Fig. 1

Fig. 2

Fig. 3

Fig. 4

Fig. 5

Inventor

RAMON E. COUCEYRO

By Anderson, Quedeka, Fitch, Even, & Tabin

Attys.

3,418,728
PUNCH CARD INTERPRETER
Ramon E. Couceyro, 817 E. Douglas St.,
Bloomington, Ill. 61701
Filed July 27, 1966, Ser. No. 568,177
5 Claims. (Cl. 35—2)

ABSTRACT OF THE DISCLOSURE

A punch card having punched holes located within various columns and row positions is interpreted by slideably positioning a plate relative to the card to align a mask having a plurality of windows with the punched hole positions in a column. An array of indicia is printed in columns on the plate with each indicia in a column being correlated with a punched hole position in said card. Disposed behind the card is a visual indicator such as, for example, a color coding which is viewed through an aligned window and a punched hole. The color viewed is correlated with a color coding for the column in which is located the indicia for the punched code.

This invention relates to a manually operable apparatus for interpreting coded information upon a punch card.

One form of punch card for which this invention is particularly adapted is a so-called "IBM" card. Such cards are generally in the form of a rectangular sheet of relatively stiff paper which is punched with a plurality of rectangular holes. Each of the holes or combinations thereof correspond to information in the form of a letter, numeral or special character. Usually such cards are punched by automatic means thereby coding the information permanently upon the card. The cards are normally decoded by complex automatic machinery which provides the information thereon in printed form. Frequently, for one purpose or another it is desired to obtain selected information from one or a small number of cards. Such a situation may arise, for example, during a financial auditing when it is necessary to verify the accuracy of a particular accounting entry. In this connection it is desirable to obtain the information as quickly and simply as possible without going to the bother of obtaining a printout by automatic decoding machinery.

A main object of this invention is to provide an apparatus for conveniently interpreting selected information upon a punch card.

A more particular object is to provide a manual punch card interpreter which is relatively small and convenient to use.

A still further object is to provide a punch card interpreter which is accurate and which is inexpensive to manufacture.

Other objects and advantages of the present invention will become apparent through reference to the following description and accompanying drawings, in which:

FIGURE 1 is a front plan view of a manual punch card interpreter in accordance with this invention with a punch card in reading position in the interpreter.

FIGURE 2 is a plan view similar to that of FIGURE 1 with the punch card advanced for interpretation of still another punch column.

FIGURE 3 is a front plan view of the interpreter with a portion broken away.

FIGURE 4 is a side view of the card interpreter of FIGURE 3.

FIGURE 5 is a back plan view of the interpreter illustrated in FIGURE 3.

Briefly, the invention is shown in the drawings and comprises a card interpreter in the form of a relatively small rectangular shaped case 11 through which an "IBM" type punch card 13 may be slidably passed. A portion of the case 11 defines a mask 15 for viewing a selected column of punches. When the case 11 is suitably positioned with respect to the card 13, the user can readily ascertain which areas of a particular vertical column have been punched. The information thus obtained is interpreted by means of an array 17 of indicia printed upon the front surface of the case 11. Thus, the user merely inserts the punch card 13 into the case 11 and slides the card therethrough until the punch column corresponding to the information desired is viewable through the mask 15. The information so obtained is interpreted by means of a color code correlated with the indicia or the array 17 to determine the information desired. It should be understood that while the particular device illustrated is adapted for use with one type of punch card, other cards may be interpreted without departing from the features of this invention, as will be hereinafter more clearly described.

As previously mentioned, a punch card, such as the card 13 illustrated in FIGURES 1 and 2, is generally constructed from stiff paper which is cut in a rectangular shape. The card is printed with horizontal rows of numerals ranging from "0" to "9" and may be further divided into vertical columns which are successively numbered as at 19. The information is coded by punching out the row numbers of a column with a rectangular punch. The holes punched along the rows from "1" to "9" are often termed "digit" punches. Across the upper portion of the card is an unnumbered border 21. The holes punched along this border and along the "0" row are usually termed "zone" punches.

Normally, three catagories of information are coded upon the card, namely, letters of the alphabet, numerals and special characters. With reference to the particular card illustrated, the holes which designate a particular letter of the alphabet are spaced along a single vertical column. Two holes are punched in the column, one being a "zone" punch and the other a "digit" punch. Since there are three possible "zone" punches and nine possible "digit" punches, there are twenty-seven two hole combinations possible. The twenty-six letters of the alphabet are thus accommodated leaving one combination not used.

A single numeral from 0 to 9 may be coded along a vertical column by punching a single hole in the column. This single hole is made either as a lowermost "zone" punch in the 0 row to designate the numeral 0 or as a "digit" punch to designate a numeral from 1 to 9. Since there are nine digit rows and one lowermost zone row, ten possible locations are provided, one for each of the numerals mentioned.

Special characters, such as "#," "$," "&," "%," are coded on the card in the following manner. As in the cases of letters of the alphabet or numerals all of the holes denoting a selected special character are located along a single vertical column. Each character may be designated by either two or three holes. A punch in the 8 horizontal row and another "digit" punch are always present when it is desired to signify a special character rather than a

numeral or letter of the alphabet. A third "zone" punch may or may not be present. Since there are eight "digit" punches which may be selected in combination with the 8 row punch and further since there may or may not be one of the three "zone" punches in combination with the two "digit" punches, there are thirty-two possible special character hole combinations in a single column. With the particular card illustrated, twenty-three special characters have been shown, however, it being understood that up to thirty-two different characters may be coded upon the card illustrated. It will be apparent that, by selecting the hole combination desired, an alphabetic letter, numeral or special character may be designated in each card column.

The case 11, as previously mentioned, is rectangularly shaped and is adapted to permit a punch card 13 of the type illustrated in FIGURES 1 and 2 to be slidably passed therethrough. The case is preferably constructed of plastic or other light durable material and comprises a rectangular, planar front plate 23 and a similarly shaped back plate 25. The edge surfaces of the plates are aligned and the plates 23 and 25 are secured together at their ends by supporting strips 27 thereby forming a rigid assembly. Opposed flat faces of the cards are spaced approximately the thickness of a punch card to define a passage to receive the punch card without binding or other obstruction as it is passed through the case 11. The length of the passage is slightly greater than the width of the punch card so that the card may be easily guided therethrough; however, it is not so great as to allow the card to substantially shift along the longitudinal axis of the case.

The left edge of the front plate 11 as viewed in FIG-URES 1, 2 and 3 is recessed slightly to define the mask 15 area of the case. The mask 15 is perforated with a row of aligned rectangularly shaped windows 29. The position of each window 29 vertically registers with the position of one of the zone or digit rows upon the punch card. If desired, the windows 29 of the digit rows of the mask may be numbered as illustrated.

A portion of the surface of the back plate directly beneath the mask is colored thereby providing a colored code to facilitate correlation with the indicia array 17 printed upon the face of the front plate 23. As illustrated in FIGURE 3, the digit windows 29, i.e. those corresponding to the rows 1 through 9 of the punch card are backed in the color black. The upper zone punch window 29a is backed in the color blue, the middle zone punch window 29b is backed in red and the lower zone punch window 29c is backed in green.

The indicia array 17 upon the front plate of the case 11 is divided into two matrix areas; namely, an alphabetical area 31 and a special character area 33. The alphabetical area is further divided into three vertical columns 35, 37 and 39. Two of these columns 35 and 37 contain nine letters and the third column contains eight letters. Each of the columns is color coded to correspond with the color backing of one of the zone windows. In the particular embodiment, the leftmost column 35 is printed in blue, the intermediate column 37 in red and the rightmost column 39 in green.

The special character area 33 is printed in four vertical columns 41, 43, 45 and 47. The first column 41 on the left is printed in black, the second 43 in blue ,the third 45 in red, and the fourth 47 in green. It should be understood that while the illustrated embodiment utilizes color coding to facilitate correlation between the various mask windows and the indicia array 17, other systems may be readily used to facilitate correlation without departing from the scope or spirit of this invention. The outwardly disposed face of the backing plate 25, as illustrated in FIG-URE 5, is printed with abbreviated instructions describing a suggested method of using the interpreter.

Referring to FIGURE 1, the interperter is operated by slidably inserting a punch card 13 into the case between the facing surfaces of the front and back plates 23 and 25. The card is slidably positioned until the vertical punch

column to be decoded is aligned with the windows 29 of the case mask 15. The user then views down the column windows taking mental note of those colors which are visible. In the example illustrated in FIGURE 1, holes have been provided in the card so the red or middle zone color is visible and, further, a single black color is visible through the seventh row window. Since there are two holes in the card 13, i.e., a "zone" punch and a "digit" punch, it is concluded that an alphabetical letter has been coded in the column under consideration. The information is decoded by locating the letter which is in the seventh row of the red column i.e. the letter P. Briefly, the color of the "zone" punch designates the color of the column in which the letter is printed and the "digit" punch, the particular letter in that column.

In the event that a numeral is coded in the column being considered, a single color will be visible through the mask and will be either black corresponding to the numerals 1 through 9 or green corresponding to the numeral 0. The numeral coded is that numeral printed directly adjacent the window 29 through which the color is visible.

Referring to FIGURE 2, the card 13 is slidably moved through the case 11 until another column to be interpreted is again aligned with the windows 29 of the mask 15. In the example of FIGURE 2, the color black is visible through the windows corresponding to the rows 8 and 3 and the color green is visible through the lower zone window 29c. Since two digit windows are black, one being the digit window 8, the user immediately realizes that a special character has been coded in the particular column under consideration. Since the color green is visible through the lower zone window 29c, the character will be found in the green column of the character area 33, that is, the column second from the left. Reading down the green column to the third row thereof the viewer can readily determine that the character coded is a ",". If for example, none of the colors behind the zone punch windows were visible through the mask 15, the user would realize that the character designated was to be found in the black or leftmost colume 41 of the character area 33 of the array and it would be in that row corresponding to the row of the blackened window of the mask other than the row 8, namely, the 3 row, such character in this example being "#".

It will be apparent that a convenient, accurate interpreter has been provided and it greatly facilitates the decoding of selected information punched upon a punch card. Although but one specific embodiment of this invention has been herein shown and described, it will be understood that details of the construetion shown may be altered without departing from the spirit of this invention as defined by the following claims.

I claim:

1. A device for interpreting coded information in the form of punched holes located within a column of punched hole positions upon a flat card, said device comprising a front plate adapted for slidable positioning relative to said punch card, a mask on said front plate having a plurality of windows for alignment with punched hole positions in a column to permit viewing of hole positions in the punched cards, an array of indicia printed in columns upon said front plate and correlated with the punched hole positions in said card, and means disposed behind said card with a visual code portion for viewing through a punched hole in said card and an aligned window in said mask, and visual coding means on said plate for correlating a column of indicia with the visual code portion viewed through said punched holes whereby the column is indicated in which the indicia for the punch hole code is located.

2. A device in accordance with claim 1 in which said indicia array is in a matrix of vertical columns and horizontal rows with said horizontal rows being horizontally aligned with said windows in said mask.

3. A device in accordance with claim 1 in which said

3,418,728

5

visual code portions are coded by colors and said visual coding means includes colors for each column for matching with said colors of said visual code portions.

4. A device in accordance with claim 3 for interpreting a series of adjacent, parallel columns of punched holes and including a guide means secured to said front plate for guiding said card for sliding relative to said mask openings and to maintain said columns parallel to said mask openings.

5. The apparatus in accordance with claim 4 in which there are zone rows of windows in said mask which are unaligned with said indicia rows, and in which a combination of colors visible through a zone window and another window indicates a selected column of indicia.

6

References Cited

UNITED STATES PATENTS

2,344,585	3/1944	Bailey	35—2
2,385,732	9/1945	Redding	35—1
2,390,439	12/1945	Johnson	35—2 X
2,984,018	5/1961	Coleman et al.	35—9

EUGENE R. CAPAZIO, *Primary Examiner.*

W. W. NIELSEN, *Assistant Examiner.*

U.S. Cl. X.R.

235—61.11