

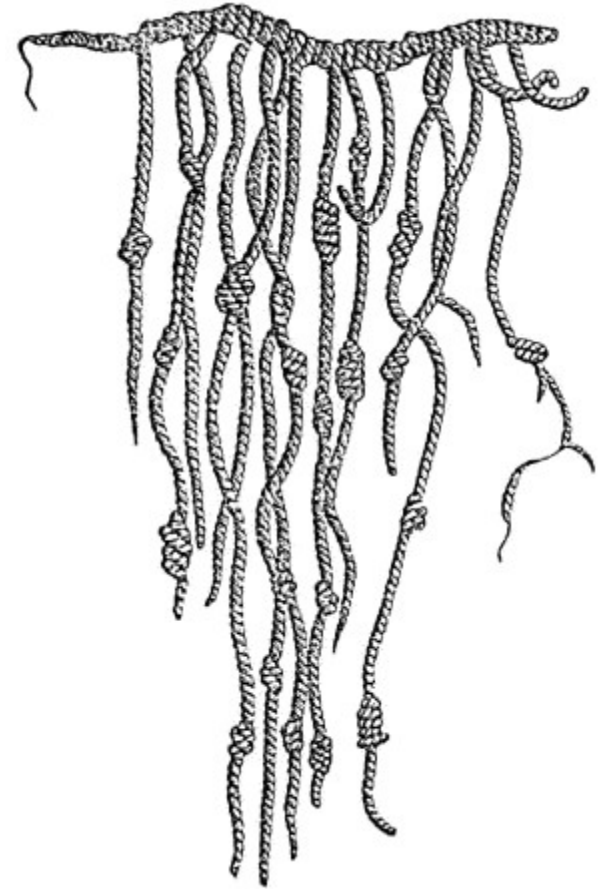
Humanités numériques

Histoire de l'informatique

Abaque



Qipu

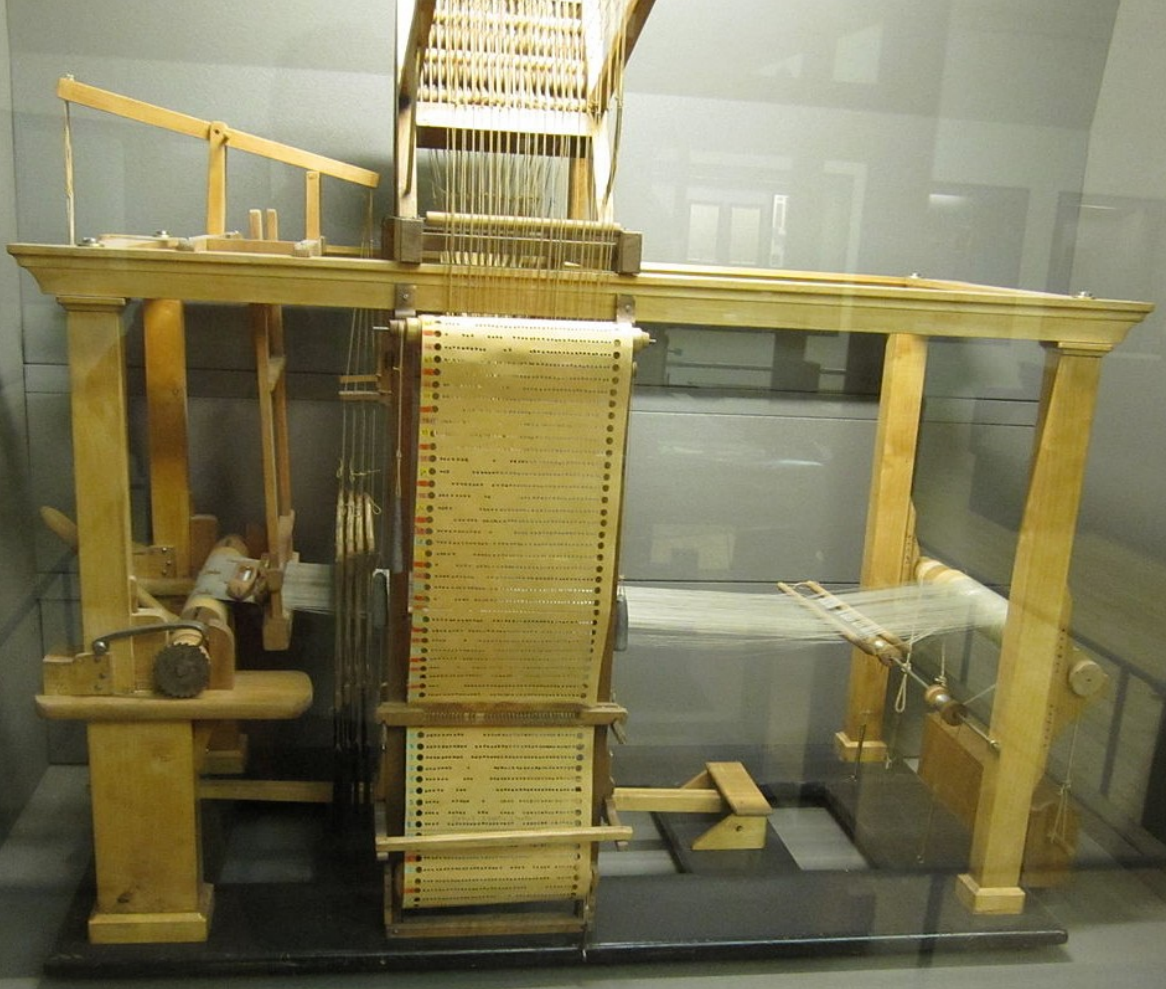




Blaise Pascal, 1640



René Descartes, 1649



Enregistrer la commande

Pour accélérer les opérations de tisser, on remplace le métier de base par une commande mécanique. Les cordes du métier sont attachées à des crochets commandés par des aiguilles. Lorsque l'aiguille se renverse par rapport à la barre de tisser, elle commande le levier

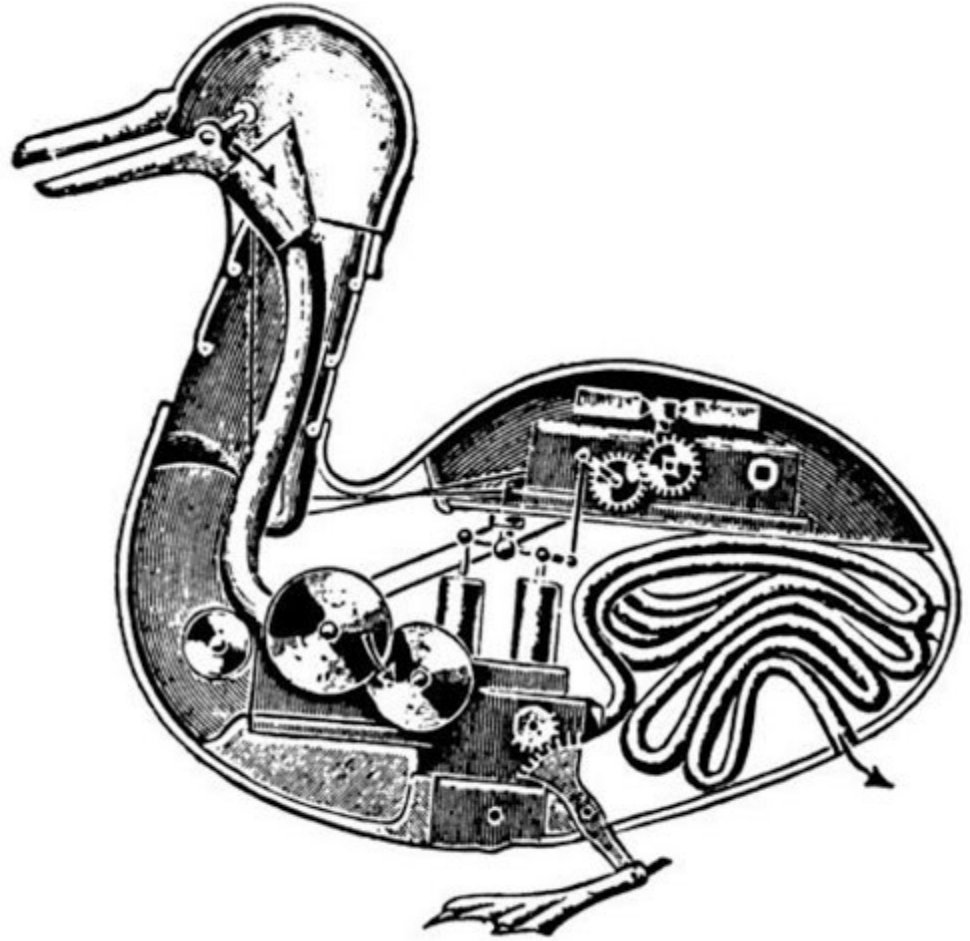
Métier à tisser de Basile
Bouchon, 1725
Musée de la Ville de Lyon, 1980
Musée de la Ville de Lyon, 1980

Basile Bouchon, 1725



2

Jean-Baptiste Falcon, 1728



Jacques de Vaucanson, 1734



A	B	C	D	E	F
G	H	I	K	L	M
N	O	P	Q	R	S
T	U	V	W	X	Y
Z	&	1	2	3	4
5	6	7	8	9	10

Télégraphe Chappe (1794)



INVENTIONS ILLUSTRES

Carnot visitant les ateliers de Jacquard

Joseph Marie Jacquard, 1803

HORRIBLE MASSACRE A LYON.



C'est le 3 avril 1834, que les premières démonstrations d'hostilités ont été faites par les ouvriers des diverses associations de Lyon. Pendant cinq jours consécutifs, les batailles durs avec un acharnement déplorable; mais enfin forces ont été à la loi. Ce n'est pas sans bien du sang répandu qu'a été scellée cette triste victoire; le canon, le mitrailleur, les clubs, les pelotons ont fait plus de ravages, ont causé plus d'incendies, et tué plus de monde, que pendant un long siège. Les insurgés s'étaient emparés de plusieurs églises, et y étaient retranchés, et y soutenaient continuellement le tocsin d'alarme. Malgré l'autorité ecclésiastique qui voulait se placer entre les deux partis combattants, il a fallu enlever les portes des églises, se battre dans les bas-côtés, au milieu des chaires, sur les autels, corps à corps; enfin c'était une hor-

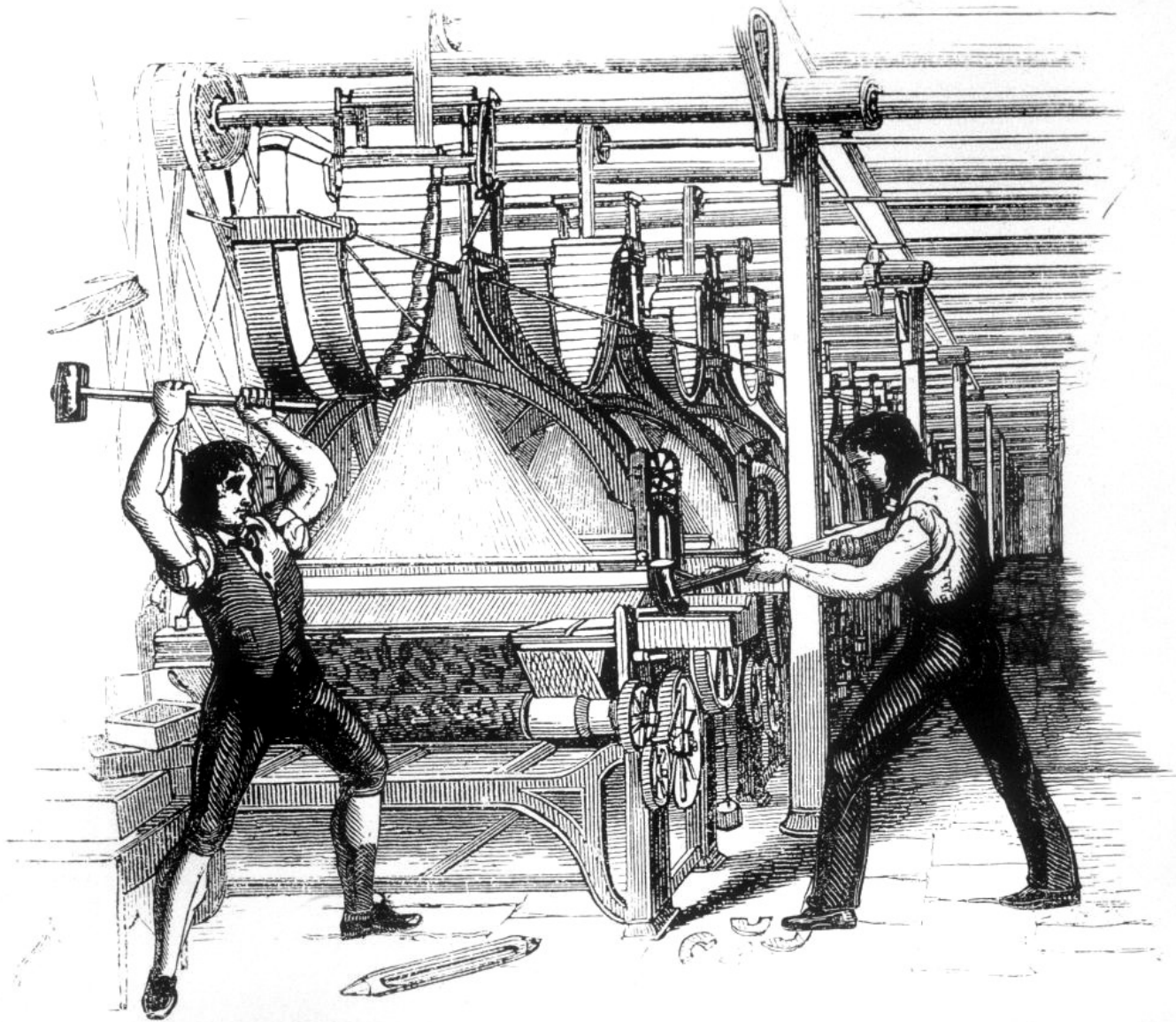
rible mêlée, une tuerie épouvantable. L'église de St-Nizier, le point central le plus opiniâtement défendu par les révoltés, a été enlevée la dernière. Six cent hommes, y ont été passés au fil de l'épée!!! Il est facile de se représenter les sensations civiles. Enfin partout, volées à la retraite, les insurgés ont cessé le feu en prenant la fuite; on en a poursuivi jusque dans les villages. Ainsi s'est terminée cette lutte sanglante, à laquelle les curieux de Lyon n'ont pas pris part; quoique ce mouvement qui s'est répété à Paris, à St-Etienne, à Arbois, eût de vastes ramifications jusque dans les villes les plus tranquilles; tout il est facile de trouver toujours prêts à se livrer aux désordres des gens qui, n'ayant rien à y perdre, ont tout à y gagner!!!

C'est, que demandent cette poignée de barbares qui osent ainsi pour renverser le régime des lois et des constitutions que nous avons déjà acquies par tant de sang et de sacrifices? La république, n'est-ce pas? C'est l'autorité pour l'indignation des citoyens civils. Enfin partout, volées à la retraite, les insurgés ont cessé le feu en prenant la fuite; on en a poursuivi jusque dans les villages. Ainsi s'est terminée cette lutte sanglante, à laquelle les curieux de Lyon n'ont pas pris part; quoique ce mouvement qui s'est répété à Paris, à St-Etienne, à Arbois, eût de vastes ramifications jusque dans les villes les plus tranquilles; tout il est facile de trouver toujours prêts à se livrer aux désordres des gens qui, n'ayant rien à y perdre, ont tout à y gagner!!!

Appeler sous le drapeau les citoyens, quand ils veulent être vus, dans les campagnes, enlever par sang et de sacrifices? La république, n'est-ce pas? C'est l'autorité pour l'indignation des citoyens civils. Enfin partout, volées à la retraite, les insurgés ont cessé le feu en prenant la fuite; on en a poursuivi jusque dans les villages. Ainsi s'est terminée cette lutte sanglante, à laquelle les curieux de Lyon n'ont pas pris part; quoique ce mouvement qui s'est répété à Paris, à St-Etienne, à Arbois, eût de vastes ramifications jusque dans les villes les plus tranquilles; tout il est facile de trouver toujours prêts à se livrer aux désordres des gens qui, n'ayant rien à y perdre, ont tout à y gagner!!!

REPORT, DE L'IMPRIMERIE DE J.-P. CLEGG.

Luddites
1811



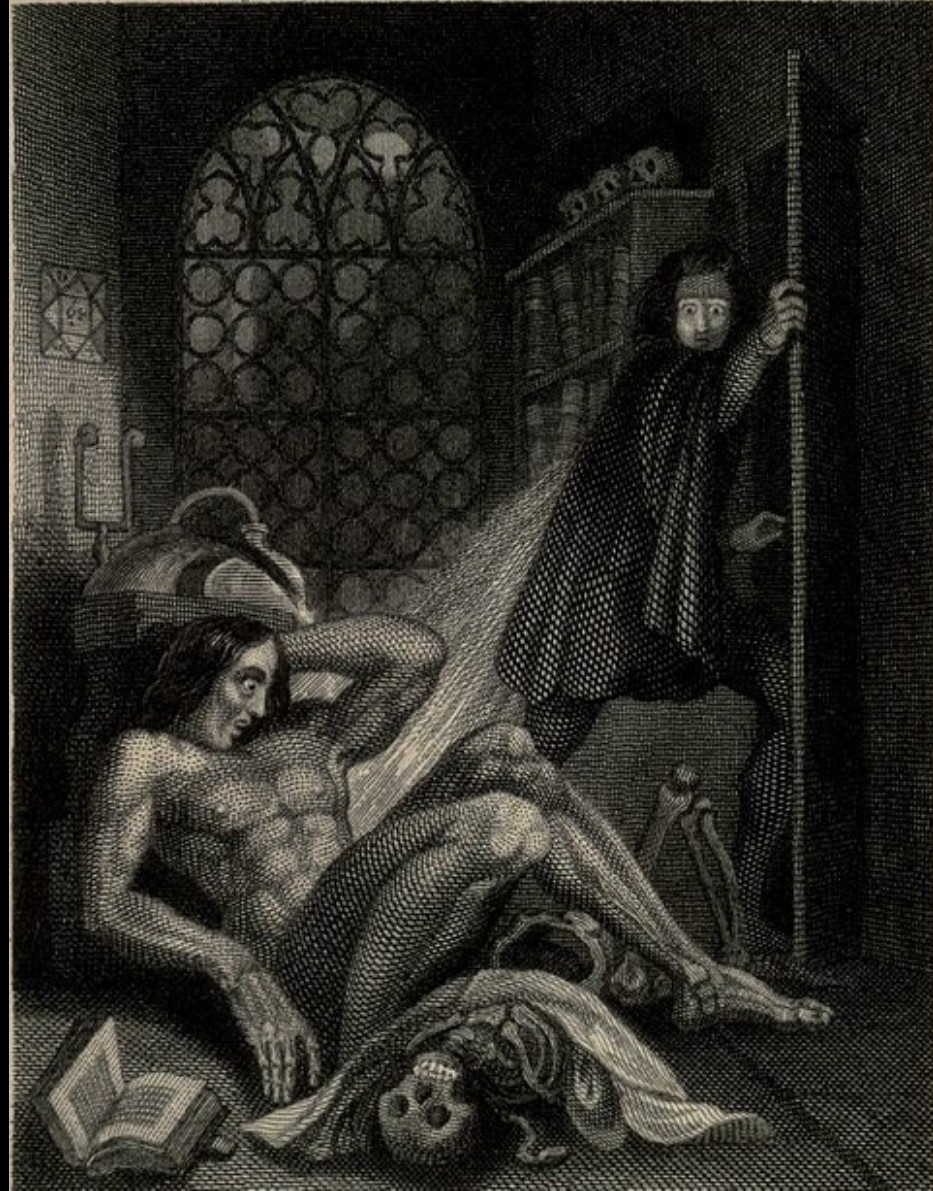


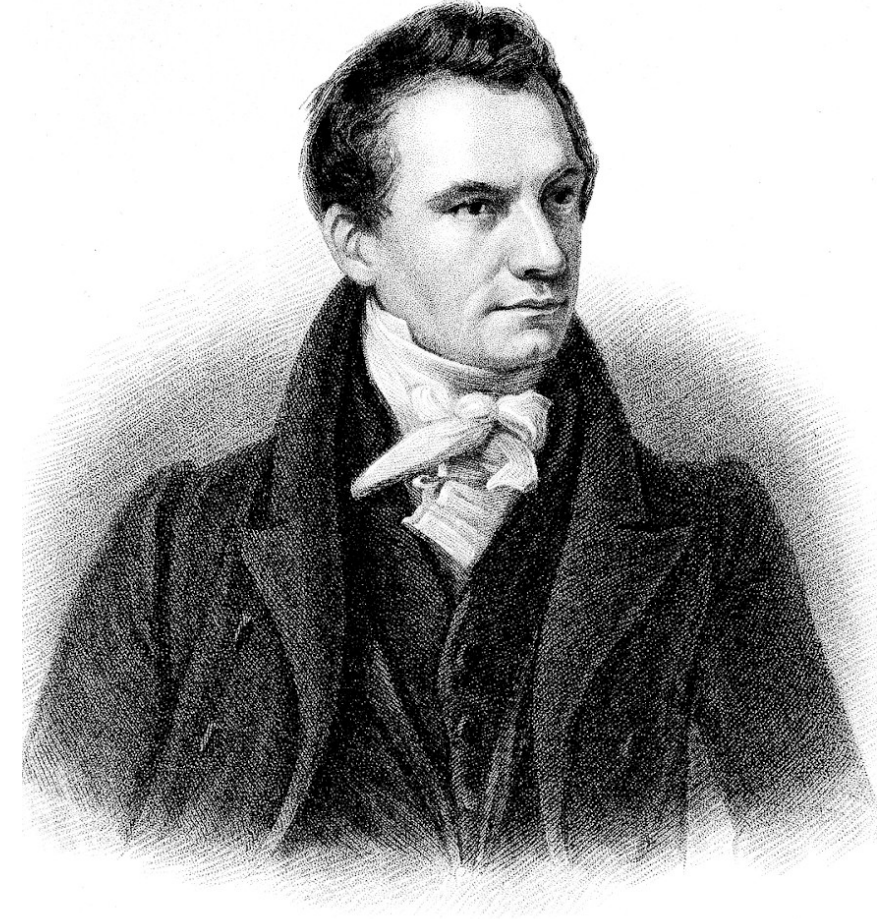
George Byron





Mary Shelley





Charles Babbage (1843)

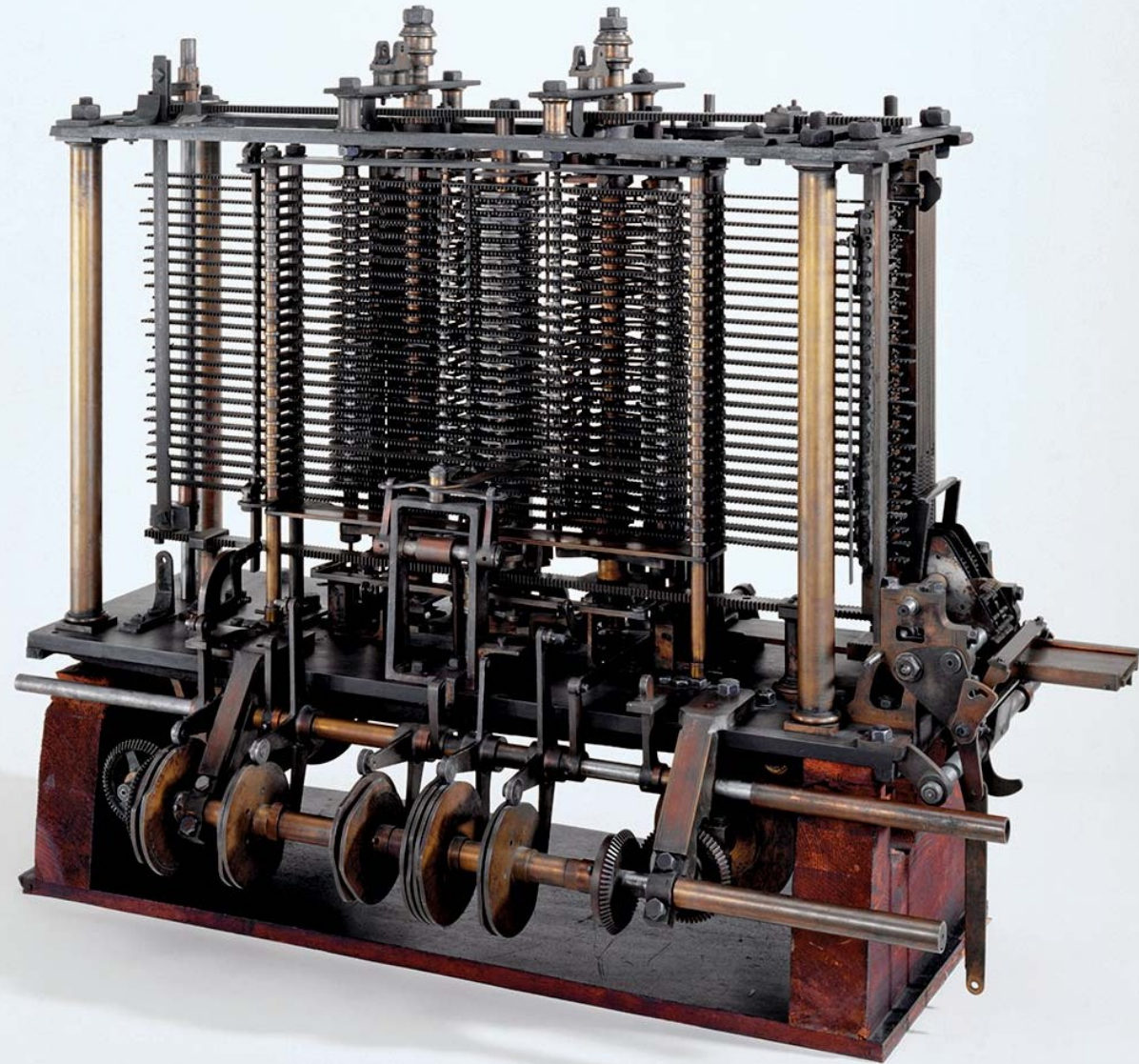


Diagram for the computation by the Engine of the Numbers of Bernoulli. See Note G. (page 277 of *say*)

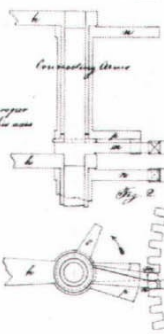
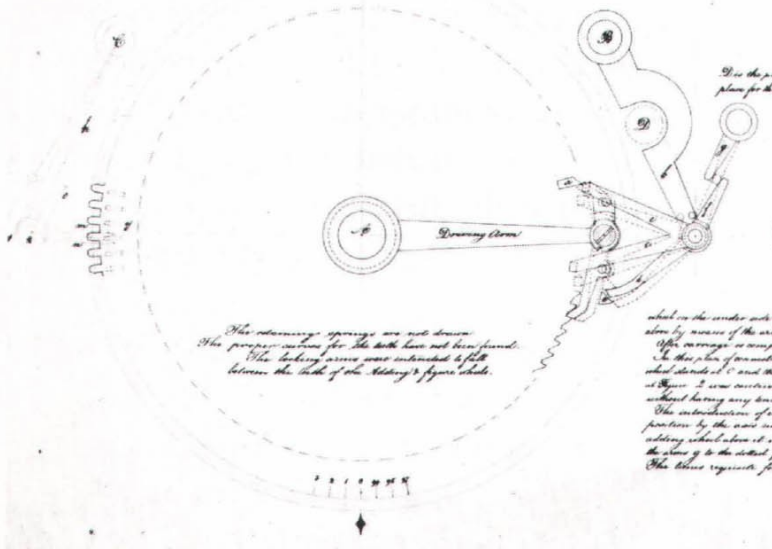
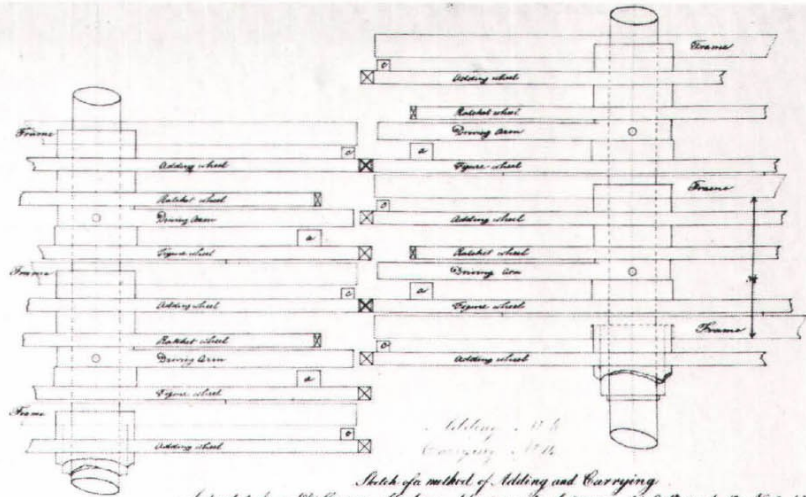
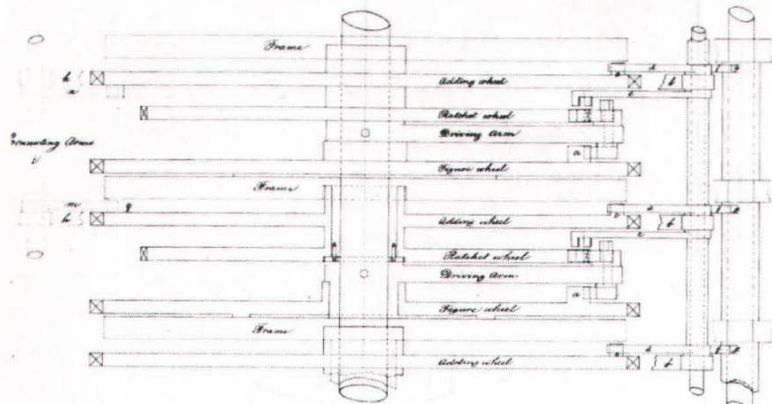
Number of Operations.	Nature of Operations.	Variables acted upon.	Variables resulting.	Indication of change in the value of any Variable.	Statement of Results.	Data														Working Variables.					Result Variables.				
						v ₁	v ₂	v ₃	v ₄	v ₅	v ₆	v ₇	v ₈	v ₉	v ₁₀	v ₁₁	v ₁₂	v ₁₃	v ₁₄	v ₁₅	v ₁₆	v ₁₇	v ₁₈	v ₁₉	v ₂₀	v ₂₁	v ₂₂	v ₂₃	
1	x	v ₁	v ₂	v ₃	v ₄	2a	2	a	2a	2a	2a																		
2	-	v ₂	v ₃	v ₄	v ₅	-2a-1	1		2a-1																				
3	+	v ₃	v ₄	v ₅	v ₆	2a+1	1			2a+1																			
4	-	v ₄	v ₅	v ₆	v ₇	2a-1			0	0																			
5	x	v ₅	v ₆	v ₇	v ₈	2a+1	2																						
6	-	v ₆	v ₇	v ₈	v ₉	2a-1																							
7	+	v ₇	v ₈	v ₉	v ₁₀	2a+1	1		a																				
8	+	v ₈	v ₉	v ₁₀	v ₁₁	2a+2	2																						
9	-	v ₉	v ₁₀	v ₁₁	v ₁₂	2a-1																							
10	x	v ₁₀	v ₁₁	v ₁₂	v ₁₃	2a																							
11	+	v ₁₁	v ₁₂	v ₁₃	v ₁₄	2a+1	1																						
12	-	v ₁₂	v ₁₃	v ₁₄	v ₁₅	2a-2																							
13	x	v ₁₃	v ₁₄	v ₁₅	v ₁₆	2a-1	1																						
14	+	v ₁₄	v ₁₅	v ₁₆	v ₁₇	2a+1-3	1																						
15	-	v ₁₅	v ₁₆	v ₁₇	v ₁₈	2a-1					2a-1	3	2a-1																
16	x	v ₁₆	v ₁₇	v ₁₈	v ₁₉	2a-2	1																						
17	-	v ₁₇	v ₁₈	v ₁₉	v ₂₀	2a-2																							
18	+	v ₁₈	v ₁₉	v ₂₀	v ₂₁	2a+1-4	1																						
19	-	v ₁₉	v ₂₀	v ₂₁	v ₂₂	2a-2																							
20	x	v ₂₀	v ₂₁	v ₂₂	v ₂₃	2a-2	1																						
21	+	v ₂₁	v ₂₂	v ₂₃	v ₂₄	2a-1																							
22	-	v ₂₂	v ₂₃	v ₂₄	v ₂₅	2a-2																							
23	+	v ₂₃	v ₂₄	v ₂₅	v ₂₆	2a-3	1																						

Here follows a repetition of Operations thirtzen to twenty-three.

24	+	v ₂₄	v ₂₅	v ₂₆	v ₂₇	2a																								
25	+	v ₂₅	v ₂₆	v ₂₇	v ₂₈	2a+1	1		a+1																					

Ada Augusta Byron King
countess of Lovelace (1815-1852)





Sketch for method of Adding and Carrying

Invented for a Difference Machine designed between 31 Oct. and 12 Nov. 1836
The arm A with the driving arm fixed to it within an entire revolution, or more part of which the disk T
is put into the teeth of the ratchet by the wheel plane B, and then the driving wheel is carried on with the arm
until when the figure wheel stands at 0 in which case the disk T returns to the driving position until the return of
the arm as per sketch.

The carriage is given by the A's only, and is carried by the arm C moving the arm B as in the dotted position.
The arm B moves through the angle A B C which with draw the disk T when the return of carriage has not been given.
The arm B moves back out at the same time the arm C are moved to the dotted position.
The arm C moves back and at the same time the driving arm moves through an arc equal to that between one figure
and the next.

The driving arm moves back and the carriage of the next wheel commences with the movement of B through the same
angle A B C as before.

If one unit of time is allowed for the ten movements of B carrying with it the 3 units of time
Suppose the machine to consist of 10 steps. Head of the machine consists of 30 cogs.
and the figure wheels to be numbered from 1 to 10. And the figure wheel on number 10 is 100.

A complete addition case	10	A complete addition case	10
Two revolutions of Driving arm	20	Two revolutions of Driving arm	20
10 Carriage	10	10 Carriage	10
Units of time = 163		Units of time = 98	

The unit of time is equal to the distance between two consecutive figures.
A simple method of connecting the wheels when several stand at 99 and thus carrying on all the wheels one unit of time
instead of 10 is shown in this and consists of the arm B which moves the arm C against the bottom of each of which
has three arms 99 9 9 upon it and it acts there, it acts with the center of the figure 100 and when the arm B
has moved into position to give addition, arm B moves the figure 1 to the line 99 (the position it is shown in) which puts
the arm 99 in the plane of a single tooth on the upper side of the adding wheel and the arm 99 into gear with a complete
wheel having any tendency to turn 99.

The introduction of either of these plans will increase the distance between the frames and will render it necessary for the wheel plane to be put the disk T into its return
position by the arm moving through an arc which is less than the distance from one figure to the next, so if this is not the case and a figure wheel should stand at 99 and the
adding wheel stand at 99 a carriage by secondary means would be attempted. The process will be, add, which takes 10 or 100 carrying again 2. Move
the stem of the disk plane, which takes 1. The ten movements of arm B carry 1 unit.

The time required for an addition on each case are then for as follows.

Case	Head of time	Head of time	Head of time
1 Without the connecting arms	163	2 With out the connecting arms	98
2 With	163	3 With	162

The connecting arm carries carriage to be anticipated at the 98



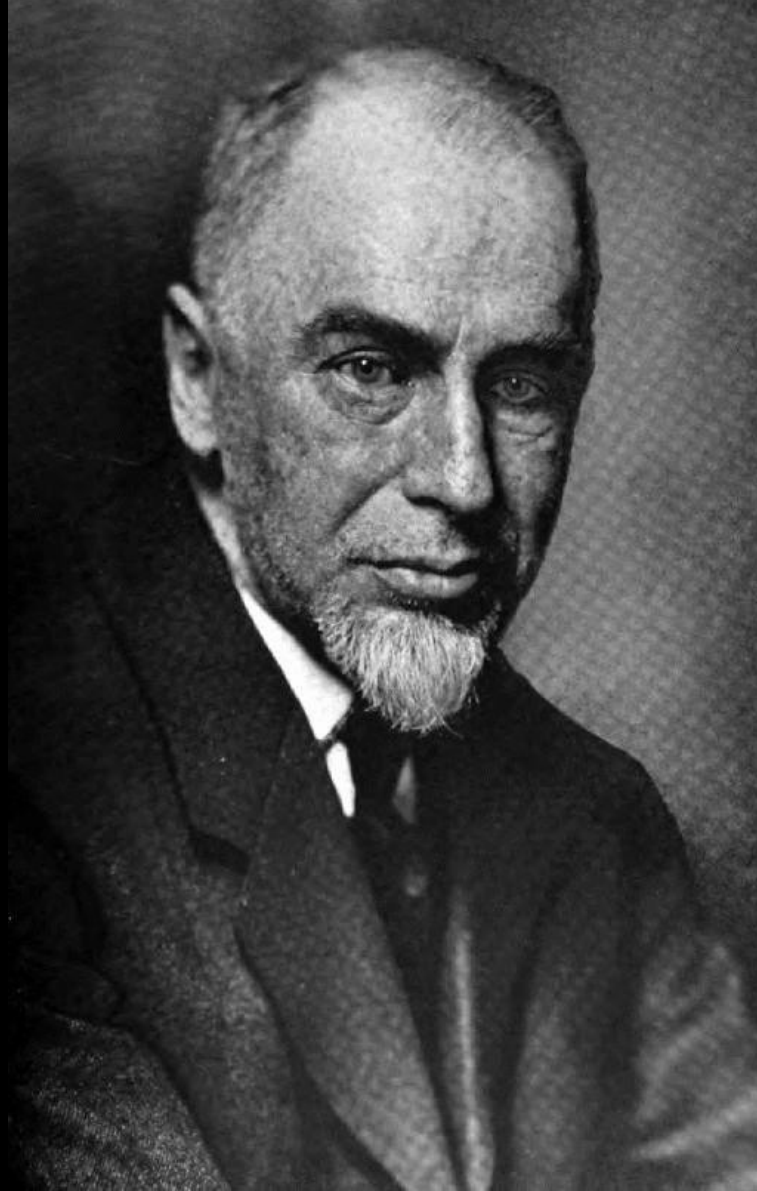
AN INVESTIGATION
OF
THE LAWS OF THOUGHT,
ON WHICH ARE FOUNDED
THE MATHEMATICAL THEORIES OF LOGIC
AND PROBABILITIES.

BY
GEORGE BOOLE, LL.D.

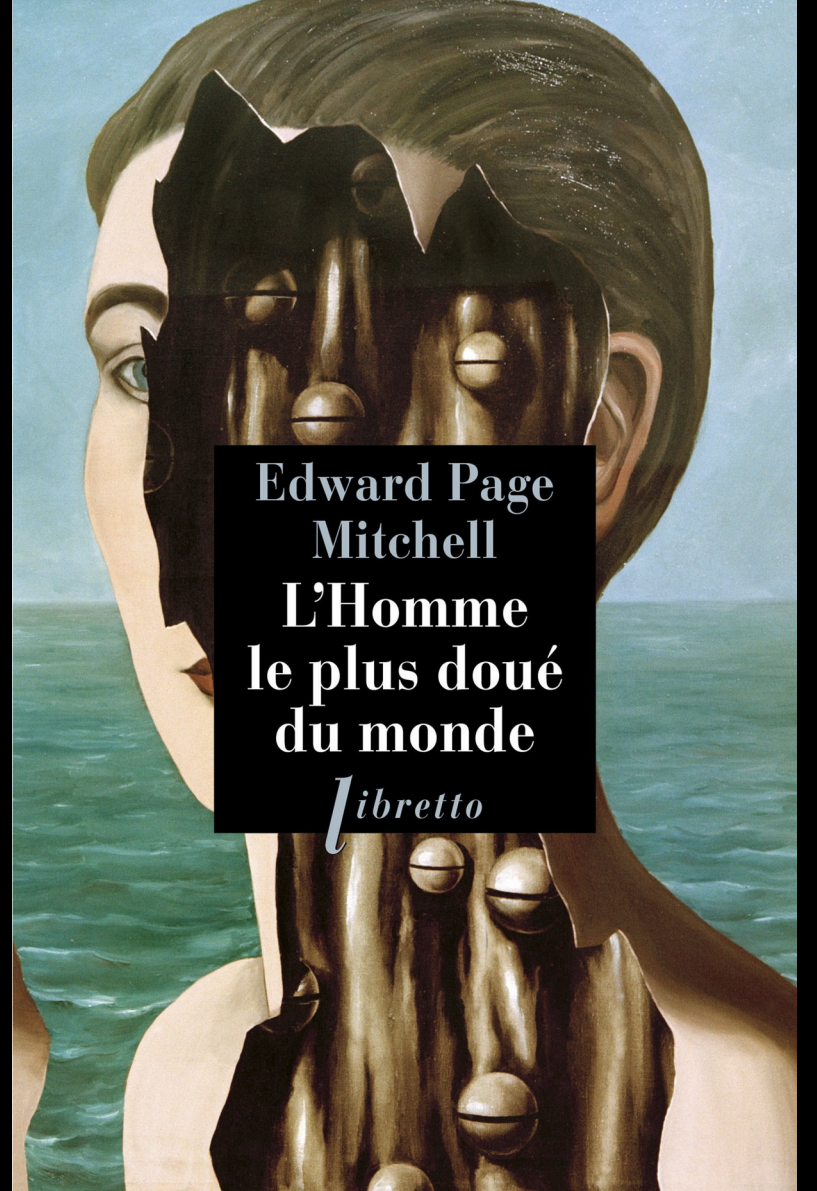
PROFESSOR OF MATHEMATICS IN QUEEN'S COLLEGE, COBK.

LONDON:
WALTON AND MABERLY,
UPPER GOWER-STREET, AND IVY-LANE, PATERNOSTER-ROW.
CAMBRIDGE: MACMILLAN AND CO.

1854.



1879

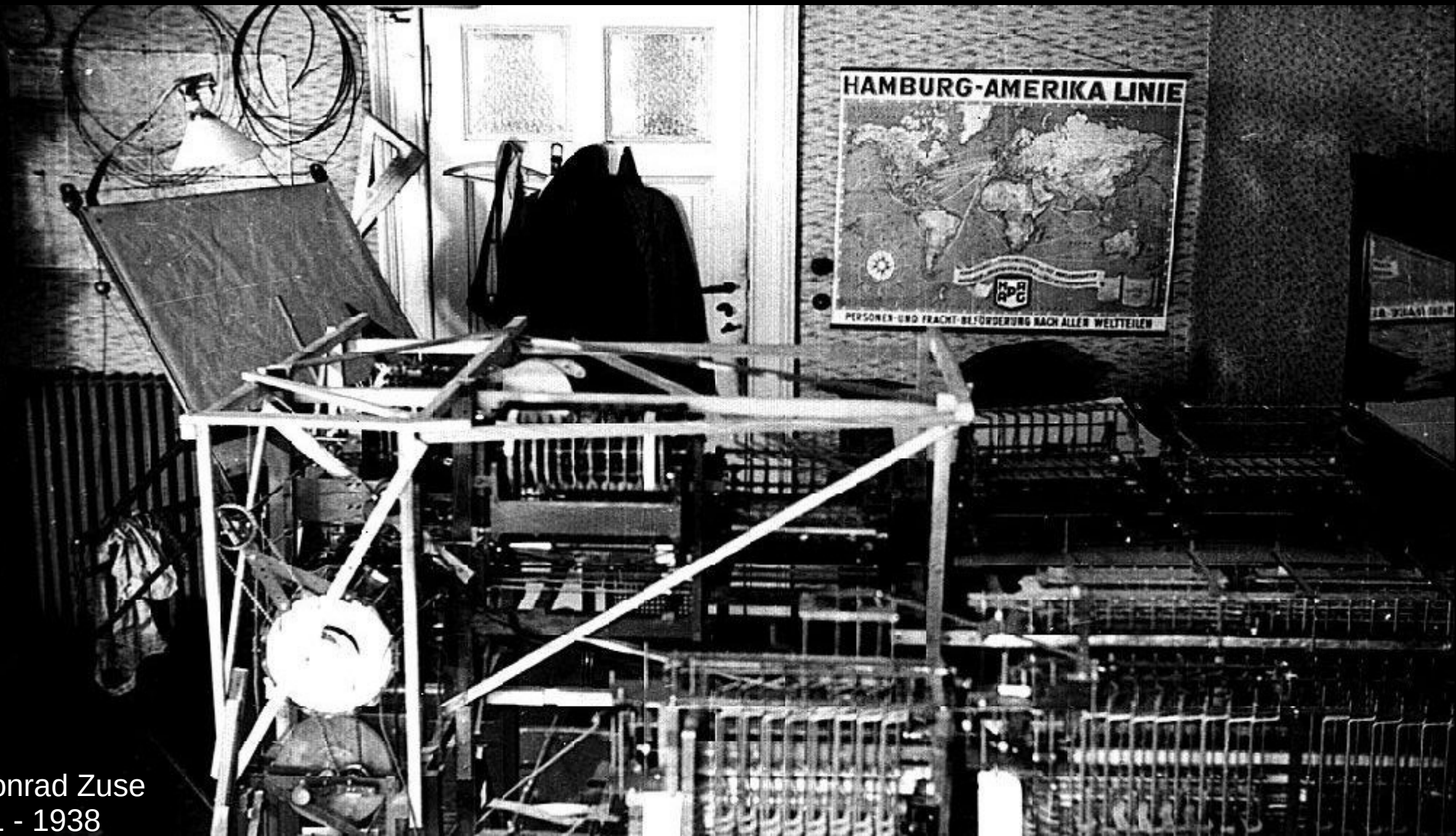




Herman Hollerith,
machine à statistiques sur cartes perforées
utilisée pour le recensement de 1890

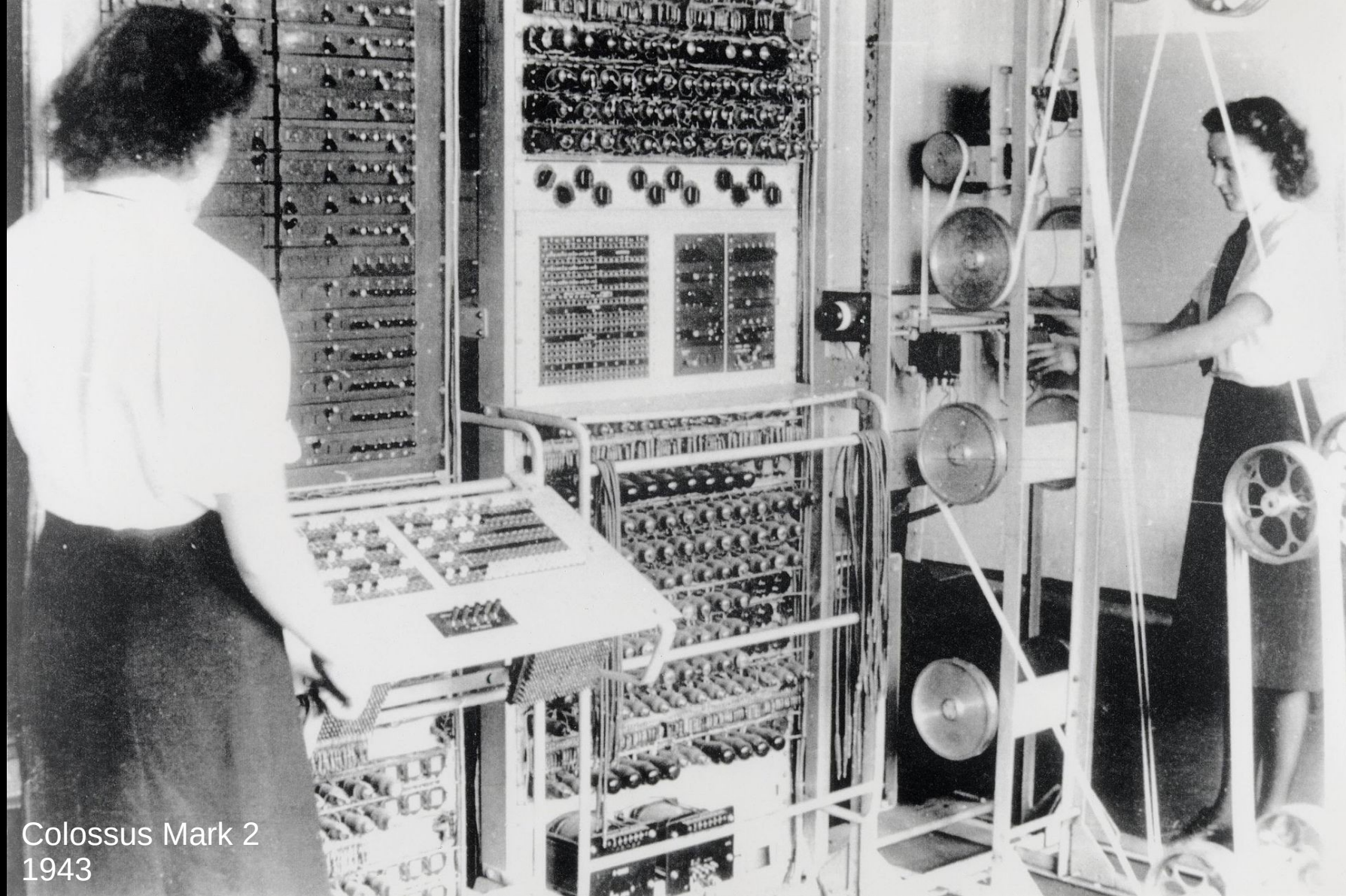
Tabulating machines co. (1896)
Industrial business machines (1917)

Konrad Zuse
Z1 - 1938

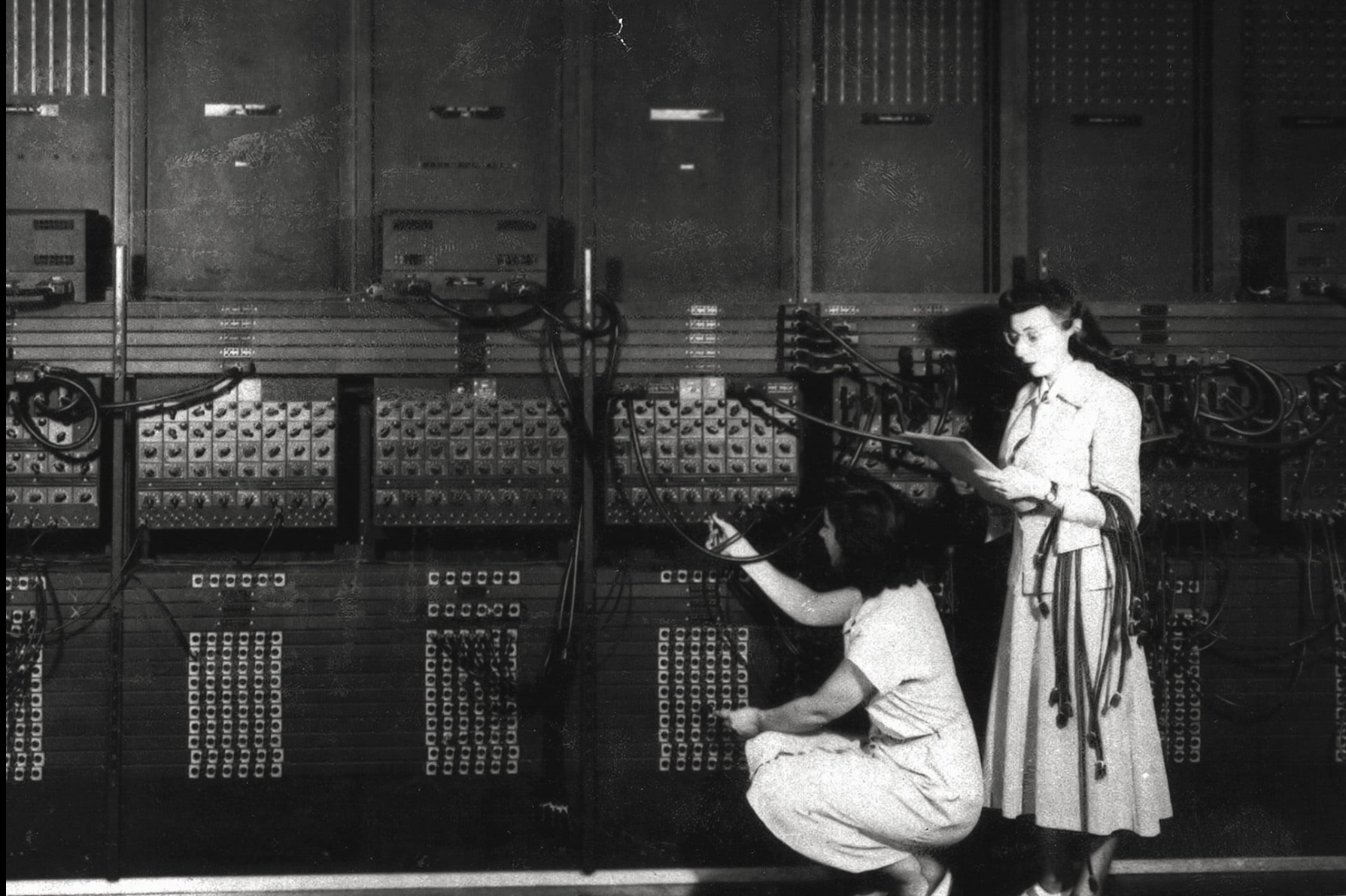


COMPUTING
DIVISION
COMPUTING
SECTION



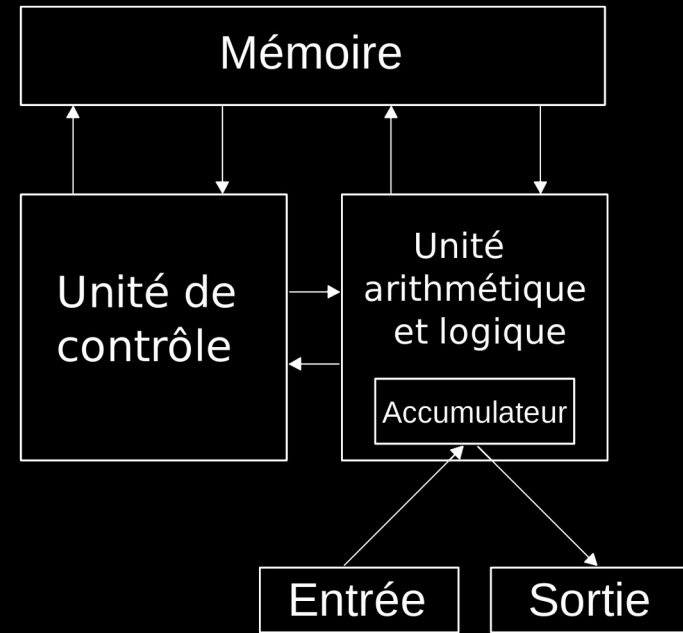
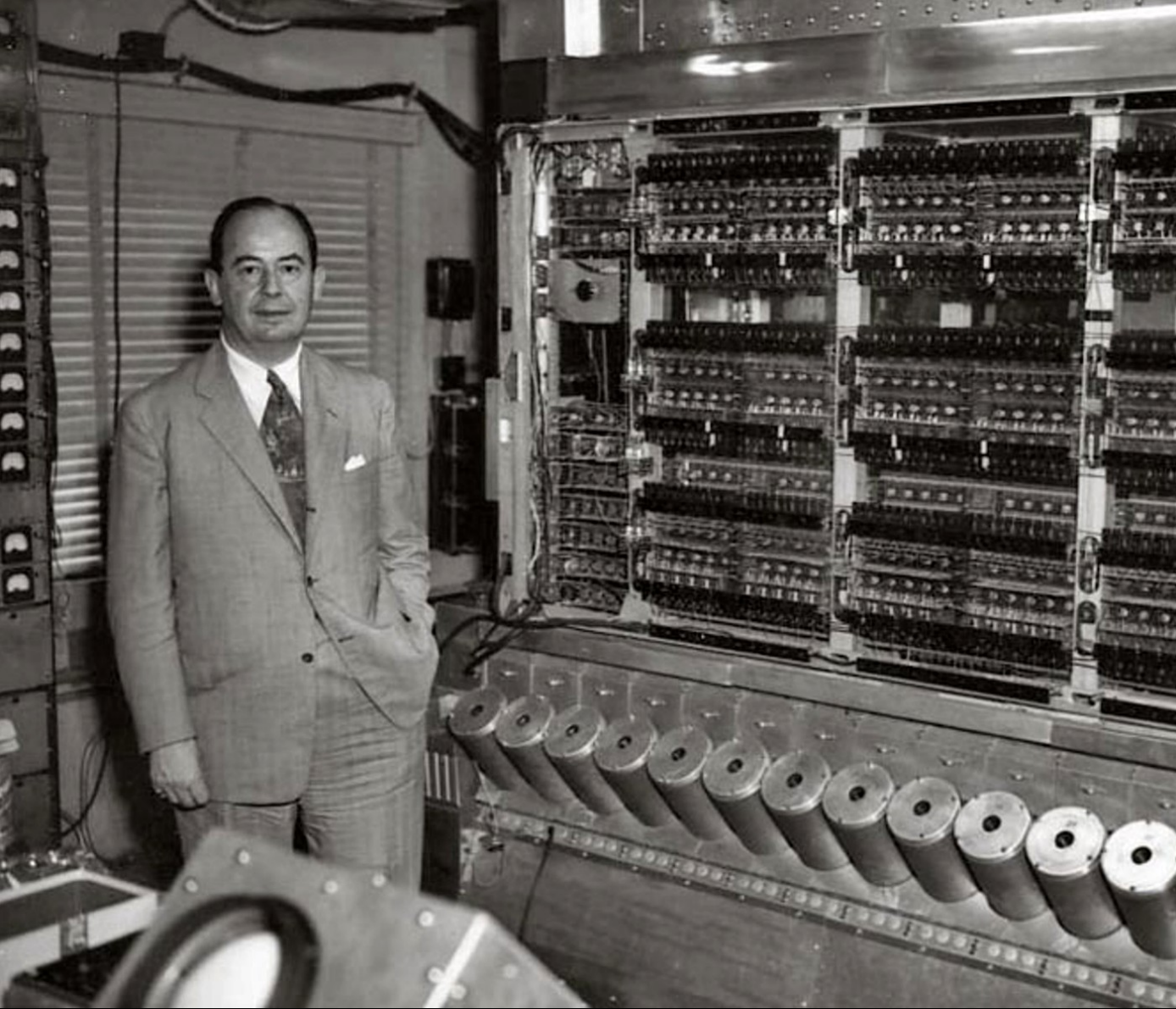


Colossus Mark 2
1943

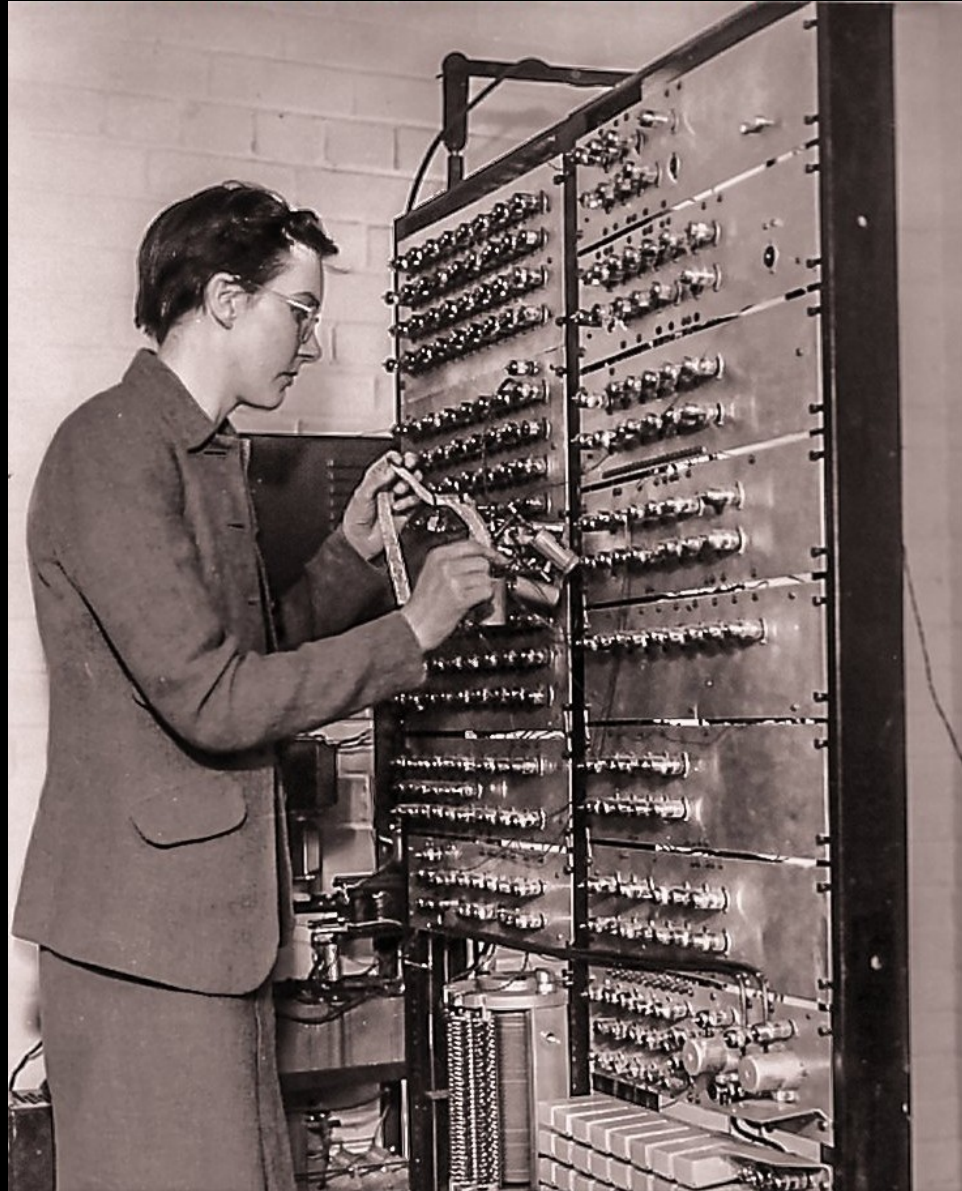


Eniac
1945

John Von Neumann (1945)

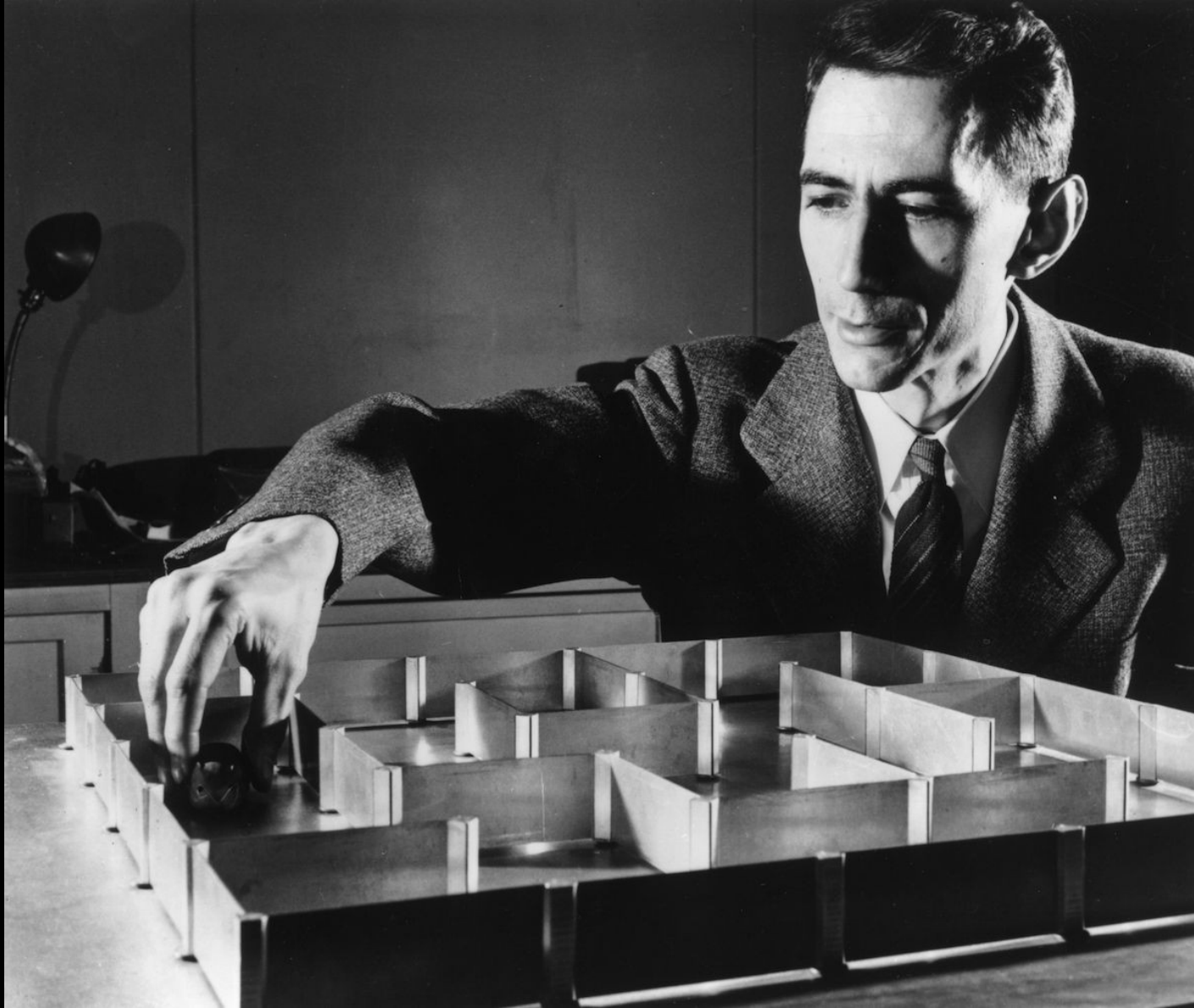


Kathleen Booth :
Langage Assembleur
(1949)

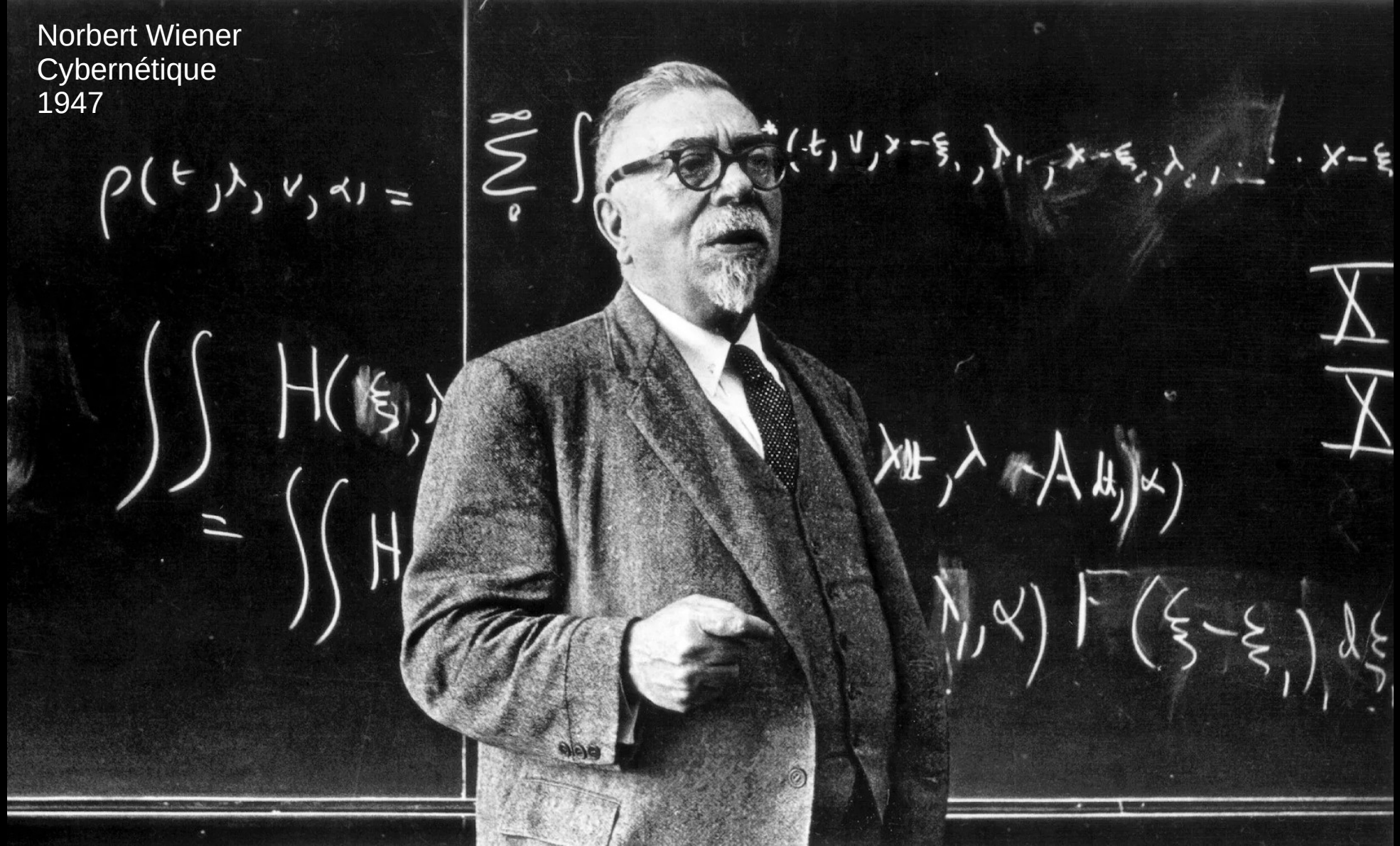




Claude Shannon
(1916-2001)



Norbert Wiener
Cybernétique
1947





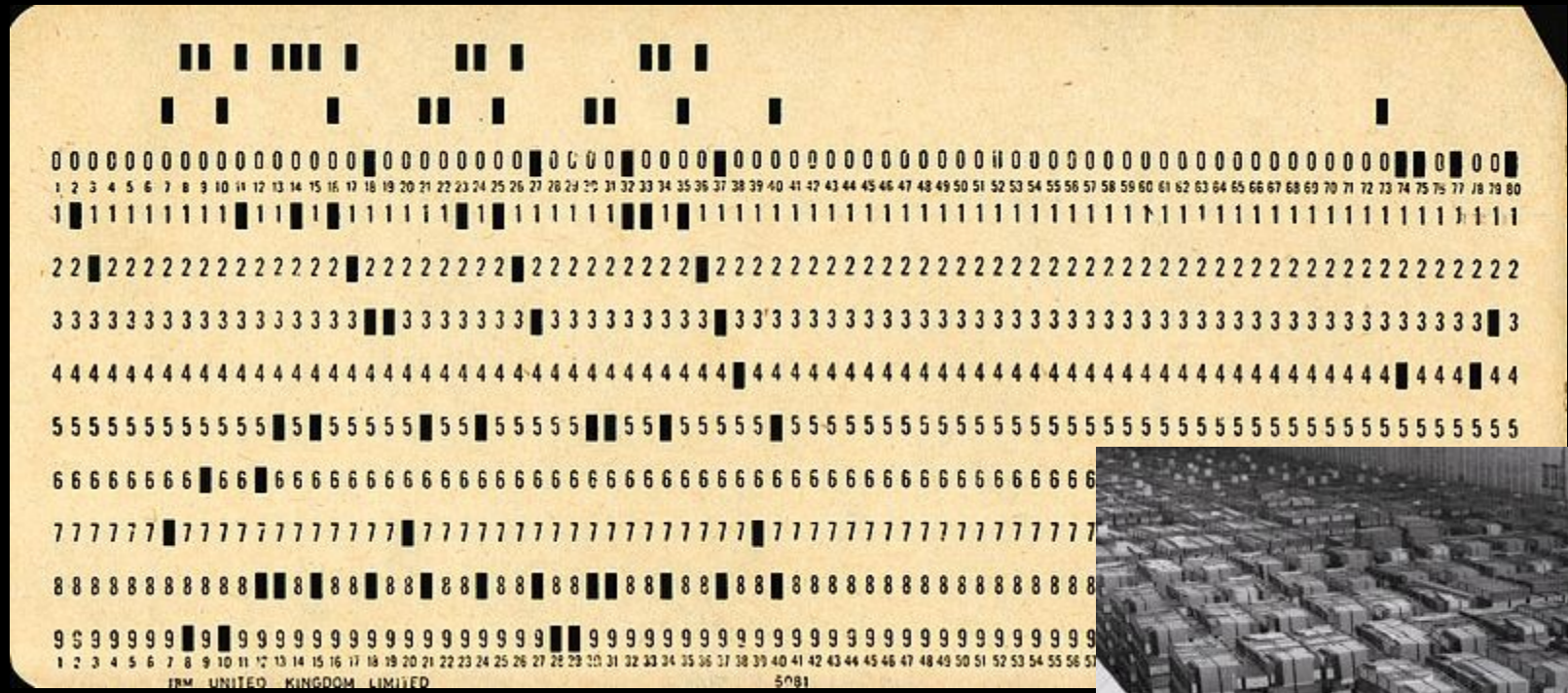
Nicolas Schöffer, spatiodynamisme (1948)

Marvin Minsky John McCarthy
1957



Grace Hopper, 1959





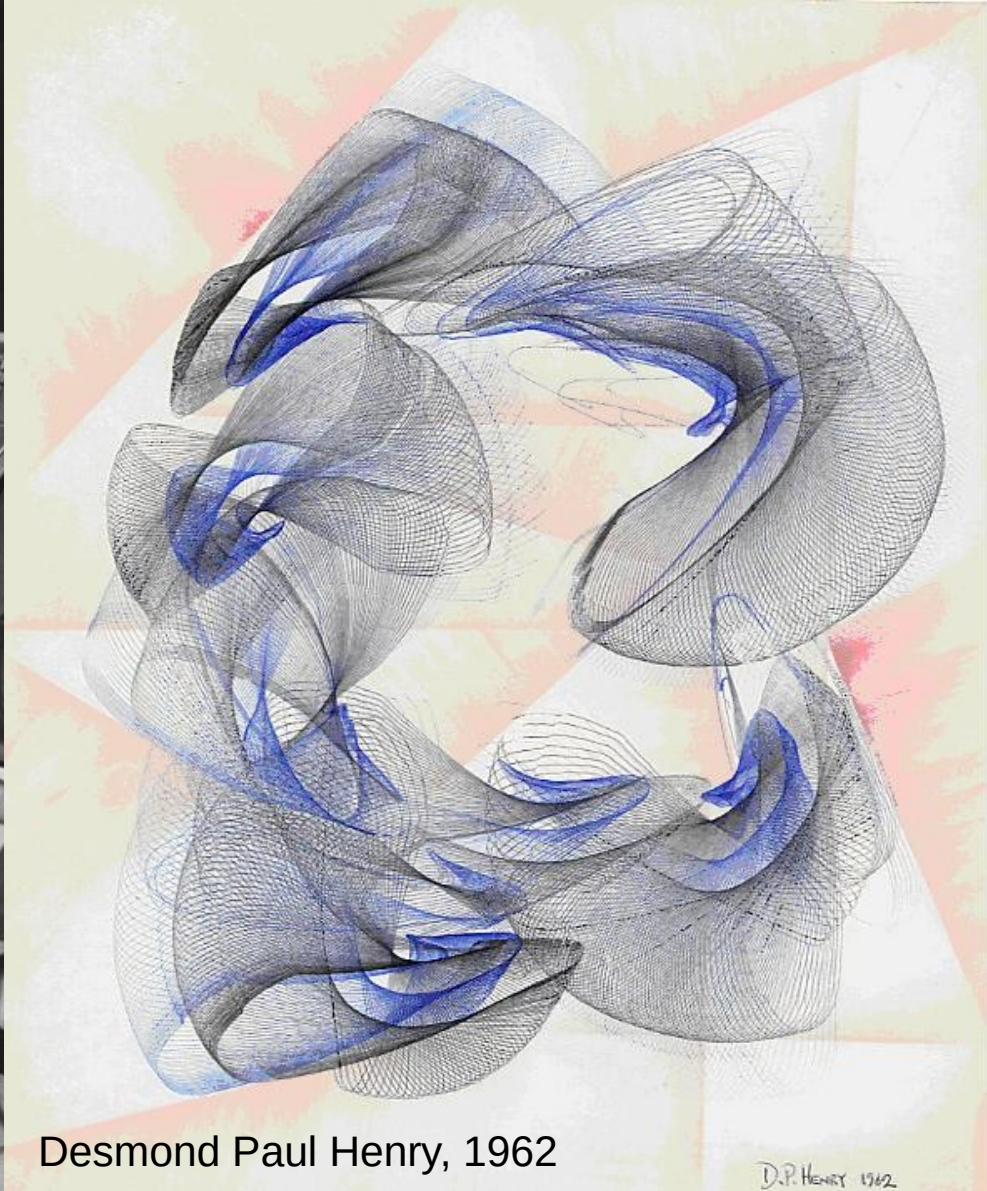
4 Go en 1959

John Whitney Sr. 1961



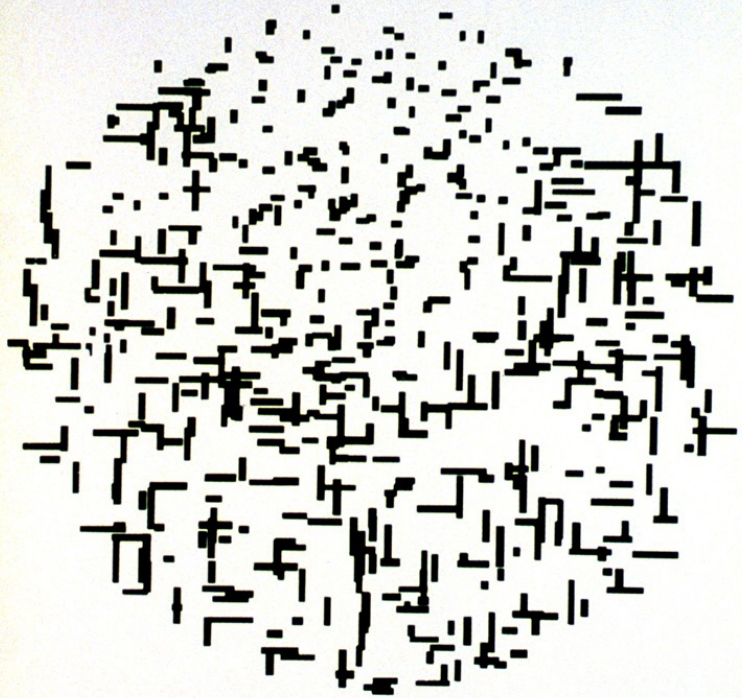


SAGE, 1959



Desmond Paul Henry, 1962

D.P. HENRY 1962



© AMN 1965

COMPUTER COMPOSITION WITH LINES (1964)
BY A. MICHAEL NOLL

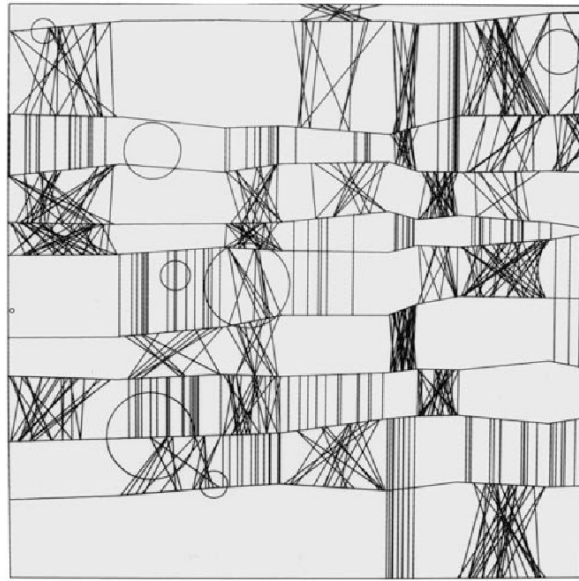


Fig. 1. Frieder Nake, *Klee. 13/9/1965 Nr. 2*, 40 × 40 cm, 1965.
(© Frieder Nake)

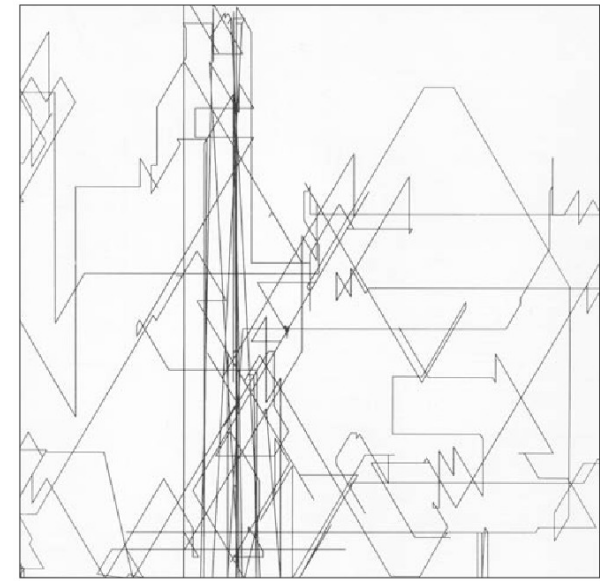
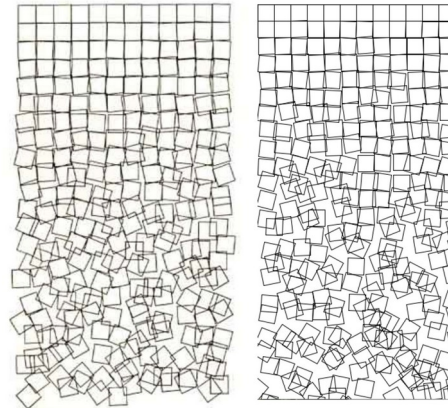
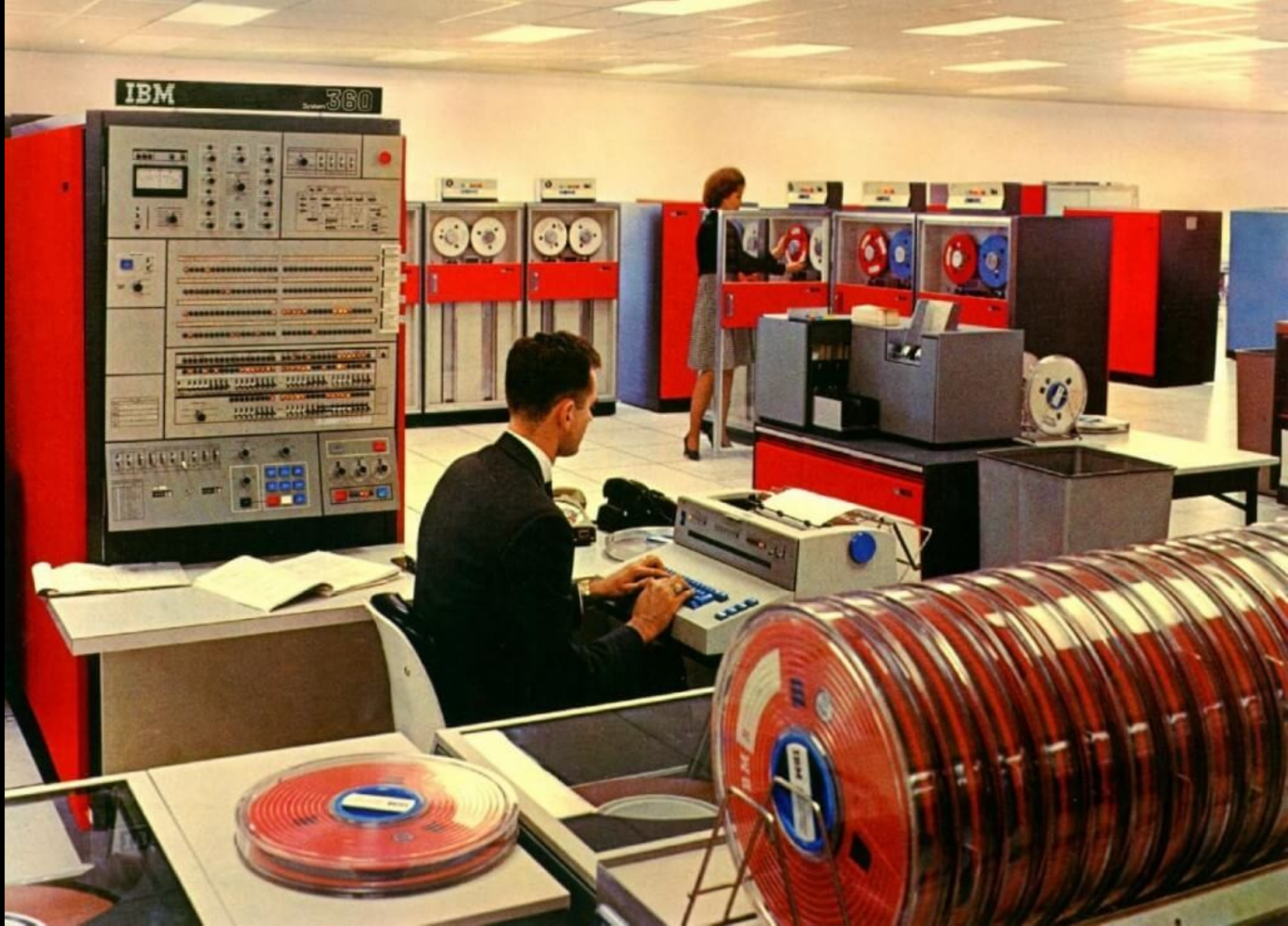


Fig. 2. Frieder Nake, *Zufälliger Polygonzug (random polygon line)*
13/9/65 Nr. 3, 40 × 40 cm, 1965. (© Frieder Nake)



A. Michael Noll
Frieder Nake
Georg Nees

1965



1965

Cybernetic Serendipity

Serendipity

Serendipity

the faculty of making
happy chance discoveries
by means of control and communication machines
both human and electronic

An exhibition

an exhibition illustrating the way
in which the human and electronic
faculties of control and communication
are used to make happy chance
discoveries by means of control and
communication machines both human
and electronic

and
other
serendipitous
manifestations

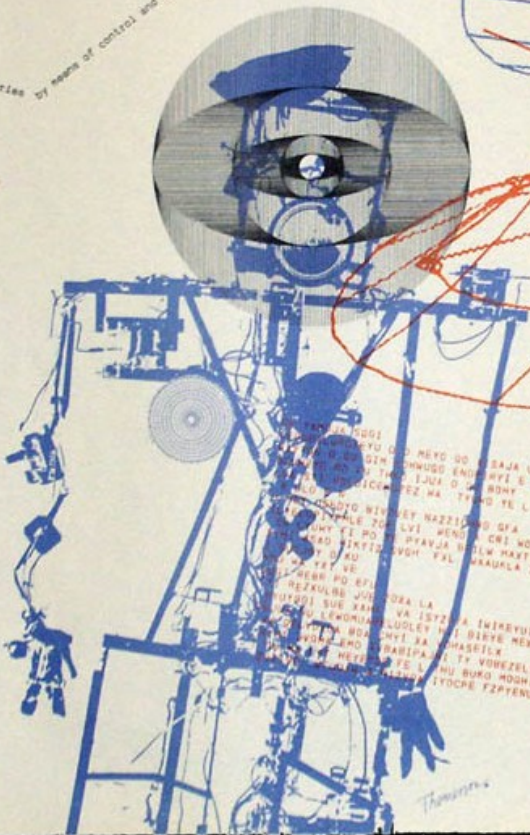
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of Contemporary
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August 2 - October 20



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Manager: ...
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Without an exhibition and illustrations
of the exhibition
Serendipity



CYBERNETIC
SERENDIPITY
LECTURES



1st

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during the hours
of the Institute, Serendipity presents
a series of lectures and a film
concerning the
of the exhibition

Thursday
August 8

Tuesday
August 13

Thursday
August 15

Tuesday
August 20

Tuesday
August 27

Tuesday
September 3

Thursday
September 5

Tuesday
September 10

Thursday
September 12

Thursday
September 19

Tuesday
September 24

Thursday
September 26

Tuesday
October 1

Tuesday
October 8

Thursday
October 10

Thursday
October 17

Frank S. Rowley
Member of the Faculty of Applied Sciences,
University of London, Institute of Science and
Technology, London

Professor Robert Rosen
Member of the Faculty of Applied Sciences,
University of London, Institute of Science and
Technology, London

Edward O. Wilson
Member of the Institute of Science and
Technology, London

R.S. Probert
Member of the Faculty of Applied Sciences,
University of London, Institute of Science and
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University of London, Institute of Science and
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Member of the Faculty of Applied Sciences,
University of London, Institute of Science and
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John Searles
Member of the Faculty of Applied Sciences,
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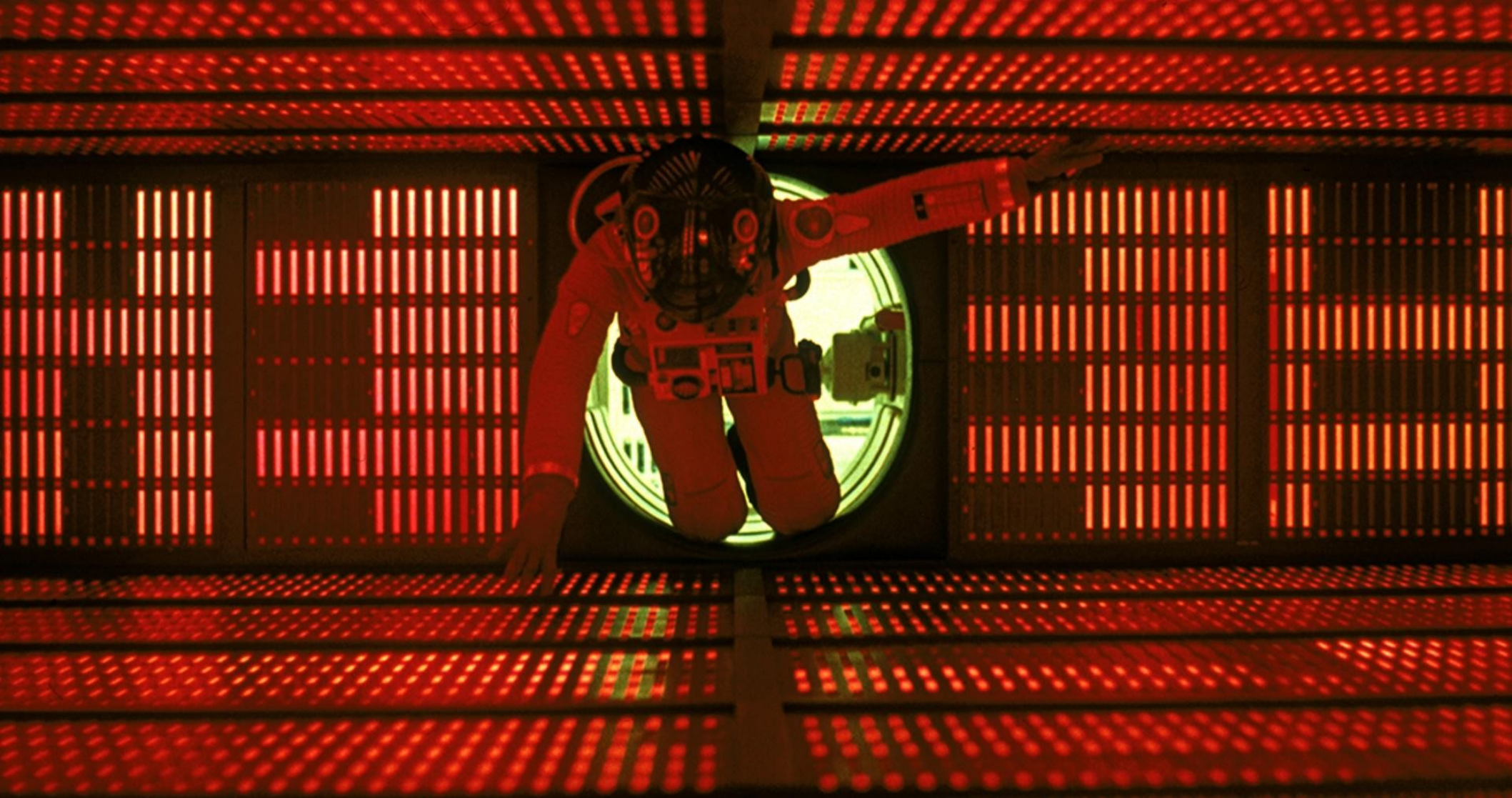
Professor Robert Rosen
Member of the Faculty of Applied Sciences,
University of London, Institute of Science and
Technology, London

Professor R.S. Probert
Member of the Faculty of Applied Sciences,
University of London, Institute of Science and
Technology, London

Professor John Searles
Member of the Faculty of Applied Sciences,
University of London, Institute of Science and
Technology, London

Mr. Peter Hill
Member of the Faculty of Applied Sciences,
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Technology, London

Août 1968
Londres



Stanley Kubrick, 2001: a Space Odyssey, 1968

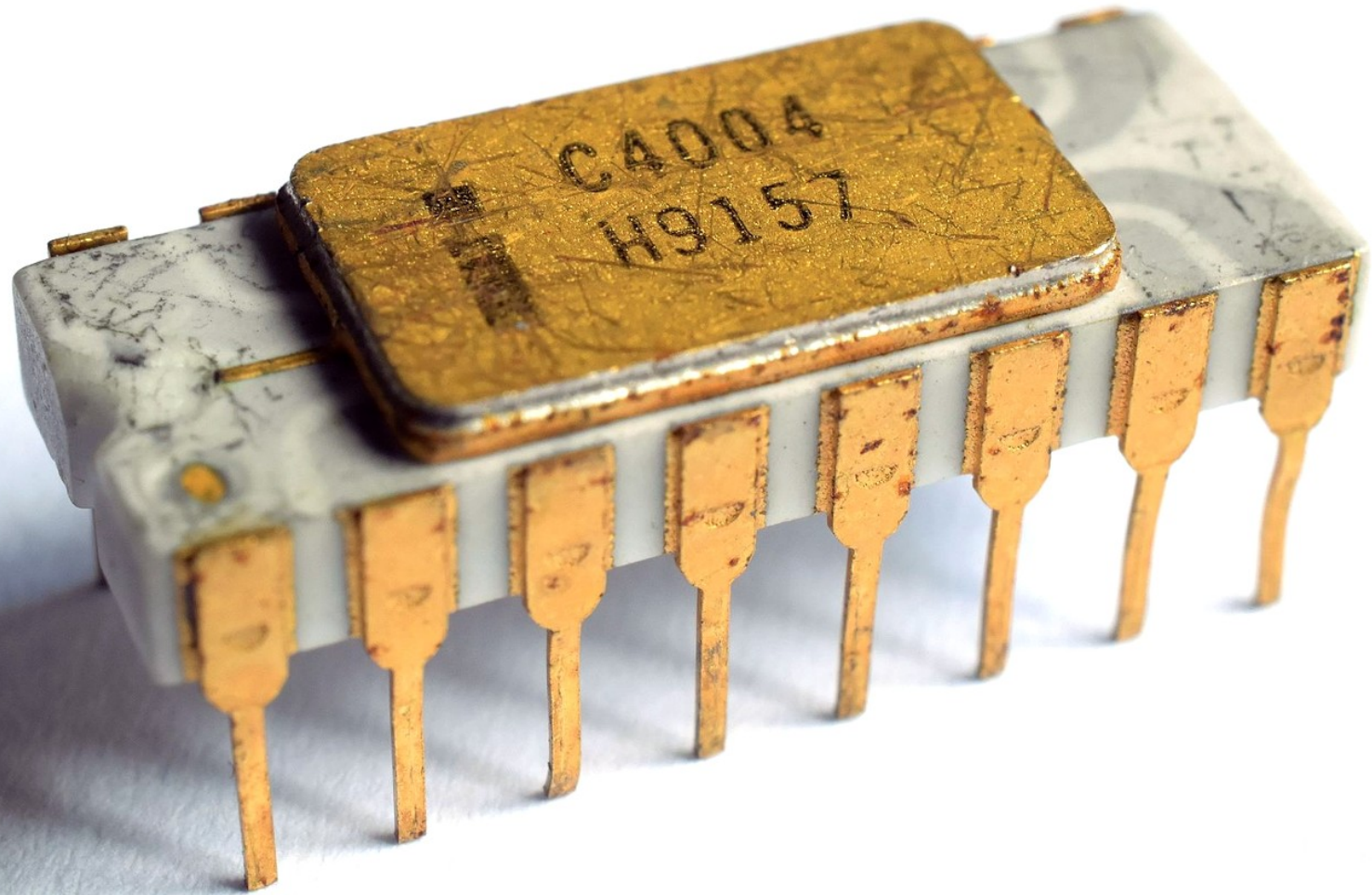


Douglas Engelbart, *The mother of all demos*, décembre 1968

Souris, bureau, interactivité, hypertexte, traitement de texte, Copier-coller, collaboration, vidéo-conférence, réseau

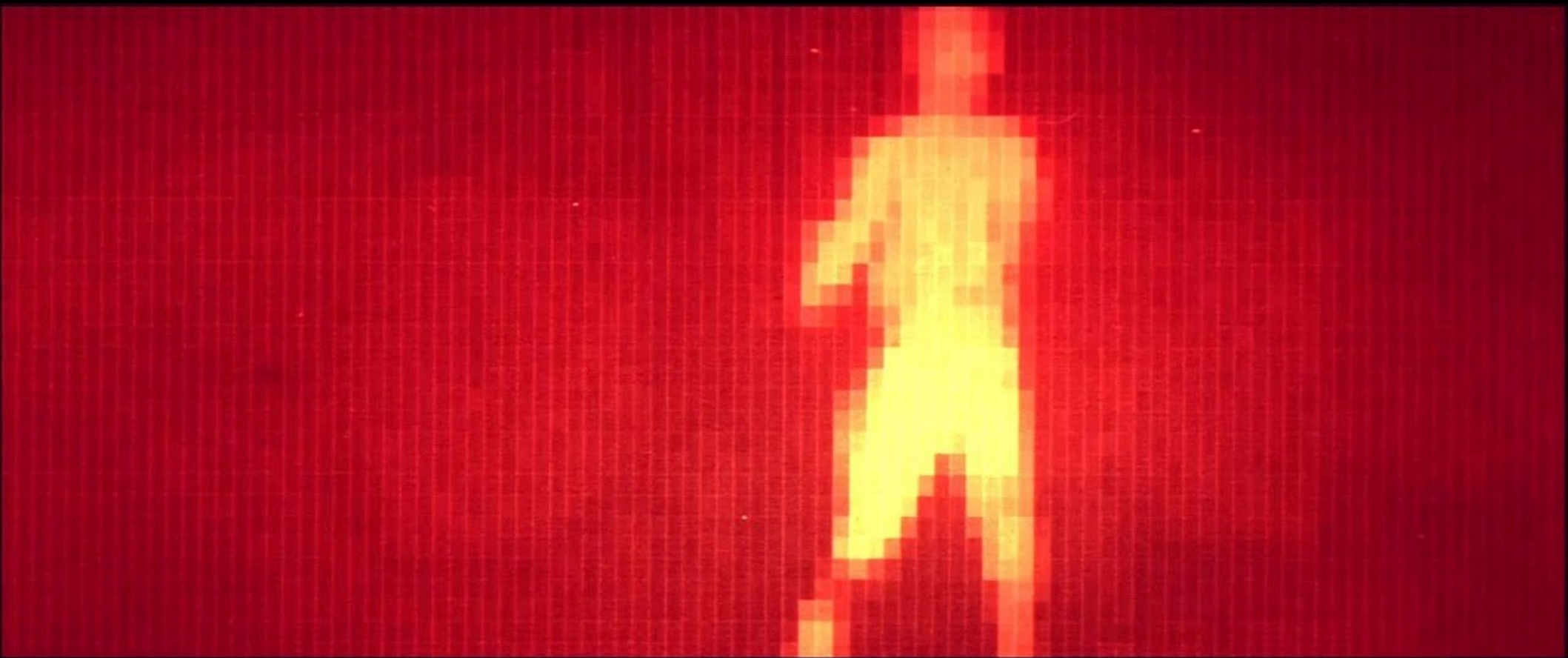


The ARPANET in December 1969





PONG

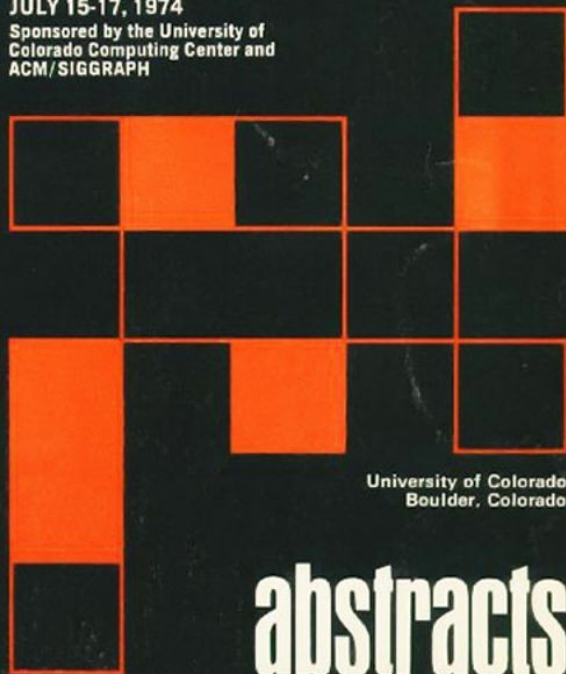


John Whitney Sr., 1973, *Westworld*

conference
on
computer graphics
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JULY 15-17, 1974

Sponsored by the University of
Colorado Computing Center and
ACM/SIGGRAPH



University of Colorado
Boulder, Colorado

abstracts



APPLE
COMPUTER

1 2 3 4 5 6 7 8 9 0 = +
ESC X-ON W WRU TAPE TAPE TAB @ LINE FEED
I O E R T Y U I O P
CTRL BOH X-OFF EDT BEL G H J K L ; ' < > ? /
SHIFT Z X C V B ^ N M . ,
RETURN
PAPER REW BHE AK
TAP TAP
TAP



This TV
not included—
sold in Fall
'76 Cat., p. 721



SCIENCE VIE

Un pont de
matière entre
deux étoiles

Les derniers
espaces sauvages
français

5 missiles
abattus
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AU BANC D'ESSAI



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UN ORDINATEUR POUR NOËL

tout savoir avant
d'acheter

MATCH

Spectravideo
contre
Commodore

ESSAI
COMPLET

IBM 186
en
franco-japonais
pour P.M.E.

INITIATION :
COMMENT PARLER AUX
ORDINATEURS

N°1

15 F

NOVEMBRE 1983 • 120 F • 5 F • 2.75 \$ Canadien • 425 F • 18 Dh. 1983 en cours

1981 the centre for computing history

Sinclair ZX81
This small black plastic computer arrived in the country in 1981. We bought them so as not to be left behind in the dawning 'computer age'. Most of us typed in:
10 PRINT "HELLO"
20 GOTO 10
RUN
... then put it away in the cupboard!

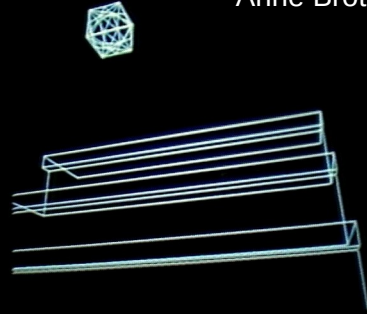
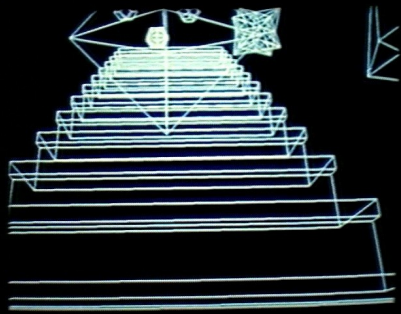
Sinclair brought computing to the masses and the ZX81 is a very important machine in computing history.

Also in this year
Royal wedding of Prince Charles and Lady Diana Spencer in Britain.

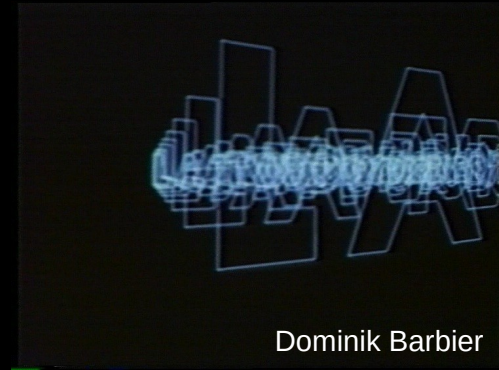
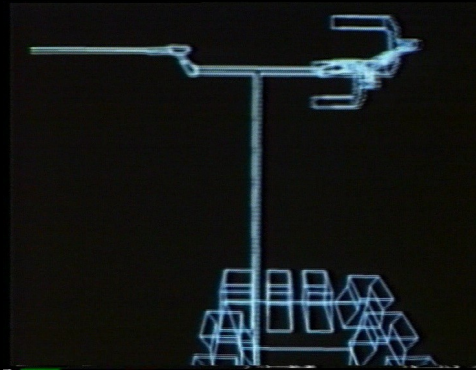


Ensad/
Atelier d'image et
D'informatique
(1983)

Terminal Tektronix
4114 et ordinateur
Bull DPS7



Anne Brotot

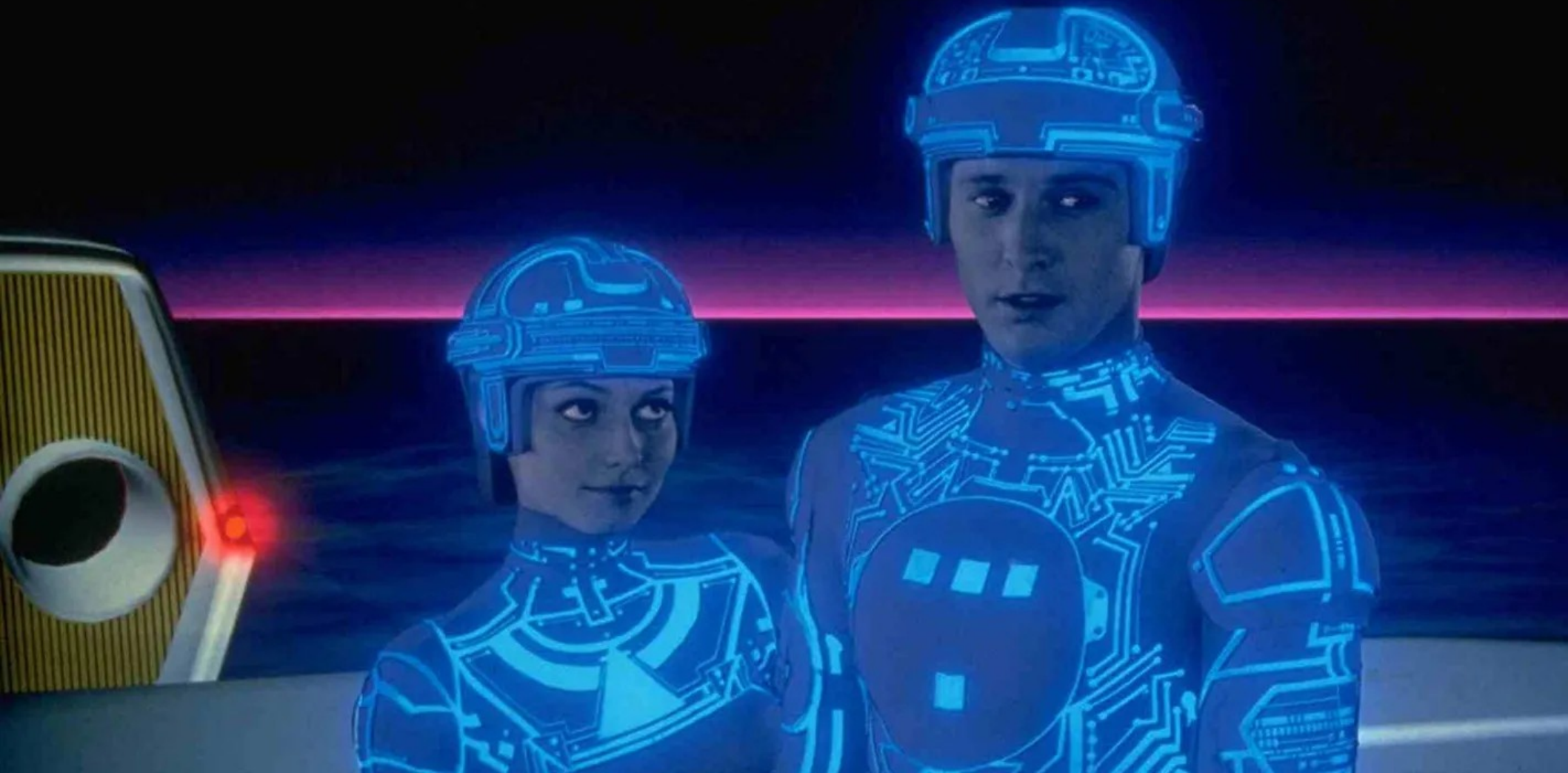


Dominik Barbier

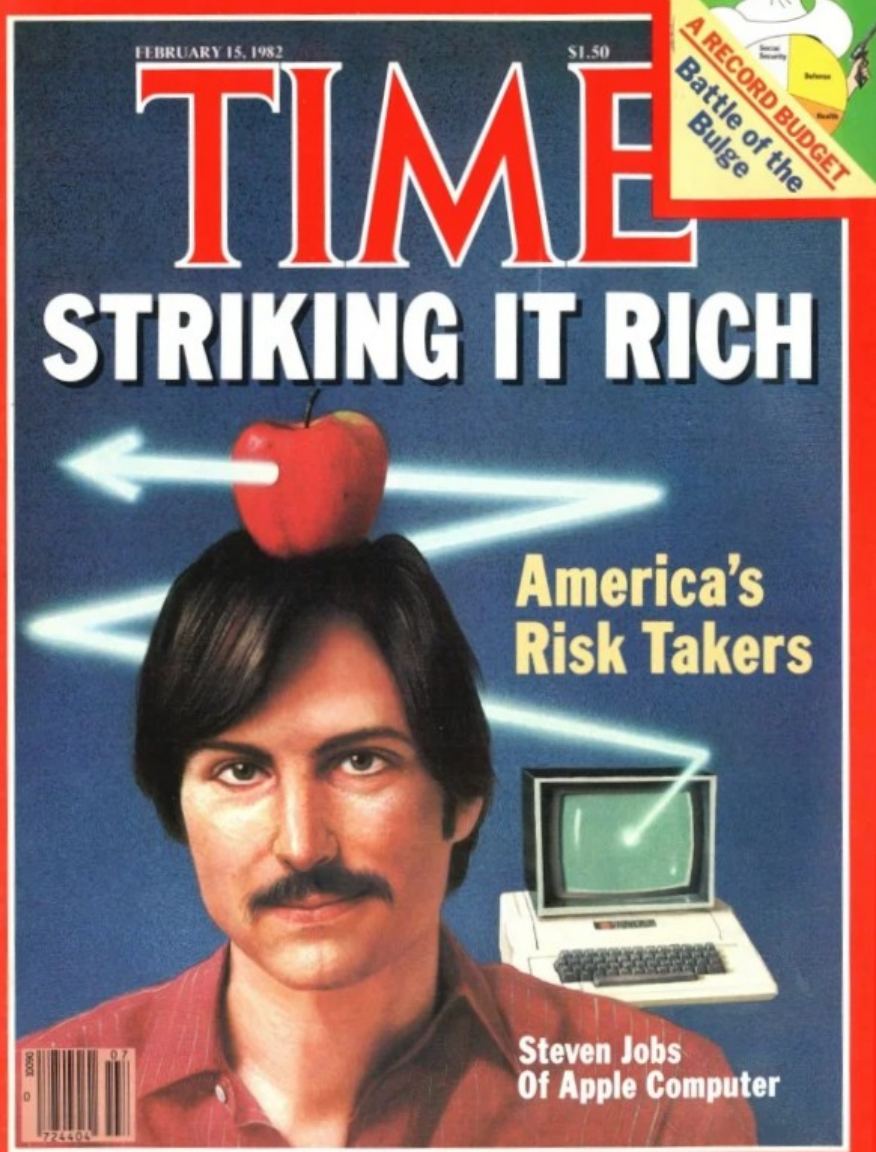




Tron, Steven Lisberger, 1982



1984





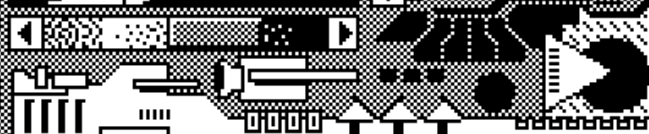
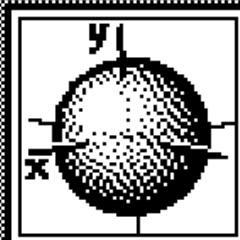
Richard Stallman



Linus Torvalds

Please Stand by - Jacking In...

Hypercard
1987



STANDBY

EXIT

SVM

LE N°1 DE LA PRESSE INFORMATIQUE

PRÉPAREZ VOTRE MICRO À

WINDOWS MULTIMEDIA

COMMENT CHOISIR

- Un kit d'extension MPC
- Un lecteur de CD-ROM
- Une carte sonore
- Un contrôleur d'écran
- Une carte d'acquisition vidéo
- et les logiciels multimédias...

EN PRATIQUE

Tracer des courbes avec Works, indexer ses documents, personnaliser Excel.

COMPARATIF

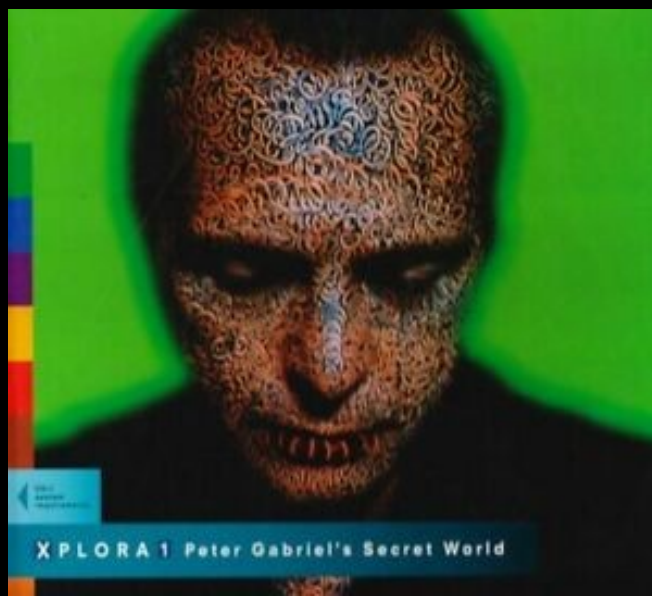
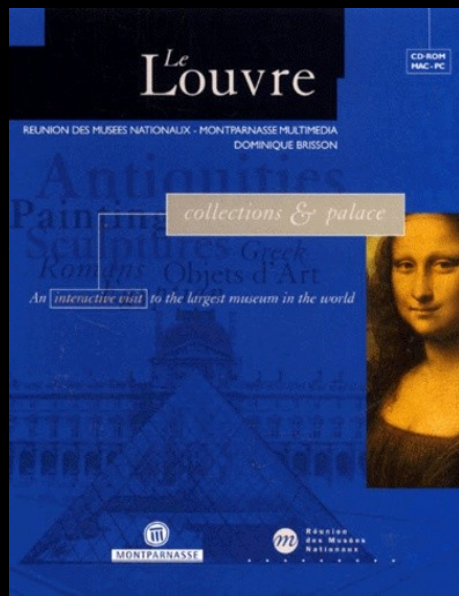
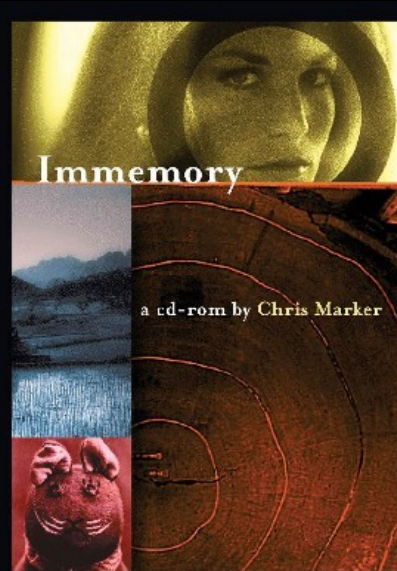
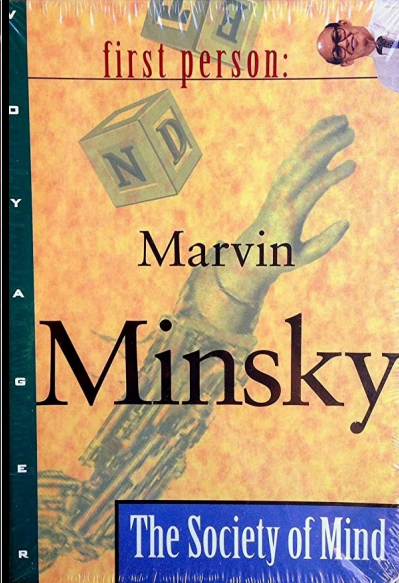
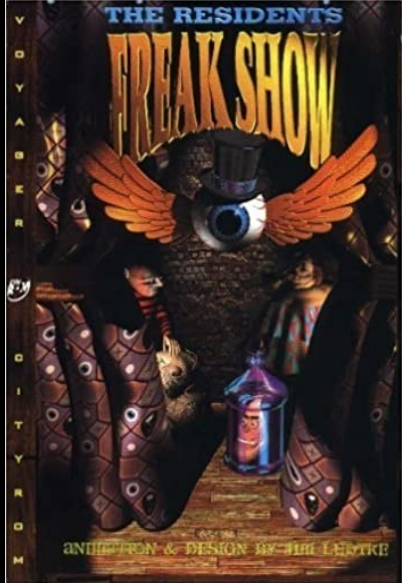
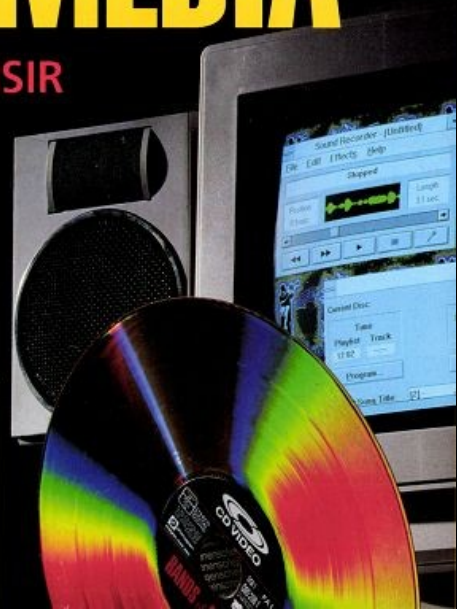
Fax-modems : quatre solutions pour Windows.

**STANDARD EUROPEEN
DE PERFORMANCES**

Les 486 SX/20 à l'épreuve

N° 92 - Mars 1992

M2606 - 92 - 25.00 F



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yahoo@akebono.stanford.edu

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Mark's HP page

Hello and welcome to my page!
The only site where a yellow eye blinks at you.



Java Drawing Tool	Molecule Viewer
The Web	The Best...
GPA!	About Me
The Vader Fader	Cow-a-Bungee
Pong Game	Monkey Theory
Magnetic Poetry	Base Converter

00:17:05

E-Mail: Themarke51@aol.com

1995



2001



2005



2010



1998



2004



2006



2011





2007