NAME OF SYSTEM:

Information Storage and Retrieval for Patents

ORIGINATOR:

Electrical Examining Operation

Patent Office

Department of Commerce

Washington, D.C. 20230

OBJECTIVE. To design and evaluate a completely mechanized document storage and retrieval system that would accelerate the retrieval of patent information for review by examiners. Additionally, to provide the capability for the identity and retrieval of a broader selection of relevant patent information.

BACKGROUND. The Patent Office maintains a central records file containing more than 3¼ million approved patents classified into more than 300 classes and 57,000 subclasses. Government regulations specify that the approval of any new patent application must be based on "novel or original features." Compliance with this policy thus demands a high degree of search accuracy and recall capability. For example, patent examiners must review all approved patents that seem related to or have the same features as new patent applications.

For years the Patent Office had been investigating new approaches to the problems inherent in the conventionally maintained hierarchical subject classification file of patents. As the file size increased, searching speeds and file accessibility became a critical problem. As one possible solution to the information problem, a Patent Office study group selected 6,000 patents for initial conversion to an experimental mechanized storage and retrieval system.

THE NEW METHOD. This experimental system uses three types of information retrieval equipment and processes in support of this effort. They are a 1401 IBM computer, a plastic microfilm jacket, and mechanical card-selecting equipment.

The computer serves as the storage medium for the patent reference index. It maintains the important descriptive data necessary to the identification of patents having relevance to new patent applications. The main reason for the success of the document retrieval function is the seven digit patent serial number. In patent searches, the computer selects and prints a list of pertinent patent numbers in accordance with the search index terms used.

For the document storage function, the study group selected a 4 x 6 inch plastic microfilm jacket coupled with a Randomatic mechanical card selector device. These media were chosen because of the relatively low cost of jacket preparation and the fast retrieval features of the mechanical selector device. In converting to the microfilm jacket system, the initial action involved the computer-assisted identification and selection of the 6,000 patent documents from the conventional file. A standard 16-mm. camera was then used to microfilm the selected patent documents. After film development, the roll film was cut into 12-image strips and manually inserted into the jacket pockets. The final step before filing of the jackets was the placing of the code notches on the bottom edge of each jacket through use of a special punch. The notches represent the seven digit patent serial number and are the means by which the mechanical selector device identifies individual film jackets.

The storage file environment includes an integrated keyboard, jacket selector device, and film jacket container. Because of characteristics of the coding and retrieval routine, microfilm jackets may be filed in random sequence.

To retrieve a jacket, the file technician first refers to a computer printout listing of patents and identifying numbers coinciding with the patent examiner's request. Using the integrated keyboard, the clerk keys in the patent numbers. A mechanical actuating unit then causes the identified patent jackets

within the file to raise slightly above the others. Retrieval then consists of picking the raised jackets out of the file container. These selected jackets are given to the patent examiner for preliminary study on the nearby search reader-printer. Should the examiner desire a more detailed study of the patent, the technician can quickly make a film-to-film reproduction of the full jacket, which can be used by the examiner in his work area for reading purposes or for making selective paper copies.

REMARKS. This mechanized microfilm jacket retrieval system has the capability for fast selection and retrieval of needed documents on a continuing basis. Its features that permit random refiling of returned jackets also save considerable time. The plastic film covering of jackets affords maximum protection to the microfilm strips.

The nature of patent examination work often requires detailed study of patent documents. Thus, the patent information needs to be close to the work area. While the acquisition and maintenance costs are rather high for such a system, there is always the possibility that it might be fully justified through improved program effectiveness.

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