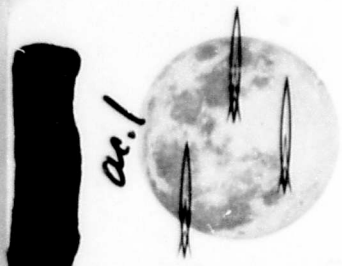
MACHINE BIBLIOGRAPHER

K. Drugov

General Dynamics/Astronautics
San Diego, California

April 1959



L-59-3-24

April 1959

MACHINE BIBLIOGRAPHER

K. Drugov

(Translation from Nauka i Zhizn, p. 68, no.5, May 1958)

Translated by W.R. Eichler

MACHINE BIBLIOGRAPHER

K. Drugov

Hundreds of books and thousands of articles dealing with a variety of subjects are printed annually and listed in catalogs. Each printed edition is entered on catalog cards which contain, in addition to the author's name, a variety of different data, such as: title of the book, main problems discussed by the author, conclusions, and much other information. These cards enable the searcher to obtain complete information on each "printed unit" before acquainting himself with the details of the content. However, even this search is enormously time-consuming when searching the literature for a specific problem.

The Laboratory of Electric Models of the Academy of Sciences of the USSR plans the construction of a special information machine consisting of a large rapid "memory" (bibliographer), a "reading" device (for quick "review" and analysis of information), and a device for introducing information (capable of machine-translation from foreign languages and of "translating into the machine language" - coding).

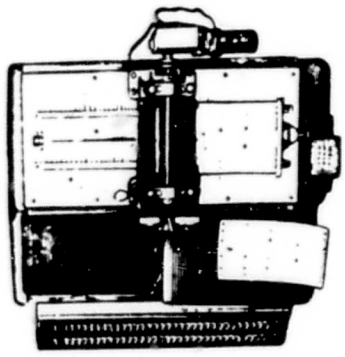


Figure 1. Perforation Device for Recording Information on Plates.

The principal feature and merit of this new information machine is its stable and rapidly-acting machine "memory". The content of the information material is applied metallized printing plates, which are then grouped into blocks (Figure 2 and 3). Since this machine, in contrast with machines constructed until now, has no moving parts, it is capable of operating over long periods of time at volocities of information retrieval heretofore unattainable.

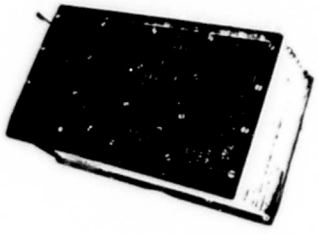


Figure 2. General view of the block (book) consisting of 512 plates (pages) with 512 binary signs.

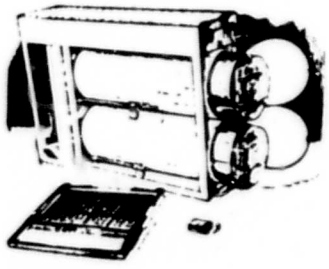


Figure 3. Drawing of one container (ordinary light bulbs and book of matches are shown for comparison of size).

When feeding a request into the machine, the latter "translates" this request into its code and sets up a program of information search. The "reading" device executes this program, selects the requested material and analyzes it.

At the completion of the selection and analysis, the machine prints the information on output printers.

The recording and computation processes require an average of 6-10 millionths of a second. Relay elements without contacts permit 300,000 operations per second. More than a million elements compose the stable "memory" of the machine, and the velocity of "reading" is on the order of 1,000,000 pages per hour.