Oct. 3, 1967 G. E. BROWN 3,344,529

CARD CHECKER

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Fig. 1.

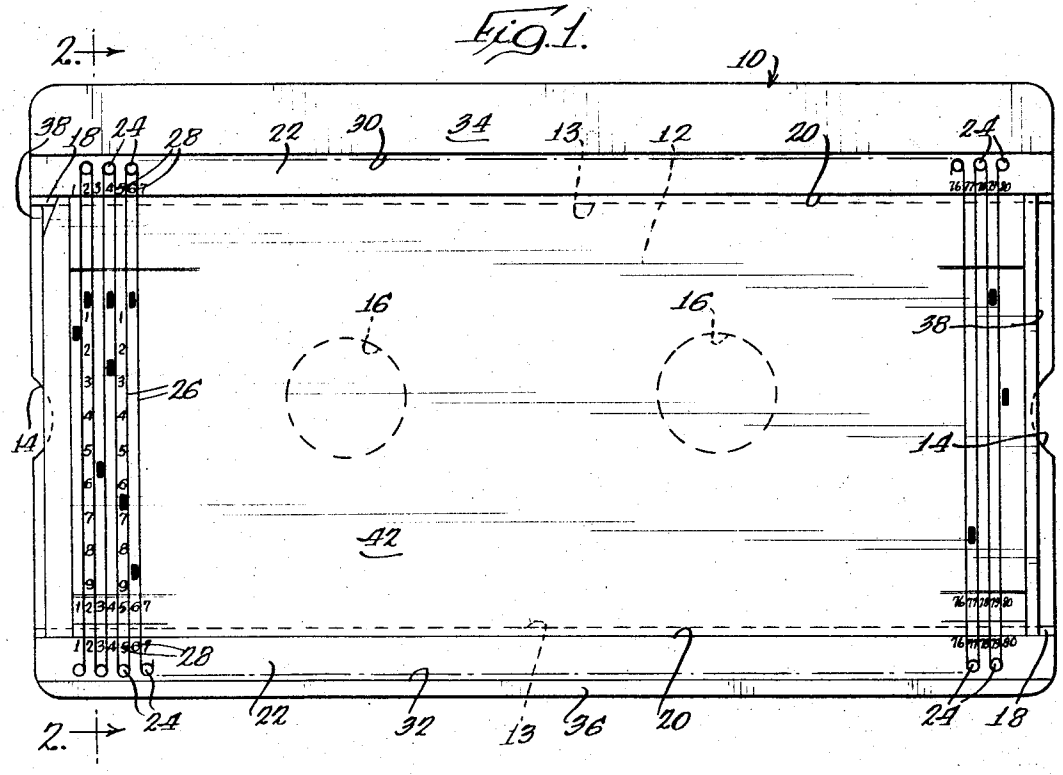


Fig. 2.

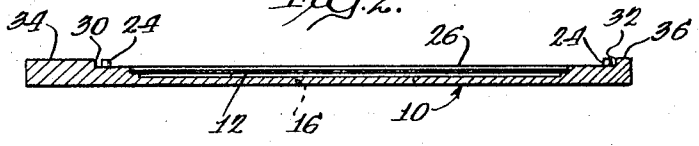
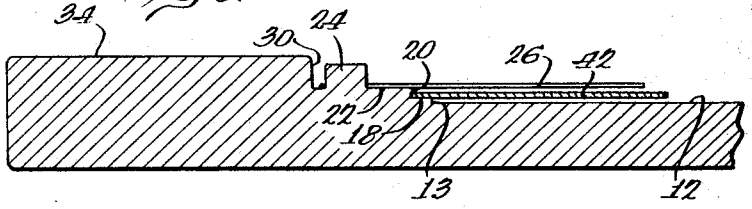


Fig. 3.



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Fig. 4.

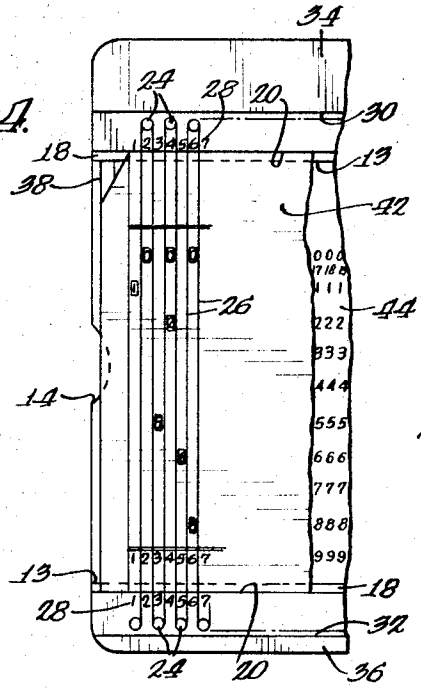


Fig. 6.

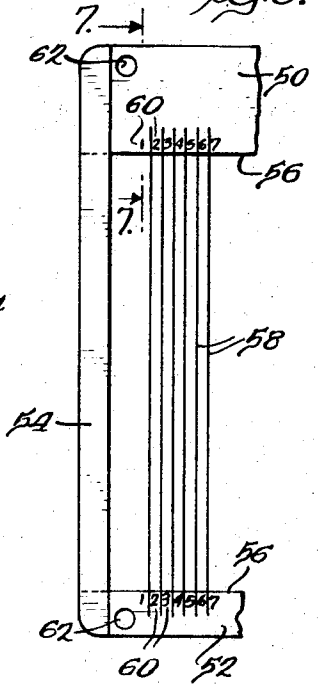


Fig. 5.

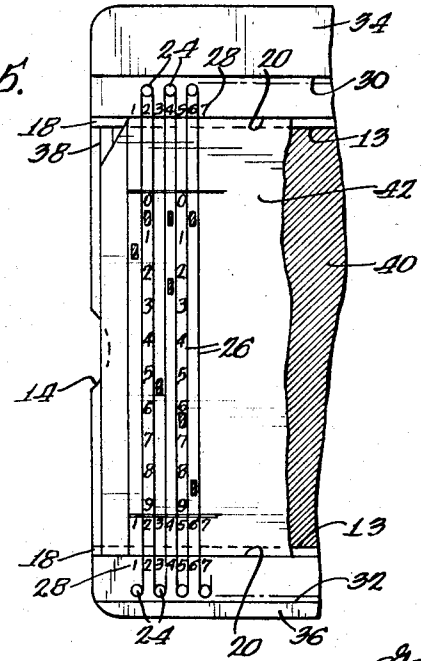
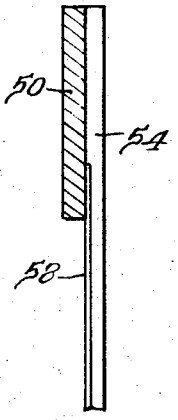


Fig. 7.



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CARD CHECKER

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ABSTRACT OF THE DISCLOSURE

A hand held pocket size punch card checker which has a rectangular base plate and top and bottom guide rails between which a card to be checked is received. Vertical wires strung across between the rails at column spacing and above a card on the base aid in identifying the column location of holes in the card being checked. Column indicia is printed along the guide rails between the wires and provision is made for a background contrasting or indicia carrying card.

Thr invention relates to punch card systems, and particularly to a simple accessory which is useful in facilitating checking punched cards to see if the information punched therein is correct.

One of the objects of this invention is to provide a novel device which facilitates the checking of punched cards.

An additional object is to provide a novel device of the above character which is inexpensive and which is small and light enough to be carried in a coat pocket.

Yet another object is to provide a novel device of the above character which can be manufactured at a low enough cost so that it can be supplied to a user free as a sales promotional or advertising item.

Other objects and advantages will become apparent from the following description of a preferred embodiment of my invention which is illustrated in the accompanying drawings.

In the drawings in which similar characters or reference refer to similar parts throughout the several views:

FIG. 1 is a plan view of a card checker embodying the present invention shown much as it appears when a card has been inserted therein for checking;

FIG. 2 is a transverse sectional view which may be considered as taken substantially along the line 2—2 of FIG. 1 in the direction indicated by the arrows;

FIG. 3 is a view similar to FIG. 2 but with a portion thereof broken away and with the remaining portion drawn to larger scale so as better to disclose details of the invention;

FIGS. 4 and 5 are fractional plan views similar to the left hand portion of FIG. 1, showing two different manners in which the checker may be used, depending upon the facility or desire of the user and the type of card to be checked;

FIG. 6 is a fractional plan view of the left end of an alternative device embodying the invention; and

FIG. 7 is a sectional view taken in the direction of the arrows along the line 7—7 of FIG. 6.

Under ordinary circumstances the information to be coded into punched cards is supplied to an operator who, by use of an appropriate machine, punches the holes in the necessary location. It then becomes necessary to check the cards to see that no mistake has been made. One method of doing this is to insert the cards into a special machine which prints out the information so that it can be read in the ordinary manner. Such machine type card checkers are useful when a large number of cards is to be checked, but are complicated, expensive, and essentially nonportable. There are, therefore, circumstances under which such card checking machines are not well adapted. As an example, frequently the information to be coded

into the cards is collected from a number of individuals who need to check the cards against their source of original information. Thus there will be a number of people who will need to check individual ones of a group of cards, and no one of them will be called upon to check a sufficient number to justify the use of any elaborate machinery.

Common practice in this type situation is to return to each of such individuals the particular cards for which he has supplied the information, and it then becomes his responsibility to check his particular group of cards and return them to some common location.

Thus, an individual simply checks the cards by observing the location of the holes and identifying the vertical and horizontal columns in which the holes are located, and upon the basis of this, determines whether the card is correct. There is considerable difficulty, however, in quickly spotting the location of specific holes among a group of holes and determining the vertical and horizontal columns in which they are located. This is particularly a problem with the vertical columns, and the reason for this is that the vertical columns are extremely close together, since a punch card normally has 80 vertical columns within a distance of less than seven inches, about eleven and one-half possible horizontal hole locations per inch. Although the horizontal rows are further apart and there are fewer of them, mistakes are also sometimes made in assigning the proper horizontal rows to the holes.

The device of the present invention consists of a rectangular plate **10** which may be formed of metal or of other firm material, including plastic. The bottom surface of this plate is flat, and the top surface is stepped down in a plurality of steps from the top and bottom edges toward the center so as to provide a depressed center panel **12** which is slightly narrower than a standard punch card from top to bottom and terminates at top and bottom vertical ridges **13**, as seen in FIG. 1. This panel **12** has a length somewhat greater than that of a punch card, and, at the ends, has notches **14** which extend inwardly of the plate such that the distance between the bottoms of the notches is somewhat less than the length of the punch card. The plate is also formed to provide one or more finger access holes **16** through the bottom thereof.

At a level slightly above the panel **12** there are top and bottom horizontal narrow ledges **18** which terminate outwardly in vertical edges **20** which serve as guides. The distance between the top and bottom edges **20** (as seen in FIG. 1) is slightly greater than the width of a punch card, so that a punch card can be slid in endwise and held against moving from side to side by the edges **20**, while being supported at its edges by the longitudinally extending surfaces **18**. Outwardly of each of the ledges **18** there is a second ledge **22** at a slightly higher lever, and these raised ledges **22**, just beyond the top and bottom edges of the card to be checked, are provided with pegs or pins or bosses **24** which extend upwardly slightly above the surface **22**. A relatively fine piano wire or the equivalent, indicated at **26**, is laced back and forth between top and bottom bosses **24** so that these wires form guide lines in relief, the vertical wire segments thus provided being arranged so that they are spaced apart a proper distance to lie between the vertical card columns and thus segregate the vertical columns from each other. There is, therefore, a vertical wire between column 1 and column 2, another wire between column 2 and column 3, and so on. Upon the horizontal surfaces of the ledges **22** I also emboss or print, or form in raised letters, the numbers for the individual columns as is indicated at **28**.

The flat surfaces **22** extend outwardly slightly beyond the pins or bosses **24** to provide clearance for the wire **26**, and terminate at rises indicated at the top by the

numeral 30 and at the bottom by the numeral 32. These rises 30 and 32 terminate upwardly in horizontal panels 34 at the top and 36 at the bottom, these panels in turn extending outwardly to the edges of the device. The panels 34 and 36 are slightly above the tops of the bosses 24 and, although it is a matter of choice, I prefer to make the lower panel 36 relatively narrow and the upper panel 34 considerably wider. The reason for this is that the upper panel, being wider, facilitates orientation of the device for use, and also provides a space for the printing of instructions, or an advertising message or the like.

One manner of using the device is indicated in FIG. 5. Here a card 40 slightly narrower than a regular punch card, and simply printed to have a contrasting color, is slid into place against the surface 12 between the vertical edges 13. This colored card is then left in place during use of the device. A card 42 to be checked is slid in an endwise direction into the space above the colored card so that it rests upon the surfaces 18 between the vertical edges 20. The card is moved into place until the first vertical column where punches may appear is lined up with the first vertical column established by the wire 26. To facilitate location of the card in an endwise direction, a vertical line 38 can be engraved or printed near each edge of the device, which vertical lines should be lined up with the vertical edges of the card when the card is properly located. If desired, the card checker can be made the same length as the punch card—rather than being slightly longer as shown—such that the vertical edges of the checking device can be lined up with the vertical edges of the card to establish proper location.

Once the card has been located in the checker, the contrasting color of the background card 40 will be seen through whatever holes have been punched and will therefore facilitate quickly locating the holes. Since each of the holes punched in the card is isolated between two wires, these wires serve as guide lines for the person using the device as his eye moves upwardly or downwardly to the numbers 28 printed on the checker just beyond the top and bottom edges of the card. He can quickly determine, therefore, whether the hole is in the proper column without the likelihood of mistake. Also, of course, since the wires form raised guide lines, a finger can be slid along the wires toward the top or bottom so that the column in which the hole is located can be determined by touch. An advantage of this system is that it protects the card against damage—scratching of the card face or enlargement of the holes—during the checking process.

The notches 14 are an aid in shifting a checked card out of the device and in properly centering a card for checking.

When the card checker is used in the manner just described, it has the disadvantage that it does not aid the operator in determining the horizontal line in which the hole is located. This for most people, however, is not so difficult to determine as is the location of the punch mark with respect to the vertical columns. Furthermore, some cards have the number of the horizontal column printed on the face of the card slightly above the punching line.

The checker, however, can be used for locating the horizontal line quickly by use of a properly printed background card. One source for such background cards is a type of standard punch card which has the numbers of the horizontal rows printed on the face thereof in each vertical column across the card, as shown at 44 in FIG. 4. My manner of using such a number card is to trim away the edges so that it is slightly smaller than a standard punch card. This trimmed card 44 is then slid into the frame against the panel 12 in place of the colored background card 40 previously mentioned. With a printed background card of this type in place, the card to be checked is slid into position as previously described, and wherever the card to be checked has a hole, the number on the background card will show through the hole and will immediately identify the horizontal column in which the hole is located, as is illustrated in FIG. 4. Thus the wires 26 identify the vertical column location of the hole as previously described, and the horizontal column is identified directly by the number thereof showing through the hole.

Of course, instead of using the checker as described, with the colored card 40 in place, it is possible simply to have the background surface 12 of a contrasting color so that it serves the same purpose. If the device is to be used in this manner however, there is no need to recess the surface 12 below the level of the surfaces 18, since there is no need to provide a space for the background card.

I also contemplate that, instead of using the background card 44 which has the numbers of the horizontal lines repeated endlessly across the card, these numbers could be printed directly upon the surface 12, thereby eliminating the need for steppping this surface down from the surface 18 by an amount slightly greater than the thickness of a card. Because of the fact that dirt may collect and such numbers may in time become somewhat obscured, I prefer to use the numbered punch card slightly trimmed as described, since such background cards can be replaced from time to time at insignificant expense, replacement being facilitated by the finger access holes 16.

The device illustrated in FIGS. 6 and 7 is essentially similar to the one described above, but is somewhat lighter and smaller and is less expensive It consists of an open frame having a top rail 50 and a bottom rail 52 secured, as by welding, to transverse strips 54 at the ends. The adjacent edges 56 of the top and bottom rails are parallel and spaced apart by a distance slightly greater than the width of a card to be checked, and the strips 54 similarly are far enough apart to receive a card in an endwise direction therebetween. This frame may be formed of any suitable material, such as sheet metal for instance.

Thin wires 58, similar to wires 26, extend across between the frame members 50 and 52 in parallel spaced relation, and are resistance welded to the top and bottom members 50 and 52 so that these wires form guide lines in the same manner as do the wires 26. Similarly also, the spaces between the wires are numbered, as at 60, upon the faces of the top and bottom members.

The frame of FIGS. 6 and 7 is used much like the device previously mentioned except that it is laid over the card to be checked, or the card is held thereagainst, rather than having the card slid thereinto in an endwise direction. It can, of course, be laid upon a table surface and the cards to be checked can be slid thereinto, or it can be secured to a suitable base plate, screw holes 62 being provided in the corners to facilitate this, so that the device becomes essentially the same as the device of FIGS. 1 to 5.

It will be appreciated, of course, that the specific manner described for attaching the wires 58 to the top and bottom members 50 and 52, and the wires 26 to the frame 10, are illustrative, since other well understood arrangements could be used in the manufacture of this device.

Although a card checker of the type I have described is helpful to almost anyone who is called upon to check punch cards, it is particularly useful in the hands of people who are in the stage of learning the manner of card checking and who have not yet developed a high order of facility in this operation. It is also particularly useful in the hands of older people who have difficulty in locating the holes and identifying the columns in which the holes are located, because of their inability to see clearly at short distances.

It has been found that the device is particularly useful in making certain that the punched holes in the card are in proper alignment in their respective columns and appear on the device correctly between the wires. This is im-

portant because in order that the cards be properly received and properly processed by the computing machine, the holes must be in proper alignment and if the device shows that they are improperly aligned, then they may be reprocessed to correct alignment before being sent to the computing machine.

From the above description of a preferred embodiment of my invention, it will be appreciated that modifications may be introduced into the device without departing from the spirit or scope of my invention, and that the scope of the invention should be determined from the scope of the following claims.

Having described my invention, what I claim as new and useful and desire to secure by Letters Patent of the United States is:

1. A hand held pocket size punch card checker comprising a rectangular base plate providing a flat surface bounded by parallel guide rails along the top and bottom edges of the surface, said guide rails being spaced apart a distance sufficient to receive a punch card to be checked therebetween between the top and bottom card edges, means providing a multiplicity of straight wire guides in uniformly spaced parallel relation in a plane slightly above the plane of a card received between said rails, said wire guides extending across a card located between said rails from top to bottom thereof, and the spacing between adjacent wires equaling the standard spacing between adjacent vertical columns of the card to be checked.

2. A hand held pocket size punch card checker comprising a rectangular base plate providing a flat surface bounded by parallel guide rails along top and bottom edges thereof, said guide rails being spaced apart a distance sufficient to receive a punch card to be checked therebetween between the top and bottom card edges, means providing a multiplicity of straight wire guides in uniformly spaced parallel relation in a plane slightly above the plane of card received between said rails, said wire guides extending across a card located between said rails from top to bottom thereof, the spacing between adjacent wires equaling the standard spacing between adjacent vertical columns of the card to be checked, at least one of said rails providing an area thereon beyond said surface, and said area having indicia printed thereon between said wires to identify the vertical columns where holes may be formed in a card to be checked.

3. A hand held pocket size punch card checker comprising a base, means providing a flat surface thereon bounded by parallel guide rails on said rectangular base along top and bottom edges of said surface, said guide rails being spaced apart a distance sufficient to receive a punch card to be checked therebetween between the top and bottom card edges, means providing a multiplicity of straight wire guides in uniformly spaced parallel relation in a plane slightly above the plane of a card received between said rails, said wire guides extending across a card located between said rails from top to bottom thereof, and the spacing between adjacent wires serving to identify the vertical columns of holes punched in a card being checked.

4. The combination called for in claim 3 in which said base is formed to provide a space for a background card located beneath the surface provided for a card to be checked.

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