



Sections: -- Magic of Engineers -- Story: Henry Ford & Charles Steinmetz -- Electrical Engineering Magic -- Penn & Teller

## == INTRODUCTION ==

As you know, engineering is more than maths and machines. There is also magic. Many people take it for granted when a project completes or a product arrives. You may recognise some of the mystery or sparkle behind the scenes.

Apologies for the text overflow. The first two comments will continue with the 'Electrical Engineering Magic' and 'Penn & Teller' sections.

## == MAGIC of ENGINEERS ==

You may have experienced in the workplace:

- a)  
SLOGANS and SYSTEMS have different focuses - - CRO timebase
- b)  
SOLVING problems need different approaches - - first world person, first-principle
- c)  
SCHEDULES for manufacturing and maintainance are different - - quarter, long-term
- d)  
PROJECT risks are different to profits - - equation length
- e)  
MANAGING or driving projects need logic, data - - standards, constraints
- f)  
CRITICAL paths involve curiosity, clarity and structure - - optimisation
- g)  
different ENVIRONMENTS need objectivity and humility - - people, places
- h)  
FEEDBACK in all forms can be adaptive - - op-amps, logic gates, people
- i)  
miss anything? (pun intended)

## == STORY == HENRY FORD & CHARLES STEINMETZ

"One day, Henry Ford ran into a serious issue at his River Rouge plant. A massive generator had malfunctioned, and none of Ford's top engineers could figure out what was wrong. So, Ford called in Steinmetz.

When Steinmetz arrived, he asked for three things: a notebook, a pen, and a cot. Then he spent two full days and nights in the plant, listening to the generator and scribbling mysterious calculations.

Finally, he asked for a ladder, a tape measure, and some chalk. Slowly, he climbed to the top of the generator, measured a spot, and marked it with a chalk "X".

Then he turned to the engineers and said: "Take off this panel, unwind the coil from this exact point, and remove 16 turns of wire."

They followed his instructions - and just like that, the generator was humming again, good as new.

A few days later, Ford received an invoice from Steinmetz:  
\$10,000

Surprised by the steep fee, Ford asked for an itemized breakdown.  
Steinmetz replied:

- Making chalk mark: \$1
- Knowing where to put it: \$9,999

Ford paid the bill. No complaints, no questions."

Full story: <https://engineerine.com/10000-dollar-chalk-mark/>  
Image credit (lwr rt) : Full story

// Posted to EEnT Alumni (LI), Elsoc-Alumni (FB) and own LI space  
// 10 FEB 2026  
// Ctee: @Kaveh, @Luke, @Edmund, @Shakthi, @Vijay  
// Prv Ctee: @GaganSK, @SomanshA, @SimonB, @MatthewR  
// Heads: Dean @JulienE; EEnT Prof. @JinhongY  
// School: Mgr @ElizabethGT; Projects @KlaraJ

## == COMMENT #1 ==

### == ELECTRICAL ENGINEERING MAGIC ==

When you consider Electrical Engineering, there was a lot of magic over the years where people have sought to control electrons by using the language of mathematics to describe and create machines.

Many will recognise the branches, technology or fields that have descended from observing nature. If I mention some descendants, you should instantly recognise the magic behind it.

Some obvious descendants:

Analogue & digital electronics,  
Control systems,  
Electromagnetics,

Embedded systems,  
Instrumentation & machines,  
Integrated circuits,

Microprocessors,  
Photonics,  
Photovoltaics,

Power & high voltage,  
Quantum mechanics,  
Radio frequencies,

Renewable energy systems,  
Robotics,  
Signal processing,

Software & artificial intelligence,  
Telecommunications and  
Vacuum tubes.

## == COMMENT #2 ==

### == PENN & TELLER ==

Curious? Some references and YT clips:

See [https://en.wikipedia.org/wiki/Penn\\_%26\\_Teller:\\_Fool\\_Us](https://en.wikipedia.org/wiki/Penn_%26_Teller:_Fool_Us) - - Wiki (.org

See [https://en.wikipedia.org/wiki/Penn\\_%26\\_Teller](https://en.wikipedia.org/wiki/Penn_%26_Teller) - - Overall Wiki (.org

See Official: <https://pennandteller.com/>

- - - YT Clips to see - - -

13-Year-Old Magician Performs Card Magic Trick

6m27

<https://youtu.be/pJ2epysGkpE>

4 Feb 2026

:

A 13-year-old magician performs a card trick on Penn & Teller: Fool Us. The routine involves a classic three-card monte scam, with a surprising twist. A young performer's skill is judged by seasoned professionals.

Magician Fools Penn & Teller with New Card Magic Tricks

12m15

<https://youtu.be/CdRw7TAyuLo>

14 Oct 2025

:

Witness Marcus Eddie's inventive illusion, deceptively presented as a card trick. The routine cleverly incorporates audience participation, building to a surprising reveal about its true nature. This isn't just card magic; it's a three-year-in-the-making original performance.

Teller explains why he remains silent on stage

4m31

<https://youtu.be/YJRIkTHqTSE>

5 Aug 2017

:

Teller discusses the surprising origins of their silent stage act, tracing it back to teenage rebellion against typical magic patter. The conversation explores how this choice evolved, impacting their performance style and audience interaction. This insightful talk reveals unexpected aspects of Teller's career.

Not including the 'untouchable' profiles.

LI (EE&T Alumni)

- a) Views = ...
- b) Emojis = ...
- c) People = ...

LI (Own)

- a) Views = ...
- b) Emojis = ...
- c) People =

{  
...  
}

FB (ElsocAlm)

- a) Views = not visible by FB
- b) Emojis = ...
- c) People = ...

{  
...  
}