Dec. 22, 1942. N. I. STARK 2,306,324

VISIBLE INDEX

Filed Jan. 21, 1939

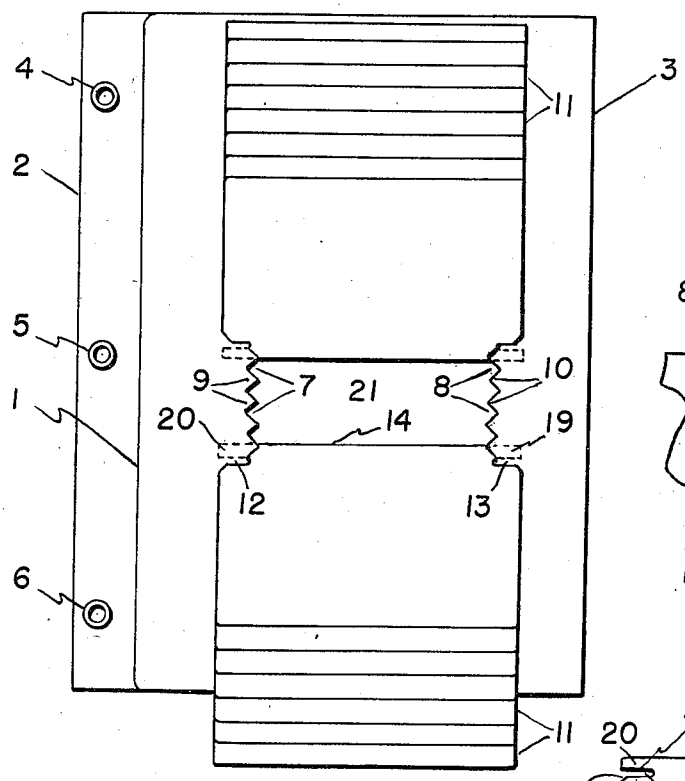


FIG. 1

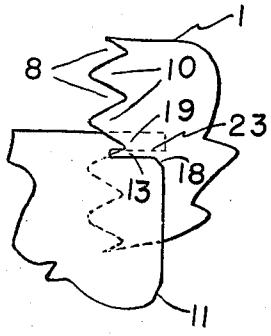


FIG. 2

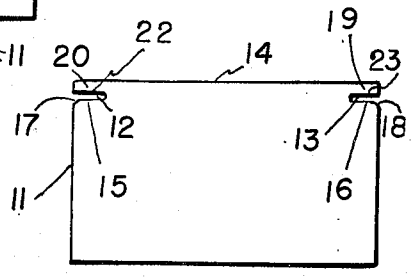


FIG. 3

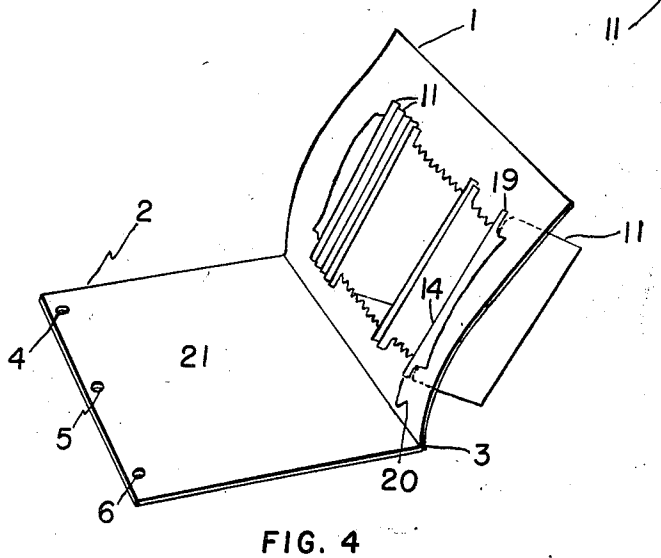


FIG. 4

INVENTOR

Nathan I. Stark

Patented Dec. 22, 1942 2,306,324

UNITED STATES PATENT OFFICE

2,306,324

VISIBLE INDEX

Nathan I. Stark, Jersey City, N. J.

Application January 21, 1939, Serial No. 252,109

5 Claims. (Cl. 129—34)

This invention relates to visible index devices and the primary object is to provide means of a novel, efficient and practical nature for hinging a number of index elements to a supporting frame in spaced relation, one index element with another.

A further object is to provide means for inserting or removing index elements to or from any position without removing the other index elements from the supporting frame.

A still further object is to provide hinge means that is without the usual axial member that index elements are provided with and not depend on the usual scored, perforated or flexible material method to turn index elements over to read or write thereon.

Another and still further object is to have a supporting frame hinged to a base sheet that is provided with reinforced openings in one side thereof to fit a suitable ring binder.

A still further object is to provide a visible index comprising a sheet folded on itself to form a folder with one of the flaps thereof die cut to provide a rectangular opening having opposed V shaped notches and tongues on two of its opposite sides and index elements with suitable notches therein to engage said V shaped notches.

Another object is to provide an index element having opposed U shaped notches adjacent one side thereof, said U shaped notches having sides adjacent the major portion of said element terminating into two obtuse angles for engaging and manufacturing purposes.

Further and more specific objects will be disclosed in the course of the following specification, reference being had to the accompanying drawing, wherein:

Figure 1 is an embodiment of the invention showing a plan view of a supporting frame hinged to a base member sheet which is provided with openings for a loose-leaf binder.

Figure 2 is an enlarged fractional detail view showing the notches and tongues of the base sheet engaging deeper notches of the index element.

Figure 3 is a plan view of an index element.

Figure 4 is a perspective view showing the base sheet unfolded and the index elements hanging from the opening.

In the illustrated embodiment of the invention, the frame 1 in Figure 1 is of a suitable flexible material such as thin fiber, celluloid, thin metal, composition sheeting or cardboard and forms an integral part of base sheet member 2, being hinged thereto by folding said base sheet member at 3; eyeleted openings 4, 5 and 6 in base sheet member 2 permitting engagement with a suitable ring binder.

V shaped notches 7 and 8 together with correspondingly V shaped tongues 9 and 10 are die cut in frame 1 to provide notched guideways and retaining means for index elements 11, said index elements each provided with opposed U shaped notches 12 and 13 for engaging V shaped notches 7 and 8 and V shaped tongues 9 and 10. The notches 12 and 13 in index element 11 are considerably deeper than the notches 7 and 8 in frame 1 of base sheet 2 and are cut adjacent and in parallelism to edge 14 of index element 11 with an outer portion of each of the innermost longitudinal sides 15 and 16 of notches 12 and 13 cut away at 17 and 18 so as to substantially shorten one of its parallel sides with respect to the other; this facilitates engagement of index element 11 with notches 7 and 8 between tongues 9 and 10.

The width of tongues 19 and 20 of index element 11 is less than half the width of any one of the tongues 9 and 10 of frame 1 as shown clearly in Figure 2. This prevents interference with adjacent index elements when turning in hinged position.

In the operation of the invention the base sheet 2 provides a smooth surface 21 for edges 14 to ride thereon, thus preventing the edges of turning index elements 11 from catching on the edges of index elements in adjacent frames when two or more of such panels of the invention are disposed together in a ring binder.

There is very little strain at the notches or point of engagement as the strain for lifting the weight of a frame filled with index elements when lying flat is distributed over the edges 22 and 23 of all the index elements 11 being turned and by lifting frame 1 slightly from base sheet 2 when turning the index elements the said strain will be reduced to a minimum.

The tendency for index elements to arc slightly when turning produces a corrugated reenforcing effect which enables a single index element to lift frame 1 sufficiently from base sheet 2 to permit free turning of index element 11.

Index elements 11 are bowed slightly to engage or disengage notches 7 and 8 of frame 1.

Notches 7 and 8 and tongues 9 and 10 are V shaped to facilitate shifting and rapid engagement of index elements 11.

Index elements 11 may be shifted singly or in groups so one or more of said index elements may be filed in any desired sequence on frame 1,

Shifting may be accomplished from the front or rear of said frame 1.

For shifting index elements 11 on the front of frame 1; the group of index elements to be shifted is held firmly and flexed slightly so the pointed tongues 9 and 10 will just pass the innermost edges of U shaped notches 12 and 13 in index elements 11 without completely disengaging said U shaped notches from notched guideways of frame 1 when shifting the group of index elements up or down in notches 7 and 8.

For shifting index elements on the rear of frame 1, said frame is turned over on a flat surface so that the backs of the engaged index elements face upwards and then fingers of one hand are pressed firmly on the center of the group of index elements to be shifted against said flat surface while the fingers of the other hand take hold and move one side of frame 1, flexing the index elements held against said flat surface sufficiently for the tongues 9 and 10 to pass the innermost edges of the U shaped notches 12 and 13 in said index elements 11 without completely disengaging said U shaped notches from the notched guideways of frame 1 when shifting the tongues of frame 1 up or down in notches 12 and 13 of index elements 11.

Many departures and variations may be made from the precise structure herein disclosed without departing from the spirit of my invention since I claim:

1. In a visible index, the combination of a base sheet member having a rectangular opening with equally spaced notches and inwardly directed tongues disposed at two opposite edges of said opening and a number of flexible index elements hinged by said notches engaging inverse notches in said index elements, the notches in said index elements being considerably deeper than the corresponding notches in said base sheet, whereby upon flexing said index elements said notches and tongues in said base sheet may be partially disengaged from inverse notches in said index elements so the ends of said tongues in said base sheet may be moved past the innermost edges of said inverse notches in said index elements.

2. In a visible index, the combination of a base sheet member having a rectangular opening with substantially V shaped notches equally spaced and inwardly directed substantially V shaped tongues disposed at two opposite edges of said opening and a number of flexible index elements hinged by said notches engaging inverse notches in said index elements, the notches in said index elements being considerably deeper than the corresponding notches in said base sheet, whereby upon flexing said index elements said notches and tongues in said base sheet may be partially disengaged from inverse notches in said index elements so the ends of said tongues in said base sheet may be moved past the innermost edges of said inverse notches in said index elements.

3. In a visible index, the combination of a base sheet member folded adjacent its middle and having a rectangular opening in one side thereof substantially V shaped notches equally spaced and inwardly directed substantially V shaped tongues disposed at two opposite edges of said opening and a number of flexible index elements hinged by said notches engaging inverse notches in said index elements, the notches in said index elements being considerably deeper than the corresponding notches in said base sheet, whereby upon flexing said index elements said notches and tongues in said base sheet may be partially disengaged from inverse notches in said index elements so the ends of said tongues in said base sheet may be moved past the innermost edges of said inverse notches in said index elements.

4. In a visible index, the combination of a base sheet having an opening therein, said opening having a number of equally spaced notches and inwardly directed tongues disposed at two opposite edges of said opening, said tongues being tapered so that the innermost portions of the tongues are considerably smaller than the outermost portions and a number of flexible index elements hinged by said notches engaging inverse notches in said index elements, the notches in said index elements being considerably deeper than the corresponding notches in said base sheet, whereby upon flexing said index elements, said notches and tongues in said base sheet may be partially disengaged from inverse notches in said index elements so the ends of said tongues in said base sheet may be moved past the innermost edges of said inverse notches in said index elements.

5. In a visible index, the combination of a base sheet member having a rectangular opening with substantially V shaped notches equally spaced and inwardly directed substantially V shaped tongues disposed at two opposite edges of said opening and a number of flexible index elements hinged by said notches engaging inverse notches in said index elements, the notches in said index elements being considerably deeper than the corresponding notches in said base sheet and cut adjacent and in parallelism to a single side of said index element with an outer portion of each innermost longitudinal side of each notch cut away so as to substantially shorten one of its parallel sides with respect to the other, whereby upon flexing said index elements said notches and tongues in said base sheet may be readily engaged with inverse notches in said index elements and partially disengaged therefrom by moving the ends of said tongues in said base sheet past the innermost edges of said inverse notches in said index elements.

NATHAN I. STARK.