

[54] **DEVICE FOR DISTRIBUTION OF PLAYING-CARDS**

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[57] **ABSTRACT**

[30] **Foreign Application Priority Data**

Sept. 28, 1973 Italy..... 29494/73

A device for distribution of playing-cards, the device comprising a cavity adapted to accommodate two packs of playing-cards arranged parallel to each other and in a side-by-side relationship, and pressure means adapted to press said two packs into contact with movable retainer means. The cavity is provided with at least one aperture for communication with the outside, and the movable retainer means are adapted to be operated in a step-by-step manner for exerting, at each step, a grazing action on one card of each pack to cause at least said card to slide, relative to the remaining cards of the respective pack, towards said aperture of the cavity and into a position in which it can be drawn from the outside through said aperture.

[52] U.S. Cl..... **273/148 A; 206/39.4; 273/149 R**

[51] Int. Cl.²..... **A63F 1/14**

[58] Field of Search..... **273/149 R, 148 A; 206/39.4**

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4 Claims, 6 Drawing Figures

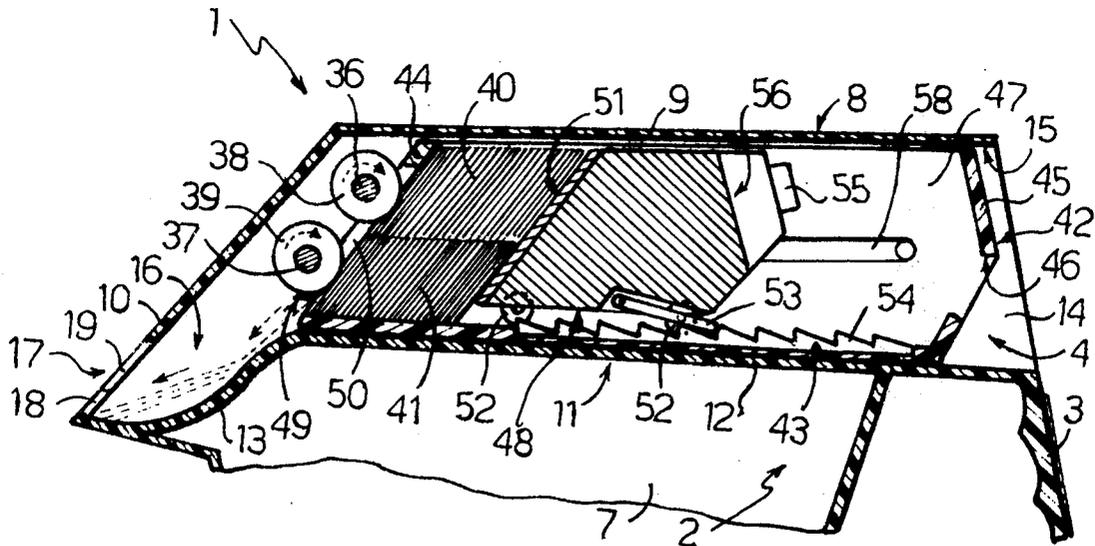


FIG. 1

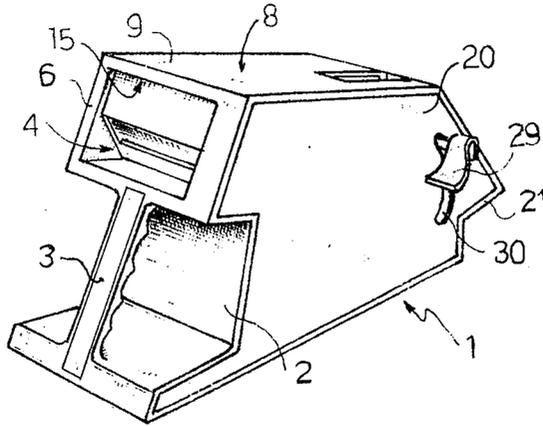


FIG. 2

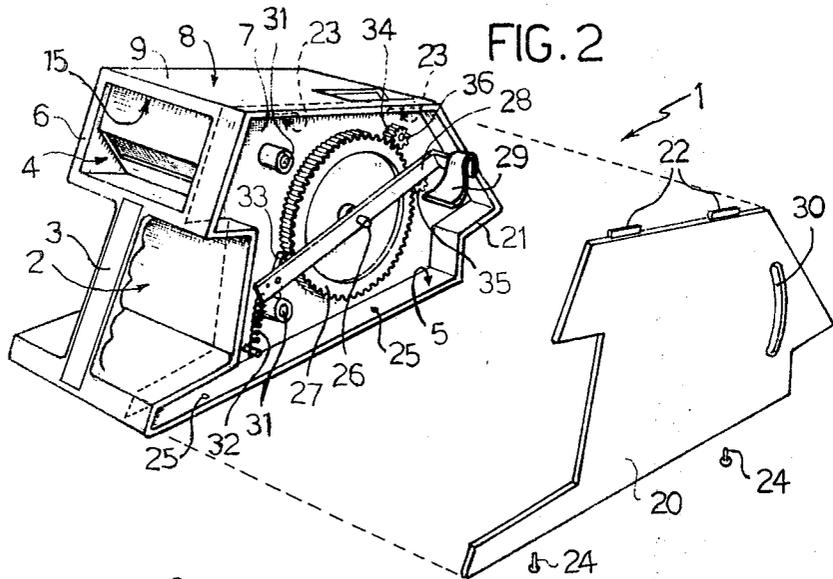
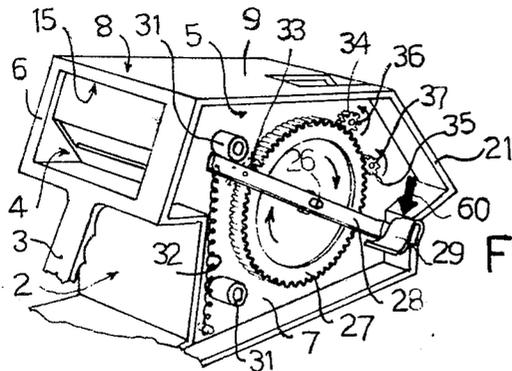


FIG. 3



DEVICE FOR DISTRIBUTION OF PLAYING-CARDS

CROSS REFERENCE TO RELATED APPLICATION

Applicant claims priority from corresponding Italian Pat. application Ser. No. 29494-A/73, filed Sept. 28, 1973.

BACKGROUND OF THE INVENTION

The present invention relates to a device for distribution of playing-cards.

Up to now, in the gambling houses, distribution of playing-cards to a plurality of players is carried out by means of distribution devices generally comprising a container, in which a pack of cards is arranged. The expression "pack of cards" as used herein is intended to designate not the complex consisting of a predetermined number (generally 52) of playing-cards of predetermined suits (generally four), but a plurality of playing-cards dimensionally equal to one another and arranged in contact with one another so as to form a substantially uniform pile.

A pack of cards as defined above is first shuffled and then introduced into the aforementioned container, which is provided, at one of its ends, with an aperture, through which the cards of said pack can be drawn out manually.

The known card distribution devices of the above mentioned type have the drawback that the pack of cards must be shuffled before being introduced into the distribution device, and the cards are drawn out and dealt exactly in the same order as they are introduced into the distribution device. Accordingly, said distribution devices reduce considerably the possibility of cheating at cards only during the distribution of the cards, but not during the previous shuffling operation. This makes it possible for an expert to obtain, instead of a casual distribution, a perfectly prearranged distribution of the playing-cards.

SUMMARY OF THE INVENTION

According to the present invention, there is provided a device for distribution of playing-cards, the device comprising a cavity for accommodating at least two separate packs of cards as defined hereinabove; at least one aperture for communication of said cavity with the outside; compression means adapted to cooperate with a first of the two end cards of each pack of cards to push said packs of cards along said cavity and towards said aperture; and movable retainer means adapted to come into contact with the second end card of each pack of cards; said compression means being adapted to apply a predetermined pressure to said packs of cards to push said packs against said movable retainer means, and the latter being adapted to be operated in a step by step manner for exerting a grazing action on each of said second end cards, said grazing action tending to cause, at every step, one or more cards of each pack to slide relative to the remaining cards towards said aperture and into a position in which they can be drawn from the outside through said aperture.

BRIEF DESCRIPTION OF THE DRAWINGS

The invention will be described by way of example with reference to the accompanying drawings, in which:

FIG. 1 is a perspective view from above of a card distribution device in accordance with the invention;

FIG. 2 is a view similar to that of FIG. 1, but partially exploded and showing the device of FIG. 1 in a first operational arrangement;

FIG. 3 shows a particular of FIG. 2 in a second operational arrangement;

FIG. 4 is a partially exploded perspective view of the front of the device shown in FIG. 1;

FIG. 5 is a view similar to that of FIG. 4, and showing, partially in cross-section, the device of FIG. 1; and

FIG. 6 is a cross-sectional view along the line VI—VI of FIG. 5.

DETAILED DESCRIPTION OF THE INVENTION

As shown in the drawings, a device 1 for distribution of playing-cards comprises a hollow pedestal 2 shaped so as to form, at its rear end, a handle 3 for lifting and displacing device 1. Device 1 further comprises two cavities, the first of which is indicated at 4 (see in particular FIGS. 4 and 6) and extends above pedestal 2, and the second of which is indicated at 5 (see in particular FIGS. 2 and 3) and is arranged sideways with respect to cavity 4, and extends with its lower portion inside pedestal 2.

Cavity 4 has two lateral longitudinal walls 6 and 7 parallel to each other and disposed in a substantially vertical position (FIG. 2). On its upper part, cavity 4 is defined by a wall 8 (see in particular FIG. 6) comprising a first portion 9, which is substantially planar and slightly sloping downwards, and a second portion 10 also sloping downwards and extending from the lower end of portion 9 so as to form with the latter an obtuse dihedral. The lower end of cavity 4 is defined by a lower wall 11 (see FIGS. 4 and 6) comprising a first portion 12, parallel to portion 9 of wall 8 and having substantially the same length as portion 9. Portion 12 is joined, at its lower end, to a second portion 13, which is inclined downwards and bent so as to form a cavity facing upwards. The lower end of said second portion 13 is connected to the lower end of the second portion 10 of the upper wall 8. Cavity 4 consists of two portions indicated by reference numerals 14 and 16 respectively (FIGS. 4 and 6). Portion 14 has a substantially rectangular cross-section and is defined, between sidewalls 6 and 7, by portions 9 and 12 of walls 8 and 11. Portion 14 has a rear aperture 15, which extends over the whole cross-section of portion 14. At its front end, portion 14 communicates with portion 16, which extends downwards to the junction between portions 10 and 13 of walls 8 and 11, and communicates with the outside via an aperture 17 formed through portion 10 of wall 8. Aperture 17 is shaped as an overturned T, and comprises a lower horizontal slit 18, which is formed through portion 10 of wall 8 flush with the upper surface of the lower end of portion 13 of wall 11, and an upper slit 19 extending upwards from the center of slit 18 and at right angles thereto.

Cavity 5 (see in particular FIGS. 2 and 3) is separated from cavity 4 by wall 7, which extends below the lower wall 11 of cavity 4 to the base of pedestal 2. Cavity 5 is laterally limited by a wall 20, which is substantially vertical and parallel to wall 7, and is equal in shape to wall 7. Wall 20 is detachably connected, by means of tabs 22 and screws 24, to the free edge of an annular flange 21 extending from the periphery of wall 7 and at right angles to the latter. Tabs 22 (FIG. 2) detachably engage respective cavities 23 formed on the

inner surface of the flange 21, and screws 24 extend through respective holes 25 of flange 21 for detachably engaging respective holes (not shown) formed in the thickness of wall 20.

A horizontal pivot 26 is mounted within cavity 5, and supports an idle gear 27 and a rocker arm 28. Rocker arm 28 is provided, at one of its ends, with a control handle 29, which protrudes from cavity 5 through an arcuate slot 30 formed in wall 20. Cavity 5 also accommodates two stop members 31 arranged one above the other, and between which rocker arm 28 may oscillate. Rocker arm 28 is kept in a normal rest position, in contact with the lower stop member 31, by means of a helical spring 32. A pawl 33 is pivotally mounted on rocker arm 28, and engages gear 27 so as to cause it to rotate only when rocker arm 28 is rotated towards the upper stop member 31 and against the action of spring 32. Gear 27 meshes with two pinions 34 and 35 (see FIGS. 2 and 5), which are keyed on two spindles, indicated by reference numerals 36 and 37 respectively (FIG. 5), supported by walls 6 and 7 and extending through cavity 4. Spindles 36 and 37 are parallel to each other and are arranged in a plane, which is substantially parallel to that of portion 10 of upper wall 8, and is located substantially at the junction between portions 14 and 16 of cavity 4. Two rollers 38 and 39 made of rubber, felt, plastics or other easily deformable resilient material, are keyed on spindles 36 and 37 respectively.

Rollers 38 and 39 are adapted to come into contact with respective packs of cards (FIGS. 5 and 6) 40 and 41. These two packs of cards 40 and 41 are arranged within a magazine 42 (FIGS. from 4 to 6) slidably mounted within portion 14 of cavity 4. Magazine 42 has a substantially rectangular shape and comprises a lower wall 43; a front wall 44, a rear wall 45, and two sidewalls 47. Front wall 44 is substantially parallel to portion 10 of upper wall 8 of cavity 4 when magazine 42 is inserted into cavity 4 with its lower wall 43 resting slidably on the upper surface of portion 12 of wall 11. Rear wall 45 is provided with an aperture 46 which serves as a handle to allow drawing out magazine 42 from cavity 4. Magazine 42 has an upper aperture for introducing packs of cards 40 and 41, and is provided with a weight 48 slidably mounted inside magazine 42. Front wall 44 of magazine 42 is provided with an aperture having the shape of an overturned T, and comprising a lower horizontal slit 49, which extends flush with the upper surface of wall 43 and over the whole width of wall 44, and a slit 50 which extends upwards from the center of slit 49. The size of slit 50 is such as to allow rollers 38 and 39 to penetrate radially (FIG. 5) through slit 50 when magazine 42 is completely mounted into cavity 4 through aperture 15.

Packs of cards 40 and 41 are arranged in a superimposed relationship within magazine 42; in particular, the cards of pack 41 are arranged in an on-edge position with one of their longer edges in contact with the upper surface of the lower wall 43 of magazine 42, and the cards of the pack 40 are also in an on-edge position so as to be parallel to the cards of pack 41, and be supported by the latter. Packs 40 and 41 are compressed between the inner surface of front wall 44 of magazine 42 and a front surface 51 of weight 48. Weight 48 is mounted on rollers 52 (FIGS. 5 and 6), which allow weight 48 to slide by gravity along wall 43 of magazine 42 and towards front wall 44 of the same. Weight 48 is provided with a tongue 53 (FIG. 6), which

projects rearwardly and downwards from weight 48 to engage a serration 54, the engagement between tongue 53 and serration 54 preventing weight 48 from sliding towards rear wall 45 of magazine 42 when device 1 is displaced by means of handle 3. Weight 48 is provided, at its rear end, with resilient pads 55 operating as bumpers, and a recess 56, which allows weight 48 to be grasped and drawn out from magazine 42. Weight 48 is further provided with two side tabs 57 (only one of which is shown in FIGS. 4 and 5), each of which engages a respective guide 58 consisting of a longitudinal groove formed in the respective sidewall 47.

Prior to their introduction into magazine 42, the cards forming packs 40 and 41 are generally shuffled. Magazine 42, which has been drawn out from device 1, is then arranged in an inclined position with its front wall 44 facing downwards. Packs 40 and 41 are then inserted into magazine 42, and made to rest on the inner surface of front wall 44 in a side by side arrangement so that each card of one pack is arranged with one of its longer edges in contact with one of the longer edges of a corresponding card of the other pack. Weight 48 is then introduced into magazine 42 so as to weigh on packs 40 and 41 and press them with a predetermined pressure against front wall 44. Magazine 42 is then arranged in the position shown in FIG. 4, and inserted, as shown in FIGS. 5 and 6, into portion 14 of cavity 4. Magazine 42 is kept in this position by rollers 38 and 39, which come into contact with the back (FIG. 5) of the first card of packs 40 and 41. Said cards are pressed with a substantially constant pressure against the respective rollers 38 and 39 by weight 48, which slides by gravity along magazine 42, the latter being slightly inclined downwards because of the downward inclination of portion 14 of cavity 4. The distribution of the cards of packs 40 and 41 is then possible by lowering handle 29.

In use, a movement of handle 29 downwards, as shown by arrow 60 in FIG. 3, starting from the position of the handle 29 shown in FIG. 2, causes rocker arm 28 to move from its rest position (FIG. 2), in contact with the lower stop member 31, to a position (FIG. 3) in contact with the upper stop member 31, said movement consisting of a rotation of rocker arm 28 about pivot 26 and against the action of spring 32. When rocker arm 28 rotates away from its rest position, pawl 33 connects rocker arm 28 to gear 27, causing the latter to rotate clockwise through a certain angle.

A rotation of gear 27 corresponds to a rotation of pinions 34 and 35, and thus of the rollers 38 and 39, through an angle, which depends upon the ratio between the number of the teeth of gear 27 and that of the teeth of pinions 34 and 35.

According to FIG. 6, rollers 38 and 39, disposed laterally in contact with the back of the upper cards of packs 40 and 41 respectively, exert by friction a grazing action on said respective upper cards. Said grazing action tends to cause said upper cards to slide on the remaining cards, and to make them pass through slit 49 and into portion 16 of cavity 4, so that said cards can be drawn, from the outside of the device 1, through aperture 17.

The movement of the cards under the thrust of the rollers 38 and 39 towards aperture 17 depends on a plurality of factors, some of which, as for instance the moisture of the ambience, are substantially equal, at any time, for all the cards, while other factors, as for instance the friction coefficient between one card and

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another, which depends upon the state of the surfaces which are in contact, vary at any time from card to card. The law according to which the cards fall, under the thrust of rollers 38 and 39, into portion 16 of cavity 4 is completely casual, since it depends upon factors 5 some of which vary in time, and some of which vary both in time and from one card to another. During distribution, several cases may occur; for example, on rotation of one of rollers 38, the card which is in contact with that roller, because of the friction with an 10 adjacent card, may slip on said roller and remain stationary, while, on the contrary, it may fall by sliding along said adjacent card or by entraining in its fall said adjacent card and one or more further cards. Moreover, it has to be pointed out that the cards of the upper pack 40 may interfere, during their fall, with the cards which fall from the lower pack 41, thus rendering even more casual the law according to which the cards drop onto the bottom of portion 16 of cavity 4 upon actuation of handle 29. 20

Since the number of the cards which fall from each pack of cards 40 and 41 at each actuation of handle 29, is regulated by a merely casual law, distribution device 1 renders practically impossible any programming of the distribution of the cards, and makes it practically impossible to cheat at cards even when the cards are inserted in a predetermined order into magazine 42. 25

According to a variant (not shown), of distribution device 1, magazine 42 is eliminated and the packs of cards 40 and 41 are arranged directly inside cavity 4, within which weight 48 is slidably mounted. 30

According to another variant (not shown), portion 14 of cavity 4 is disposed vertically and packs 40 and 41 are arranged side by side instead of being superposed in an on-edge arrangement. 35

According to a further variant (not shown), rollers 38 and 39 are replaced by mechanical fingers or other similar device, said mechanical fingers being actuable with a back and forth motion by means of an external actuating device, and being arranged with their free ends in contact with the back of the upper cards of packs 40 and 41, in order to exert on said cards a grazing action similar to that exerted by rollers 38 and 39. 40

According to a last variant (not shown), weight 48 is replaced by a cap or plate, which is pushed into contact with packs 40 and 41 by resilient means. 45

What I claim is:

1. A device for distribution of playing-cards, the device comprising: 50
a cavity;

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magazine means for accommodating at least two separate packs of cards arranged in a superimposed and on-edge relationship, and with each card of one pack arranged with one of its edges in contact with a corresponding edge of a card of the other pack, said magazine means being mounted to be slidably along at least part of said cavity;

first aperture means for communication of said cavity with the outside, said first aperture means facing an end wall of said magazine means;

compression means arranged within said magazine means for engaging the bottom card of each pack of cards, and pushing said packs of cards towards said end wall;

second aperture means provided through said end wall to enable the cards to come out from said magazine means;

movable retainer means adapted to extend through said second aperture means into said magazine means and into contact with the top card of each pack of cards to support said packs of cards against the action of said compression means; and

means for operating said movable retainer means in a step-by-step manner, said movable retainer means being adapted, when operated, to exert a grazing action on each of said top cards, and said grazing action tending to cause, at each step, at least said top card of each pack to slide relative to the remaining cards towards said first aperture means through said second aperture means, and into a position in which it can be drawn from the outside through said first aperture means.

2. A device as claimed in claim 1, wherein said cavity comprises a first portion, which is inclined downwards; said movable retainer means being arranged at the lower end of said first portion of the cavity and said magazine means being slidably mounted within said first portion of the cavity and extractable therefrom.

3. A device as claimed in claim 2, wherein said compression means comprise a weight mounted inside said magazine means for sliding therealong in a direction substantially perpendicular to said end wall.

4. A device as claimed in claim 2, wherein said cavity further comprises a second portion, which extends downwards from the lower end of said first portion; said first aperture means being provided at the lower end of said second portion, and the latter receiving the cards, which have come out from the magazine means through said second aperture means under the action of said movable retainer means. 50

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