April 19, 1932. R. A. FURLONG 1,854,831

VISIBLE INDEX CARD TRAY

Filed Nov. 26, 1929

Fig. 1

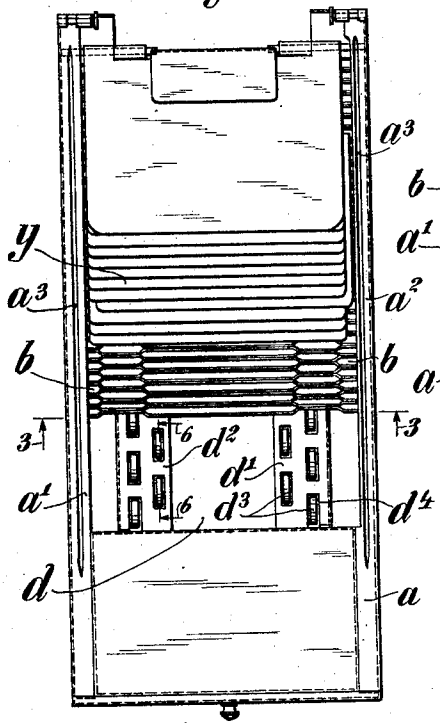


Fig. 2

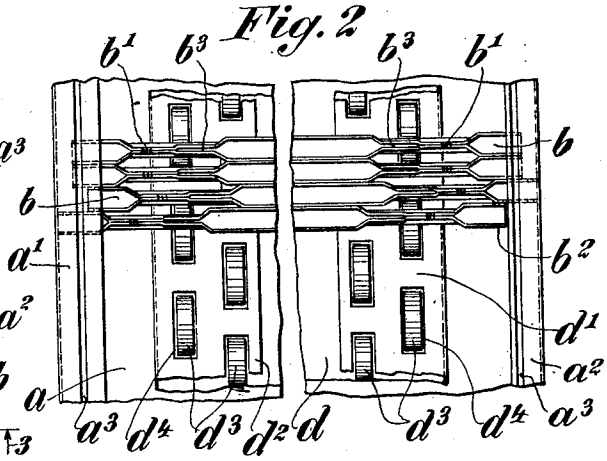


Fig. 6

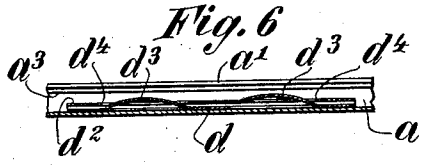


Fig. 3

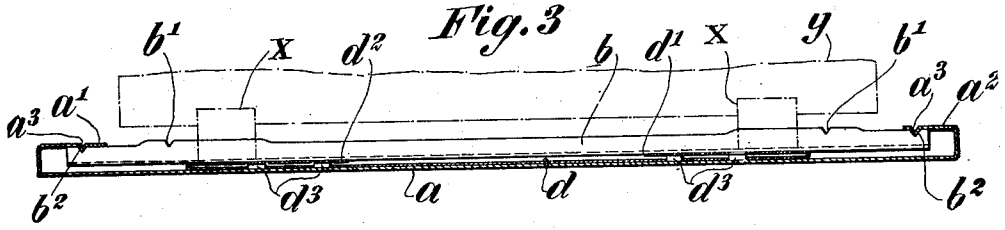


Fig. 4

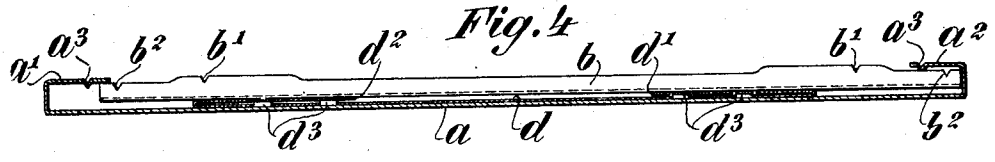
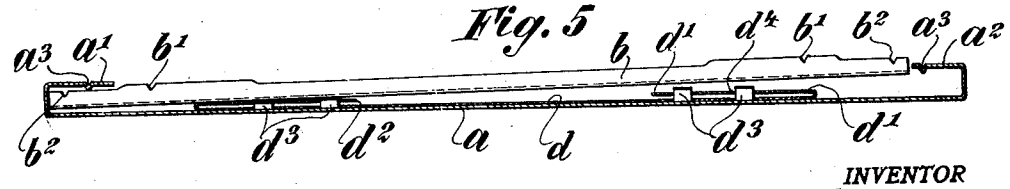


Fig. 5



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UNITED STATES PATENT OFFICE

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VISIBLE INDEX CARD TRAY

Application filed November 26, 1929. Serial No. 409,774.

This invention relates to an improved card tray and card holder for visible index systems. The principal object of the invention is to mount a card holder in a tray by means which permit lateral shifting of a card with the holder in one direction while maintaining positive engagement of the holder with the tray and lateral shifting of the holder in the opposite direction preparatory to its removal from the tray. A further object is to provide means for retaining the holder releasably in its normal position.

A further object of the invention is to provide yielding means of improved construction in direct association with the tray for cooperation with the holders to maintain them yieldingly in their desired position and assist to a degree in their removal from the tray.

A more general object is to improve the construction of card holders in such manner that they shall be rigid in form, simple in construction, cheap to manufacture and convenient to manipulate. This same general object also pertains to the tray structure in respect of the yielding elements which cooperate with the card holders.

Reference is now to be had to the accompanying drawings for a detailed description of the preferred embodiment of the invention, in which:

Figure 1 is a view in plan of a card tray embodying the improvements, some of the card holders being removed therefrom to show the disposition of the springs at the bottom of the tray.

Figure 2 is a fragmentary detailed view in plan and on a somewhat larger scale showing a few card holders mounted in the tray, one of which is offset to the right in position to offset its card while another is shown as moved to the left to permit its removal from the tray.

Figure 3 is a view in transverse section through the tray on the plane indicated by the lines 3—3 of Figure 1 and looking in the direction of the arrows showing a holder in median position.

Figure 4 is a view similar to Figure 3 but showing the holder moved to the right to offset a card.

Figure 5 is a view similar to Figure 4 but showing the holder moved to the left to permit its removal from the tray.

Figure 6 is a detailed view in longitudinal section through the tray showing the construction of the spring means and taken on the plane indicated by the line 6—6 of Figure 1 and looking in the direction of the arrows.

In the type of tray in which the present improvements will be found most useful it is intended that the card holders shall fill the tray and not be movable longitudinally of the tray. Figure 1 illustrates such a tray at a to be filled completely with a series of card holders b normally retained in place by overhanging flanges a', a^2, at opposite sides of the tray, the flange a' in accordance with the present improvements being of greater width than the flange a^2 at the right. The length of each holder illustrated clearly in Figure 3 with reference to the overall width of the tray is such that it can be slid to the right or to the left. To facilitate such movement when and as required it may be convenient to provide each holder with a notch b' or dimple or the like for the insertion of a tool or the thumb nail. Further, for convenience in maintaining each holder in its median or normal position it may be desirable to provide it at each end with a notch b^2 or dimple or the equivalent engageable with a corresponding protrusion a^3 formed on the reverse faces of the flanges a', a^2 of the tray. In the illustrated embodiment such a detent is shown as formed conveniently and inexpensively as longitudinally extending grooves pressed in the top surface of the flanges a', a^2 the protrusion on the underside thereby formed cooperating with the aforesaid notches b^2 in each holder. As shown in Figure 4 the overall length of each holder b in such with reference to the distance between the two flanges a', a^2, that when the holder is moved to the right its left end will not be disengaged from the overhanging flange a', this flange being of such width as to prevent such a disengagement. This relationship permits the offsetting of a card without the possibility of displacement of the holder and the convenient return subsequent-

ly of the holder to its normal median position. The flange a^2, on the contrary, having in mind the length of the holder b is not of sufficient width to prevent the disengagement of the right-hand end of the holder when the latter is moved to the left as shown in Figure 5. On the contrary, when a holder is to be removed from the tray it is slid to the position shown in Figure 5 so that one end is exposed and it may readily be withdrawn.

The preferred form of holder is made as a simple stamping of symmetrical outline. By forming up the portions of the holder adjacent the notches b' at its opposite ends, slots b^3 can be left under which the enlarged hinges x of a card y can be engaged while the hinge itself extends through said slots. This affords a very convenient method of mounting and dismounting the cards on the holders simply by buckling the cards momentarily in their center to reduce the space between the hinges until they can be slid under the slots b^3 whereupon the card expands to its normal flat shape and the hinges become engaged with the holder.

With the construction described it is desirable to subject the holders to spring pressure so that they will be retained more effectively within the tray against accidental displacement, rattling and looseness. In the improved construction such spring means are formed separately and secured in the bottom of the tray. One simple and inexpensive spring element is illustrated. As shown in Figure 5 a flat sheet of metal d is reversely bent along its opposite edges, forming overlying flanges indicated at d', d^2. On the main under section of the strip a series of springs d^3 are struck up at intervals, two rows of such spring leaves in staggered relationship being preferably provided at each side in line with the two overlying flanges d', d^2, respectively. As illustrated in Figure 1 by staggering the spring leaves d^3 in two rows, at each side respectively, the leaves are aligned in pairs transversely of the tray. To expose the leaves to the card holders it is necessary to punch slots in the flanges d', d^2, in line with the respective leaves, the slots being illustrated at d^4. The result is that every bar in the tray is sure to be subjected to the action of at least two of the springs d^3 as appears clearly in Figure 2. The springs urge the bars upwardly into intimate engagement with the overhanging side flanges a' a^2, of the tray, and prevents their accidental movement. When a holder is moved to the left as shown in Figure 5 the springs near its right end thrust it upwards so that when the end is disengaged from the flange a^2 the bar is presented conveniently for withdrawal. The spring sheet d can be conveniently welded to the bottom of the tray as a separate operation.

The invention is not to be limited to the materials employed nor to the form and size of the elements necessary for the attainment of the objects set forth.

What I claim is:

1. In combination with the tray of a visible index, a rigid card holder mounted transversely within the tray, flanges of unequal width carried by the tray and overlying the opposite ends of the card holder, said card holder being retained positively by said flanges when moved in one direction but disengageable from the flanges when moved in the opposite direction, and means to position the holder yieldingly in its normal median position in the tray.

2. In a visible index tray having a plurality of card holders slidably held therein, a spring sheet secured in the bottom thereof and having a plurality of spring leaves struck up therefrom for engagement by the card holders to resist, yieldingly, sliding thereof.

3. In a visible index tray, a spring sheet formed at opposite edges with overlying reversely bent flanges having a plurality of openings therein, a plurality of spring leaves struck up from the lower main section of the spring sheet and protruding through the respective openings for engagement with the card holders.

4. In a visible index tray, a spring sheet formed at opposite edges with overlying reversely bent flanges having a plurality of openings therein, a plurality of spring leaves struck up from the lower main section of the spring sheet and protruding through the respective openings for engagement with the card holders, said spring leaves being arranged in rows extending longitudinally of the tray but staggered with respect to one another.

5. In a visible index tray, a rigid card holder mounted transversely within the tray and displaceable laterally thereof in both directions from a median position, means to retain the holder within the tray when in median position and when in one extreme position of displacement, and to release the holder from the tray when in the other extreme position of displacement.

6. In a visible index tray, a rigid card holder mounted transversely within the tray and displaceable laterally thereof in both directions from a median position, means to retain the holder within the tray when in median position and when in one extreme position of displacement, and to release the holder from the tray when in the other extreme position of displacement, and spring means carried with the tray and coacting with the holder to resist said lateral displacement.

7. In a visible index tray, rigid card holders mounted transversely within the tray, each individual card holder being displace-

able laterally thereof in both directions from a median position, means to retain each holder within the tray when in median position and when in one extreme position of displacement, and to release each holder from the tray when in the other extreme position of displacement, and a series of springs disposed longitudinally of the bottom of the tray and engaging the underside of the holders to hold them yieldingly against such lateral displacement.

This specification signed this 21st day of November, A. D. 1929.

ROLAND A. FURLONG.