



VICTORIAN INVENTIONS

THE PHONOGRAPH

JOHN KRUESI: Try to imagine a world without recorded music... that's how things were before 1877. But in that year, Mr Thomas Edison invented what we call the *phonograph*, a machine that would change the world.

I'm John Kruesi, and I helped to make the machines that Mr Edison designed. He was, if you like, a professional inventor; if he had an idea for some kind of new machine, why he just sat down and figured out how to do it. Then shared his ideas with us, like he is here with my friend Harry...

EDISON: Do you know what this is, Harry?

HARRY: Yes, Mr Edison. It's a telegraph machine. Used for sending messages.

EDISON: That's it. Normally, how it works is that the operator presses this little lever here, in a pattern of short and long presses. Right?

HARRY: Right, Mr Edison.

EDISON: Now, each time I press this lever, it sends a current of electricity down this wire, and at the other end, another machine like this one clicks every time the current reaches it. And an operator listens and writes down what he hears. Now, I said that's normally how it works, but this machine is something I invented.

HARRY: Yes?

EDISON: Yes. This paper tape. You see it's got a line of dents in it, short ones and long ones, so that, instead of the operator having to push the key, the dents in the paper do it.

HARRY: How is that?

EDISON: Funnily enough, Harry, I was about to tell you. I put the tape in here... And I pull it...

HARRY: I see!

EDISON: And as I pull it, the dents push the lever up and down, and make it work just as if an operator was doing it, but much faster. Now, if I pull it really fast, something very interesting happens. Hear that? The lever makes a note, because it's moving so fast.

HARRY: Oh, yes.

EDISON: Now, if the paper tape had a line of ups and downs of the sound of someone talking - rather than regular dents - would a machine like this reproduce speech, instead of that note it makes?

HARRY: I don't know.

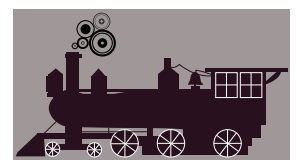
EDISON: What do I employ you for?

HARRY: Er... to think.

EDISON: Well, THINK!

JOHN KRUESI: Now this is where I come in. Mr Edison worked by sketching drawings of the machines he wanted made, and then people like me made the machines. He just gave us the drawings, he never explained what the machines were for.

EDISON: Kruesi?





JOHN KRUESI: Mr Edison. It's done, here it is. If you don't mind my asking, what's it for?

EDISON: It's a machine to record sound, and then play that sound, so you can hear it exactly as it was said.

JOHN KRUESI: Uh? If you don't mind my saying it, I think that's one of the most absurd things I've ever heard.

EDISON: Well...we'll give it a try. First I'll set it going so keep quiet. The next thing I say should be recorded... *Mary had a little lamb...* Now I stop it. Listen carefully.

JOHN KRUESI: [To himself] *Mein Gott in Himmell!*

EDISON: It works! I can't believe it!

JOHN KRUESI: Mr Edison was so pleased with his machine, his phonograph, as he called it, that the next day he called all the newspapers in New York to come and see him.

EDISON: This is the first public demonstration of a phonograph, a device which can record the human voice, and then play it back for everyone to hear.

JOURNALISTS: What? / Never! / No, no, no, etc.

EDISON: All I do is turn this little handle here... and, as I turn, I just shout into the machine. *Mary had a little lamb!* And now, gentlemen, I simply turn the handle again, and...

JOURNALIST 1: I'm pretty sure I won't understand, but can you try to explain how it does that?

EDISON: This cylinder here - there's a sheet of silver paper wrapped round it.

JOURNALIST 2: With you so far.

EDISON: And you see here, there's a lever with a sharp point on it, and that's fixed to this tiny drum skin. Now, the point of the lever is touching the silver paper on the cylinder. When I turn the handle, it turns the cylinder. And, as I shout, that makes the point go up and down, and, as it does that it dents the silver paper as it turns. And then, when I turn the handle again... this time, the dents in the silver paper make the point go up and down, and the lever makes the drum skin move back and forth, and that makes the sound. Simple!

JOURNALIST 1: You've lost me there, Mr Edison!

JOURNALIST 2: It's a marvellous machine, but what use do you see for it?

EDISON: What use do I see for it? Well, among others, I see people sitting in their own homes listening to recorded music.

JOURNALIST 2: Really?

JOHN KRUESI: But, of course, Mr Edison was right.

