April 4, 1967 W. I. FRIEDMAN ETAL 3,312,473

CARD SELECTING AND DEALING MACHINE

Filed March 16, 1964 7 Sheets-Sheet 1

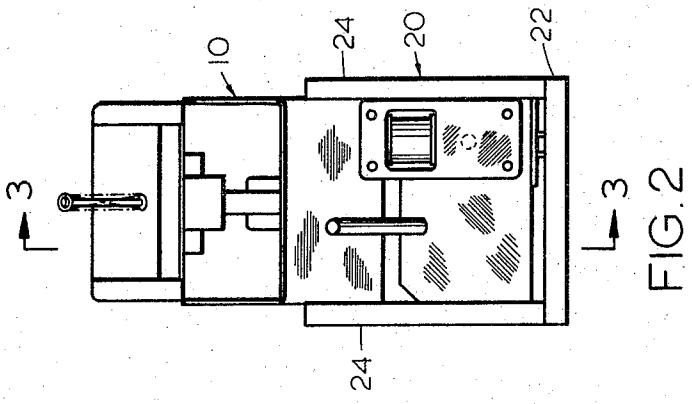


FIG. 2

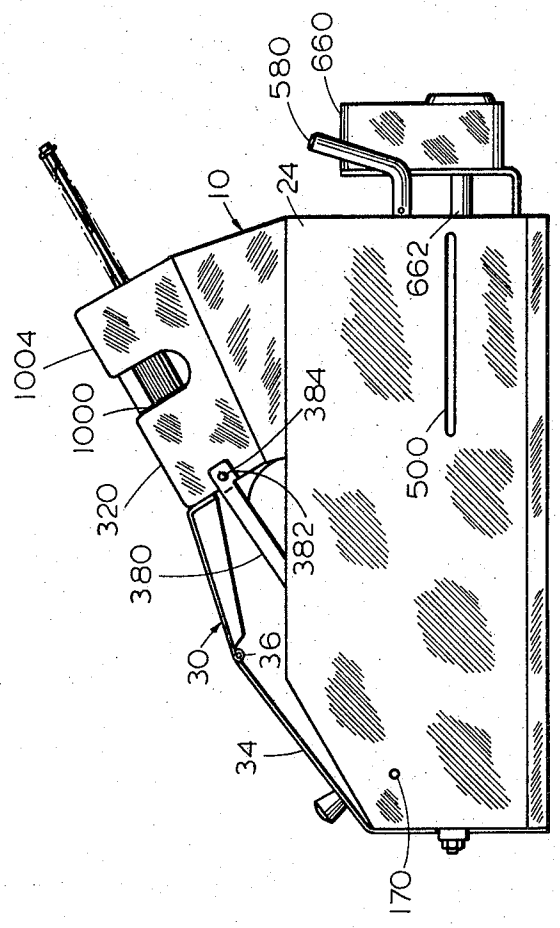


FIG. 1

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April 4, 1967 W. I. FRIEDMAN ETAL 3,312,473

CARD SELECTING AND DEALING MACHINE

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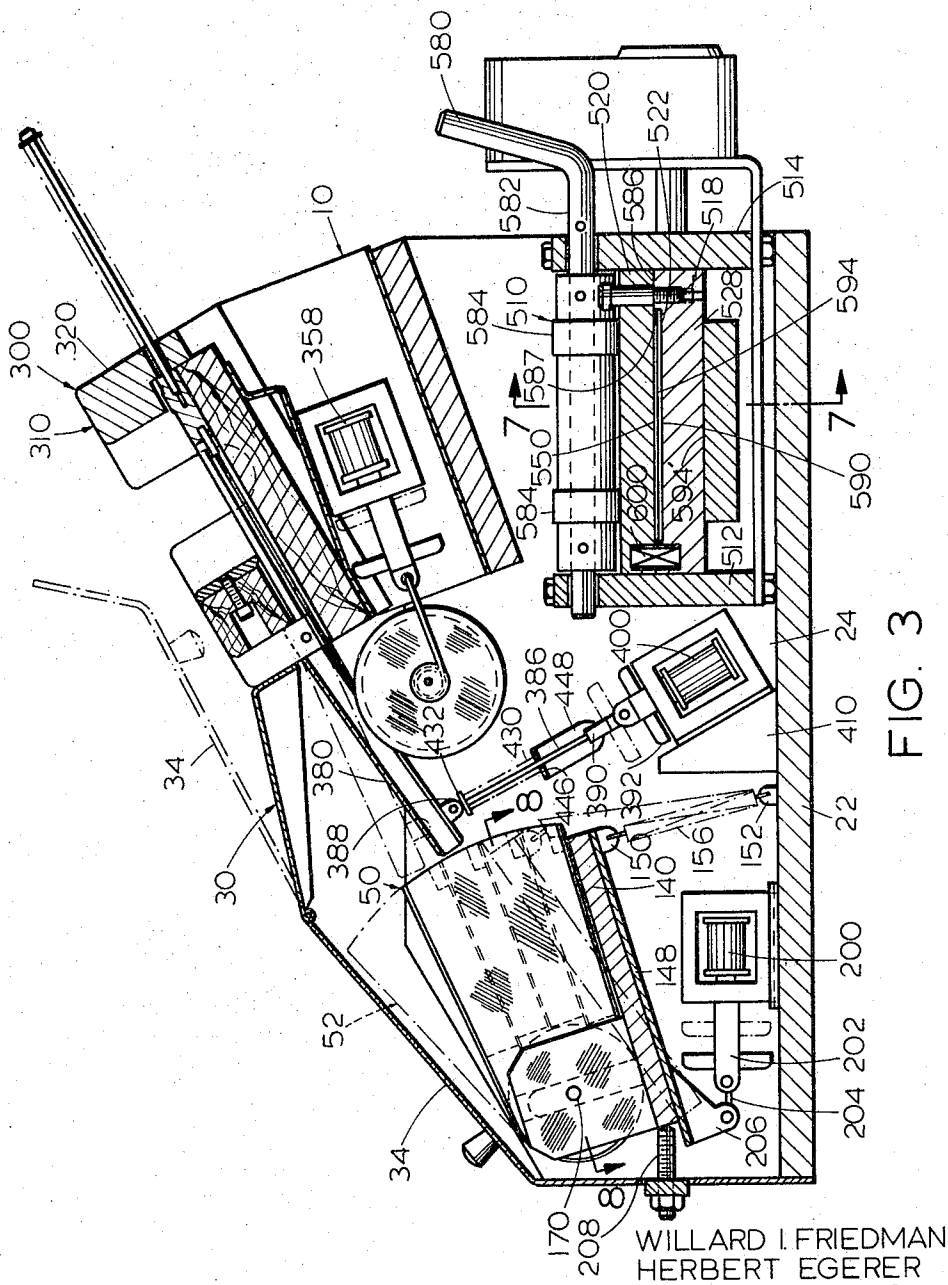


FIG. 3

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CARD SELECTING AND DEALING MACHINE

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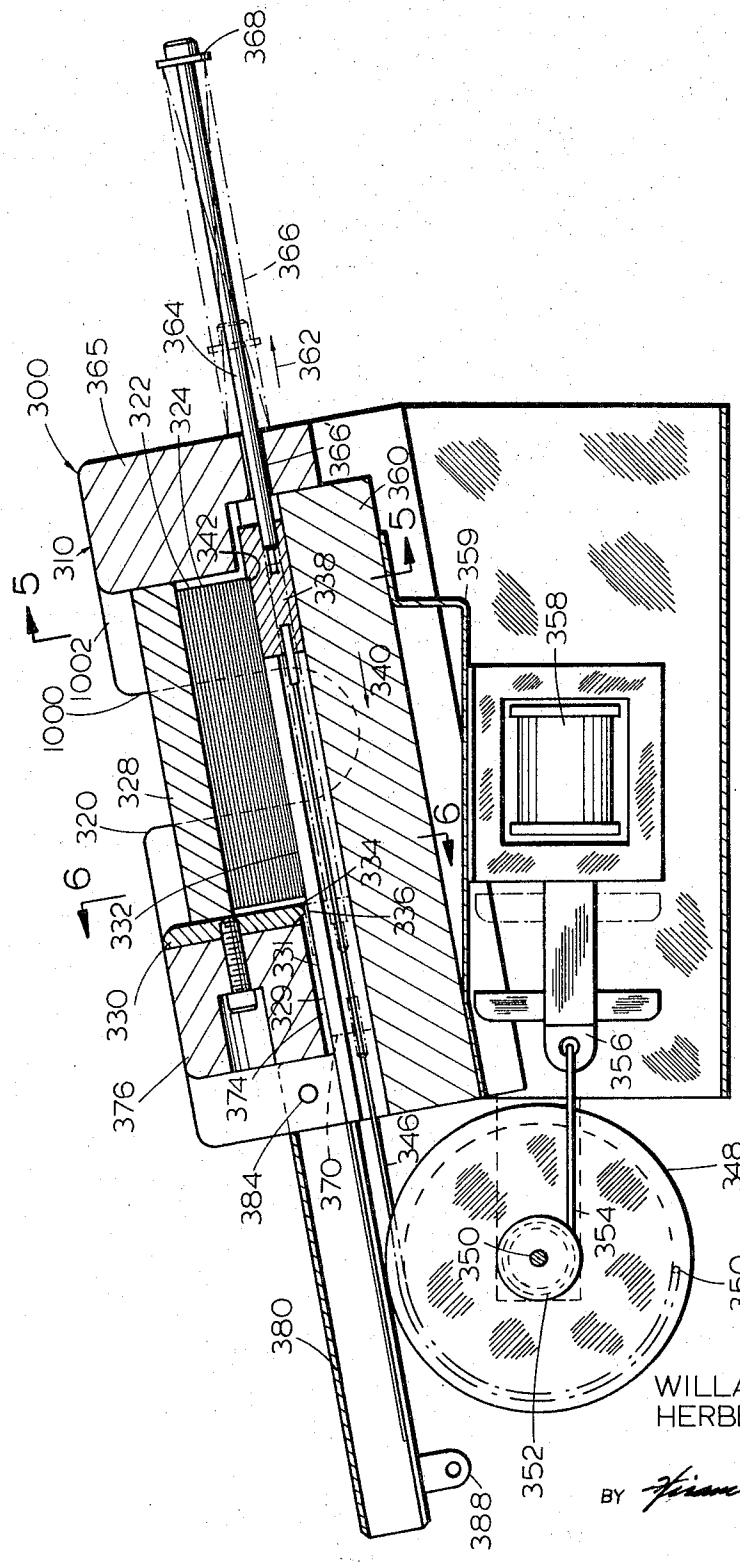


FIG. 4

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April 4, 1967 W. I. FRIEDMAN ETAL 3,312,473

CARD SELECTING AND DEALING MACHINE

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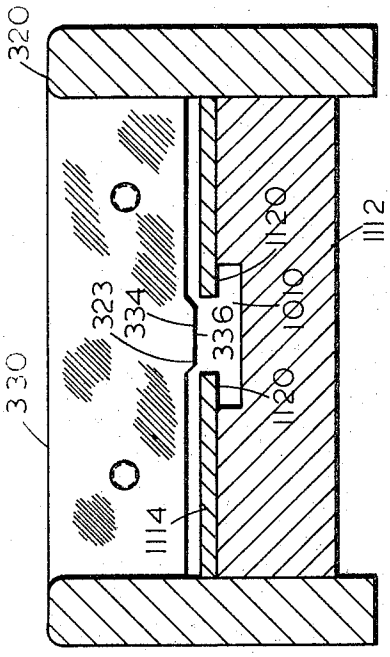


FIG. 6

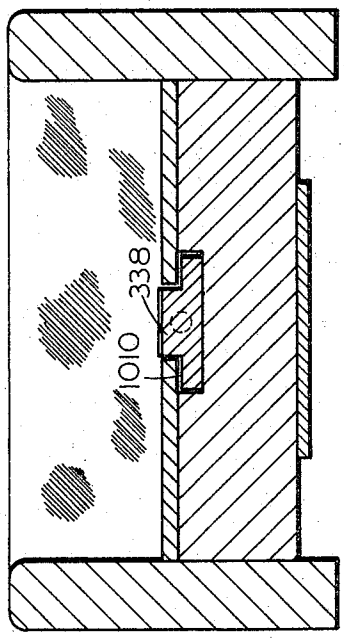


FIG. 5

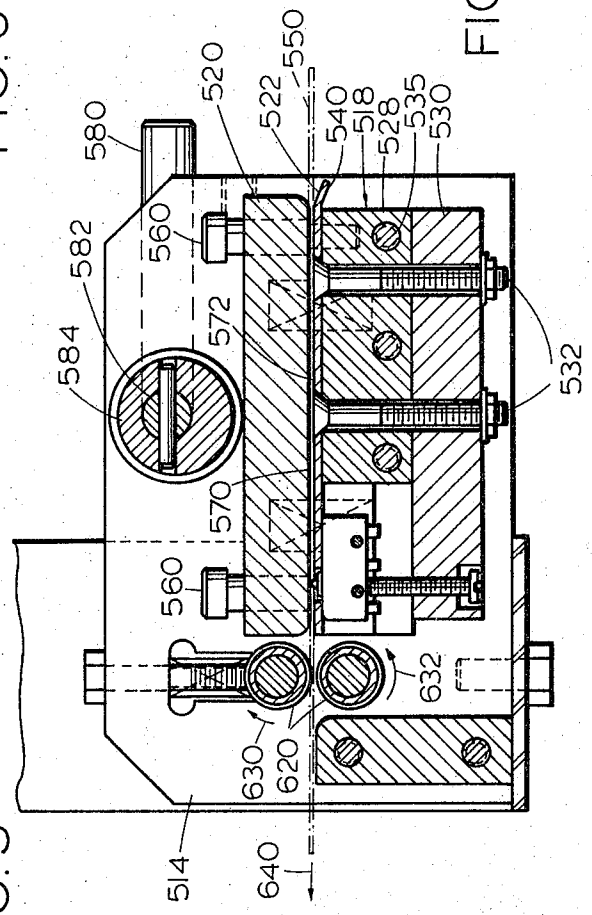


FIG. 7

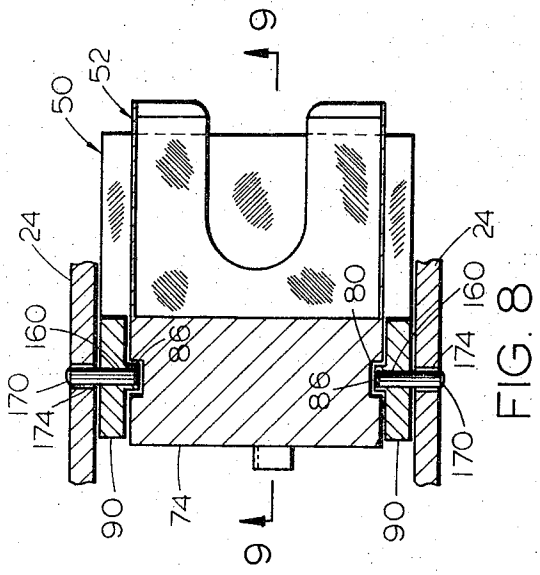
WILLARD I. FRIEDMAN
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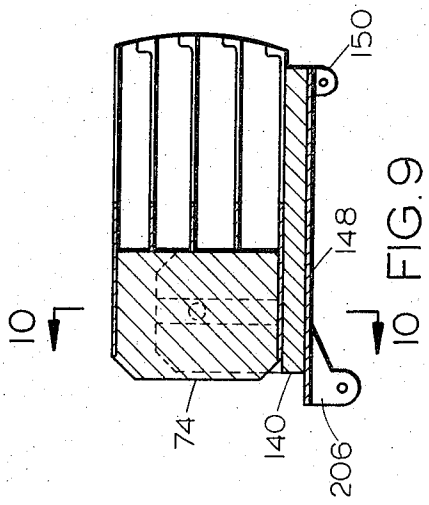
BY Hesian A. Sturges,
Agent

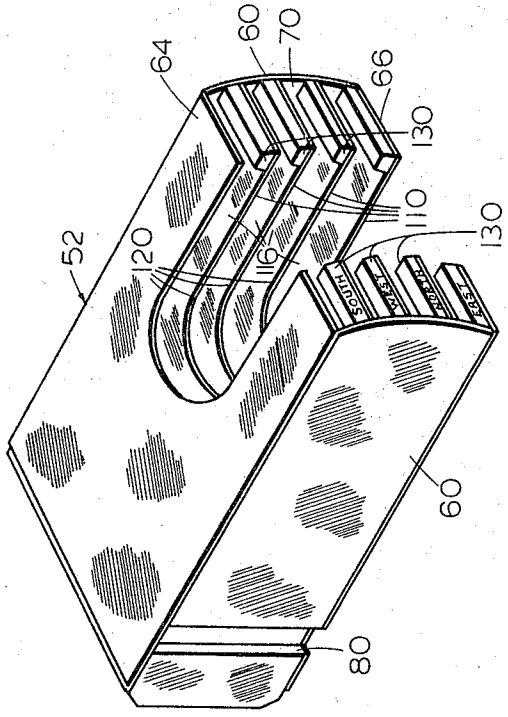
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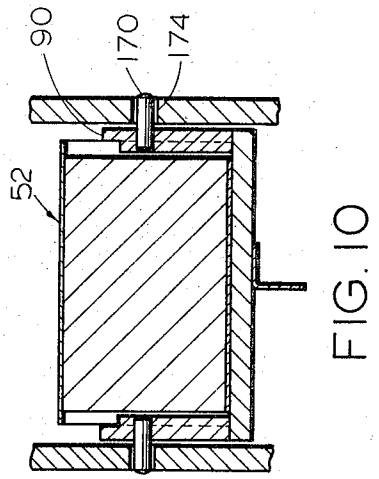
CARD SELECTING AND DEALING MACHINE

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CARD SELECTING AND DEALING MACHINE

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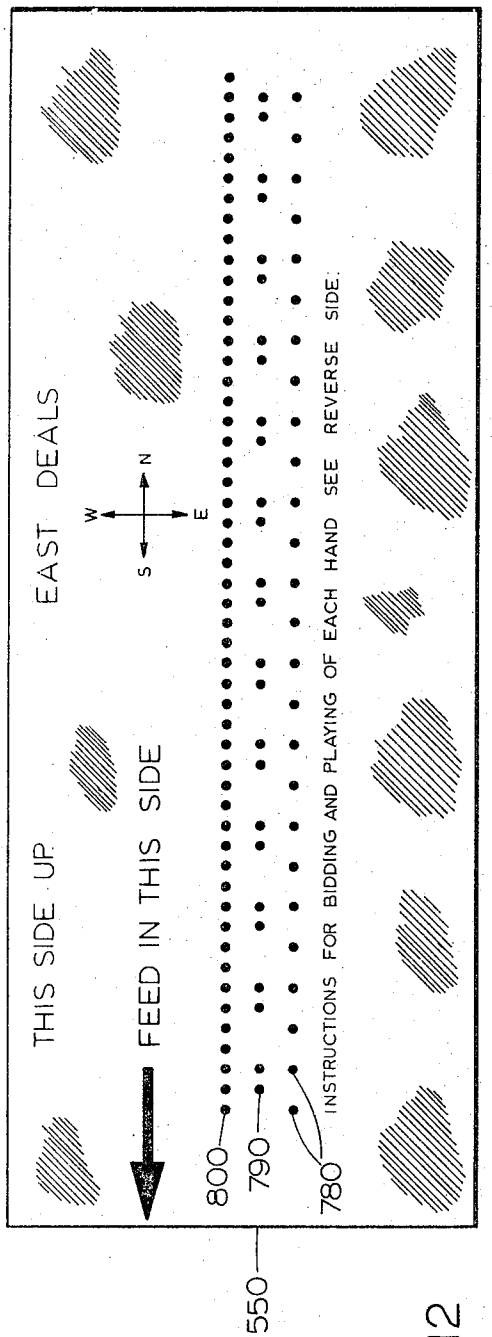


FIG. 12

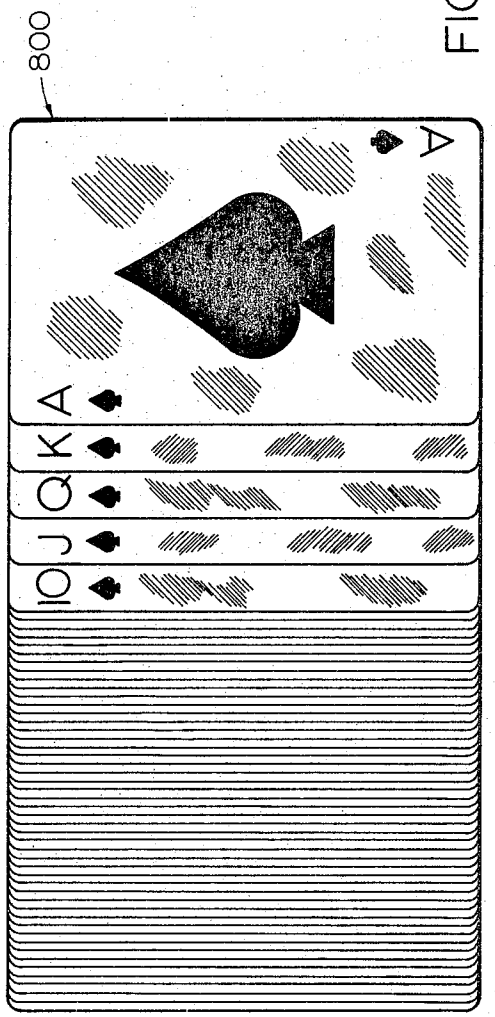


FIG. 13

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CARD SELECTING AND DEALING MACHINE

Filed March 16, 1964 7 Sheets-Sheet 7

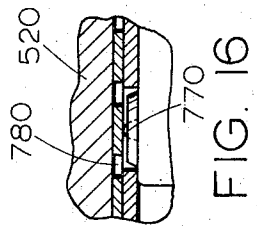


FIG. 16

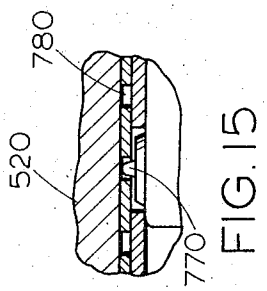


FIG. 15

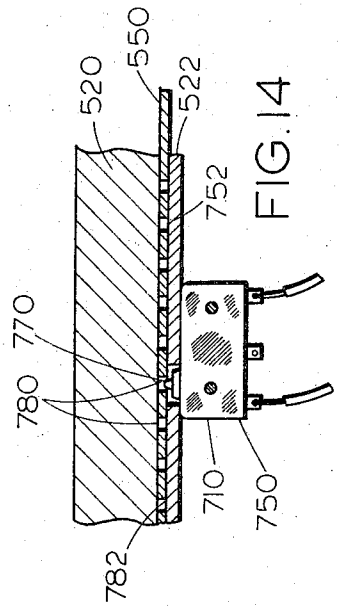


FIG. 14

FIG. 17

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United States Patent Office 3,312,473 Patented Apr. 4, 1967

3,312,473

CARD SELECTING AND DEALING MACHINE

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Filed Mar. 16, 1964, Ser. No. 352,135
5 Claims. (Cl. 273—149)

This invention relates to card dealing machines, and more particularly, it is an object of this invention to provide a card dealing machine which is adapted to deal playing cards into a plurality of hands in which each hand has exactly those playing cards which it should have in accordance with a predetermined pattern.

In bridge tournaments, for example, it is desirable that the element of luck be removed from the game by making it possible for each player to have had the opportunity of playing exactly the same hand that another player has had at a different time in the same tournament. Bridge players also delight in playing the same hands that have been played in tournaments by experts so that they can measure their own technique in comparison with the play of the experts.

Although for these reasons a card selecting and dealing machine has been desired, the dealing machines which have heretofore proposed have all been of types from which cards are only dealt at random.

Still another object of this invention is to provide a card dealing machine which is adapted to utilize common playing cards rather than cards of special shapes.

Yet another object is to provide a machine of sufficiently few and simple parts, proportional to its functions, that it can be manufactured and merchandised at the least cost possible.

Yet another object resides in the provision of a machine as described having a minimum number of parts for assuring a maximum freedom from breakdowns.

Other and further objects and advantages of the present invention will be apparent from the following detailed description, drawings and claims, the scope of the invention not being limited to the drawings themselves as the drawings are only for the purpose of illustrating a way in which the principles of this invention can be applied.

Other embodiments of the invention utilizing the same or equivalent principles may be used and structural changes may be made as desired by those skilled in the art without departing from the present invention and the purview of the appended claims.

In the drawings:

FIGURE 1 shows a front view of the machine showing a forward slot to receive a programming card.

FIGURE 2 shows a rear view of the machine.

FIGURE 3 is a sectional view taken along the line 3—3 of FIGURE 2 with some parts shown in section, and others, for convenience of illustration being shown in full line. A card bin door is shown in dotted lines in open position and in full lines in closed position.

FIGURE 4 shows a side view of the card holding and delivery mechanism with certain parts broken away and other parts shown in section, the view being an enlargement of the corresponding section of FIGURE 3.

FIGURE 5 is a sectional view taken along the line 5—5 of FIGURE 4.

FIGURE 6 is a sectional view taken along the line 6—6 of FIGURE 4.

FIGURE 7 is a sectional view of a program card reading assembly as seen along the line 7—7 of FIGURE 3.

FIGURE 8 is a sectional view taken along the line 8—8 of FIGURE 3 and shows a section through the playing card bin.

FIGURE 9 is a sectional view taken along the line 9—9 of FIGURE 8 and shows a cross section sideways through the playing card bin.

FIGURE 10 shows a cross section taken along the line 10—10 of FIGURE 9, showing the playing card bin and the pivot pins about which it rotates.

FIGURE 11 is a perspective view showing the playing card bin after it has been removed from the playing card bin assembly.

FIGURE 12 is a top plan view of the programming card which controls operation of the machine.

FIGURE 13 shows a deck of playing cards arranged in accordance with a predetermined order and sequence preparatory to placement in the machine.

FIGURE 14 is an enlarged detail of a programming switch and associated parts including a portion of the programming card, the various parts being broken away and shown in section much as they are seen in FIGURE 7.

FIGURE 15 is a view similar to FIGURE 14 but in still further detail showing the actuator tip of the programming switch in a position of insertion into one of the programming card holes.

FIGURE 16 is a detail similar to FIGURE 15 but showing the actuator tip of the programming switch in a depressed position in which the switch is held in an off position.

FIGURE 17 shows a wiring diagram and several mechanisms controlled thereby are diagrammatically also shown.

The card selecting and dealing machine of this invention is generally indicated at 10 in FIGURES 1–3 and has a main frame or housing generally indicated at 20 having a base 22, sides 24, and a cover 30, having a playing card bin door 34 which can be opened by hinging at 36 into the dotted line position shown in FIGURE 3 for allowing access to a playing card bin assembly, best seen at 50 in FIGURE 3, for the removal of a playing card bin 52, shown in FIGURE 11, from which the several hands of playing cards can be removed for use in a game as later described.

As best seen in FIGURE 11, the playing card bin has side walls 60, a top wall 64, and a bottom wall 66. The side, top, and bottom walls preferably describe a box-like configuration which has an open end which is wall-less and which is identified by an opening 70.

The bin 52 further has a rear wall or closed end wall 74, which latter is best seen in FIGURE 9, which is relatively thick. This also being visible in FIGURE 8 in which certain vertical slots through the end wall 74 can be seen at 80, the slots being vertical and being disposed one on each side of the bin 52 for the purpose of receiving inwardly protruding cylindrical portions 86 of a pair of standards 90 which latter are disposed one on each side of the bin 52 whereby the end wall 74 and consequently the entire bin 52 is adapted to swing upwardly as indicated in dotted lines at 52 in FIGURE 3, the upward swinging being continuable until the bin is in a vertical position, if desired; or optionally, the entire bin can be removed from the standards 90 and will then be as shown in FIGURE 11.

Referring to FIGURE 11, it will be seen that the bin 52 preferably has three shelves 110 therein for defining, with the top 64 and the bottom 66, four playing card hand compartments 116, with each of the shelves 110 parallel to the bottom 66 and the bottom 66 normally tilted somewhat upwardly from the horizontal at the open end 70 when the bin 52 is in the card-receiving position shown in FIGURE 3.

As best seen in FIGURE 11, a deep recess 120 extends completely through the card bin 52 from top to bottom, entering inwardly from the open end 70 thereof, the recess 120 extending through the top 64, the bottom 66, and also each of the shelves 110, in order to facilitate the removal of the cards from the bin.

Adjacent the entrance opening 70, as best seen in FIG-

URE 11, the bin is provided on the upper side of each of its shelves 110 and also on the upper side of its bottom 66 with upwardly protruding stops 130 for assisting gravity in maintaining cards in the compartments 116.

As best seen in FIGURE 8, the standards 90 are attached at their lower sides to a base portion 140 of the playing card bin assembly 50 which latter supports the bottom 66 of the bin on its upper side, as best seen in FIGURE 3, with the lower side of the base 140 attached to a base carrier 148 having a downwardly extending tab 150 to which a spring 156 is attached, the spring 156 extending downwardly to a further tab 152 attached to the bottom wall 22 of the main frame 20.

The standards 90 each have openings 160 extending horizontally thereinto, as best seen in FIGURE 8, into which stub axles 170 are received, the latter extending outwardly through axle openings 174 in the side walls 24 of the main frame, whereby the entire bin assembly 50 is adapted to swing about the axles 170 and this swinging motion is controlled by a solenoid 200 which can be called the card bin solenoid 200, which latter is best seen in FIGURE 3, and is mounted on the upper side of the base 22 and which has a clapper 202 pivotally connected by a rod assembly 204 to an ear 206 on the base carrier 148 of the card bin assembly 50.

A bolt 208 connected to the main housing 22 has a rearward end disposed in a position for engaging the forward side of the base portion 140 below and forwardly of the axles 170 preventing undue upward swinging of the rearward end of the card bin to define an upwardmost or top position of the said rearward end as shown in dotted lines in FIGURE 3.

Referring now to FIGURE 3, a card motion assembly is there shown at 300 which has as one of its parts the card bin assembly 50 and which has as another of its parts a card-holding and delivery mechanism 310, which latter is shown in detail in FIGURE 4.

The card-holding and delivery mechanism 310 has as its main part a card holder 320.

The card holder 320 has in it a cavity 322 rectangular in top view for receiving a deck of cards 324 arranged in a stack, the deck 324 being forced downwardly by a vertically slidable weight 328 received in an upper part of the cavity 322.

A forward wall member or gauge plate 330 forms a forward wall of the cavity 322, as seen in FIGURE 6, and has the lower edge of its depending center portion 323 disposed above the planar bottom wall 332 of the cavity 322 a distance which is greater than the transverse thickness of one of the cards of the deck 324, but less than the combined transverse thickness of two cards.

The gauge plate 330 has the rearward corner 334 of its lower edge 336 preferably in the form of a right angle, but most important of all, at an angle such that the lower edge 336 does not slant downwardly toward the plane of the bottom 332 from its inner side forwardly excessively whereby only the bottom-most card of the deck 324 tends to slide under the corner 334 at times when a sliding feeder dog 338 pushes forwardly on the lowermost one of the cards of the deck 324 as the feeder dog 338 moves forwardly in the direction of the arrow 340 with the lowermost card of the deck 324 received in a notch 342 in the top and forward side of the feeder dog. The notch 342 is of rectangular shape having a depth exactly the depth or at least not more than the depth of one of the cards of the deck 324.

The forward wall or gauge plate 330 is spaced above the bottom wall 332 for defining the rear entrance of an exit slot 329 which latter has a lower surface 331 in the same plane with the cavity bottom wall 332.

The feeder dog 338 is pulled forwardly by a cable 346 attached to its forward side, the cable 346 extending at least partially around a pulley 348 to which the forward end of the cable 346 is anchored at 350.

The pulley 348 is mounted on an axle 350 suitably

connected to the sides 24 of the main frame 20, the axle 350 being fixed to the pulley 348 for rotation therewith and also being fixed to a smaller pulley 352, whereby rotation of the pulley 352 will cause rotation of the larger pulley 348. A second cable 354 extends around the pulley 352 and is anchored thereto, the second pulley 354 being attached to the clapper assembly 356 of a card delivery solenoid for a first electrical motor means 358 which latter is attached to a bracket 359 which is in turn fixed to a bottom 360 of the card-receiving cavity 322.

The feeder dog 338 is constantly urged in a rearward direction, as indicated by an arrow 362, by means of a spring stem 364 attached to the feeder dog 338 and extending slidably through a rearward portion 365 of the card holder 320 at an opening 366' therethrough.

A spring diagrammatically illustrated at 366 surrounds the stem 364 and presses at its forward side on the rearward wall 365, the rearward end of the spring engaging a cap 368, which latter is firmly fixed to the rearward end of the stem 364 so that the spring 366 tends at all times to urge the feeder dog 338 rearwardly so that the feeder dog 338 has a tendency to retract under the influence of the spring 366 from a forward position, shown in dotted lines in FIGURE 4 at 370, to a rearward position, shown in full lines in FIGURE 4, in which latter position it is caused to be positioned with its notch 342 in a position receiving the lowermost one of the cards of the deck 324.

At times when the solenoid 358 has actuated the feeder dog 338 into the forward dotted line position 370, the lowermost card of the deck 324 will have been caused to slide forwardly through a card passage 374 which extends under the gauge plate 330 and also under other forward portions of the card holder 320, such other portions being indicated at 376.

As best seen in FIGURE 1, a card chute 380 is mounted on the forward side of the card holder 320 with tabs 382 on the rearward end of the chute overlapping the sides of the card holder 320 and being secured to the card holder 320 by pins 384 for mounting the chute 380 in a manner permitting it at its forward end to rotate about a horizontal axis through the ends 384, which latter are in alignment. The chute 380 has a receiving end defined by its rearward end, which latter is in a position for receiving cards from the passage way 374 and the forward end of the chute 380 extends into a position for delivery of cards into the card bin 52.

On the underside of the chute 380 as seen in FIGURE 3, a rod 386 is pivotally connected to a tab 388, which latter is fixed to the underside of the forward end of the chute 380. The rod 386 is connected by a suitable member 390 to the clapper assembly 392 of a card chute solenoid 400, which latter can also be called a third motor means 400.

The card chute solenoid or third motor means 400 is attached to a mounting 410, which latter is fixed to the base 22 for anchoring the solenoid 400. The rod 386 has a coil spring 430 around it as indicated diagrammatically in FIGURE 3, the upper end of the spring bearing against a shoulder 432, which latter is fixed to the rod 386. The lower end of the spring 430 bears against an end portion 446 of a member 448, which latter is attached to the side wall 24 of the main frame housing with the rod 386 extending slidably through the portion 446 and being permanently connected to the clapper 392 through the member 390, as above described.

Thus it will be seen that when the chute solenoid 400 is energized, its clapper 392 will move downwardly pulling the rod 386 through the member 448 against the resistance of the spring 430 for causing the chute 480 to move into the full line position shown in FIGURE 3.

Whenever the chute solenoid 400 is not energized, the spring 430 will tend to press against the portion 446 and the shoulder 432 for causing the chute 380 to be urged into the dotted line position shown in FIGURE 3.

Referring now to FIGURE 1, it will be seen that one of the side walls **24** has a horizontal slot **500** through it and, as best seen in FIGURE 3, on the inner side of the slotted side wall, which latter has been removed in the formation of FIGURE 3, we there find a program card reading assembly **510** having forward and rearward frame members **512** and **514** disposed approximately in vertical planes extending transversely of the side frame members **24**. Between the forward and rearward frame members **512** and **514** is a program card receiving means or assembly generally indicated at **518** and having first and second card positioning members **520** and **522** which latter can also be called top and bottom card positioning members **520** and **522**.

As best seen in FIGURE 7, the lower card positioning member **522** is mounted on an upper support **528** having a lower support **530** below it. The lower card positioning member **522** is attached to the upper support **528** by bolts **532** which also extend through the lower support **530**, the member **528** being attached to the forward and rearward reader frame members **512** and **514** by suitable means such as screws **535** partially seen in FIGURE 7.

That end of the second or lower card positioning means **522** which faces the slot **500**, shown in FIGURE 1, can be seen at **540** in FIGURE 7 to be bent downwardly for guiding a program card **550** between the members **520** and **522**.

The upper or first program card positioning member **520** is slidably mounted on vertical bolts **560** which extend therethrough with the lower ends of the bolts **560** threadedly received in the member **518** whereby the upper card positioning member **520** is adapted to move upwardly and downwardly away and toward the lower card positioning member **522**.

The first and second, or upper and lower card positioning members **520** and **522** have, respectively, first and second opposed parallel card engaging surfaces **570** and **572** which are horizontally disposed and which are spaced during operation for engaging the opposite sides of the program card **550**, as best seen in FIGURE 7.

The upper or first card positioning member **520** can be moved from an upward position downwardly by the operator in the following manner: a lever **580**, best seen in FIGURES 3 and 7, is attached to a shaft **582** which is rotatably disposed through the forward and rearward reader frame members **512** and **514** and on the shaft **582** a pair of spaced cam members **584** are provided which have outer surfaces eccentrically disposed with respect to the shaft **582**, whereby when the lever **580** is placed in the position shown in FIGURE 7, the cam members **584** will press against the upper side of the upper card positioning member **520** holding it in the position shown in FIGURE 7 in which the upper card positioning member **520** engages the upwardly extending side portions **586** of the member **528**, the side portions **586** extending along the sides of the positioning member **520**. The two upwardly extending side portions **586** have straight parallel vertical inner edges or card edge guide surfaces **587** which are spaced for slidably receiving the program card **550** snugly therethrough to guide the card through the card reading assembly.

The card guide surfaces **587** are of a height to space the lowermost position of the upper positioning member **520** above the lower positioning member **522** for snugly and slidably receiving the program card therebetween in a card recess **594** having an outline identified in FIGURE 3 by the outline of the card **550**.

As best seen in FIGURE 3, it will be seen that a large recess **590** is disposed in the top of the member **528** and is of a depth equal to the combined thickness of the lower card positioning member **522** and the thickness of the program card **550**, whereby at times when the upper card positioning member **520** is disposed against the member **528**, the program card **550** disposed therebetween will be

snugly and slidably received in the card recess **594** which forms an upper part of the large recess **590**.

The members **520** and **528** are provided with spring receiving recesses **594'** for receiving springs **600** whereby when the lever **580** is put in the position permitting the upper card positioning member **520** to move upwardly, then the spring **600** will urge the member **520** upwardly.

As best seen in FIGURE 7, a pair of opposed rotating rollers **620** are mounted on the end members **512** and **514** rotatably whereby the rollers **620** are horizontally disposed and are spaced apart a desirable distance for snugly receiving the program card **550** therebetween whereby rotation of the rollers **620** in the directions of the arrows **630** and **632** will tend to pull the program card **550** through the reading assembly in the direction of the arrow **640**, as seen in FIGURE 7.

Suitable means for driving the rollers **620** are provided, and as best seen in FIGURE 17, this is done with a motor **660** having a shaft **662** connected to one of the rollers **620**.

Referring now to FIGURE 17, in the wiring diagram shown there, the card bin control solenoid **200**, the card chute control solenoid **400**, and the card removal solenoid **358**, are all seen to have one of their terminals grounded, as indicated by the numeral **690**; and each have their other terminals connected by wires **694**, **696** and **698** to respective ones of three switches **700**, **702**, and **704**. The other terminals of the switches are respectively connected by wires **710**, **712**, and **714** to a manual switch **720** through wires **722** and **724**.

The manual switch **720** has its other terminal connected by wire **728** to a source of power **730**, which latter has its other terminal connected by a wire **732** to a ground.

The wire **722** extends to the motor **660** which has its other terminal grounded through a wire **740**.

As best seen in FIGURE 17, the three switches **700**, **702**, and **704** are disposed in parallelism along side each other with their housings **750** mounted beneath a forward end **752** of the second or lower card positioning member **522**, each switch housing having an upwardly extending depressible normally protruding nib **770**, best seen in FIGURE 14, which is adapted to engage in various ones of a row of holes **780** in the program card **550**.

The switches **700**, **702**, and **704** are each of a type having on their interiors means for urging their nibs **770** into the protruding position shown in FIGURE 14, this not being shown in detail as such switches are conventional and not a part of this invention.

In their outer positions, the nibs **770** protrude beyond the adjacent or lower card positioning surface **782** for entering into one of the holes **780'** in the card **550**. The nibs **770** are each retractable to a depressed position flush with the surface **782** when an imperforate portion of the card **550** is depressed there against during passage of the card. Referring to FIGURE 12, it will be seen that there are three rows of holes in the card, the row **780**, a row **790**, in the center, and a row **800** on the other side of the row **790**. The rows are parallel and the holes therein are spaced apart various distances for serving their special purposes. The row **800** are the holes for actuating the switch **704** for the control of the card feeding solenoid **358**. There are fifty-two holes in the row **800** because there are fifty-two cards in a deck.

The row **780** are the holes for actuating the card chute solenoid **400** and operate the switch **702**.

The center row of holes **790** actuate the switch **700** for controlling the card bin solenoid **200**. The switch **720** can be in the same form as the switches **700**, **702**, and **704** if desired, in which case, the switch **720** would have its nib **770** opposite an area of the program card which has no holes at all, whereby the switch **720** is closed whenever the program card is in place to start the drive motor **660** and to allow the current to go to the three solenoid switches **700**, **702**, and **704**.

FIGURE 13 shows a deck of playing cards **800**. The

cards in the deck are sorted in the following rotation: spades, hearts, diamonds, and clubs. Each suit, in turn, is sorted in sequence: ace, king, queen, jack, 10, etc., down to 2.

With the cards in this sequence as they are put into the machine, the program cards can accurately control the delivery.

In operation, the cards are put in place in the card holder **320** and the weight **328** is put in above them. Next, the program cards is inserted at a time when the lever **580** is in a position for holding the card positioning member **520** in an open position. The lever **580** is then swung into the position shown in FIGURE 7 for confining the card in position for actuating the switches **700**, **702**, and **704**.

With the switch **720** closed because its nib is opposite a continually closed part of the program card, the motor **660** actuating the rollers **620**, pulls the card into the machine and as each card is delivered from the card holding and delivery mechanism **310** by operation of its solenoid **358**, the chute **380** will direct it toward the card bin **52**. Since the bin **52** can be in two positions, an upper and a lower position, and since the chute can also be in an upper and a lower position, four different relative positions of the forward end of the chute with respect to the card bin are possible. These four positions are exactly spaced to coincide with the four different compartments of the card bin. After the program card is run through the machine, all cards will be in the card bin with one hand in each bin compartment.

Then the operator can remove the bin and will find picking the hands out of the bin made simple by the recesses **120** seen in FIGURE 11, and distributing them to the South, West, North and East.

After distributing the hands, the card bin is then replaced.

The process of placing the cards in the card holder **320** is facilitated by downwardly extending recesses **1000** which are disposed in the right and left side walls **1002** and **1004** of the card holder **320**, as best seen in FIGURES 1 and 4, the recesses **1000** being directly opposite each other. As best seen in FIGURE 5, a trackway recess **1010** is provided extending forwardly and rearwardly in the bottom of the card holder **320** and as the bottom of the card holder has two parts, the lower part **112** and an upper part **114**, which latter define the walls of the track recess **1010** and as the inner portion of the track recess is larger with forwardly and rearwardly extending inner edges **1120** of the upper bottom portion **1114** extending inwardly over side edges of the lower part of the recess **1010**, a trackway is defined which is adapted to slidably confine the feeder dog **338**, which latter, as best seen in FIGURE 5, has a cross sectional shape complementary to the recess **1010** for close slidable fit therein.

Within the meaning of the appended claims, it will be seen that the solenoids **200** or **400** can be either one called a second motor means.

As thus described, this invention is believed to fulfill the objectives above set forth for providing a card dealing machine which also accurately selects the cards to be dealt sorting them into predetermined hands.

From the foregoing description, it is thought to be obvious that a card selecting and dealing machine constructed in accordance with our invention is particularly well adapted for use, by reason of the convenience and facility with which it may be assembled and operated, and it will also be obvious that our invention can be changed and modified without departing from the principles and spirit thereof, and for this reason, we do not wish to be understood as limiting ourselves to the precise arrangement and formation of the several parts herein shown in carrying out our invention in practice, except as claimed.

We claim:

1. A card selecting and dealing machine comprising: a frame, a card motion assembly comprising: a card holding and delivery mechanism comprising a card holder and a first electrical motor means and card removal means operably correlated with said first motor means and said card holder for dealing a card from said card holder upon operation of said first motor means, and said card motion assembly further comprising a card bin assembly having a card bin having a plurality of compartments, said card holding and delivery mechanism and said bin assembly being movably mounted with respect to each other on said frame; and a card motion assembly positioning means operatively correlated with said card motion assembly and comprising a second electrical motor means which latter when operated will cause said card delivery mechanism and said bin assembly to be disposed in a plurality of positions with respect to each other at different times for delivery of a card into a different one of said compartments at each of said times, a program card reading assembly connectable to a power source and having program card receiving means for receiving an indicia-bearing program card, and said reading assembly having circuit completing means connected to said power source and correlated with said receiving means and adapted for completing circuits from said source to said first motor means respectively when indicia on said card are positioned opposite said circuit completing means respectively, drive means operatively associated with said reading assembly for causing relative movement of said card and said card reading assembly to dispose various parts of said indicia opposite said circuit completing means, and further circuit completing means connected to said power source and correlated with said program card receiving means and adapted for completing circuits from said source to said second motor means when indicia on said card are positioned opposite said further circuit completing means respectively, said further circuit completing means being cooperative with the indicia on said card for causing said second motor means to be operated in timed relationship to said first motor means.

2. The combination of claim 1 in which said card holding and delivery mechanism further comprises a card chute positioned for receiving delivery of cards from said card holder, said chute having a delivery end adjacent said bin and said delivery end being movable into a plurality of positions with respect to said bin for delivery of cards to various compartments of said bin, a third motor means forming a part of said second motor means and connected to said chute and adapted when operated to move said delivery end of said chute into said plurality of positions.

3. The combination of claim 1 in further combination with: said card holding and delivery mechanism comprising a card holder having a card deck receiving cavity in its upper defining cavity side walls, rearward wall, and forward wall, and a substantially planar cavity bottom wall, said cavity forward wall having a card exit slot at its lower end, and said cavity forward wall having a lower edge lowermost portion disposed above said cavity planar bottom wall a distance which is greater than the transverse thickness of one card of a deck of playing cards and lesser than the combined transverse thickness of two cards, said cavity bottom wall having an elongated track-recess therethrough extending toward said forward wall, a feeder dog longitudinally slidably disposed in said track-recess, said feeder dog having a forward upper recess of a depth not greater than the lowermost card of said deck, means connected to said first motor means and to said feeder dog for pulling said feeder dog forward from a rearward card reception position for receiving a lowermost card of a deck disposed in said cavity to a forward position for sliding said lowermost card out from under said deck and through said card exit slot, means operably correlated with said feeder dog for automatically retracting said feeder dog from its forward position rearwardly to a rearward position in which it can receive a further

card from the bottom of said deck, said dog track-recess and said dog having complemental interfitting surfaces for preventing said dog from escaping from said recess when sliding between said rearward and forward positions.

4. The machine of claim 1 wherein said program card indicia comprises rows of holes therein and in which said program card receiving means comprises first and second card positioning members having respectively first and second opposed parallel card engaging surfaces spaced for engaging opposite sides of a program card, and wherein said circuit completing means and said further circuit completing means include a plurality of switches each having a depressible normally protruding nib engageable in a hole in a program card, each switch having means to urge its said nib into a position protruding beyond an adjacent one of said surfaces for entering a hole in said card, said nibs each being retractable to a depressed position flush with said adjacent surface when an imperforate portion of a card is pressed thereagainst, said card receiving means further having at least one straight guide surface for guiding a card having a straight side edge whereby rows of holes through said card and in parallelism with said straight side edge will pass over nibs of respective switches.

5. The combination of claim 4 in further combination with a program card having rows of holes therein, each

said row being in alignment with a different one of said switch nibs when said card is disposed with a proper edge against said guide surface, the thickness of said card and the holes in said card each being of a size for the reception of a respective switch nib in a respective hole sufficiently to actuate said switch, the imperforate portions of said card disposed between said holes causing sufficient depression of said switch to actuate said switch in an opposite direction.

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