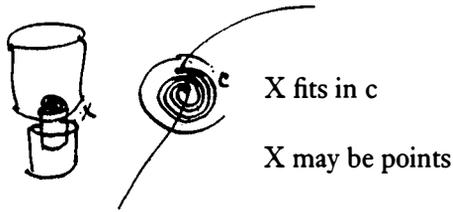


Jet of gas;<sup>7</sup> platina wire kept hot by battery and many other means keeps the metallic diapham hot this vibrates in close proximity to an exceedingly delicate thermo pile connected to the line. Perhaps something cool at the other end would be good

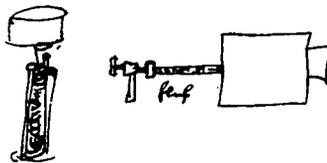
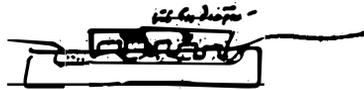


both diaphragms kept hot or one kept hot other cold or can use two diaphragms of <sup>b</sup> which one is ~~na~~ always naturally colder than the other =<sup>a</sup>

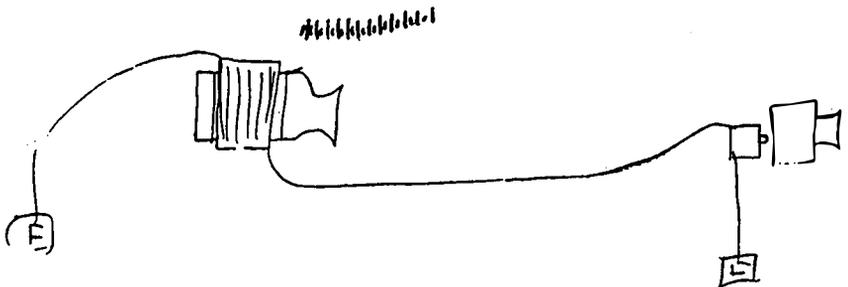
HO



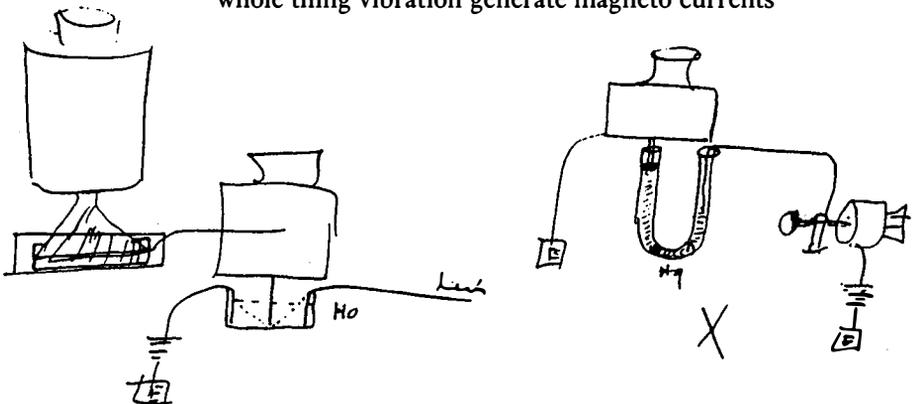
This is principle<sup>8</sup>



fluff<sup>9</sup> coated with a Semi-Cond or wet plated in or between 3 insulated pins [---ing from a plate?]<sup>c</sup> diaphragm has strght pin in it touching fluff & its contracted & expanded by the movement of the diaphragm

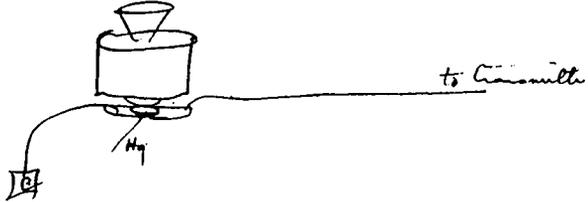


Tin tube closed ends &<sup>b</sup> covered with wire. Talk into it sets whole thing vibration generate magneto currents



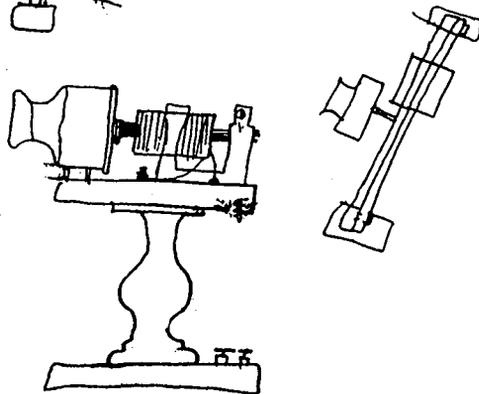
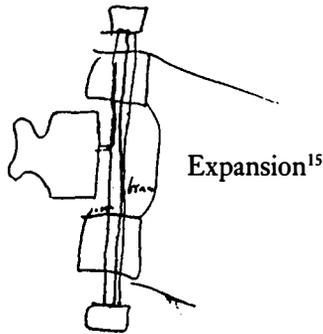
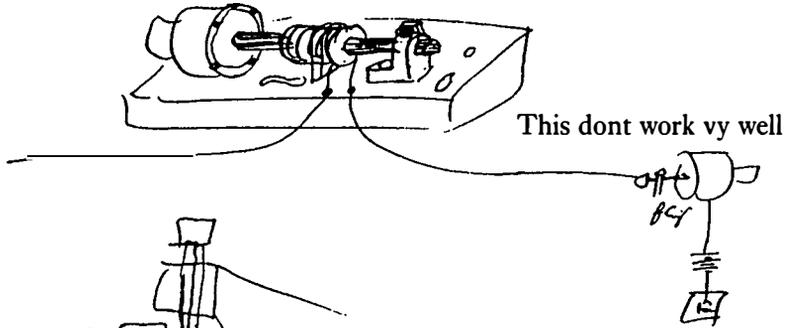
X<sup>10</sup> is an attempt to use the capillary movement of mercury to work a diaphragm<sup>11</sup>

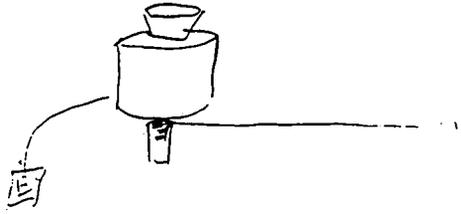
i find that fluf works good if pressed made thus wks ok<sup>12</sup>



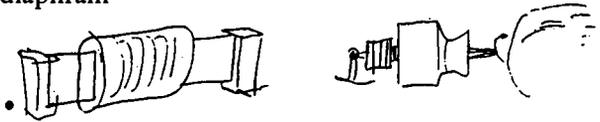
Hg in flat dish with a chem solution.<sup>13</sup> I claim setting a diaphragm in motion by a movement derived from the action of Electrolysis on Mercury =

I use the Expansion of the iron wires to work a diaphragm<sup>14</sup>

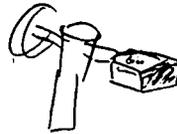




have a very fine diaphm and [insulated?]<sup>c</sup> Electrode [ex-  
cept?]<sup>c</sup> extremely fine point uninsulated of platina— use a  
good conducting solution The waves coming over wire will  
produce gas & this will crackle & give a sound or motion to  
the diaphram



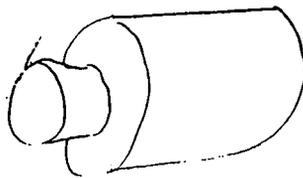
Ear peice to Concentrate Sound<sup>16</sup>



I propose to use Ark[ansas] oil stone & pbgo it & let fluf  
rest against thus— this will give more margin<sup>17</sup>



pbgo loose talk diphm toss it about & pvt good contact



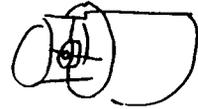
I find that the B. P. F. & V. give wind rushes different from  
.C. .G. H J S T X Z

The slot in the mouthpeice is sufficient f~~rom~~or the latter  
but the other rushes go directly in tube hence I propose to put  
something in tube having sharp edges to cut the wind which  
rushes in wind not downward like the “sh”

it can be



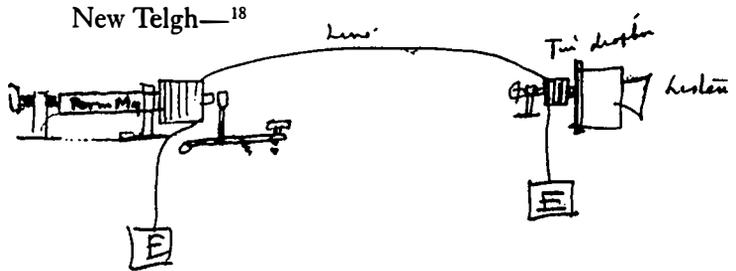
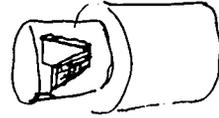
Edge



this



this



or can dup apparatus at each end

T A Edison

Chas Batchelor

James Adams

X and X (photographic transcript), NjWOE, Lab., Vol. 12:108; TI 2, Edison's Exhibit 115-12; Lab., Vol. 12:109, 112; TI 2, Edison's Exhibit 113-12; Lab., Vol. 12:114, 110; TI 2, Edison's Exhibit 111-12; Lab., Vol. 12:107 (*TAEM* 4:48; 11:425; 4:50, 52; 11:424; 4:53, 51; 11:423; 4:47). Document multiply signed and dated. <sup>a</sup>Followed by centered horizontal line. <sup>b</sup>Interlined above. <sup>c</sup>Illegible.

1. Testifying in 1896, Edison and Batchelor remembered recording sound experimentally on many different materials in the second half of 1877. The exact action of the recording point—embossing, indenting, scraping, or cutting—was the subject of intense legal dispute. Pp. 171-72, 210, 586-92, 599-602, 617-20, 623-25, 644, 647, *American Graphophone v. U.S. Phonograph* (*TAEM* 116:159-60, 179, 367-70, 373-75, 382-87, 397, 398).

2. Figure labels are "N York" and "Washn."

3. Prescott 1879 (549-50) reproduced and described another design for recording telephone messages, a "telephonograph," that Edison drew the same day. The original drawing is lost, but see Vol. 15:6, Lab. (*TAEM* 4:333).

4. Figure label is "air resevoir."

5. Figure labels are "Thermopile" and "Spk." X is the thin strip at far left attached to the tube labeled "Spk."

6. Edison had experimented with thermostats using hard rubber and gum copal. Doc. 514; NS-77-004, Lab. (*TAEM* 7:566).

7. Figure labels are "Line" and "Ga[s]."

8. Figure label is "vib by diapm—"

9. Figure label is "fluf."

10. Figure labels are "HO," "Line," and "Hg."

11. See Doc. 846; Prescott 1879, 547; and Jehl 1937-41, 1:144.

12. Figure label is "fluf in at X."
13. Figure labels are "Hg" and "to transmitter."
14. Figure label is "fluf."
15. Figure labels are "iron" and "brass."
16. Figure label is "brass." It seems to indicate a brass wrapper around the oilstone.
17. That is, greater variation of current strength.
18. Figure labels are "Perm Mg," "Line," "Tin diaphm," and "Listen."