

**GRAPHIC  
BIOGRAPHY**

# ALEXANDER GRAHAM BELL





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In 1876 a great centennial talk was held in Philadelphia. The guest of honor was Dom Pedro, Emperor of Brazil. Dom Pedro tried a new invention by which the human voice could be carried over a wire.



Dom Pedro thought it was the most remarkable thing in America. But most people thought it only a toy without any useful purpose.

THE TELEPHONE

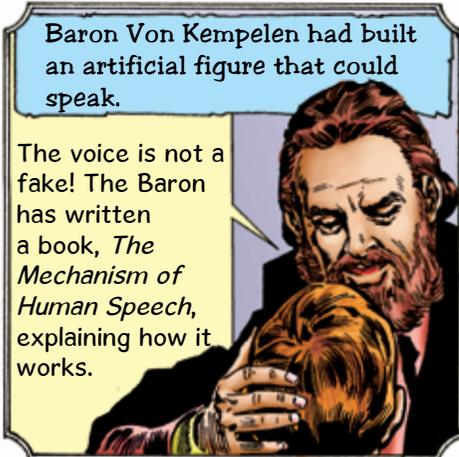




From his father, who was to become professor of elocution at the University of London, Aleck had lessons in speaking.

To be or not to be, that is the question!

No, no, my boy. Feel the vowel sounds. Use your lungs.



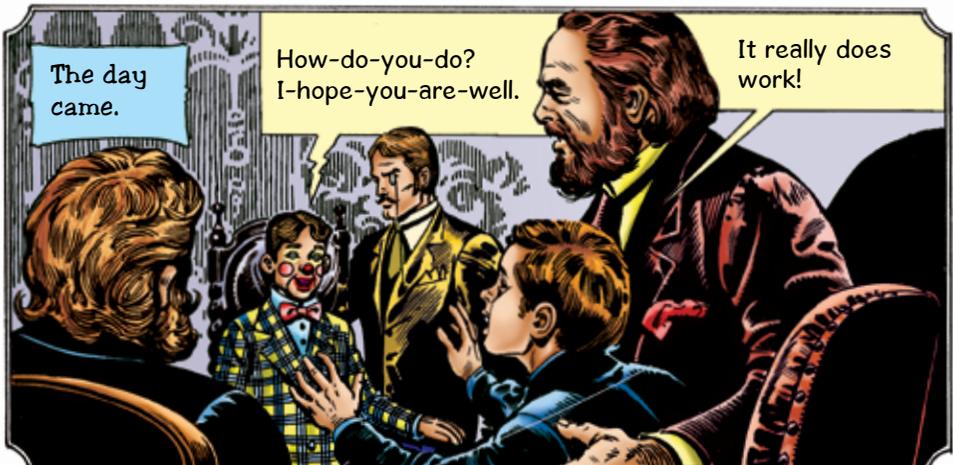
Baron Von Kempelen had built an artificial figure that could speak.

The voice is not a fake! The Baron has written a book, *The Mechanism of Human Speech*, explaining how it works.



The Baron's machine will be shown here. Would you like to see it?

Very much.



The day came.

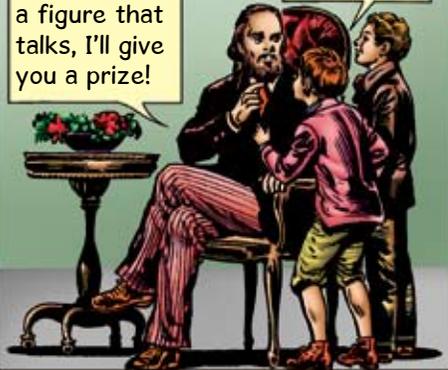
How-do-you-do?  
I-hope-you-are-well.

It really does work!

At home, Mr. Bell made his older sons an offer.

My boys, if you can make a figure that talks, I'll give you a prize!

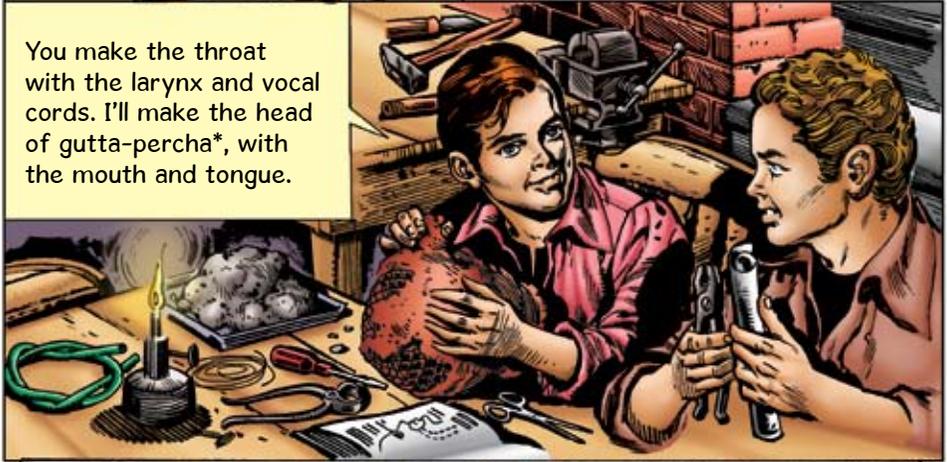
Great!  
We'll do it!



We don't know how the Baron's figure works, but we can figure out from father's books how a person talks. We'll make it that way!



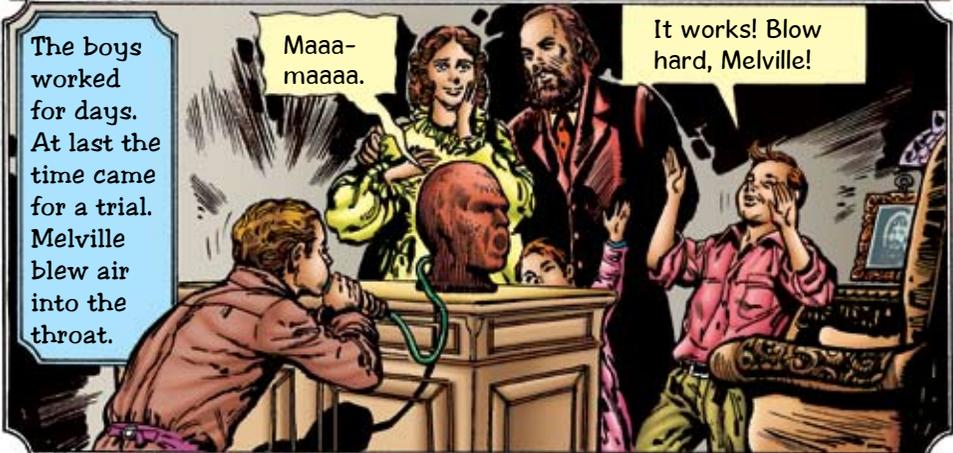
You make the throat with the larynx and vocal cords. I'll make the head of gutta-percha\*, with the mouth and tongue.



The boys worked for days. At last the time came for a trial. Melville blew air into the throat.

Maaa-maaaa.

It works! Blow hard, Melville!



\* a tough plastic substance from the latex of several Malaysian trees that resembles rubber

So Mr. Bell gave up his London career, and they sailed for America. Aleck performed at the ship's concert.

Will ye no come back again?



They reached Quebec on August 1, 1870.

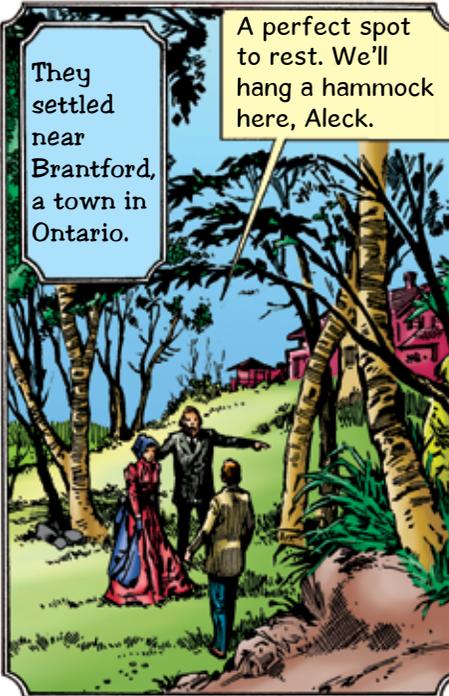
Smell that air! You'll be well in no time!

I'm sure you're right.



They settled near Brantford, a town in Ontario.

A perfect spot to rest. We'll hang a hammock here, Aleck.



And with pillows and a blanket, this will make a perfect sofa seat!



Aleck did a lot of resting there. Also a lot of studying and thinking.

During the winter, he felt well enough to try to work out some of his idea.

Listen to the vibration of the strings. I am using them as tuning.



I hope to work out a harmonic telegraph system so that several messages could be sent at once over one wire.

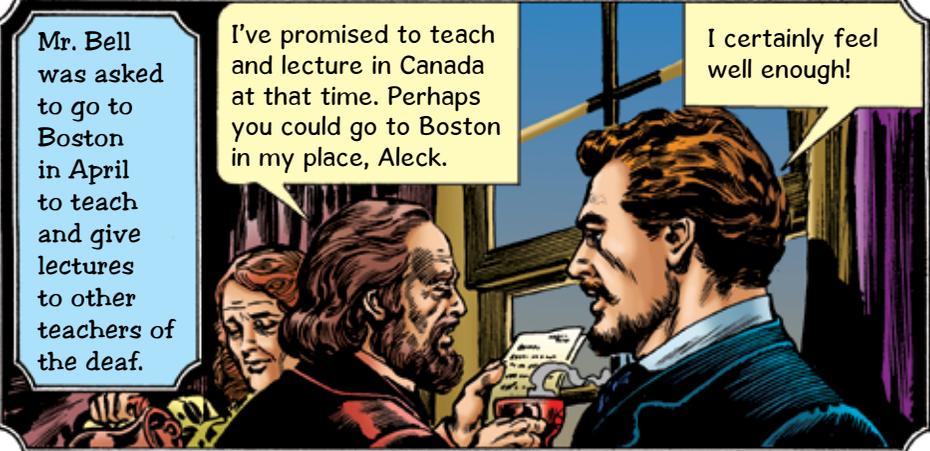
That would be of great value to the telegraph companies.



Mr. Bell was asked to go to Boston in April to teach and give lectures to other teachers of the deaf.

I've promised to teach and lecture in Canada at that time. Perhaps you could go to Boston in my place, Aleck.

I certainly feel well enough!

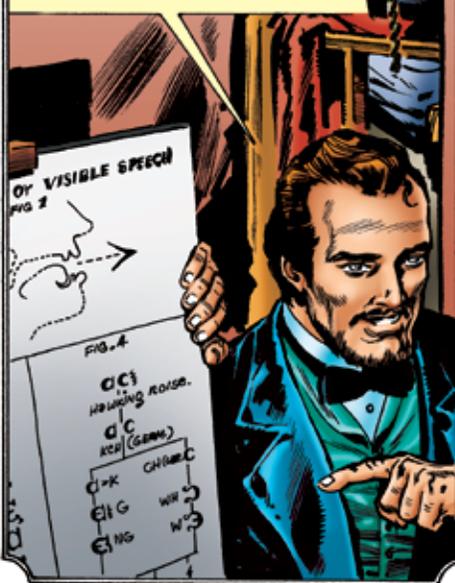


And you know my theories, my methods, and my alphabet of visible speech as well as I do.

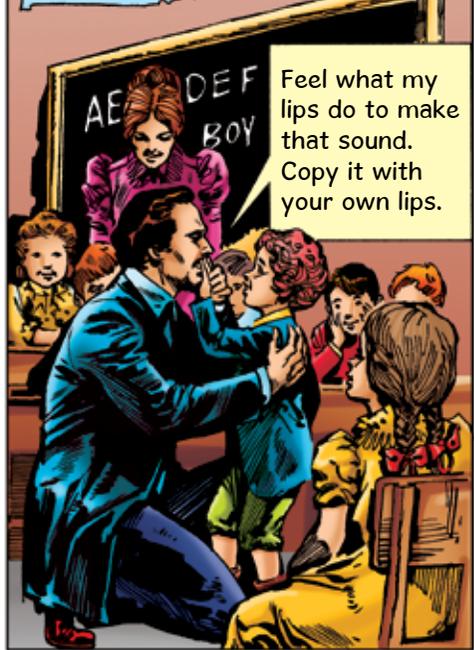
Thank you, father. I would like to go to Boston.



These symbols make up the alphabet of visible speech as developed by my father.

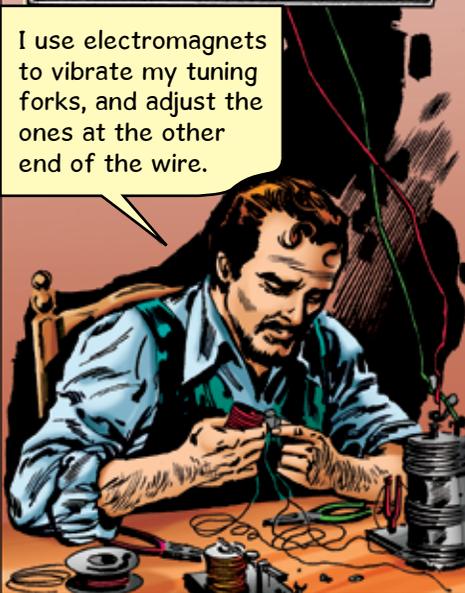


He held classes for deaf children.



Feel what my lips do to make that sound. Copy it with your own lips.

But he spent his nights working on his own experiments in an attic.

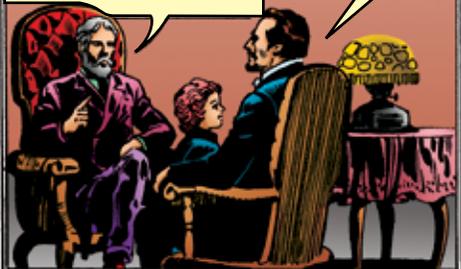


I use electromagnets to vibrate my tuning forks, and adjust the ones at the other end of the wire.

One day he spoke of his inventions to Thomas Sanders, the father of one of his pupils.

Western Union would pay a lot for such a device! If you need money for your experiments, I'll be glad to back you.

Yes, sir! Right now I need money to have models made, in order to apply for a patent.



Thomas Sanders became one of Aleck's chief backers.

Gardiner Greene Hubbard, a wealthy Boston lawyer, consulted Aleck about his 16-year-old daughter.

Mabel has been deaf since a childhood illness. She reads lips well, but needs help in speaking.

Perhaps I could advise her present teacher.

Hubbard, too, wanted to invest in Aleck's inventions.

And soon Aleck was visiting the Hubbard's every week, not to teach but because he and Mabel were in love.

As soon as I am earning enough, we can be married.

It wouldn't take so very much, would it?

Charles Williams' Electrical Shop was a place where inventors could have working models made.

This is not quite right. I will talk to the workman.

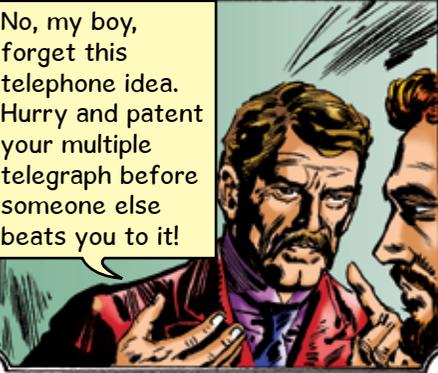
Aleck went to the workbench of Thomas A. Watson.

This part, it isn't the way I wanted it.

I made it that way because, from my study of electricity, it would seem ...

But Aleck's backers were not interested in this new idea.

No, my boy, forget this telephone idea. Hurry and patent your multiple telegraph before someone else beats you to it!



Mr. Hubbard felt the same.

Your father thinks my telephone idea is foolish. If I stick with it, he may forbid us to marry!

No one can prevent two people from marrying if they want to badly enough!



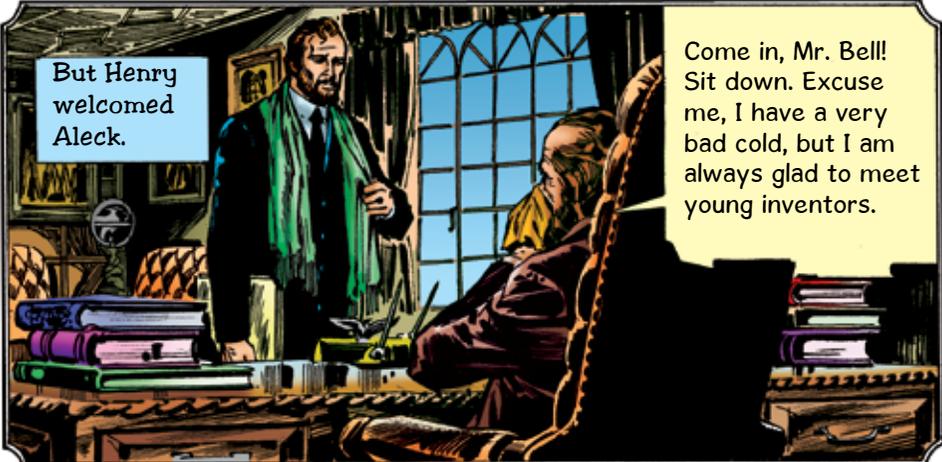
So Aleck went to Washington and on March 6, 1875, applied for a patent on his telegraph instrument. Then he visited the Smithsonian Institution.

I have a letter of introduction to Joseph Henry, the director. But perhaps such a great scientist won't bother to see me.



But Henry welcomed Aleck.

Come in, Mr. Bell! Sit down. Excuse me, I have a very bad cold, but I am always glad to meet young inventors.



Mr. Henry heard Aleck's ideas for the telegraph. He was so interested that Aleck told him his ideas for a telephone.

Should I publish my ideas and let others work it out? Or should I try to do it myself?

You have the germ of a great invention. Work it out yourself.



But back in Boston, he went on working on the telegraph.

Let's try something new, using steel reeds instead of tuning forks.

You stay here. Start the reeds vibrating and tune them. I'll listen on the receiving end.



All spring they worked that way and into June. Then one evening ...

What did you do? Don't change a thing! Let me see!

Why, one of the reeds was stuck. I plucked it to loosen the end.



As the hot summer wore on, Aleck seldom slept and forgot to eat. One night he fainted. Watson rushed for a doctor.

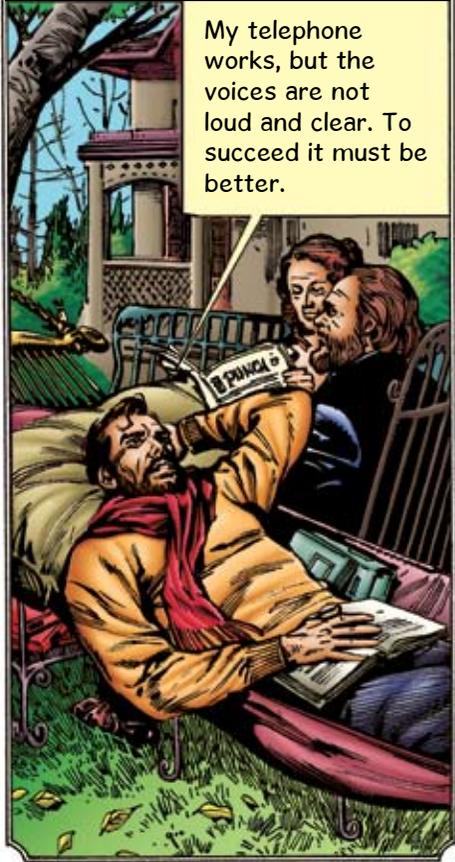
He needs country air, good food, and plenty of rest.



So once again Aleck went to Canada to get his health back.

He rested and thought out his problems.

My telephone works, but the voices are not loud and clear. To succeed it must be better.



At least I have the time now to get my papers in order to apply for a patent.



The following March 1876, he was granted a patent on the first telephone.