

July 9, 1875
W. R. P.

292 Essex St. - Salem
March 18th 1875

Dear Papa and Mama

I have just returned from
to New York thoroughly worn
Found your letters of the
14th awaiting me.

I am now beginning to realize the
care and anxieties of being an inventor.
In order to complete the apparatus —
as thoroughly as possible — I have decided
to give up all Professional work for
some weeks. I have put off all

pupils and classes until the 12th
of April. Flesh and blood could
not stand much longer ~~what I~~ ~~the~~

such a strain as I have had
upon me. Professional work is

all in confusion — and the
only way ~~the~~ is to cut the
Gordian Knot — and throw up
everything till the end is achieved.

I long to write full account
to you — but I have delayed writing
in order to give a connected narrative
of the whole.

You seem to think
that my anxieties are over — when in
truth they are really only beginning.

Before entering upon explanations let
me ask you first — to hunt over
all my old letters that you have preserved

This letter was received by me on March 24th 1875 and it has been sent here out of my trunk since 13th (1875) Jan. pages. 14th 13th 14th 15th 16th 17th 18th 19th 20th 21th 22th 23th 24th 25th 26th 27th 28th 29th 30th 31th 1st 2nd 3rd 4th 5th 6th 7th 8th 9th 10th 11th 12th 13th 14th 15th 16th 17th 18th 19th 20th 21th 22th 23th 24th 25th 26th 27th 28th 29th 30th 31st 1st 2nd 3rd 4th 5th 6th 7th 8th 9th 10th 11th 12th 13th 14th 15th 16th 17th 18th 19th 20th 21th 22th 23th 24th 25th 26th 27th 28th 29th 30th 31st 1st 2nd 3rd 4th 5th 6th 7th 8th 9th 10th 11th 12th 13th 14th 15th 16th 17th 18th 19th 20th 21th 22th 23th 24th 25th 26th 27th 28th 29th 30th 31st 1st 2nd 3rd 4th 5th 6th 7th 8th 9th 10th 11th 12th 13th 14th 15th 16th 17th 18th 19th 20th 21th 22th 23th 24th 25th 26th 27th 28th 29th 30th 31st 1st 2nd 3rd 4th 5th 6th 7th 8th 9th 10th 11th 12th 13th 14th 15th 16th 17th 18th 19th 20th 21th 22th 23th 24th 25th 26th 27th 28th 29th 30th 31st 1st 2nd 3rd 4th 5th 6th 7th 8th 9th 10th 11th 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for everything bearing on the Telegraph.
Forward to me at once as evidence.

I must take action at once in regard
to foreign patents. Will you or
Uncle help me in this?

What I would like is this.
I have written to my lawyers in Washington
to make application for a ^{foreign} patent on
my own responsibilities.

Should I prove unable
to pay for these applications at
once — will you help me?

While these applications are being
got out I shall write to the
Herdmans offering them a share
if they will take the pecuniary burden
of any interference that may arise abroad
from Mr. Gray. Should they decline
— which I should think unlikely —
I should of course relinquish a foreign
contest.

Before going on with the
narrative from where I left off last
time I shall look over your letter
and see if there are any points to
be answered.

I received Carrie's letter and your former
just as I was starting for New York.
I wrote to Carrie from New York — and

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Telegraphed to you — but a matter of importance prevented me from writing. I am so glad that Mr. Ottaway has decided to come. Perhaps I may be in a position to ask Mr. Ottaway to come and take care of me here. If she would it would be so nice.

There is no "lovely Lizzie" of mine on hand! That message was not sent by me! I do not think I am one of the marrying sort. When there is anything of the kind on the tapis — I shall consult you — first. I am too much given over to scientific experiments and to my profession — to think of anything of that kind yet — and I doubt very much if I ever shall.

I say this not in joke but in earnest. If I ever marry at all it will not be for years yet.

When I am free to dispose of my interest in the invention — I shall do so — and then you may expect to see Visible Speech go ahead. I can then take up the Electro-Motor which I think as valuable an idea as this Telegraph. *W.P.P.*

When will Uncle begin building? I should like to see how the wood looks now.

Please give my love to Uncle Aunt, and cousins — and tell them not to think I forgot them if no queries come in my hurried letters.

I saw the notice of Prof. Whitney's work in the "Atlantic Monthly" about six weeks ago — and at once purchased a copy of the work. The article on Visible Speech is a reprint of that which was published in the North American Review in 1868 or '69. If you would like to see it — I shall forward the work.

If you see or hear from the Kennedys — please thank them for papers sent to me at various times.

I presume the papers are sent by W. Kennedy, as they come from "Perth".

I must congratulate you on your new dignity — paper — "Justice of the Peace" — and am only sorry not to be able to direct my letter to "The President of the Horticultural Society". Perhaps you may shortly be "M.P." or M.P.

I hope so.

Tell Mrs. Mitchell how glad I am to hear she is better. Give her my love and tell her I don't forget her.

What is Charlie

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N.P.R.

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doing now? Is Aileen connected with the College? Has the photograph of Miss Reid ever been found? I should like to know — as I felt quite uncomfortable under the suspicion.

How splendid it will be if Chester should come out.

By the by I have a dim recollection of having spoken of some invention to Chester and George Minchin when I was last in Dublin. I am half inclined to believe it was connected with telegraphy. Please ask Aunt to sound them. If it should prove so — and if they have any recollection of the idea — it might be important for them to send a statement.

Now to resume telegraphy.

When I was in Washington I had a letter of introduction to Prof. Henry who is the Lyndall of America.

I had found on enquiring at the Institute of Technology that some of the points I had discovered in relation to the application of acoustics to telegraphy had been previously discovered by him.

I thought I would therefore explain all the experiments and ascertain what was new and what was old.

He listened with an unmoved countenance

— but with evident interest to all — but when I related a experiment that at first sight seems unimportant — I was startled at the sudden interest manifested.

I told him that on passing an intermittent current of electricity — through an empty helix of insulated copper wires a noise could be heard proceeding from the coil — similar to that heard from the telephone.

He started up — said "Is that so?" Will you allow me Mr. Bell to repeat your experiments and publish them to the world through the Smithsonian Institute — of course giving you the credit of the discovery."

I said it would give me extreme pleasure — and added that I had apparatus in Washington — and could show him the experiments myself at any time.

He asked if I could do it then if he went with me — and I told him that I had everything in readiness at Mr. Hubbard's house. He said "I will go with you now. Have you a carriage here?"

I had not — and so he put on his coat and was about to ~~ride~~ ~~his~~ carriage — when I offered to save him the trouble of going out on such a raw damp day by bringing

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O.P.P.

the apparatus to the Smithsonian Institute. (He was suffering from a cold — and besides is very aged — I believe about 80 years old.)

We appointed noon next day for the experiment.

I set the instrument working and he sat at a table for a long time with the empty coil of wire against his ear listening to the sound.

I felt so much encouraged by his interest — that I determined to ask his advice about the apparatus I have designed for the transmission of the human voice by telegraph. I explained the idea and said "What ^{would} you advise me to do —" "Publish it and let others work it out — or attempt to solve the problem myself."

~~He advised me~~
He said he thought it was "the germ of a great invention" — and advised me to work at it myself instead of publishing.

I said that I recognized the fact that there were mechanical difficulties in the way that rendered the plan impracticable at the present time. I added that I felt that I had not the electrical knowledge necessary ~~to solve~~ to overcome the difficulties. His laconic answer was — "Get it".

A.M.B.

X I cannot tell ^{you} how much these two words have encouraged me. I live too much in an atmosphere of discouragement for scientific pursuits. Good Mr Sanders is unfortunately one of the curious people — and is too much in the habit of looking at the dark side of things. Such a chimerical idea as telegraphing vocal sounds would indeed to most minds seem scarcely feasible enough to spend time in working over.

I believe however that it is feasible, and that I have got the clue to the solution of the problem.

Prof. Henry seemed to be much interested in what I told him — and cross-questioned me about my past life — and specially wanted to know where I had studied Physics.

He told me that Mr. Gray had been to see him when he first ~~left~~ took steps to obtain a patent — and that he (Prof. Henry) had given him a letter of introduction to Prof. Lyadell.

He added that Gray was by no means a scientific man. ~~He said~~ As I was leaving he said "If I can be of any assistance to you in the Patent Office — I shall be very happy to do anything in my power."

My visit to the Smithsonian Institute seems to me to be the brightest spot in my whole life. I feel now that I am accepted by scientific men — as one of themselves.

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N. P. P.

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Having left Prof. Henry and Washington —
I proceeded to New York where I saw
W. Arton and W. Prescott the Electrician —

Arrangements were made for me to bring my
instruments to New York and experiment on
a real line - wire.

I left Boston last Sunday and called
at the office of the Western Union on Monday.

W. Arton and W. Prescott both devoted
a large portion of their time in discussing with
me the whole plan from its theoretical point
of view. W. Smith — the manager of the experimental
room was absent from town but was telegraphed
for. He replied that he could not come till
next morning. Tuesday forenoon we had
Batteries connected — and I tuned up my
instruments. They went like clock - work.

I have come to the conclusion — that by a
happy chance they are much more perfect
than I thought at first.

The signals were as clear, sharp, and rapid as
with the ordinary Morse sounds. I connected
Two Transmitters and Two Receivers on only
one line — and two messages were sent
simultaneously. We had 100 cells of a
battery — and all went well on our artificial
circuit. W. Prescott then said he would like
to see them tried on a real line - wire. He
telegraphed to Philadelphia to have two wires

crossed there so as to give us (practically)
a continuous wire from New York to Philadelphia
and back.

The ^{electric} magnets I employed were
not intended for trial on a long line —
They were wound with coarse wire — and
the "resistance" was only "3 ohms". Ordinary
electric magnets for actual service on a line have
a resistance of about 200 to 600 ohms.

None of us therefore expected the instruments
to work without stronger magnets.

But they did work. The signals, though
feeble, came sharply and coarsely through the
200 miles of line-wire!!! I suggested trying
stronger magnets — so Mr. Prescott ordered the
instruments to be taken to the work shop — and
stronger magnets placed on them. They
were to be ready in the afternoon ~~at~~ so I
went out to dinner — and returned in a couple
of hours.

Next will form subject for next
letter.

With fond love

Your ever affectionate Son
Alec

Prof. A. N. Bell
Brantford, Ontario.

AmB.