

Nov. 7, 1939.

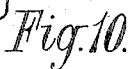
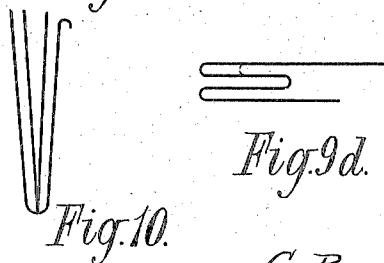
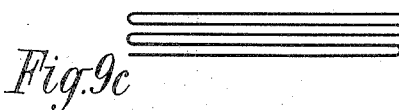
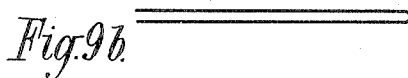
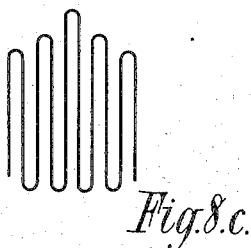
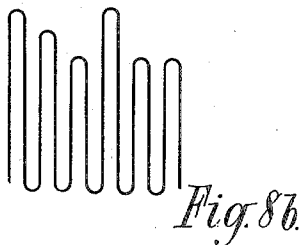
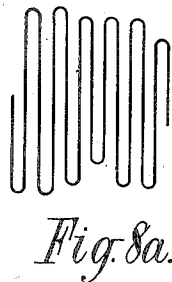
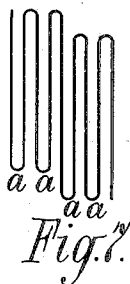
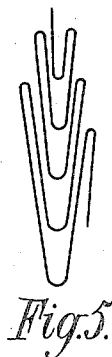
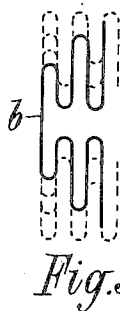
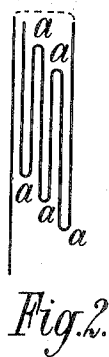
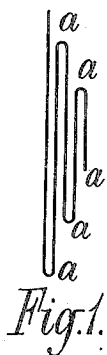
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2,179,172

FOLDED SHEET FOR MAPS, TIMETABLES, AND THE LIKE

Original Filed Aug. 8, 1933

2 Sheets-Sheet 1



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FOLDED SHEET FOR MAPS, TIMETABLES, AND THE LIKE

Original Filed Aug. 8, 1933 2 Sheets-Sheet 2

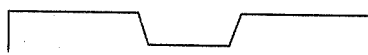


Fig. 11.

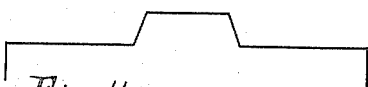


Fig. 11a.

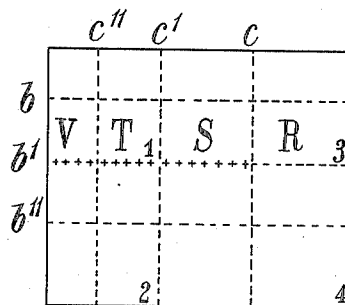


Fig. 12.

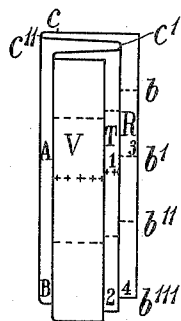


Fig. 13.

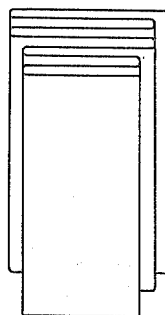


Fig. 13a.

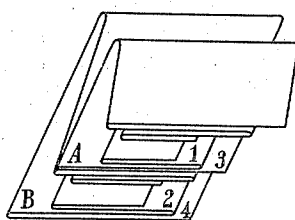


Fig. 14.

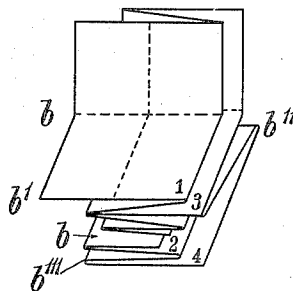


Fig. 15.

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UNITED STATES PATENT OFFICE

2,179,172

FOLDED SHEET FOR MAPS, TIMETABLES,
AND THE LIKE

Claud Bonnaire, London, England

Original application August 8, 1933, Serial No. 684,149. Divided and this application July 8, 1937, Serial No. 152,662. In Germany August 9, 1932

5 Claims. (Cl. 283—62)

It has already been proposed, in order to facilitate the perusal of maps, timetables, or the like, to fold a sheet or a strip of paper in zigzag, or step-like manner, in two directions, making
5 is possible to index a middle surface of a large sheet folded upon itself.

The object of the present invention is to provide a visible index preferably for every section on the back and front sides of a map or the
10 like, which is folded lengthwise and crosswise, and to permit the perusal of all parts and sides of the sheet without completely unfolding it, which furthermore, will permit the user to keep his bearings with respect to the whole sheet or map while
15 such parts are being used.

Apart from maps and the like, such an arrangement of folded sheets can also be used for any printed or written matter, such as plans, graphs, surveys, designs, timetables, diagrams,
20 drawings and the like, and in short, for any kind of sheet arrangement where a large surface is required to be reduced with the help of folds and both sides are to be constantly perused.

In the case of plans, maps and the like, same
25 can be used on stands, hangers, etc., or be bound in book or album form, or the like, by providing suitable attaching means at any of the edges common to all parts of the folded sheets.

For this purpose, according to this invention, a sheet will firstly be folded over in one or as many folds as required, in one direction, hereinafter called the primary folding, and thereupon folded over itself again transversely to the primary folding, also in one or as many folds as
35 required, hereinafter called the secondary folding, whereby at least one of the directions of folding will be a step-fold, giving access to both sides of the sheet.

According to the kind and sequence of folds chosen, part sheets will thereby appear exposed.

The kind of foldings used can vary in a set, or be repeated as often as required, preferably at the same distance apart, or in the same sequence, and according to requirements, for instance, several distinct, independent overlapping
45 sections similar to the folded sheet shewn in Fig. 4 can be obtained by repeating any of the larger folds of this figure at any given point after a number of smaller folds have been made on the sheet (Fig. 8b).

Part cuts will be provided along any folds that obstruct the free use of any sheet required for the purpose of enabling the map or the like to be readily opened to display any section. Through
55 the step-like arrangement of the margins it be-

comes very much easier to ascertain and to grasp any side of the sheet.

The exposed margins may bear any known type of references, signs, scales, or index, or miniature maps printed, typed or written on them, or the markings shewn in these margins may be reproduced on a key plan on a separate sheet or cover in such a manner as to correspond with the folded or cut surfaces or positions of individual points on the sheet, or map, etc.

By means of such index the finding and perusal of any given point, or of certain district on a map, is greatly facilitated, as the map need only be opened at the place at which the particular point is shewn on the index map. Any known type of finder may be used with the map. An index, or the like, may also be provided on the cover of the map, or elsewhere.

Various constructional forms of the sheet arrangement, according to the invention, are shewn by way of example, in the drawings accompanying my specification.

Figs. 1-10 are foldings viewed in the direction of the plane of the sheet.

Fig. 11 is a plan view of a part of a sheet with an incision.

Fig. 11a shews part of a sheet provided with a tab.

Figs. 12-15 illustrate by way of example a manner in which the invention may be used in connection with a map.

Fig. 1 shews a fold made with alternative or progressive margins appearing on both sides of a sheet.

Figs. 2-6 shew various kinds of step-folds, with exposed margins *a*, of which Fig. 3 shews a complete sheet folded in step-like formation, the folds adopted on either side can be any one suited, such as are shewn in the other figures by way of example, on two distinct sides or halves, the two halves or sets of which may also be folded over each other at *b*.

Figs. 7 and 8 shew different methods of foldings intermediate to the main folds, that can be used for exposing parts of the sheet only after several folds and in order to take up any required area of a large map in between any exposed margins.

Fig. 10 shews a fold containing extra sheets or strips inserted in the fold to contain any additional information required with a single sheet thickness, instead of a double (folded) sheet.

Fig. 12 shews the map laid flat and prepared for folding along the lines *c*, *c'*, *c''*, *b*, *b'*, *b''*, to form sections R, S, T, V, and also cut along

part of the line *b'*, as indicated by the cross markings.

Fig. 13 shews the map after the primary folding, with the strips for overlapping.

Fig. 14 shews the result of the secondary folding.

It will be seen that the index numbers are provided at the exposed corners.

Fig. 15 shews how the map is opened and unfolded transversely to display the section numbered 1, on one side of the sheet, or it can further be opened to display instead a section on the other side of the sheet.

It will be clear that any section of the map may be displayed without unfolding to a greater extent than is shewn in Fig. 15.

Similar results are obtained by varying the choice of the primary and secondary foldings as well as the number or the direction of the folds used in each case. A primary fold according to Fig. 6 or 6a, and a secondary fold, as per either Fig. 9a or 9c, or again 4, will give an arrangement suitable for a large map.

Figs. 7 and 8a shew also a certain number of regular folds placed in between certain folds, shewing free margins, which also allow including a considerably greater area within any limited surface for the finished article. Same can be used with any kind of fold, and form groups of folded sheets between each indexed portion. Such groups of folds can also themselves present relatively stepped and sub-indexed subsections in any direction, (Figs. 8a-c), permitting free access to individual sheets as required. The actual number of folds used in each case will depend on the size of the sheet and the size to which it is to be reduced. By suitable choice of the manner of folding, it is therefore possible to obtain any required kind of index on the front and/or the back of the sheet.

Where a sheet, or any part of a sheet, is folded in second folding in a regular manner, such as for instance per Fig. 9b, or 9c, cutouts or tabs, etc. (Fig. 11), can be made in any sheet of the secondary folding and which covers any other sheets of the primary folding which it is required to render accessible, will obtain the same step-folding effect as a secondary step-folding. This can be applied on any side, or even on both sides of the folded set in case it is required to render various sides of the primary folding accessible, more particularly when the first folding is a back and front fold as per Fig. 1.

Fig. 13a shews how greater areas can be taken up within the folds with the use of a number of intermediary folds—regular or step-like (Fig. 8), without increasing the finished size.

Furthermore, the ends of the sheets may be reinforced, preferably with transparent material, and tabs, incisions, or cutouts of any shape, which are offset with respect to one another, may be provided for facilitating the turning over.

Fig. 11 shews a plan view of a sheet, in which the superposed parts having portions cut way in, or along, one edge, are shewn in full or dotted lines respectively. In order to prevent the sheets from coming apart, or for securing same together, any type of fixing or strengthening means, such as press buttons or other fastening

means may be provided, and further, these may be used as a means of fastening when several cut part sheets are exposed. For instance, in Fig. 14 a tab X could be attached behind the fold b, the other end of which will be attached by a button or press fastener to the cover, so as to avoid strain on fold *b'*, when using the map in the position indicated in Fig. 15.

Any of the sheets or their parts or cover may be used to bear additional plans or text such as advertisements, illustrations, etc. Cross reference over the parts of a map that has been separated by part cuts will be facilitated by the indices proceeding in value across such cuts or separations. For instance, if a map or the like has a horizontal partial cut (*b'*), then the indices will follow preferably in longitudinal sequence or rows of sequences proceeding across the cut portion of the sheets rather than over the folds, viz: in Fig. 15, section 2, is the extension of section 1 across the part cut (*b'*).

Having now particularly described and ascertained the nature of my said invention and in what manner same is to be performed, I declare what I claim is:

1. A sheet of material having imprinted on the back and front thereof a diagrammatic representation such as a map, which is folded into a number of superposed sections along substantially parallel fold lines, and folded again into a number of sections along fold lines substantially parallel to one another but transverse to the first set of fold lines, the fold lines of the first set being spaced apart to produce sections of varying widths, at least some of the lower sections having marginal strips exposed, the exposed strips including at least one strip from the front and at least one strip from the back of the sheet.

2. A sheet of material, having imprinted thereon a diagrammatic representation such as a map, which is folded along a plurality of lines parallel to one edge and then is folded along a plurality of lines transverse thereto, the first set of lines having intervals between successive lines which increase progressively towards one edge of the sheet, the sheet being cut along some of the lines of the second set along a part of their length, so that the cuts cross all but one of the fold lines of the first set.

3. A folded sheet, having imprinted thereon a diagrammatic representation such as a map, which is folded along a plurality of lines parallel to one edge and then is folded along a plurality of lines transverse thereto, the first set of lines having intervals between successive lines which increase progressively towards one edge of the sheet and the second set of lines having intervals between alternate lines which increase progressively towards one edge of the sheet, the sheet being cut along alternate lines of the second set along a part of their length so that the cuts cross all but one of the fold lines of the first set.

4. A folded sheet as claimed in claim 1, having index tabs on the edges of the sheet.

5. A folded sheet as claimed in claim 1, having parts of the edges of the sheet cut away.

CLAUD BONNAIRE.