

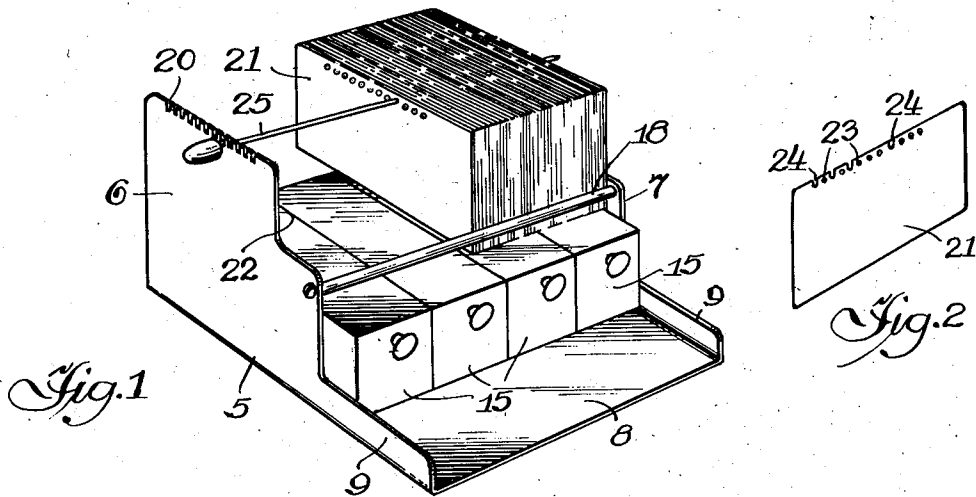
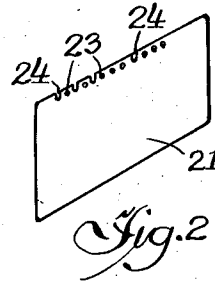
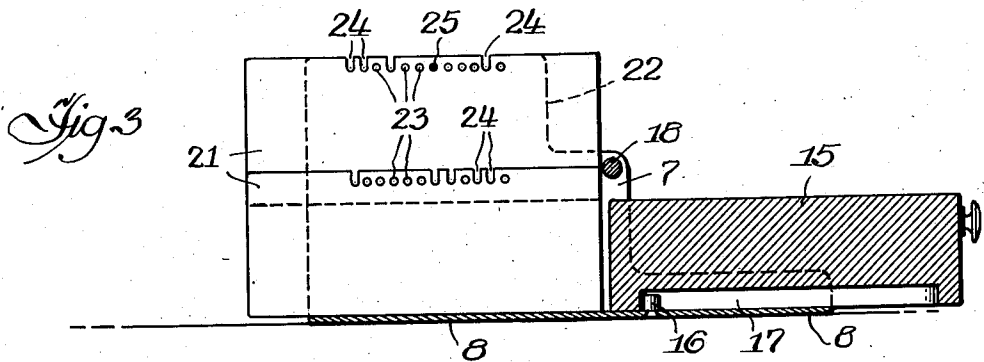
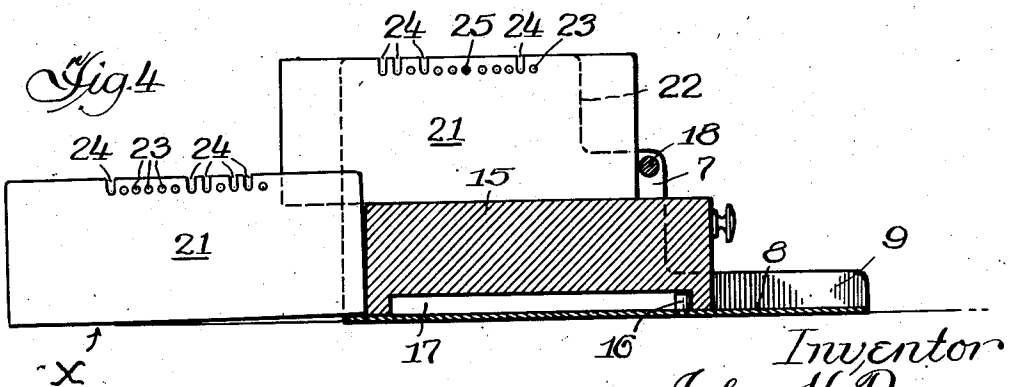
June 16, 1953

J. H. PAGE
CARD SORTING DEVICE

2,642,066

Filed Aug. 3, 1949

2 Sheets-Sheet 1



16
Inventor
John H. Page
Parker & Carter Attys.

June 16, 1953

J. H. PAGE
CARD SORTING DEVICE

2,642,066

Filed Aug. 3, 1949

2 Sheets-Sheet 2

Fig. 5

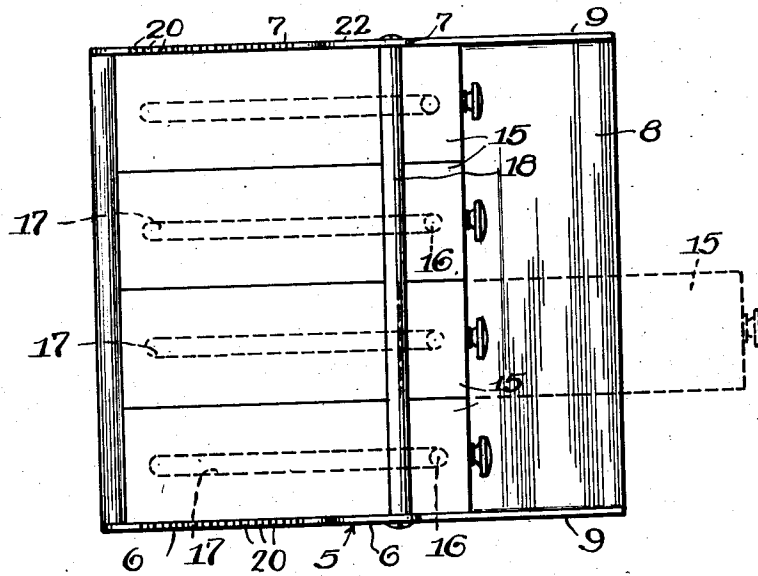


Fig. 6

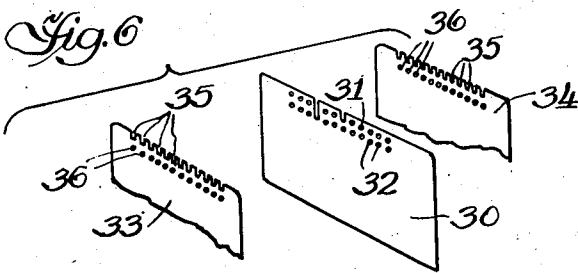


Fig. 8

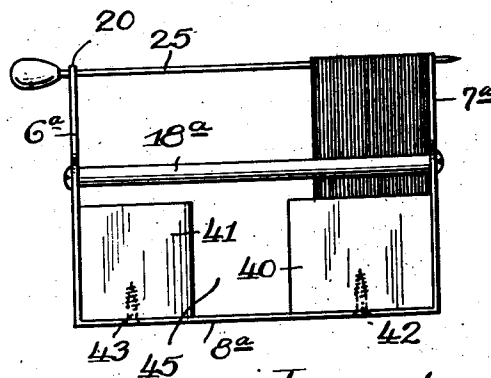
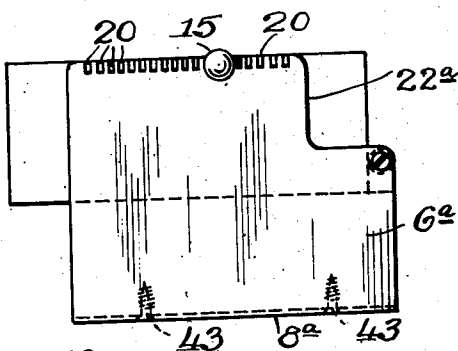


Fig. 7



Inventor
John H. Page
Farber & Carter Attys.

UNITED STATES PATENT OFFICE

2,642,066

CARD SORTING DEVICE

John H. Page, Muskegon, Mich., assignor to The Shaw-Walker Company, Muskegon, Mich., a corporation of Michigan

Application August 3, 1949, Serial No. 108,331

1 Claim. (Cl. 129-16.1)

1

This invention relates to card sorting devices employing cards which are notched or perforated on their edges.

More particularly, the invention relates to sorting devices of the kind broadly disclosed in United States Patent #1,544,172, wherein the cards are punched with a plurality of perforations adjacent their edges, and the cards are then classified by notching, slotting or cutting away the material between one or more perforations and the edge of the card, thus forming a pattern of notches relating to a single classification. It is common practice to sort such cards by jogging them into alignment in some kind of a tray and then passing one or more sorting needles through the various perforations. Lifting the needle or needles will carry with it such cards as have not been notched at that particular hole through which a needle is passed.

The principal object of the invention is to facilitate the sorting of notched cards by reducing the physical effort now required by present sorting devices.

A further object is to provide a device which readily enables a large number of cards to be sorted at one time.

Other objects and advantages will appear as the following description proceeds.

The invention may best be understood by reference to the accompanying drawings, in which:

Figure 1 shows a perspective view of the device with cards and a needle in place ready for sorting;

Figure 2 is a perspective view of a single card of the kind used in the sorting device shown in Figure 1;

Figure 3 is a transverse section of the device shown in Figure 1, with one of the supporting blocks removed for sorting the cards thereon;

Figure 4 is a view similar to Figure 3 but showing the manner in which the supporting block may be returned to initial position for ejecting sorted cards from the device;

Figure 5 is a plan view of the device with the cards omitted.

Figure 6 is a fragmentary perspective view showing a modified form of card punching in which the cards have a plurality of rows of holes and the upper edges of the sorting tray would be provided both with notches and one or more additional rows of holes, for selective positioning of one or more sorting needles;

Figure 7 is a side view of a modified form of sorting device;

2

Figure 8 is an end view of the modified form of device shown in Figure 7.

Referring now to details of the embodiment of my invention shown in Figures 1 to 5, both inclusive, the device consists of a material tray, indicated generally at 5, generally U-shaped in cross-section, with an upright front wall 6 and upright rear wall 7 and a bottom wall 8. The bottom wall 8 and reduced front and rear wall portions 9, 9 project toward one end of the device to form an extended guide for a plurality of similar blocks 15, 15 in side-by-side relation and independently slidable along the bottom wall 8.

Intermediate the top and bottom edges of the side walls 11 and 12 is a cross bar 18, extending between and connected to said front and rear walls. The upper edges of the front and rear walls are provided with a plurality of notches 20, 20 in predetermined spaced relationship with each other to correspond with certain holes and notches formed in the cards 21, which are to be sorted.

Corner portions of the upright walls 6 and 7 are cut away to form L-shaped steps 22, 22 above the cross bar 18 to facilitate the handling of the cards.

A plurality of stops 16, 16 project upwardly from the bottom wall 13 into elongated slots 17 formed in the bottom faces of the blocks 15 so as to limit the movement of each of said blocks from the closed, card supporting position, shown in Figures 1 and 4, to the open non-card supporting position, shown in Figure 3.

One of the cards is shown in Figure 2. It is provided, as usual, with a series of aligned holes 23, 23 along its upper edge, some of which holes are cut away or notched, as indicated at 24. The holes and notches are variously arranged on different cards, for sorting. The holes and/or notches 23, 24 are spaced apart corresponding to the slots 20, 20 on the upper edge of the side walls 11, 12 for the reception of one or more sorting needles 25 so that, when the sorting needle is passed through any hole in the cards, both ends of the needle are supported in corresponding notches on the tray walls 11, 12.

The modified form of card sorting device, shown in Figure 6, is designed for use when the cards, as indicated at 30, have a plurality of rows of holes, indicated at 31 and 32. In this case, the upper edges of the upright walls 33 and 34 of the sorting tray are provided both with a row of notches 35 and with an additional row of holes 36 therebelow, in registering relation respectively with the rows of holes 31 and 32 of the card 30.

In some cases, one or more of the rows of holes 31, 32 may be cut away to the upper edge of the card, as shown in Figure 6. In other respects, the sorting device is constructed and operated in the same manner as the form of device shown in the preceding figures.

In the modified form of device, shown in Figures 7 and 8, the general construction of the sorting tray is similar to that described and shown in connection with Figures 1 to 5 but, instead of having a plurality of sliding blocks for supporting the cards, one or more blocks 40 and 41 are suitably fixed with respect to the tray, as for instance, by fastening screws 42, 43 passing through the base 8a of the tray. The blocks 40 and 41 extend in a direction parallel with the walls 6a and 7a and are spaced laterally from each other to form an open pocket 45 between their adjacent upright faces, as shown in Figure 7.

In the illustrative form shown, the block 40 is somewhat wider than the block 41, but the width of the blocks may be varied, as well as the width of the pocket 45 between said blocks. The upright walls 6a and 7a are provided along their upper edges, as before, with a series of registering notches 20 for supporting one or more sorting needles 25. In other respects, the sorting tray is similar to the form of tray shown in Figures 1 to 5, inclusive.

The use and operation of the device shown in Figures 1 to 5, inclusive, is as follows:

The movable blocks 15 are initially placed in their closed position, as shown in Figure 1. The cards to be sorted are then placed on top of the blocks and jogged into alignment against the bar 18 and rear wall 12 of the tray, as shown in Figure 1.

A sorting needle 25 is then inserted through a selected hole of all the cards. One of the movable blocks 15 in front of the cards is then pulled out beyond the cross bar 18, until it is in position shown in full lines in Figure 3, or in dotted lines in Figure 5. The pocket formed by the withdrawal of this block permits any cards brought over it, which are notched at the hole through which the needle was passed, to drop to the bottom of the tray. The pocket is preferably of less depth than the vertical height of the cards, so that the dropped cards interleave with the cards which remain suspended on the sorting needle. This interleaving, together with the fact that the pocket is comparatively narrow, maintains the dropped cards in their original order and in approximately vertical position. If a few cards only have dropped, the operator may grasp them and pull them out from the end of the tray opposite the removed block 15. In case it is only desired to make reference to the cards, they may be pulled out sufficiently to permit such reference and then restored to their original position in the tray.

If any great number of cards are dropped, then the removal is facilitated by returning the withdrawn block into its closed position. The return movement of this block forces any cards, which have dropped below their original position on the block, into the extended position shown at "X" in Figure 4, where they can be easily gripped and disposed of.

It often occurs in sorting cards that many cards do not drop down as far as others due to crowding of the cards. By ordinary methods of sorting, this is a serious handicap to speedy and accurate work. It will be seen, from Figure 4, that the action of returning the block to its closed position will carry all the cards with it, which

have dropped even the short distance required to clear the sorting needle. This feature is particularly advantageous when the cards are made of thin stock or of poor quality paper, as such cards, due to their light weight and surface roughness, are disposed to cling to the adjoining cards and fail to drop far enough to be readily withdrawn.

Although the number of sliding blocks 12 may vary, and some may be fixed, or entirely omitted, it will be understood that it is often desirable to have at least two separate blocks, so that one block can be used for a temporary support for certain of the cards, while the other block can be removed to form an open pocket, into which certain of the cards may be dropped. By providing a plurality of sliding blocks 12, such as the four indicated in the drawings, the operator can remove the blocks selectively as desired, depending upon the number of cards to be sorted. In some cases, it is helpful to remove the blocks progressively from one side wall to the other as the sorting proceeds, using one or more of the other blocks for temporary support of other cards, either before or after they have been sorted, or when certain of the cards are to be re-sorted, with the sorting needle or needles in another position. Accordingly, the provision of a plurality of sliding blocks, as shown in the form of Figures 1 to 5, gives a wide latitude for sorting operations.

The modified form of sorting device, illustrated fragmentarily in Figure 6, operates upon substantially the same principle as the sorting devices previously described, excepting that the cards 30 have a plurality of rows of sorting holes 31 and 32, which require a corresponding number of sorting apertures or slots 35 and 36 formed along the upper edge of the side walls 33 and 34.

The use and operation of the modified form of sorting device shown in Figures 7 and 8 is, in the main, very similar to that of the form shown in Figures 1 to 5, excepting that, instead of having slidable blocks to form the card supporting platform, the modified form has one or more fixed card supporting blocks 40 and 41 with an open pocket 45 adjacent the blocks. The cards can be sorted by moving them laterally along the sorting needle over the open pocket 45 so that the selected cards will drop into the latter.

It will be observed that, in both forms shown in Figures 1 to 5 and 7 and 8, the blocks, whether sliding or fixed, provide, in effect, platform means which is stepped at different heights parallel with the upright walls to permit certain cards to drop from a higher step to a lower step. Where sliding blocks are employed, the stepped arrangement results when one or more of the sliding blocks are removed from their card-supporting position beyond the cross bar 18, in which case the bottom wall or base 8 forms the lower step for supporting the cards. In the modified form shown in Figures 7 and 8, the blocks 40 and/or 41 form the upper step, and the bottom wall 8a in the pocket 45 forms the lower step for reception of cards that are dropped into said pocket.

Although I have shown and described certain embodiments for the purpose described, it will be understood that I do not wish to be limited to the exact construction shown and described but that various changes and modifications may be made without departure from the spirit and scope of the invention as defined in the appended claim.

I claim:

A card-sorting device comprising a base, a pair of spaced upright walls having a series of sorting needle apertures along the upper edges thereof, a horizontal cross member connecting said walls intermediate the top and bottom thereof for aligning the proximate ends of the cards to be sorted, and a plurality of blocks of uniform height slidably mounted in side-by-side relation on said base between and parallel to said side walls, said blocks being arranged for selective withdrawal beneath said cross member to non-card-supporting position beyond the latter.

JOHN H. PAGE.

References Cited in the file of this patent

UNITED STATES PATENTS

Number	Name	Date
2,220,562	Wardy	Nov. 5, 1940
2,261,717	Connor et al.	Nov. 4, 1941

FOREIGN PATENTS

Number	Country	Date
19,565	France	Dec. 5, 1914 (Addition to 445,437)
865,042	France	Feb. 10, 1941
583,391	Great Britain	Dec. 17, 1946