

# **The Bicentennial History of Electromagnetic Telegraph**

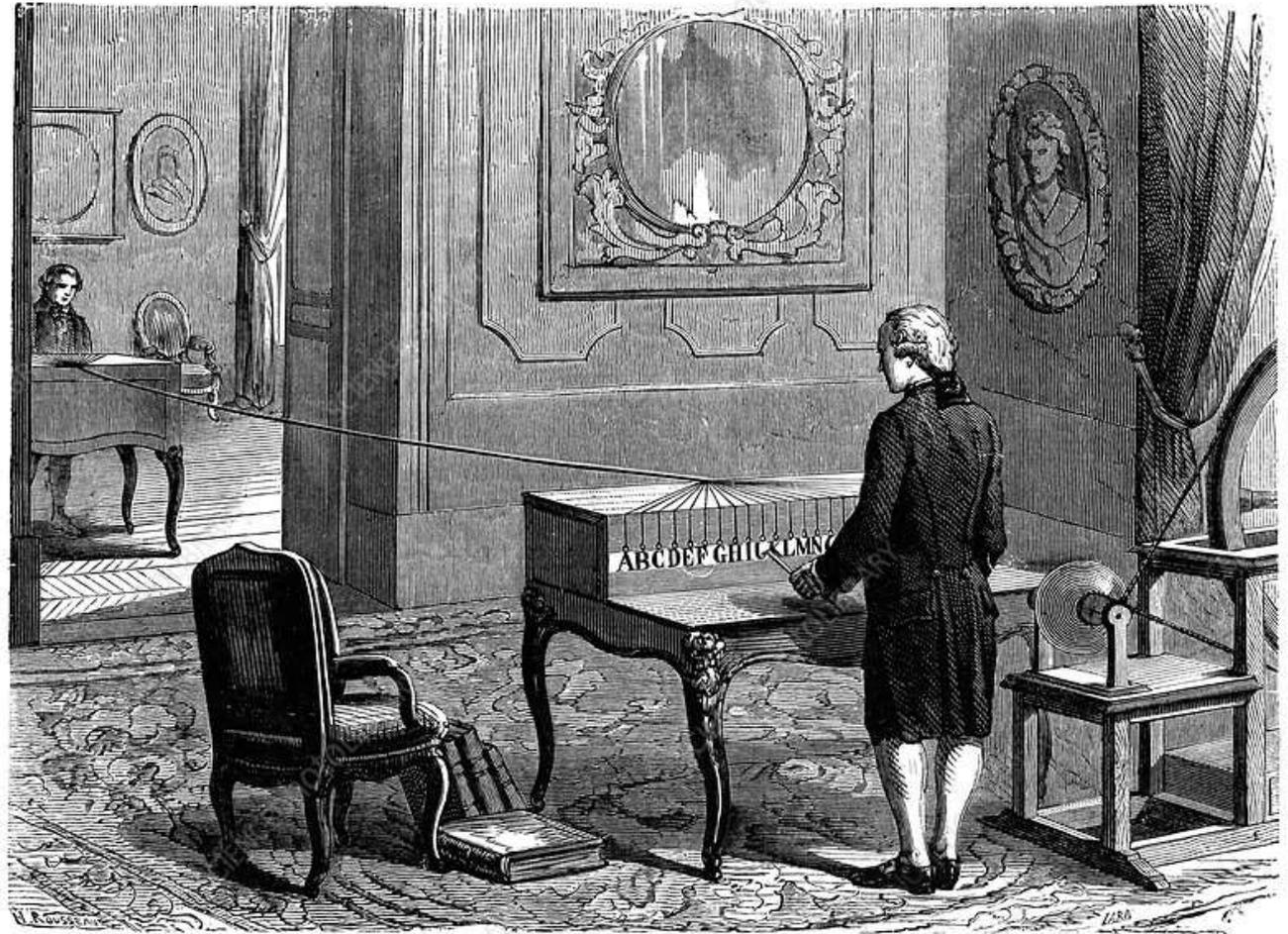
**(from Ørsted's experiments to social networks)**

**Engineering Technologies and Computer Science:  
Innovation & Application  
*International Conference*  
*Moscow - Saint-Peterburg, June, 24-27, 2020***

It was the telegraph that became the first way of instant communication over long distances. Thanks to the telegraph, information was separated from the physical movement of objects - horse messengers, postal carriages and wagons. Its implementation revolutionized the global economy and social relations.



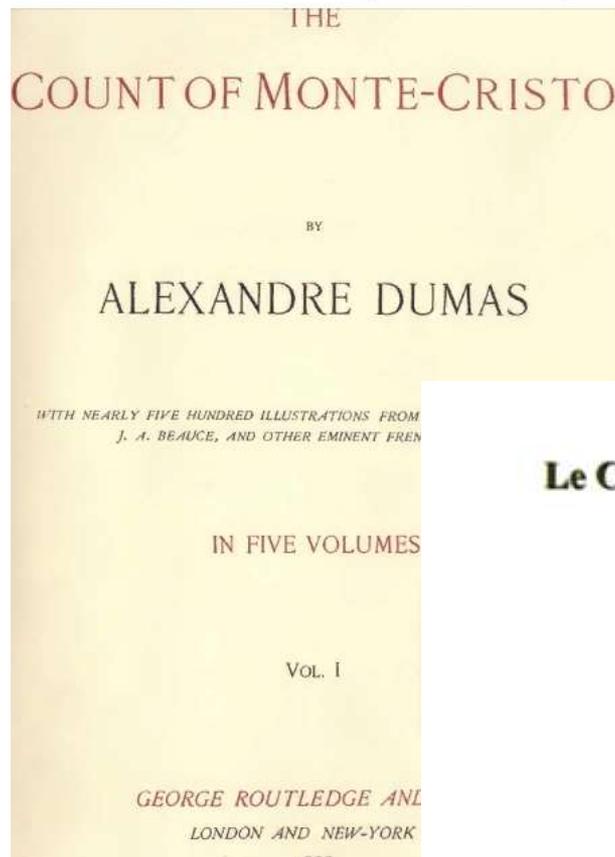
# Georges-Louis Le Sage and early electric telegraph (1774)



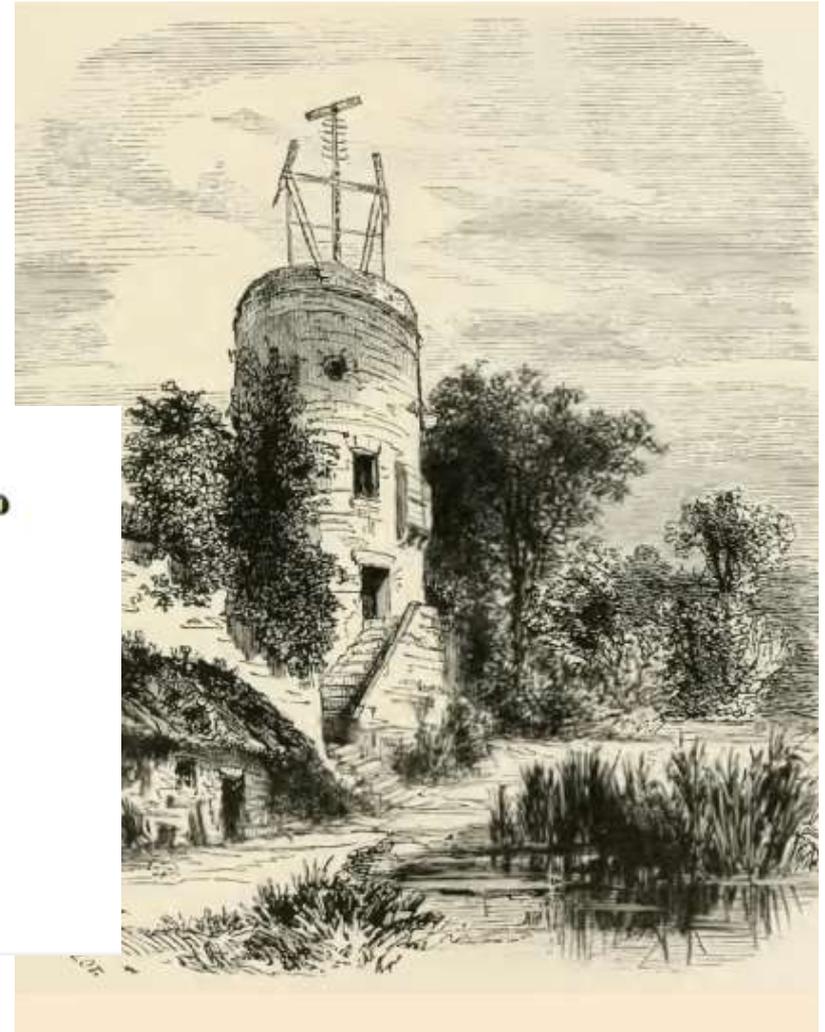
# Claude Chappe (1763-1805) and his semaphore tower in Germany



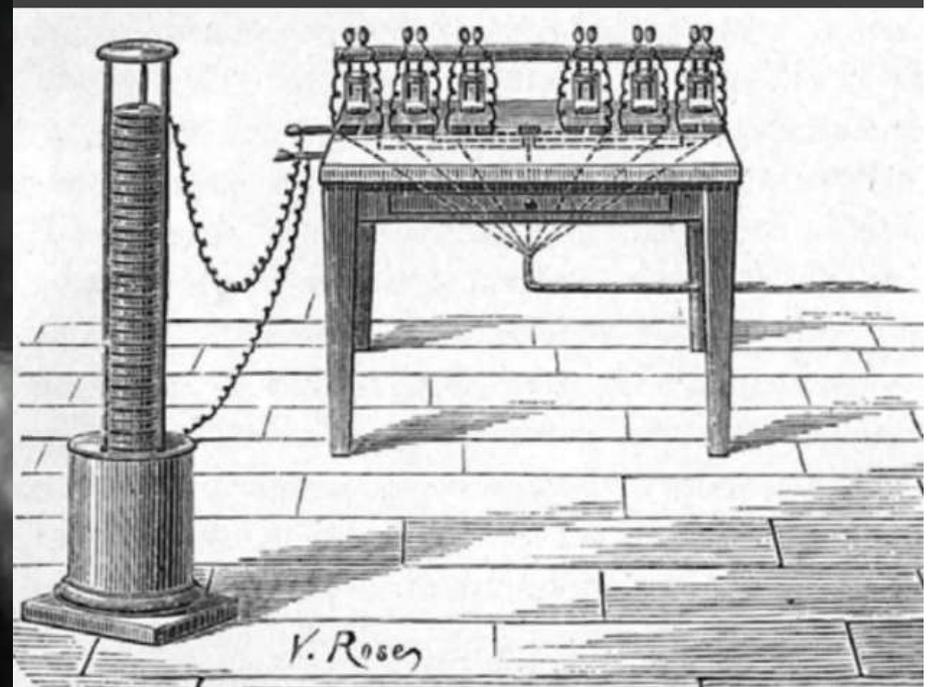
# Some years later



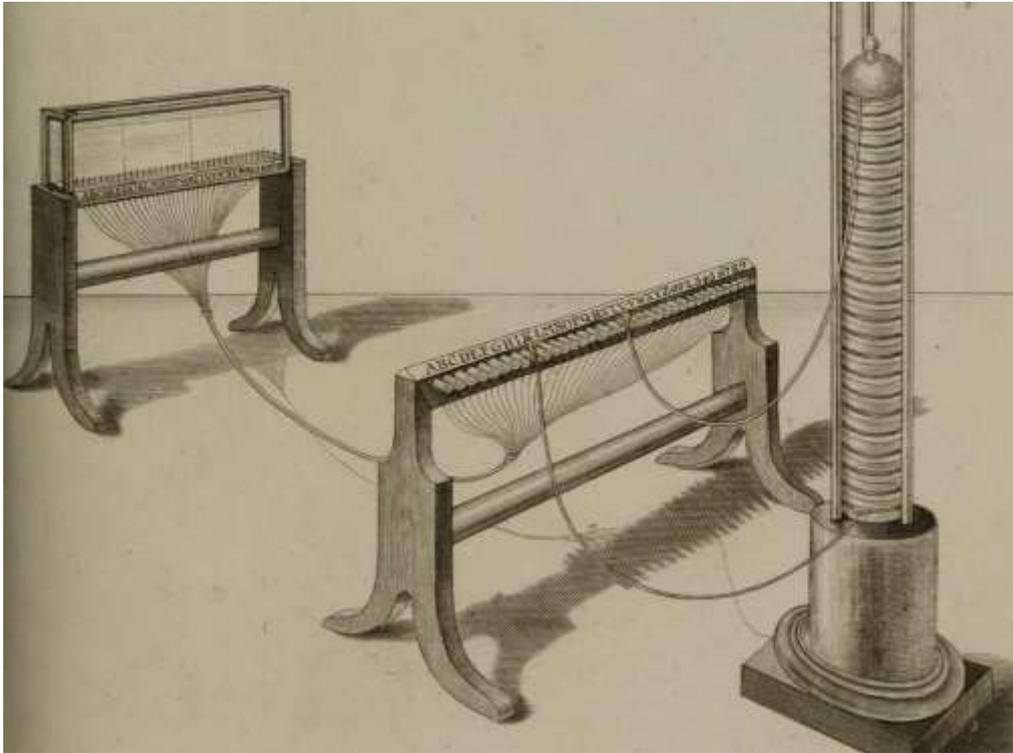
Alexandre Dumas  
**Le Comte de Monte-Cristo**



# Francesc Salvà i Campillo and electric telegraph system (1804)



# 1809: electrochemical telegraph by **Samuel Thomas von Sömmerring**



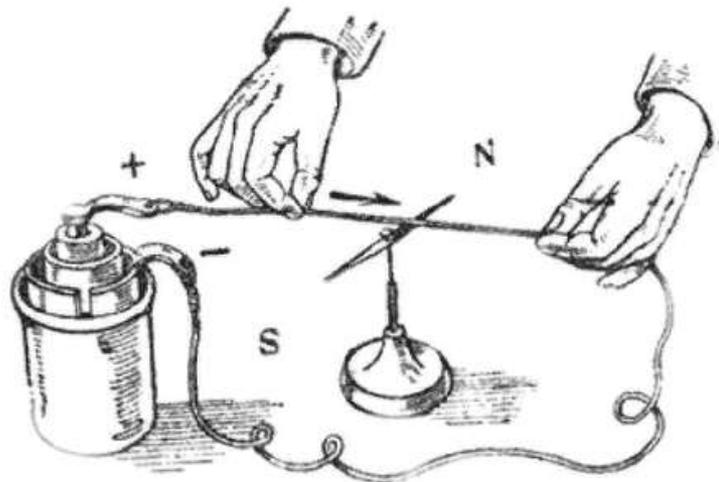
# Hans Christian Ørsted, 1820: demonstration of relationship between electricity and magnetism

Эрстед тәжірибесі. 1820 ж.



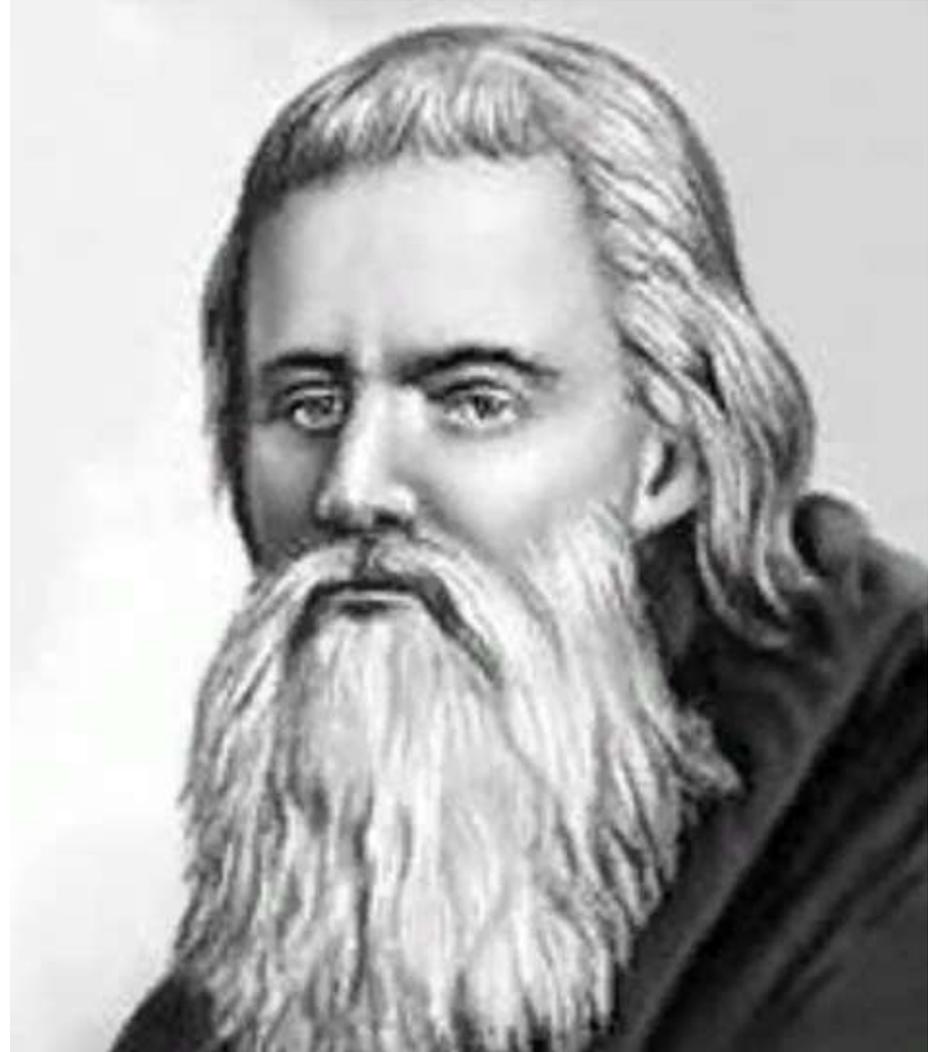
Тұрақты электр тогының  
магниттік тілшеге әсері

Тілше токқа  
перпендикуляр орналасуға  
тырысады



Барлық тогы бар өткізгіштердің  
айналасында магнит өрісі пайда  
болады

# In Russia: Ivan Kulibin



# Captain A.N. Butakov's brochure



— 7 —

(я имѣлъ счастье бытъ въ свитѣ Адмирала, по особенному его ко мнѣ расположенію). Въ одно утро, Адмиралъ рассказываетъ мнѣ, что Артиллерійскій Офицеръ N, на корабль Геркулесъ, занемогъ, и потому предположенная нами охота съ ружьемъ на берегу не можетъ исполниться. Таковое извѣстіе мнѣ показалось непонятнымъ, ибо мы не имѣли никакого сообщенія съ шхмъ кораблемъ. На вопросъ мой Адмиралу, какъ это ему сдѣлалось извѣстно, не обещалась шлюбкою, онъ отвѣчалъ, что узнали по Телеграфу.— По Телеграфу? какъ это такъ? Не вѣрилось: я думалъ, Адмиралъ изволитъ шутить. Однако Адмиралъ показалъ мнѣ книжку Телеграфа и употребленіе оной. Съ сей-то самой минуты, можно сказать, поселилась во мнѣ непреодолимая охота узнать Телеграфъ

— 8 —

подробнѣе, и приравнѣвъ его къ нашему языку. Я спалъ размышлялъ объ ономъ; спалъ изыскивалъ средства, какъ бы достать Англійскіе морскіе Телеграфы; по это было почти невозможное дѣло на Англійскомъ корабль, гдѣ сигнальные книги хранятся въ большой тайнѣ. Совсѣмъ шхмъ мнѣ удавалось по временамъ заглядывать врасплохъ въ книжку, и особенно часто на корабль Queen (Королева), гдѣ сидѣлъ Лордъ Коллинвудъ, послѣ Трафалгарскаго сраженія. Такимъ образомъ, въ продолженіе трехъ-лѣтняго моего служенія на Англійскихъ корабляхъ, успѣлъ я мало по малу рассмотреть и замѣнить алфавитный порядокъ и прибавочные флаги Телеграфа, ошъ военныхъ сигналовъ. Флаги употреблялись шхъ же самыя, что и въ военныхъ сигналахъ. Въ послѣдствіи спалъ я набирать неболь-

# Baron Paul Ludwig Schilling

(on the right - a sketch by A. Pushkin)

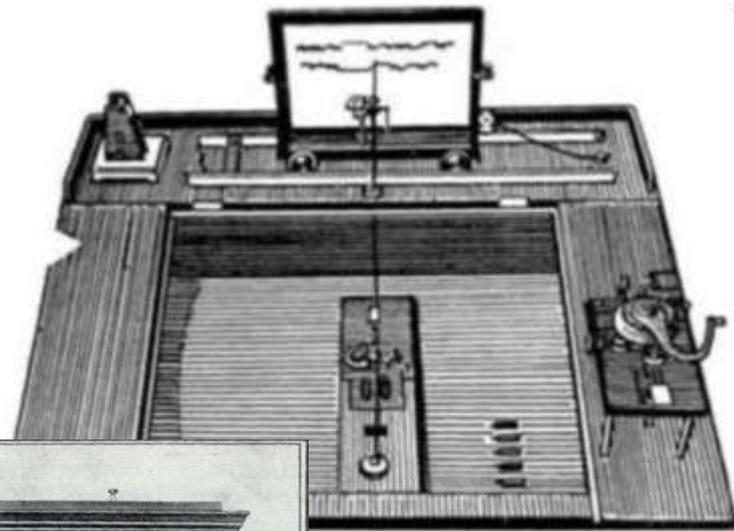


# The first electromagnetic apparatus Schilling, 1832

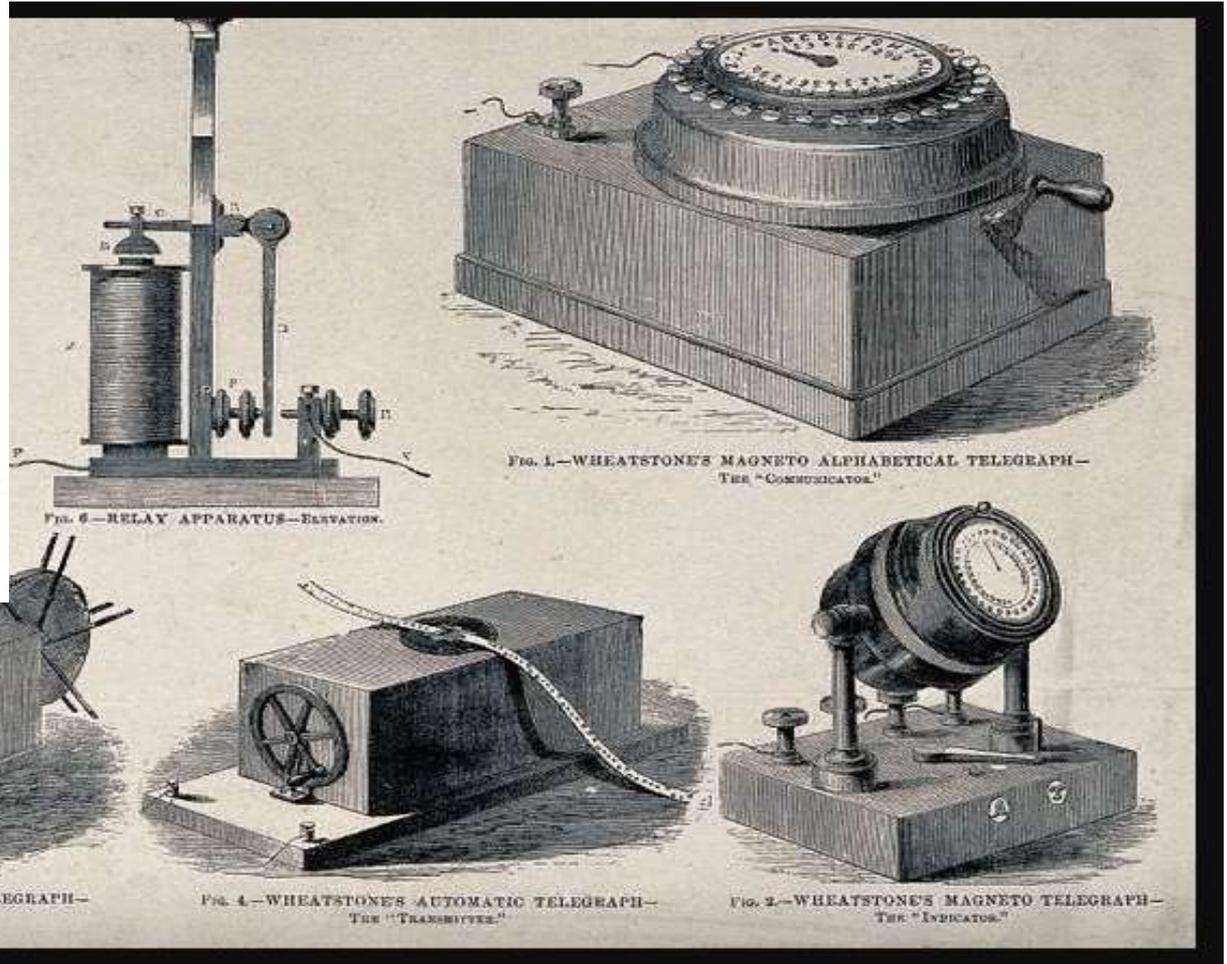


# Moritz Hermann von Jacobi

Буквопечатающий телеграф  
Б.С. Якоби



# Sir Charles Wheatstone's automated telegraph network equipment

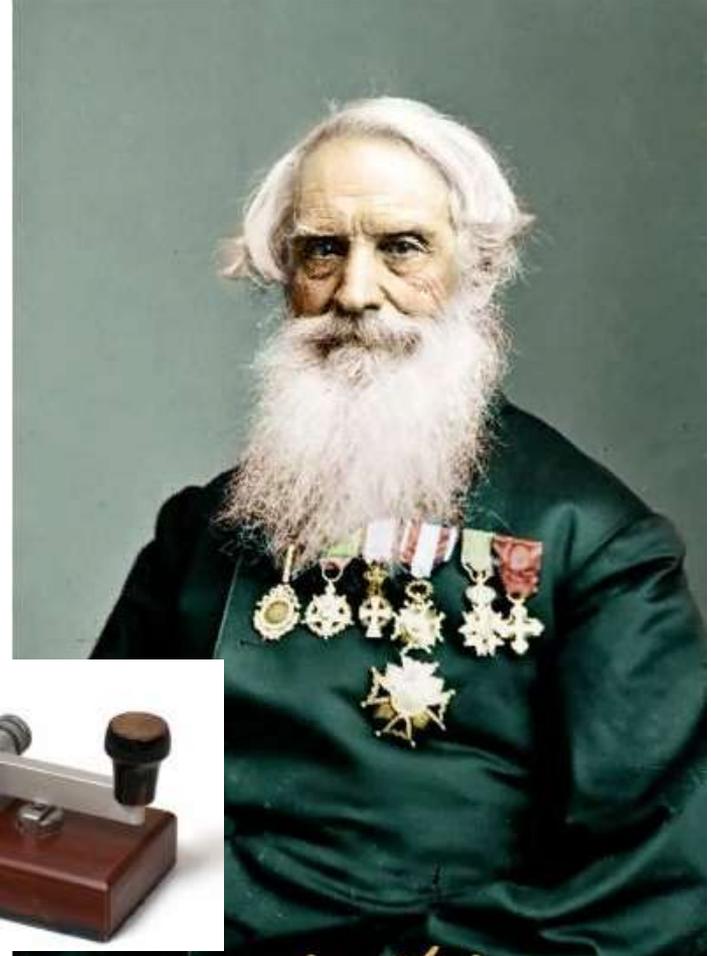
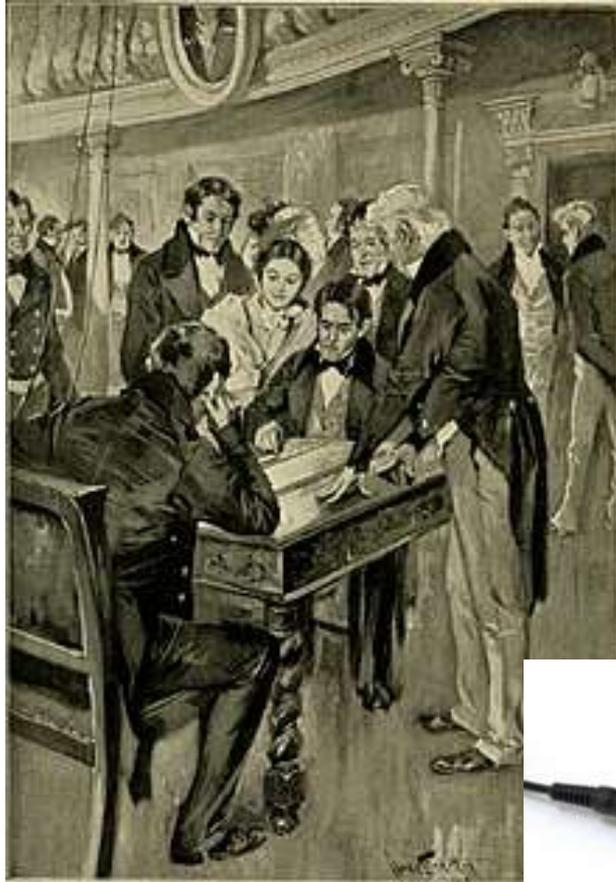


<https://www.thoughtco.com/the-history-of-the-electric-telegraph-and-telegraphy-1992542>

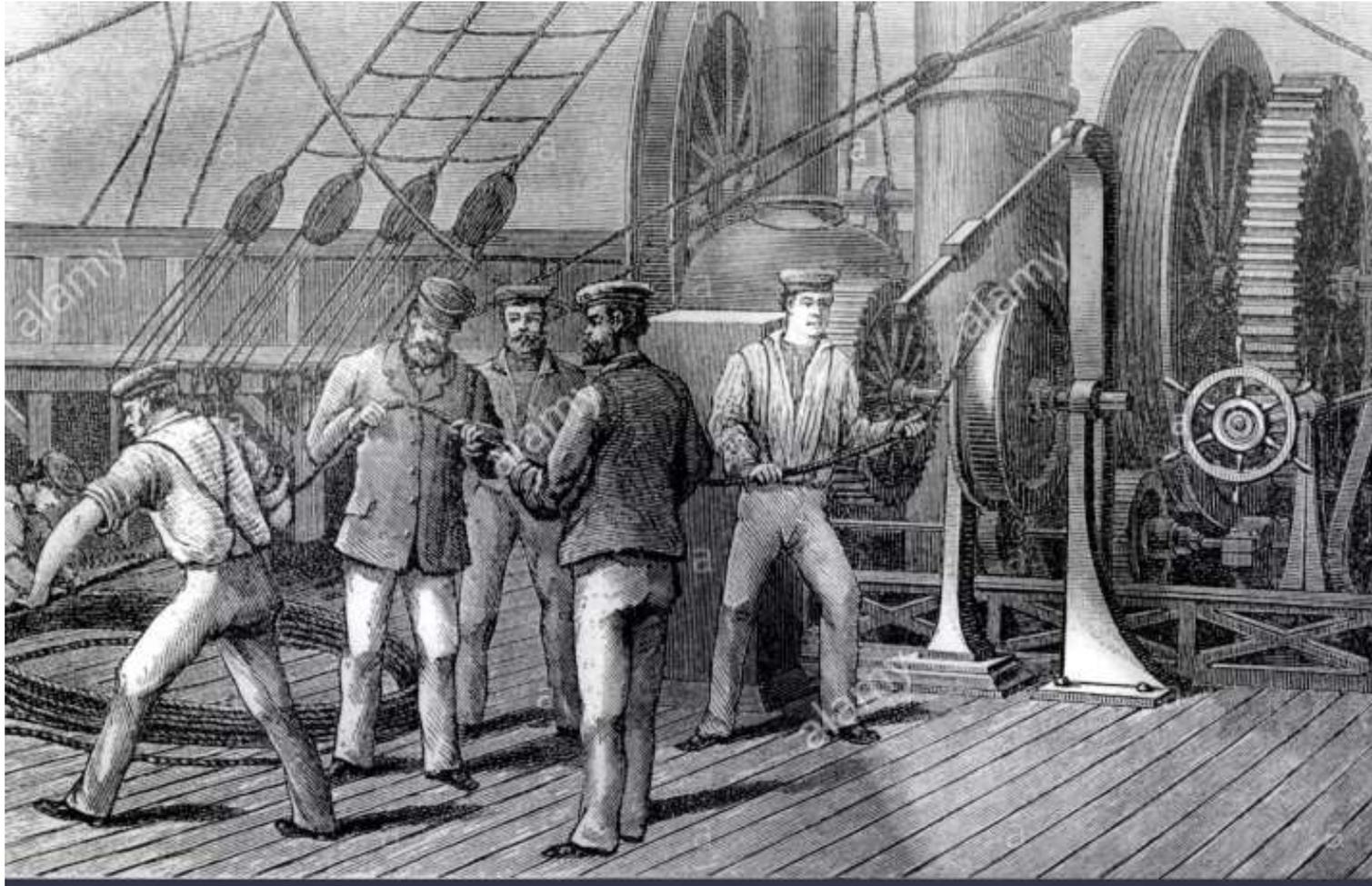


# Samuel Morse sending the message

*What hath God wrought* (May 24, 1844)



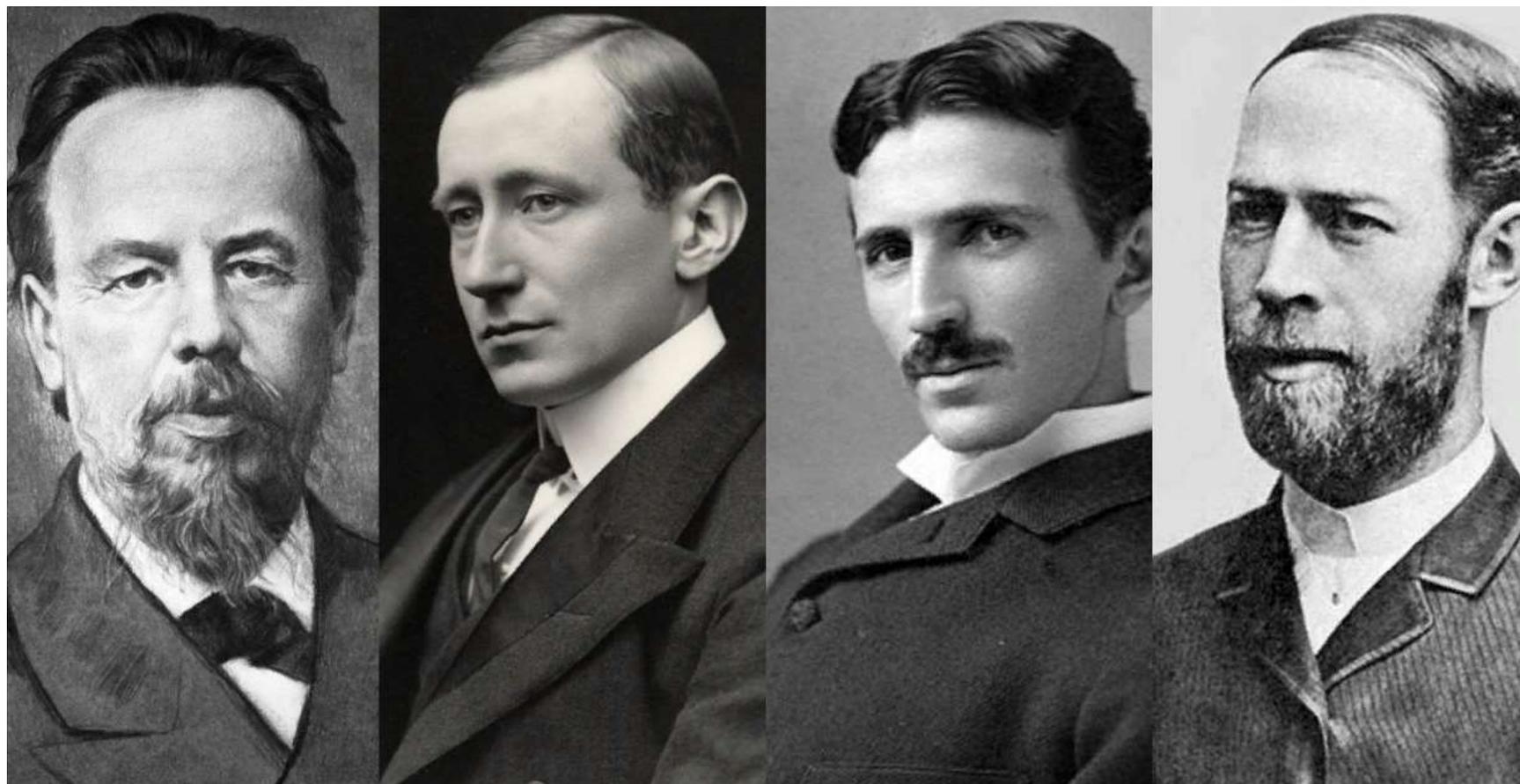
# Laying the transatlantic telegraph line



# Jean-Maurice-Émile Baudot



# Radio creators: A.S. Popov, G.Marconi, N.Tesla, H.Hertz



# Alternative means of communication

Domestic telegraphy reached its peak of development in 1982, when 540 million telegrams were sent. The development of telephone communications, radio and television in the 80s caused the telegraph to lose their positions. This process was aggravated by the economic crisis of the 90s. The decline in telegraphic messages continued in the 1990s, when this type of communication was hopelessly replaced by fax and email. It is computer telecommunications that have become leaders in recent decades.

<user> @ <domain>

Mail is being replaced by messengers and social networks; services like iMessage / WhatsApp / Viber / Telegram. But they are unlikely to replace email in the near future. Indeed, even paper "snail" mail still exists and does not give up its positions. And this is not a matter of technology, but of mentality and strong social inertia.



# Telegraph in the 21st Century

The advent of the Internet has led to the fact that in many countries telegraphs have been abandoned as irrelevant, morally obsolete and unprofitable services.

In 2006, Western Union, a pioneer in telegraphy, stopped providing this service, focusing on the money transfer market. Many countries abandoned the telegraph even earlier: the United Kingdom in 1982, New Zealand in 1999, Sweden in 2002, and the Netherlands in 2004. They were followed by Lithuania and Slovakia (2007), Australia (2011), Kazakhstan and Ukraine (2018).

In Russia, telegraph communication continues to exist, telegraph messages are transmitted and received using telegraph modems connected to the personal computers of operators. Messaging is already carried out through modern communication channels, the network of a wired telegraph in most of Russia has been dismantled. Telegrams are used for money transfers, for congratulations, condolences.

Thus, in situations where the fact of sending and receiving messages must be legally recorded, the telegraph can compete with more convenient means of communication. In this niche of transmission of documentary information, it can exist for a long time



# Telegraph in the 21st Century



# Coventry Telegraph

## D-DAY FOR SKY BLUES

AS ADMINISTRATOR'S DEADLINE LOOMS... We join politicians and fans in signing open letter calling for FA to step in

COVENTRY CITY ON YOUR SEE BACK PAGE

# МОСКОВСКИЙ ТЕЛЕГРАФЪ

ВЪВЕДЕННЫЙ

Николай Полищукъ

МОСКВА

BY TELEGRAPHIC AGENCY SERVICE, изъ международнаго телеграфнаго бюро

1851.

# The Telegraph

BOLLYWOOD'S UNSUNG HEROES THE SELENA SLIT

## Crushed under death express

28 devices moved down

Free-falling rupee drags stocks down

Villagers vote out Vedanta

# ТЕЛЕГРАФ NR1

МАКСИМ ГАРКИН

МОСКВА

069-84 84 74

# Sunday Telegraph

## THE NIGHT WATCH

On the beat with the hottest star who kept us safe while we slept

Exclusive: Nation to celebrate frontline virus workers

# THANKS GIVING DAY

ACTION GUIDE TO WHAT MOVIES YOU'LL SEE FIRST P112

# Телеграфъ

Симферополь — город, которого нет

Кавказъ, Крымъ, Украина, Россия, Европа

# Воронежскій Телеграфъ

КОНЬЯКЪ ШУСТОВА

# De Telegraaf

HULP TE LAAT

LAWINE

# ОМСКИ ТЕЛЕГРАФЪ

ДЪВА МОРЯ

# КАЗАНСКІЙ ТЕЛЕГРАФЪ

КАЗАНЬ И СЕИ

# The Daily Telegraph

Troops on the streets in race to foil second terror attack

Care charity slammed as clients left without food

He slaughtered innocent girls dazed by their pop idol. Our hearts break

# Belfast Telegraph

Back to his roots — royal florist returns home

KLOPP'S ACES 'POOL ONE STEP CLOSER

# JEWISH TELEGRAPHIC AGENCY

At a German train station, a unique memorial is dedicated to Jews deported to their death

# ТЕЛЕГРАФ

РУССКИЙ ТЕЛЕГРАФЪ

Нам бы только день просто

«Газпром» сокращает подачу га

# Questions?

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