Sept. 5, 1944. C. S. FRUITMAN 2,357,320

THREE-DIMENSIONAL INDEX SYSTEM

Filed Aug. 10, 1942 3 Sheets-Sheet 1

Fig. 1.

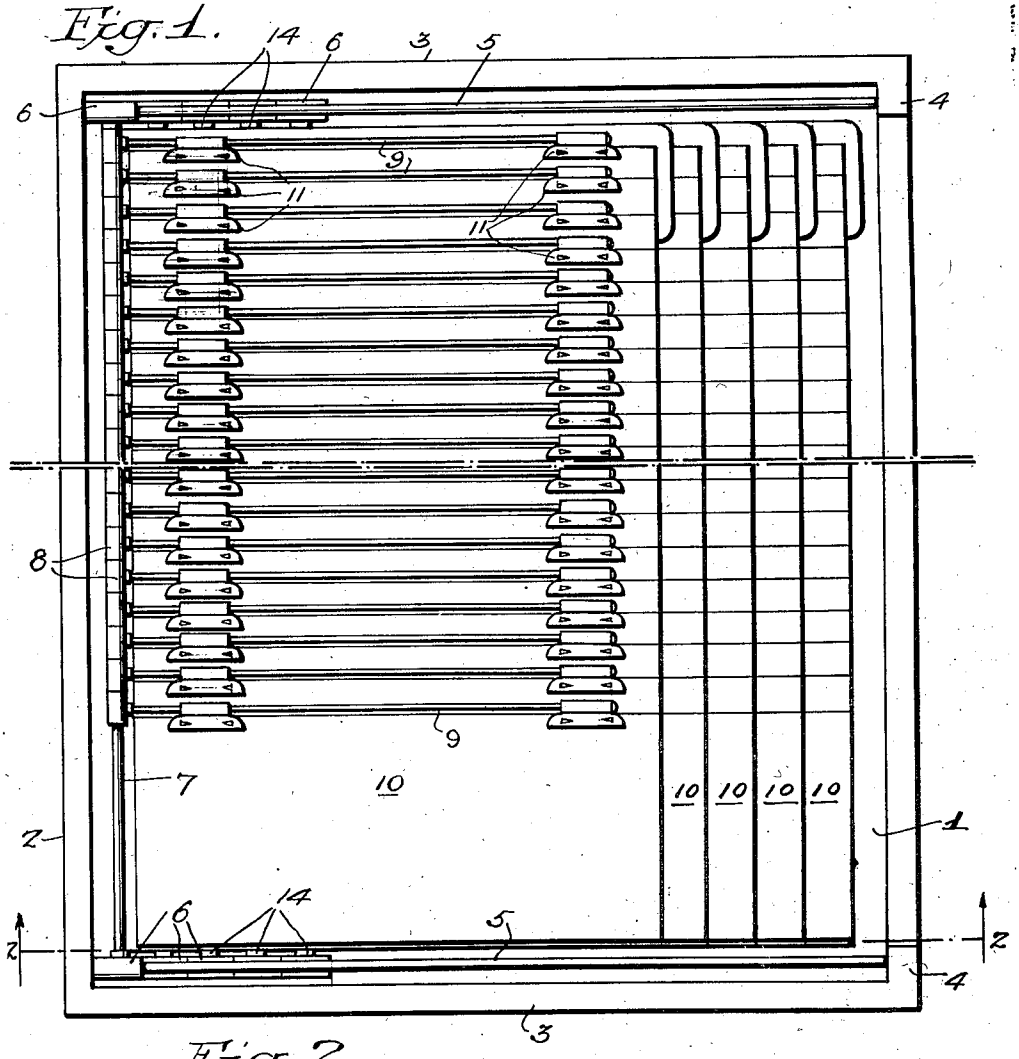
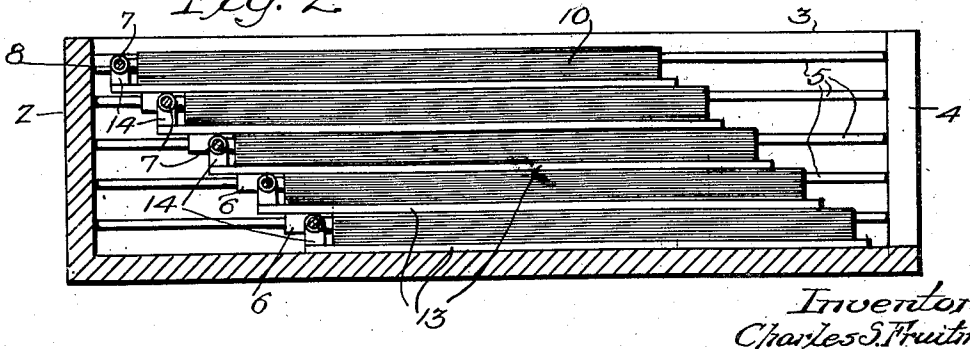


Fig. 2



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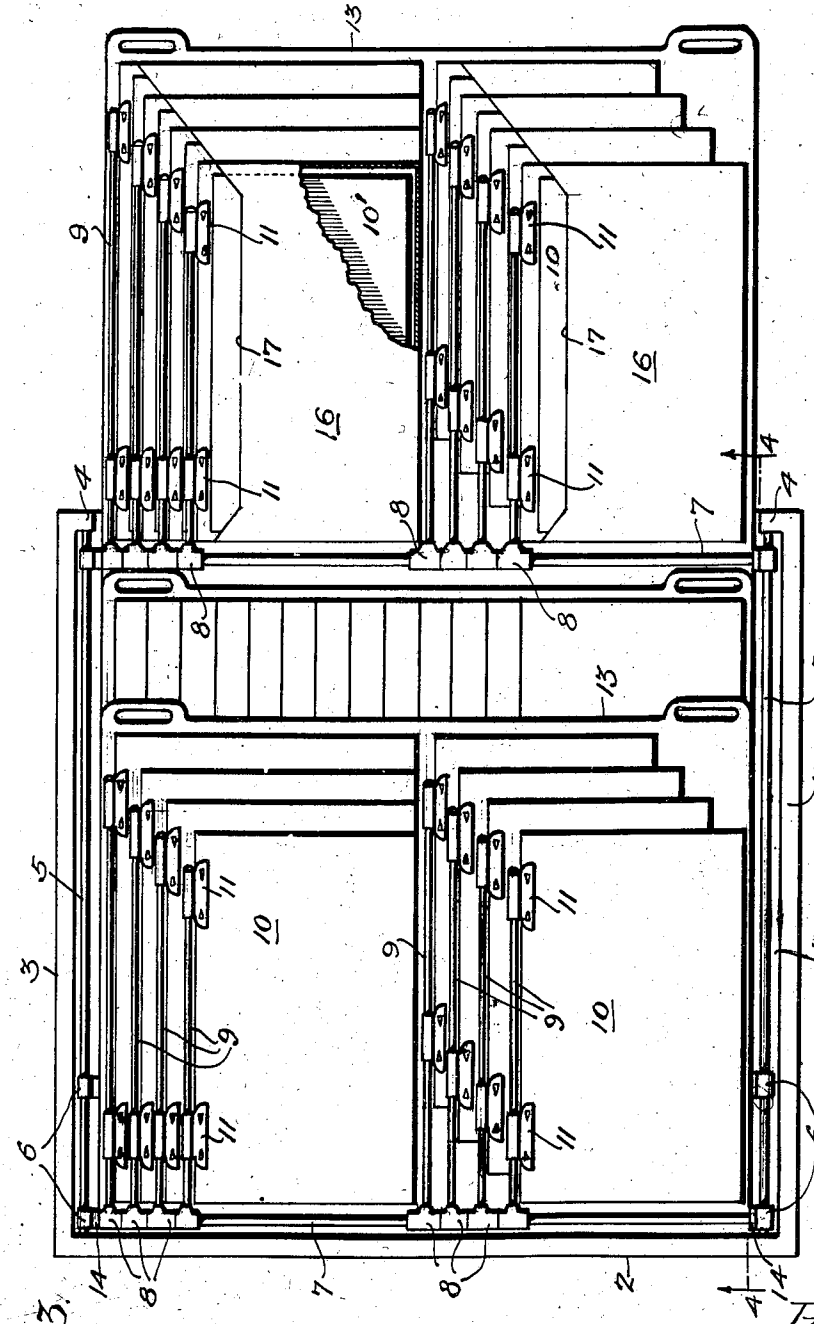


Fig. 3.

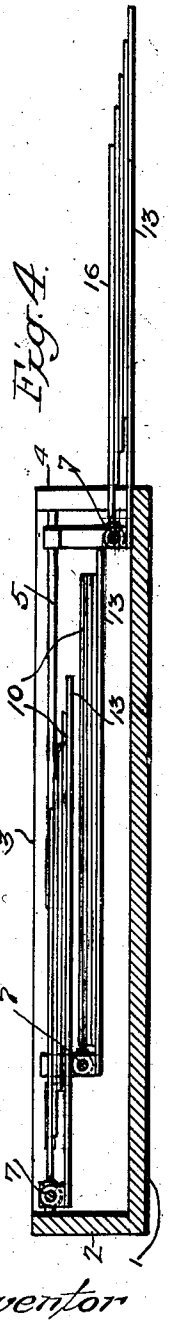


Fig. 4.

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Fig. 5

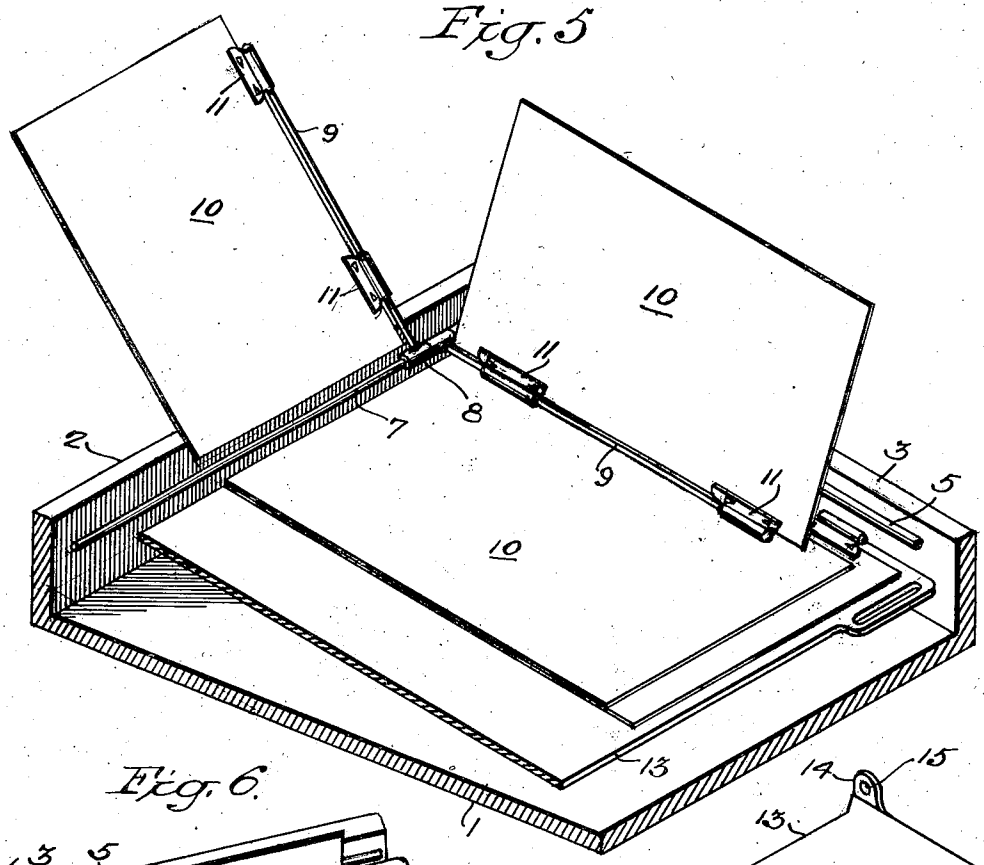


Fig. 6.

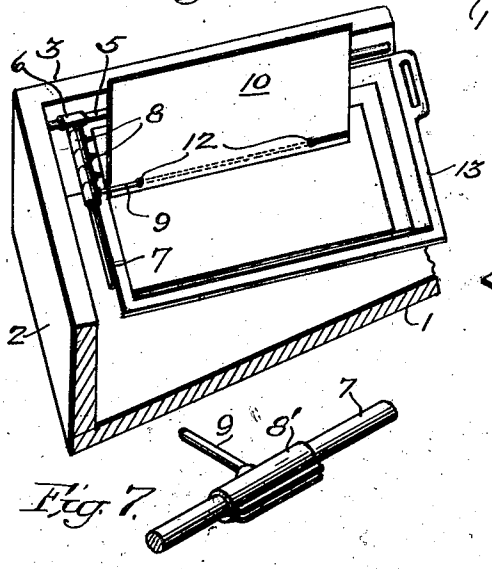
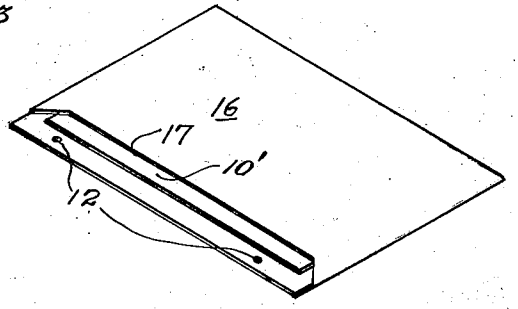


Fig. 7.

Fig. 8.

Fig. 9.



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THREE-DIMENSIONAL INDEX SYSTEM

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Application August 10, 1942, Serial No. 454,257

4 Claims. (Cl. 129—34)

The object of the invention broadly is to provide improvements in indexes, but more particularly in that type which is usually referred to as a card index and/or filing system, and references hereinafter to cards will be understood as applying to simple cards of various sizes such as, pockets, envelopes, sheets and all similar card-like elements.

Another object is to provide an improved card index, which comprises a column of such elements as a unit, and a compound pivotal mounting for each element, whereby the several elements in the column unit can be independently moved angularly, so as to permit a direct view of the reverse of a given card, either in upright or inverted position, or a combination of the reverse of two cards, one of which is upright while the other is inverted.

A further object is to provide a card index, comprising a plurality of columns of card-like elements, a supporting member therefor, means to permit said columns to be shifted laterally with respect to one another, a pivotal support for the individual cards of each column carried by said means, and a pivotal connection between each card and its pivotal support, whereby each card can be moved angularly in either or both of two planes, which are perpendicular to each other and angularly disposed with respect to the plane in which said column units are shiftable.

Still another object is to provide an index of this character, in which each card is detachably connected to its pivotal support and, if desired, to the pivotal connection between the card and its said support.

And a still further and more specific object is to provide an index of this character, which comprises a frame member, a plurality of parallel rods slidable laterally upon said member with respect to one another, a plurality of supporting members angularly movable about and preferably detachably carried by each supporting member having a radially extending arm, and a card pivotally mounted upon and preferably detachably secured to each arm.

With the objects thus briefly stated, the invention comprises further details of construction and operation, which are hereinafter fully brought out in the following description, when read in conjunction with the accompanying drawings, in which Fig. 1 is a plan view showing one embodiment of the invention; Fig. 2 is a vertical section on the line 2—2 of Fig. 1; Fig. 3 is a view somewhat similar to Fig. 1, but showing two of the column units shifted outwardly from their normal retracted positions; Fig. 4 is a section on the line 4—4 of Fig. 3, and shows the relation of the several column-supporting means to one another in the assembled device; Fig. 5 is a fragmentary perspective view showing the index structure so arranged that the reverse sides of two card elements are simultaneously visible, by moving one of said elements angularly about its supporting arm, and the other of said elements angularly about its vertical arm-supporting rod; Fig. 6 is a fragmentary perspective view showing a modified method of mounting the several elements upon their respective supporting arms; Fig. 7 is an enlarged fragmentary detailed view showing a clip-like sleeve by which a card-supporting arm is detachably connected to its supporting rod; Fig. 8 is a fragmentary perspective view of a corner portion of one of the backing members and shows a representative form of the pivotal connection by means of which said backing member is attached to the supporting rod of its respective card column; and Fig. 9 is a perspective view showing a modified form of card element comprising a pocket or envelope into which a card may be removably inserted.

Referring to the drawings, a hollow frame member of any suitable construction is here shown for purposes of illustration as comprising a base 1, from the edges of which extend upwardly box-like side and end walls 2 and 3, one side wall being preferably omitted, but being represented by two inwardly directed projections 4 from the adjacent surfaces of said end walls. It is to be understood that this frame or base member is shown merely to illustrate any and all of the many forms which it can assume, such for instance as a sample or display case, an index case, a sliding drawer, a sliding element and the like. It is also to be noticed that the specific mountings of the several card-like elements herein shown in detail are merely intended to illustrate one embodiment of the invention, and that said invention is by no means intended to be limited by the details herein disclosed, but instead is intended to comprise within its scope any and all forms and embodiments which fall within the scope of the appended claims.

In this illustrative embodiment a pair of parallel bars 5 extend between the opposite end portions of the said wall 2, and the respective projections 4, and slidable upon these bars are pairs of sleeves 6, between which extend vertical rods 7, while slidable upon each of said rods is a plurality of sleeves 8, which may be in a substantially continuous series (Fig. 1) or in spaced se-

ries or groups (Fig. 3). Extending radially from each of said sleeves is an arm 9, which supports one of said card-like elements 10 by means of a hinged connection 11, here shown as comprising a sleeve slidable both longitudinally of and axially about said arm. At this point it should be noted that the invention is also not limited to the particular type of connection between the elements 10 and the arms 9, as such connection may assume innumerable forms, such for instance as that shown in Fig. 6, wherein the arm 9 extends thru two or more apertures or eyelets 12 in the element 10. It is also to be noted that each of said arms is preferably detachably connected to the supporting rod 7, as by means of the radially resilient chip-like sleeve 8' shown in Fig. 7.

Figs. 1 and 2 show the illustrative embodiment of the invention with all of the several card columns in normal retracted position, while in their respective positions, with their right-hand edge portions extending freely to one side of the column next above, any desired names, numbers or other identifying indicia carried by the respective cards in each column and at the same time in all of said columns, being viewed simultaneously and selected at will. Thus, to view the obverse of any card above the lowermost in the uppermost column, those cards above it are oscillated angularly upwardly and reversely as far as necessary about the axis of the supporting rod 7, as indicated at the left-hand side of Fig. 5. On the other hand, when the underside or reverse of any card in said uppermost column is to be made visible, all of those cards above, in addition to the selected card itself, are oscillated into the removed position just described, as shown in Fig. 5. However, if the reverse of the selected card is desired to be viewed in inverted position, those cards above it in its respective column are first angularly shifted into said removed position, after which the said selected card can be shifted about its supporting arm as shown at the right-hand side of Fig. 5 and also in Fig. 6.

In order to lift all of the cards of a given column, whether arranged continuously, as shown in Fig. 1, or in a plurality of series or groups, as shown in Fig. 3, backing members 13 are shown as being provided with oppositely positioned upwardly extending parallel ears 14, having apertures 15 thru which extend opposite end portions of the respective rods 7. These members 13 may also have finger engageable extensions, if desired, but in any case are intended to permit the cards of each column to be handled as a unit in shifting them in bulk about their supporting rod, said backing member being of any suitable material, such for instance as sheet metal, plastic, or the like.

Referring to Figs. 3 and 4, the uppermost column at the left side of the device is shown in its normal retracted and lowered position, while a second column beneath it is shown as having been shifted laterally outwardly a short distance, in order that somewhat more of the surfaces of the cards can be seen than is normally visible when it also is in retracted position. A third column is shown as having been extended fully beyond the right hand side of the frame support, so that its card elements can be elevated angularly, as hereinbefore described, entirely independently of the elements of said first two columns, this arrangement being intended to illustrate another of the many arrangements by which a plurality of columns can be shifted laterally any desired extent within the limits imposed by the dimensions of the parallel bars 5 and their supporting frame.

It will also be noted that instead of the unbroken vertical series of cards shown in Fig. 1, and as also composing the central column in Fig. 3, cards of different widths and/or heighths may be provided as shown at the left side of Fig. 3, or as similarly illustrated at the right side of Fig. 3 in the form of envelopes 16, having open sides 17, through which are inserted cards 10'.

Having thus described my invention, what I claim and desire to protect by Letters Patent of the United States, is:

1. The combination of a substantially flat supporting member, with a series of elements, slidable supports carried by said member to permit said series to be shifted from side to side as a unit in a given plane, pivotal supporting means to permit said elements to be moved about a common axis angularly with respect to said plane, and connections between said elements and said last-mentioned means to permit said elements to be moved about parallel axes angularly with respect to said plane.

2. The combination of a substantially flat supporting frame, with a plurality of columns of card-like elements, means carried by said frame to permit said columns to be shifted from side to side in a given plane and independently of one another, radial means connecting a column of said elements to said first means and operative to permit the elements of said column to be moved angularly about a common axis in said first plane, and pivot means coaxial with and connecting each of said elements in said column to said radial means.

3. The combination of a supporting frame, with a plurality of columns of card-like elements, a rod for each column having its end portions connected to said frame and said end portions being movable in parallel paths, arms pivotally and slidably carried by and movable angularly about the axis of each of said rods, and means pivotally securing each of said cards to one of said arms, whereby said columns are movable laterally upon said frame and independently of one another in a given plane, and each of said elements is movable at will about its supporting arm and about one of said rods in planes perpendicular with respect to each other and to said first-mentioned plane.

4. The combination of a supporting frame, with a plurality of columns of card-like elements, a pair of spaced parallel bars carried by said frame, a plurality of parallel rods extending between and slidable laterally upon said bars, a plurality of arms pivotally carried by each of said rods, and a pivotal connection between each of said arms and one of said elements, whereby each element is adapted to be shifted laterally as a part of its column in a plane parallel with said bars, and angularly about its supporting arm and rod in planes perpendicular with respect to each other and to the plane of said bars.

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