

Figure 1

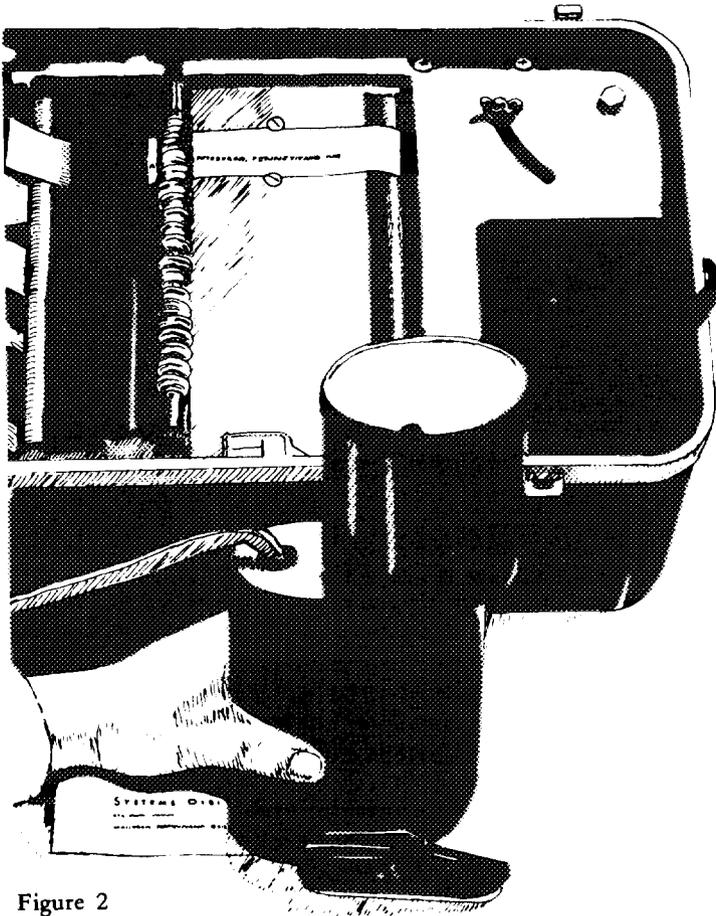


Figure 2

"Scanning" is a key word because it distinguishes the *Copywriter* from other copying devices, which are generally stationary devices that reproduce a whole page. The *Copywriter* copies *selectively* by being moved by hand along the printed line from left to right.

Many CC<sup>®</sup> readers are engineers, and there will be others whose work with sophisticated instruments may interest them in details of the first prototype of the *Copywriter*. Its reading and writing units are pictured in Figure 2. The information copied was reproduced on a continuous strip of *Teledeltos*<sup>®</sup> electrosensitive recording paper, the paper often used by Western Union for dispatching telegrams by facsimile machines. An electric current causes the surface of the paper to "burn" off, exposing a black carbon layer. The reading unit was held between the thumb and index finger, and pushed along the line to be copied at a uniform rate of speed. If you moved it too fast, the copy would "condense" or contract. If you moved it too slowly, the copy would "expand".

Although the original prototype proved that selective copying was possible, it was deficient in many ways and clearly not suitable for regular use. There was more work to do.

Several years later, despite my further failures to convince manufacturers of the need, Mr. Clapp continued his interest. The CLR funded a feasibility study to review the state of the art. I had hoped the resulting report would convince CLR to pursue development of the prototype, but Mr. Clapp was unable to authorize the necessary funds. Subsequently I tried to obtain support from the Air Force. At one stage, they actually took my proprietary proposal

and put out a Request for Proposals on it. Legal action was initiated to get it back.

In 1969, I persuaded the Board of Directors of ISI to form a subsidiary company called Selective Information Devices, Inc. (SID). ISI lent SID the money to incorporate in a new prototype many technological advances made since construction of the original device. SID contracted with a biomedical instrumentation company with special experience in miniaturization to build the new machine. The result was a reading unit as small and light as a pocket fountain pen. Problems of synchronizing the reading and writing units were overcome, and the relatively expensive and messy *Teledeltos* paper was replaced by a fast photosensitive paper on which the latent image is developed by a heating element. In addition, a cathode ray tube (CRT) display unit was included for monitoring purposes, which permits one to test the reading unit without exposing paper. This display capability suggests some amusing uses, e.g., applications like an "electronic menu" -- a diner could scan a menu at the table and have his order displayed on a CRT in the kitchen, bypassing the scribblings or memory of the waiter.

The display and erase capability could have interesting applications in teaching. Using TV rather than a blackboard, a teacher could display diagrams, special characters (including Chinese), or short verse sequences, rather than write them out on the blackboard or wait for every student to find the proper place in his text. Or a lawyer, working in a library, could extract selected sentences from statutes or

court decisions, display them on the TV console, and make hard copies of those he wants to study further.

I have found that most people who consider the *Copywriter* ask whether it can be used for selective input of data into a computer or other digital device. The same question occurred to me, and in 1969, I incorporated a character-recognition circuit into one of my patents on a proofreading typewriter.<sup>7</sup> This type of "digital" *Copywriter* may have more direct application than the "analog" facsimile device, since the latter requires a writing unit, although there are many situations in which character recognition isn't necessary.

We intend to pursue the *Copywriter* project as time and resources permit. I should be glad to hear from anyone interested in it. Naturally an expression from our readers that they would like to have access to such a device would help our continuing search for a sponsor who can follow through from production to marketing.

1. I am pleased to report that Professor Hammet, at 79, is professionally active and in good health. When it recently appeared, I was delighted to examine the new edition of his classic text: Louis P. Hammett,

Physical Organic Chemistry: Reaction Rates, Equilibria, and Mechanisms, 2 ed., New York: McGraw Hill, 1970, 420 pp.

2. Larkey, S.V. The Welch Medical Library Indexing Project. Bull. Med. Library Assoc. 41(1):32-40, 1953.
3. Field, H.G., Himwich, W.A., Garfield, E. *et al.* Final Report on Subject Headings and on Subject Heading. Welch Medical Library Indexing Project. Baltimore: Johns Hopkins University, 1955, 47 pp., with appendices, mimeogr.
4. Garfield, E. The preparation of subject-heading lists by automatic punched-card techniques. *J. Documentation* 10(1):1-10, 1954.
5. Garfield, E. Preliminary report on the mechanical analysis of information by use of the 101 statistical punched-card machine. *Amer. Documentation* 5:7-12, 1954.
6. Himwich, W.A., Garfield, E. *et al.* Final Report on Machine Methods for Information Searching. Welch Medical Library Indexing Project. Baltimore: Johns Hopkins University, 1955, 38 pp., mimeogr.
7. Garfield, E. U.S. Patent 3,512,129: Character recognition selective copying and reproducing apparatus. Patented May 12, 1970.