

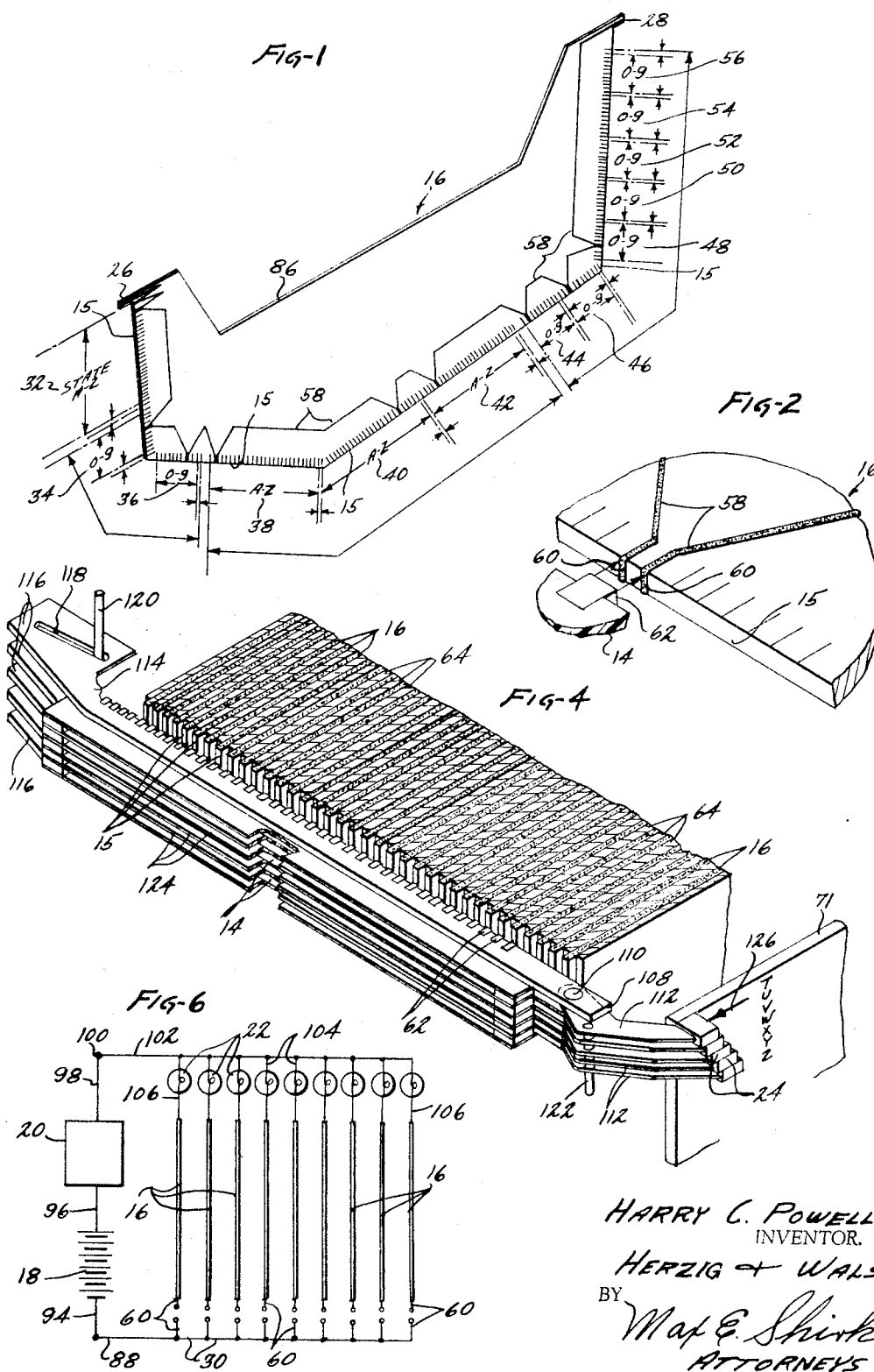
Nov. 8, 1966

H. C. POWELL
VERIFYING MACHINE

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Filed April 6, 1964

2 Sheets-Sheet 1



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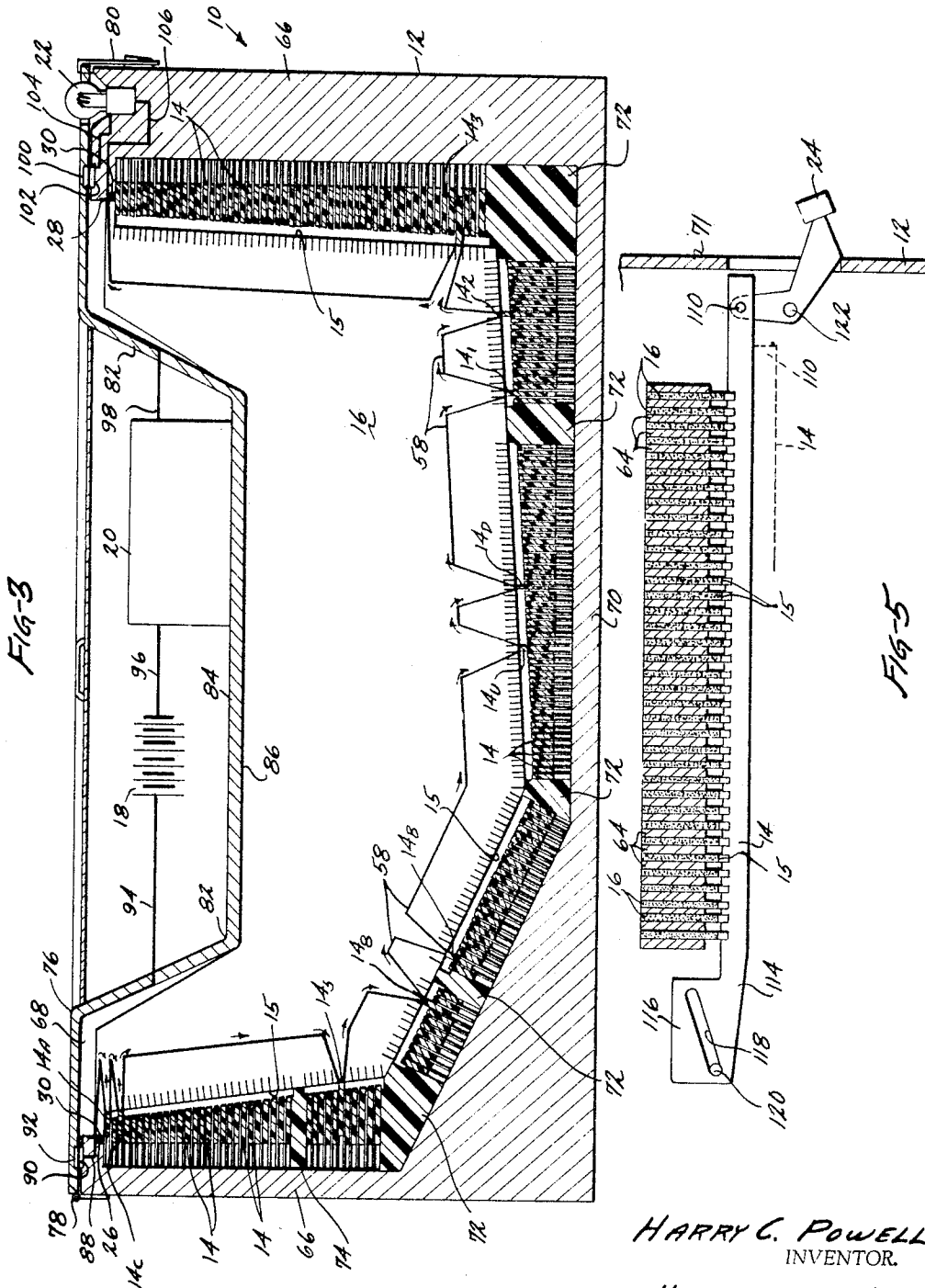
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VERIFYING MACHINE

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5 Claims. (Cl. 73-156)

This invention relates to a new and useful verifying machine, and more particularly to a simple and inexpensive verifying machine which mechanically programs information which acts upon other information previously programmed into the machine to emit a signal upon coincidence of the programmed information with the pre-programmed information.

Although a number of prior art verifying devices are available for emitting a signal upon coincidence between programmed information and pre-programmed information, they do have certain disadvantages.

One disadvantage resides in the fact that certain prior art verifying machines are relatively expensive and complicated to operate.

Another disadvantage resides in the fact that such prior art machines do not lend themselves to use in the field, such as in police cars.

Yet another disadvantage resides in the fact that a good many prior art verifying machines are difficult to pre-program.

In view of the foregoing factors and conditions characteristic of verifying machines, it is a primary object of the present invention to provide a new and improved verifying machine not subject to the disadvantages enumerated above and having simple mechanical means which can be programmed to act upon pre-programmed information efficiently and expeditiously.

Another object of the invention is to provide a verifying machine having mechanical programming means arranged about the peripheral edge of card means containing pre-programmed information.

Yet another object of the invention is to provide a verifying machine which will emit a coincidence signal pinpointing the source of the pre-programmed information.

A further object of the present invention is to provide a verifying machine which is simple and easy to program and which is portable.

According to the present invention, a verifying machine is provided with mechanical keybars which are arranged in a suitable housing in a pattern corresponding to the periphery of a bank of cards carrying pre-programmed information which is wired into the cards.

When the cards are placed in the machine, they are connected in an electrical circuit with a battery or other suitable source of power and with a signal-emitting means. When the keybars are brought into engagement with the peripheral edges of the cards in a predetermined sequence corresponding to the information programmed into any particular card, an electrical circuit is completed through the particular card to the signal-emitting means.

The features of the present invention which are believed to be novel are set forth with particularly in the appended claims. The present invention, both as to its organization and manner of operation, together with further objects and advantages thereof, may best be understood by reference to the following description, taken in connection with the accompanying drawings in which like reference characters refer to like elements in the several views.

In the drawings:

FIGURE 1 is a perspective view of a pre-programmed card of the present invention;

FIGURE 2 is a partial, perspective view, on an enlarged scale, of a portion of the card of FIGURE 1, together with a portion of an associated keybar;

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FIGURE 3 is a cross-sectional view of a verifying machine of the present invention;

FIGURE 4 is an enlarged, perspective view of a portion of the machine of FIGURE 3 showing a stack of pre-programmed cards and their associated keybars;

FIGURE 5 is a plan view of the portion of the machine shown in FIGURE 4; and

FIGURE 6 is a schematic wiring diagram for the verifying machine.

Referring again to the drawings, and particularly to FIGURES 3 and 5, a verifying machine constituting a presently preferred embodiment of the invention, generally designated 10, includes a housing 12 in which a plurality of keybars 14 are mounted in banks at right angles to the peripheral edges 15 of a plurality of pre-programmed cards 16. The keybars 14 may be programmed, in a manner to be hereinafter described, to act mechanically upon the cards 16 to complete an electrical circuit through a suitable power source 18 causing a signalling device 20 to emit a signal upon coincidence between the information programmed into the keybars 14 and the pre-programmed information contained on a particular card 16. The signalling device 20 will emit a signal regardless of which card 16 completes the circuit. In addition, a signal lamp 22 is wired in a parallel circuit with each individual card 16 (FIGURE 6) so that a particular lamp 22 emits a signal only when its associated card 16 carries the information coinciding with the information programmed into the keybars 14. The signal lamps 22 permit isolating the card 16 containing the sought-after, pre-programmed information whereupon the card 16 can be removed from the housing 12 and examined for any remarks which may be printed thereon.

The cards 16 may be preprogrammed with any sought-after information. For example, they may be pre-programmed with the numbers of lost, stolen or revoked credit cards. A machine 10 could then be located at a central station in a large department store and a card 16 representing each lost, stolen or revoked credit card could be inserted into the housing 12. Each cash register in the department store would then be equipped with keybar actuating means connected to the keybars 14 in the housing 12 through suitable electrical circuits and solenoids, not shown. Thus, when a customer presents a credit card at a particular cash register, the clerk need only depress the keys on her cash register corresponding to the number on the card which has been presented to her. If the presented card is lost, stolen or revoked, a signal will be emitted by the signal device 20 indicating to the clerk that she should not accept the proffered card.

On the other hand, a separate machine 10 may be positioned adjacent each cash register and may be equipped with a plurality of keys 24 (FIGURE 4) which directly actuate the keybars 14. Also a machine 10 which is equipped with the keys 24 may be used by a police officer in a patrol car to check for stolen vehicles. In this event, the card 16 is pre-programmed with information concerning stolen vehicles. The verifying machine 10 will be described for purposes of illustration, but not of limitation, as being used for this latter purpose.

Assuming that it is desirable to identify each stolen vehicle by the state or province, year date and number shown on its license plate, then a card 16 may be provided with banks of letters and numerals corresponding to those shown in FIGURE 1. The upper left-hand corner of the card 16 is provided with an electrical contact 26 and the upper right-hand corner with an electrical contact 28 which are engageable with suitable buss bars 30 mounted in the housing 12 to connect the card 16 in an electrical circuit with the power supply 18. The card 16 is shaped about its periphery in such a manner that a maximum

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amount of information can be programmed within a minimum amount of space. The upper left-hand marginal edge of card 16 may be provided with a first bank of letters 32 which can be pre-programmed to indicate the state shown on a license plate. A first bank of numerals 34 is displayed on the lower portion of the upper left-hand marginal edge of card 16. The bank 34 contains the numerals 0-9 corresponding to the first number to be used in identifying the year date of the license plate. The card 16 is then cut on an angle, as shown in FIGURE 1, so that a maximum of banks of keybars 14 may be clustered around the card 16 with the major axes of the keybars 14 lying at right angles to the major axes of the cards 16. The upper end of the angular edge of the card 16 may be provided with a bank of numerals 36 which includes the numerals 0-9 corresponding to the second number used to identify the year date of a license plate. The remaining portion of the peripheral edge 15 of card 16 is provided with three banks of letters 38, 40 and 42 and seven banks of numerals 44, 46, 48, 50, 52, 54 and 56, respectively, all of which may be used in various combinations to pre-program the license number of a stolen vehicle into the card 16. Since none of the states in the United States nor any of the provinces in Canada employ more than three letters and seven numerals on their license plates, a card 16 can be pre-programmed with enough information so that a single verifying machine 10 can be used to readily verify any license plate issued by any of the states of the United States or by any province in Canada.

Assuming that an automobile bearing 1958 California license No. BUD-123 has been stolen by an armed fugitive, information concerning the fugitive may be printed upon the card 16 which is then pre-programmed to contain the information concerning the state, year date and number of the license plate. The card 16 is pre-programmed by attaching an interrupted electrical circuit to the card which extends from the contact 26 to the contact 28. This is accomplished by attaching electrical leads 58 to the card 16 and interrupting the leads 58 at the edge 15 of the card 16, as shown in FIGURE 2, adjacent each letter or numeral corresponding to the information to be programmed into the card 16. For example, the information concerning the state issuing the license plate is programmed into the card 16 by bringing the conductors 58 to the edge of the card 16 in bank 32 adjacent the letters C and A corresponding to an abbreviation of the word "California." The conductor 58 would then be carried down to the banks 34 and 36 where it would be extended over the marginal edge of the card and interrupted adjacent the numerals 5 and 8 corresponding to the year date of the license plate. The conductor 58 would then be continued about the perimeter of the card to the contact 28 being brought to the edge of the card at banks 38, 40, 42, 44, 46 and 48 to program the license number BUD-123 into the card 16. The conductor 58 may comprise a gummed aluminum foil, magnetic pencil mark or the like and includes spaced conductors 60 which extend in spaced, parallel relation over the edge 15 of the card 16 astraddle each letter or numeral to be programmed into the card 16. These sets of spaced conductors 60 leave a fault in the circuit extending from contact 26 to the contact 28 at each numeral or letter programmed into the card 16 so that a circuit cannot be completed through the power source 18 until each fault is bridged by a suitable conductor block, such as the one shown at 62 in FIGURE 4. The conductor blocks 62 are carried by the keybars 14 which are made of a suitable dielectric material so that electrical current will not be carried longitudinally along the keybars 14.

A plurality of pre-programmed cards 16 corresponding to all stolen vehicles in a given area at a given time are stacked together with a dielectric separator 64 placed between adjacent cards 16 so that the conductors 58 will not be short-circuited between cards.

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Referring again to FIGURE 3, the housing 12 includes upstanding side walls 66, an open top 68, a closed bottom wall 70 and a front wall 71 (FIGURES 4 and 5). Dielectric spacer blocks 72 may be placed along the bottom wall 70, as shown, to support the lower marginal edges 15 of the cards 16 and spacers 64 and a dielectric spacer 74 engages the lower portion of the upper left-hand margin of the cards 16 to support the cards out of contact with the conductor blocks 62 on keybars 14 when they are in their retracted positions. After the cards 16 have been inserted through the open top 68 into the housing 12 in such a manner that the electrical contacts 26 and 28 engage their associated buss bars, a cover 76 may be swung on its hinge 78 to a closed position closing open top 68 whereupon a latch 80 may be secured to maintain the lid 76 in its closed position. The lid 76 may be depressed, as shown at 82, to bring a wall member 84 into engagement with the upper edge 86 of each card 16 to firmly anchor the cards 16 in the housing 12.

The buss bar 30 for all of the contacts 26 is connected by a common lead 88 to a collector 90 which is mounted on the upper edge of the wall 16 and which is engageable by a second collector 92 mounted in the lid 76. The collector 92 is connected by a lead 94 to the power source 18. The power source 18, which may comprise any suitable storage battery, is connected by a lead 96 to the signal device 20 which, in turn, is connected by a lead 98 to a second collector 100 mounted in lid 76. The collector 100 is engageable with a third collector 102 which extends along the upper edge of the wall 66 and is connected by leads 104 to the lamps 22 (FIGURE 6). Each lamp 22 is connected by a lead 106 to the buss bar 30 adjacent its associated card 16. Thus, when a circuit is completed through the conductors 58 on a particular card by bringing the proper conductor blocks 62 into engagement therewith, a lamp 22 identifying that particular card will become illuminated. It will be obvious to those skilled in the art that insulation, not shown, will have to be provided to insulate the buss bars 30 and collectors 90, 92, 100 and 102 from the housing 12 and cover 76 in the event these two elements are made from a non-dielectric material.

The keybars 14 are mounted in banks corresponding to the associated banks 32-56 on the cards 16. Each keybar 14 includes a first end 108 which is pivotally connected by a pin 110 to the leg 112 of a key 24. The other ends 114 of the keybars 14 include cams 116 which have cam surfaces 118 engaging a fixed, vertical pin 120 (FIGURES 4 and 5). The legs 112 of keys 24 are pivotally mounted on a vertical pin 122 and extend through the front wall 71 of housing 12. A plurality of spacer bars 124 maintain the keybars 14 in spaced relation and provide suitable surfaces upon which they can slide when actuated by their associated keys 24. A keybar 14 may be brought into engagement with the associated edges 15 of cards 16 by moving an associated key 24 in the direction of arrow 126 from the position shown in FIGURE 4 to the position shown in FIGURE 5. This causes the pivot pin 110 to swing on an arc from the dotted line position to the solid line position shown in FIGURE 5. Simultaneously, the cam surface 118 cams the end 114 in toward the card 16 by sliding along pin 120 from the position shown in FIGURE 4 to the position shown in FIGURE 5.

Operation of the device will be readily understood. Because of its simplicity and inexpensive nature, a verifying machine 10 may be placed in each law enforcement officer's vehicle. Each morning the law enforcement officer assigned to a particular vehicle may be handed a group of cards 16 which have been pre-programmed the night before with information on stolen vehicles. The officer may also be given a list of recovered vehicles which are no longer wanted. The officer could identify the cards 16 which are to be removed from machine 10 as representing non-wanted vehicles merely by programming the in-

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formation concerning state, year and license number into the machine 10 for each card 16 by depressing the proper keys 24 whereupon a circuit would be completed to the lamps 22 representing the cards to be removed from the machine.

The cards representing newly wanted vehicles would then be placed in the machine 10 after which the cover 76 would be closed and locked with the latch 80.

Assuming the operator of a vehicle bearing 1958 California license No. BUD-123 has committed a minor traffic offense or has acted in a suspicious manner, while pulling the vehicle over to the curb, the officer could program the machine 10 by depressing the keys 24 corresponding to the license number of the vehicle so that the keybars 14_C, 14_A, 14_B, 14_U, 14_D, 14₁, 14₂ and 14₃ would be brought into engagement with the peripheral edge 15 of the card 16, as shown in FIGURE 3. The conductor blocks 62 on these depressed keybars would then engage the conductor strips 60 extending over the edge of the card 16 completing a circuit through power supply 18 and signal device 20. The lamp 22 identifying the particular card 16 in question would also become illuminated indicating to the officer which card 16 should be withdrawn from the machine 10. The officer could then quickly open lid 76, withdraw the card 16 in question and examine it for additional information. Should the car bearing 1958 California license No. BUD-123 have been stolen by an armed fugitive, for example, this information could be printed on the card 16 where it is readily available to the officer.

It is to be understood that one verifying machine 10 could be located at a central station and that the keybars 14 could then be operated by suitable relays and switching devices actuated by telephone, radio waves, electrical impulses or the like.

While the particular verifying machine herein shown and described in detail is fully capable of attaining the objects and providing the advantages hereinbefore stated, it is to be understood that it is merely illustrative of the presently preferred embodiment of the invention and that no limitations are intended to the details of construction or design herein shown other than as defined in the appended claims.

What is claimed is:

1. In a verifying machine having pre-programmed information-carrying card means and signal-emitting means, said card means including an anchoring edge and a plurality of other edges, the combination comprising:
 - programming means mounted in said machine in a bank about each of said other edges with the major axis of said programming means lying at right angles to the major axis of said card means;
 - actuating means connected to said programming means to bring said programming means into engagement with said other edges in accordance with a predetermined program; and
 - means connecting said programming means to said signal-emitting means when said predetermined program coincides with said pre-programmed information.
2. In a verifying machine, the combination comprising: pre-programmed, information carrying card means immovably mounted in said machine, said card means

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having a predetermined shape defined by a fixed peripheral edge including an anchoring portion and a remaining portion;

- signal-emitting means mounted in said machine;
- programming means mounted in said machine in a bank following said predetermined shape about said remaining portion of said peripheral edge with the major axis of said programming means lying at right angles to the major axis of said card means;
- actuating means connected to said programming means to bring said programming means into engagement with said remaining portion of said peripheral edge in accordance with a predetermined program; and
- means connecting said programming means to said signal-emitting means when said predetermined program coincides with said pre-programmed information.

3. The combination of claim 2 wherein said means for connecting said programming means to said signal-emitting means includes a electrical circuit affixed to said card means, said electrical circuit being interrupted at said peripheral edge at points corresponding to said pre-programmed information, said connecting means also including conductor blocks carried by said programming means for engagement with the interrupted portions of said circuit to complete said circuit when said predetermined program coincides with said pre-programmed information.

4. A verifying machine comprising:

a housing having a closed bottom, an upstanding side wall and an open top;

dielectric keybar means mounted in said housing in banks along said side wall and said bottom wall;

conductor blocks mounted on said keybar means;

a plurality of pre-programmed cards immovably mounted in said housing, each of said cards having a peripheral edge adjacent and associated bank of said keybar means and engageable thereby when said keybar means is actuated to bring said conductor blocks into engagement with said peripheral edges, all of said cards being sensed simultaneously when said keybar means is actuated;

a signal device provided in said housing;

electrical circuit means mounted in said housing, said cards and said signal device being connected electrically in a circuit with said circuit means; and

conductor means mounted on each of said cards, each of said conductor means having its ends connected to said electrical circuit means through said signal device, each of said conductor means being interrupted at the periphery of an associated card adjacent a predetermined number of said conductor blocks corresponding to predetermined, pre-programmed information carried by said associated card.

5. The verifying machine of claim 4 including a lamp bulb connected in said electrical circuit for each separate card.

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