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PLAYING CARD DEALING DEVICE

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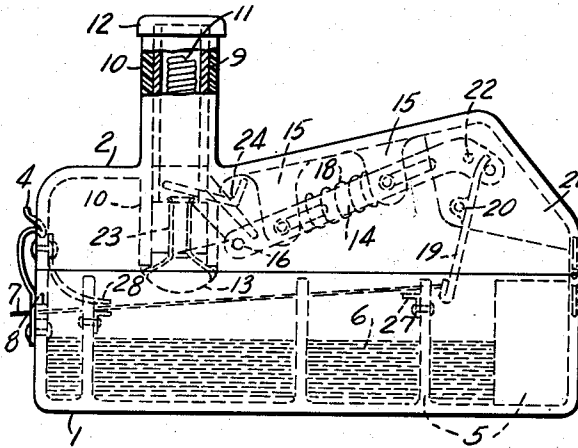


Fig. 1

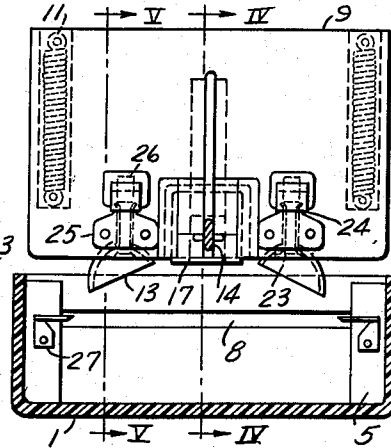


Fig. 3

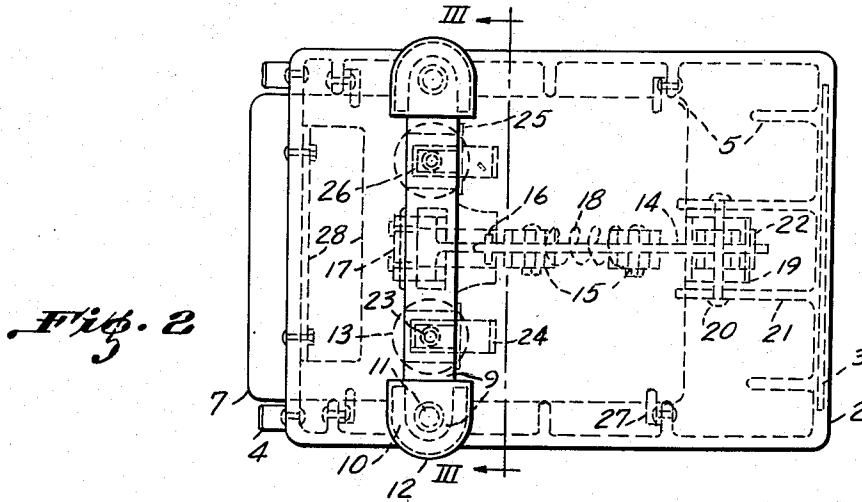


Fig. 2

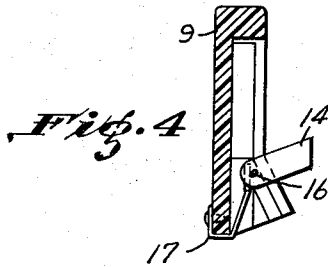


Fig. 4

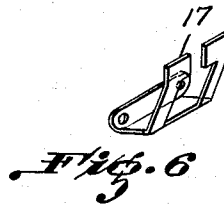


Fig. 6

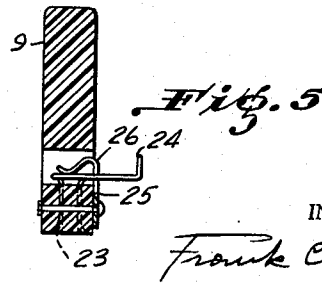


Fig. 5

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PLAYING CARD DEALING DEVICE

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9 Claims. (Cl. 273-149)

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My invention relates to card dealing devices particularly for playing cards. It is a general object of my invention to provide an inexpensive device, the construction of which would be both useful equipment and an interesting novelty of considerable simplicity and sturdiness, of outstanding attraction and of desirable performance. This smartly designed device, light in weight, can be held completely under the hand while resting the wrist on the table. It actually takes only one hand to deal the cards with it. By easily pressing down with the finger a protruding wide knob on the cover and letting it up, the device will infallibly shoot out the top card of a pack resting on the bottom and, by repeating the action, will eject singularly each card to the last one without any physical harm being done to them. It operates rapidly, noiselessly, and without fatigue or hardship to the operator. It ejects with precision even to the far end of large tables and moreover makes it hard on the player who likes to pull tricks.

It is to be noted that particular attention has been devoted in obtaining a plan for a construction of moldable materials such as of colorful and transparent keratin or other similar plastic or alloy as far as the box, the cover and the knob is concerned; however it is within the intent of this invention to use metal, wood and other material, if desired.

The present device consists of a small box or receptacle of a firm material with four upright sides and a bottom and has a hinged-on cover which is comprised also of four sides and of a suitably shaped top, said cover being locked to the box when in closed position. An enclosure of upright walls is within the box to form a card magazine to hold in place the pack of cards which rests horizontally on the bottom; however, it will be seen that said enclosure is not a necessary element of the construction and actually it provides a larger space for the installation of an operating mechanism and rigidity to the box. A suitably shaped hand-operated knob is housed within the cover and is partly thrust out upright through the same, there-at guided by two U-shaped pillars and is suspended with coil springs by means therefor. A set of two small elastic suction cups is obliquely fastened to the bottom of the knob and there are means regulating air inlet into them so as to respectively pick up singularly the cards and to release them. A connecting metal blade is supported from the ceiling by ribs and means therefor and it has a transverse pin at one end to ride or slide along

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the interior edges or tracks of a gashed quadrangular tunnel of a form similar to an up-side-down and inverted Y in the operating knob to transmit the latter's downward and upward motion into forward and backward motion of the connection blade to swing by recoil a card-ejecting hammer which is supported by other ribs and means at the opposite end.

Detailed description

Fig. 1 is the left side-elevation of the device, its front and back being respectively located at the left and at the right;

Fig. 2 is its plan view, with the pack of cards omitted though showing a card partly ejected;

Fig. 3 is a section of view taken on line III—III of Fig. 2 the cover and pillars not being shown;

Fig. 4 is a section of view taken on line IV—IV of Fig. 3 and shows the knob centrally sectioned and, more clearly, where-at the connection blade is activated because of the track formed by the gashed tunnel in the knob and because it is aided by a specially formed flat spring thereon properly assembled;

Fig. 5 is a section of view taken on line V—V of Fig. 3 and shows complete in the knob a preferred valve-lever assemblage, which is not shown fully in Fig. 1;

Fig. 6 shows the specially formed flat spring in a full view.

Referring to the numbers on the drawings: 1 is the box or card-receptacle; 2 is the cover; 3 is the hinge; 4 are spring metal locks carried by the box and adaptable to be hooked on incisions at the cover; 5 are the walls extending up at a right angle to the sides of the box where-within the pack of cards 6 is enclosed and rests on the bottom; 7 is a card shown as it is being ejected through an exit 8 on the front of the box; 9 is the hand-operated knob provided with the gashed tunnel or groove of inverted Y shape in cross section; 10 are the U-shaped pillars that support and guide the knob and are preferably molded in one piece with the cover; 11 are the coil extension springs placed within the knob, one at each end thereof, held up by metal caps 12 resting on top of the pillars and secured to the knob at the lower end in order to normally force the knob upwardly; 13 are the oblique elastic suction cups carried by the knob to pick up quickly the top card and curve it at the same time in order to prevent the latter from sucking up the next one or next one below, by effectively eliminating the air drag which would otherwise impede the quick uplift of a single card; 14 is the connecting

metal blade or a connection means held to a stable degree and guided by supporting means carried by the cover and consisting of two sets of walls or ribs 15, extended parallel downwardly from the ceiling, and of pins or struts crossing through said ribs. The blade 14 has elongated apertures whereby it rests on said pins or struts in order to be free for forward and backward motion; 16 is a short pin solidly extending through and at a right angle to the blade 14 and it may be capped with a rolling stock or caps to lessen the friction with the tracks of the knob and with the specially formed flat spring 17 secured centrally within an enlargement of the lower portion of the tunnel formed in the knob; 18 is a compression coil spring, which imparts the recoil to the blade 14 and it surrounds the blade 14 in between the ribs 15 and is secured on 14 at its back end, to force 14 toward the back at all times. It should be noted that the extension springs 11 must have a combined pull power superior to the one of the compression spring 18 in order to effect the automatic uplift of the knob, once this has been pressed down with the fingers. When the knob gets pressed down, the front end of the blade 14, because of the pin 16, will seemingly follow up the lower slant portion or leg of the groove or tunnel in the center of the knob; then the pin 16 pushes the blade spring 17 forward and out of its way, as shown in Fig. 4, and continues upwardly until a card has been picked up and then, once the pressure on the knob is let go, it will follow automatically the tracks or edges of the tunnel back downwardly; this time, however, the pin 16 will roll over the edges of the spring 17, which serves as a bridge over the junction of the tracks, and down until it is free to snap back. In this manner the back end of the blade 14 will activate the card-ejecting hammer or blade member 19 which should have a rubber tip where it hits the card. The hammer 19 is freely suspended, intermediate its ends, by a crossing rod or strut 20, which is held in place by supporting walls or ribs 21 of the cover 2, and it is conveniently connected to the blade 14 by a couple of pins 22, secured on the blade similarly to 16, that will push forth and back the upper portion of the hammer since this is preferably made of sheet metal and has a narrow U-like slot, where-through the blade 14 travels. 23 are small tubes flared at both ends to hold in place the suction cups against the knob and also serve as air-passage into the cups when these are automatically unplugged at the proper time by levers 24, that is when the latters' turned up ends or lips will hit the ceiling of the cover in the operation. The flared tubes 23 may be substituted by similar means of the removable type if made in two pieces or, as it is apparent, if molded as single units with the suction cups 13. The part of the levers that rests on tubes 23 should be lined with rubber or machined so as to be air-tight. 25 are props or fulcrums secured vertically on the knob beneath the levers at a right angle thereto and preferably made of pieces of sheet metal of a width larger than the levers and each have the upper end reduced in width to form a shoulder; said reduced end of the fulcrums sticks through an aperture provided on the levers which rest on said shoulders during the operation. 26 are flat springs having one end placed longitudinally over the levers to force them down on the tubes 23, while at the other they are welded to each of said reduced ends of the fulcrums stuck through the levers, or they

may be secured otherwise to the knob. For the assemblage relative to the levers a hole or cut-out has been provided on the knob, as shown.

27 are four angular blades fastened as shown in Figs. 1, 2 and 3 to four of the walls 5 and have a short and very flexible tip extended horizontally preferably for a little length over the pack of cards. The card being brought up curved by the oblique suction cups may pass through said four tips either freely or by brushing them away, dependent on how much said flexible tips extend over the pack of cards. Once the card is released by the suction cups and resumes the flat shape, it may drop and slide upon the four flexible tips while simultaneously being ejected out through the card-exit 8 by the prompt blow of the ejecting hammer 19. A light flat spring 28 fastened inside on the front of the cover also guides and aides the ejection of said card by speeding up the return to its flat shape. Another spring similar to 28 may be fastened on the ceiling or thereabout to lightly press down upon the back portion of the card being elevated. The two rear flexible blades 27 should be placed higher than the two in front; the card-exit should be below the horizontal level of the suction cups in unoperated position so that the card is ejected in a plane angular to the surface of the table and will hit it very quickly, thus performing a satisfactory ejection.

While I have herein shown my card dealing device as embodied in a preferred form of construction, by way of example it will be apparent that further alterations or modifications and further adjustments and additions might be made in the construction without departing from the spirit of the invention. Consequently, without limiting myself in this respect, I claim as my invention:

1. A card dealing device including: a receptacle adaptable as a card magazine; a cover operative to be firmly locked on said receptacle and to permit access into the same; an operating mechanism operative to pick up and eject each top card from a pack resting horizontally in the magazine; means on and depending within the cover housing and supporting said mechanism; means supported on the cover and vertically operative to activate said mechanism, said means operative to activate said operating mechanism including: two U-shaped guide members extending vertically through said cover; knob means slidable between and within the guide members and operative in one direction; spring means operative to return said knob means to its original position; track means on said knob means formed by a grooved portion of inverted Y shape in cross section, and said operating mechanism including: a connection means carried by a portion of said supporting means of the cover and adaptable to be engaged at the front end for forward and backward motion by said track means; and a card ejection means carried by another portion of said supporting means of the cover and engageable by the back end of said connection means.

2. A device as defined in claim 1 and including: an enlargement of said inverted Y-shaped groove adjacent the lower part and the point at which the legs of said inverted Y-shaped groove intersect; a specially formed blade spring housed within said enlargement and conforming with the track means; and a transverse pin means carried by said connection means and engageable by the track means and alternately by the special blade

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spring, said track means and blade spring and transverse pin means being adaptable to transmit the downward and upward travel of the knob into a forward and backward activation of the connection means.

3. A device as defined in claim 1 in which said back end of the connection means includes: stud means carried by the connection means whereby the latters' forward and backward motion causes activation of the card ejection means.

4. A device as defined in claim 1 in which the connection means includes: elongated apertures whereby said connection means is carried by the aforesaid portion of the support means of the cover; and pin means carried by said support means transversely through the elongated apertures of the connection means, said apertures and pin means permitting forward and backward travel of the connection means.

5. A device as defined in claim 4 in which said card ejection means comprises: a blade member pivoted intermediate its ends by the aid of a portion of the supporting means of the cover; a slot on one end of the blade member where-through said back end of the connection means is inserted; and a pair of transverse pins carried by said connection means on opposite sides of the blade whereby the connection means and the card ejection means are operatively connected together.

6. A device as defined in claim 4 and including: a spring means disposed in between said aforesaid portion of the supporting means, surrounding a portion of said connection means intermediate its ends and having the back end secured to the connection means, the forward motion of the latter causing compression of the spring means and the latter's recoil pushing backwardly the connection means, this in turn causing the ejection means to strike the sucked up card, said recoil and strike being effected when said front end of the connection means is released by the bottom of the front end of said groove.

7. A card dealing device including: a receptacle adaptable as a card magazine; a cover operative to be firmly locked on said receptacle and to permit access into the same; an operating mechanism operative to pick up and eject each top card from a pack resting horizontally in the magazine; means on the cover housing and supporting said mechanism; means supported on the

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cover and vertically operative to activate said mechanism; said operating mechanism including: a knob means; a set of resilient suction cups carried by the knob means and having the bases thereof oblique in relation to the plane of a pack of cards resting in the receptacle, said cups being adaptable to pick up by compression only the top card of the pack without the latter sucking up the next one or next ones below; air inlet means for said oblique suction cups; and automatic control means for the air inlet means whereby the sucked up card is releasable.

8. A device as defined in claim 7 in which said air control means includes: a lever normally closing the air inlet means; a turned up lip at one end of said lever operative to open automatically the air inlet means in the operation; a fulcrum for said lever and supporting the same; and spring means normally forcing the lever closed on the air inlet means, the fulcrum being secured to the knob means, the lever having an aperture wherethrough projects a reduced end of the fulcrum, the aforesaid spring means being connected to said end of the fulcrum.

9. A device as defined in claim 7 where said operating mechanism further includes: means operative by spring reaction and adaptable to strike the sucked up card; an aperture on the receptacle where-through the card may be ejected, the aperture being located below the horizontal level of the bases of the suction cups; spring means depending from the cover and adaptable to press down on said sucked up card; and slide means secured in the receptacle in a slant plane and whereupon the card may drop and slide, the slant slide means, the location of the aperture and the relative spring reactions being adaptable to effect a substantial ejection of the cards.

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