

[54] **BOOK INDEXING AND PROCESSING SYSTEM**

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 [51] **Int. Cl.²** **B42F 21/00**
 [58] **Field of Search** **283/36, 42**

[56] **References Cited**
OTHER PUBLICATIONS

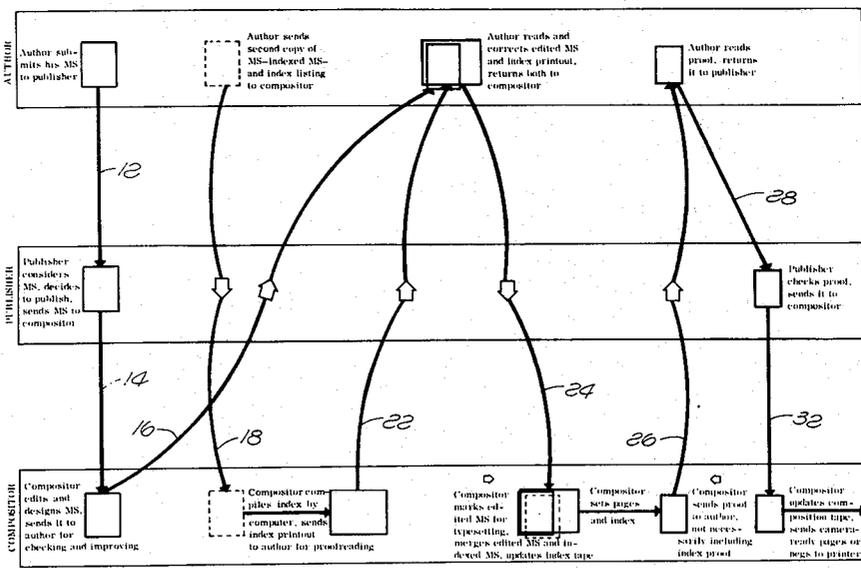
A Guide for the Preparation of Indexes, by Eleanor T. Harris, Copyright The Rand Corp., 1965, pp. 2, 4 and 9.

Primary Examiner—Lawrence Charles
Attorney, Agent, or Firm—Harvey S. Hertz

[57] **ABSTRACT**

A process for manufacturing books containing an index and for expediting publication thereof is disclosed. Both text and index are processed in such a way as to be ready simultaneously for printing. Indexing is based on the author's manuscript rather than typeset pages. The material to be indexed in the manuscript is denoted therein. Index-indicia are assigned to each item of denoted material; they are ordinarily assigned in accordance with the sequential appearance of the items in the manuscript. When the manuscript text is finally typeset and the index is being composed, the index-indicia are converted to the page numbers of the text on which the material appears. Thus both text and index are processed, nonstop, in one and the same operation. The text and/or index can be processed by computer or manually, as desired.

4 Claims, 9 Drawing Figures



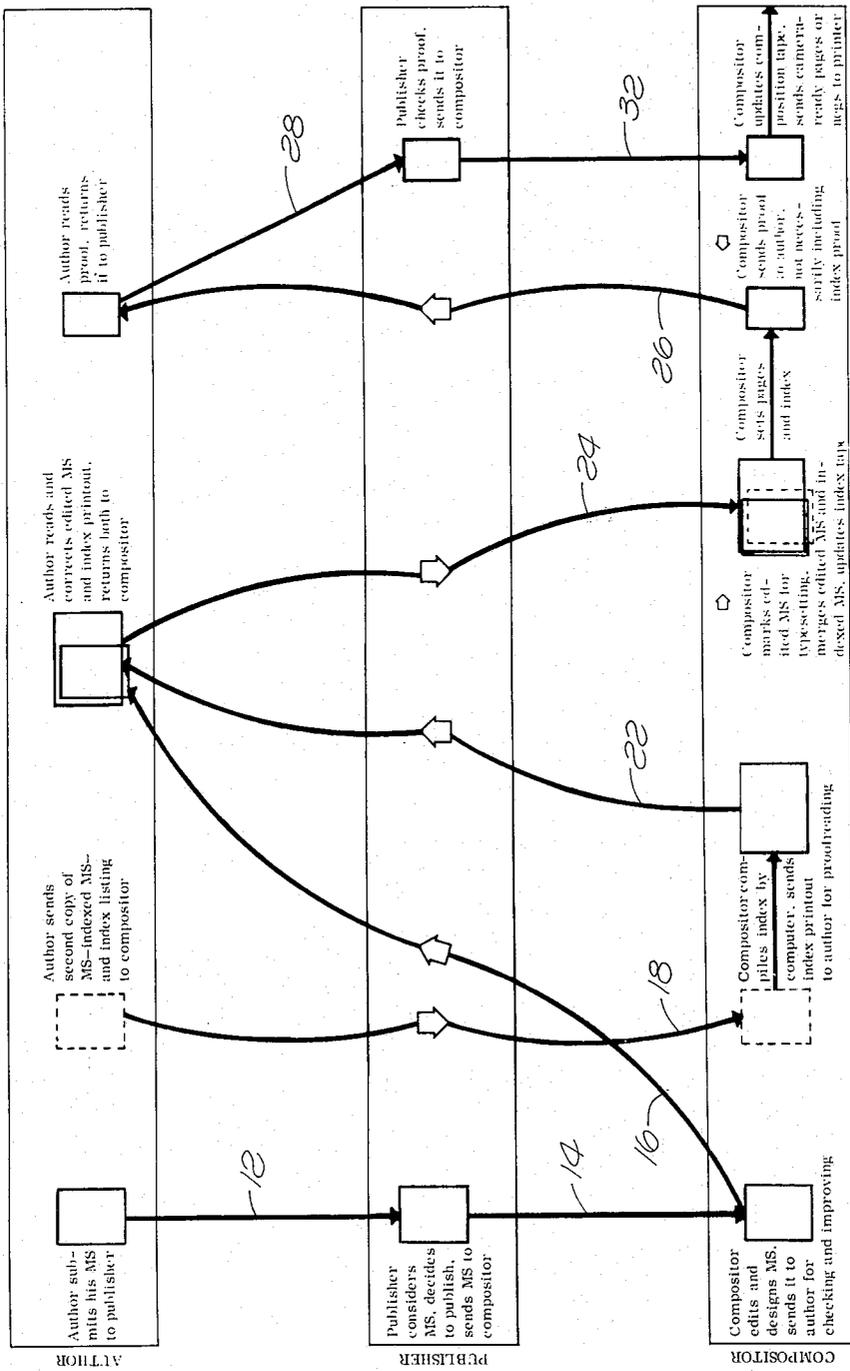


FIG. 1.

Indexed Manuscript

225

351 begin before a year or more of preliminary work. Wilbur
elected to symbolize the start of the project by driving a
silver spike for the short railroad line which was to con-
352 nect the dam site with the Union Pacific Railroad in Las
Vegas. On 17 September 1930 Wilbur drove the spike and
declared, "I have the honor to name this dam after a
353 great engineer who really started this greatest project of
all times, the Hoover Dam." ³⁵ Shock reverberated
354- throughout California, Nevada, and wherever the friends
355- of the Boulder Canyon project were to be found. The
356 Sacramento Bee castigated Wilbur for his "unapproach-
able gall," and leveled the accusation that he had ignored
facts. "He made a consummate ass of himself," and he
"assumed the prerogative of Mussolini." ³⁶

On the day Wilbur renamed the dam the San Francisco
357 News carried comment on the recent primary election.
They predicted that governor-elect James Rolph and Con-
gressman Phil D. Swing were the men who would most
likely be Senate candidates in 1932. The News further
identified Swing for its readers as a popular young veteran,
an aggressive and experienced lawmaker, and "the real
father of Boulder Dam." ³⁷

Examining Wilbur's act from a legal rather than an
emotional stance, Swing was convinced that the original
name given to the project would stand. Congress had the
legislative prerogative and it had recognized the project

FIG.2.

226

as Boulder Dam. There had already been two attempts
to change the name in Congress. Representative Edward
358 Taylor had introduced a bill to change the dam name to
359 Hoover in May 1929. Senator Reed Smoot of Utah had
introduced a similar measure in January 1930. Both
bills had been assigned to the respective Irrigation com-
mittees and never reported out.⁴⁰

Privately Swing was very disappointed at the turn of
events. "It looks as if those of us who worked for the
great Boulder Dam are going to be shoved out of the pic-
ture by changing the name and credit for the work."⁴¹
The following sincere, originally punctuated letter could
not help but restore his good humor:

My, Dear, Mr, Swing,

I do not comprehend his legal right? and I hope
ever man and woman in Nevada, Arizona and Cali-
fornia will unanimously demand the name to remain
known to the entire United States as the Swing,
Johnson, Bolder Dam.⁴²

-354 Swing was justifiably pleased when a second amend-
-355 ment by Colorado Representative Taylor to change the
name of the dam officially was rejected by the House on
12 December 1930.⁴³

360 In October 1930 Arizona filed a complaint in the
361 Supreme Court against all other Colorado River basin
states and Ray Lyman Wilbur. Arizona alleged that the
Boulder Canyon Project Act was unconstitutional, that

FIG.3.

Author-prepared Index Listing

- 351 *Wilbur, Ray Lyman, 225*
- 352 *Union Pacific Railroad, 225*
- 353 *Hoover, Herbert: as engineer, 225*
" " : " " : (see also Compact)
- 354- " " : dam named for, 225
Hoover Dam: see Boulder Dam
- 355- *Boulder Dam: name controversy, 225*
" " : see also Johnson, Hiram
- 356 *Sacramento Bee, The, 225*
- 357 *San Francisco News, 225*
Father of Boulder Dam: see Swing, Philip David
" " " " : " Boulder Dam
- 358 *Taylor, Edward, 226*
- 359 *Smoot, Reed, 226*
- 354 *Hoover, Herbert: dam named for, 226*
- 355 *Boulder Dam: name controversy, 226*
- 360 *Wilbur, Ray Lyman, 226*
- 361 *Boulder Canyon Project Act, 226*

FIG.4.

Index Listing Marked for Inputting

- S Wilbur, Ray Lyman,/#351
- S Union Pacific Railroad,/#352
- S Hoover, Herbert:/as engineer,#353
- S Hoover, Herbert:/as engineer,#(see also Compact)
- S Hoover, Herbert:/dam named for,#354--354
- X Hoover Dam:/See Boulder Dam
- S Boulder Dam:/name controversy,#355--355
- X Boulder Dam:/See also Johnson, Hiram
- S Sacramento Bee, The,/#356
- S San Francisco News,/#357
- X Father of Boulder Dam:/See Swing, Philip David
- X Father of Boulder Dam:/See Boulder Dam
- S Taylor, Edward,/#358
- S Smoot, Reed,/#359
- S Wilbur, Ray Lyman,/#360
- S Boulder Canyon Project Act,/#361

FIG.5.

Index Printout

Boulder Canyon Project Act, 361

Boulder Dam: name controversy, 355--355. See also Johnson, Hiram

Father of Boulder Dam. See Boulder Dam; Swing, Philip David

Hoover Dam. See Boulder Dam

Hoover, Herbert: as engineer, 353 (see also Compact); dam named for, 354--354

Sacramento Bee, The, 356

San Francisco News, 357

Smoot, Reed, 359

Taylor, Edward, 358

Union Pacific Railroad, 352

Wilbur, Ray Lyman, 351, 360

FIG.6.

Valley. This could be developed in conjunction with wide-ranging speaking tours, and Phil Swing liked to make speeches.³⁴

351 The first dam appropriations from Congress prompted Ray
Lyman Wilbur to mark the project's commencement with a Sep-
352 tember ceremony in Nevada. The practical necessities of the con-
struction schedule dictated that work on the dam proper could not
353 begin before a year or more of preliminary work. Wilbur elected
354 to symbolize the start of the project by driving a silver spike for
the short railroad line which was to connect the dam site with the
355 Union Pacific Railroad in Las Vegas. On 17 September 1930 Wilbur
drove the spike and declared, "I have the honor to name this dam
after a great engineer who really started this greatest project of all
times, the Hoover Dam."³⁵ Shock reverberated throughout Califor-
356 nia, Nevada, and wherever the friends of the Boulder Canyon
project were to be found. The *Sacramento Bee* castigated Wilbur
for his "unapproachable gall," and leveled the accusation that he
had ignored facts. "He [Wilbur] made a consummate ass of him-
self," and he "assumed the prerogative of Mussolini."³⁶

357 On the day Wilbur renamed the dam the *San Francisco News*
carried comment on the recent primary election. They predicted
that governor-elect James Rolph and Congressman Phil D. Swing
were the men who would most likely be Senate candidates in 1932.
The *News* further identified Swing for its readers as a popular
young veteran, an aggressive and experienced lawmaker, and "the
real father of Boulder Dam."³⁷

During the weeks that followed Wilbur's announcement Swing
received a number of letters from friends who wrote him to share
their sense of outrage for Wilbur's deed. Swing's response to nearly
all of them was calm, in contrast to that of the newspapers. To
Sam Evans he put the matter in perspective. "How many people
know that Muscle Shoals was rechristened Wilson Dam?" he
queried.³⁸ "I do not think there is any larceny involved in the mere
naming of the project of Senator Johnson and my own labor the
'Hoover Dam,'" he wrote to another friend. "Many a child has
been named for a man who admittedly was not its father."³⁹

Examining Wilbur's act from a legal rather than an emotional
stance, Swing was convinced that the original name given to the
project would stand. Congress had the legislative prerogative and

FIG. 7.

Senatorial Aspirations

133

358 it had recognized the project as Boulder Dam. There had already
359 been two attempts to change the name in Congress. Representative
Edward Taylor had introduced a bill to change the dam name to
Hoover in May 1929. Senator Reed Smoot of Utah had introduced
a similar measure in January 1930. Both bills had been assigned to
the respective Irrigation committees and never reported out.⁴⁰

Privately Swing was very disappointed at the turn of events. "It
looks as if those of us who worked for the great Boulder Dam are
going to be shoved out of the picture by changing the name and
credit for the work."⁴¹ The following sincere, originally punctu-
ated letter could not help but restore his good humor:

My, Dear, Mr, Swing,

I do not comprehend his legal right? and I hope ever man and woman
in Nevada, Arizona and California will unanimously demand the name
to remain known to the entire United States as the Swing, Johnson,
Bolder Dam.⁴²

-354 Swing was justifiably pleased when a second amendment by Col-
-355 orado Representative Taylor to change the name of the dam offi-
cially was rejected by the House on 12 December 1930.⁴³

360 In October 1930 Arizona filed a complaint in the Supreme Court
361 against all other Colorado River basin states and Ray Lyman
Wilbur. Arizona alleged that the Boulder Canyon Project Act
was unconstitutional, that Wilbur was invading the state's quasi-
sovereign rights by building the dam, and alleged that the Colorado
was not navigable. The defendants could either file a motion to
dismiss or file an answer in January. The motion to dismiss would
deal only with questions of law, while an answer would raise ques-
tions of fact and law. The defendants elected to pursue the former
course. Swing worked closely during the final session of the
Seventy-first Congress with W. B. Mathews and Charles Childers,
representing the state of California, in the preparation of Califor-
nia's motion for dismissal. Fortunately for the Boulder Canyon
project, Arizona had not asked for a preliminary injunction. The
work on the dam was not interrupted.⁴⁴

On 11 March 1931, a few days after the close of Congress, Sec-
retary Wilbur, in the presence of Dr. Elwood Mead and Repre-
sentative Phil D. Swing, signed the largest single contract that ever

FIG.8.

Typeset Output

Boulder Canyon Project Act, 133

Boulder Dam: name controversy,
132-133. *See also* Johnson,
Hiram

Father of Boulder Dam. *See*
Boulder Dam: Swing, Philip
David

Hoover Dam. *See* Boulder Dam

Hoover, Herbert: as engineer,
132 (*see also* Compact); dam
named for, 132-133

Sacramento Bee, 132

San Francisco News, 132

Smoot, Reed, 133

Taylor, Edward, 133

Union Pacific Railroad, 132

Wilbur, Ray Lyman, 132, 133

FIG. 9.

BOOK INDEXING AND PROCESSING SYSTEM

BACKGROUND AND SUMMARY OF THE INVENTION

Conventional system of processing books that contain a "back-of-the-book" index are very laborious, time-consuming and expensive. Typically, after a manuscript is forwarded by an author to a publisher, up to 15 months can be consumed in editorial assessment, editing, designing and final marking for typesetting. An additional 6 to 9 months are required to process the completed manuscript through typesetting, paging and indexing, including the attendant proofing, correcting and scheduling procedures for the latter steps.

Finally, an additional 3 to 6 months are required for the printing and binding of the completed book. Thus, it has been found that a minimum of 2 years' lead time is required from the time the manuscript arrives in the publisher's office until the publication date of the finished product. Such a lengthy time span and procedure require a large expenditure of funds without any income in return. Moreover, the book loses its timeliness and effectiveness as a vehicle of knowledge when compared to other communication media. While not all of the above steps can be expedited, there is much room for saving in time and expense in the editing, the typesetting and, particularly, the indexing of a book going through production.

One major problem area in book processing today is the compilation and production of the index so that it correlates with the final pages of the typeset text. The normal procedure in book production is for the author to prepare the index when the final version of the typeset text pages is completed. By this time, a year and a half may have elapsed since the author forwarded the manuscript to the publisher, and the author may no longer have an interest in the publication other obligations may have arisen, or he may be unavailable. Even if a professional indexer is engaged, little time is likely to be saved. An index takes time to be compiled, and then it must be edited, typeset, proofread, corrected in type, paginated, reproofed and recorrected. During this time, the main body of the publication must be held up at the printers until the index is ready for press. If production of the index falls behind schedule, the entire book printing must be rescheduled and this in turn necessitates rescheduling the publishing, promotion and advertising program.

A major disadvantage in having the author wait so long to prepare the index to the publication is that the subject matter is no longer fresh in his mind. The author is obligated to work on a subject that may no longer be motivating. He must also produce the index under pressure of meeting a deadline. In such circumstances, it has been found that the final indexing product is not satisfactory, nor can the author improve the text which has already been typeset. Additionally, the author may feel a need to make major alterations in the text in order to accommodate certain developments in the subject matter of his work; this is almost impossible, due to the expense involved in redoing the typesetting. Since the author is generally responsible for preparation of the index and since he is normally the person best qualified to do the job, a better system of book processing — one which aids the author to perform the indexing — is greatly needed.

The present invention of book processing provides a system for indexing before, during and after editing of a manuscript. That is, the index can be compiled and processed in type concurrently and integrally with the preediting, editing and composition of the manuscript text. The system enables both the text and the index to be edited and compiled and to be typeset in virtually one and the same continuous operation.

Briefly, the invented process works as follows: The material to be indexed is denoted in the manuscript text, usually by underscoring or circling. Each piece of denoted material is assigned a special symbol such as an index-indicia number. The denoted material is then separated out and compiled as follows: the key words of the material to be indexed are sorted and alphabetized; main heads and subheads are arranged in alphabetical or numerical order, as desired; entries are edited (redundancies are eliminated, cross-references are supplied); and finally cross-references are run in at the appropriate places.

Typically, such a series of steps can be performed manually with index cards, or mechanically in part with a card sorter, or electronically to some extent by means of a computer program. The alphabetized or assembled index is compiled in preliminary form, that is, the index-indicia numbers will accompany the denoted items as substitutes for the as yet unknown book-page numbers. As soon as the manuscript text is set, the preliminary index can be finalized and typeset, with the index-indicia numbers converted to the page numbers found on the typeset version of the text.

The book manufacturing process of the present invention incorporating a system of pre-pages indexing can place the index at the core of the overall production process, instead of treating the indexing as an appendage to the production cycle where it becomes the common bottleneck of all book production. Integration and concurrence of indexing and text-processing operations constitute a production process radically different from that practiced in conventional publishing and printing. The production process of the present invention, in addition to its many advantages for authors, shortens editing and type-setting time, eases proofing, correcting and scheduling procedures, and reduces publishing and bookmaking costs. A main advantage to the author is that he can strengthen weaknesses turned up in the text by the indexing since the index is compiled prior to the text being set in type.

Both the book processing and/or the indexing can be either manually performed or computer assisted. No part of either the book or index processing, however, needs to be computerized, not even the typesetting of the text. Hot-metal or linofilm systems of composition may readily be used. Indexing has to be performed manually initially, in any case, but its clerical compilation may be computer assisted. If the clerical compilation work is computer assisted, typesetting of the index does not have to be computerized as well, although this is advisable because feasible and economical (a second keyboarding of the index data is not required as with other systems). Therefore, the process of the present invention can be readily adopted by publishers and printers whether or not they use computer equipment. Manual processing of the index, however, may be found laborious and, apart from allowing firm scheduling, represents little improvement over conventional methods.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a flow diagram used to explain the steps of manufacturing a manuscript text and its index into a final book publication which incorporates the indexing system of the present invention;

FIGS. 2 and 3 are pages of a manuscript which has been indexed by the system of the present invention;

FIG. 4 is an index listing prepared from the indexed manuscript of FIGS. 2 and 3;

FIG. 5 is an index listing which has been edited and marked for keypunching or encoding;

FIG. 6 is an index printout which has been produced from the data supplied in an index listing such as the index listing of FIG. 5;

FIGS. 7 and 8 are typeset text pages produced from the edited, master manuscript having index-indicia merged thereon; and

FIG. 9 is a typeset output of the index, with the index-indicia numbers converted into the desired book-page numbers in accordance with the indexing system of the present invention.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring now to the drawings, there is shown in FIG. 1 a flow diagram used to explain the complete-book manufacturing process of the present invention. The process of FIG. 1 utilizes an indexing system wherein the author denotes the material to be indexed in his manuscript and identifies each denoted material with an index-indicia number. As will be explained hereinafter, these index-indicia numbers operate temporarily as substitutes for the final publication page numbers, which are as yet unknown. For the work of index-denoting selection (index precompilation), it is assumed that the author is familiar with the basic principles of indexing.

As illustrated in the flow diagram of FIG. 1, normally the author submits his manuscript (MS) to the publisher, as indicated by line 12. At this time, the publisher considers the manuscript for publication. Should he decide to publish the manuscript, it is then sent to a compositor, as indicated by line 14. The compositor edits and designs the manuscript, and returns it to the author for checking and improving, as indicated by line 16.

If the original manuscript submitted to the publisher has not been indexed in accordance with the indexing system of the present invention, the author forwards a duplicate indexed copy of the manuscript (shown in dotted lines) to the compositor, as indicated by line 18. The compositor then compiles the index by means of a computer or other sorting techniques, from the second indexed manuscript. The compositor then sends a printout (or a sortout if the index is not assembled by computer) of the index to the author for proofreading, as indicated by line 22. It should be noted that the edited, master manuscript could be sent to the author simultaneously with the printout of the compiled index. The author reads and corrects the edited manuscript and index printout, checking and revising the edited manuscript and index printout against each other, and forwards both to the compositor, as indicated by line 24. The compositor then marks the edited manuscript for typesetting, merging both the edited manuscript and the indexed manuscript, and undates the index printout or sortout. If a computer has been used to

compile the index, the index tape is updated. Then the compositor sets the pages of the text and outputs the index in type. Proof is then forwarded to the author and optionally can include the index proof as well, as indicated by line 26. The author reads the proof and returns it to the publisher, as indicated by line 28. The publisher checks the final proof and it is then forwarded to the compositor, as indicated by line 32. Finally, the compositor updates the test typesetting (the composition tape if photocomposition is used) and sends camera-ready pages or negatives of both text and index to the printer for printing of the final publication.

FIG. 2 illustrates a page of an indexed manuscript (numbered page 225) which can be the original manuscript submitted to the publisher or a duplicate copy thereof which the author has prepared for indexing. Normally, the data to be indexed is underlined or otherwise denoted in the manuscript. As an example, in line 1 of FIG. 2, the word "Wilbur" has been underlined so as to denote a proper word for indexing. Each item denoted is then assigned an index-indicia number, shown as 351, 352, etc., in the left margin of FIG. 2. The index-indicia numbers are arbitrary numbers which are assigned to the items of denoted material, as will be further explained. They are usually though not necessarily put in consecutive order. Should an item run over a number of manuscript pages an indication is made on the line where the item begins by placing a hyphen after the number, i.e., 354-, or 355-. When the item ends, the same number is placed on the margin with a hyphen preceding the number, i.e., -354, or -355, as illustrated in FIG. 3 which represents the next page, i.e., page 226 of the indexed manuscript.

Then, as illustrated in FIG. 4, an index listing is prepared, listing the denoted items in consecutive order by index-indicia numbers together with the page numbers on which the items appear in the manuscript. The denoted items to be indexed are reproduced from the indexed manuscript in the index listing as shown in FIG. 4. Each item is reproduced in full each time. The denoted items are normally placed in the order in which they are found in the text, but they may also be scrambled. The items are put in standard index style, that is, simple entries and main heads (of complex entries) are put in the usual inverted order. A main head is reproduced as often as its proper subhead occurs in the text (e.g., items 353 and 354 of FIG. 2, both subheads, had to have their proper main heads supplied: "Hoover, Herbert: as engineer, 225" and "Hoover, Herbert: dam named for, 255"). Similarly, both a main head and a subentry must be reproduced each time for their proper sub-subentry. This is done in much the same manner as one would do if one were using index cards. Each denoted item carries the same index-indicia number as assigned to it on the indexed manuscript.

If denoted items as encountered in the text are not phrased as they are to appear in the index, they are rephrased in the listing. Items that are not mentioned specifically in the text are improvised (cf. denoted item 355). Cross-references, which are not numbered, are also supplied. Denoted items must be spelled out consistently every time. The index-indicia numbers are normally listed to the left of the denoted items and the manuscript page numbers to the right of the denoted items.

It should be noted in FIG. 2 that the "Sacramento Bee" and the "San Francisco News," being titles of newspapers, have each word underlined individually.

The entire phrase is also underlined. It should be understood, of course, that the individual-word underlining refers to the necessity of italicizing the words in the final printing of the publication and should not be confused with the index item-denoting system of the present invention.

The index listing of FIG. 4 is next edited and marked for keypunching or encoding in preparation for processing such as by computer. If the keypuncher has also indexing experience, of course, these steps can be eliminated as the keypuncher can input from memory the editing and special marks that are required for processing the index data.

FIG. 5 illustrates the index listing of FIG. 4 which has been edited and marked for keypunching or encoding. The symbol "S" is used to denote subheads that are to appear in numerically ascending order, that is, the order in which the items are found in the text. A type-indicator "A" (not shown) could be used to indicate subentries that are to appear in alphabetical order. The symbol "X" is used to denote cross-references. Of course, other markings and codings could be used, the above being merely an example of one form of coding. It should be noted that the index-indicia numbers are keypunched or encoded following the items they identify. The manuscript page numbers are ignored. In processing the index data during a further step, the index-indicia numbers will operate as would-be page reference numbers.

Where the type-indicator "A" is used, prepositions and other portions of subentries not to be alphabetized are bracketed. The bracketing device has numerous other applications as well.

The index data together with the indexing program are next fed into a computer. This step is taken even though the final publication page numbers for the index items are not yet known. The index-indicia numbers serve as temporary substitutes for the final publication page numbers. The program unscrambled the denoted items, alphabetizes, coordinates the component parts of the entries, arranges subentries in alphabetical order or numerical order, eliminates redundancies and provides proper punctuation. Cross-references are provided at the appropriate places. The assembled index is then printed out for proofreading and correcting.

FIG. 6 illustrates the index printout from the data supplied from FIG. 5. Note that the index-indicia numbers now follow rather than precede each denoted item. The printout is next checked for errors. (In item 6, e.g., "The" has been circled to indicate an error.) The author marks corrections on the printout as he would on proof.

If new items have been inserted, they are simply added to the index data together with their index-indicia numbers. Any denoted items deleted are deleted along with their index-indicia numbers. The index tape is updated on the basis of the corrected index printout. When updating has been completed, the indexing program and index data tape are retained to await production of the text pages.

The index printout performs another function besides that of correcting or improving the index data. Errors and inconsistencies, which are usually found easily in an index, as a rule turn up counterparts overlooked in the main body of the manuscript. These errors can then be taken care of by an editor. Other errors discovered in the text with the help of the index printout, or changes the author makes, can easily be carried out,

too, since the assembled index printout is available prior to final typesetting of the manuscript. Thus, there are no author's alterations. (Note that the error in FIG. 6 has been corrected in FIG. 7.)

As the edited, master manuscript is marked for typesetting, the index-indicia numbers of the index data are transferred to the master manuscript for the indexed manuscript. In this way, both manuscripts are merged for the purpose of indexing. The index-indicia numbers are written in the margin opposite their respective items in the text as before. New index-indicia numbers are also indicated in the typesetting copy. In keyboarding the text, the index-indicia numbers are input and programmed to appear in the margin of the composition (see FIGS. 7 and 8). If Linotype or linofilm systems of typesetting are used, the index-indicia numbers can be set manually in the margins. Even with photo-composition systems, the index-indicia numbers can be transferred manually to the page proof instead of the manuscript, if desired.

As soon as the final publication page numbers are known, a "concurrency table" is formed. The concurrency table indicates the final publication page numbers that the index-indicia numbers appear on.

The concurrency table consists of a series of equations, each containing an index-indicia number and its concurrent book-page number. The concurrency table is keyed onto the updated index tape; it and the indexing program are rerun. The index-indicia numbers, which were previously keyed into the index data, are converted into the desired publication page numbers. Each item number input will result in its concurrent book-page number. The output tape containing the updated items and page numbers is interfaced with electronic typesetting equipment and the final index is output in type-set form.

FIG. 9 illustrates a sample of typeset index output as it will appear in print. This typesetting is acquired from an updated version of the items in the computer printout of FIG. 6, with the index-indicia numbers converted automatically to publication page numbers. The index is, thus, typeset and paginated in final, machine-ready form, and is entirely error-free because it has been already updated. More importantly, the index can be output in the typeset form of FIG. 9 within minutes of the moment book pages are ready, whether the latter were produced by computer typesetting techniques or more traditional methods. Unlike traditional production methods, there is no waiting for pages to be typeset before the index can be compiled, no index typescript need be edited, no index copy need be set, no matter need be proofread, corrected and revised, and there is no need to keep book pages standing at the printers until an index can be compiled and composed. A book with an index can be processed entirely in a single step by the method of the present invention.

While the invention has been described as providing an index utilizing a computer program, it should be understood that the index could also be processed manually. In such a system, denoted items and their accompanying index-indicia numbers are placed on conventional index cards. The cards are then manually alphabetized and a listing similar to that shown in FIG. 4 is prepared from the index cards. However, as noted earlier, indexing that is computer assisted to some degree is preferable. The system above described is probably the most practical, given the present state of the art. But higher levels of computerization can be achieved

— for example, intermediate steps now performed manually as described above can be performed automatically — and perhaps the entire production cycle, based on the system of the present invention, can be fully automated.

Whether the index is processed manually or computer assisted in varying degrees, the process of the present invention is made unique by the possibility of placing the index at the core of the production cycle and of processing the index concurrently and integrally on three successive levels with the three successive stages of product development: (1) index precompilation with text preediting; (2) index compilation with text editing; and (3) index processing in type with text processing—so that both index and text are output simultaneously in printing-ready form. Integration of concurrent operations results in the text itself being edited, typeset and generally processed in a wholly unique way, and its effects can be felt also in the book printing and binding stages and beyond.

I claim:

1. In a book manufacturing process the method of compiling a final index from manuscript, comprising the steps of:

- a. encoding with a corresponding consecutive index-indicia code each item of indexed material in said manuscript;

- b. processing said indexed material and said corresponding consecutive index-indicia codes in a predetermined order;

- c. inputting said index-indicia codes concurrently with said manuscript; and

- d. converting said index-indicia codes to the corresponding page numbers of the final copy of the book.

2. In a book manufacturing process in accordance with claim 1 the method wherein said indexed material is further processed in alphabetical order.

3. In a book manufacturing process in accordance with claim 1 wherein said method includes the step of further reproducing said manuscript in final page format with said index-indicia codes appearing adjacent to said corresponding indexed material.

4. In a book manufacturing process in accordance with claim 1 the method wherein said index-indicia codes are converted in the index to the corresponding page numbers of the final text by means of a concurrence table, said concurrence table containing means for reading said index-indicia codes and printing out therefor the corresponding numbers of the pages whereon said index-indicia codes appear in said final text.

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