

March 26, 1935.

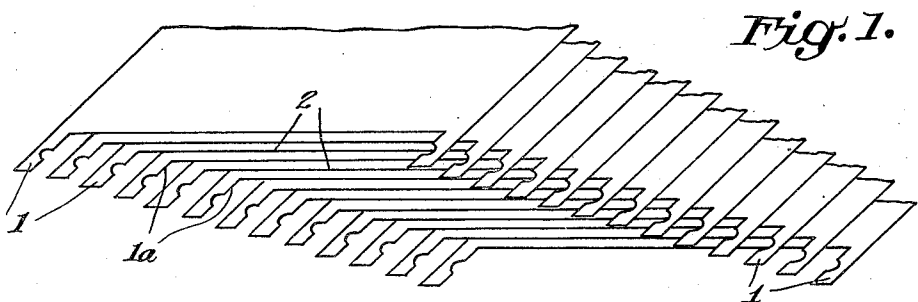
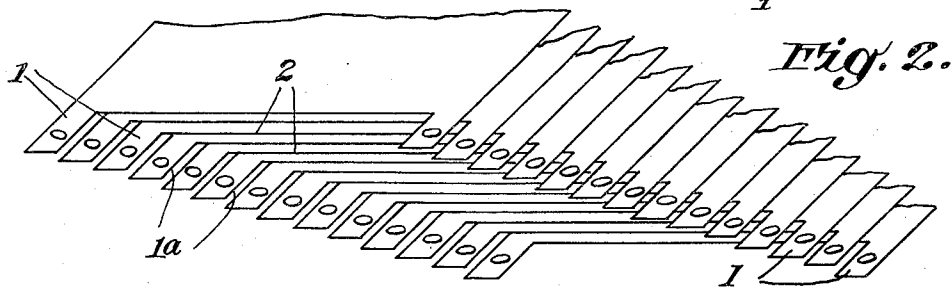
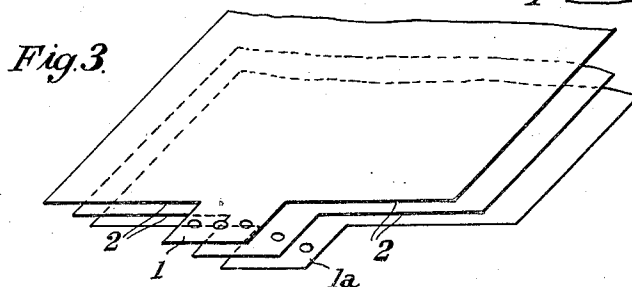
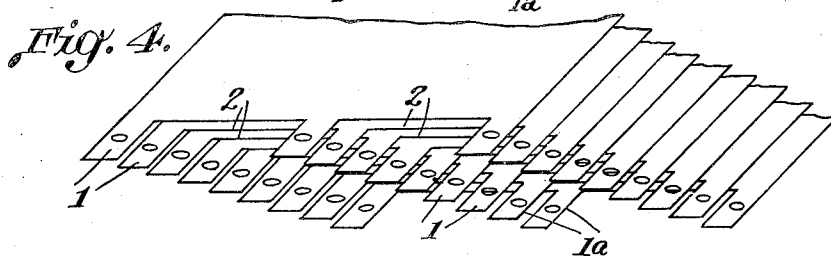
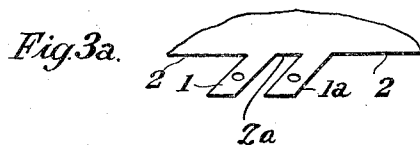
R. F. POWER

1,995,674

LOOSE LEAF VISIBLE INDEX

Filed April 27, 1932

3 Sheets-Sheet 1



Inventor
R. F. POWER.
Per: Sydney R. Page.
Attorney.

March 26, 1935.

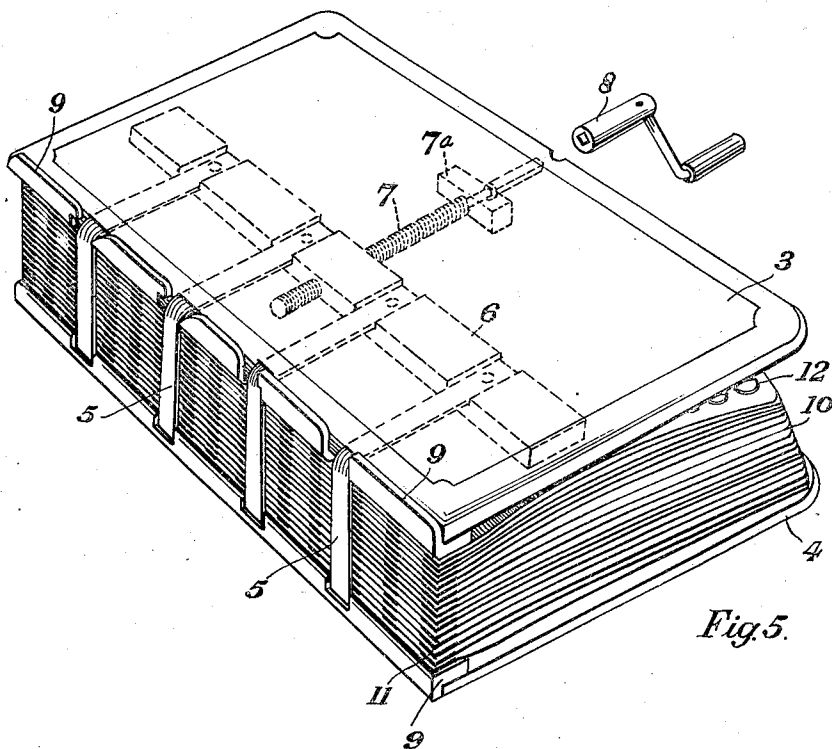
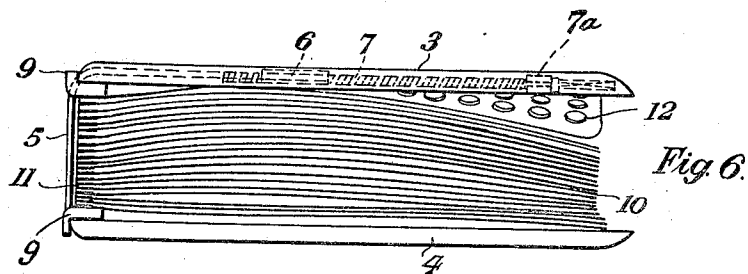
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LOOSE LEAF VISIBLE INDEX

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3 Sheets-Sheet 2



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LOOSE LEAF VISIBLE INDEX

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3 Sheets-Sheet 3

Fig. 7.

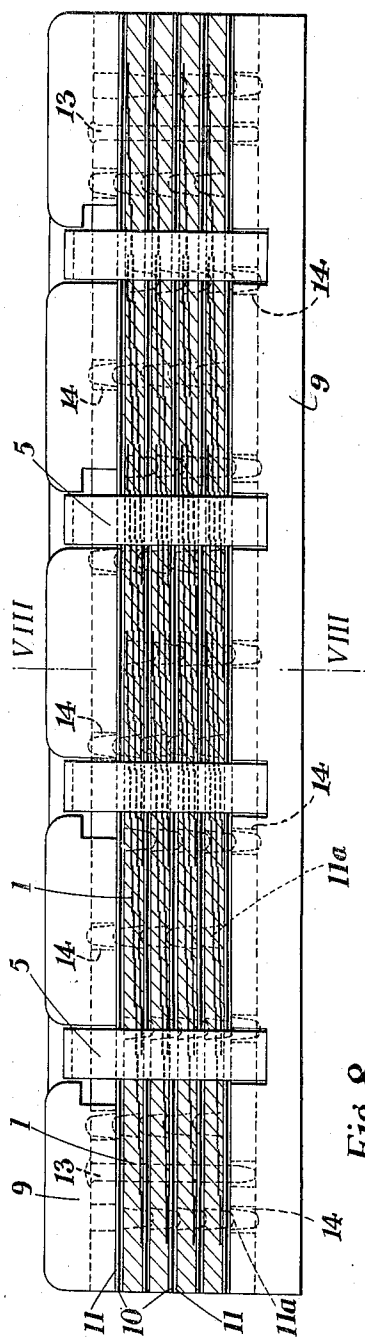


Fig. 10.

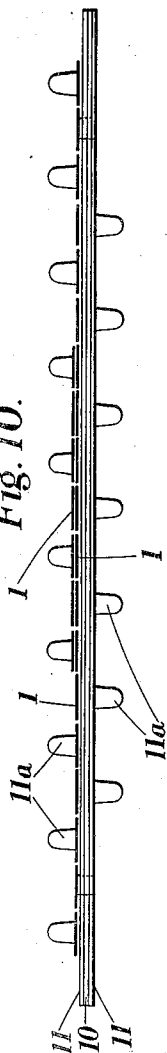


Fig. 9.

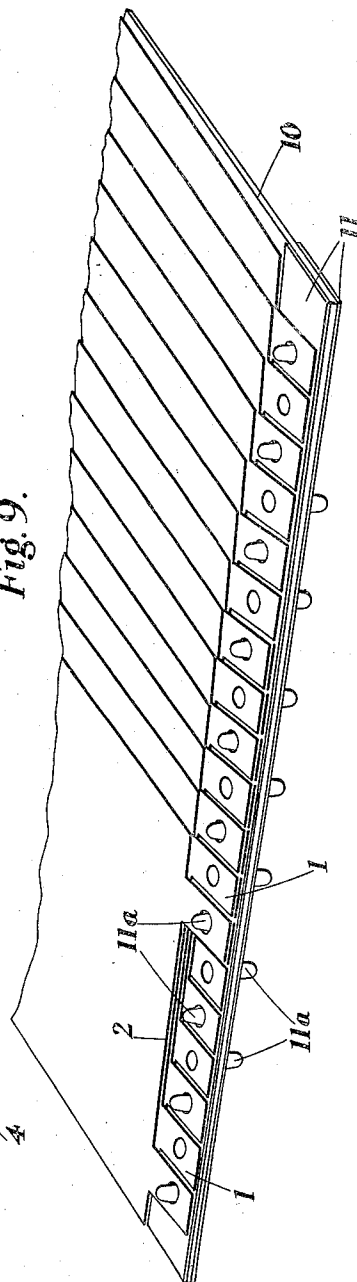
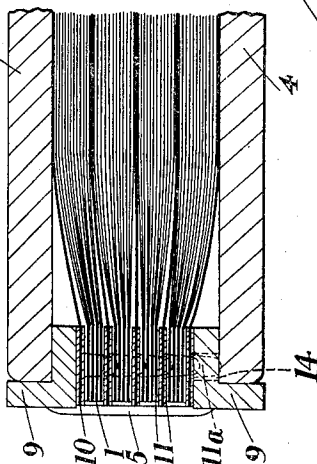


Fig. 8.



INVENTOR
R. F. POWER
BY
Sydney S. Page.
ATTORNEY

UNITED STATES PATENT OFFICE

1,995,674

LOOSE LEAF VISIBLE INDEX

Richard Fitz Power, Hampstead, London, England, assignor to Morland & Impey Limited, Northfield, Birmingham, England

Application April 27, 1932, Serial No. 607,810
In Great Britain May 28, 1931

2 Claims. (Cl. 129—1)

This invention relates to loose leaf visible indexes of book form with removable units.

Visible indexes as usually employed are in the form of books constituted by collecting together a plurality of relatively stout sheets, herein referred to as "dividers" each of the size of the book, and on each of which are supported a series of relatively small leaves arranged in overlapped relation so that a strip of each leaf is visible and on which indicia are formed to indicate the contents of the individual leaves.

A characteristic feature of such a visible index is the removability of the divider and its leaves as a unit without upsetting the arrangement of the leaves in the other units. In such a construction the dividers are generally provided with studs or equivalent integers by which the respective series of leaves is removably secured to the divider, the dividers being thereby interlocked, which prevents relative movement, the whole being secured into book form by clamping means.

The provision of the studs or equivalent means on the dividers introduces a thickness to the book at the binding considerably greater than at the fore edge of the book, hence the binder assumes, normally, a wedge shape. This tapering form is frequently aggravated in accommodating the clamping means by which the binder and leaves are secured between the covers of the book.

A main object of the present invention is to obtain a flat book form of loose leaf visible index.

A further object is to devise a method of binding leaves together in a loose leaf visible index so as to obtain a precise predetermined width at the binding area.

Another object is to devise a method of binding leaves together in a loose leaf visible index so as to obtain a precise predetermined width at the binding area which will compensate for the thickness of the binding means so that the top cover lies parallel to the back cover.

Another object of the invention is to devise a means of forming units for loose leaf visible indexes in which the thickness of the paper overlying the securing means for the unit is substantially even from end to end of the margin at the binding area and another object is to regulate the thickness of the paper in the binding area of such units so as to compensate for the thickness of the unit securing means.

Further and other objects of the invention will be understood from the following description and appended claims.

In order that the invention may be more clear-

ly understood preferred embodiments will now be described by way of example only, with reference to the accompanying drawings, in which

Fig. 1 diagrammatically illustrates an arrangement of overlapped sheets each having two lugs, wherein the total width of the lugs on any one sheet equals the width of the overlap;

Fig. 2 shows, also diagrammatically, a further arrangement of sheets each having two lugs, wherein the total width of the lugs on any one sheet equals twice the width of the overlap;

Fig. 3 shows diagrammatically another arrangement of sheets each having a single lug, each lug having a width equal to three times the width of the overlap;

Fig. 3a shows a modified form of the Fig. 3 construction wherein the middle part of the single lug is cut out leaving a lug width equal to two overlaps;

Fig. 4 shows yet another arrangement wherein each sheet has three lugs and the combined width of the three lugs on one sheet equals three times the width of the overlap.

Fig. 5 is a pictorial view of a visible index book constructed according to the present invention but not showing any details of the lugs;

Fig. 6 is a front end elevation thereof.

Fig. 7 is an end elevation on an enlarged scale of the book shown in Fig. 6 showing the details of the lug arrangement and of the anchoring means therefor;

Fig. 8 is a view in cross section on the line VIII—VIII of Fig. 7;

Fig. 9 is a pictorial view of a divider for use in a book according to the invention; and

Fig. 10 is an elevation of the divider shown in Fig. 9.

In the drawings the lugs formed in the marginal area of the leaves in accordance with the invention are identified by the reference 1 and the cut-away portions by which the lugs are formed are indicated by the reference 2.

Fig. 1 shows an arrangement where the lugs are each equal to half the width of the overlap, that is the sum of the widths of the lugs on one leaf is equal to the overlap. If such leaves are arranged in overlapped relation on a divider the thickness of the paper in the marginal area will nowhere be greater than the thickness of one leaf only.

Accordingly in such an arrangement the gradual increase in thickness of the paper from the top to the bottom of the margin of the divider, which occurs in the ordinary well known form of index, is entirely eliminated and thereby a large

space in the marginal area is gained for the accommodation of the whole of the binding mechanism.

In Fig. 2 a similar construction is shown, but in this case the lugs are each equal to the width of the overlap, hence the maximum thickness of paper anywhere along the margin will be equal to the thickness of two leaves and accordingly in such a construction there will be substantially the same gain of space in the thickness of the book at the binding as is derived from the construction referred to in describing Fig. 1 in which the thickness is equal to that of one leaf for the accommodation of the binding means.

Following the principle laid down in carrying out the invention the thickness of the paper in the margin may be precisely regulated, that is within the limits of one leaf thickness.

In Fig. 3 is shown an alternative form in which one lug only is produced in the middle of the leaf the lug being of just sufficient width to permit of engagement with the binding means of the divider in such a manner as to prevent pivoting of the leaf.

In such a construction the lug being of a width equal to three overlaps, the maximum thickness of paper in the binding area of the divider is equal to the thickness of three leaves.

An alternative application of the construction shown in Fig. 3 is illustrated in Fig. 4 in which instead of one lug equalling three overlaps, three lugs are employed, each equal to the width of one overlap.

The construction shown in Fig. 3 may be modified by cutting out the middle part of the lug, as indicated at 2a in Fig. 3a, thereby the thickness of paper in the margin of the index is reduced by the thickness of one leaf as the width of each of the two remaining lugs left is equal to one overlap. However, the construction shown in Fig. 3 is preferred as it provides greater mechanical strength resisting pivoting.

In accordance with the novel principle underlying the invention the extent of the portion cut away from the margin of each leaf within the binding area is precisely regulated so that the sum of the widths of the lugs left on one sheet bears a definite predetermined ratio to the overlap and thereby the extent of the maximum thickness of paper on a divider within the binding area is predetermined.

To obtain the thickness of one leaf thickness from the top to the bottom of the divider, the sum of the widths of the lugs on a leaf must equal the width of the overlap. If two lugs are used they will each be equal to half the width of the overlap.

To obtain a thickness in the marginal area of the divider equal to the thickness of two superimposed leaves two lugs will be used on each leaf, each lug being equal to the overlap.

By reducing the thickness of the paper in the margin of the index, a space in the margin is gained to accommodate the binding means. This result is clearly illustrated in the construction shown in Figs. 5 to 8, in which the invention is shown as applied to a binding means as described and claimed in United States Patent Specification No. 1,856,337, dated May 3rd, 1932, whereby a rabbetted portion is formed at the binding area to receive the binding means which become located within the plane containing the top cover when resting on the body of the leaves.

The construction comprises front and back covers 3 and 4 connected by thongs or clamping means

5 anchored in the back cover 4 and connected to an adjustable bar indicated at 6, the position of which with regard to the back of the book is controlled by a screw threaded spindle indicated at 7 held against axial displacement by means of a block 7a and operated by hand by a key 8 entering the edge of the book.

By operating the key 8 the bar 6 is moved laterally and according to its direction the thongs are tightened or loosened.

Associated with the rear edges of each cover are clamping bars 9 constituting binding means cut away for the passage of the thongs 5, each clamping bar being formed with a shoulder which engages the back of the respective cover and on which its cover hinges.

In this construction each divider 10 (Figs. 9 and 10) of the index is embossed at 12 and carries at the margin within the binding area, two metal strips 11 from which punched protuberances in the form of cones 11a may project from each side of the divider alternately, the protuberances being of tapered nature so that they fit one over the other as shown in Figs. 7 and 8 and as clearly described in the aforesaid United States Patent Specification No. 1,856,337. These protuberances are in nature studs which act as anchoring means to engage in perforations in the area of the margin of the leaf which in the construction being described, is limited to lugs 1 of predetermined width, thereby the leaves of a series are secured as a unit and by reason of the studs fitting one over the other, the dividers are interlocked.

In order to collect the dividers within the book the metal strips 11 are perforated for the passage of posts 13 carried by the clamping bars 9, the collected dividers being then clamped together by the thongs 5. The bars 9 are also provided with holes 14 for engagement by the cones 11a on the divider 10.

As clearly illustrated in Figs. 5 to 8, the control of the thickness of the paper on each divider provides a space to accommodate the binding means, whereby the top cover 3 is disposed parallel to the back cover 4 at the binding edge, as the amount of paper removed from the marginal area of the leaves of the index has compensated for the thickness of the strips 11 and of the binding means including the clamping bars 9.

As can be seen from the detail views in Figs. 7 and 8, five dividers 10 are employed and between each two adjacent dividers are twelve overlapping sheets. Each sheet has four lugs and the width of each lug 1 is equal to the width of the overlap. Hence the combined width of all the lugs on one sheet equals four times the width of the overlap.

It will be seen from Figs. 7 and 8 that nowhere in the binding area are there more than four overlapping lugs. Hence the total lug thickness in the margin is equal to that of sixteen sheets only whereas the total number of overlapping sheets is forty-eight.

In Figs. 7 and 8 the lugs 1 are shown separated for the sake of clarity but when the clamping means are tightened the lugs are compressed closely.

Thus, not only can the clamping bars 9 be countersunk into the binding area, but also the thickness of the dividers 10 and associated metal strips 11 is compensated for.

The sheets in Figs. 7 and 8 are not shown individually owing to limitation of space. Their

arrangement can clearly be seen from Figs. 9 and 10 which show a divider or unit.

In Figs. 9 and 10 each sheet has two lugs 1 whose combined width equals twice the overlap. Hence there are no more than two superimposed lugs anywhere on the divider, in spite of the fact that the divider carries thirteen sheets.

It will be seen that the first six and the last six lugs on the divider have no other lugs superimposed on them, whereas the lugs in the middle do lie one on the other, there being seven pairs of such superimposed lugs.

The dividers, as shown are of the same size as the sheets, which are supported by the dividers, and the latter may be embossed as shown at 12 to compensate for the variation in thickness of paper occurring in the body of the leaves of the book.

If desired, however, the dividers may be made only the same width as the metal strips 11 in which case the dividers do not extend between the sheets.

Although in the construction described the leaves on each divider are shown treated in accordance with the invention to accommodate the particular binding means shown, this is by way of example only as where thinner or different bindings are employed a lesser amount of paper may be removed from the binding area according to the invention and to this end the leaves only on one portion of a number of the units (e. g. on alternate dividers) need be treated. Preferably to attain standard production, all the leaves are the same and the width of the lugs on each leaf regulated to attain the desired thickness of paper in the binding area of a completed book of a predetermined number of units.

A further feature of books constructed as described with reference to the drawings is that the amount of "smoothing out" effected results in an even or substantially even thickness of paper from top to bottom of the binding area of each unit—hence an even bed is attained for the clamping bar, and because of the absence of tendency to warp, lighter bars may be employed, or the collected units may be engaged by clips extending over the binding area.

In the body of the book there is only the thickness of one leaf at the top and bottom and a maximum thickness depending on the number of leaves in the unit, occurs in the middle of the book, but no claim is made herein to the novelty of embossing the dividers for this purpose, which practice is well known in the art.

Further, it should be noted that the actual form of the lugs as shown in Figs. 1 to 4 of the drawings, are shown by way of example only but the form shown is preferred, bearing in mind that such leaves are required to be constructed so that they pass through the platen of a typewriter for the entry thereon of records.

To this end, the sides 1a of the lugs are preferably as shown in the drawings, that is at right angles to the paper edge, thereby an arrangement is provided whereby, when the paper is in the platen, the latter may be rotated in either

direction without the lugs catching up in the associated mechanism of the typewriter.

Further, in the drawings the lugs 1 are shown perforated for the passage of hollow protuberances, but this also is by way of example only. Other shaped apertures in the lugs may be employed, the shaped apertures depending on the nature of the protuberances, and where the lugs are relatively narrow as in Fig. 1, they may be notched or shouldered to be engaged by the protuberances or other equivalent means partly passing through them. An advantage of securing the leaves to their binding means by lugs as herein described, is that the leaves are easily turned in the book.

Apart from the advantages already pointed out a loose leaf visible index constructed according to the invention may readily include a considerably greater number of leaves than heretofore for a given size binding, or the same number of leaves may be comprised in a book having a binding considerably thinner than heretofore employed.

What I claim is:—

1. In a loose leaf visible index having binders, a plurality of dividers, means for removably connecting the dividers arranged at intervals along one edge thereof, anchoring means for each divider arranged in registering spaced relation along the said edge thereof, a plurality of overlapped sheets disposed between a pair of said dividers, lugs formed on one of the margins of said sheets to correspond with the said edges of said dividers and to engage with the anchoring means, the width of any one lug on any one sheet being less than the length of the sheet adjacent the binding edge and the sum of the widths of all the lugs on any one sheet bearing a ratio to the width of the overlap of their respective sheet, which ratio is not greater numerically than that number of lugs which have a total thickness equal to the maximum thickness which it is desired to accommodate between a pair of dividers in the binding area, and clamping means connecting the binders whereby when said clamping means is tightened the thickness of the index in the binding area is reduced.

2. For use in a loose leaf visible index according to claim 1, a unit comprising a divider including a strip disposed along one of its margins, said strip having disposed thereon in spaced relation a plurality of hollow cones, a plurality of overlapped sheets disposed on said divider and lugs formed on one margin of said sheets and having perforations through which the cones pass, the width of any one lug on any one sheet being less than the length of the sheet adjacent the binding edge and the sum of the widths of all the lugs on any one sheet bearing a ratio to the width of the overlap of their respective sheet, which ratio is not greater numerically than that number of lugs which together with the strip have a total thickness equal to the maximum thickness of the superimposed sheets on the divider.

RICHARD FITZ POWER.