

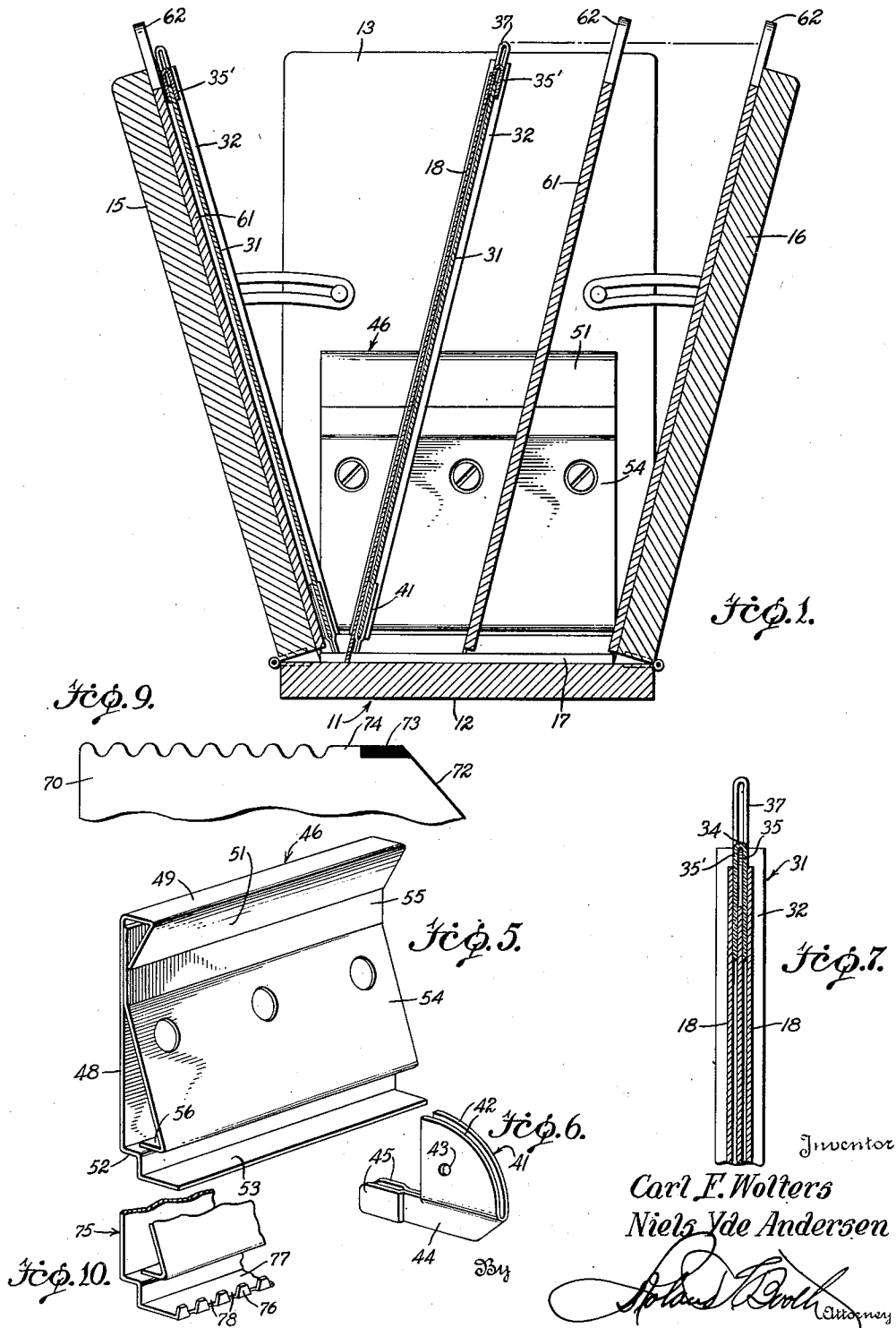
Jan. 9, 1951

C. F. WOLTERS ET AL
VISIBLE OFFSET CARD FILE

2,537,564

Filed May 17, 1945

2 Sheets-Sheet 1



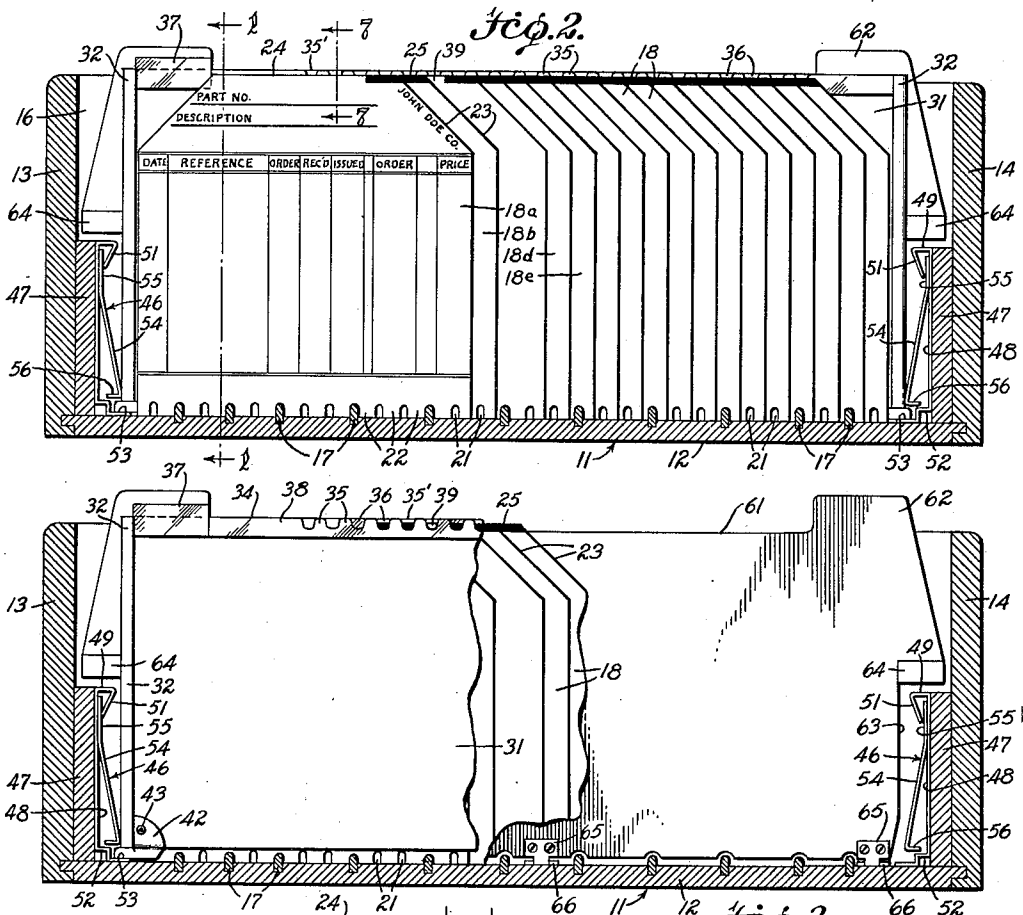
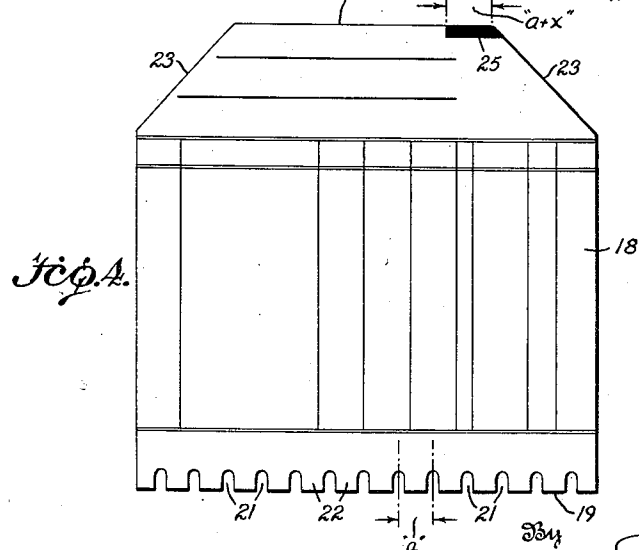
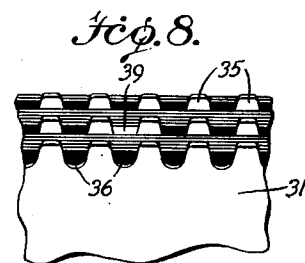
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2 Sheets-Sheet 2



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VISIBLE OFFSET CARD FILE

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8 Claims. (Cl. 129-16)

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This invention relates to a card index and file of the type wherein the cards are offset horizontally from each other to provide visible marginal portions, and it has particular reference to the provision of means for accurately and positively aligning the cards and signalling at a glance such cards as may be missing from the file.

While it has heretofore been proposed to arrange cards in horizontal rows and in overlapping relation, so that a marginal portion of each card would be visible, such prior proposals have failed to meet all of the essential requirements of such a file, due to misalignment of the cards in each row, difficulties in expanding the file as new cards were added, inability to locate missing cards at any part of the file without thumbing through the assembly, and limitations on the number of cards which could be collected in a given space. The present invention contemplates improvements overcoming these, and other objections, thereby to provide a file of the character described which may be readily applied to the collocation of information of various types.

The invention is directed to providing a card index that has many of the space saving advantages and the simplicity of vertical filing, an offset visible margin for visible indexing, an arrangement to increase efficiency in both hand and machine posting, the removal and replacement of cards without unnecessary loss of time, re-filing of cards with little chance of misfiling, flexibility providing for increasing the number of cards in the file by additions to the index at any point, and a signal arrangement for directly indicating a missing card.

The invention provides a divider panel having a serrated top edge portion for protecting the top edges of the cards adjacent thereto and leaving sections of the top edges of the cards visible for indicating at a glance the absence of a card from the file. A transparent cover may be folded over the serrated top edge to facilitate manual operation of the divider panels and provide them with a smooth, rounded edge.

The principles of the invention, and practical ways in which its objectives may be attained, will be apparent from the following description of a typical embodiment, illustrated in the accompanying drawings, wherein:

Fig. 1 is a transverse cross section of a filing tray with index cards and divider panels disposed therein, the section being taken substantially along the line 1-1 of Fig. 2.

Fig. 2 is a longitudinal cross section through the filing tray showing in elevation a series of horizontally offset index cards.

Fig. 3 is a view similar to Fig. 2, with the several card units broken away to show successively the divider panels, index cards, and a section panel or throwing panel.

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Fig. 4 is an elevation of a typical index card.

Fig. 5 is a perspective of a retaining clip employed to secure and align the divider panels.

Fig. 6 is a perspective of one of the divider panel retaining members adapted to cooperate with the retaining clips.

Fig. 7 is an enlarged cross section taken on line 7-7 of Fig. 2.

Fig. 8 is an enlarged fragmentary perspective illustrating a portion of the top edges of several divider panels and the cards therebetween.

Fig. 9 shows a fragment of the upper portion of an index card having a portion of the margin serrated.

Fig. 10 shows a portion of a divider retaining member in perspective to illustrate how it may be provided with a plurality of notches for retaining dividers in position against longitudinal movement.

As shown in Figs. 1, 2 and 3, the file comprises a tray, generally designated by the reference numeral 11, which in this instance is of a relatively small or portable type, and includes a bottom 12, fixed end walls 13 and 14, and hinged front and back walls 15 and 16. When in use, the hinged walls may be tilted outwardly a limited distance, as shown in Fig. 1, thereby facilitating reference to the contents of the tray. When not in use, the hinged walls are brought to and latched in a vertical position, so that the tray may receive a cover, if desired, and be safely stored in any suitable place. Except as hereinafter explained, the precise construction of the tray is not of the essence of the invention, as it will be apparent that trays of other types and sizes may be employed.

The bottom 12 of the tray is provided with a plurality of uniformly or equally spaced guide rails 17, herein shown as straight inserts set into and projecting above, the bottom, and extending from the front to the back. These rails are adapted to support and space index cards 18, which, as best shown in Fig. 4, each comprise a rectilinear sheet of suitable paper stock having a lower edge 19 formed with uniformly spaced notches 21 to provide intervening depending tabs 22. The notches 21 are of such width and height to fit nicely over the projecting portions of the rails 17, as shown in Fig. 2, while the tabs 22 occupy the spaces between the rails and lightly abut the bottom 12. Inasmuch as there are a substantial number of notches 21 in a card of suitable width, it is not essential that there be as many rails as notches, as some notches may be unoccupied by rails without interfering with the intended operation. However, it will be apparent that the distance between the centers of the rails 17, if not equal to the center to center distance of the notches, should be some whole multiple thereof. That is to say, if the distance

between the notch centers is designated as the dimension "a" (Fig. 4), then the distance between the rail centers may be "a," "2a," or the like. With this arrangement, any card 18 may be moved to the right or left in uniform increments or whole multiples thereof, simply by placing any notch 21 over the rail previously encompassed by an adjacent notch.

The card 18 is advantageously of such height as to project slightly above the open top of tray 11, and each upper corner is cut at a suitable angle, of say 45°, to provide diagonal margins 23. While it is entirely feasible to cut one corner, rather than both, for most installations both corners are formed as shown, for purposes which will be hereinafter more fully explained. The front, or visible face of the card 18, is also provided, at the junction of one edge 23 and the straight top edge 24, with a dark section 25 providing a decided contrast in color with the remainder of the edge 24. The section 25 has a length equal to or slightly greater than the dimension "a," representing the spacing of the notches 21, which is designated in Fig. 4 as "a+x." It should be pointed out that while this contrasting border portion may be somewhat wider than the notch spacing, it should not be equal to "2a," unless further and unnecessary adjustments are made. The body of each card 18 may be ruled to delineate a business form suited to the keeping of some particular kind of record, and upon which may be periodically entered the information relevant to the account or business transaction to which the form relates.

A number of the cards 18 are adapted to be filed in the tray 11 in the manner shown in Fig. 2, from which it will appear that the cards are laid on top of each other, with the right hand margin of each card exposed, and therefore visible when viewed from the face of each series. For convenience in description, the several cards 18 are here designated as 18a, 18b, and so forth. It will be seen that the card 18a is adjacent the left hand end wall 13, and its notches 21 engage some of the spacer rails 17. The next card 18b is positioned to the right a distance equal to the dimension "a," and accordingly the card 18b is visible along its right hand margin for a width equal to the dimension "a." The contrasting portions 25 of the cards 18a and 18b therefore merge into each other, presenting a continuous line of color and a distinctive signal. No card 18c is shown, as it is to be understood that this card is temporarily out of the file for posting or other purposes. Therefore the next card is marked 18d, and it is accordingly spaced a distance "2a" from card 18b. This removal of the card 18c therefore interrupts the continuity of the line, formed by the portions 25, since no one of these portions is as long as the distance "2a." Accordingly, the absence of any given card is at once indicated by the interruption of the line, giving another distinctive signal to the user at a glance.

It will be apparent that when sufficient cards have been superimposed in offset relation to extend from one side of the tray to the other that a series has been completed, and that the next series of cards should be positioned immediately in back of the series just described, and continue in this fashion until the capacity of the tray has been reached. It will also be seen that the cards 18 are effectively held against longitudinal displacement, that they are readily removed and inserted, and that the place for reinsertion of a card may be located by the signal given by the

interruption of the continuous band formed by the portions 25.

Inasmuch as the tray would have an extremely small capacity if only one series of cards were filed therein, and it would be difficult to locate and separate the various series if they rested directly against each other, provision is further made for index guides or dividers which cooperate with the structure just described. To this end, the invention contemplates dividers or divider panels, generally designated by the reference numeral 31, which are positioned in the tray 11, in longitudinally extending relation, and between the various series of cards 18. These dividers 31 may be made from heavy cardboard as well as from aluminum or steel or metal alloys having a desired character of stiffness and other qualities.

As best shown in Fig. 2, each divider 31 consists of a rectangular sheet of heavy stock extending between the end walls 13 and 14, and framed on its vertical edges with spacer strips 32, each of which is grooved to receive an edge of the sheet. The strips 32 are of such thickness as to space adjacent dividers the width required to accommodate the pile of cards 18 placed between two dividers. The lower edge 33 of the divider is spaced from the projecting rails 17, by means presently to be described, and this spacing need be no more than is sufficient to allow flipping the dividers back and forth without binding. The left hand upper edge portions 34, as shown in Figs. 2 and 3, are continuous for a distance equal to about twice the cut-away portion of the edge 24 of a card 18 and the right-hand upper edge portion is continuous for a distance equal to one of the cut-away portions, while the space between these portions is serrated to provide projections 35 and interposed recesses 36. A transparent visible folded tab 37 may be secured to the portion 34 of the sheet 31, to receive a removable index label. If desired, a transparent folded strip 35' may be extended across the entire upper edge to protect the projections 35 from undue wear and bending. This folded strip 35' provides a rounded smooth upper edge on divider 31 so that fingering of the dividers in operation of the file is made convenient and easy, without likelihood of injuring the fingers or fingernails.

The center to center distance between adjacent recesses 36 is equal, or substantially so, to the distance "a" between the centers of the notches 21 in the cards 18, although the actual width of the recesses may be somewhat greater than the actual width of the notches. The height of the dividers 31 is moreover such that, in assembled relation, the upper edge of the divider extends a slight distance above the edges of the cards 18. With this arrangement, it will be seen that the recesses of the dividers are aligned in depth with respect to each other, and are also aligned lengthwise with the portions 25 on the cards 18. Because of these relationships, the continuous border seen on a series of cards 18 when viewed by themselves will be seen as alternate light and dark spots, when viewed directly from the face of the divider 31. This is because the projections 35, will, in the last stated case, mask a portion of the dark border, and the divider 31 itself, is of different color. When a card is removed, however, the uniformity of the pattern will again be interrupted, as indicated by the reference numeral 39 in Figs. 2, 3 and 8, and the absence of a card is signalled by the absence of its dark border section 25.

It will accordingly be understood that the

recessing of the guide index members or dividers 31 along their upper margins is coordinated with the formation of the cards 18, so that the "out" signal will be readily apparent whenever any card is removed. It should here be pointed out that the provision of such recessed dividing members, in addition to preserving the cards in series, moreover enables one to detect the absence of a card when viewing the tray in depth. That is to say, one of the problems heretofore encountered has been to determine the absence of a card in some series toward the back of the tray, and the only thing one could do would be to peer and crane over the tray while leafing through the cards. With the present arrangement, the projections 35 and spaced recesses 36 create a pattern, as shown in Fig. 8, which has visibility in depth, as well as longitudinally, and it accordingly can be relied upon to detect a missing card anywhere in the file without the difficulties heretofore experienced.

It was previously pointed out that the length of the continuous portions 34 on the upper edge of the dividers 31 may be made fairly long with respect to the cut-away portion of the card 18. This permits of the positioning of the index tab 37 at the upper corner of the divider, or a tab's breadth from the corner, thereby enabling offsetting of the tabs to some extent, and sufficiently to identify and readily distinguish index legends which may be aligned in depth. It may also be noted that, by cutting the cards 18 at both uppermost corners, the cards 18 may not only be used on both sides, or made reversible, but that such double cutting simplifies the selection of tab positions on the dividers 31 in the manner just described.

Inasmuch as the recesses 36 on the dividers 31 reveal the contrasting color of the body of a card 18 as distinguished from the signal or dark section 25 when an adjacent card is removed, it is important to provide means to maintain the dividers in their intended positions. For this purpose, the lower corners of each sheet 31 are provided with pivot members 41, the structure of which is best shown in Fig. 6. This member comprises a pair of spaced lugs 42 adapted to lie on either side of the sheet stock, and to be secured by a rivet or other suitable fastener positioned through an opening 43. The lower portions of the lugs merge into horizontally extending portions 44 which terminate in rounded ears 45 which are spaced to provide an overall width substantially equal to that of the side strips 32.

The projecting portions of pivot members 41 cooperate with retaining members 46, mounted on stanchion plates 47 on the inner faces of end walls 13 and 14. As best shown in Fig. 5, each retaining member 46 is formed of a fixed plate 48 having a top rail 49, a reentrant gripping flange 51, an inwardly projecting ledge 52, and bottom step 53 having a width slightly greater than the projecting portion of the pivot member 41. The retaining member moreover has a plate including downwardly extending movable leaf 54 depending from a strap 55 underlying top rail 49 and flange 51 and secured to the upper margin of fixed plate 48. A stop flange 56 is provided on the lower edge of movable leaf 54. The leaf 54 may be readily pressed toward fixed plate 48 to expose step 53, but it normally extends outwardly over step 53 due to its inherent resilience.

In order to insert a divider in the tray, it is simply necessary to push it down into the tray, and, as the projections 45 strike the leaves 54 at

opposite ends of the tray, they ride over them with a cam action and finally drop down to rest on steps 53. The leaves are then released, and accordingly spring back to their normal position, and into engagement with the edges of the spacer strips 32. As the tension in the leaves is equal, for all practical purposes, the divider is therefore centered in the tray, and is automatically brought into such a position, that the recesses 36 assume their correct positions with respect to the border sections 25 along the top edges 24 of the cards 18. In addition to providing for longitudinal alignment, vertical alignment is also obtained, as the dividers are held by the location of the pivots 45 between the step 53 and flange 56. This protects the upper edges of the cards 18. Removal of a divider is readily effected by merely pressing down the leaves 54 with a pencil or the fingers. The lower portions of pivots 45 are rounded from the folding of the metal forming the pivots and accordingly provide for free rocking movement of the dividers in their supported position on steps 53.

The continuous and serrated upper edge of each divider 31 protects the cards 18 of the contiguous series from vertical displacement which might otherwise be encountered, as by ruffling the cards 18 with the finger tips. In small trays, any divider may be grasped along its tab portion to swing the tray contents one way or the other. However, for trays of large capacity, it is preferable to employ throw boards at suitable intervals, rather than make the dividers of excessively heavy stock on the one hand, or imposing an undue strain on them, on the other. The throw boards 61 consist of rigid stock extending from end to end of the tray, extending as high as the other elements of the assembly, and preferably provided with upwardly extending tabs 62 to facilitate handling. The lower side portions of the boards are cut away, as indicated by the reference numeral 63, Fig. 3, in order to provide clearance around retaining members 46. The throw boards are formed with abutments 64 which may engage the rails 49 and thus limit the arc of movement. The lower margin of the board carries spaced hinge members 65 which engage companion hinge pieces 66 secured to bottom 12. It will be apparent that these hinges may be fixed, or slidable, as desired, and of any suitable construction, depending upon whether the user prefers to have a relatively fixed or movable board. As many such boards may be included as the size of the tray dictates.

The card 70 shown in Fig. 9 is formed in the same manner as the card shown in Fig. 4 with notches 21 in the bottom margin and one or both upper corners formed with a diagonal margin as indicated at 72. The top margin has the dark section 73 forming the card signal and an adjacent portion 74. The remaining portion of the upper margin of card 70 is of serrated form to correspond with the serrated portion of dividers 31. The serrations in the card will register with the serrations in the dividers and provide for giving greater visibility to the sections 73 and 74 than with the upper edges formed in straight relation, as shown in Fig. 4.

Fig. 10 shows a retaining member 75 constructed in the same manner as retaining member 46 with the addition of an upwardly extending flange 76 on the inner edge of the step 77. Flange 76 is provided with notches 78 formed to receive rounded ears 45 of pivot member 41 so that the pivot member 41 is retained against sliding movement along step 77. In this way the dividers

are held in a desired position of adjustment in the tray but may freely pivot about pivot members 41 in the operation of the file.

From the foregoing description, it will be seen that the present invention provides improvements in visible card index files of the horizontally offset type, having flexibility as to capacity, and facility in determining the correct position or absence of any index card. It will also be discerned that the cards may be rapidly moved from one position to another when using the file, without displacing the cards or the index guides or dividers employed to space them. By retaining the dividers in position on the steps of retaining members 46 or 75 against accidental removal, the cards between adjacent dividers will not be disturbed when cards on the other sides of these dividers are removed. The steps may also have their positions gaged to bring the upper serrated portions and other portions of the upper margins of the dividers into a desired position and relation to the top edges of the index cards in the tray. While the invention has been described with respect to one practical embodiment, it should of course be understood that it is not limited to the precise details of construction, but that it should be regarded as encompassing all the various parts and combinations, and the modifications and variations thereof, as are encompassed by the scope of the following claims.

The invention claimed is:

1. A tray in which is retained superimposed horizontally offset index cards arranged in series and spaced in depth by dividers in the tray, said tray comprising a bottom, end walls, and an open top, said index cards having regularly spaced notches along their lower edges and said dividers having recesses formed along their upper edges and spaced the same as said notches, guide rails positioned along the bottom of said tray and extending parallel to said end walls and engaging at least some of the notches in said cards, and resilient retaining members adjacent said end walls and above said bottom engaging the edges of the dividers to retain them in pivoted relation in said tray and position the recesses therein in predetermined relation to said notches, guide rails and index cards for displaying portions of said cards through said notches.

2. In a horizontally offset visible file, a series of index cards formed with notches along their lower edges at uniformly spaced intervals, guide means at the bottom of said cards for engaging in at least some of the notches in said cards for maintaining said cards in position with said notches in alignment, a signal index on the upper edges of the cards adapted to form a distinctive signal when a series of cards is arranged in offset overlapping relationship in increments equal to the notch interval, and a portion of a card adjacent said distinctive signal being displayed when any of the series is removed, a divider positioned in front of the cards in said series, a plurality of recesses formed in the upper edge of said divider through which said signal index is visible, the center to center spacing of the recesses being substantially equal to the center to center spacing of the notches, and means to align the divider with respect to the series of cards to maintain a substantially predetermined relation between the recesses, notches, and signal index.

3. In a horizontally offset visible file, a plurality of index cards each of which is formed along one edge with alternate tabs and notches having

uniform center to center spacing, guide means at the bottom of said cards for engaging in at least some of the notches in said cards for maintaining said cards in position with said notches in alignment, a cut-away corner at the opposite edge of the card, a signal index extending from said cut-away corner along said opposite edge a distance at least equal to the notch spacing but less than twice such spacing, whereby, when a plurality of such cards are arranged in superimposed relation and offset from each other a distance equal to the notch spacing there is established a distinctive visible signal, and a divider adapted to be positioned against said series of cards, said divider having an upper edge lying adjacent the upper edges of said cards, said upper edge being serrated to form alternate projections and recesses extending below said signal index, the center to center distance between said recesses being substantially equal to the notch spacing, whereby said distinctive signal is visible through said recesses.

4. In a horizontally offset visible file, a plurality of superimposed and horizontally offset index cards having a visible signal index along a portion of one edge, said index defining one distinctive signal when said cards are regularly arranged and uniformly spaced and another distinctive signal when said regular arrangement is interrupted, and a divider adapted to be positioned over said cards, said divider having a serrated edge registering with said signal index, and means for positioning the divider with respect to the cards to maintain the serrated edge in registering horizontal and vertical relationship to said signal index to display said signal index through said serrations.

5. In a horizontally offset visible file adapted to receive index cards arranged in regularly offset horizontal rows and dividers interposed between such rows, a tray having a bottom and end walls, guide rails positioned along the bottom and parallel to the end walls, said rails having a predetermined center to center spacing, index cards having bottom edges formed with alternate tabs and notches, said notches having a uniform center to center spacing and adapted to be positioned over said rails and to be shiftable between said end walls in regular increments, a signal index formed on the opposite edge portion of said cards to establish one distinctive signal when a complete horizontal series of cards is mounted on said rails and another distinctive signal when an incomplete series is so mounted, resilient retaining members mounted on said end walls and having stop and step portions adjacent the bottom of the tray, dividers interposed between horizontal series of cards, each of said dividers comprising a sheet extending between the end walls and having an upper edge overlying the upper edges of the cards and said signal index, pivots on the lower corners of the dividers adapted to be engaged by said retaining members between said stop and step portions and thereby to be retained in vertical predetermined positions, the side edges of said dividers abutting said retaining members to position said dividers in predetermined horizontal relation, a plurality of projections and recesses formed on the upper edge of each divider, said recesses having a center to center spacing substantially equal to the spacing of said notches and being aligned by said retaining members with said signal index.

6. A file, comprising a tray having a bottom and end walls, retaining members mounted on

said end walls, each retaining member having a step on the bottom thereof extending inwardly beyond the inner face of said end wall, a retaining flange spaced above said step inwardly of the adjacent end wall, and a resilient leaf portion connecting the retaining flange with the upper portion of said retaining member for resiliently supporting said flange over said step, said leaf portions inclining inwardly and downwardly from the inner faces and relative to said end walls, and a divider having pivot projections on the bottom corners for engaging in said tray with the distance between the ends of said divider and projections thereon, less than the distance between said end walls but greater than the distance between said retaining flanges, said divider extending between said end walls, said pivot projections engaging said leaf portions in downward movement of a divider in the tray for moving said retaining flanges outwardly until said projections pass said retaining flanges and engage on said step, said leaf portions normally supporting said retaining flanges over said pivot projections when supported on said steps to retain said divider pivotally connected to said tray.

7. A file comprising a tray having bottom and end walls, a divider supporting and retaining member mounted on each end wall, each retaining member having a plate mounted on the inner side of an end wall, a step extending inwardly from the lower margin of said plate, a flexible leaf having its upper margin mounted on the upper margin of said plate and inclining downwardly and inwardly from said margins over said step, and a stop flange mounted on the lower margin of said leaf in spaced parallel re-

lation above said step, said retaining members being arranged on the inner faces of said end walls in opposed relation for cooperation in pivotally and detachably mounting dividers in said tray in transversely extending relation therebetween and having pivot members projecting outwardly from opposite lower ends of each divider with each pivot member engaged between the step and stop flange on a retaining member.

8. In a file as claimed in claim 7 having the retaining member formed to provide each step with a plurality of upwardly extending spaced projections for holding a divider against longitudinal movement along said steps and separating adjacent dividers.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
1,146,466	Wardy	July 13, 1915
1,975,566	Boosse	Oct. 2, 1934
2,042,167	Beeler	May 26, 1936
2,326,241	Martin	Aug. 10, 1943
2,435,077	Hall et al.	Jan. 27, 1948

FOREIGN PATENTS

Number	Country	Date
217,105	Great Britain	of 1924
323,786	Great Britain	of 1930
612,495	Germany	of 1935