

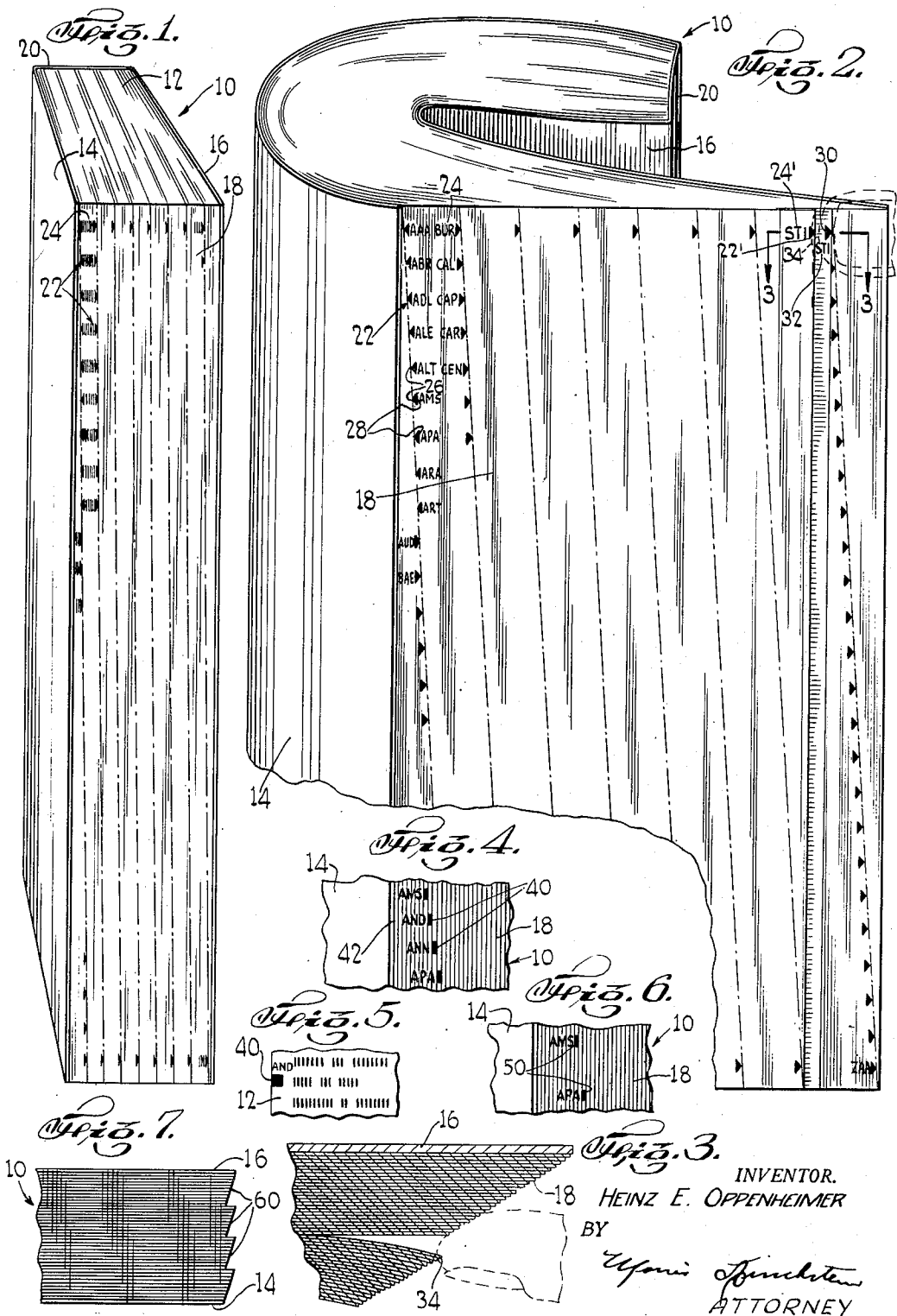
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INDEXING MEANS

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INDEXING MEANS

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This invention relates to indexing means for books or a plurality of flexible or soft sheets assembled so as to have one set of edges in registration.

Heretofore, indexing means for books, such as dictionaries, directories, digests, Bibles, diaries, indexes, reference books and the like, indicated broad sub-divisions. Although each sub-division ordinarily included many sheets, the different sub-divisions had widely varying numbers of sheets and it was not unusual to find edge indexed books wherein one indexing symbol applied to a sub-division of five sheets and another to a sub-division of several hundred sheets. With such coarse indexes it was difficult to find the desired sheet in a specified sub-division. Furthermore, due to the varied numbers of sheets in the different sub-divisions, it was hard to estimate within a few pages the position of the desired sheet in a sub-division upon first opening the books. These and other disadvantages primarily arose because of the relatively small width of books, compared to the number of sheets therein, which allowed only a limited number of symbols and legible characterizing indicia to be marked thereon.

It is an object of my invention to overcome the foregoing defects and provide an edge indexing means of the character described which will permit one to pick a desired sheet at first selection, or to come within a very few sheets thereof.

Another object of my invention is to provide an edge indexing means of the character described which indicates fine sub-divisions of relatively few sheets throughout the entire book.

Another object of my invention is to provide an edge indexing means of the character described which indicates uniform sub-divisions, i. e., sub-divisions of substantially the same number of sheets throughout the entire book.

Another object of my invention is to provide an edge indexing means of the character described with accompanying characterizing indicia for indicating every page of the book.

Another object of my invention is to provide an edge indexing means of the character described which is so arranged that in employing the indexing means the book must be so manipulated as to facilitate the opening thereof at a desired page.

Another object of my invention is to provide an indexing means of the character described which is so arranged as to permit the use of a very large number of easily visible symbols and legible characterizing indicia.

Another object of my invention is to provide an indexing means of the character described in which the sheets are so constructed that, upon thumbing the book in search of a desired page, the book will automatically open to such page.

Another object of my invention is to provide an indexing means of the character described which shall be inexpensive to incorporate into a book or similar collection of sheets, practical and efficient in use, and an integral and indestructible part of a book or like article.

Other objects of the invention will in part be obvious and in part hereinafter pointed out.

The invention accordingly consists in the features of construction, combinations of elements, and arrangement of parts which will be exemplified in the construction hereinafter described, and of which the scope of application will be indicated in the appended claims.

In the accompanying drawing, in which are shown various possible embodiments of my invention and in which like numerals refer to like parts throughout,

Fig. 1 is a perspective view of a book embodying my invention, the book being disposed with the sheets thereof flat so that the indexed edge is fully contracted;

Fig. 2 is a similar view of the book in flexed condition, with the indexed edge expanded;

Fig. 3 is a sectional view taken substantially along the line 3—3 of Fig. 2;

Fig. 4 is a highly enlarged fragmentary view of the expanded indexed edge of a book embodying a modified form of my invention;

Fig. 5 is a fragmentary plan view of a leaf of the book shown in Fig. 4;

Fig. 6 is a highly enlarged fragmentary view of the expanded indexed edge of a book embodying still another modified form of my invention; and

Fig. 7 is a top fragmentary view of a book embodying yet another modified form of my invention.

In general, I carry out my invention by placing marks on the sheets in such manner that the same are visible from an edge of a book. These marks ordinarily include both symbols for indicating the locations of various sub-divisions and indicia for characterizing each symbol. In order to provide sufficient space for the very large number of characterizing indicia required, said indicia are so formed that when the book is maintained flat, the indicia are very narrow. Indeed, due to their extreme slimness when the book is thus disposed, these indicia are, at best, indistinctly legible, and ordinarily are wholly illegible.

However, when a book is flexed by bending about an axis parallel to the indexed surface, this surface is substantially expanded and the indicia correspondingly broadened to such an extent that they become plainly visible and may be easily read. At the same time, the symbols are broadened so that their location may be more accurately determined. Due also to the flexing action necessarily performed in operating the indexing means, the indexed surface of a book is obliquely disposed to the edges of the sheets forming said surface. This greatly facilitates thumbing through the book in search of a desired sheet and permits the thumb or other finger to be easily introduced between the desired sheet and the next adjacent sheet. I have found a degree of flexing which expands the indexing surface of the book from four to five times its fully contracted width to be highly satisfactory, although lesser and greater degrees of flexing give good results. This greatly enlarged indexing surface permits the use of a very large number of easily visible symbols and characterizing indicia, or of a smaller number of such symbols together with large indicia or indicia comprising many characters or letters.

Referring now to the drawing, and more particularly to Figs. 1 and 2, I have there shown a book 10 embodying one form of my invention, this form being generally characterized by the fact that the locating symbols as well as the characterizing indicia are formed so as to be visible on the edges of a plurality of adjoining sheets. In this form of my invention the locating symbols may, as desired, indicate either the location of an endmost page of a small group or subdivision of sheets, or indicate the extent of such subdivision. The controlling factor in determining which of such alternative markings shall be employed may be either the number of sheets contained within a sub-division, or the amount of space desired to be left on the indexed page for the printing of characterizing indicia.

In the illustrated form of my invention, the book 10 comprises a very large number of soft, flexible sheets 12 disposed between front and back covers 14 and 16. The indexing surface 18 of the book, i. e., the surface remote from the binding 20, has imprinted thereon a large number of indicating symbols 22 and characterizing indicia 24. Said symbols 22 may take any desired form, as for example the triangles illustrated in Figs. 1 and 2. Said triangles are so positioned on the indexing surface 18 that each apex 26, opposed to a vertical side 28, terminates at a sheet immediately adjacent the first page of a sub-division. Due to this arrangement, the indicating symbols 22 run up to but not beyond the first sheet of each sub-division.

The said indicating apices 26 may be located to either the right or left of the vertical side 28 of the triangle and, as will be seen in Fig. 2, the first few triangles are preferably so disposed that the indicating apices 26 are to the left of the vertical side 28, in order that the characterizing indicia 24 may be placed to the right of the triangle, where there is sufficient room to receive such indicia.

The height of the indicia 24 and the width thereof when the indexed surface of the book is in expanded condition may be selected to give any desired visibility. The symbols 22 are not made too large or spaced so far apart that their total number or the number of indicia will be appreciably limited. For example, in the illus-

trated book 10 I have arranged the symbols 22 vertically in slightly stepped or offset relationship with twenty-five symbols to a line and with eight such lines on the indexed surface 18. In this manner, a total of two hundred edge symbols is easily placed upon a six hundred page book 10. This enables me to employ an indicating symbol 22 for sub-divisions having an average of three sheets or six pages. Of course, each of the subdivisions does not necessarily have to consist of three sheets, and if a reasonable classification of the book will cause certain sub-divisions to occasionally include four or five sheets and other sub-divisions one or two sheets, the objects of my invention are still served.

In the event a symbol 22 extends over all the pages of a sub-division, said symbol may either be of equal height on the right and left hand sides thereof, or may taper toward the front or rear end of the sub-division, in order to indicate, according to a predetermined scheme, either the first or last page of such sub-division.

As above noted, the characterizing indicia 24 may be printed either to the right or to the left of the indicating symbol. However, I have found it more convenient in use to have all the characterizing indicia throughout a book or throughout substantial sections thereof, as for example half of a book, placed on the same side of the indicating symbols 22 in order to avoid confusion. This general rule governing the relative positioning of the indicating symbols and characterizing indicia may, however, be relaxed at the beginning or end of the book or section of a book, where, as indicated in Fig. 2, insufficient room is present on the desired side of the indicating symbol to print the characterizing indicia.

Any desired type of characterizing indicia 24 may be employed, and preferably the height of such indicia approximates that of the indicating symbols. The indicia, of course, may consist of any desired signs suitable to the type of indexing employed, as for example the indicia may be letters of the alphabet, numbers, words, colors, etc., etc.

I preferably so arrange the indicating symbols and subdivide the book that the classifications denoted by the symbols not only consist of a very small number of sheets, but also of substantially the same number of sheets. In this manner, a user of the book may more exactly determine at first selection the approximate location of a desired sheet. For example, if the user observes upon examining the edge index that a desired sheet lies approximately midway between the two ends of a denoted subdivision, he can readily approximate the position of such middle sheet, firstly because the subdivisions are very small, and secondly because upon continued use of the book he will become accustomed to breaking subdivisions of equal sizes in like manner, that is, in half, quarters, etc.

It will be appreciated that in the use of a book incorporating my improved edge indexing means, said book may be flexed in either direction. The symbols 22 and indicia 24 may be marked in any desired manner on the book so as to be visible on the indexing surface 18 thereof. For example, the flat sheets 12 may be printed adjacent and up to the edge thereof lying on the indexed surface, and the mark thus formed will be visible on such surface. These marks can be so arranged as to form in conjunction the desired indicia and symbols. Alternatively, the in-

dicia and symbols can be printed, stamped or otherwise impressed upon the indexed surface of the book while the same is fully flexed or expanded.

If desired, a combination of the above described two means may be employed, with the symbols formed by printing on the flat of the sheets 12 and the indicia formed by marking the indexed surface while the book is in flexed condition. It will be appreciated that where the symbols or indicia or both are formed by printing on the flat of the sheets, the book is preferably employed by flexing it in such manner that the printed portion of the flat sheet is exposed, rather than by flexing it so that the back of the printed sheet is rendered visible. However, regardless of the manner of flexing, the symbols and indicia will always be distinct and legible.

As an aid to determining when the desired sheet, which in this instance represents the first sheet of a subdivision, has been reached while thumbing through the book, I may additionally employ a symbol 30 on the first sheet of each subdivision, which symbol is in registration with the indicating symbol 22' for that subdivision. This symbol 30 is preferably of the same outline and dimensions as the indexing symbol 22, so that the eye may be able to quickly recognize the appearance of the desired page. In addition, a characterizing indicia 32 may be associated with the symbol 30 on the flat of the page as a further token that a proper selection has been made. These symbols 30 can be printed on both sides of a sheet, so that the user will be able to recognize the appearance of the selected sheet whether thumbing from the right or from the left.

By way of example, I have illustrated in Fig. 2 some of the characterizing indicia 24 employed in indexing a telephone directory of a very large city, such as New York. These indicia were so selected that approximately three sheets are included in every subdivision. The first indicia in the second row is "BUR," which indicates the first three letters of the first name, say, on page 150. The next indicia is "CAL," which is found at page 156. "CAP" is at page 162, "CAR" at page 168, and "CEN" at page 174.

I have also provided means for still further facilitating the selection of the first page of any desired subdivision and rendering this selection almost automatic. Such means comprises so forming the edges of sheets in the vicinity of an endmost sheet in a group or subdivision that, when thumbing through a book in search of such subdivision, the thumbing action will automatically cease at the sheet. Specifically, this may be accomplished by indenting or cutting away a small portion 34 of the sheet preceding the endmost sheet of a subdivision. This cut-away portion 34 may be in the form of an arc which is in registration with the indicating symbol 22 for that subdivision, and is at least approximately as large as the tip of a human finger. Due to this construction, as the thumb passes over successive sheets on the way up to the subdivision to be selected, and slides over the sheet having the indentation 34, the flesh of the thumb will move inwardly towards the binding 20 of the book and form a stop which prevents the next sheet, which is an endmost sheet of the desired subdivision, from moving past the thumb.

In Figs. 4 and 5 I have shown a modified form of my invention, which is characterized by the provision of indexing symbols 40 for each page

12 of the book 10, said indexing symbols 40 being formed by printing on the flat of the page adjacent and running up to the edge of the indexing surface 18 of the book. These symbols are generally spaced in the same manner as shown in the first form of my invention, that is, in a stepped formation to provide a steeply sloped line of symbols. The accompanying characterizing indicia 42 may be formed either by printing on the flat of the pages or by printing on the indexing surface of the book when the latter is in flexed condition.

When this form of indexing is employed, I have found that the indicating symbols may occupy only a very small vertical space, since the user in selecting any desired page in such embodiment of my invention does not rely upon visual registration of a special sign on the page with an indicating symbol to determine when the proper page has been selected.

In using a book indexed in accordance with the form of my invention shown in Figs. 4 and 5, it is merely necessary to place the thumb in alignment with a selected exposed indexing symbol 40 and indicia 42 and thumb across the sheets in the region of the desired sheet, until the symbol 40 appears on the open page under the thumb. Moreover, if the book is sufficiently flexed, it is very simple to place the thumb directly at the desired symbol and thus locate the proper sheet with extreme rapidity.

It will be appreciated that by employing indicating symbols which are disposed only on one sheet, maximum room is provided for the printing of the characterizing indicia 42, and lesser accuracy will then be required in imprinting such indicia. When this form of my invention is applied to a telephone directory of a large city, I may employ for example fifteen steeply sloped lines of symbols, each line of which includes forty symbols 40. Thus, every one of the approximately six hundred sheets of this thick book is separately indexed on the edge 18 thereof. It may be mentioned that when the indentations 32 are used in this form of my invention the visibility of the symbols is increased.

In Fig. 6 I have shown still another modified form of my invention, which is generally similar to that shown in Figs. 4 and 5 and is distinguished therefrom in that, instead of indexing every sheet of the book 10, only the endmost sheet of each sub-division is indexed by a symbol 50, said subdivisions including, as in the first form of my invention, but few sheets and the number of sheets in the various sub-divisions being substantially equal.

In Fig. 7 there is illustrated still another modified form of my invention, wherein a larger indexing surface 60 is provided by causing such surface to be inclined to the front and back faces 14 and 16 of the book 10 when the book is in flat position. As indicated, several steps of inclined surfaces may be employed, and the number of steps may be increased or decreased, as desired. Other means may be employed for conveniently increasing the width of the registered sheet edges, as for example the indexing surface may be arcuately formed.

While the invention has in its various forms been described with reference to books of substantial thickness, i. e., of a very large number of sheets, it will be understood from the foregoing that essentially a thickness is required such as will permit the enlargement or increase of legibility of the symbols upon flexing as herein described.

Thus, the invention may be applied to a book or assembly of sheets of as small a thickness as 3 mm., or having as few as fifty sheets.

It will thus be seen that there is provided a device in which the several objects of this invention are achieved, and which is well adapted to meet the conditions of practical use.

As various possible embodiments might be made of the above invention, and as various changes might be made in the embodiments above set forth, it is to be understood that all matter herein set forth or shown in the accompanying drawing is to be interpreted as illustrative and not in a limiting sense.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

1. In combination, several soft flexible sheets, means to maintain said sheets in assembled relationship, one set of edges of said sheets being spaced from said means and disposed in substantial registration to form an indexing surface, and edge indexing intelligence conveying indicia on said surface, said indicia being so formed that they are only distinctly legible when the sheets are manipulated to substantially expand said surface, said indicia being extremely narrow when said sheets are disposed in flat condition and said indexing surface thereby fully contracted.

2. In combination, several soft flexible sheets, means to maintain said sheets in assembled relationship, one set of edges of said sheets being spaced from said means and disposed in substantial registration to form an indexing surface, and edge indexing intelligence conveying indicia on said surface, said indicia being so formed that they are only distinctly legible when the sheets are manipulated to substantially expand said surface, said indicia being extremely narrow when said sheets are disposed in flat condition and said indexing surface thereby fully contracted, said indicia being formed by marks on the flat of said sheets adjacent and running up to said edges.

3. In combination, several soft flexible sheets, means to maintain said sheets in assembled relationship, one set of edges of said sheets being spaced from said means and disposed in substantial registration to form an indexing surface, and edge indexing intelligence conveying indicia on said surface, said indicia being so formed that they are only distinctly legible when the sheets are manipulated to substantially expand said surface, said indicia being extremely narrow when said sheets are disposed in flat condition and said indexing surface thereby fully contracted, said indicia being formed by marks on said edges.

4. In combination, several soft flexible sheets, means to maintain said sheets in assembled relationship, one set of edges of said sheets being spaced from said means and disposed in substantial registration to form an indexing surface, and edge indexing signs on said surface, said signs comprising indicating symbols and characterizing indicia, said symbols being so narrow as to be ineffective and said indicia being so narrow as to be illegible when said sheets are disposed in flat condition and said indexing surface thereby fully contracted, said symbols and said indicia being broadened to a distinctly visible and legible shape when said sheets are substantially flexed about an axis parallel to said surface and said indexing surface thereby appreciably expanded.

5. A combination as set forth in claim 4, wherein said symbols denote sub-divisions of very few sheets each throughout the entire set of sheets.

6. A combination as set forth in claim 4, wherein said symbols denote substantially regular sub-divisions of very few sheets each throughout the entire set of sheets.

7. A combination as set forth in claim 4, wherein said symbols denote sub-divisions of very few sheets each throughout the entire set of sheets and said symbols run up to but not beyond an endmost sheet of said sub-division.

8. A combination as set forth in claim 4, wherein every sheet is denoted by a separate symbol.

9. A combination as set forth in claim 4, wherein every sheet is denoted by a separate symbol and each symbol consists of only a mark on a flat surface of the indicated sheet, said mark having one edge thereof coincident with the registered edge of the sheet.

10. A combination as set forth in claim 4, wherein said symbols extend over a plurality of sheets and denote sub-divisions of very few sheets each throughout the entire set of sheets, and an endmost sheet of each sub-division has printed on its flat surface a symbol similar to and in alignment with the indicating symbol for such sub-division.

11. A combination as set forth in claim 4, wherein said symbols extend over a plurality of sheets and denote sub-divisions of very few sheets each throughout the entire set of sheets, and an endmost sheet of each sub-division has printed on its flat surface a symbol similar to and in alignment with the indicating symbol for such sub-division, said flat-printed symbol being disposed near a registered edge.

12. A combination as set forth in claim 4, wherein said symbols denote sub-divisions of very few sheets each throughout the entire set of sheets and each symbol consists of only a mark on an endmost sheet of each sub-division, said mark having an edge thereof coincident with the registered edge of the page.

13. A combination as set forth in claim 4, wherein the sheet and only the sheet immediately adjacent a sheet denoted by an indicating symbol has an edge portion thereof indented in alignment with said symbol.

14. A combination as set forth in claim 4, wherein said surface is angularly disposed relative to said sheets.

15. In combination, several flexible sheets, means to maintain said sheets in assembled relationship, one set of edges of said sheets being spaced from said means and disposed in substantial registration to form an indexing surface, and edge indexing intelligence conveying indicia on said surface, one dimension of said indicia from the first to the last of said sheets, when said indexing surface is contracted and normal to said sheets, being so slight as to render said indicia incognizable, the other dimension of said indicia being of cognizable magnitude, said first mentioned dimension, when by manipulation of said sheets said surface is substantially expanded and acutely disposed relative to said sheets, being expanded to cognizable magnitude to render said indicia legible.

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