



everything old is
new again

designing for the future

Aug. 4, 1970

J. E. LAMBRIGHT ET AL

3,522,664

INTERFACE DEVICE AND DISPLAY SYSTEM

Filed Nov. 20, 1967

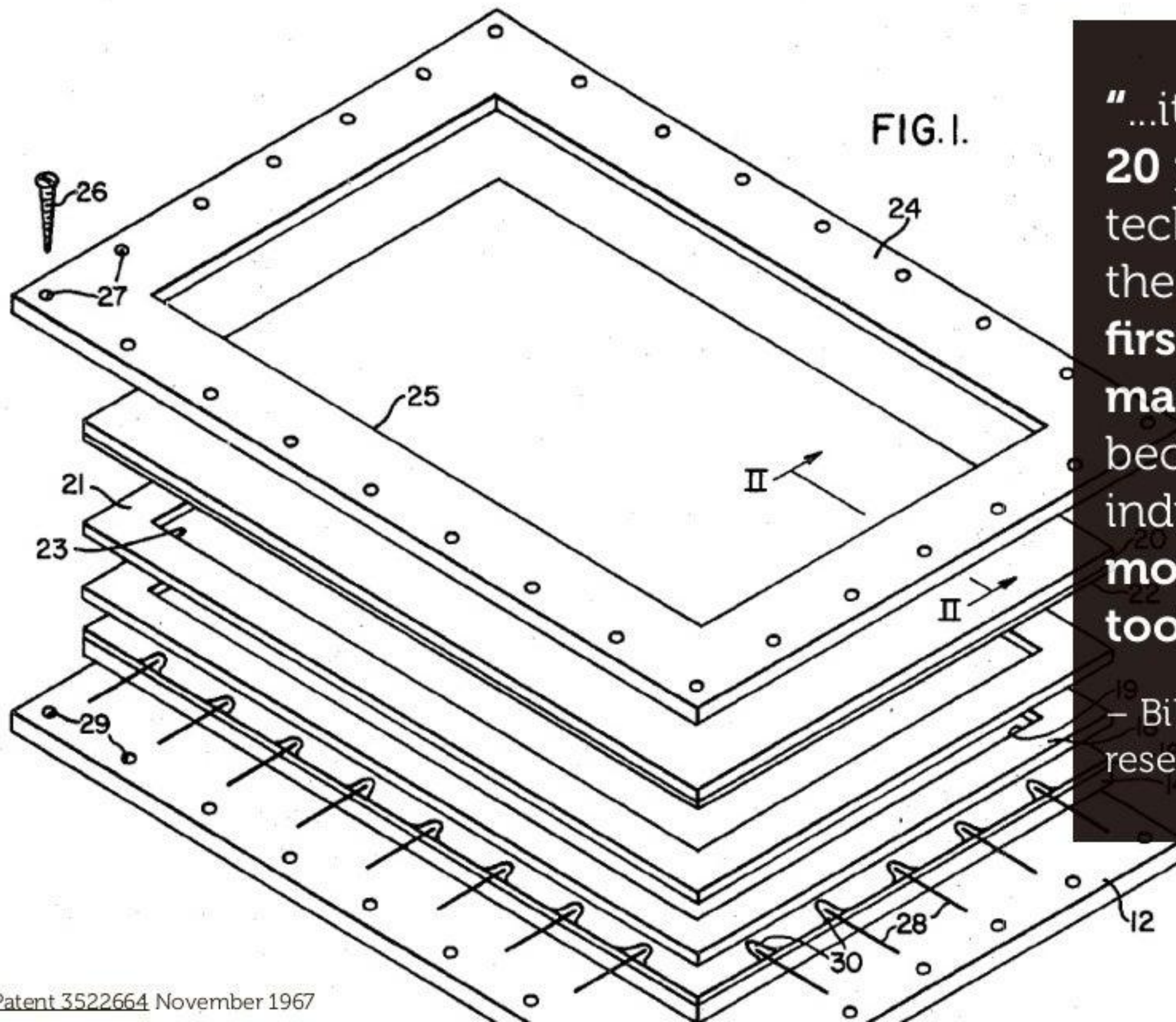


FIG. 1.

"...it takes **on average 20 years** for a technology to make the transition from **first articulation to maturity** (defined as becoming a \$1billion industry)...**the mouse**, for example, **took 30 years.**"

— Bill Buxton, Principle researcher Microsoft



take **for example**
the humble fax machine...

(a technology that may finally have outlived its usefulness)

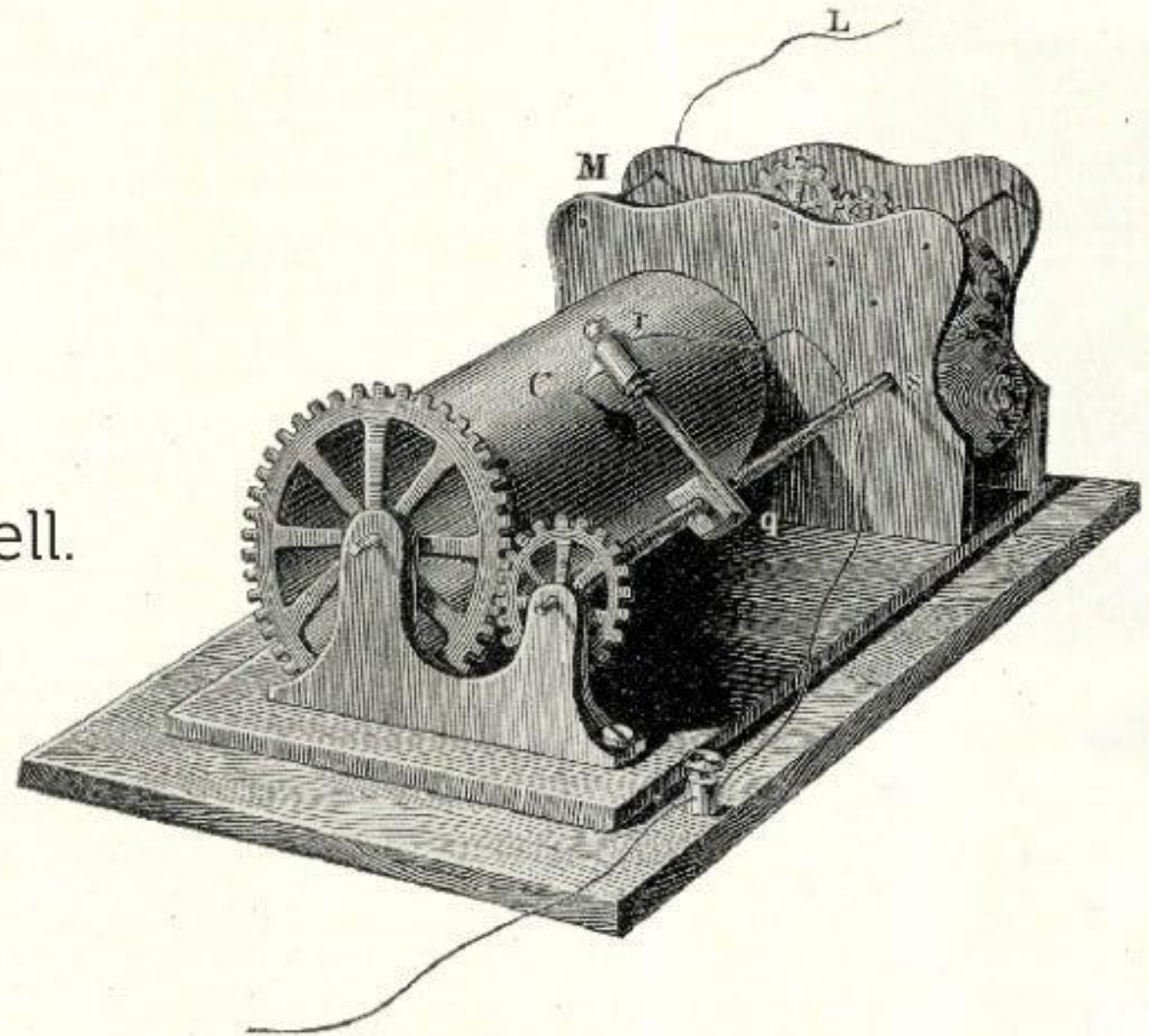
1843

1848

Alexander Bain

Frederick Bakewell

...then **improved on**
(and patented once again)
in 1848 by Frederick Bakewell.



Bakewell, E. P. 12352, 2. 12. 1848

1843

1848

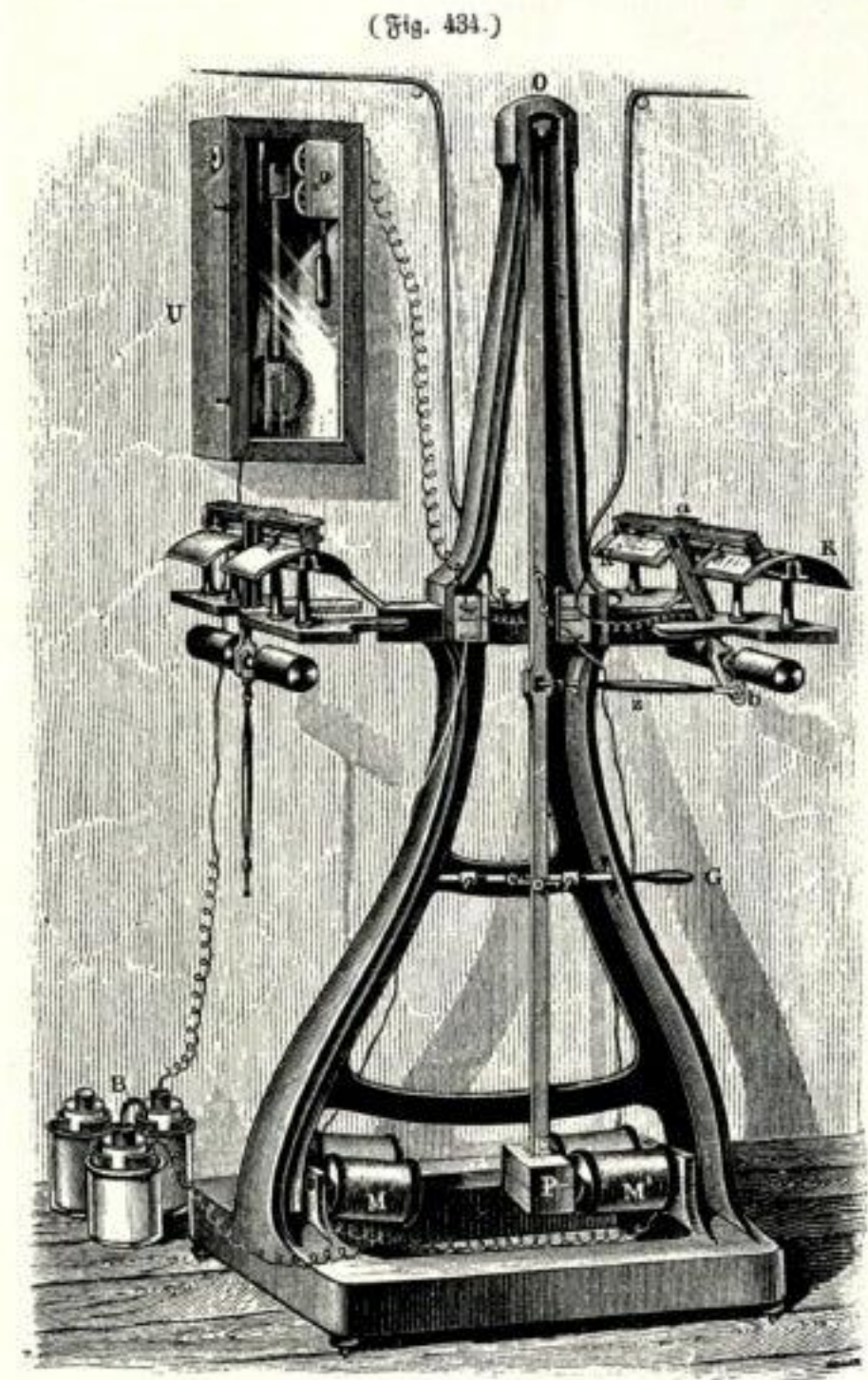
1861

Alexander Bain

Frederick Bakewell

Giovanni Castelli

Then **improved on** once again
13 years later, this time by
Giovanni Castelli, an Italian priest...



Castelli's pantelegraph

1843

1848

1861

1865

Alexander Bain

Frederick Bakewell

Giovanni Castelli

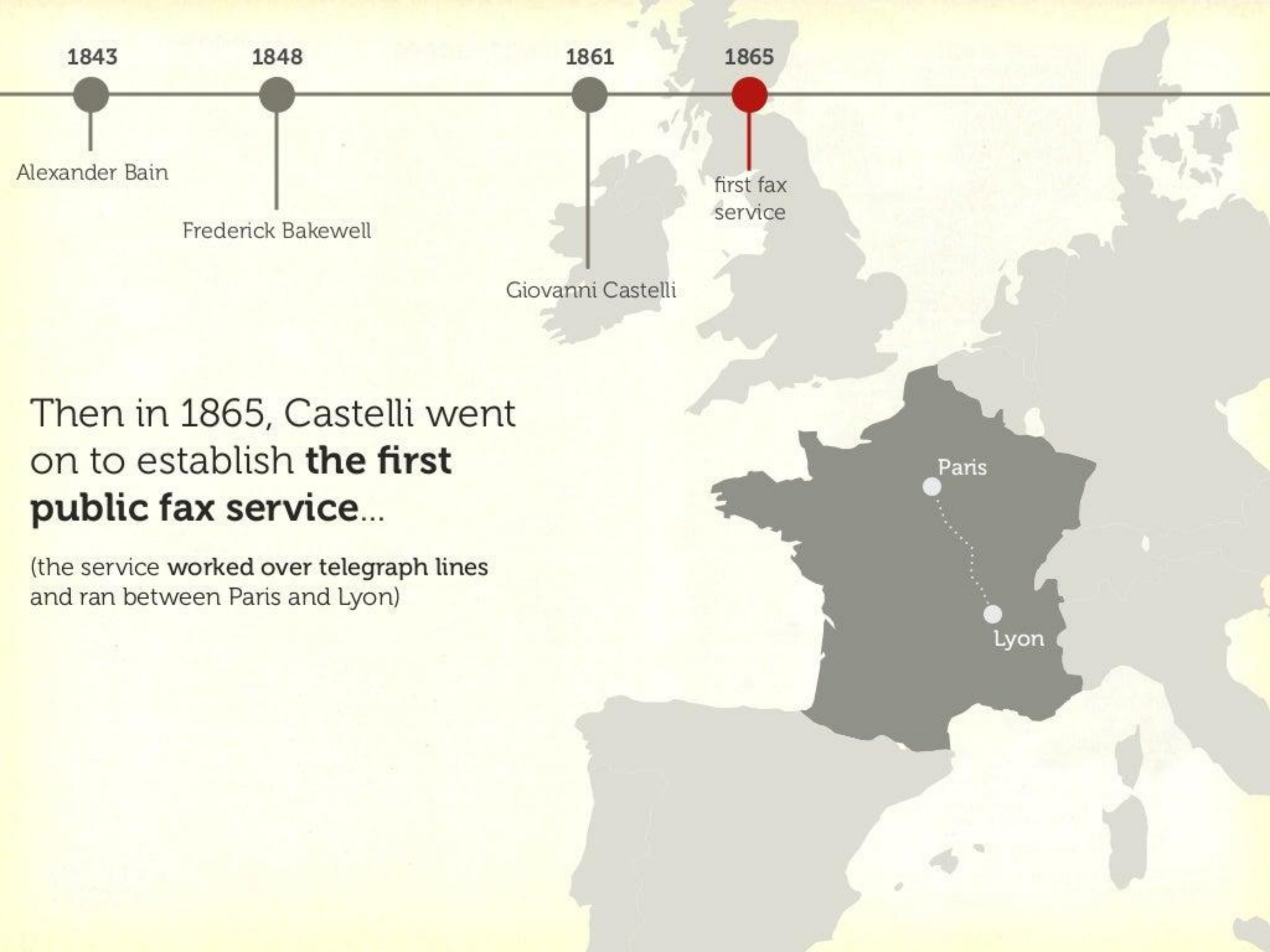
first fax service

Then in 1865, Castelli went on to establish **the first public fax service...**

(the service worked over telegraph lines and ran between Paris and Lyon)

Paris

Lyon



1843

1848

1861

1865

1876

Alexander Bain

Frederick Bakewell

Giovanni Casti

...this was still **11 years before** the invention of the telephone...

(this isn't unusual—we don't always know the true value of a technology until a related one comes along)

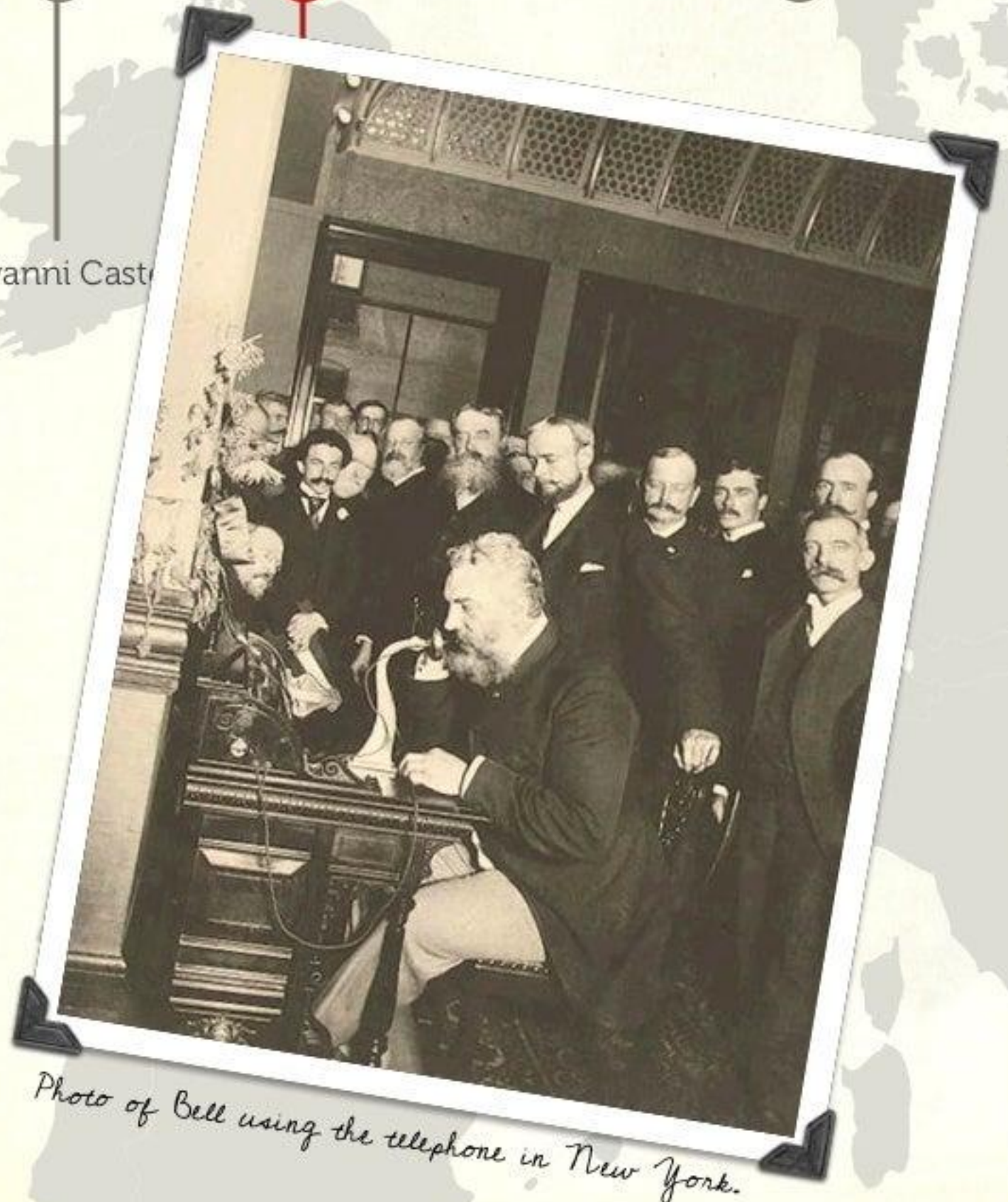


Photo of Bell using the telephone in New York.

1843

1848

1861

1865

1876

Alexander Bain

Frederick Bakewell

Giovanni Castelli

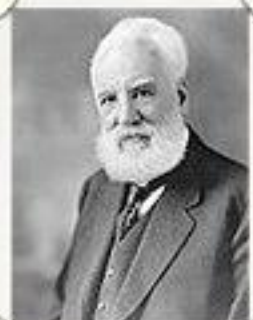
first fax
servicetelephone
patent:
Alexander
Graham BellInnocenzo
ManzettiThomas
Edison

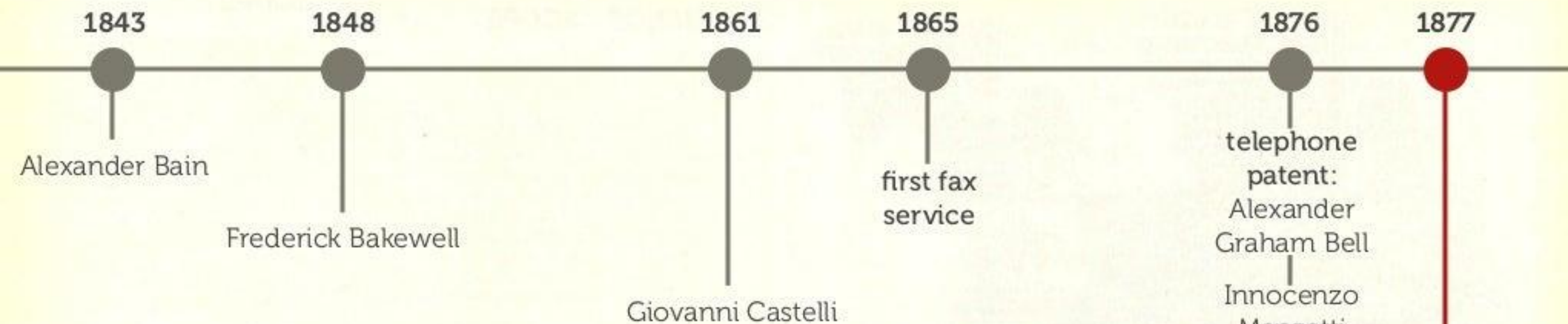
J. P. Reis

Elisha Gray

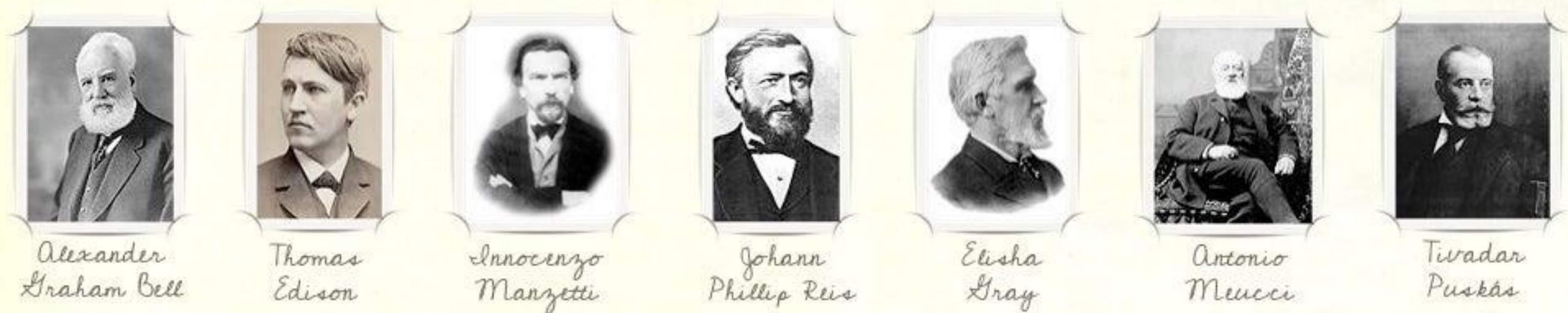
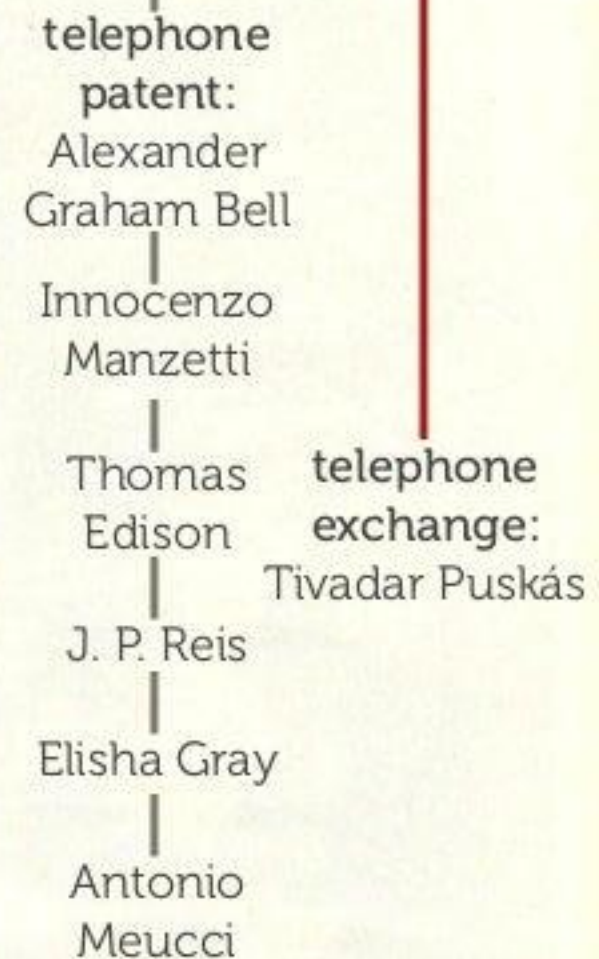
Antonio
Meucci

Six people were known to have been working on
"voice transmission over a wire" around the
 time that Bell was ultimately successful in
 obtaining the first patent.

Alexander
Graham BellThomas
EdisonInnocenzo
ManzettiJohann
Phillip ReisElisha
GrayAntonio
Meucci



Shortly thereafter, a Hungarian engineer by the name of Tivadar Puskás **invented the telephone switchboard**—which allowed for the formation of telephone exchanges (and **eventually networks**).



A close-up photograph of a toy car constructed from white plastic blocks, possibly LEGO. The car has four blue wheels and a red telephone handset mounted on top. The handset is connected to a coiled cord. The car is decorated with colorful stars and stripes. A dark blue text box is overlaid on the right side of the image.

almost immediately—we began
dreaming up ways to **move**
phones around

an example from
the early **1920s**

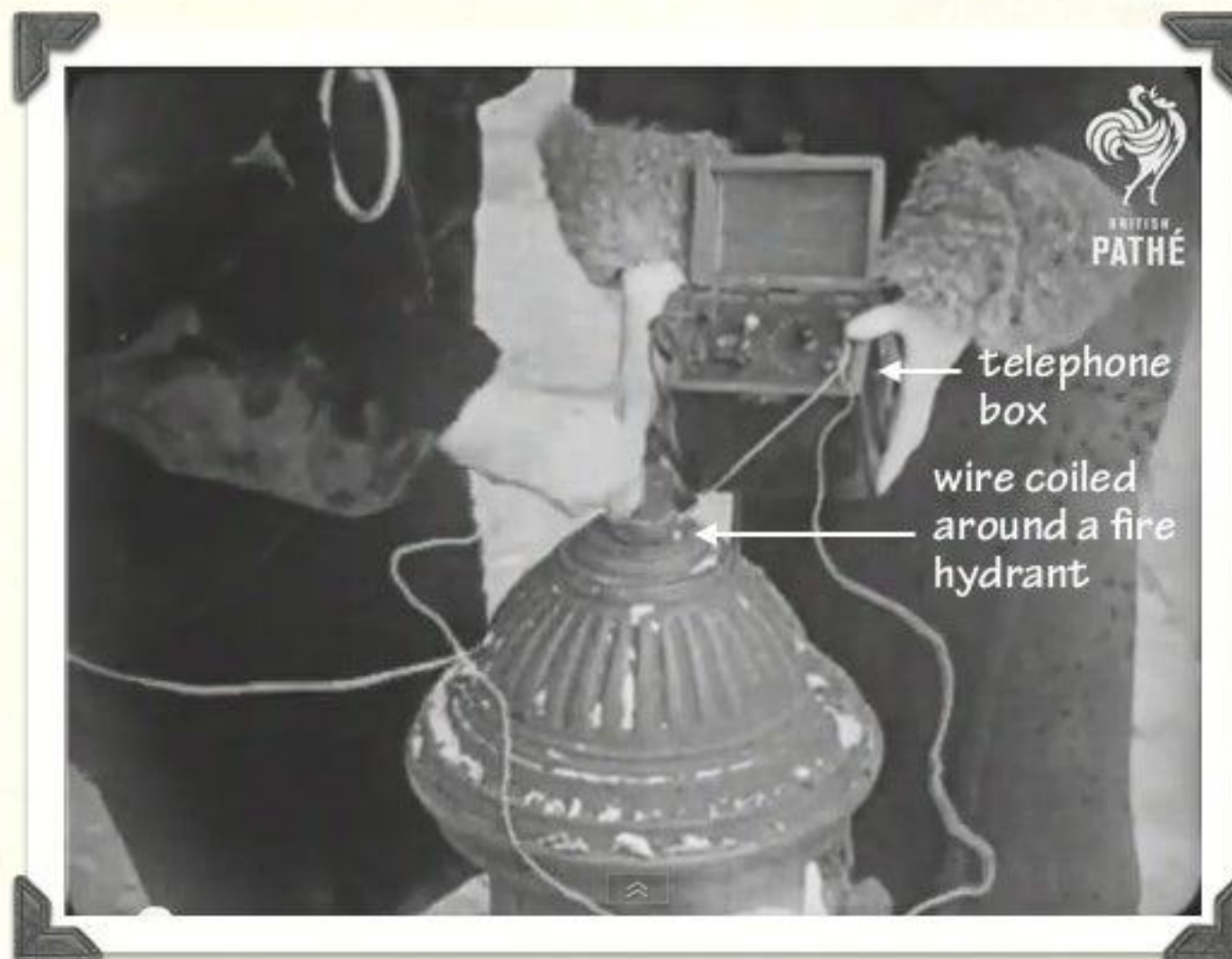


A **wireless phone prototype** for the well-to-do lady on the town...



It's Eve's portable
wireless 'phone — and
won't hubby have a
time when he has
to carry one !

...of course **it's a bit bulky**, so the lady
may need a gentleman to carry it...



"The two ladies are using a small simple HF radio, probably a 'Cat's Whisker' type. For it to work **it needs to be earthed**, which is why it's **connected to the fire hydrant...**"



"The antenna (or aerial) is the wire in the umbrella..."

- Explanation courtesy of Simon Atkins, an Ex-Royal Signals officer



the simplest solution was
of course to **distribute the phones**
throughout our environment

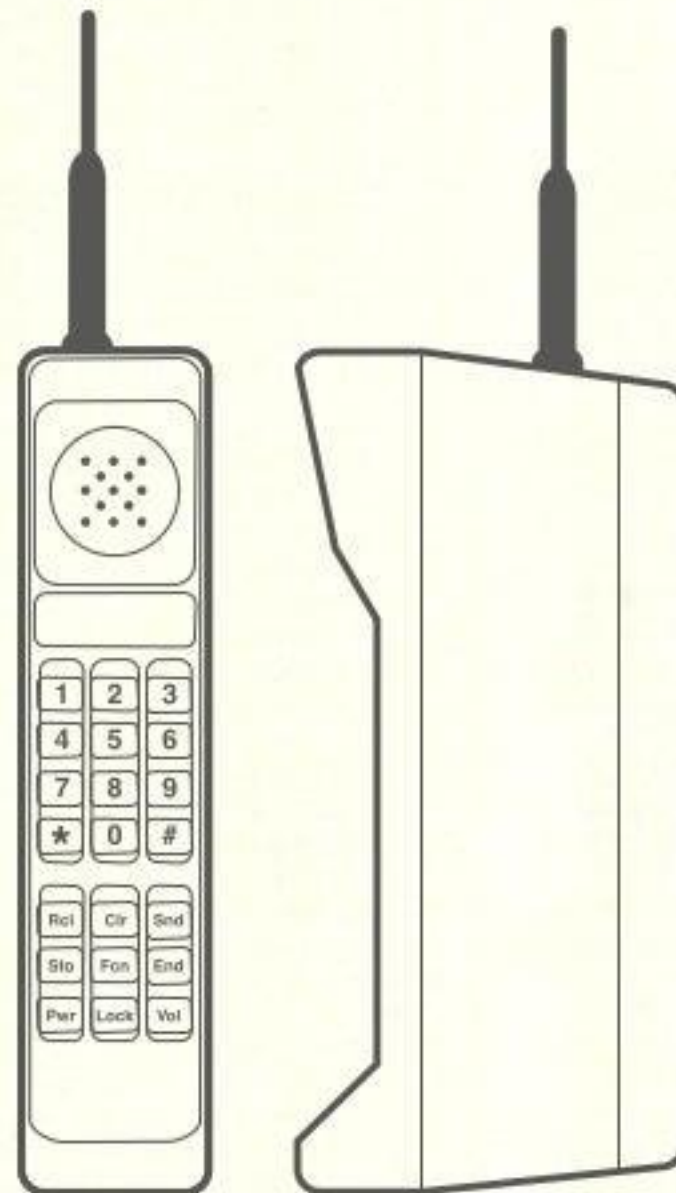
(a solution that remained **useful for more than 100 years!**)



in a pinch, you could
also **build a portable booth**

a mobile phone center for reporters in 1960s Chicago

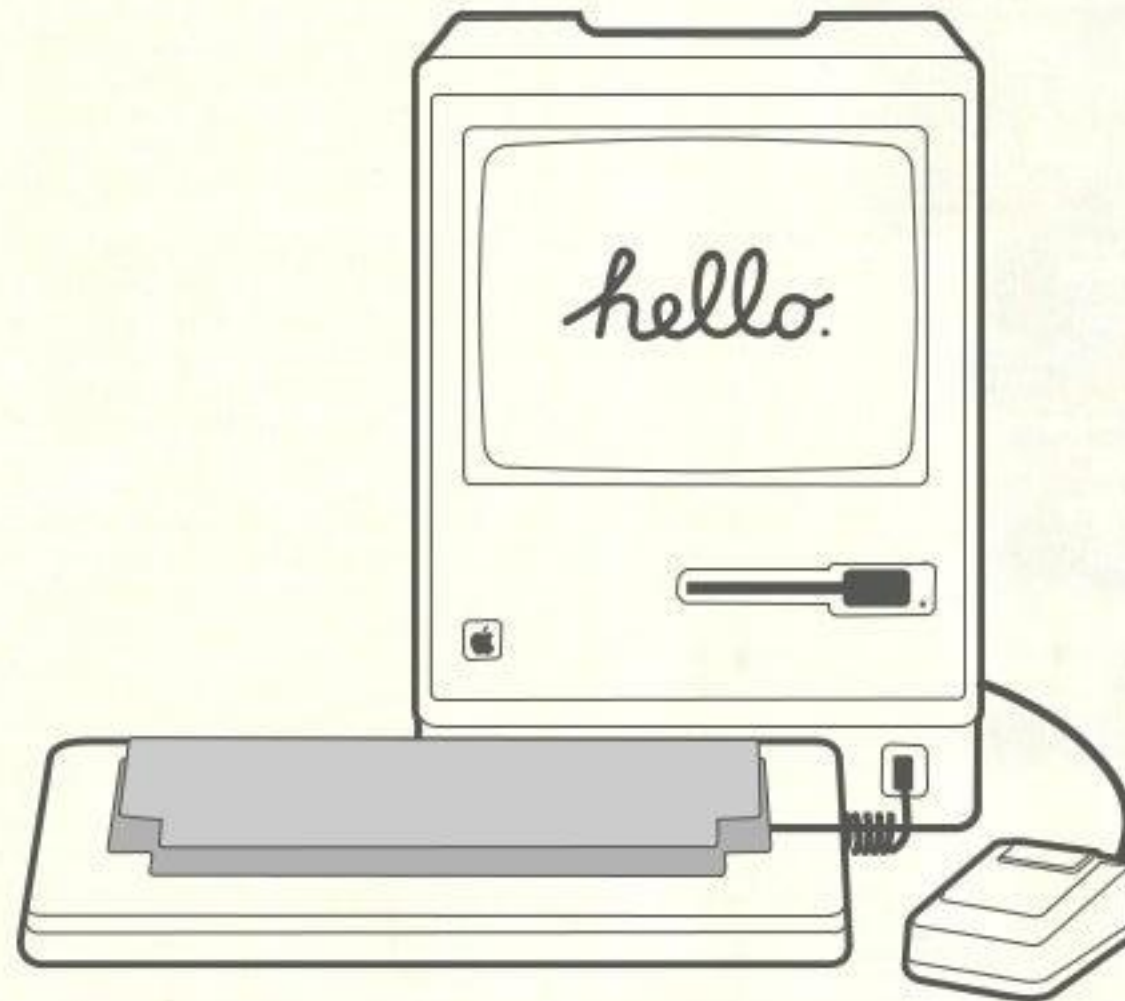
Finally, after twenty years of experimentation
(and the invention of microprocessors) we ended up with this....



1983: the \$3,995 DynaTAC

the first mobile telephone that
could connect to the telephone
network without the assistance of
a mobile operator

...which was released **about the same time** as this.



1984: the Apple Macintosh
the first commercially successful personal
computer to feature a mouse and a
graphical user interface

...**the following ten years** were pretty much devoted to finding ways to **combine** these two concepts....

