

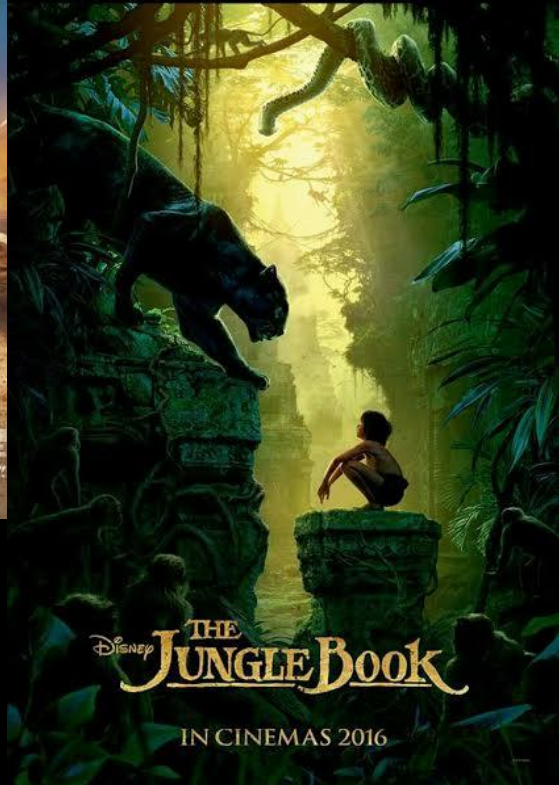
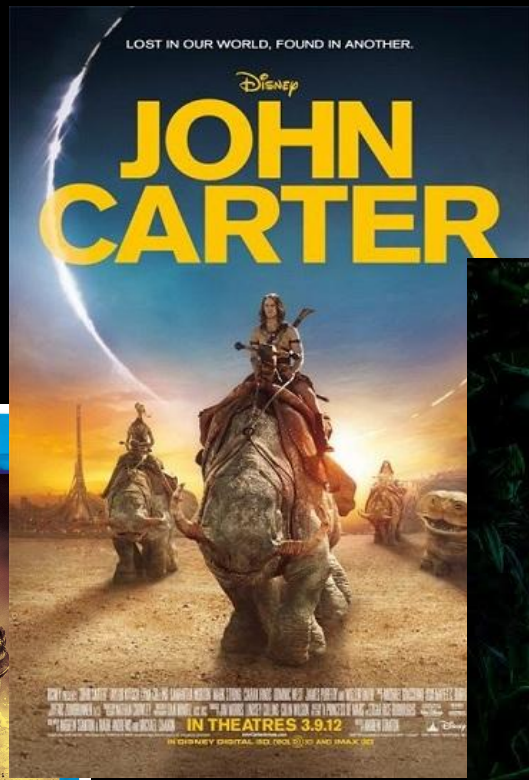
IMAGINARY ENGINES

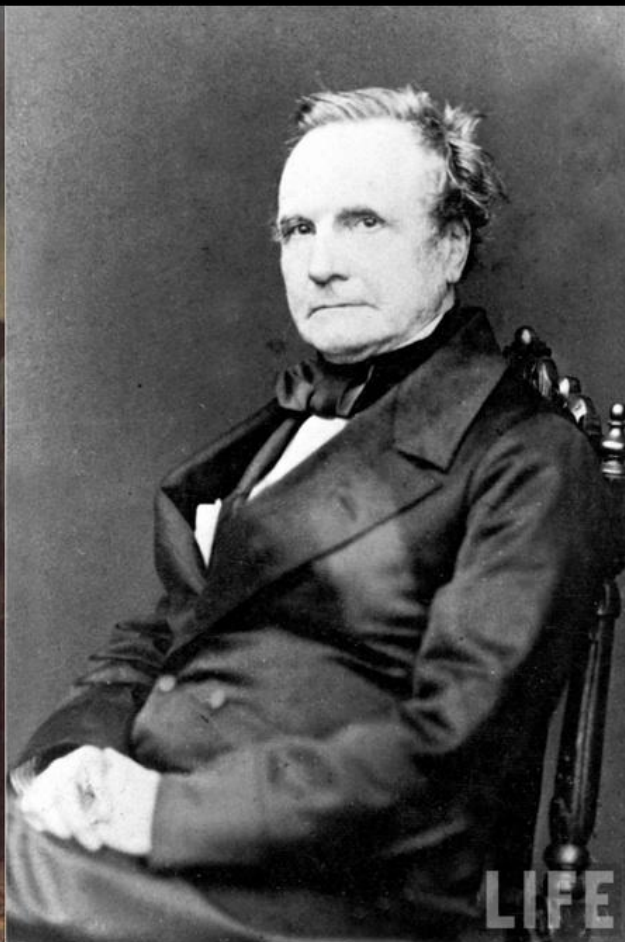
The Thrilling Adventures of
Lovelace and Babbage





LASH OF THE TITANS





ADA was the daughter of "mad, bad, and dangerous to know" poet and nutcase Lord Byron.

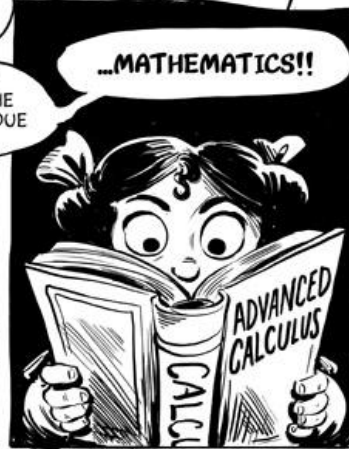
Her mother Anabel fled the ~~exploding planet~~ her husband but was afraid their daughter would inherit his **WILD BLOOD!!**



ADA
MUST NEVER
BECOME
POETICAL!

ONLY ONE
THING HAS THE
POWER TO SUBDUCE
POETRY..

...MATHEMATICS!!



THE POTENTIAL TO BE AN ORIGINAL MATHEMATICAL INVESTIGATOR. PERHAPS OF FIRST-RATE EMINENCE..

BUT SHOULD WE URGE, OR CHECK HER DESIRE TO GO BEYOND THE PRESENT BOUNDS OF KNOWLEDGE??

SHE HAS AS MUCH MATHEMATICAL POWER AS WOULD REQUIRE ALL THE STRENGTH OF A MAN'S CONSTITUTION TO BEAR!



SOON, THE STRUGGLE BETWEEN MIND AND BODY WILL BEGIN...

Tutored by distinguished mathematicians, Ada was turned into a **HUMAN CALCULATING MACHINE!**

MEANWHILE, in his *secret* laboratory, super-genius inventor **CHARLES BABBAGE** labours on the radical non-human calculating machine!



NO ONE HAS THE INTELLECT TO GRASP THE BRILLIANCE OF MY **DIFFERENCE ENGINE!!**



SHORT-SIGHTED FOOLS!!!

DIDN'T THE GOVERNMENT GIVE YOU THAT **HUGE GRANT** THAT YOU THEN SPENT ON A DIFFERENT MACHINE THAT YOU ALSO DIDN'T FINISH?

SILENCE, MINION!

WHO CAN COMPREHEND MY **UNAVAILING STRUGGLES?**



IT CAN TABULATE ACCURATELY AND TO AN **UNLIMITED EXTENT**, ALL SERIES WHOSE GENERAL TERM IS COMPRISED BY THE FORMULA $\Delta^7 U_x = 0!!!$



INDEED, ALL OTHER SERIES WHICH ARE CAPABLE OF TABULATION BY THE **METHOD OF DIFFERENCES!!**



EXACTLY!



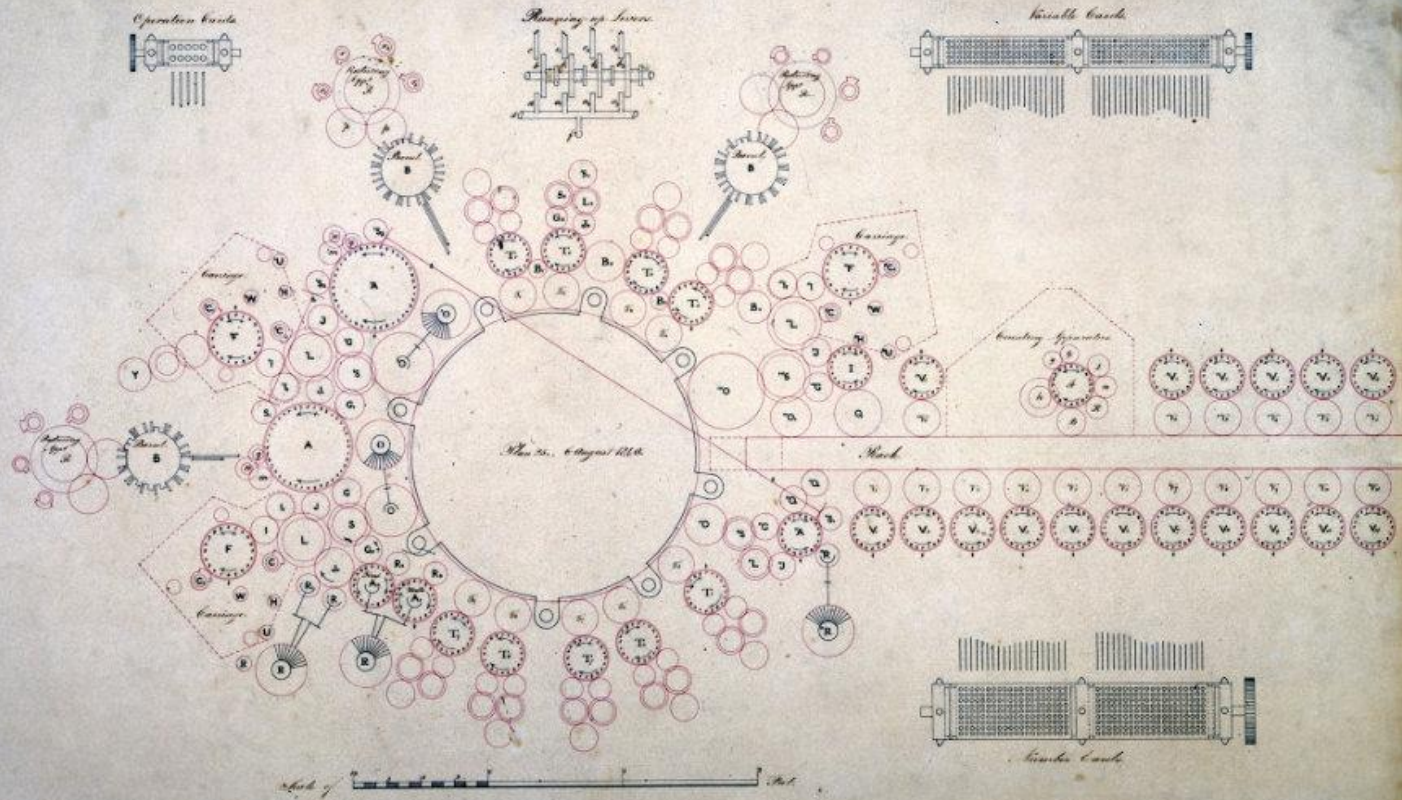
THIS MUST
BE TWITTERED!



WAIT,
THIS IS
A FAN.



SUDDENLY,
THERE IS A GAPING
HOLE IN MY LIFE
OF WHICH
I WAS HITHERTO
UNAWARE.



The General Plan of
M. Babbage's Great Calculating Engine.



In 1842, Ada Lovelace wrote the first paper on computer science, and published the first computer program, for Babbage's unbuilt design for a punchcard-run mechanical computer, the Analytical Engine.



Ugh, that's a terrible ending! Actually what happened was, Lovelace and Babbage lived on and built a giant calculating Engine and used it to
FIGHT CRIME and HAVE ADVENTURES!



THE AVENGERS

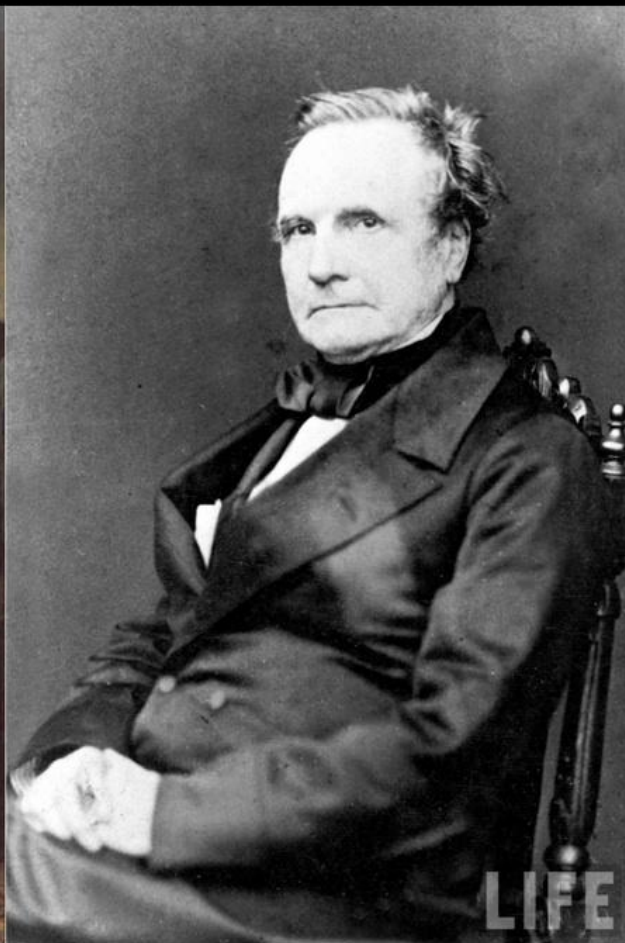
AGENTE SPECIALE VOLUME 3



DVD
VIDEO

STUDIO CANAL

UNIVERSAL



syneypadua.com presents a hideous mutant offshoot

2D GOGGLES

dangerous experiments in comics



« Previous—

Next »

Lovelace and Babbage Vs The Client Pt 3

© Published at: 12:08 pm - Friday August 21 2009

My purpose in this episode is get all the computer gags out of the way.



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TO THE
**DIFFERENCE
ENGINE!***



IN THE NEXT
THRILLING EPISODE OF LOVELACE AND BABBAGE!



PRECIOUS, PRECIOUS NOTES!

— not a whole lot of notes for the first part, though if you want to read the actual training methods of Victorian Organ Grinder's monkeys [this is fairly horrifying](#). So, historical accuracy on the psycho monkeys.

— mostly this episode (this whole story, really) is grown from a spore that implanted itself in my brain from [The Ninth Bridgewater Treatise](#). It's a bit hard to explain what this is.. let's turn to the ever-invaluable Google Books, shall we?

First, the Bridgewater Project:

THE series of 'Treatises, of which the present is one, is published under the following circumstances :

THE RIGHT HONOURABLE and REVEREND FRANCIS HENRY, EARL of BRIDGEWATER, died in the month of February, 1829 ; and by his last Will and Testament, bearing date the 25th of February, 1825, he directed certain Trustees therein named to invest in the public funds the sum of Eight thousand pounds sterling ; this sum, with the accruing dividends thereon, to be held at the disposal of the President, for the time being, of the Royal Society of London, to be paid to the person or persons nominated by him. The Testator further directed, that the person or persons selected by the said President should be ap-



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Find results

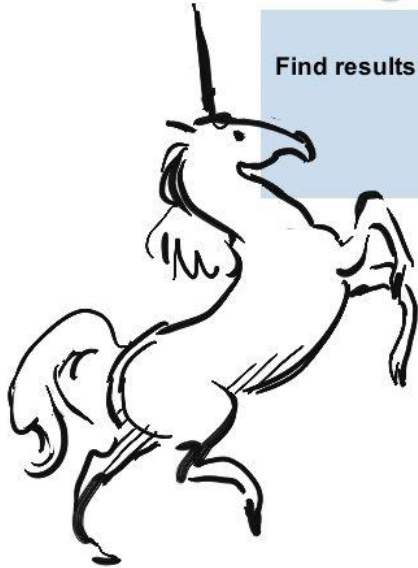
with **all** of the words

with the **exact phrase**

with **at least one** of the words

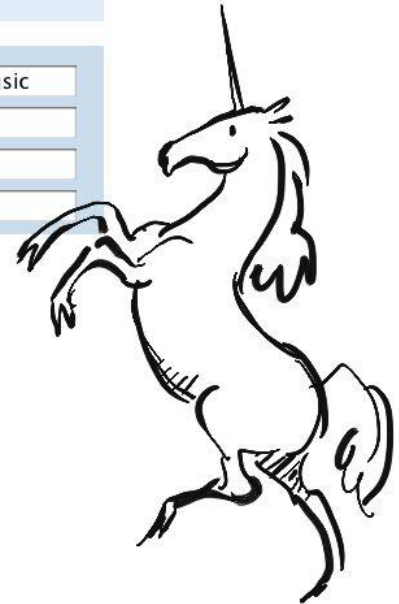
without the words

Babbage street music



1830 and 1870

e.g. 1999 and 2000, or Jan 1999 and Dec 2000

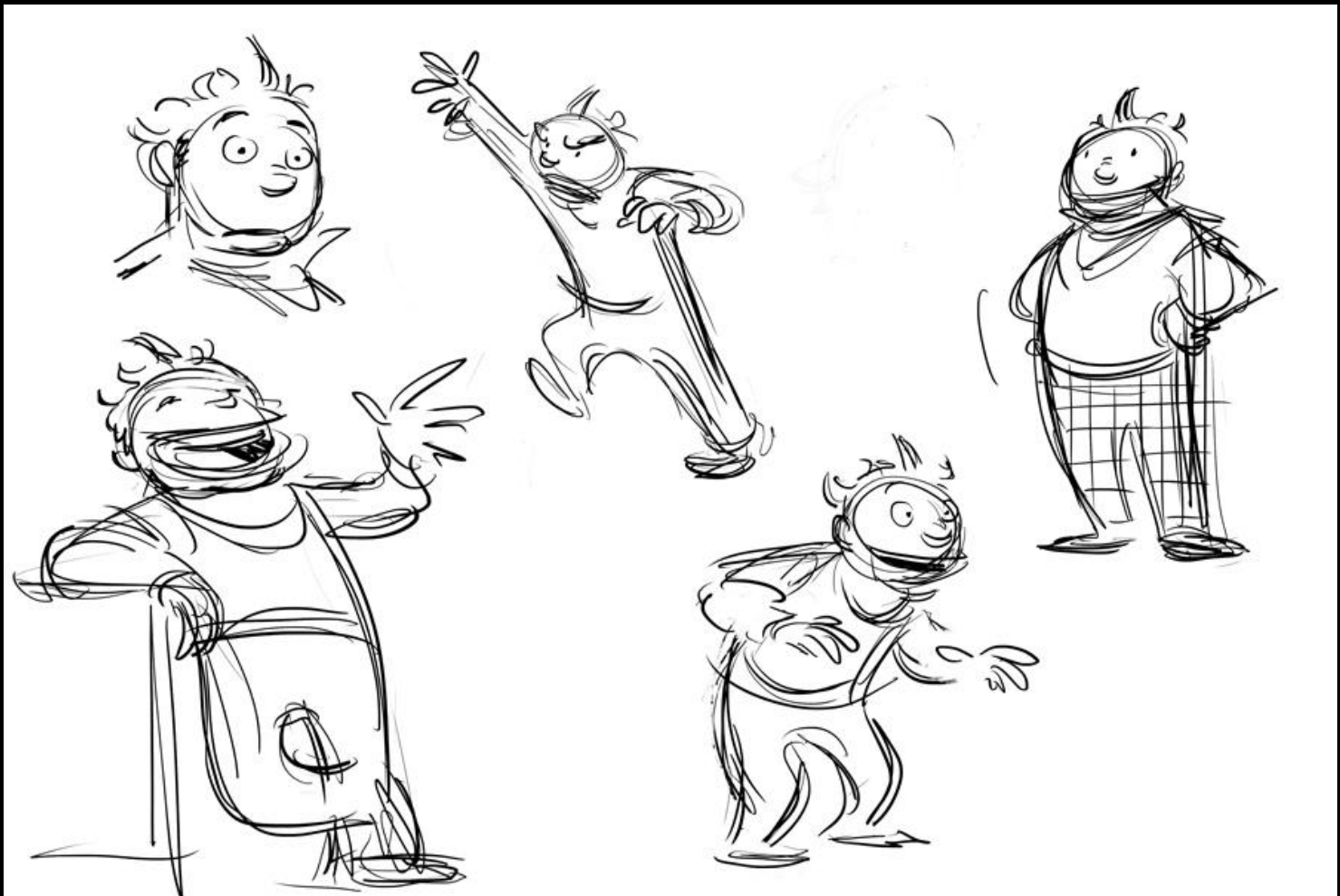




partments and in their provinces, had become eminent, so as to deserve the title of Lions. Cambridge was strongly, worthily, and ably represented in the persons of Airy the astronomer, Whewell the mathematician and mineralogist, Sedgwick the renowned champion of geology, Babbage the logarithmetical Frankenstein. Each Society of London had sent forth its deputies; Davies Gilbert and children from the Royal Society, Brown the boast of the Linnean, Murchison, Fitton, and Greenough

electrical experiments. Kenyon acknowledged Lady Lovelace to be a woman of remarkable intellect, but she was too mathematical for his taste. "Our family are an alternate stratification of poetry and mathematics," Lady Lovelace used to say. Babbage thought that if he was blind he could write poetry; "and I should take for my subject the description of an intellectual inferno," he said. It was difficult to associate poetry in any form with Babbage—he was so eminently practical. He told me that he never allowed himself to lose any time.

B
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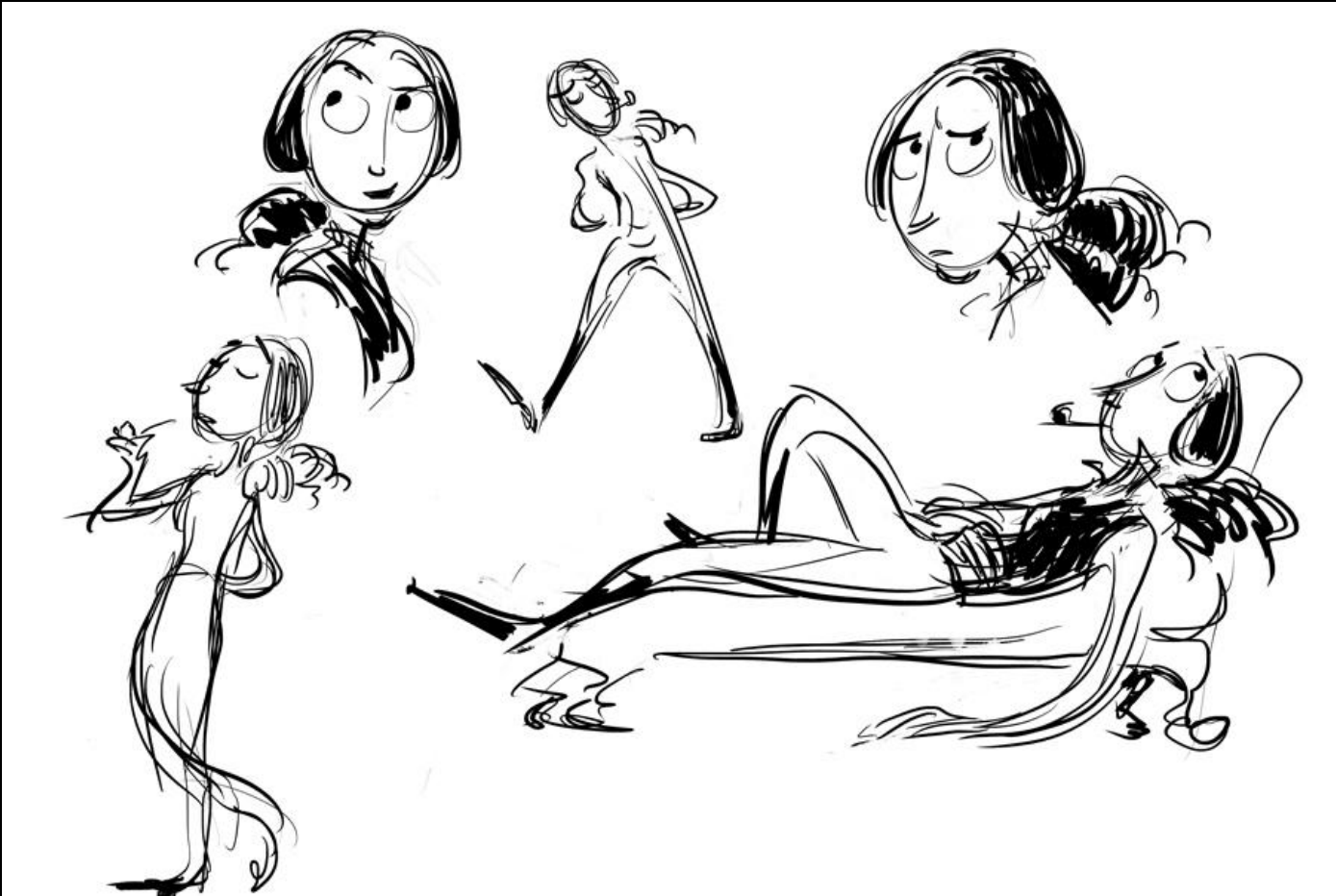




No. XXIV.

FANCY PORTRAIT OF THE GENTLEMAN WHO HAS BEEN
HONOURABLY MENTIONED BY PRINCE ALBERT!

"HONOURABLY MENTIONED, INDEED! IS THAT ALL? SCANDALOUS!"



"YOU DON'T SAY SO!"—Mr. Nazro has concluded to give lessons in biblical elocution hereafter, at the reduced price of ten thousand dollars per annum!

OH FIE!—It is said, that Ada Byron, the sole daughter of the "noble bard," is the most coarse and vulgar woman in England!

"ANOTHER—AND YET ANOTHER!"—A new monthly magazine is in contemplation, under the editorial direction of Charles Hoffman.

JAM JEHAN NIMA.—John Howard Payne is in New-Orleans, collecting subscribers for his contemplated periodical.

DIVORCES.—An Albany paper says that the number of divorces in the United States amount to two thousand a year!

the same process would be repeated. If, however, any mistake had been made by the attendant, and a wrong logarithm had been accidentally given to the engine, it would have discovered the mistake, and have rung a louder bell to call the attention of its guide, who on looking at the proper place, would see a plate above the logarithm he had just put in with the word "*wrong*" engraven upon it.


By such means it would be perfectly possible to make all calculations requiring tabular numbers, without the chance of error.

number of that card by the number of the card which it demanded. The Engine will always reject a wrong card by continually ringing a loud bell and stopping itself until supplied with the precise intellectual food it demands.

It will be an interesting question, which time only can solve.

computed and punched by itself.
The engine first computes and punches on cards. These are brought to it by attendants. But the engine itself takes care of itself by verifying the numbers brought to it by verifying the






LET'S SEE HOW LADY
LOVELACE IS GETTING ON!



***@#!!!



Lady Lovelace speaks so many
languages-- We are not
familiar with that one!



THAT'S AN.. ER.. SPECIAL
LANGUAGE WE'RE DEVELOPING
JUST FOR THE ENGINE!



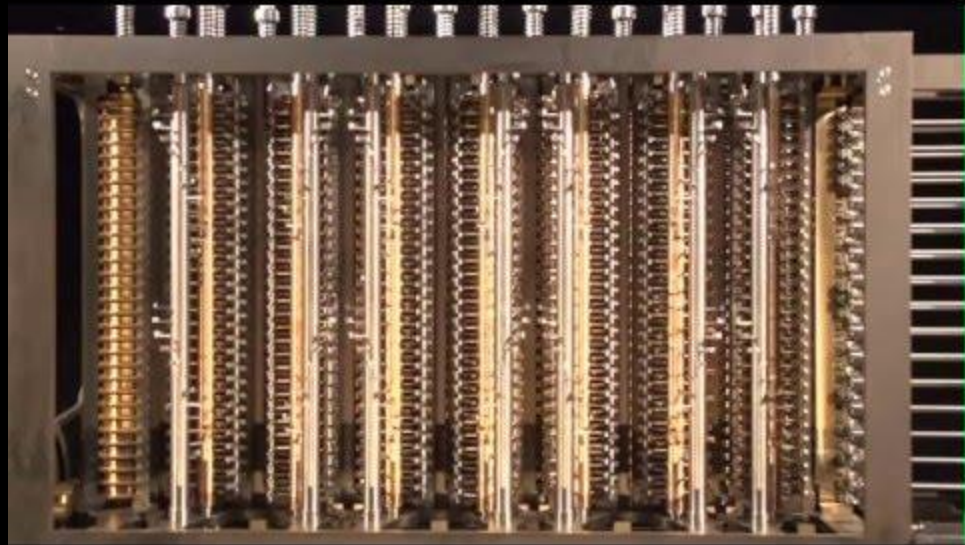
Fascinating!

After he got up to go, by some chance of conversation the late Lady Lovelace's name (Lord Byron's daughter 'Ada') was mentioned; he knew her intimately and spoke highly of her mathematical powers, and of her peculiar capability—higher he said than of any one he knew, to prepare (I believe it was) the descriptions connected with his calculating machine. (I fear I am not ex-

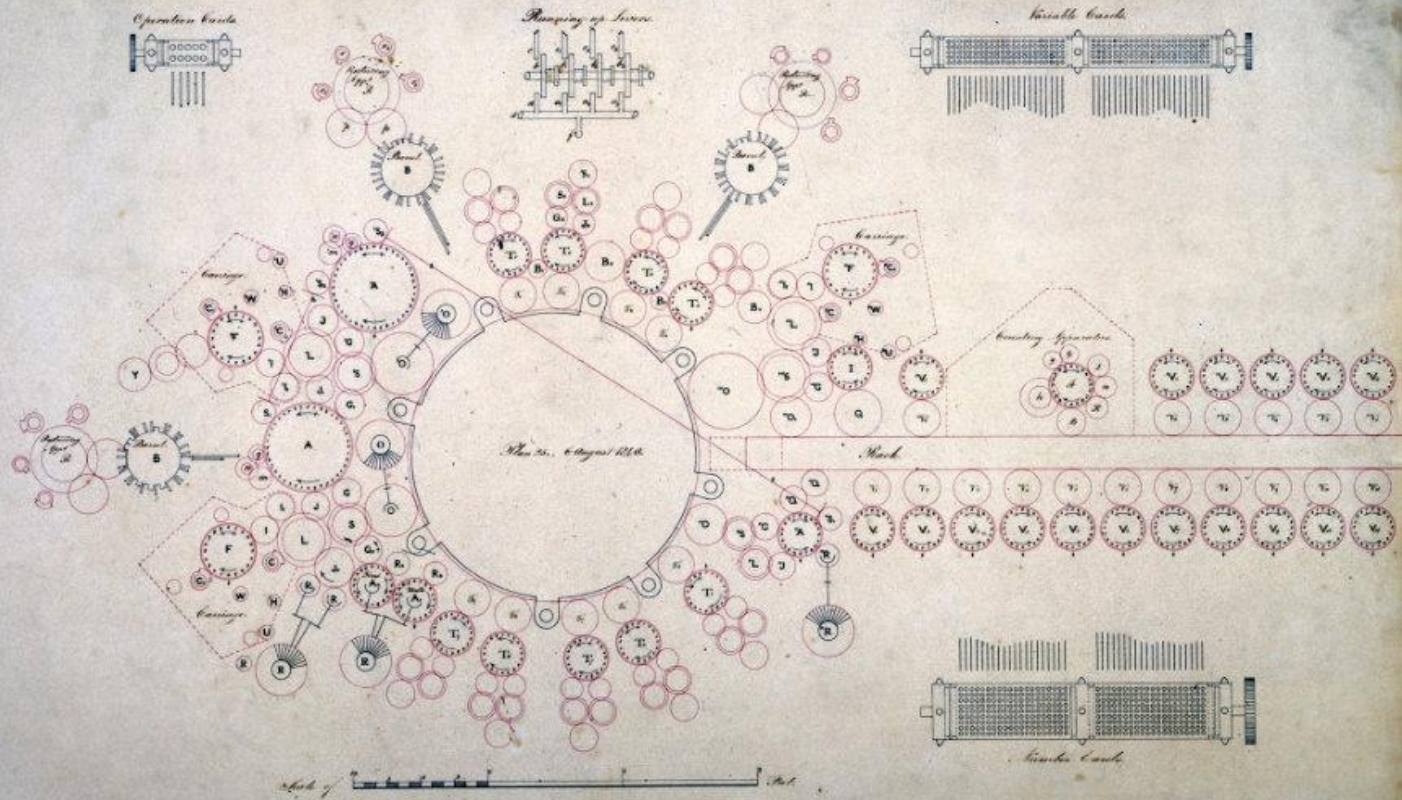
pressing myself rightly here as to the precise nature of the subject he mentioned):



The Analytical Engine







The General Plan of
M. Babbage's Great Calculating Engine.

Sub 1

Trains on "F and I during Operations in Mill

Address, Oct. 13, 1911

Give P from above to Ingroup with 1 Card puts Neg. sign on sign with of "F

Transfer sign of P to sign with of "F

Give Q from above to Ingroup with 2 Card puts Neg. sign on sign with of "F

Transf. P from Ingroup with 1 to Central Transf. sign of Q to sign with of "F

Transf. Q from Ingroup with 2 to Central

Reduce I to zero

Reduce "F to minus zero

Subtract What is on A from "F Reduce Ingroup with 1 to zero

Reduce "F to minus zero

The above trains include all recurring in the six Standard Cases of Add.?

All the Trains in list 135 Add. are included in list 132

Multiplication (Standard)

18

Rk $\overset{\wedge}{\underset{\circ}{Q}}$ I

$\overset{\wedge}{\underset{\circ}{\theta}} \overset{\wedge}{\underset{\circ}{S}} \overset{\wedge}{\underset{\circ}{L}} \overset{\wedge}{\underset{\circ}{I}} \overset{\wedge}{\underset{\circ}{F}}$ "C" $\overset{\wedge}{\underset{\circ}{L}}$ "I" $\overset{\wedge}{\underset{\circ}{F}}$

Card puts ± on "F"

19

Rk $\overset{\wedge}{\underset{\circ}{Q}}$ I

$\overset{\wedge}{\underset{\circ}{I}} \overset{\wedge}{\underset{\circ}{C}} \overset{\wedge}{\underset{\circ}{S}} \overset{\wedge}{\underset{\circ}{O}} \overset{\wedge}{\underset{\circ}{C}}$ $\overset{\wedge}{\underset{\circ}{\theta}} \overset{\wedge}{\underset{\circ}{S}} \overset{\wedge}{\underset{\circ}{L}} \overset{\wedge}{\underset{\circ}{I}} \overset{\wedge}{\underset{\circ}{F}}$ "C" $\overset{\wedge}{\underset{\circ}{L}}$ "I" $\overset{\wedge}{\underset{\circ}{F}}$

Card puts ± on "F"

20

$\overset{\wedge}{\underset{\circ}{I}} \overset{\wedge}{\underset{\circ}{C}} \overset{\wedge}{\underset{\circ}{S}} \overset{\wedge}{\underset{\circ}{O}} \overset{\wedge}{\underset{\circ}{C}}$

$\overset{\wedge}{\underset{\circ}{I}} = 0$

21

"F" = -0

22

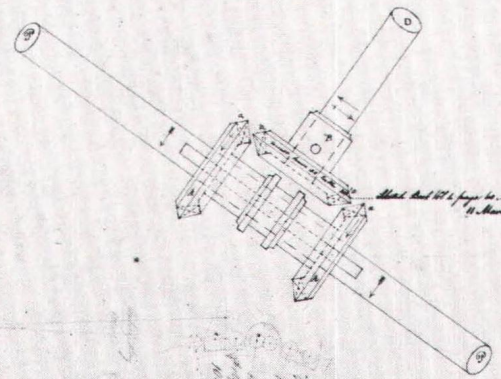
23

$\overset{\wedge}{\underset{\circ}{C}} \overset{\wedge}{\underset{\circ}{O}} \overset{\wedge}{\underset{\circ}{S}} \overset{\wedge}{\underset{\circ}{L}} \overset{\wedge}{\underset{\circ}{I}} \overset{\wedge}{\underset{\circ}{F}}$ "C" $\overset{\wedge}{\underset{\circ}{L}}$ "S" $\overset{\wedge}{\underset{\circ}{O}}$ $\overset{\wedge}{\underset{\circ}{C}}$ "L" $\overset{\wedge}{\underset{\circ}{I}}$ "F"

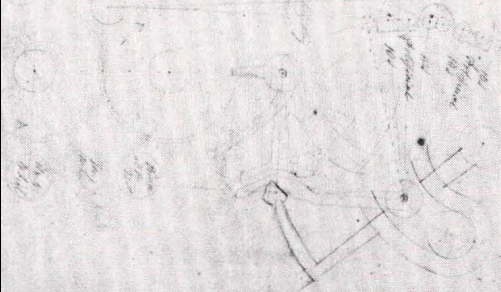
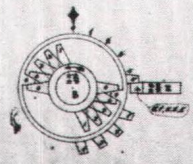
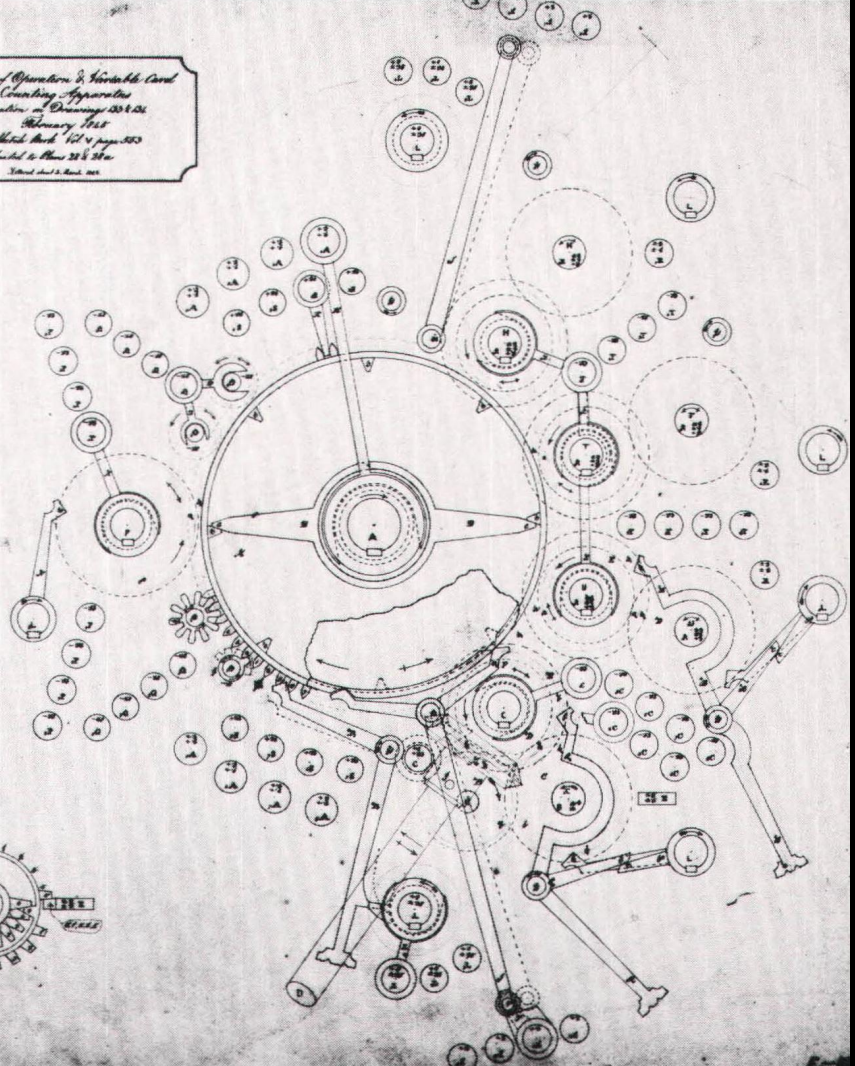
$\overset{\wedge}{\underset{\circ}{I}} = 0$

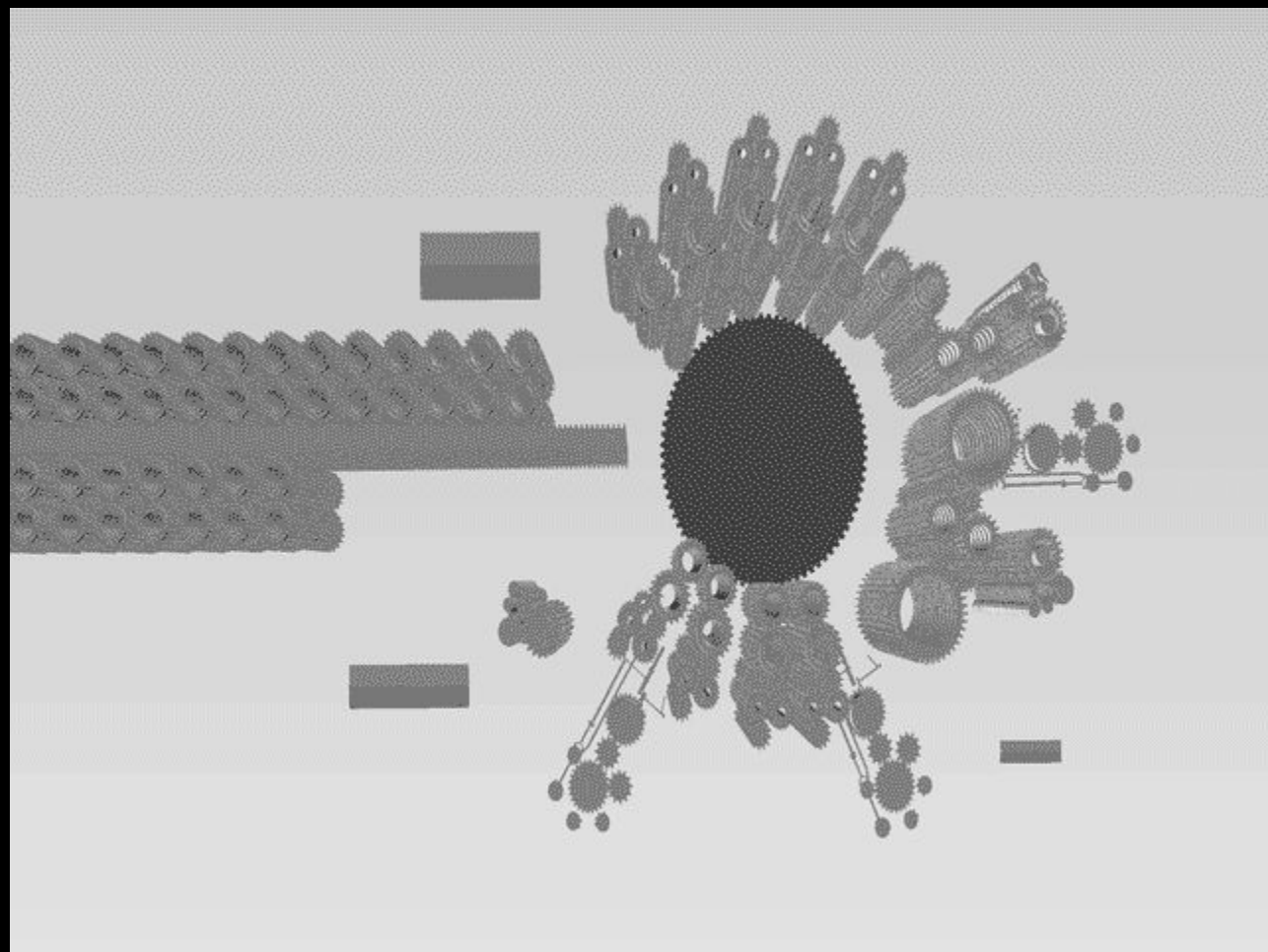
Plan of Operators & Variable Card
 Counting Apparatus
 Boston & Drawing 234.01
 January 1868
 de Mott's Arch. Vol. 4 page 555
 Serial to Plans 23 & 24
 Revised about 2d. March 1868

Q. Can it be used for counting off instead of C. I. If so
 8 bands to draw the 8 figures open C. may be saved
 29 Sept 1868



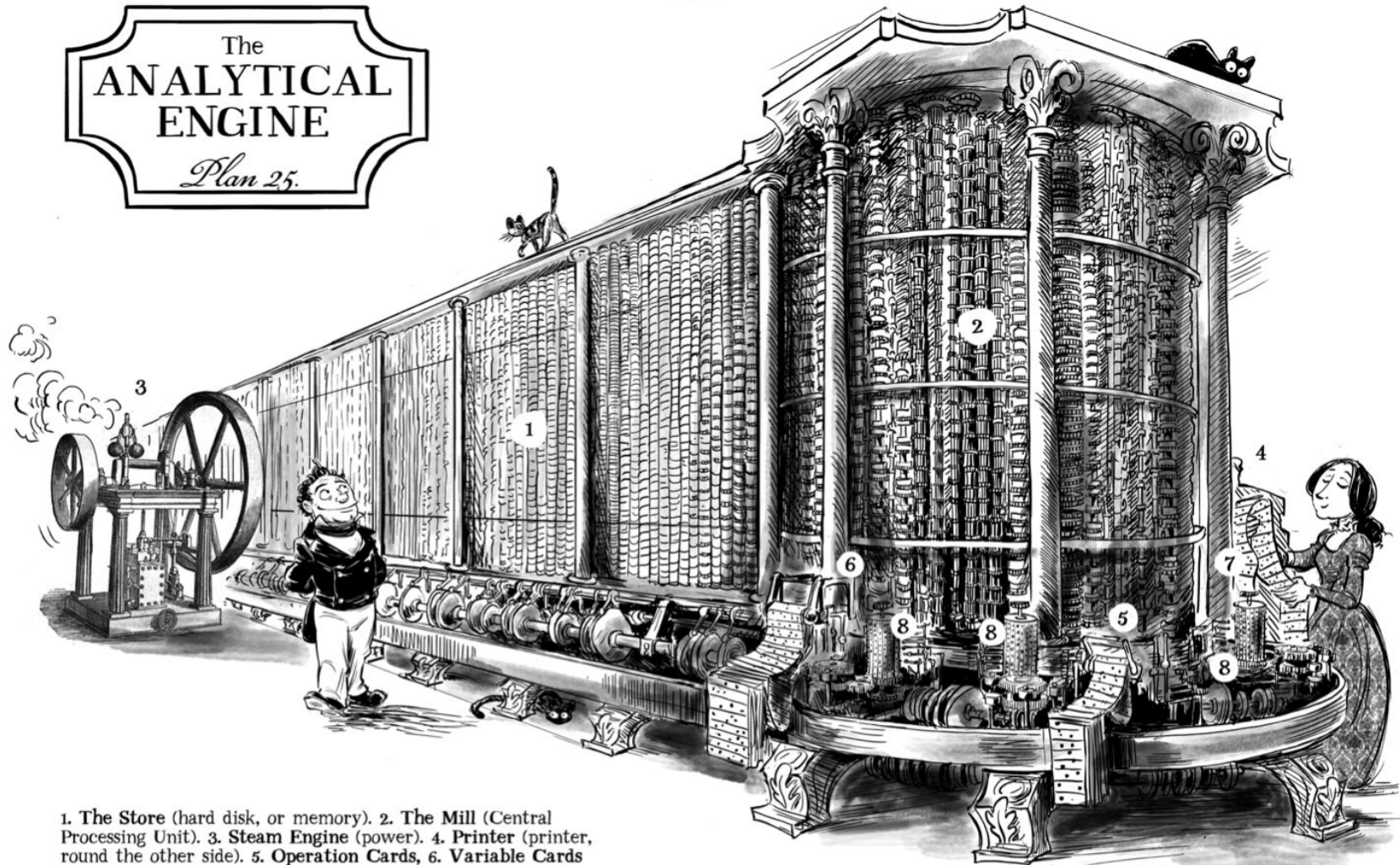
Match Arch Vol 4 page 555
 11. March 1868





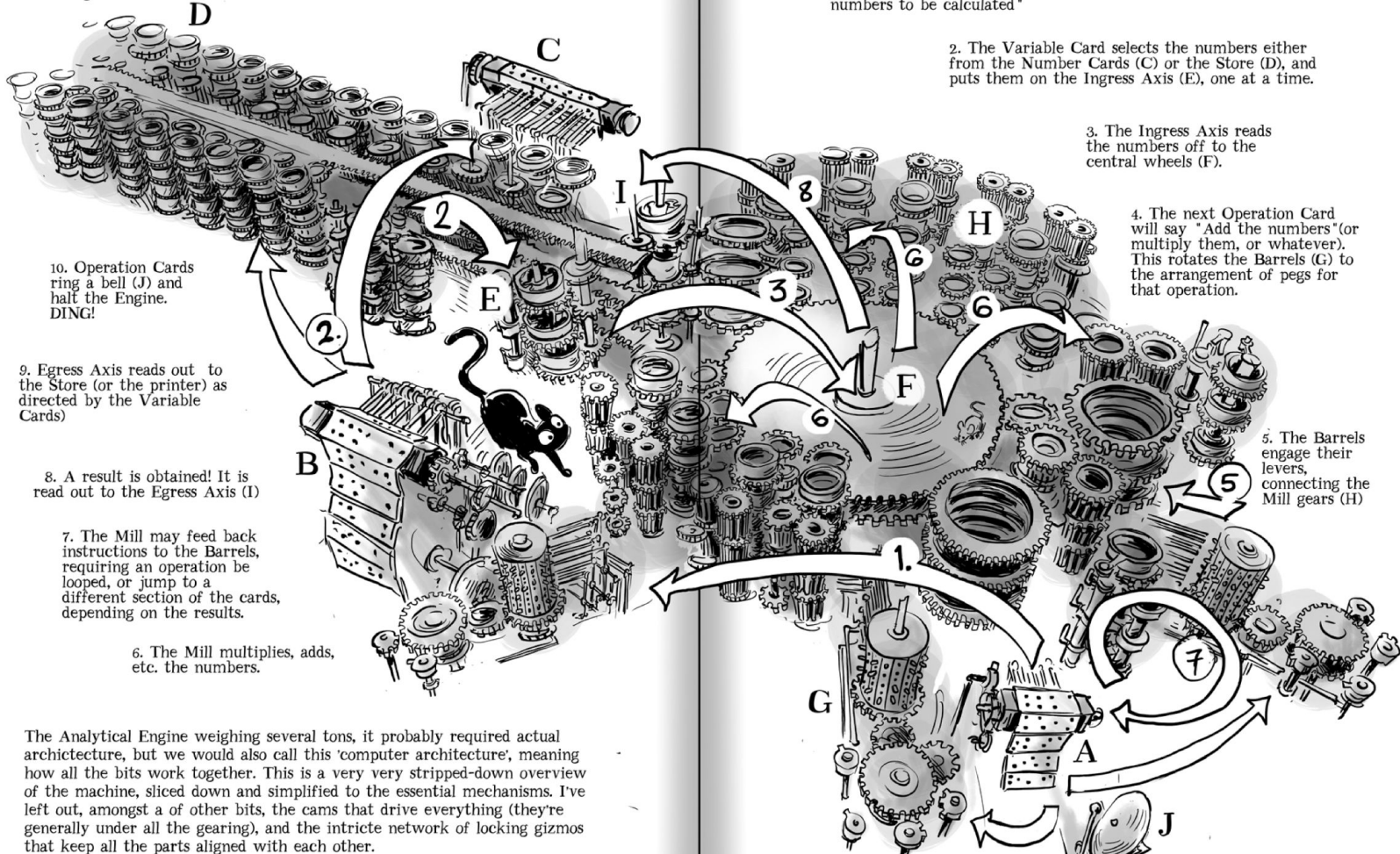
The ANALYTICAL ENGINE

Plan 25.



1. The Store (hard disk, or memory). 2. The Mill (Central Processing Unit). 3. Steam Engine (power). 4. Printer (printer, round the other side). 5. Operation Cards, 6. Variable Cards, 7. Number Cards, (together making up the software). 8. The Barrel Controllers (microprograms).

The Analytical Engine is, at heart, an adding machine eating its own tail-- the circle of big wheels on the end do the sums, controlled by the cards and barrels, and feed the numbers on and off the 'Store' at the other end-- what we'd call the Memory. I'll go over them bit by bit but this is how they all work together:



1. The Operation Cards (A) communicate to Variable Cards (B) "Fetch the numbers to be calculated"

2. The Variable Card selects the numbers either from the Number Cards (C) or the Store (D), and puts them on the Ingress Axis (E), one at a time.

3. The Ingress Axis reads the numbers off to the central wheels (F).

4. The next Operation Card will say "Add the numbers" (or multiply them, or whatever). This rotates (G) to the arrangement of pegs for that operation.

5. The Barrels engage their levers, connecting the Mill gears (H)

10. Operation Cards ring a bell (J) and halt the Engine. DING!

9. Egress Axis reads out to the Store (or the printer) as directed by the Variable Cards

8. A result is obtained! It is read out to the Egress Axis (I)

7. The Mill may feed back instructions to the Barrels, requiring an operation be looped, or jump to a different section of the cards, depending on the results.

6. The Mill multiplies, adds, etc. the numbers.

The Analytical Engine weighing several tons, it probably required actual architecture, but we would also call this 'computer architecture', meaning how all the bits work together. This is a very very stripped-down overview of the machine, sliced down and simplified to the essential mechanisms. I've left out, amongst a of other bits, the cams that drive everything (they're generally under all the gearing), and the intricate network of locking gizmos that keep all the parts aligned with each other.

and A in which B is the subject. Thus neither of the four following lines is inconsistent with itself.

Some A is not B and Every B is A

Some A is not B and No B is A

Some A is not B and Some B is A

Some A is not B and Some B is not A.

We find then, including converses, which are not identical with their direct propositions, *six* different ways of asserting or denying, with respect to agreement or non-agreement, total or partial, between A and, say X: these we write down, designating the additional assertions by U and Y.

A Every A is X	Identical.	Identical.	O Some A is not X
U Every X is A	E { No A is X } E { No X is A }	I { Some A is X } I { Some X is A }	Y Some X is not A

We shall now repeat and extend the table of page 8 (A), &c., meaning, as before, the denial of A, &c.

From A or (O) follow A, (E), I (O)

From E or (I) (A), E, (I), O, (U), Y

From I or (E) (E) I

From O or (A) (A), O

From U or (Y) (E) I, U (Y)

From Y or (U) (U) Y

Having thus discussed the principal points connected with the simple



perhaps (I speak doubtfully) Maria Agnesi, has wrestled with difficulties and shown a man's strength in getting over them. The reason is obvious: the very great tension of mind which they require is beyond the strength of a woman's physical power of application. Lady L. has unquestionably as much power as would require all the strength of a man's constitution to bear the fatigue of thought to which it will unquestionably lead her. It is very well now, when the subject has not entirely engrossed her attention; by-and-bye when, as always happens, the whole of the thoughts are continually and entirely concentrated upon them, the struggle between the mind and body will begin.

Perhaps you think that Lady L. will, like Mrs. Somerville, go on

idea of applying the cards had occurred ; and the Analytical Engine does not occupy common ground with mere "calculating machines." It holds a position wholly its own ; and the considerations it suggests are most interesting in their nature. In enabling mechanism to combine together *general* symbols, in successions of unlimited variety and extent, a uniting link is established between the operations of matter and the abstract mental processes of the *most abstract* branch of mathematical science. A new, a vast, and a powerful language is developed for the future use of analysis, in which to wield its truths so that these may become of more speedy and accurate practical application for the purposes of mankind than the means hitherto in our possession have rendered possible. Thus not only the mental and the material, but the theoretical and the practical in the mathematical world, are brought into more intimate and effective connexion with each other. We are not aware of its being on record that anything partaking in the nature of what is so well designated the *Analytical* Engine has been hitherto proposed, or even thought of, as a practical possibility, any more than the idea of a thinking or of a reasoning machine.

We will touch on another point which constitutes an important distinction in the modes of operating of the Difference and Analy-