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Description

The present invention relates to slot machines.

More specifically, the present invention relates to those machines which are normally installed in pubs, cafes, recreational centres, sports salons and similar establishments, which operate by the insertion of coins, or possibly tokens, having a predetermined value and which, in each operating cycle, following the dictates of chance, pay off prizes consisting of multiples of the value of the mentioned coins, or in some cases of vouchers which can be exchanged for such prizes or for services rendered by the establishment itself in which the machine is installed, such as, for example, food or drink having a pre-established value.

Even more specifically, the present invention relates to known machines which comprise a completely closed casing having, at the front and at the a height suitable to be conveniently observed, a number of display units for displaying digits, or possibly any other conventional signs or symbols. When the machine is operated, through an electronic system based on the use of digital techniques and by integrated circuits, symbols or signs are continuously, randomly and independently changed for a pre-established period of time at a rapid speed to produce a resulting combination of signs or symbols from which the prizes paid off by the machine depend. This type of machine can be adapted with relative ease to the realization of different games. Prior art machines comprise a slot for the insertion of coins, a push button which permits each operating cycle to be commenced after a coin has been inserted and duly been accepted by a corresponding coin control device, and a set of three push buttons by means of each one of which the changing of symbols on an associated display unit may be interrupted. A prize is obtained when pre-established combinations appear on the display units. These combinations are valued differently in accordance with a table which basically consists in the repetition of the same sign on all of the display units, or at least on two of them. The machine is also provided with a system which permits, in a determined game, the signs or symbols which are of interest to be retained in order to increase the possibility of success in the following game.

In DE—A—2 205 993 there is described a slot machine which has a rear box connected by hinges to a front box. The operating components of the machine are located in this box. The front box is provided with windows through which the rotating parts of the machine may be viewed.

The object of the invention is to facilitate and simplify assembly of the machine during manufacture as well as repair and maintenance of the machine.

According to this invention there is provided a slot machine comprising a casing, a frame mounted inside the casing, and a general electric circuit, said general electric circuit including a set of display units, a set of control elements, at least one signalling element, a control circuit, and an input circuit, said set of display units being located on the machine at a front position and at a height suitable to be comfortably observed, each of said display units being arranged to display a succession of luminous signs or symbols, and said control circuit being arranged to change the symbols or signs displayed on said display units for a pre-established period of time following operation of one of said control elements to produce a resulting combination of symbols or signs, prizes paid by said machine being determined by the resulting combination, characterized in that the casing is completely open at its front and rear facer, in that the machine includes front and rear gates rotatably mounted about vertical axes for closing said front and rear faces and safety locks for securing the gates in their closed positions, and in that the general electric circuit is physically divided into a first part which includes the input circuit and is mounted on the frame, a second part which includes the control circuit and is mounted on the inner face of the rear gate, and a third part which includes the display units, the control elements and said at least one signalling element and is mounted on the front gate.

This invention will now be described in more detail, by way of example, with reference to the drawings in which:

Figure 1 is a front view of a slot machine constructed in accordance with the invention;

Figure 2 is a plan view of the machine represented in Figure 1, with the two access gates to the interior in an intermediate open position;

Figure 3 is a side elevational view of the machine represented in the preceding figure;

Figure 4 is a rear elevational view of the same machine, with the rear gate completely open;

Figure 5 is a front perspective view, on a slightly enlarged scale, of the same machine represented in the four preceding figures, with the rear gate situated in an intermediate open position;

Figure 6 and Figure 7 are front and upper views, respectively, of the main elements through which the coins are inserted in the machine;

Figure 8 is a sectional view taken along line VIII—VIII of Figure 6;

Figure 9 is a schematic diagram of the general electric and electronic circuit which feeds the different mechanisms and elements forming the machine;

Figure 10 is an exploded perspective view of one of the display units which produce the rapid succession of numbers, signs or symbols; and

Figure 11 is a longitudinal sectional view of the display unit represented in the preceding figure conveniently assembled.

Although the present invention is applicable to the construction of large-sized slot machines to be directly installed on the floor, it can, more preferably, be applied to the construction of machines having relatively reduced dimensions to be installed on a table, a counter, or the like, or

to be fixed to a wall or a similar vertical surface. Hence, in accordance with the invention, there is provided a casing 1 having a general parallelepiped shape, of sheet metal, preferably having dimensions none of which exceed 50 cm, and which are for example, about 44.5 cm in height, by 34 cm in width, by 38 cm in depth. The casing 1 may be provided with a set of flexible legs 4 or any other type of supporting or fixing elements.

According to the invention, the casing 1 is open at its front and rear faces, and these are closed by gates 14, 17 hinged thereto through corresponding suitable vertical axes, defined by corresponding sets of hinges 2, 2', of any suitable type, arranged so that they permit the gates 14, 17 to close until they are situated in planes parallel or almost parallel to the corresponding faces. These gates 14, 17 facilitate handling of the mechanisms and the inner elements of the machine. Both gates are secured in the closed position by means of safety locks 3 which can be of the type which provide, when the gates 14, 17 are secured, a highly resistant and, naturally, completely tamperproof block isolated from the outside.

On the upper surface of the casing 1 there are located slots 5 for the insertion of the coins by means of which the machine will be operated. These slots 5 are arranged in two molded bodies 6, 6' identical to each other, conveniently secured to this upper surface, for example, by means of screws which thread in corresponding holes 7, whereby they are completely inaccessible from the outside. Each one of these bodies 6, 6' has a stepped configuration, presenting an approximately L-shaped section which defines a protruding vertical surface 8, aligned with the slot 5 in the same vertical plane or slightly inclined, so as to facilitate the insertion of the coins. The coin receiving bodies 6, 6', are capable of receiving coins having two different values, for example, 5 and 25 peseta coins, respectively. The body 6' serves only to provide the players with small change, in the normal case in which the machine is programmed to operate with coins having the first mentioned value. These two bodies 6, 6' are connected to devices 9, 9' for controlling the size, weight and alloy of the coins. The devices 9, 9' are connected to small grooves 10, 10' into which faulty or false coins are dropped and which can be collected through corresponding side opening 11, 11'. The coin control devices 9, 9' are fixed to the casing 1 in a readily dismountable manner. They are, for example, fitted into corresponding fixed guides and locked by means of bolts or latches 12, 12' which can be actuated from the outside. Thus, in the preferred embodiment of the invention, it will be sufficient to render inoperative the body 6' which receives the 25 peseta coins and to dismount the two coin control devices 9, 9' removing the former and mounting the latter in its place, for the machine to be ready to operate with 25 peseta coins, without returning small change of the coins having a higher value. These operations of adaptation could be carried out with all ease and swiftness by merely opening the front gate 17 which will subsequently be described in detail.

The gate 14 with which the rear face of the casing 1 is closed is mainly flat, in order to permit the possible installation of the machine against a wall or a similar vertical surface, and has only one continuous perimeter edge or flange 13 which fits into a corresponding step 15 provided at the edge of the face of the casing 1, forming a sufficiently sealed closure to prevent the penetration of dust or other impurities and any type of foreign elements with which fraudulent handling could be attempted. This gate 14 in accordance with the invention, serves as a support for a plate 16 for a control circuit which will subsequently be described in detail. Thus, it is sufficient to open this gate 14 completely, placing it in the position indicated in Figure 4 of the accompanying drawings, to have a comfortable and easy access to this control circuit, so that any necessary repair or verification can be carried out. Preferably, the rear gate 14 will, furthermore, have a countersunk zone, not represented in the drawings, in which there will be situated the plug connection element through which the machine will be coupled to the main supply network, a general switch and a general safety fuse.

The gate 17, by means of which the front face of the casing 1 is closed, has a slightly bulged shape, preferably formed by two inclined planes 18, 18' joined by a rounded horizontal edge 19. According to the invention, to the inside of this gate 17 there is fixed, so that it can be reached once opening has taken place, a plate 20 which supports luminous display units, to which reference will be made subsequently, and which are visible from the outside through screen units 21, 21', 21'' which, in conjunction, form a playing screen 22. This gate 17 is also provided with openings through which there project to the outside, ready to be actuated, control elements comprising a push button 23, by means of which the machine is operated, once the corresponding coin has been inserted in the slot 5 and has been duly accepted, and a set of push buttons 24, 24', 24'' by means of which there is achieved the dual function of interrupting, when desired, the rapid succession of signs or symbols on a corresponding display unit and of retaining a symbol obtained in a previous game for the following game, in the conditions which will subsequently be studied. This gate 17 is also provided with one or more plates 25, on which there are represented the distinct combinations of prize awarding signs, together with the amounts thereof, forming a sort of table, as well as one or more plates 26 which contain the instructions for use of the machine and a signalling element in the form of a luminous screen 27 with the pertinent indication which will be illuminated notifying the public when the machine is out-of-order for

example, because of breakdown, because the supply of coins for paying off the prizes has been worn out, or for any other reason. Finally, at the lower part of the machine there is a large sized groove 28 readily accessible from the outside in which the coins corresponding to the prizes obtained by the players in the successive games will be dropped in a position to be picked up.

On the casing 1 itself besides the coin receiving bodies 6, 6', there is situated, in the lower zone, a coin storage housing 29 capable of sliding horizontally on guides 30, 30', so that it is in a position to be partially extracted, for example, towards the front part, before the gate 17 is opened, by merely pulling a handle 31 of any suitable type. The housing 29 serves to store the coins which constitute the profits corresponding to the operation of the machine, and is secured in the closed position by means of a safety lock 32, whereby to have access to the contents it is necessary to have at least two keys corresponding, respectively, to this latter lock 32 and to the lock 3 of the front gate.

The guides 30, 30' form part of a frame 33 which can slide on guides fixed to casing 1 so that it can be preferably partially or completely withdrawn from the casing 1 by horizontal sliding both through the front and the rear part thereof, in order to facilitate any repair, control or maintenance operations which should be carried out. On this frame 33 there is mounted, firstly a transformer 35 with a primary winding prepared to operate at any normal voltage, i.e. normally at 125 or 220 V, and three independent secondaries of 9, 14 and 24 V, respectively, which supply the operating voltages of the various individual elements. The outputs of the transformer 35 are connected to a plate 34 which supports an input circuit, which has at least one heat dissipator which is made, for example, of black anodized aluminium.

On this frame 33 there is likewise installed an amplifier 36 which emits different sounds during operation of the machine, specially emphasizing, by duly selected melodies, that a player has obtained one of the different possible prizes, and which also emits predetermined melodies when the machine is out-of-order for a pre-established period of time. Beside, this amplifier 36 is used to emit alarm signals, for example, in the form of a siren, when the machine is subjected to blows, pushes, inclinations or any type of fraudulent handling.

Finally, on the frame 33 there are also installed the elements which guide and control the passageway of the coins from the inlet slots 5 towards the housing 29 or towards the groove 28 accessible from the outside, in which the coins originating from the small change and prizes are dropped. These elements basically comprise a coin registering the dispensing mechanism 37, of the rotary type, known per se, which is conveniently controlled by an electronic control circuit and which drives towards the groove 28 the amounts corresponding to the distinct prizes obtained by the player, as well as the small change corresponding to the coins having a value higher than the price of the game, which are inserted. through the corresponding slot 5, i.e. through the slot provided in the body 6' which is directly connected to the housing 29 through a chute 40 in which there are placed sensing elements which detect the insertion of each coin, in order to return the small change and to register it. The coins corresponding to the price of each game (generally 5 pesetas, as mentioned) which are inserted in the slot of the body 6 are stored in a storage tank 38 connected to a meter device, which it feeds. When the full capacity of this tank 38 is reached, the successive coins which are inserted through the mentioned slot, since this tank 38 is full up to the level of discharge, drop into a chute 39 which guides them towards the housing 29. The tank 38 is provided with a safety device which cooperates with the electronic coin metering system of the machine and which can, for example, consist in a sensing element 41 or a similar element which is activated by the weight of stored coins, so that when the reserve coins are reduced to below a pre-established level, the machine will no longer operate and further games cannot be played, since the existing reserve does not permit the prizes which could possibly to obtained by the player to be paid off. Finally, referring to the guide, distribution and control coins, the machine is equipped with three meters 42, 42', 42'' installed, for example, on a support plate 43 directly fixed to the frame 33, which register, respectively, the insertions of coins having a higher value (i.e. 25 peseta coins in the most common embodiment), the number of games played (and not the number of coins inserted, so that the calculation of the profits are not falsified by the insertion of coins which will then be rejected since more than one stored credit will exist), and the number of coins which leave the rotary coin registering and dispensing mechanism 37 as a result of a prize, without registering those which leave as small change of coins having a higher value, so as not to alter the calculation of the profits.

The general electric and electronic circuit of the various elements and mechanisms of the machine is shown in Figure 9 of the accompanying drawings. This figure, due to the complexity thereof, does not represent the circuit which is supported by the plate 16, ie. the control circuit. However, apart from the previously mentioned elements, such as the set of push buttons 24, 24', 24'' and the general operating push button 23, it only illustrates the meters 42, 42', 42'' activated by the two types of coins accepted by the machine, output amplifiers 44, 44', 44'', 45 and 46 corresponding, respectively, to interruption, out-of-order and to playing, the safety coils of coin devices 47, 47', a coin discharge coil 48, and the coils 49, 49', 49'' of the previously mentioned meters. Finally, the references 50, 50', 50'' correspond to the decoding circuits which control display units 51, 51', 51'' integrated in the screen 22 and which will subsequently be studied.

As represented in Figures 10 and 11 of the accompanying drawings, the display units 51, 51', 51'' for producing the rapid succession of luminous signs or symbols adopt an already known structure, incorporating a certain number of sign bearing transparent plates 52 mounted in parallel on a frame. This frame comprises a flat rectangular shaped plate 53 of insulating material on which there rest, and to which there are fixed by means of screws, two opposing metal bodies 54, 54'. These bodies 54, 54' have a number of horizontal grooves 55, separated by corresponding ribs 56, equal to half plus one of the number of transparent plates 52 which should be mounted and so situated that each one of these plates 52 fit into one of the grooves 55 one of the bodies 54, 54', and are merely supported at their front against a rib of the opposite body 54, 54', whereby assembly is substantially facilitated. Each one of the metal bodies 54, 54' has a countersunk zone, opposite to the grooves 55, in which there fits and is fixed, by means of a mere screw 57, an insulating plate 58, 58'. One of the faces of each one of these plates 58, 58' is provided with a printed circuit 59, while the opposite face has, emerging in an orthogonal direction, a certain number of lamps 60 (as many lamps as transparent plates of which the display is comprised) duly connected to said circuit 59. When assembly takes place, the lamps 60 are housed in corresponding holes 61 provided in the corresponding metal body 54, 54'. Each of these lamps 60 is in a condition to illuminate the transparent plate 52 which correspond to its position, with the possible interposition of different coloured filters, duly folded and fitted at the edges of said plate 52. Due to this arrangement, each one of the mentioned transparent plates 52, at the time at which it should be visible on the screen, is illuminated at two opposite edges and not at a single one of these edges, as in normal. Thus, there are obtained much better conditions of visibility of the signs from the outside and, beside especially due to a suitable distribution of the lamp 60 on the assembly, there is obtained a practically complete uniformity in the intensity of illumination of the successive signs. Finally, the described assembly is closed with a cover 62, for example, a stamped metal sheet, which conveniently fits into the position of assembly and is fixed therein, for example, by means of screws, and which is provided with a large central window 63 through which the transparent plates bearing the signs are visible from the outside, when they are conveniently illuminated.

Generally, as is logical, and apart from those already specified, all those additions and modifications in detail which do not affect the essential conditions, can be introduced in the practical embodiment of the invention. It should also be pointed out that in certain cases and under determined conditions, some of the mentioned details can be applied separately, which possibility should also be considered as being included in the scope of protection.

Claims

1. A slot machine comprising a casing (1), a frame (33) mounted inside the casing (1), and a general electric circuit, said general electric circuit including a set of display units (51, 51', 51''), a set of control elements (23, 24, 24', 24''), at least one signalling element (27), a control circuit, and an input circuit, said set of display units (51, 51', 51'') being located on the machine at a front position and at a height suitable to be comfortably observed, each of said display units (51, 51', 51'') being arranged to display a succession of luminous signs or symbols, and said control circuit being arranged to change the symbols or signs displayed on said display units (51, 51', 51'') for a pre-established period of time following operation of one (23) of said control elements to produce a resulting combination of symbols or signs, prizes paid by said machine being determined by the resulting combination, characterized in that the casing (1) is completely open at its front and rear faces, in that the machine includes front and rear gates (17, 14) rotatably mounted about vertical axes for closing said front and rear faces and safety locks (3) for securing the gates (17, 14) in their closed positions, and in that the general electric circuit is physically divided into a first part which includes the input circuit and is mounted on the frame, a second part which includes the control circuit and is mounted on the inner face of the rear gate (14), and a third part which includes the display units (51, 51', 51''), the control elements (23, 24, 24', 24'') and said at least one signalling element (27) and is mounted on the front gate (17).

2. A slot machine as claimed in claim 1, characterized in that the frame (33) can slide on guides fixed to the casing (1) so that the frame (33) is capable of being partially withdrawn from the casing (1) through at least one of the front and rear gates (17, 14) and in that the machine includes a storage housing (29) located in the lower part of the casing (1) for storing the profits resulting from operating the machine, said housing (29) being capable of sliding on horizontal guides (30, 30') forming part of frame (33) so that the housing (29) can be withdrawn through the front face of the casing (1), and said housing (24) being secured in its closed position by a safety lock (32).

3. A slot machine as claimed in claim 2, characterized in that the machine includes a delivery groove (28) which is accessible from the outside of the machine for delivering prizes and small change, and in that there is mounted on the frame (33) an assembly comprising said input circuit, an amplifier (36) and guide elements (37, 38, 39, 40) which guide goins to said storage housing (29) and said delivery groove (28), said guide elements including a storage tank (38) for reserve coins and a rotary coin registering and dispensing mechanism (37) for delivering coins to said delivery groove (28).

4. A slot machine as claimed in claim 2, charac-

terized in that the machine further comprises two protruding bodies (6, 6') mounted on the upper surface of the casing (1) and provided with slots (5) for the insertion of coins of two different values, a pair of devices (9, 9') connected to said protruding bodies (6, 6') for controlling the weight, size and alloy of said coins, a pair of lateral slots (11) for the rejection of false coins, a chute (40) mounted on the frame (33) for delivering coins from one (5) of said coin insertion slots to the storage housing (29), said chute (40) containing a sensing element for detecting the insertion of each coin in order to register the coin and return small change, a storage tank (38) mounted on frame (33) for reserve coins which is arranged to receive coins from the other (5) of said coin insertion slots, said other (5) of said coin insertion slots receiving coins having a value coinciding with the price of a game, a rotary coin registering and dispensing mechanism (37) connected to said storage tank (38) for delivering prizes and small change, and a chute (39) mounted on the frame (33) and through which coins are diverted when the storage tank (38) is completely full to the storage housing (29).

5. A slot machine as claimed in claim 5, characterized in that the storage tank (38) is provided with a sensing element (41) activated by the weight of the stored coins and which prevents the machine from operating when this weight falls below a pre-established safety limit.

6. A slot machine as claimed in claim 4 or claim 5, characterized in that the devices (9, 9') for controlling the weight, size and alloy of the coins are mounted on the machine in a readily dismountable manner so that it is sufficient to render inoperative the slot (5) for the insertion of coins having a higher value and to replace the controlling device (9) for coins having a lower value with the controlling device (9') for coins having a higher value in order to make the machine ready to accept only coins having a higher value and use these as prizes.

7. A slot machine as claimed in claim 3, characterized in that the front gate (17) has a bulged shape and comprises upper and lower oppositely inclined planes (18, 18') joined by a rounded horizontal edge (19), said lower plane (18') has said delivery groove (28), and said upper plane (18) is provided with said control elements (23, 24, 24', 24''), a screen (22) through which the display units (51, 51', 51'') can be viewed, said at least one signalling element (27), and a plate (27) containing instructions for using the machine, said control elements including push buttons (24, 24', 24'') associated with respective ones of the display units (51, 51', 51'') for interrupting the changing of signs or symbols during a game or for retaining a symbol or signs obtained in a previous during a following game, and said at least one signalling element comprising a luminous screen (27) for indicating that the machine is out-of-order.

8. A slot machine as claimed in claim 1, characterized that the rear gate (14) is flat and parallel to the rear face of the casing (1), the rear gate (14) is provided with a plate (16) which supports the control circuit, and the rear gate (14) has a countersunk zone in which these are situated and accessible from the outside, elements through the machine is connected to an electricity supply network, a general operating switch, and at least one safety fuse.

9. A slot machine as claimed in claim 1, characterized in that the input circuit is connected to the output of a transformer (35) mounted on the frame (33), said transformer (35) having a primary winding arranged to operate at two different voltages and three independent seconding windings which supply power at different voltages.

10. A slot machine as claimed in any one of the preceding claims, characterized in that each display unit (51, 51', 51'') comprises an insulating plate (53), a pair of metal bodies (54, 54') mounted in opposing positions on the insulating plate (53), each of said metal bodies (54, 54') having an inner face provided with a succession of grooves (55) which are parallel to the insulating plate (53), a set of sign bearing plates (52), one edge of each of said sign bearing plates (52) fitting into a groove (55) in one of said metal bodies (54, 54') whilst its opposite edge rests on a rib (56) which separates two successive grooves (55) in the other of said metal bodies (54, 54') and a pair of insulating plates (58', 58'') mounted on the outer face of the metal bodies (54, 54') and whose outer surfaces incorporate printed circuits (59) and from whose inner surfaces there protrude orthogonally lamps (60) housed in corresponding holes (61) provided in the metal bodies (54, 54') and for illuminating said sign bearing plates (52) so that each of the plates (52) may be simultaneously illuminated at two opposite edges.

Patentansprüche

1. Spielautomat mit einem Gehäuse (1), einem innerhalb des Gehäuses (1) angebrachten Rahmen und einem allgemeinen elektrischen Schaltkreis, wobei der allgemeine elektrische Schaltkreis einen Satz von Anzeigeeinheiten (51, 51', 51''), einen Satz von Steuerelementen (23, 24, 24', 24''), mindestens ein Anzeigelement (28), einen Steuerschaltkreis und einen Eingabeschaltkreis aufweist, der Satz von Anzeigeelementen (51, 51', 51'') an dem Automaten an einer vorderen Position und in einer zum bequemen Beobacten geeigneten Höhe angeordnet ist, jede der Anzeigeeinheiten (51, 51', 51'') aufgebaut ist zum Erzeugen einer Aufeinanderfolge von Leuchtzeichen oder Symbolen, und der Steuerschaltkreis aufgebaut ist zum Verändern der auf der Anzeigeeinheit (51, 51', 51'') angezeigten Symbole oder Zeichen für eine vorher festgesetzte Zeitdauer nach der Betätigung eines (23) der Steuerelemente zum Erzeugen einer resultierenden Kombination von Symbolen oder Zeichen, wobei die von dem Automaten zu zahlenden Preise durch die resultierende Kombination bestimmt werden, dadurch gekennzeichnet, daß das Gehäuse (1) an seiner

vorderen und hinteren Fläche vollständig offen ist, daß der Automat eine vordere und hintere Klappe (14, 17), die jeweils drehbar um vertikale Achsen zum Schließen der vorderen und hinteren Fläche angebracht sind, und Sicherheitsschlösser (3) zum Sichern der Klappen (14, 17) in ihrer geschlossenen Stellung aufweist, und daß der allgemeine elektrische Schaltkreis physisch in einen ersten Teil, der die Eingangsschaltung enthält und auf dem Rahmen angebracht ist, einen zweiten Teil, der den Steuerschaltkreis enthält und auf der inneren Fläche der hinteren Klappe (14) angebracht ist, und einen dritten Teil, der die Anzeigeeinheiten (51, 51', 51''), die Steuerelemente (23, 24, 24', 24'') und das mindestens eine Anzeigeelement (27) enthält und auf der vorderen Klappe (17) angebracht ist, unterteilt ist.

2. Spielautomat nach Anspruch 1, dadurch gekennzeichnet, daß der Rahmen (33) auf an dem Gehäuse (1) befestigten Führungen gleiten kann, so daß der Rahmen (33) teilweise aus dem Gehäuse (1) durch wenigstens eine der vorderen oder hinteren Klappen (17, 14) herausgezogen werden kann, und daß der Automat einen in dem unteren Teil des Gehäuses (1) angeordneten Sammelbehälter (29) zum Speichern des von der Tätigkeit des Automaten herrührenden Profites aufweist, wobei der Behälter (29) auf horizontalen Führungen (30, 30'), die Teil des Rahmens (33) bilden, so gleiten kann, daß der Behälter (29) durch die vordere Fläche des Gehäuses (1) herausgezogen werden kann, und der Behälter (29) in seiner geschlossenen Position durch ein Sicherheitsschloß (32) gesichert wird.

3. Spielautomat nach Anspruch 2, dadurch gekennzeichnet, daß der Automat eine Zuführungsrille (28) aufweist, die zum Zuführen von Preisen und Wechselgeld von der Außenseite des Automaten zugänglich ist, und daß auf dem Rahmen (33) eine Anordnung angebracht ist, die den Eingabeschaltkreis, einen Verstärker (36) und Führungselemente (37, 38, 39, 40) aufweist, die Münzen zu dem Speicherbehälter (29) und der Zuführungsrille (28) führen, wobei die Führungselemente einen Sammeltank (38) für Reservemünzen und eine drehende Münznachweis- und -ausgabevorrichtung (37) zum Anliefern von Münzen an die Zuführungsrille (28) aufweist.

4. Spielautomat nach Anspruch 2, gekennzeichnet durch zwei vorstehende Körper (6, 6'), die auf der oberen Oberfläche des Gehäuses (1) angebracht sind und mit Schlitzen (5) zum Einwerfen von Münzen von zwei verschiedenen Werten versehen sind, ein Paar von Einrichtungen (9, 9'), die mit den vorstehenden Körpern (6, 6') zum Überwachen des Gewichtes, der Größe und Legierung der Münzen verbunden sind, ein Paar von Längsschlitzen (11) für die Rückweisung falscher Münzen, eine auf dem Rahmen (33) angebrachte Rinne (40) zum Zuführen von Münzen von einem (5) der Münzeinwurfschlitze zu dem Sammelbehälter (29), wobei die Rinne (40) ein Nachweiselement zum Erfassen rNachweiselement zum Erfassen des Einwurfes von jeder Münze zum Registrieren der Münze und zum Rückgeben von Wechselgeld enthält, einen auf dem Rahmen (33) angebrachten Sammeltank (38) für Reservemünzen, der zum Aufnehmen von Münzen von dem anderen (5) der Münzeinwurfschlitze angeordnet ist, wobei der andere (5) der Münzeinwurfschlitze Münzen mit einem Wert, der mit dem Preis des Spieles übereinstimmt, aufnimmt, eine drehende Münznachweis- und -ausgabevorrichtung (37), die mit dem Sammeltank (38) zum Ausgeben von Preisen und Wechselgeld verbunden ist, und eine auf dem Rahmen (33) angebrachte Rinne (39), durch die Münzen abgeleitet werden, wenn der Sammeltank (38) vollständig gefüllt ist, zu dem Sammelbehälter (29).

5. Spielautomat nach Anspruch 4, dadurch gekennzeichnet, daß der Sammeltank (38) mit einem Nachweiselement (41) versehen ist, das durch das Gewicht der gesammelten Münzen aktiviert wird und das den Automaten am Betrieb hindert, wenn dieses Gewicht unter eine vorherbestimmte Sicherheitsgrenze fällt.

6. Spielautomat nach Anspruch 4 oder 5, dadurch gekennzeichnet, daß die Einrichtungen (9, 9') zum Überwachen des Gewichtes, der Größe und Legierung der Münzen auf dem Automaten in leicht entfernbarer Weise angebracht sind, so daß es ausreichend ist, den Schlitz (5) für den Einwurf von Münzen mit einem höheren Wert unwirksam zu machen und die Überwachungeinrichtung (9) für Münzen von einem niedrigeren Wert durch die Überwachungseinrichtung (9') für Münzen mit einem höheren Wert zu ersetzen, damit der Automat fertig ist, nur Münzen mit einem höheren Wert anzunehmen und diese als Preise zu benutzen.

7. Spielautomat nach Anspruch 3, dadurch gekennzeichnet, daß die vordere Klappe (17) eine ausgebuchtete Form hat und eine obere und untere, entgegengesetzt geneigte Ebene (18, 18') aufweist, die durch eine gerundete horizontale Kante (19) verbunden sind, die untere Ebene (18') die Zuführungsrille (28) aufweist, und die obere Ebene (18) mit den Steuerelementen (23, 24, 24', 24''), einem Schirm (22), durch den die Anzeigeeinheiten (51, 51', 51'') betrachtet werden können, dem wenigstens einen Anzeigeelement (27) und einer Platte (26), die Anweisungen für die Benutzung des Automaten enthält, versehen ist, wobei die Steuerelemente Druckschalter (24, 24', 24'') aufweisen, die mit den entsprechenden der Anzeigeeinheiten (51, 51', 51'') zum Unterbrechen des Änderns der Zeichen oder Symbole während des Spieles oder zum Festhalten eines Symboles oder Zeichens, das in einem vorherigen Lauf erhalten wurde, für das folgende Spiel, zusammenhängen, und das mindestens eine Anzeigeelement einen Leuchtschirm (27) zum Anzeigen, daß der Automat außer Betrieb sei, aufweist.

8. Spielautomat nach Anspruch 1, dadurch gekennzeichnet, daß die hintere Klappe (14) flach und parallel zu der hinteren Fläche des Gehäuses (1) ist, die hintere Klappe (14) mit einer Platte (15) versehen ist, die den Steuerschaltkreis trägt, und die hintere Klappe (14) eine versenkte Zone hat, in der Elemente, durch die der Automat mit einer

elektrischen Netzspannungsversorgung verbunden ist, ein Haupteinschalter und mindestens eine Sicherung angebracht und von der Außenseite zugänglich sind.

9. Speilautomat nach Anspruch 1, dadurch gekennzeichnet, daß der Eingabeschaltkreis mit dem Ausgang eines auf dem Rahmen (33) angebrachten Transformators (35) verbunden ist, wobei der Transformator (35) eine Primärwicklung angebracht hat zum Betrieb bei zwei verschiedenen Spannungen und drei unabhängige Sekundärwindungen, die Leistung bei verschiedenen Spannungen abgeben.

10. Spielautomat nach einem der vorhergehenden Ansprüche, dadurch gekennzeichnet, daß jede Anzeigeeinheit (51, 51', 52'') aufweist: eine isolierende Platte (53), ein Paar von in gegenüberliegenden Positionen auf der isolierenden Platte (53) angebrachten Metallkörpern (54, 54'), wobei jeder der Metallkörper (54, 54') eine innere Fläche versehen mit einer Aufeinanderfolge von Rillen (55), die parallel zu der isolierenden Platte (53) sind, hat, einen Satz von zeichentragenden Platten (52), wobei ein Ende von jeder der zeichentragenden Platten (52) in eine Rille (55) in einem der Metallkörper (54, 54') paßt, während ihr entgegengesetztes Ende auf einer Rippe (56), die zwei aufeinanderfolgende Rillen (55) in dem anderen der Metallkörper (54, 54') trennt, ruht, und ein Paar von auf den äußeren Flächen der Metallkörper (54, 54') angebrachten isolierenden Platten (58', 58'') deren äußere Oberflächen gedruckte Schaltungen (59) einschließen und von deren inneren Oberflächen Lampen (60) senkrecht hervorstehen, die von entsprechenden Löchern (61) auf genommen werden, die in den Metallkörpern (54, 54') vorgesehen sind, zum Erleuchten der zeichentragenden Platten (52), so daß jede der Platten (52) gleichzeitig von zwei entgegengesetzten Kanten beleuchtet werden kann.

Revendications

1. Machine de jeu, comprenant un coffre (1), un châssis (33) monté à l'intérieur de ce coffre (1), et un circuit électrique général, ce circuit électrique général comprenant un jeu d'unités d'affichage (51, 51', 51''), un jeu d'éléments de commande (23, 24, 24', 24'') au moins un élément de signalisation (27), un circuit de commande et un circuit d'entrée, le jeu des unités d'affichage (51, 51', 51'') étant localisé sur la machine dans une position avant et à une hauteur convenant pour qu'on puisse l'observer aisément, chacune des unités d'affichage (51, 51', 51'') étant agencée pour présenter une succession de signes ou de symboles, le circuit de commande étant agencé pour changer les symboles où les signes présentés sur les unités d'affichage (51, 51', 51'') pendant une période de temps préalablement établie, après l'actionnement de l'un (23) des éléments de commande susdits pour produire une combinaison résultante de symboles et de signes, les prix payés par la machine étant déterminés par la combinaison résultante, cette machine étant caractérisée en ce que le coffre (1) est totalement ouvert suivant sa face avant et suivant sa face arrière, en ce que la machine comprend des portes avant et arrière (17, 14) montées à rotation autour d'axes verticaux pour la fermeture des faces avant et arrière susdites et des serrures de sécurité (3) destinées à bloquer les portes (17, 14) dans leurs positions de fermeture, et en ce que le circuit électrique général est physiquement subdivisé en une première partie qui comprend le circuit d'entrée et est montée sur le châssis, en une seconde partie qui comprend le circuit de commande et est montée sur la face interne de la porte arrière (14), et en une troisième partie qui comprend les unités d'affichage (51, 51', 51''), les éléments de commande (23, 24, 24', 24'') et le ou les éléments de signalisation (27), et qui est montée sur la porte avant (17).

2. Machine de jeu suivant la revendication 1, caractérisée en ce que le châssis (33) peut glisserisée en ce que le châssis (33) peut glisser sur des guides fixés au coffre (1), de sorte que ce châssis (33) peut être partiellement retiré du coffre (1) à travers au moins l'une des portes avant et arrière (17, 14), et en ce que cette machine comprend un logement de stockage (29) localisé dans la partie inférieure du coffre (1) et destiné à stocker les profits résultant du fonctionnement de la machine, ce logement (29) pouvant glisser sur des guides horizontaux (30, 30') faisant partie du châssis (33) de sorte que ce logement (29) peut être retiré à travers la face avant du coffre (1), ce logement (29) étant bloqué dans sa position de fermeture par une serrure de sécurité (32).

3. Machine de jeu suivant la revendication 2, caractérisée en ce qu'elle comprend une rainure de distribution (28) qui est accessible depuis l'extérieur de la machine pour fournir des prix et la petite monnaie, et en ce que, sur la châssis (33), est monté un assemblage comprenant le circuit d'entrée, un amplificateur (36) et des éléments de guidage (37, 38, 39, 40) qui guident les pièces vers le logement de stockage (29) et la rainure de distribution (28), ces éléments de guidage comprenant un bac de stockage (38) pour des pièces de réserve et un mécanisme rotatif d'enregistrement et de distribution de pièces (37) pour envoyer des pièces à la rainure de distribution susdite (28).

4. Machine de jeu suivant la revendication 2, caractérisée en ce qu'elle comprend en outre deux corps en saillie (6, 6') montés sur la surface supérieure du coffre (1) et comportant des fentes (5) destinées à l'introduction de pièces de deux valeurs différentes, une paire de dispositifs 9, 9') reliés à ces corps en saillie (6, 6') pour contrôler le poids, les dimensions et l'alliage des pièces susdites, une paire de fentes latérales (11) pour le rejet des pièces fausses, une goulotte (40) montée sur le châssis (33) pour délivrer les pièces depuis l'une (5) de ces fentes d'introduction de pièces vers le logement de stockage (29), cette goulotte (40) comportant un élément sensible destiné à déceler l'introduction de chaque pièce afin d'enregistrer la pièce et de renvoyer la petite monnaie,

un bac de stockage (38) monté sur le châssis (33) pour les pièces de réserve, ce bac étant agencé pour recevoir des pièces depuis l'autre (5) des fentes d'introduction de pièces, cette autre fente (5) d'introduction de pièces recevant des pièces ayant une valeur coïncidant avec le prix d'un jeu, un mécanisme rotatif d'enregistrement et de distribution de pièces (37) relié au bac de stockage (38) pour délivrer les prix et la petite monnaie, et une goulotte (39) montée sur le châssis (33) et à travers laquelle les pièces sont déviées, lorsque le réservoir de stockage (38) est totalement rempli, vers le logement de stockage (29).

5. Machine de jeu suivant la revendication 5, caractérisée en ce que le bac de stockage (38) est pourvu d'un élément sensible (41) actionné par le poids des pièces stockées et empêchant la machine de fonctionner lorsque ce poids tombe en dessous d'une limite de sécurité préalablement établie.

6. Machine de jeu suivant la revendication 4 ou la revendication 5, caractérisée en ce que les dispositifs (9, 9') destinés au contrôle du poids, des dimensions et de l'alliage des pièces sont montés sur la machine d'une manière aisément démontable, de manière qu'il suffise de rendre inopérante la fente (5) destinée à l'introduction de pièces ayant une valeur plus élevée et de remplacer le dispositif de contrôle (9) des pièces ayant une valeur plus basse par le dispositif de contrôle (9') des pièces ayant une valeur plus élevée, pour rendre la machine prête à accepter uniquement des pièces ayant une valeur plus élevée et pour utiliser celles-ci comme prix.

7. Machine de jeu suivant la revendication 3, caractérisée en ce que la porte avant (17) présente une forme bombée et comprend des plans supérieur et inférieur (18, 18') inclinés de façon opposée et réunis à un bord horizontal arrondi (19), le plan inférieur susdit (18') comportant la rainure précitée de distribution (28), le plan supérieur susdit (18) comportant les éléments de commande (23, 24, 24', 24''), un écran (22) à travers lequel on peut voir les unités d'affichage (51, 51', 51''), le ou les éléments de signalisation (27), et une plaque (26) comportant des instructions d'utilisation de la machine, les éléments de commande comportant les boutons-poussoirs (24, 24', 24'') associés respectivement à chacune des unités d'affichage (51, 51', 51'') et destinés à interrompre le changement de signes ou de symboles durant un jeu ou à retenir un symbole ou un signe obtenu dans un jeu précédent pour un jeu suivant, le ou les éléments de signalisation comportant un écran lumineux (27) destiné à indiquer quand la machine est hors service.

8. Machine de jeu suivant la revendication 1, caractérisée en ce que la porte arrière (14) est plane et parallèle à la face arrière du coffre (1), cette porte arrière (14) comportant un plateau (16) qui supporte le circuit de commande, cette porte arrière (14) présentant une zone entre creux dans laquelle sont situés et accessibles depuis l'extérieur, des éléments par lesquels la machine est connectée à un réseau d'alimentation d'électricité, un commutateur général de fonctionnement, et au moins un fusible de sécurité.

9. Machine de jeu suivant la revendication 1, caractérisée en ce que le circuit d'entrée est connecté à la sortie d'un transformateur (35) monté sur le châssis (33), ce transformateur (35) comprenant un enroulement primaire conçu pour fonctionner à deux tensions différentes, et trois enroulements secondaires indépendants qui fournissent de l'électricité à différentes tensions.

10. Machine de jeu suivant l'une quelconque des revendications précédentes, caractérisée en ce chaque unité d'affichage (51, 51', 51'') comprend une plaque isolante (53), une paire de corps métalliques (54, 54') montés à l'opposé l'un de l'autre sur cette plaque isolante (53), chacun des corps métalliques (54, 54') présentant une face interne pourvue d'une série de rainures (55) qui sont parallèles à la plaque isolante (53), un jeu de plaques portant des signes (52), un bord de chacune de ces plaques portant des signes (52) s'adaptant dans une rainure (55) de l'un des corps métalliques (54, 54') tandis que son bord opposé repose sur une nervure (56) qui sépare deux rainures successives (55) de l'autre des corps métalliques (54, 54') et une paire de plaques isolantes (58', 58'') montées sur la face extérieure des corps métalliques (54, 54') et dont les surfaces extérieures comportent des circuits imprimés (59), tandis que, sur leurs surfaces intérieures, se présentent en saillie pendiculaire des lampes (60) logées dans des trous correspondants (61) prévus dans les corps métalliques (54, 54') et destinées à illuminer les plaques porteuses de signes (52) de sorte que chacune des plaques (52) peut être illuminée simultanément suivant deux bords opposés.

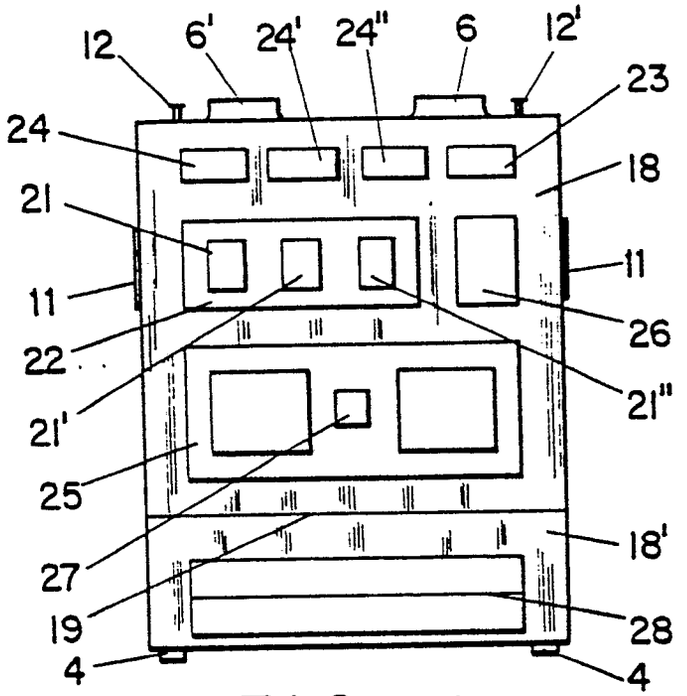

12
6'
24'
24"
6
12'
23
24
18
21
11
11
26
22
21"
21'
25
27
18'
19
28
4
4

FIG. - 1

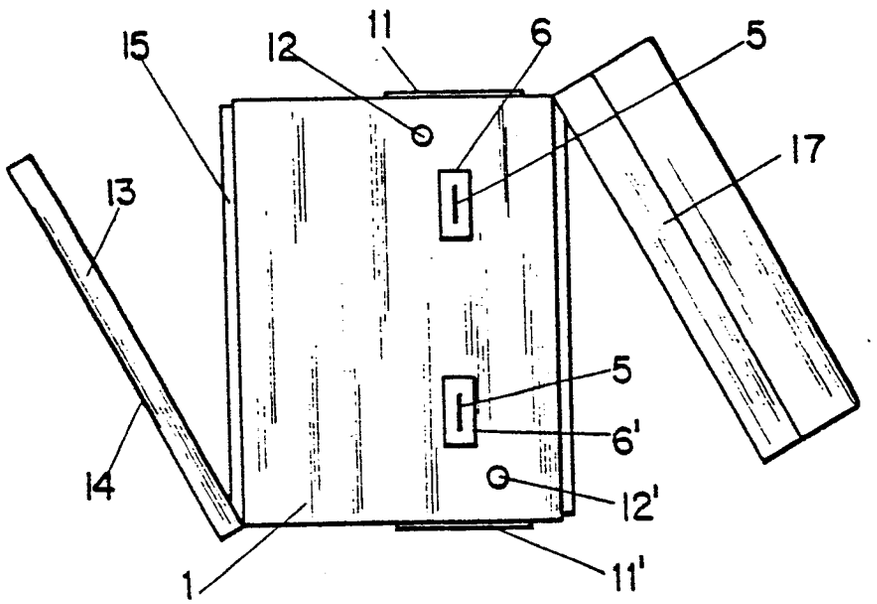

15
12
11
6
5
17
13
5
6'
14
12'
1
11'

FIG. - 2

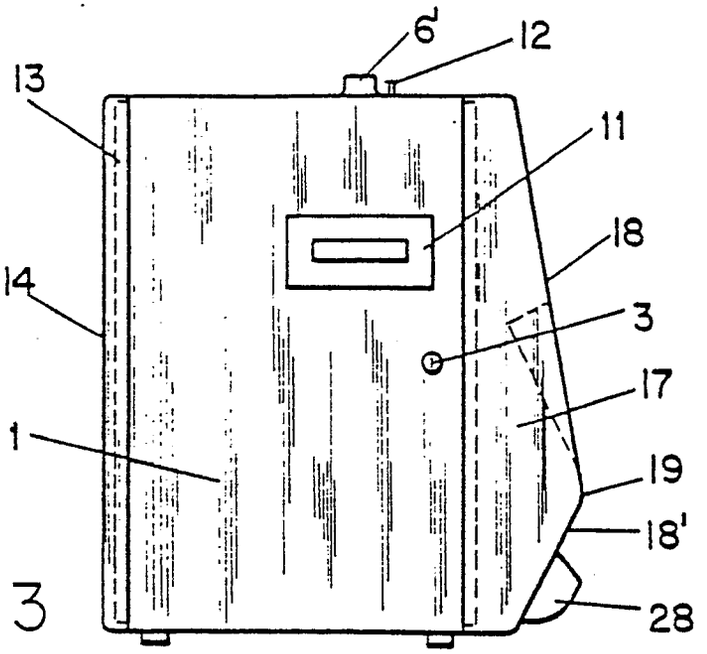

6'
12
13
11
18
14
3
17
1
19
18'
28

FIG.- 3

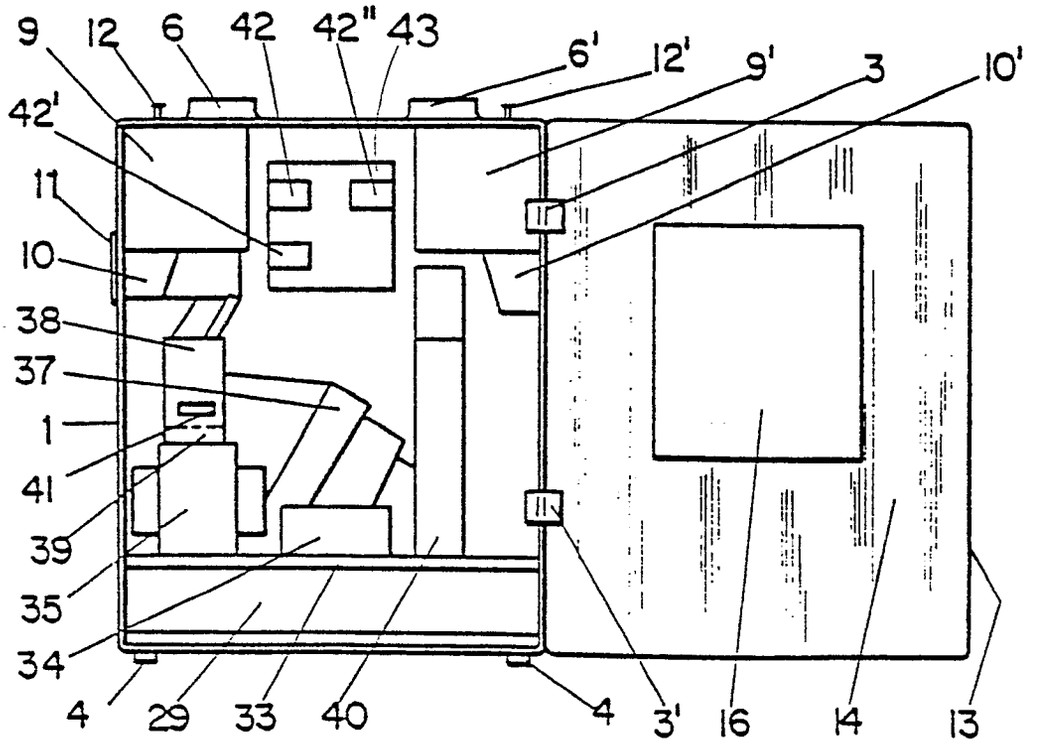

9
12
6
42
42"
43
6'
12'
9'
3
10'
42'
11
10
38
37
1
41
39
35
34
4
29
33
40
4
3'
16
14
13

FIG.- 4

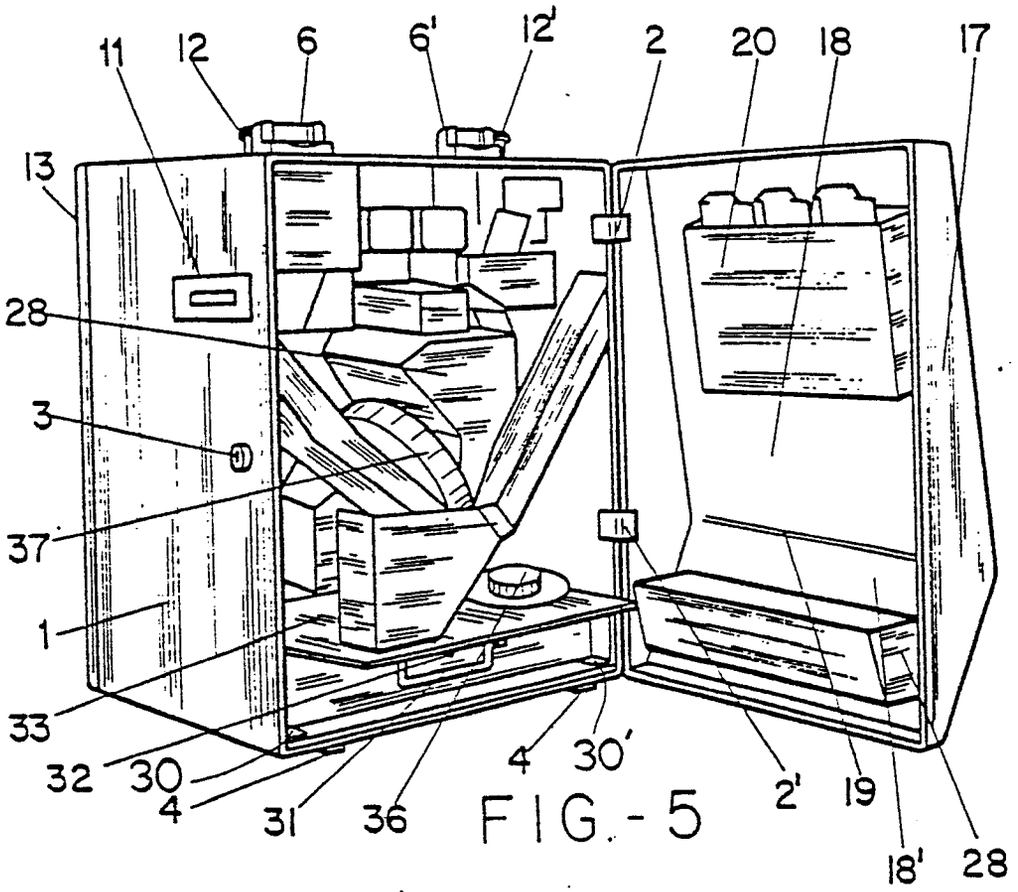


FIG.-5

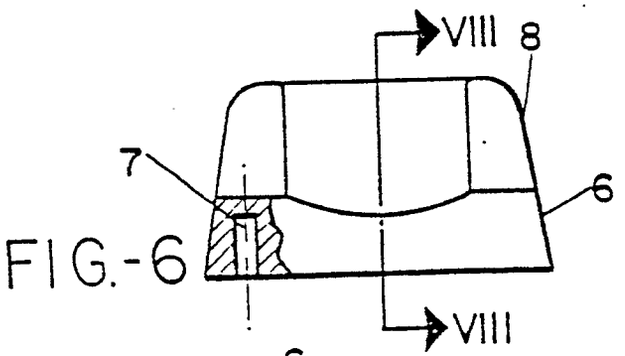


FIG.-6

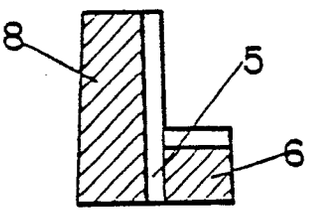


FIG.-8

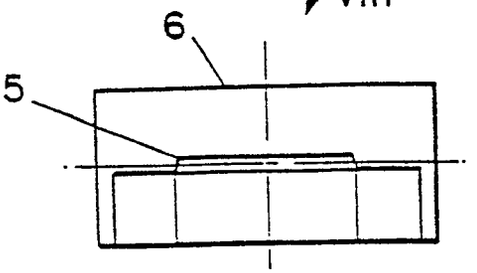


FIG.-7

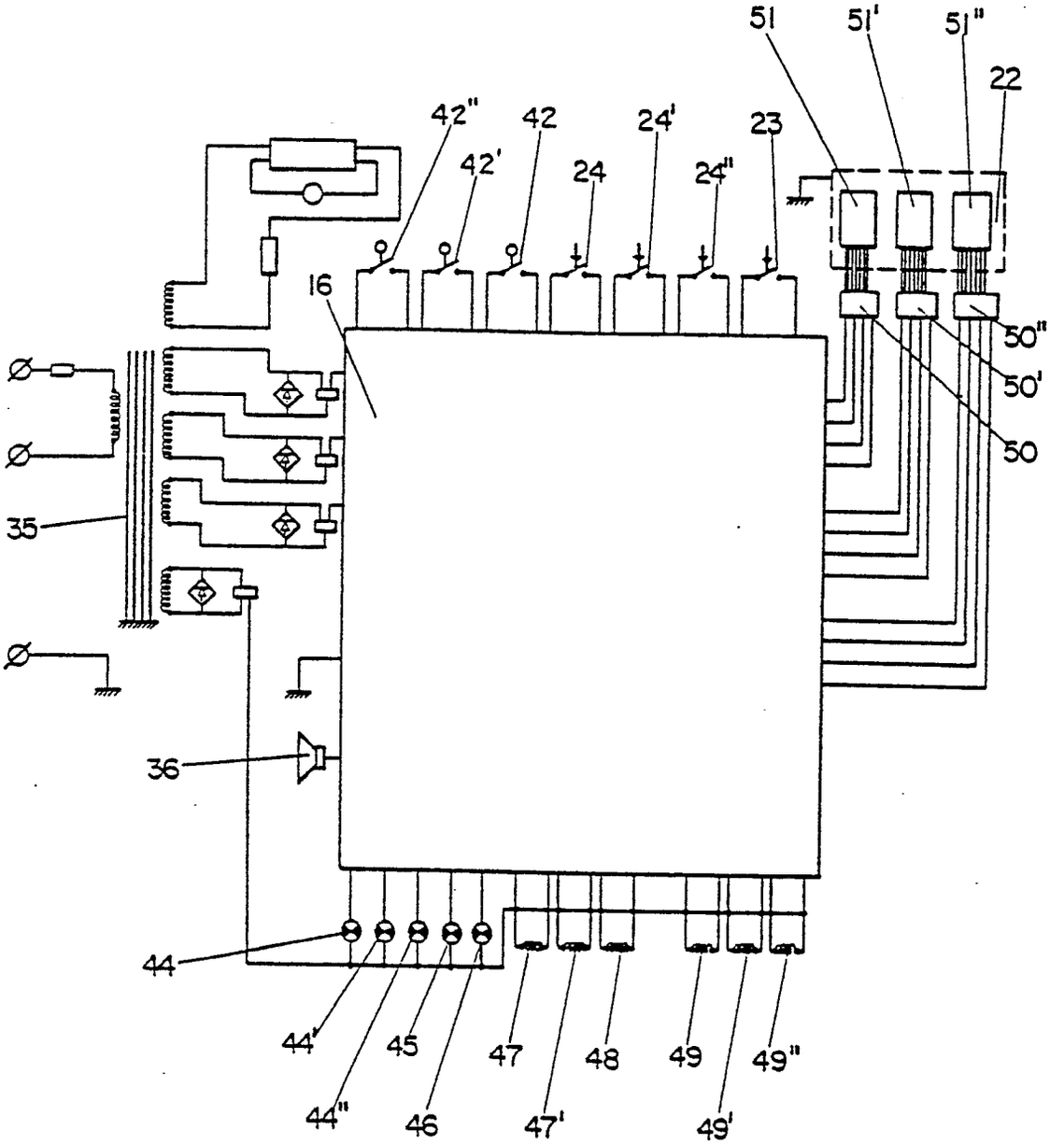

51
51'
51"
22
42"
42
24'
23
42'
24
24"
16
50"
50'
50
35
36
44
44'
45
47
48
49
49"
44"
46
47'
49'

FIG.- 9

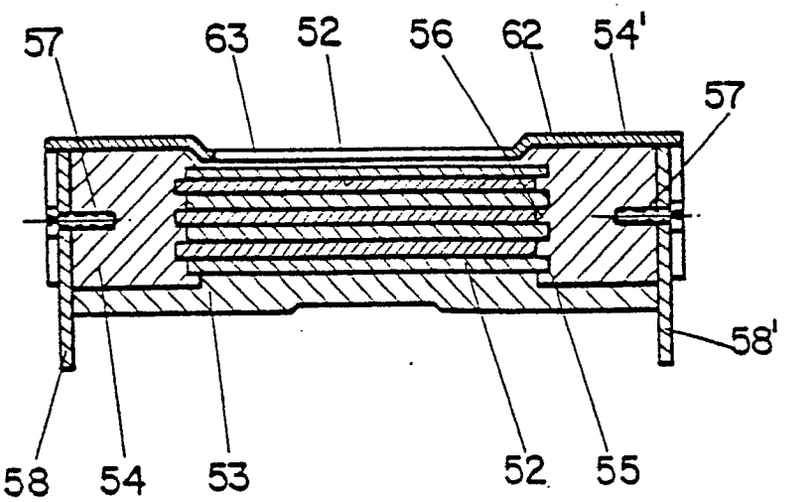


FIG. - 11.

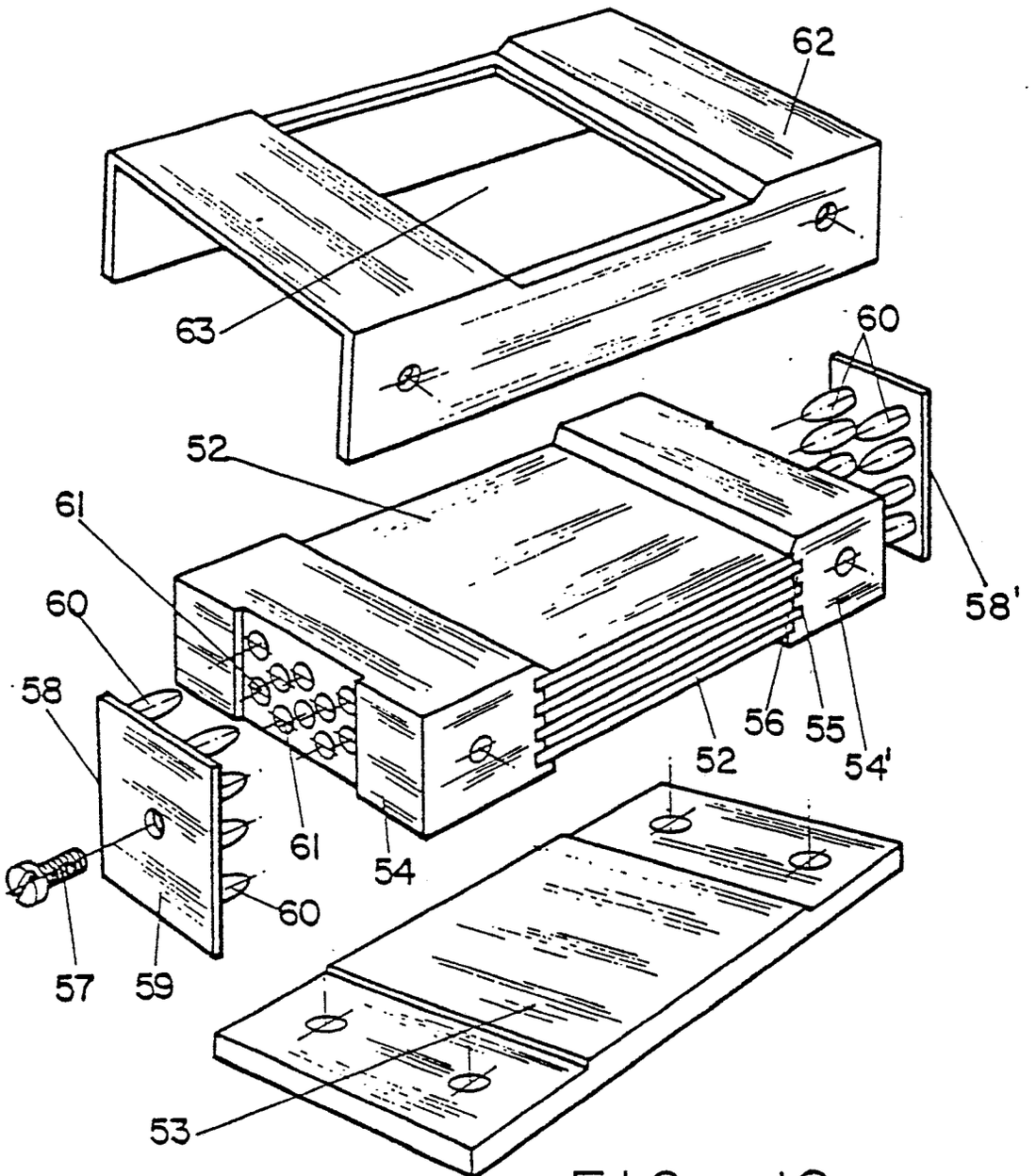


FIG. - 10.