

Nov. 4, 1941.

R. CONNOR ET AL

2,261,719

DEVICE FOR SORTING CARD RECORDS

Filed March 2, 1940

2 Sheets-Sheet 1

FIG. 1

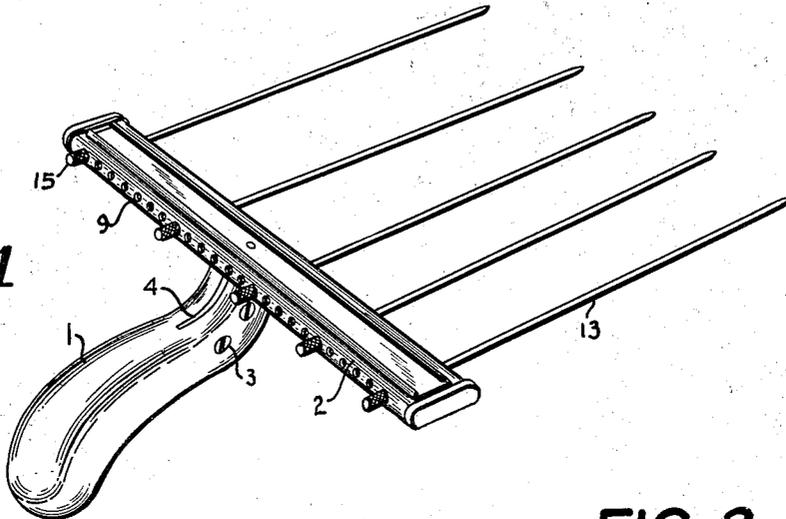


FIG. 2

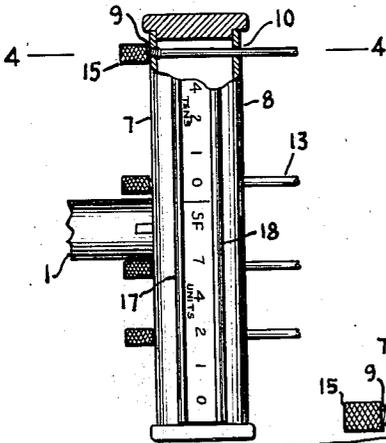
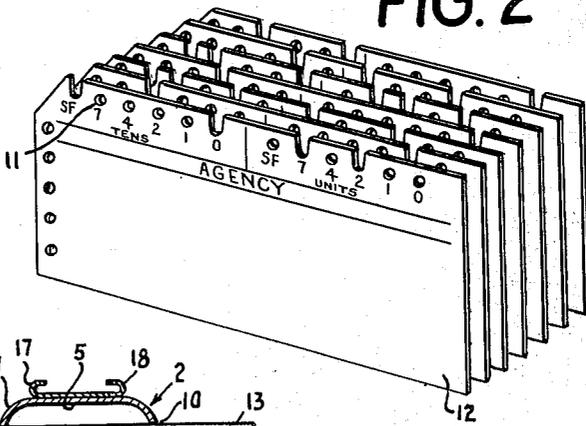


FIG. 3

FIG. 4

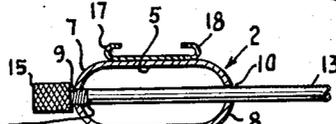


FIG. 5

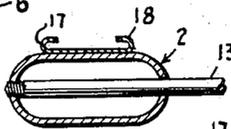


FIG. 6

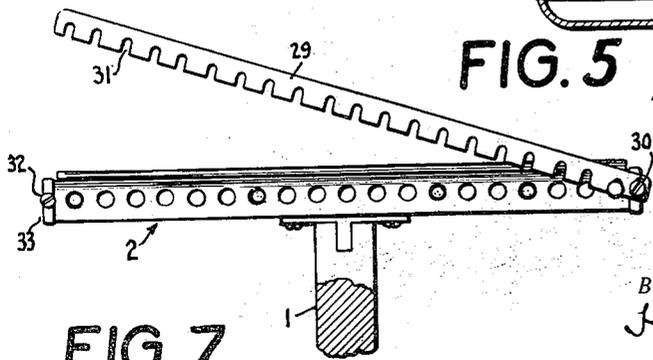
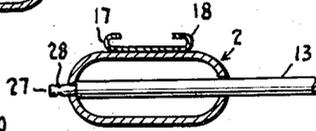


FIG. 7

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2 Sheets-Sheet 2

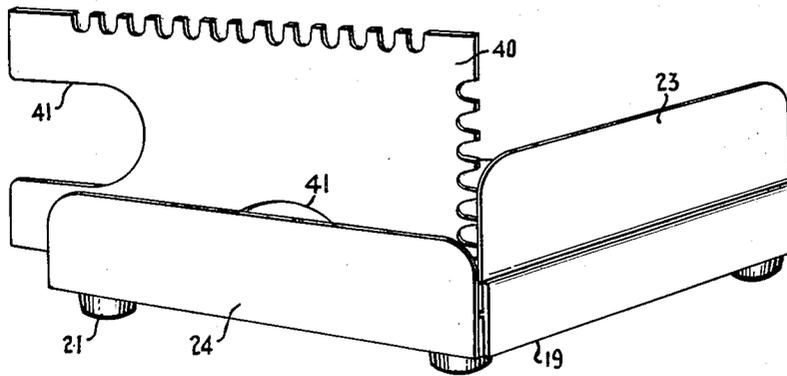


FIG. 8

FIG. 9

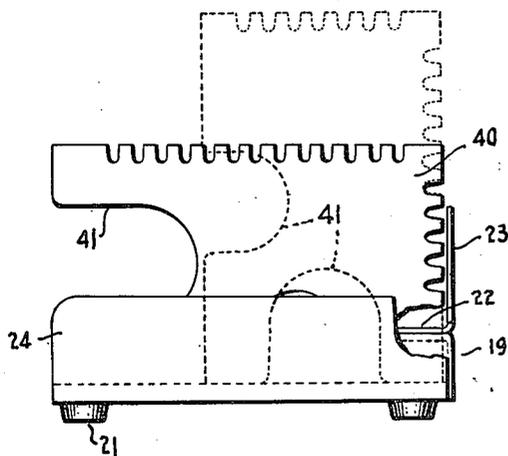
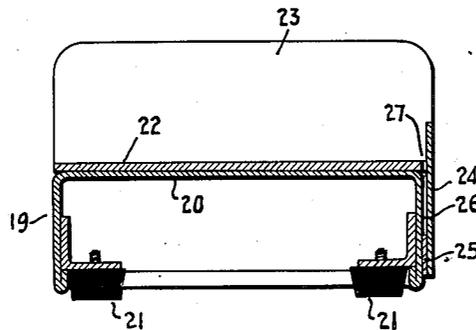


FIG. 10

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DEVICE FOR SORTING CARD RECORDS

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Application March 2, 1940, Serial No. 321,826

15 Claims. (Cl. 129—16.1)

Our invention relates to card sorting systems such as are described in United States Letters Patent to A. Perkins, Nos. 1,544,172, issued June 30, 1925, and 1,739,087, issued December 10, 1929.

As set forth in these patents, a number of loose leaves, cards, tallies, checks or the like, are provided with a plurality of perforations which are punched in the cards adjacent one or more edges. Certain of these perforations are cut away to the edge forming a pattern of slots or notches which relate to a single classification.

The cards thus notched or slotted may then be sorted into numerical, geographical, or other desired sequence, by passing a needle or sorting device through the perforations and elevating the same, the undesired cards will be carried away by the sorting device while the wanted ones will fall into the tray.

This system has attained very wide commercial acceptance and use. In practice however, while it is possible to use the Perkins system for selective sorting as well as sequence sorting, it requires considerable more time in making the selection due to the necessity of passing the sorting needle or device through the perforations several times.

For example, if it is desired to segregate a relatively small quantity of cards from a total of hundreds of thousands, as for example, from a sales record covering the entire United States it is desired to select a comparatively small quantity for a certain territory. Obviously the individual designation number for each of many territories would frequently be made up of a number of digits, for example, 297,682, and to segregate all cards bearing this number by means of a single sorting needle, would require handling of all of the cards for each digit, and furthermore because of employing the 1—2—4—7 code as set forth in Perkins Patent No. 1,739,087, it would be necessary to sort the cards twice for such numerals as 3, 5, 6 or 8.

A serious objection to this method of sorting for the purpose of selecting a small group from a large one is that the cards are rearranged in sequence and must be resorted to restore them to their previous order.

Our invention has for its principal object to construct a sorting device having a plurality of needles so that several classifications may be selected at one time.

A further object is to so construct the device that the location of the needles may be quickly and readily changed by the operator, so that he may fit them to register with the pattern which

relates to the particular classification which is to be selected.

A further object is to provide the needle holder with an indicia to guide the operator in placing the sorting needle correctly so as to form the required pattern.

A further object is to so form the holder that the needles will be held straight. This is very important due to the fact that the perforations in the cards being in alignment, if the needle is not straight but inclined at an angle, while it might be possible by springing the needle to enter the points in the perforations in the front card at the start, since practice has shown that the needles to accomplish the most satisfactory result should be at least a foot long, it is clear that at the back of the stack of cards the points would be entirely out of register with the perforations.

Our means of accomplishing the foregoing objects may be more readily understood by having reference to the accompanying drawings, which are hereunto annexed and are a part of this specification, in which:

Fig. 1 is a top perspective view of our improved needle holder with several sorting needles in position;

Fig. 2 is a top perspective view of a small group of cards which have been slotted or notched to represent various classifications;

Fig. 3 is a fragmentary view of the needle holder with the handle and needle broken away and shows indices for identifying the needles; a portion is also broken out of one end of the holder to expose an assembled needle and an end plug;

Fig. 4 is a cross section taken on a line 4—4 in Fig. 3 showing one means of retaining the needles in the holder;

Figs. 5 and 6 are similar cross sectional views showing modified forms of mounting the needles in the holder;

Fig. 7 is a front view of the holder showing one way of attaching the handle thereto and also showing means for holding the type of needle shown in Fig. 6;

Fig. 8 is a perspective view of a card supporting stand with a master card template in place;

Fig. 9 is a cross section taken through the approximate center of Fig. 8 with the template not shown; and

Fig. 10 is a front view of the card supporting stand with the master template shown in the same position as in Fig. 8 and also showing by dotted lines the said template faced about as well as rotated one fourth of a turn.

Similar reference numerals refer to similar parts throughout the entire specification.

As shown in the drawings, our improved holder comprises a handle 1 which may be made of wood or plastic material secured to the elongated bar or rod-like needle support 2 by means of screws 3 which pass through an extension 4 on the needle support, or it may be secured as shown in Fig. 7. Obviously any suitable or convenient manner of fastening may be employed.

The needle support 2 is preferably formed of a tube having two flat sides 5 and 6 which are joined by arcuate walls 7 and 8. The ends of the tube are preferably closed by plugs which may be pressed into the ends as clearly shown in Fig. 3. The walls 7 and 8 are provided with a plurality of holes 9 and 10 corresponding in number and register to perforations 11 formed in the cards 12 shown in Fig. 2. As shown in Fig. 3 the needles 13 (of which we only illustrate four though it will be obvious to persons skilled in the art that a lesser or greater number may be used) are provided with a threaded end 14 which is passed through an opening in the arcuate wall and screwed into the arcuate wall 7. The needle is then locked in place by means of a knurled knob 15 threaded onto the end 14 of the needle. It will be clearly seen that the needles 13 being supported by both walls 7 and 8, they are necessarily straight if the holes through which they pass are accurately formed in the first place. In Fig. 5 we omit the knurled knobs which saves expense, but it is not as desirable as the construction shown in Figs. 3 and 4.

In Figs. 6 and 7 we show a modified form for securing the needles 13 to the holder. As there shown the end 27 of the needle is provided with a reduced stem or neck 28 which is formed by a circumferential groove. In Fig. 7 we show a lock bar 29 which is pivotally secured to one end 30 of the tube, and one edge of the lock bar 29 is provided with a plurality of notches 31 which correspond in number to the holes in the tube. The notches are fitted to and coincide with the necks 28 on the ends of the needles. A screw 32 is mounted in the other end 33 of the tube, the head being spaced from the tube to permit the entrance of the lock bar 29, thus preventing the dislodgment of the needles until the lock bar has been elevated as shown in Fig. 7.

Parallel ribs 17 and 18 are suitably secured to the flat side 5 to receive a suitable strip of paper or cardboard bearing indicia corresponding to the coding on the cards 12.

In order to expedite the sorting and for greater convenience, we provide a card holder shown in Figs. 8, 9 and 10. As illustrated, it comprises a four-sided base 19 and a flat wall 20. Angle bars are suitably secured to the side walls by spot-welding or any other desired manner. These bars serve as a convenient mounting to which may be secured the rubber feet 21.

On the wall 20 we weld a sub-plate 22 which is formed with a right angle wall 23. This plate furnishes a stop for limiting the movement of the cards 12 from left to right when they are placed on the card holder for the purpose of aligning the perforations 11 punched in the cards 12. A front plate 24 may be secured to one side of the card holder. The plate 24 is spaced from the side of the card holder by a metal strip 25 which extends vertically for approximately one-third the height of the card

holder leaving a space 26 intermediate the two. The plate 22 is cut away as shown at 27 to coincide with the space 26 and also to permit the front edge of plate 22 to be flush with the outer surface of plate 24 thus forming a tight corner to prevent a card from passing through when the cards are being stacked.

The card holder is equipped with a master guide plate or template 40 which fits into the space 26 and abuts the plate 24. The edges of the guide plate 40 are notched to correspond with the perforations 11 in the cards 12. A thumb cut 41 is formed at two sides of the template 40.

The operation is as follows: the template 40 is placed in the card holder with the notched edge uppermost and a portion extending above the upper surface of plate 22 equal to the size of the cards and the thumb cut 41 to the left. A stack of cards is now grasped in the left hand and retained in the position shown in Fig. 2. They are then placed upon the card holder and moved toward the right until all cards are stopped by the plate 23, the thumb passing into the opening 41.

The multiple needle support 2 shown in Fig. 1 is equipped with needles arranged in place corresponding to the pattern of notches formed in certain cards which it is desired to select from the stack. The holder handle is now held with the right hand just above the template 40 with the extreme right end approximately flush with the right hand edge of said template and the device is then lowered, until the needles rest in the corresponding grooves at a point fairly close to the holder where the spacing of the needles is practically identical with the grooves in the template.

Without removing the needles from the grooves the holder is now pulled away from the cards until the points of the needles rest in the grooves in which position they may all be simultaneously inserted in the holes in the cards which are then manipulated as disclosed in the previously mentioned Perkins Patent No. 1,739,087, resulting in undesired cards remaining on the needles and predetermined cards dropping from the stack.

Having described our invention what we regard as new and desire to secure by Letters Patent is:

1. In a sorting device for sorting cards, a holder formed of a tube having flattened sides joined by arcuate walls, a plurality of holes in said arcuate walls, a plurality of needles, means to detachably secure one or more of said needles in said holes.

2. In a card sorting device having a stack of perforated and slotted cards; a holder, there being a plurality of holes therein corresponding in number and registering with the perforations and slots in said cards, a plurality of needles, each pointed at one end and provided with a circumferential groove adjacent the other end, indicia on said holder, means engageable with said grooves to detachably secure said needles in predetermined holes in the holder, said means comprising a lock bar pivoted to said holder and having a plurality of notches registering with the holes in the holder.

3. An article of manufacture for facilitating the sorting of cards having edges with notches and perforations therein; an elongated rod-like holder having a single row of aligned holes therein, one or more needles in said holes for engaging

the said card perforations and notches, means on said needles to secure them in predetermined locations in said holder.

4. An article of manufacture for facilitating the sorting of cards having notched edges; an elongated holder having a single row of aligned holes therein, one or more needles in said holes, means on said needles to secure them in predetermined locations in said holder, and a channel having inturned edges secured to one side of said holder, said channel being adapted to receive indicia whereby to determine the locations of said needles.

5. An article of manufacture for facilitating the sorting of cards having notched edges; a holder comprising a flattened tube, the flattened sides joined by arcuate walls, a plurality of apertures in said walls, the apertures in one wall being threaded, and one or more needles mounted in said holder, one end of said needles being threaded and fitted to said threaded apertures.

6. An article of manufacture for facilitating the sorting of cards having notched edges; an elongated holder having a single row of aligned holes therein, one or more needles in said holes, means on said needles to secure them in predetermined locations in said holder, and means on said holder to hold said needles in parallel and longitudinal alinement.

7. An article of manufacture for facilitating the sorting of cards having edges with notches and perforations therein; an elongated rod-like holder having a single row of aligned holes therein, one or more needles in said holes for engaging the said card perforations and notches, means on said needles to secure them in predetermined locations in said holder, and means on said holder to detachably secure them in predetermined locations.

8. In a card sorting device having a stack of perforated and slotted cards; a holder, there being a plurality of holes therein corresponding in number and registering with the perforations and slots in said cards, a plurality of needles, each pointed at one end and provided with a circumferential groove adjacent the other end, indicia on said holder, and means engageable with said grooves to detachably secure said needles in predetermined holes in the holder.

9. An article of manufacture for facilitating the sorting of cards having edges with notches and perforations therein; an elongated rod-like holder having a plurality of openings therein, one or more needles in said openings for engaging the said card perforations and notches, the edges of said openings forming bearings to prevent transverse movement of said needles and means to secure said needles in predetermined locations in said holder.

10. An article of manufacture for facilitating the sorting of cards having edges with notches and perforations therein; an elongated rod-like holder having two rows of registering aligned holes therein, one or more needles in said holes for engaging the said card perforations and notches, means on said needles to secure them in predetermined locations in said holder.

11. An article of manufacture for facilitating the sorting of cards having notched edges; an elongated holder having two rows of registering aligned holes therein, one or more needles in said holes, means on said needles to secure them in predetermined locations in said holder, and a channel having inturned edges secured to one side of said holder, said channel being adapted to receive indicia whereby to determine the locations of said needles.

12. An article of manufacture for facilitating the sorting of cards having notched edges; an elongated holder having two rows of registering aligned holes therein, one or more needles in said holes, means on said needles to secure them in predetermined locations in said holder, and means on said holder to hold said needles in parallel and longitudinal alinement.

13. An article of manufacture for facilitating the sorting of cards having edges with notches and perforations therein; an elongated rod-like holder having two rows of registering aligned holes therein, one or more needles in said holes for engaging the notches and perforations therein, means on said needles to secure them in predetermined locations in said holder, and means on said holder to detachably secure them in predetermined locations.

14. An article of manufacture for facilitating the sorting of cards having notched edges; a holder comprising a flattened tube, the flattened sides joined by arcuate walls, a plurality of apertures in said walls, the apertures in one wall being threaded, one or more needles mounted in said holder, one end of said needles being threaded and fitted to said threaded apertures, and locking means fitted to the threaded ends of said needles to lock them against longitudinal movement.

15. An article of manufacture for facilitating the sorting of cards having edges with notches and perforations therein; a rod-like holder, a plurality of needles for engaging the said card perforations and notches, there being a plurality of openings in said holder which form bearing surfaces for said needles which prevent transverse movement of said needles, and means to detachably secure said needles in certain predetermined openings.

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