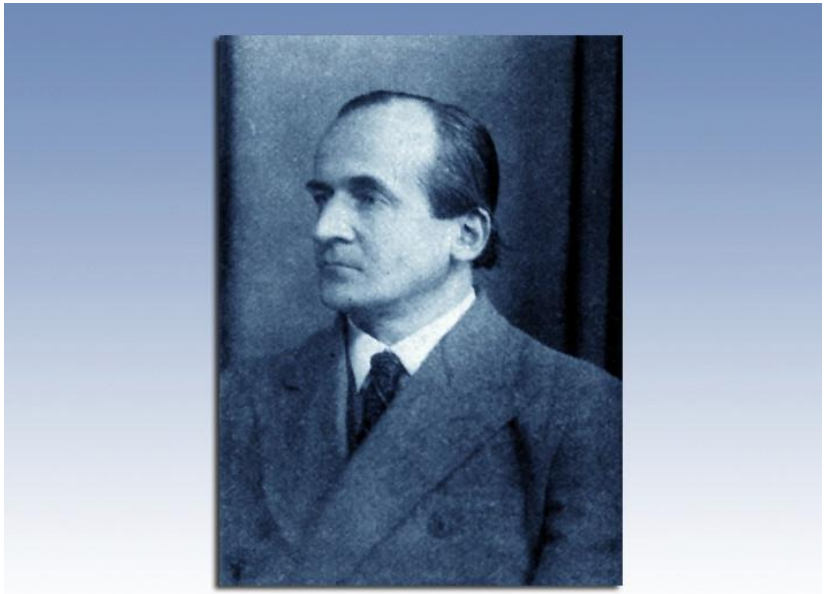
The Hungarian Ljapunov:
Dr. Tihamér NEMES (1895-1960)

He started his activity as a mechanical engineer on 1917.

Nemes Tihamér

- The not very well understood, accepted and recognised inventor
- The first engineer in Hungary,
- who tried to publish and teach
- the basic concepts of
- „cybernetics”



His engineering activity

- - He was the mechanical engineer of the Lloyd aircraft factory
- - He was interested and studied the electrotechnik and telecommunication
- - He became the chief engineer of the *„Telefon-communication News Company”.*
- *He is 30 years old, when he was appointed as managing director of the Electrical and Precision Engineering Inc. Co.*

He is interested about the research and development.

- He interrupted his directorship carrier and he goes as a single engineer to the Development Organisation of the Hungarian Post
- His first task was: to develop new phones. He is the innovator of the famous new Hungarian phone: CB 35, which was distributed in whole Europe
- He worked out a new methode about understanding the speach in the phones.

The CB 35 Phone

- In the Phone-
- museum
- One of the most
- successful
- Hungarian phome
- product (left)

The development of machines about the human activities

- He is interested about the television-technics, his first theoretical and practical research started in 1930.
- He studied the mechanism of eyesight and applied the results in his colour television-patent.
- He patented his colour television system (1951).
- Later it was realised
- The television was his first *cybernetica*l-like modell of the human eyesight.

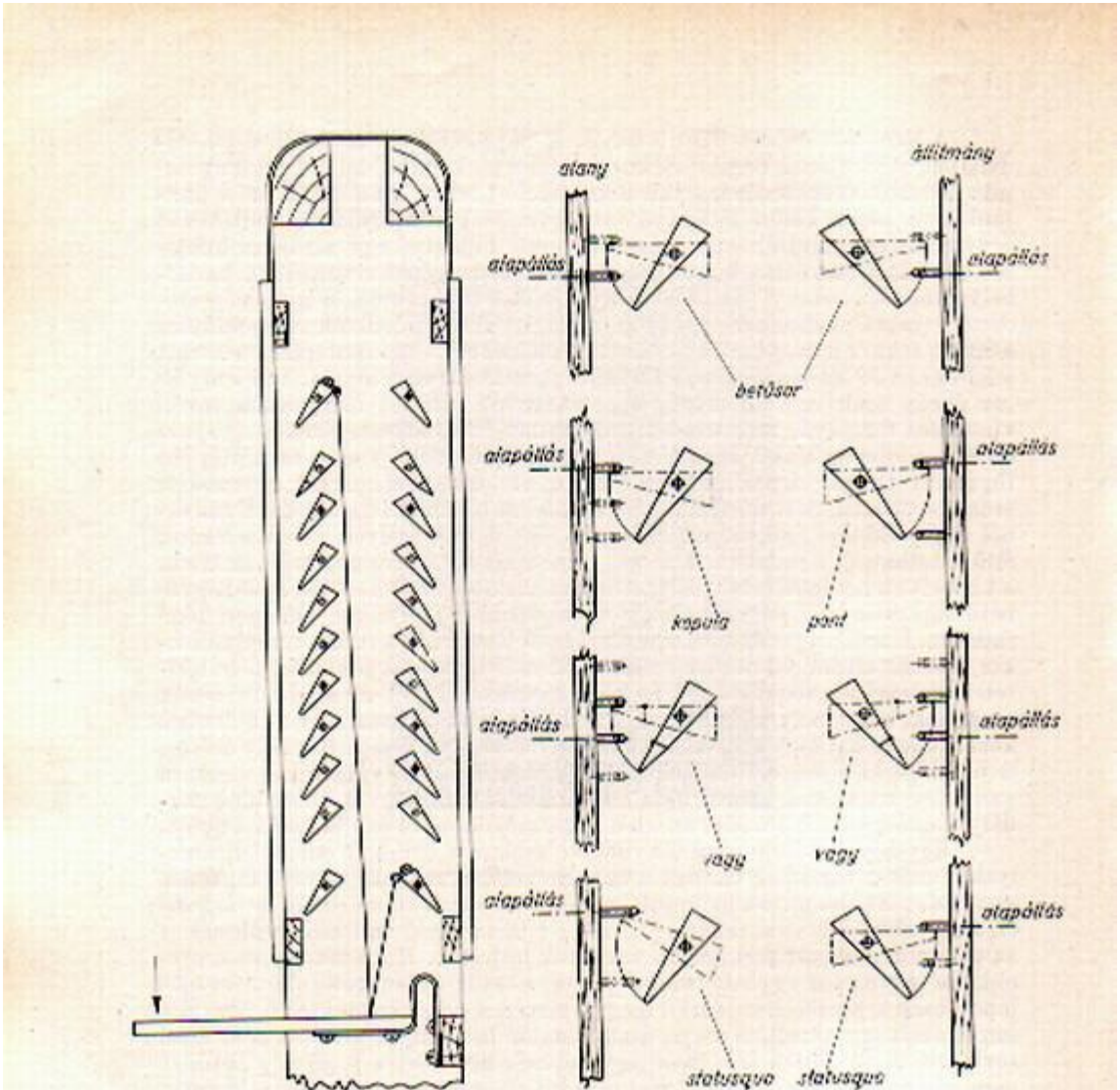
A Hungarian engineer on cybernetics before the cybernetics was invented.

- Norbert Wiener declared the basic concepts of the cybernetics on 1948 in his book:
  - *„Cybernetics or Control and Communication in the Animal and Machine*
  - *(The animal means human beeing, too.)*
- Tihamér Nemes' goal was to copy and to realize the different human activities with mechanical and electrical machines

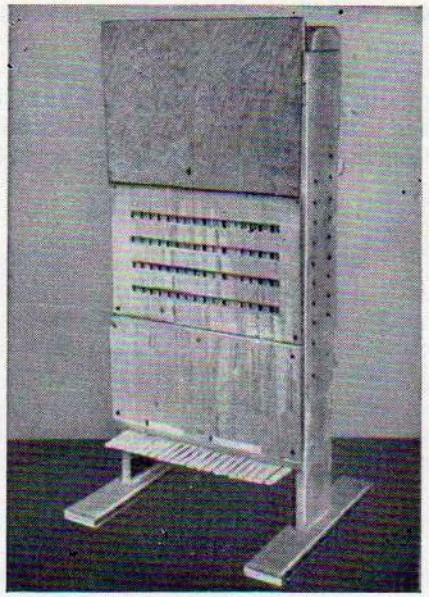
His logical machines

- The working modell of the Jevons-logical piano. Only wood, nail and string
- The pocket logical machine of wood to the engineers solving *logical tasks* – using as the *„slide-rule" to arithmetical operations*
- The genetics logical machine with reveresed punch cards.
- Unfortunately all his logical machines were lost.

The copy of the Jevons' logical piano. Internal details: wood, nail and string

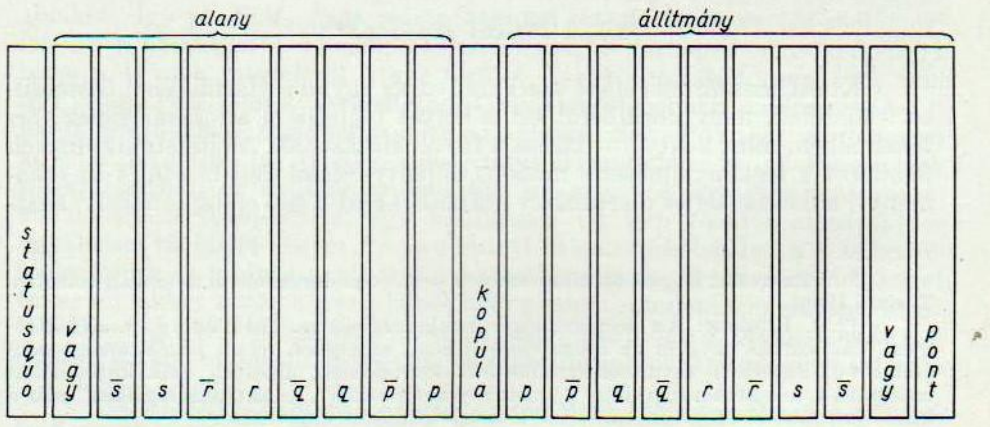


The copy of the Jevons' logical piano. The view of the piano and its keyboard



17. ábra

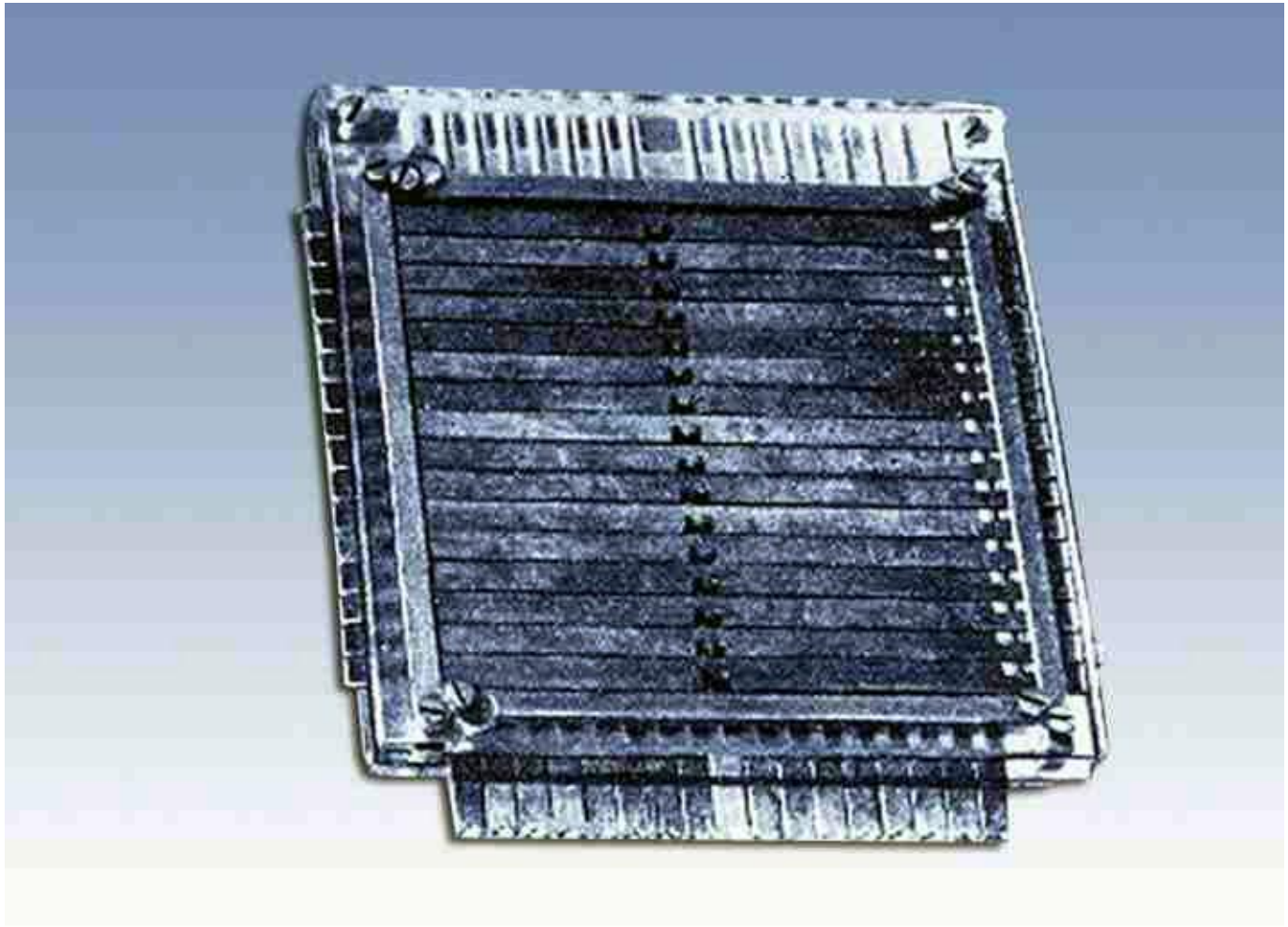
A Jevons-féle logikai pianínó (e könyv szerzőjének



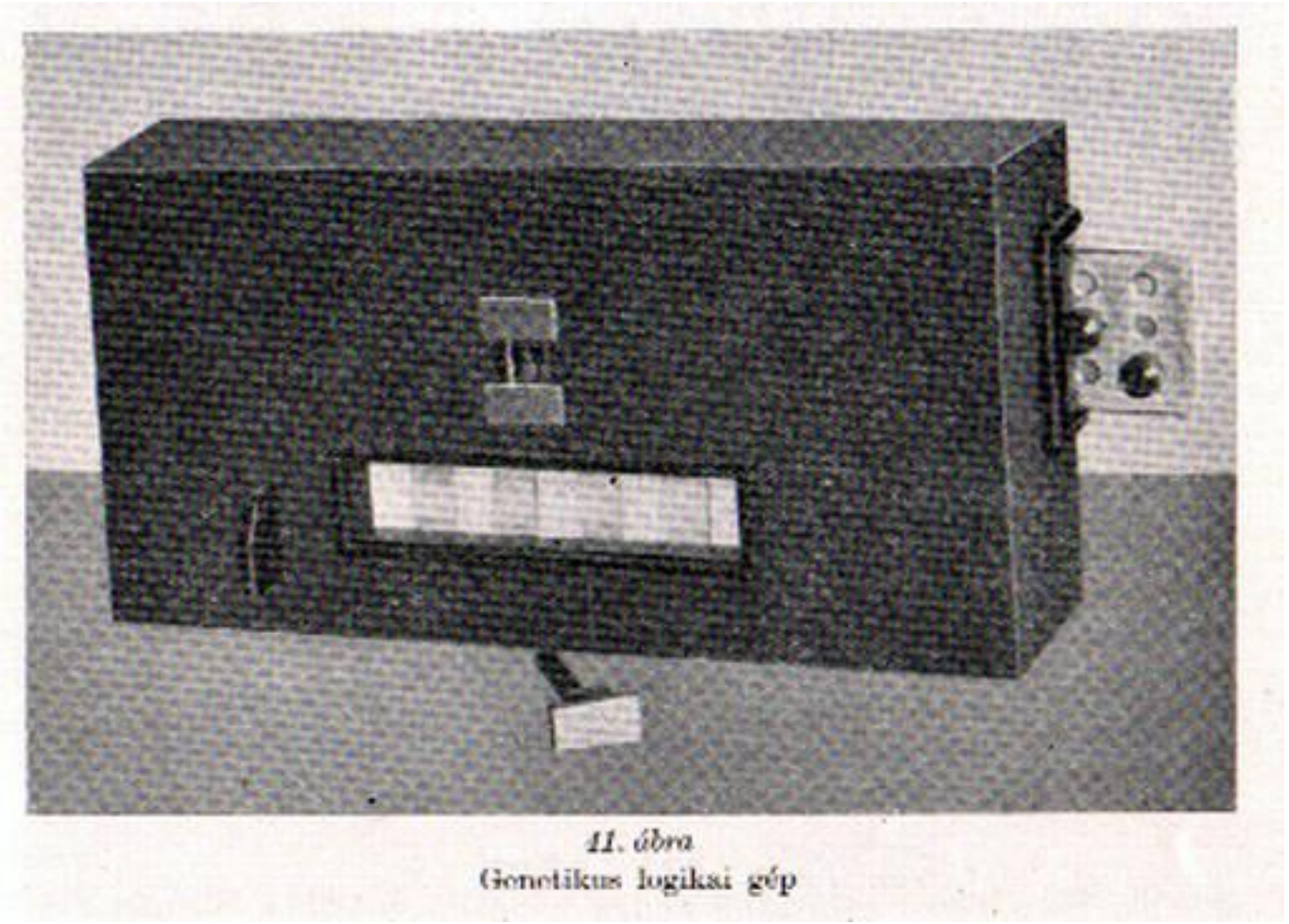
18. ábra

A Jevons-féle logikai gép billentyűzete

The pocket logical machine of wood



The genetic logical machine
Reversed punch card



11. ábra
Genetikus logikai gép

Electro-mechanical, cybernetical theoretical machines. Patents.

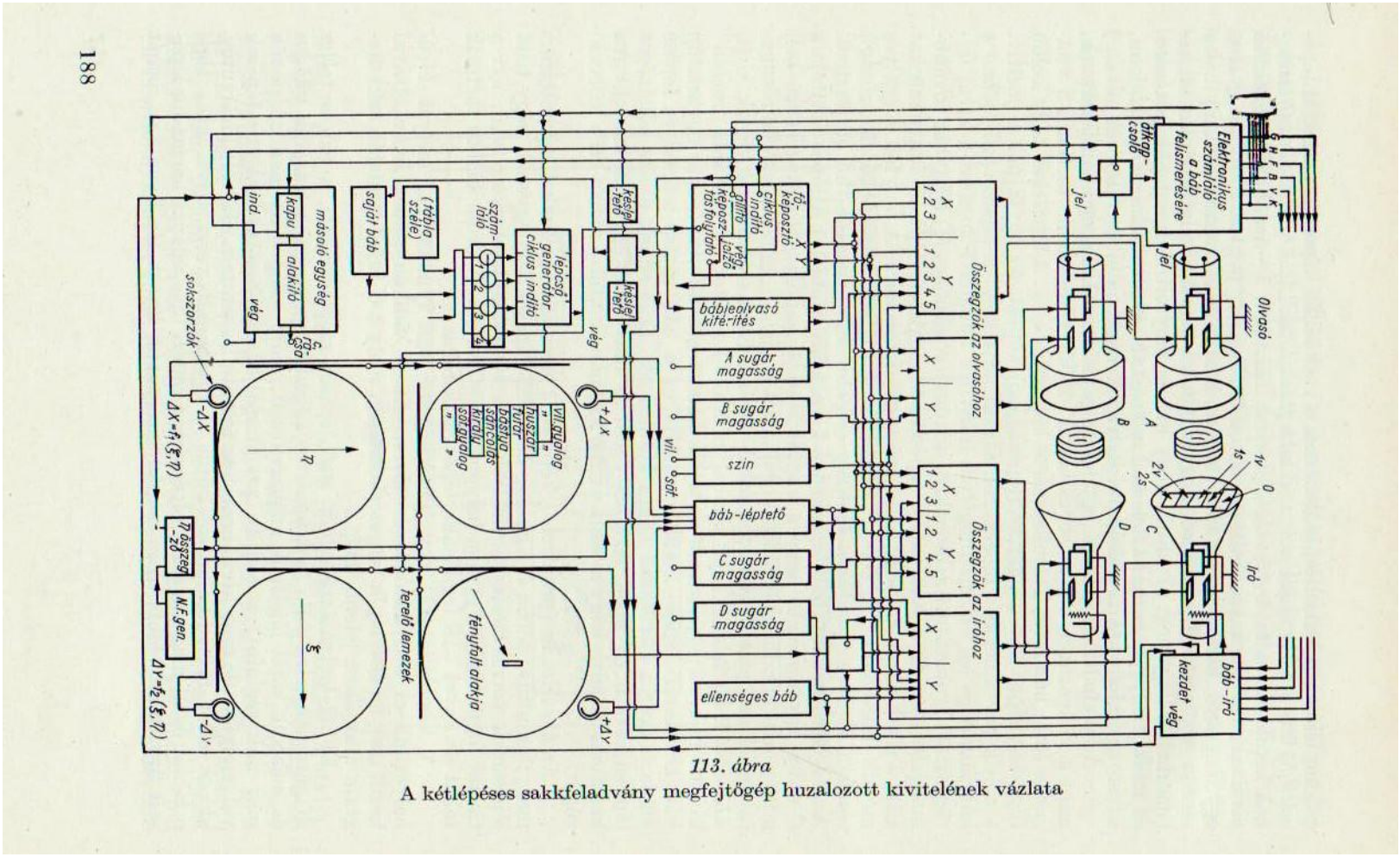
- He could not realized them
- Walking machine. A mechanical modell for the motion of the human leg. 1945.
- Speech writing automat
- Reading machine
- Machine for statistical data-processing
- Learning machine
- Music–compose machine etc.

All Nemes' models were lost

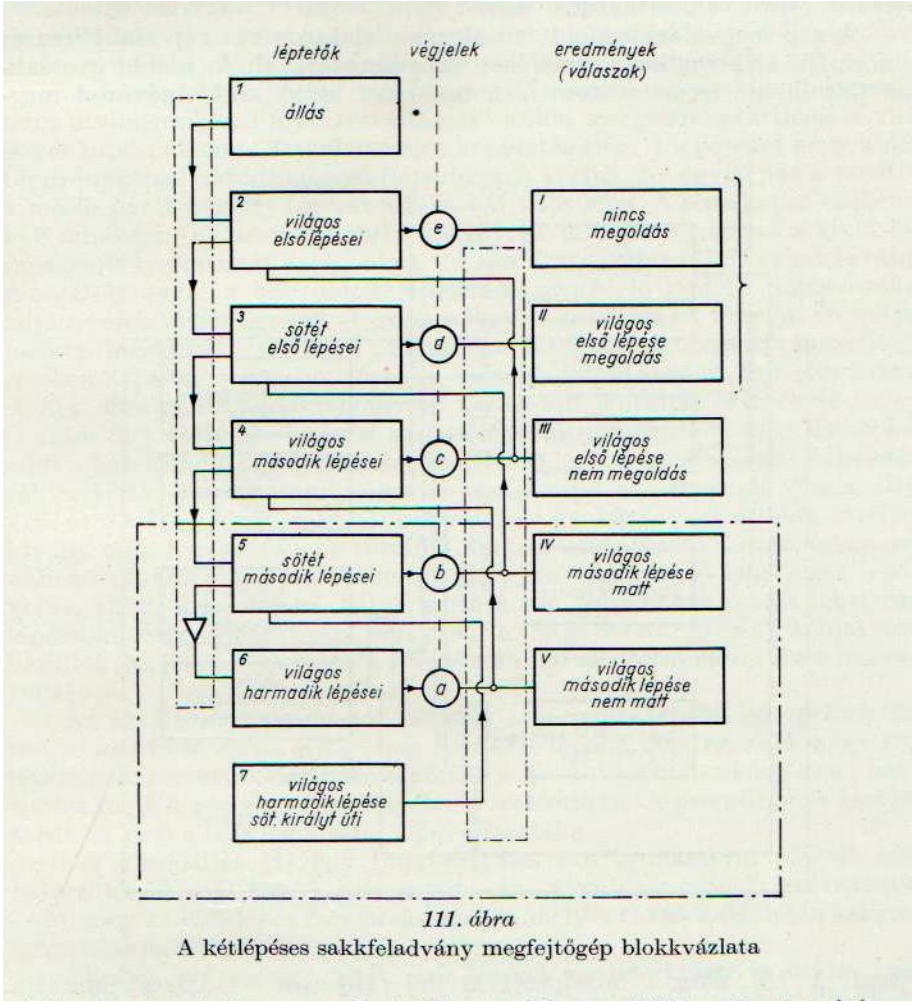
Chess

- He studied the mechanism of the human thinking – i.e. the operation of the brain.
- He was a good chess-player.
- His chess machines were only designed, but he could not construct them, becuse the level of the engineering-technology was poor.
- He construct a chess machine to solve a chess exercise in two steps.
- His next construction was a chess playing machine, but it was never realized

A design of a theoretical chess-machine to solve chess exercises in two steps.



A theoretical chess-machine to solve chess exercises in two steps. Block-chart



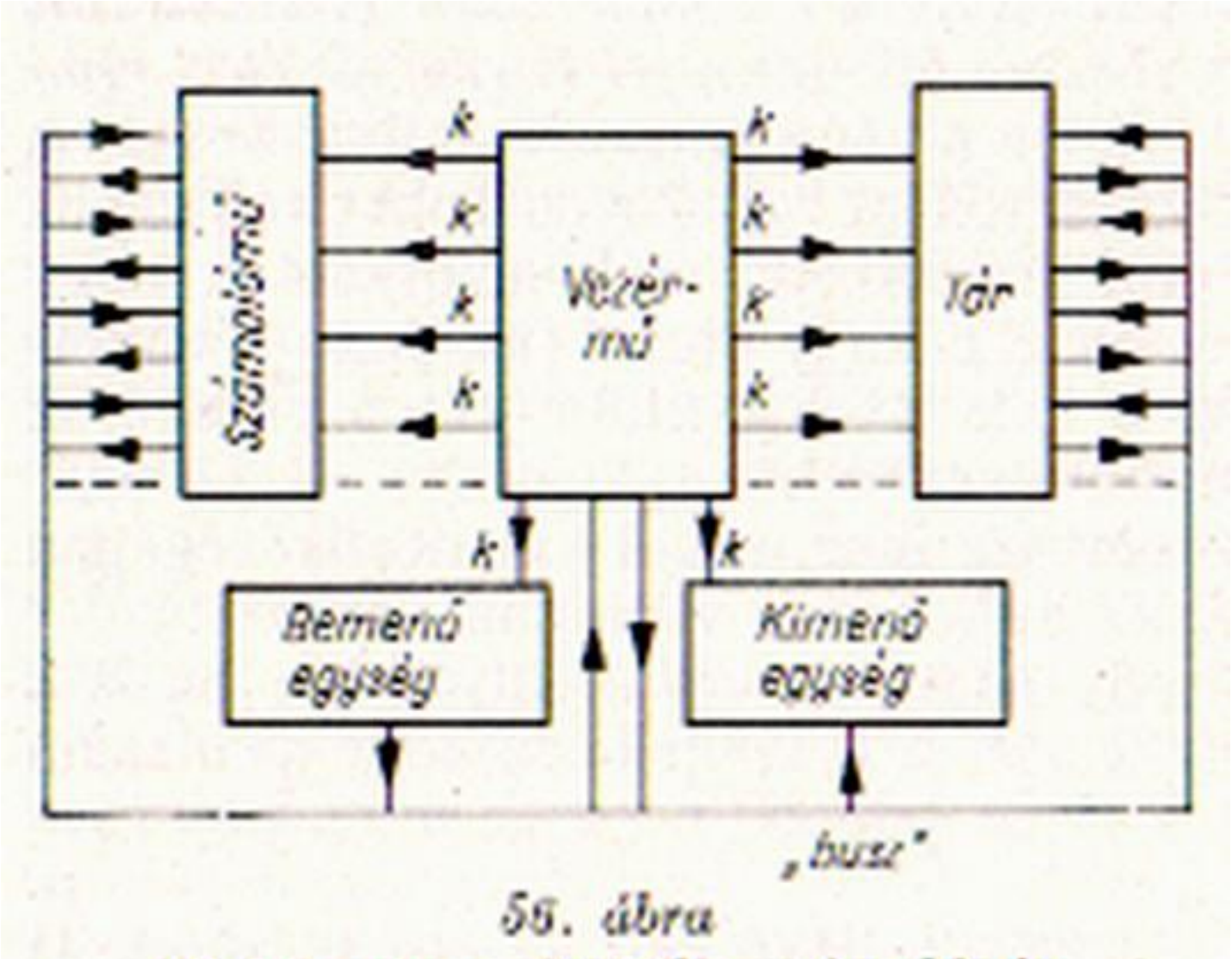
111. ábra

A kétlépéses sakkfeladvány megfejtőgép blokkvázlata

Computers

- Several visits in our Cybernetical Reserch Group from 1957, where we constructed the M-3 computer.
- It was our first connection
- He was a very good adviser
- He was interested about our activities
- He died before we can show him our M-3 computer, which was ready in 1959.

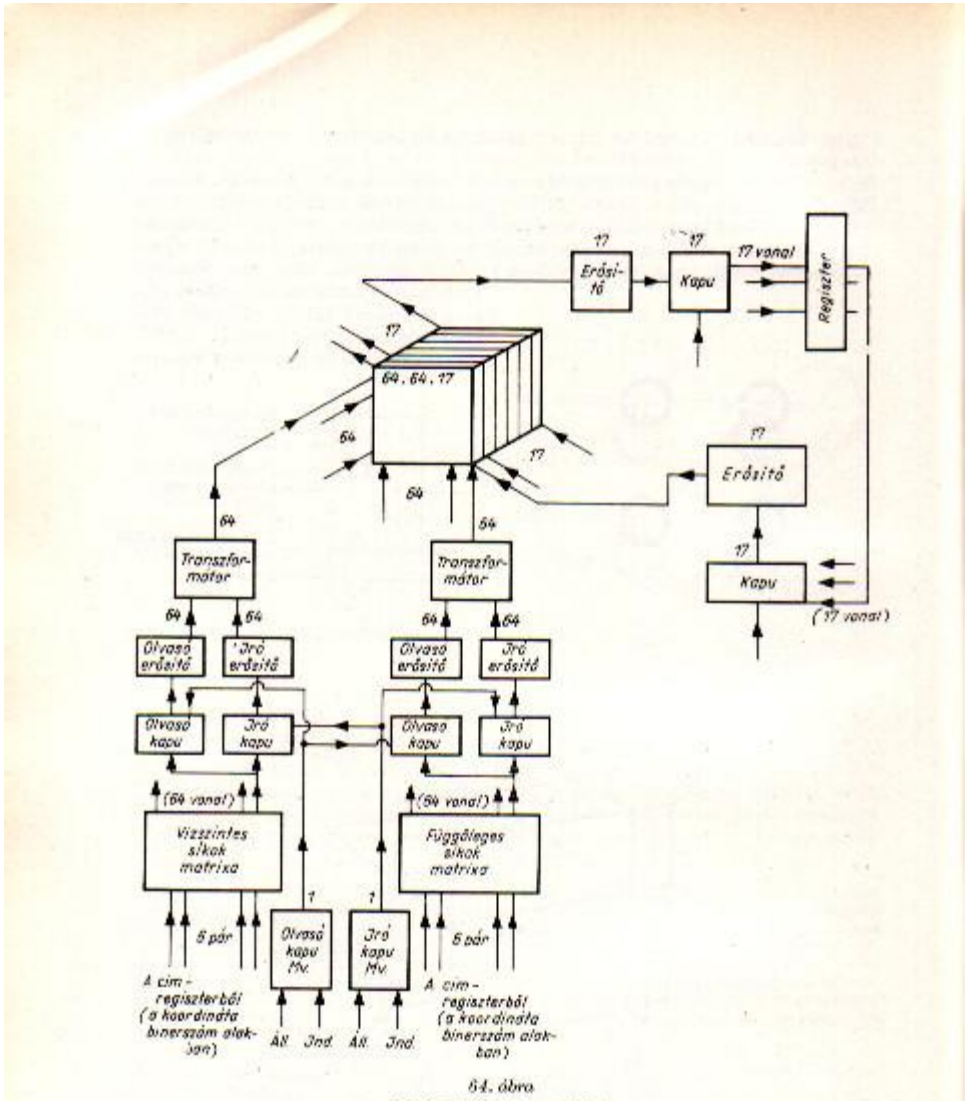
His immagination about the computer in his book



56. ábra

His idea about the controller of the ferrit-memory

- He studied the
- Early American
- Computers

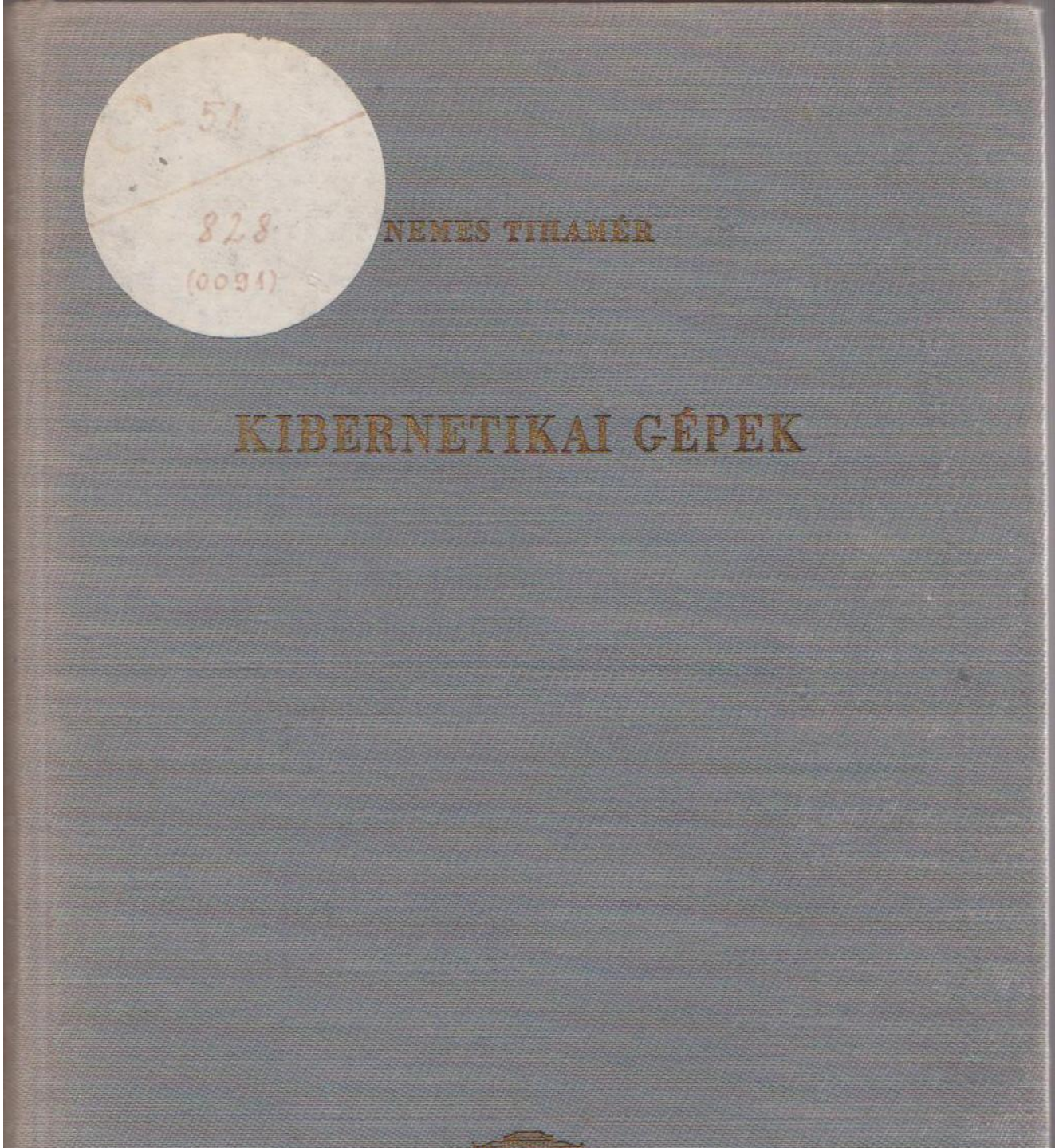


64. ábra

He was an invited speaker of the Budapest University of Technology

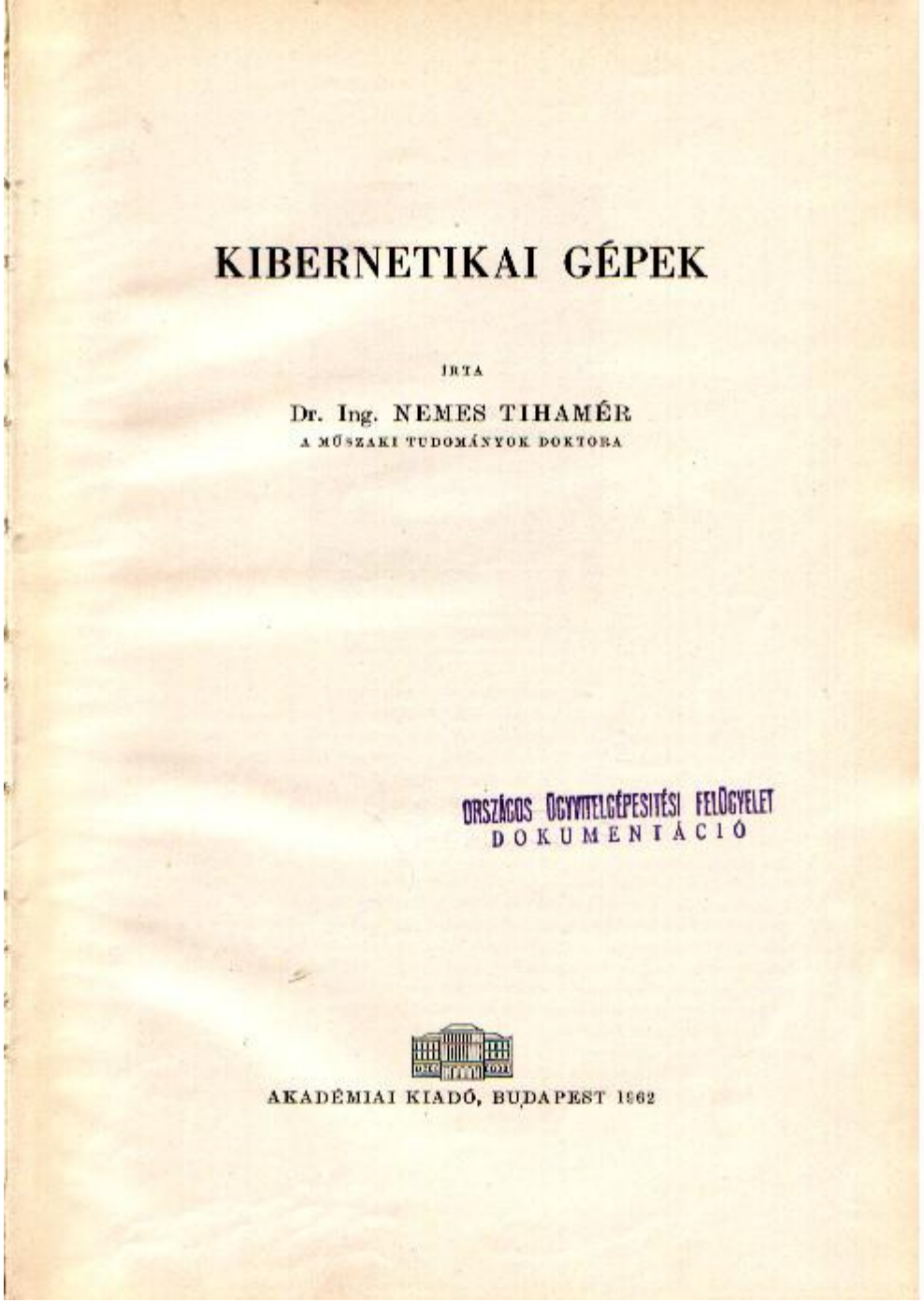
- He was not an „ordinally” speaker
  - He gave lectures
    - to undergraduated students and
    - engineers of continuation courses
  - He was an excellent speaker
  - He gave ideas
  - His subject matter was more then the normal teaching material. He presented mostly his immaginations .
  - He wrote a lot of articles and studies, but his book was edited by his friends after his death

His postumus Book, Edited by his friends



Cybernetical machines

- This book was
- edited by his
- friends from the
- Studies of
- Tihamér Nemes,
- the No 1
- Cybernetical
- Scientist in
- Hungary.



KIBERNETIKAI GÉPEK

ÍRTA

Dr. Ing. NEMES TIHAMÉR

A MŰSZAKI TUDOMÁNYOK DOKTORA

AKADÉMIAI KIADÓ, BUDAPEST 1962