

Dec. 7, 1965

W. LANG

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PREARRANGED HAND PLAYING CARD DEALING APPARATUS

Filed Feb. 14, 1963

5 Sheets-Sheet 1

FIG. 1

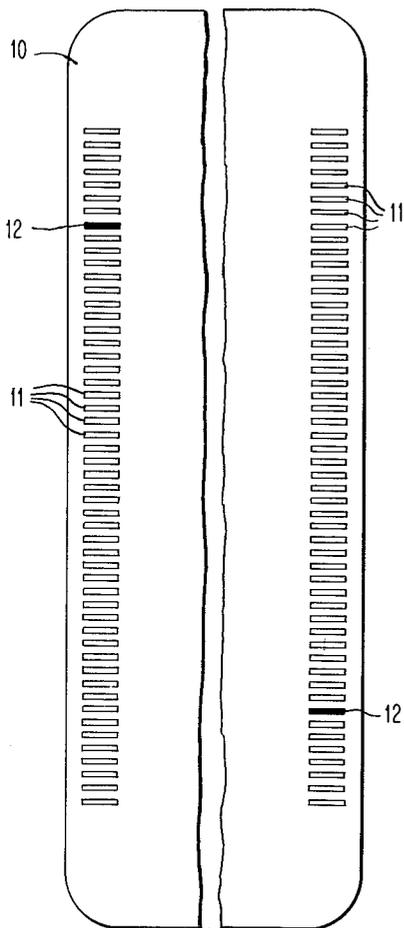


FIG. 2

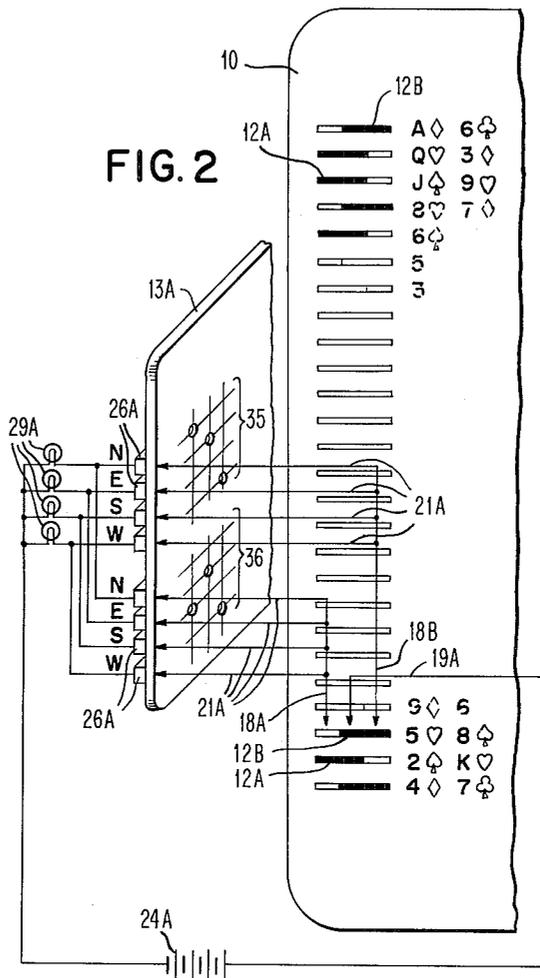
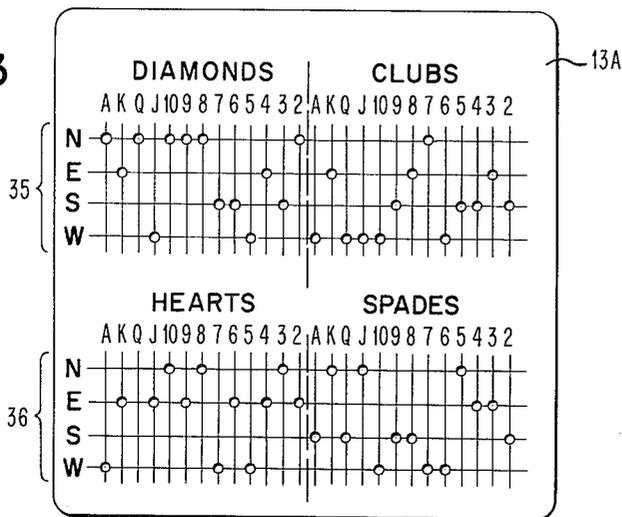


FIG. 3



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FIG. 6

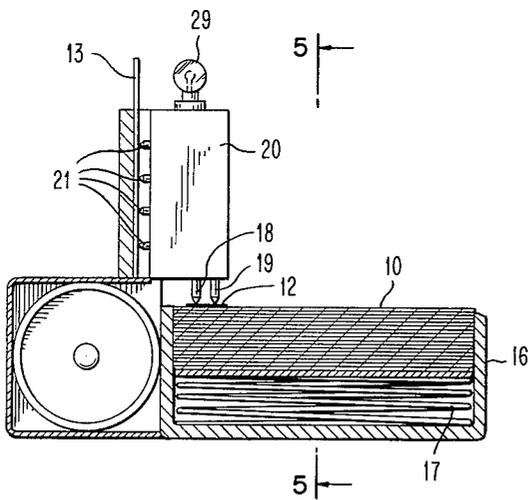
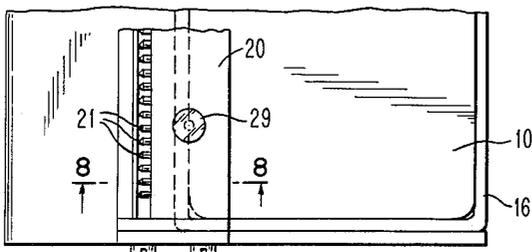


FIG. 4

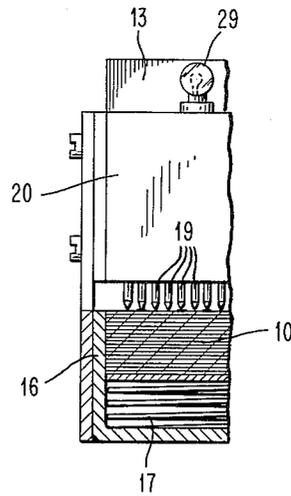


FIG. 5



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FIG. 11

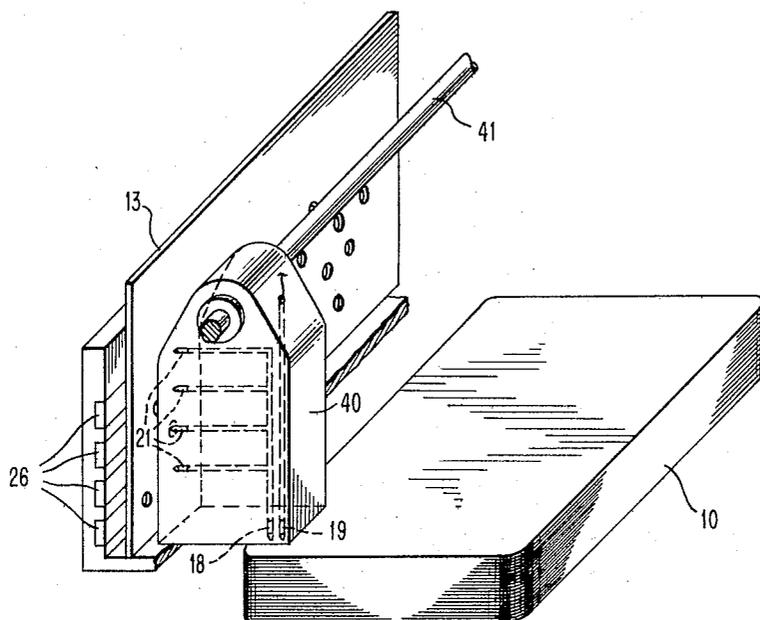
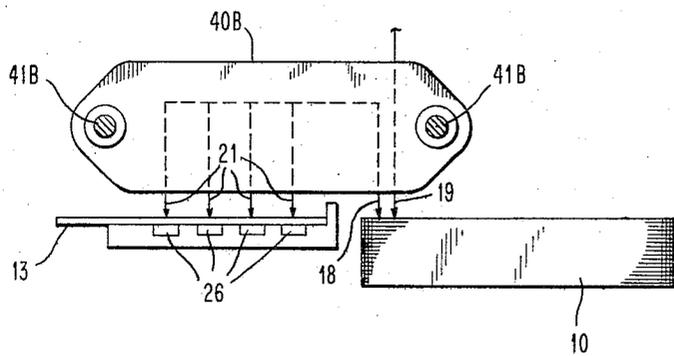


FIG. 12



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FIG. 13

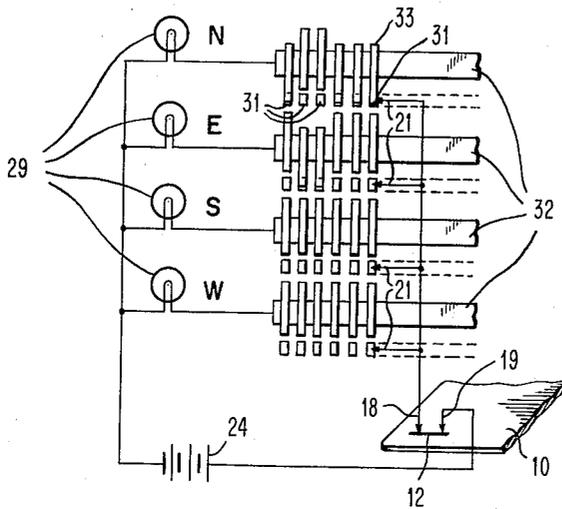
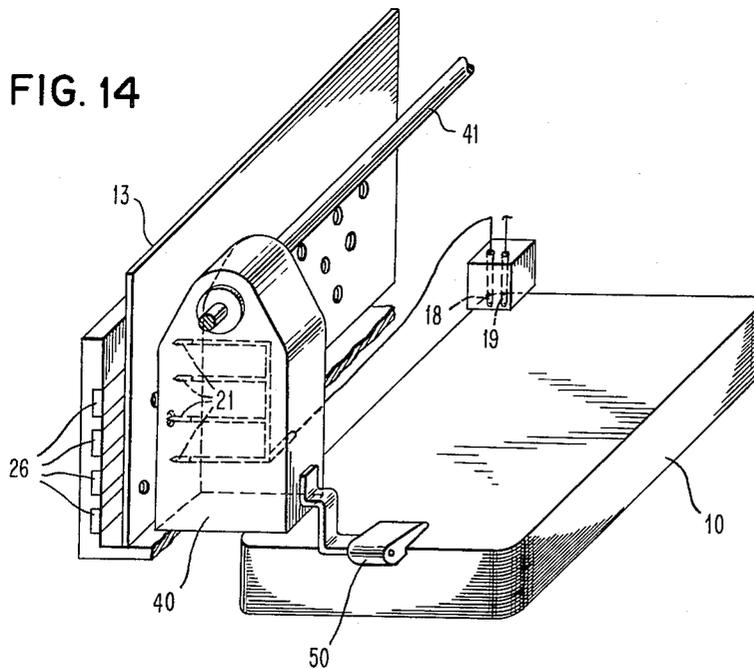


FIG. 14



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**PREARRANGED HAND PLAYING CARD DEALING APPARATUS**

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 Filed Feb. 14, 1963, Ser. No. 258,451  
 15 Claims. (Cl. 273-149)

The principal object of the present invention is to provide a device that will enhance the enjoyment of games in which playing cards are employed and particularly in card games where "hands" are dealt to each of several players.

A further object of the invention is to provide a device that will indicate the order in which cards are to be dealt from a deck and thereby eliminate the need for shuffling the cards prior to dealing.

In the well known and popular game of bridge, for example, 13 cards are dealt to each of 4 players, and each "hand" may be more or less interesting, due to the usual shuffling of the cards and the random nature of dealing.

Through utilization of the device of the present invention, the dealer will be enabled to distribute "hands" that are interesting and in the case of bridge playable with good scoring possibilities, with respect to at least one pair of partners.

In carrying out the objects of the invention, it is proposed to provide a deck of cards in which each card contains a mark or indicia representing the suit and value of the card. Preferably, this is accomplished by providing on the back of each card 52 marking positions (for bridge), 48 (for pinochle), etc. in which for each card a different position will contain a conductive mark imprinted thereon. Such mark would, of course, be visible, but, if secrecy is desired, it could take the form of a magnetic mark embedded in the material of the card.

An arrangement is provided to read or sense the backs of the cards in succession and to operate a signal or indication in the form of a lamp to designate that the card sensed is to be dealt to player North, East, South or West (for bridge distribution). The particular signal operated is predetermined by a preconfigured slide, insertible in the apparatus and coordinated with the card sensing device so that, if for example the card sensed has a mark indicating that it is the Ace of Diamonds, the slide may be configured to predetermine that such Ace of Diamonds is to be dealt to player North and accordingly the North lamp will be illuminated.

The preconfigured slides, of which the number is unlimited, have (for bridge) 52 columns of marking or perforating positions in each of which 4 positions are provided to represent North, East, South and West. If, for example, a column represents the Ace of Diamonds and such card is to be dealt to North, the North position in that column will be perforated.

In accordance with a modified form of the invention, the number of marking positions on the playing cards may be reduced to 26 by a so-called "overlapping technique" to provide 52 different designations.

It is contemplated that the slides be prepunched, in accordance with interesting hands, but such may also be in the form of a punchboard, with each position scored to enable the possessor to make up his own slide by punching out the positions representing any desirable distribution, such as a hand played by experts.

According to a further modification, the slides may be replaced by a manually adjustable switching arrangement whereon any selected card distribution may be set, without limitation.

Other objects and advantages of the invention are set

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forth in the accompanying specification and drawings which show by way of illustration several forms in which the invention may be embodied.

In the drawings:

5 FIG. 1 shows a playing card and the manner in which 52 marking positions are distributed thereon.

FIG. 2 shows a playing card and the manner in which 26 marking positions can be utilized to represent 52 items, together with related circuitry.

10 FIG. 3 illustrates a preconfigured slide perforated to represent cards that are to be dealt to each of four players.

FIG. 4 is a cross-sectional view of the apparatus to show the relative positions of the playing cards, the slide, the sensing devices and the indicators.

15 FIG. 5 is a section on lines 5-5 of FIG. 4.

FIG. 6 is a partial plan view of FIG. 4.

FIG. 7 is an exploded circuit diagram of the apparatus.

FIG. 8 is a sectional detail of the sensing devices and their manner of connection to the distribution controlling

20 slide.

FIG. 9 is a modification showing the manner in which settable switches may be utilized in lieu of the slide. The view is a section on line 9-9 of FIG. 10.

FIG. 10 is an end view of FIG. 9 showing the spacing

25 of the switches.

FIG. 11 is a modified form of the invention in which the sensing elements traverse the playing card with the card at right angles to the slide.

FIG. 12 is a modified form of the invention in which

30 the playing cards and slide may be co-planar.

FIG. 13 is a circuit diagram of the modification utilizing the manual switch settings of FIGS. 9 and 10.

FIG. 14 is a further modification in which the card sensing elements are stationary and the cards are sensed

35 referring advance by a feeding mechanism.

Referring to the drawings, each playing card 10 (FIG. 1) of a deck is provided with 52 marking positions 11 extending along one edge of the card. A second set is provided along the opposite edge to provide for possible 180°

40 rotative difference among the cards in the deck.

Each position is allotted to a different card and the association is preferably in a random manner, with a single position marked with a short conductive line 12 made

45 by commercial forms of conductive printing techniques, preferably by embedding the mark so that it is flush with the surface of the card.

FIG. 7 shows the preconfigured non-conductive slide 13 diagrammatically in its physical relation to playing card 10. In alignment with each marking position 11

50 of the card 10 is a column 14 on slide 13, each of which has four perforating rows 15 designated N, E, S, and W.

Each column 14 of slide 13 is allotted to the card assigned to the related marking position 11. Thus, for example, where the card positions 11, as shown, have been

55 assigned to the King of Hearts, the Queen of Diamonds, the Five of Hearts, the Two of Clubs, and the Ace of Spades, in that order, the columns 14 will control the destiny of the related cards and may carry appropriate designations in the upper margin of the slide 13.

This slide may, if desired, contain printed information, not shown, indicating that the hand whose distribution it

60 controls was played by such and such persons, in such and such a tournament and the bidding was so and so, together with the ultimate result. This information would enable the players to compare their efforts with the so-called experts and provide the invention with additional

65 educational value.

The slide 13 as perforated in FIG. 7 denotes that the

King of Hearts and the Five of Hearts are to go to East; the Queen of Diamonds to North; the Ace of Spades to South; and the Two of Clubs to West.

Referring now to FIG. 4, the cards 10 are placed in a receptacle 16 wherein they are urged upwardly by a spring 17 to force the marking positions into contact with sensing elements 18 and 19. There is an element 18 and an element 19 for each marking position 11 of the cards 10 spaced in each position, so that a mark 12 occurring in any position will effect electrical connection between its related elements 18, 19.

The elements 18, 19 are shown in enlarged detail in FIG. 8 where they are shown as ball-point contact heads integral with conductors embedded in an insulating block 20. The conduits of element 18 are each in electrical contact with 4 horizontal plungers 21, supported in a split tubular casing 22, whose separable ends are urged apart by a spring 23.

All the elements 19 are electrically commoned and connected to a source of current such as battery 24 (FIG. 7) through wire 25. Consequently, upon sensing a mark 12, current flows from battery 24, through wire 25 to elements 19, the mark 12, and element 18 from whence it branches to the four related plungers 21.

The plungers 21 abut slide 13 at its punching positions and, if a hole is present in one of the 4 positions, the circuit continues to one of the common strips 26 (E for the example of FIG. 7), switch 28, lamp 29 designated E, and back to battery 24.

Thus, for the example of FIG. 7, the mark 12 in card 10 representing the King of Hearts will, because of the presence of a hole in the E position of the column, cause illumination of the E lamp 29. This signals the dealer to slide the topmost card from the deck and deal it to the player E.

It may be noted that, as the topmost card is slid off the deck, the next card is immediately in sensing position and the circuit is completed to illuminate the appropriate lamp, even as the dealer is passing the preceding card to a player.

It will be obvious from inspection of FIG. 7 that a universal card dealing apparatus can be constructed by providing more than four bars 26 with an equal number of lamps and contact plungers 21. For example, to accommodate a game in which all the cards are to be dealt to 6 players, there would be 6 plungers 21; 6 bars 26, and 6 lamps 29 with a six-row slide having perforations in accordance with a desired distribution.

A simplification in preforming the slide (considering bridge, for example), would be to omit perforating one row. As a result, only 3 lamps will operate to indicate N, E or S, for example, and the absence of illumination would indicate the card is to go to W.

In FIG. 7, the switch 28 when shifted to its dotted line position will interchange partners for variety in dealing. Thus, a pair of hands are dealt to partners N and S with switch 28 in full line position and the same hands will be dealt to partners E and W with switch 28 shifted. This variation enables either or both pairs of partners to match their skill against the play of any expertly-played hand represented on the slide.

In FIGS. 9, 10 and 13, the insertible slide 13 is replaced by a panel 30 of insulating material supporting columns of conducting inserts 31, contacted by the plungers 21. Extending horizontally are four conducting bars 32 wired to the lamps 29. For each insert 31 there is a slider 33 selectively positionable to connect its related insert 31 with an adjacent bar 32.

By adjusting the sliders 33, as for example in FIG. 13, the sensing of a conductive mark 12 will complete the circuit from battery 24, through element 19, mark 12, element 18, uppermost plunger 21, insert 31, slider 33, the N bar 32 and the N lamp 29 back to battery. The indication therefor is that the card sensed is to be dealt to player N.

FIG. 2 illustrates a system of marking in which twenty-six marking positions are employed on the playing cards, in each of which positions either of two distinctively identifiable marks 12A and 12B may be made for a total of 52 different marks (for a bridge deck).

The two marks in any position are distinguishable by the fact that one, 12B, is made at the right hand end of the position and the other 12A is made at the left hand end of the position. Thus, the topmost position in FIG. 2 may represent either of the two cards, i.e., Ace of Diamonds and Six of Clubs. The mark 12B shown is to designate the Six, while for designating the Ace, mark 12A is made in the left end. The two marks, in effect, overlap to form a common central portion and a triple reading device or prober, shown diagrammatically, comprising elements 18A, 18B and 19A, contacts the cards as explained for FIG. 8.

For this form of the invention, the distribution slide 13A (FIGS. 2 and 3) is double-decked to provide two sets of 4-position columns perforated in the upper deck 35 with holes whose contacting pins 21A are electrically connected to sensing element 18B. The slide is perforated in the lower deck 36 with holes whose contacting pins 21A are electrically connected to sensing element 18A.

With the circuit arrangement of FIG. 2, it will be apparent that a mark 12A to the left will be sensed by elements 18A and 19A to complete a circuit from battery 24A, common 19A, the mark 12A, element 18A, pins 21A of deck 36, a perforation in one of the 4 positions, corresponding bar 26A to the opposite lamp 29A and back to battery 24A.

Similarly, for a mark 12B, the circuit extends through 19A, the mark 12B, element 18B, pins 21A of deck 35 and a perforation in such deck to the appropriate lamp 29A.

In the above described embodiments, there has been provided a sensing element for each marking position of the playing cards involving a duplication of parts but with a resulting instantaneous indication of each card's destination. A further modification shown diagrammatically in FIGS. 11 and 12 provides for a single set of sensing elements 18, 19 supported in a carriage 40 which also carries pins 21. The carriage is arranged to be slidable in FIG. 11 along a rack 41 so that, as it is moved along, the elements 18, 19 will slide over the slide across corresponding columns of punched positions in stationary slide 13. Thus, as the carriage is progressed manually, from left to right, a circuit will be completed upon reaching the position marked, to illuminate the lamp representing the preselected destination of such card.

In operation, the dealer will move carriage 40 from left to right extremity of the cards, remove the top card, then return the carriage from right to left, during which journey the appropriate lamp will be lighted, the card removed and the excursions of the carriage 40 continued through the remaining cards of the deck.

In FIG. 12 is shown an arrangement whereby a carriage 40B is slidable on rods 41B, with slide 13 and cards 10 arranged in parallel planes.

It will be apparent that carriages 40 and 40B can readily be adapted to carry the triple sensing elements 18A, 18B and 19A of FIG. 2, if the card arrangement employing overlapped marking positions of FIG. 2 are utilized by simply providing a double set of pins 21 and using the double decked distribution slide 13A of FIG. 3.

FIG. 14 illustrates diagrammatically the manner in which the principles of the invention may be applied to an arrangement wherein the playing cards are mechanically advanced from the card holder. In this modification, the sensing elements 18, 19 are stationary and carriage 40 has a card feeding finger 50 attached thereto, so that as the carriage is moved along rod 41, a card is advanced beneath elements 18, 19 and pins 21 contact the columns of slide 13 at the moment that the related card-

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designating position is in alignment with the elements 18, 19. The occurrence of a mark will indicate the player to receive the advanced card.

The reciprocation of carriage 40 and consequent feeding of the cards can, of course, be motorized in more sophisticated adaptations of the invention, which in its basic concept serves the educational purpose of readily enabling card players to set up "expert" or "tournament" hands and compare their own ability with that of the "experts." Such a device may be complemented by the provision of accompanying explanations and/or instructions placed on slides 13 and concealed from view until after a hand has been played.

In accordance with the embodiments disclosed herein, a deck of cards may be distributed in accordance with an unlimited number of arrangements in a simple and rapid manner or redealt, if desired, to repeat a distribution.

While this invention has been particularly shown and described with reference to preferred embodiments thereof, it will be understood by those skilled in the art that the foregoing and other changes in form and details may be made therein without departing from the spirit and scope of the invention.

What is claimed is:

1. A device for use in the dealing of predetermined hands of playing cards from a deck of cards in which each card contains a single indicium representing its suit and value, comprising means for sensing each of successively presented cards of a deck for the indicium representing the suit and value of the card, a selectively settable device pre-conditioned in accordance with a desired composition of hands, an indicator for each player, operating means therefor, and means jointly controlled by said sensing means and said settable device upon sensing the single indicium on a playing card for causing the operating means to operate the indicator associated with the player to whom the card is to be dealt.

2. The invention according to claim 1 in which the sensing means is constructed and arranged to sense each card of the deck while a preceding card is being removed from the deck.

3. The invention according to claim 1 in which the sensing means is traversable across the indicia representing position of each card in successive order.

4. The invention according to claim 1, in which the sensing means and the playing cards are movable relative to one another to cause indicia positions of the cards to be sensed in succession.

5. The invention according to claim 1 in which the selectively settable device comprises a panel of manually settable switches for selectively connecting the sensing means to the indicators.

6. In an educational device, a holder for a deck of playing cards, each of which has a designation thereon, representative of the identity of the playing card, an indicator for each of a number of players, an adjustable control device having an adjustable element for each card of the deck, settable to identify the player who is to receive the card, means for sensing the designation on a card in said holder, and means jointly controlled by said sensing means and said control device for operating the indicator related to the player whose identity has been preset on the control device.

7. The invention according to claim 6 in which the means for sensing the designation on a card comprises a carriage mounted for movement across the surface of the card and a contacting element mounted in said carriage in engagement with the card for sensing the presence of a designation.

8. The invention according to claim 6 in which the designations consist of electrically conductive lines and the sensing means comprises a pair of conductive elements for completing an electrical circuit through said conductive lines upon sensing thereof.

9. A device for use in the dealing of predetermined

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hands of playing cards from a deck in which each card contains a single mark representing its suit and value; comprising a holder for said deck of cards, means for sensing the outermost card of the deck for the mark thereon, a stationary control element configured to represent the players to receive certain cards, sensing means for said control element, an indicator for each player, and means for causing both said sensing means to jointly and instantaneously operate the indicator associated with the player to whom the card is to be dealt.

10. The invention according to claim 9 in which said holder is configured to enable removal of the cards, one by one, to thereby present the next succeeding card to its sensing means, while the control element remains in sensing relationship with its sensing means, whereby both said sensing means will jointly and instantaneously operate the indicator associated with the player to whom said next succeeding card is to be dealt.

11. A device for use in the dealing of predetermined hands of playing cards from a deck of cards in which each card contains a single indicium representing its suit and value, there being as many indicium positions as there are cards in the deck; comprising means for simultaneously sensing all indicium positions of the outermost card of the deck, a control element configured to indicate the players to whom the cards are to be dealt, said element containing a single designation for each card of the deck, representative of its destination, means for simultaneously sensing all designations on said element, concurrently with said first sensing means, an indicator for each player, and means instantaneously effective upon the sensing of said card and element for operating the indicator associated with the player to whom the card is to be dealt.

12. In combination, a holder for a deck of cards, from which cards may be dealt one by one, each card having a row of spaced marking positions along one edge, equal in number to the number of cards in the deck, a mark in any position representing the suit and value of the related card, a control element located adjacent to said holder, having a row of marking positions corresponding to the positions on the cards, with each position having a plurality of sub-positions equal to the number of players, a mark in any subposition representing the player to whom the related card is to be dealt, an indicator for each player, means for simultaneously sensing all card marking and control element marking positions, and means effective upon said sensing for operating the indicator related to the player to whom the card is to be dealt.

13. In combination, means for sensing a playing card having a single row of marking positions in which a mark in one position represents the identity of the card, a control card having a column of four marking positions for each marking position of the playing card, a circuit connection extending from each playing card marking position to all four marking positions in the related column of marking positions of the control card, a plurality of current responsive indicators one for each of said four control card marking positions, and means responsive to the sensing of a mark in a position of a playing card and the occurrence of a mark in any of the four positions of the related column of the control card, for completing a circuit to the current responsive indicator related to the marked position of the control card.

14. In combination, a holder for a deck of playing cards, each of which has a row of spaced marking positions in which a single mark is made to identify the card, a control card supported by the holder in a plane adjacent to said deck of cards, said control card having a column of marking positions for each marking position of a playing card, with said columns being spaced equally to the spacing of the playing card positions and each column having a mark in one of a number of differentially spaced positions in the column to represent the destination of a related card, a sensing unit mounted for sliding contact across the row of marking positions of the outer-

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most card of the deck and across the control card so as to successively contact the marking positions of the playing card and concurrently therewith contact the related column of marking positions of the control card, a plurality of destination representing indicators, one for each differential marking position of the control card, and means controlled by said sliding element and effective immediately upon contacting a mark on a playing card, for operating the indicator related to the destination representing mark in the concurrently sensed control card column.

15 The invention according to claim 14 in which the sensing unit is arranged for reciprocation across the cards and the means controlled thereby is effective to selectively operate the indicators during movement of the unit in either direction.

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15 DELBERT B. LOWE, *Primary Examiner.*