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F. H. OGDEN ET AL
CARD DEALING MECHANISM

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2 Sheets-Sheet 1

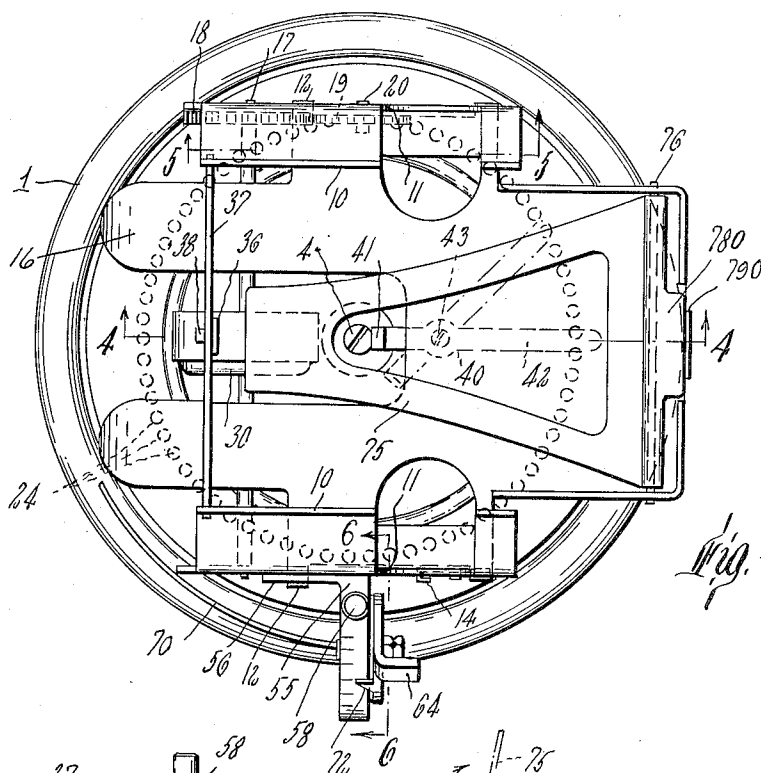


Fig. 1.

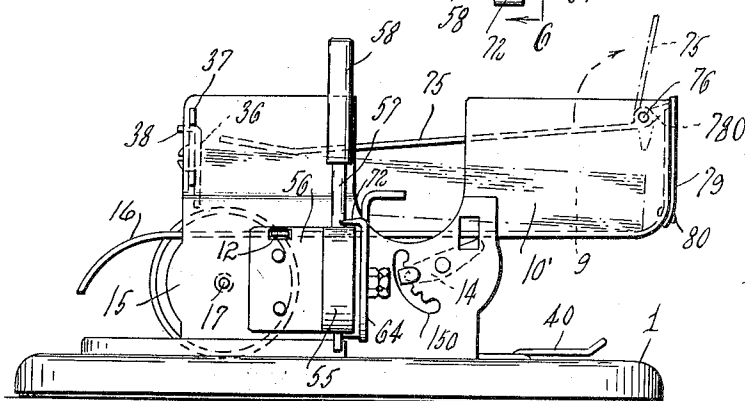


Fig. 2.

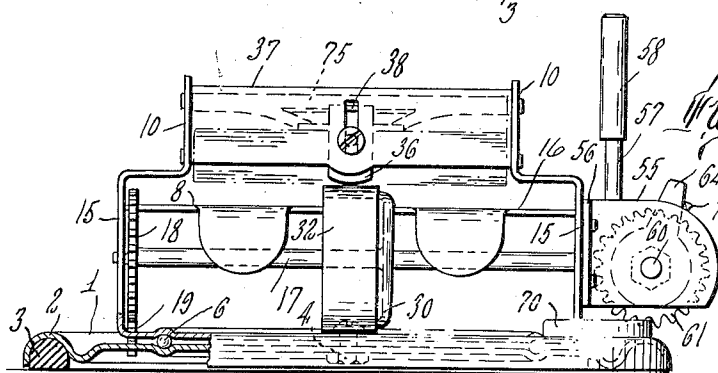


Fig. 3.

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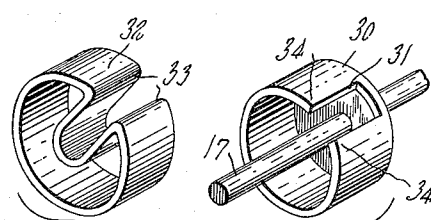
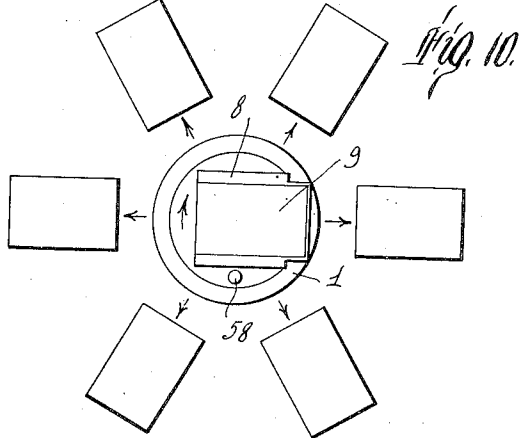
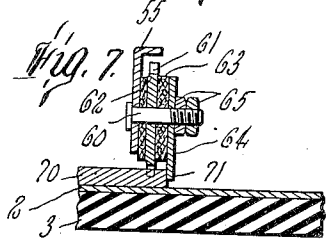
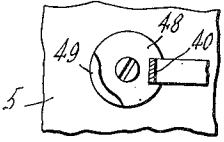
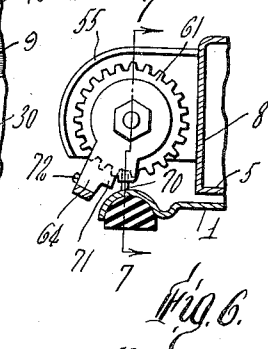
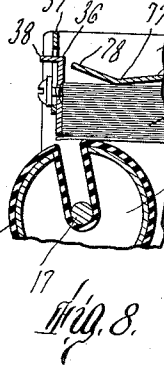
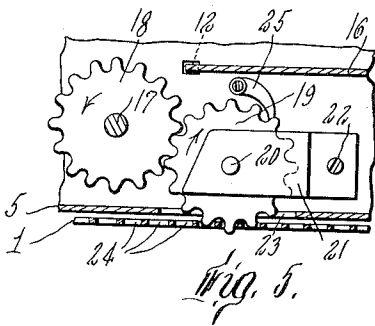
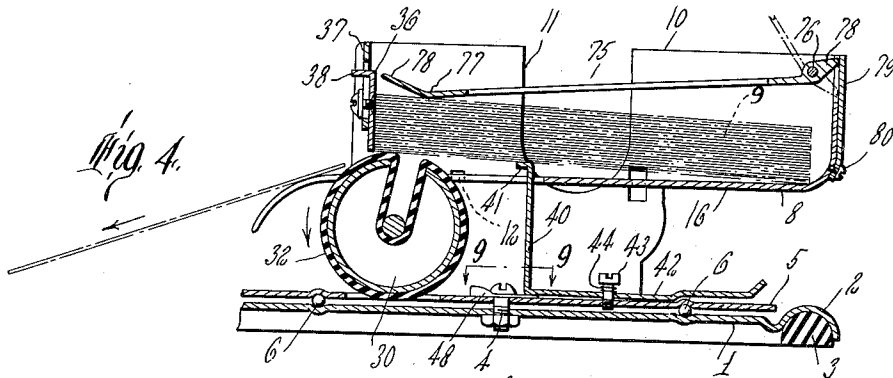
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CARD DEALING MECHANISM

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6 Claims. (Cl. 273—149)

This invention relates to mechanisms for dealing playing cards.

One object of the invention is to provide a mechanism of relatively simple and inexpensive construction by which cards may be dealt successively into a plurality of piles.

A further object of the invention is to provide means by which after a selected number of cards for each pile have been dealt, the mechanism will be automatically stopped.

Still another object is to provide mechanism by which the number of piles into which the cards are dealt may be selected.

Further objects and advantages will appear from a description of an embodiment shown in the accompanying drawings in which

Figures 1, 2 and 3 are top plan, side, and end elevational views, respectively, of a card dealing mechanism embodying the invention.

Figures 4, 5 and 6 are detail sectional views on the correspondingly numbered section lines of Figure 1, Figure 6 showing the counter for the number of cards to be dealt in stopping position.

Figure 7 is a detail sectional view on line 7—7 of Figure 6.

Figure 8 is a fragmentary view similar to a portion of Figure 4, but showing the parts in different positions.

Figure 9 is a detail sectional view on line 9—9 of Figure 4.

Figure 10 is a diagrammatic top plan view of the mechanism showing an arrangement of the piles of cards dealt thereby.

Figure 11 is an exploded perspective view of the card-feeding wheel and its cover.

Referring first to Figures 1 to 4, the mechanism comprises a circular base 1, which is shown as provided with a marginal upwardly extending channel 2 for the reception of a ring 3 of rubber or similar cushioning material which may be engaged with the top of a table, or the like, and support the mechanism therefrom and prevent scratching or other marring of the table. This base 1 has a central pivot 4, shown as a screw and nut, which pivotally connects therewith a disk 5 which may be supported anti-frictionally for rotation about the pivot 4. Such means may comprise a series of balls 6 located in annular grooves in adjacent faces of the member 1 and the disk 5. The disk 5 supports in elevated position thereon a holder 8 for a pile of cards to be dealt as at 9. This pile is supported between upstanding side wall members 10 which are preferably provided with recesses 11 which facilitate the placing of the cards in the holder since they provide openings through which the fingers of the user may pass. Base portion 16 is preferably provided at the rear thereof with integral upstanding wall portions 10'.

The holder 8, as shown best in Figure 2, is provided with side portions 15 which extend downwardly below the base 16 of the holder which is pivoted on lugs 12

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extending through holes in the side portions 15 and have journaled therein end portions of a shaft 17. Inwardly from one of the side portions 15, the shaft 17 has secured thereto a gear 18, which, as shown best in Figure 5, meshes with a gear 19 carried by a shaft 20 which is journaled at opposite ends in the adjacent side member 15 and in a bracket piece 21 secured to this side piece as by a screw 22. This gear 19 extends through a slot 23 through the disk 5 and its teeth engage in perforations 24 of the supporting disk 1. These perforations 24 are arranged in circular array about the axis 4 as a center, as is shown best in Figure 1, so that as the holder is turned about the axis 4 in one direction, the gear 23 is caused to rotate and this imparts rotation through the gear 18 to the shaft 17.

Reverse direction rotation is prevented as by a gravity pawl 25 as shown in Figure 5. Substantially midway of the ends of the shaft 17 it has fixed thereto a friction roll 30. As best shown in Figure 11, this friction roll has its periphery interrupted at one point as by a slot 31 and its periphery may be covered by friction material such as a rubber band 32. This rubber band may be placed in position or removed without requiring the removal of the roll 30, it being only necessary that the band be indented as shown in Figure 11 so as to be placed about the shaft 17, the two loop portions 33 being then moved axially of the shaft over the end portions 34 at opposite sides of the slot 31. This permits easy removal and replacement of the friction surface of the roll, which, it will be noted, is interrupted opposite to the slot 31. The peripheral surface of this roll is normally engaged by the lowest card of the pile 9, this roll being shown in Figure 8 in position to begin a dealing action which also is the final stopped angular position of the roll.

A vertically adjustable gate element 36 is carried by the front wall 37 of the holder, this gate having a forward projecting flange 38 extending through a slot 39 in this wall. The lower end of this gate is spaced from the surface of the roll to an adjustable extent, depending upon the thickness of the individual cards and also adjusted for this same thickness is a lever 14 having spring engagement in an arcuate slot 150 in one of the side walls 15 (see Figure 2) which adjusts the base 16 angularly about its pivot at the lugs 12, one end of the lever 14 engaging the under face of the base 16 at one side of its pivotal axis at the lugs 12. The space beneath the gate 36 forms a throat which permits the passage of a single card from the lowest face of the pile or pack within the holder 8, and permits the continued rotation of the roll in the direction shown by the arrow in Figure 4 to feed out the lowest card from the pack. Since the rotation of the roll is accompanied by a rotation of the pile itself, since the holder revolves about the axis 4 to cause the roll to turn, successive deliveries of the cards from the pile are made at different angular positions of the holder. By proper choice of gear sizes and the number of holes 24 in the base, the number of times a card is fed from the pile outwardly from the axis 4 during each rotation of the holder is determined.

As shown, the parts are so arranged that normally six cards are dealt at each rotation of the holder, these being arranged in piles angularly spaced about the axis of rotation of the holder as shown in Figure 10. However, means may be provided for rendering the roll ineffective to deal cards at certain angular positions, the means shown providing for dealing at four angular positions rather than six whenever this is desired. This means comprises a lifting element 40, shown best in Figures 1 and 4, which has a vertical portion provided with a horizontal foot 41 underlying the pile of cards in the holder. It also has a horizontal portion 42 which is supported for rocking and vertical motion on the pivot screw 43,

but is normally held depressed as by a spring 44 surrounding the pivot screw 43, and bearing between the under face of its head and the top face of the portion 42. The member 40 is thus mounted for pivotal motion about the pivot screw 43, which, it will be noted, is eccentric to the pivot screw 4. The pivot screw 4 has fixed thereto a stationary circular cam element 48 (Figure 9) provided with a raised portion 49 about a portion only of its periphery. The member 40 may be swung about the pivot 43 between the two positions shown in dotted lines in Figure 1. In one of these positions the lower end of the upright 40 engages the top face of the cam 48, as shown in Figure 9, and when the holder is in angular position to bring the raised portion 49 therebeneath, this portion 40 is lifted, raising the cards within the holder out of contact with the dealing roll. As shown the raised portion 49 is of sufficient length and is properly positioned to hold the pack of cards out of contact with the roll surface during the normal time for dealing out two cards at adjacent angular positions. Cards are thus not dealt at these two angular positions, thus reducing the number of angular positions at which cards are dealt from six to four. Thus the dealing mechanism can be adjusted to deal either six or four hands as may be desired, though of course, they could be adjusted to deal into any desired number of piles by correspondingly designing the parts.

It also is highly desirable that the dealing be stopped automatically whenever a predetermined number of cards have been dealt into each of the plurality of piles, and without requiring any care on the part of the operator to insure that the correct number of cards has been dealt. To this end a counter mechanism is shown. This mechanism comprises a partial casing 55 which may be provided with a foot 56 for attachment to one of the side wall portions 15 as shown best in Figures 1 and 3, and to this casing 55 may be secured the lower end of a post 57 provided with a handle 58 which may be grasped by the operator in order that the holder may be turned about the axis of its pivot 4. This casing 55 (see Figure 7) has a pivot shaft 60 on which is journaled a gear 61 and a friction washer 62, which may be of felt or suitable material, and is positioned between the gear 61 and the side of the casing 55. A second friction washer 63 is positioned on the opposite side of the gear 61 and between it and an arm 64, these parts being held in frictional contact as by check nuts 65 threaded on the end of the pivot pin 60. Thus the arm 64 may be turned independently of the gear 61, although it is frictionally held thereto so that if left alone it will turn with the gear 61, and the gear 61 will tend to remain in any angular position in which it is placed by its frictional engagement through the washer 62 with the casing 55, but it may be turned when desired. The base 1 has an arcuate tooth element 70 secured to its upper face in such a manner that it is inclined toward the axis 4 in one angular direction, as shown, for example, in Figure 1, in a clockwise direction, and this tooth 70 extends between adjacent teeth of the gear 61. Lengthwise effective portions of the tooth 70 are thus at different distances from the axis of rotation of the holder. Thus at each rotation of the holder the fixed tooth 70 engaging between adjacent teeth of the gear 61 causes the gear 61 to be advanced by a predetermined amount, and as shown herein, by a single tooth. This advance carries with it the arm 64 (see Figures 1 and 6) which at one point has a stop shoulder 71, and at one angular position of this arm 64, the stop shoulder 71 comes opposite to the end of the tooth 70 and prevents further rotation of the holder. The arm 64 may be turned out of stopping position against the friction exerted by the friction washer 63 and may be initially set at any desired angular position. As shown it has a point 72 which cooperates with index markings on the outer edge portion of the casing 55, thus to indicate to the operator the number of complete rotations of the

holder which can be made before the stop is brought into stopping position. Since each rotation of the holder is effective to deal one card in each of the operative angular positions, the number of such complete rotations permitted determines the number of cards dealt in each of the dealt piles. The operator then merely turns the holder as by grasping and turning the handle 58 in the direction permitted by the pawl 25, and after the lever 64 has been set to the proper index marking on the casing, whereupon he rotates the holder until rotation is stopped, whereupon he knows that the proper number of cards have been dealt at each of the angular positions.

In order to insure proper engagement of the cards in the holder against the dealing roll, an arm 75 has been shown, this arm being pivoted on the cross pivot 76 and bearing adjacent to its forward end as at 77 against the top face of the pile of cards in the holder substantially opposite to the point of engagement of the dealing roll with the card on the opposite face of the pack. The forward end of the arm 75 may be turned upwardly as at 78 so that it may be grasped easily and lifted out of position to facilitate the placing of the cards in the pack. As shown it is provided with a cam extremity 780 projecting backwardly from the pivot 76 and against which bears a leaf spring 79 secured to the adjacent end wall of the holder, as by means of one or more screws 80. This spring tends to hold the arm yieldingly either in its downward position, pressing the cards in the pile in the holder toward the dealing roll, or in lifted position from which it may be turned freely into the position shown in dotted lines in Figure 2, where the upper face of the holder is unobstructed for the placing of the cards therein, this leaf spring and arm 780 acts somewhat as a toggle, tending to hold the arm in either of the two positions to which it may be turned.

In operation it will be seen that when the plate 36 has been adjusted in accordance with the thickness of the cards used, the lifter 40 has been adjusted to determine the number of piles of cards or hands to be dealt, and the lever 64 has been adjusted to determine the number of cards desired for each pile, it is then only necessary to lift the arm 75, place the cards in position in the holder, lower the arm 75, and then to rotate the holder until it is stopped automatically by the counter mechanism. During each rotation of the holder, one card is dealt at each of the operative angular positions and when the desired number have been dealt into each pile, the operation of the mechanism is automatically stopped.

From the foregoing description of an embodiment of this invention it should be evident to those skilled in the art that various changes and modifications may be made without departing from its spirit or scope.

We claim:

1. A card dealing mechanism comprising a holder for a pile of cards, means supporting said holder for rotation about an axis, means including a rotary roll having an interrupted periphery and carried by said holder and rotated by rotation of said holder for dealing out cards one by one from said holder in piles arranged angularly around said holder, said rotary roll normally engaging an end card of said pile, a member engageable therewith and effective to hold said cards in said holder out of such engagement with said roll, and means selectively operable to render said member operative at certain angular positions of said holder to thereby decrease the number of said angularly arranged piles into which the cards in said holder are dealt.
2. A card dealing mechanism comprising a holder for a pile of cards, means supporting said holder elevated for rotation about an axis, a roll having an interrupted periphery and journaled in said holder beneath said pile of cards and with which the lowest card of the pile may engage over the continuous portion of said roll periphery, means by which said holder may be rotated about said axis, means actuated by the rotation of said holder about

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said axis to rotate said roll and thereby deal the engaged cards out from said pile into a plurality of dealt piles arranged about said axis, a card shifter element beneath the cards in said holder, and means actuated as said support is being rotated to lift said shifter and press said pile of cards away from contact with said roll and there hold them during a predetermined portion of each rotation of said holder to thereby cause said roll to fail to deal cards at certain of its normal dealing angular positions.

3. A card dealing mechanism comprising a holder for a pile of cards, means supporting said holder elevated for rotation about an axis, a roll having an interrupted periphery and journaled in said holder beneath said pile of cards and with which the lowest card of the pile may engage over the continuous portion of said roll periphery, means by which said holder may be rotated about said axis, means actuated by the rotation of said holder about said axis to rotate said roll and thereby deal the engaged cards out from said pile into a plurality of dealt piles arranged about said axis, a card shifter element beneath the cards in said holder, means actuated as said support is being rotated to lift said shifter and press said pile of cards away from contact with said roll and there hold them during a predetermined portion of each rotation of said holder to thereby cause said roll to fail to deal cards at certain of its normal dealing angular positions, and means for automatically stopping the rotation of said holder after a predetermined number of complete rotations thereof.

4. A card dealing mechanism comprising a holder for a pile of cards, means supporting said holder elevated for rotation about an axis, a roll having an interrupted periphery and journaled in said holder beneath said pile of cards and with which the lowest card of the pile may engage over the continuous portion of said roll periphery, means by which said holder may be rotated about said axis, means actuated by the rotation of said holder about said axis to rotate said roll and thereby deal the engaged cards out from said pile into a plurality of dealt piles arranged about said axis, a card shifter element beneath the cards in said holder, a stationary cam disposed centrally of said supporting means, and a lever mounted on said supporting means and carrying said shifter element and swingable from and toward cooperative relation to said cam, and when in cooperative relation causing said cam to lift said shifter element to lift and hold said cards in said holder from contact with said roll at certain predetermined angular positions of said holder to thereby deal cards to less than the normal number of dealt piles.

5. A mechanism of the class described comprising a holder for a pile of cards, means supporting said holder for rotation about an axis, a roll having an interrupted periphery and journaled in said holder beneath a pile of cards and with which the lowest card of the pile may

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engage on the continuous portion of said roll periphery, means by which said holder may be rotated about said axis, means actuated by the rotation of said holder about said axis to rotate said roll and thereby deal the engaged cards out from said pile into a plurality of dealt piles arranged about said axis, a gear journaled on said holder, a stationary actuating tooth past which said gear is moved as said holder is rotated and engaging between adjacent teeth thereof and having effective portions arranged at different distances from said axis whereby rotation of said holder rotates said gear, an arm frictionally carried by said gear for adjustment relative thereto and having a stop, and an element cooperating with said stop to stop rotation of said holder when said stop reaches a predetermined angular position about said shaft axis thereby to determine the number of cards dealt in each of said dealt piles.

6. A mechanism of the class described comprising a holder for a pile of cards, means supporting said holder for rotation about an axis, a roll having an interrupted periphery and journaled in said holder beneath a pile of cards and with which the lowest card of the pile may engage on the continuous portion of said roll periphery, means by which said holder may be rotated about said axis, means actuated by the rotation of said holder about said axis to rotate said roll and thereby deal the engaged cards out from said pile into a plurality of dealt piles arranged about said axis, a gear journaled on said holder, a stationary actuating tooth past which said gear is moved as said holder is rotated and engaging between adjacent teeth thereof and having effective portions arranged at different distances from said axis whereby rotation of said holder rotates said gear, an arm frictionally carried by said gear for adjustment relative thereto and having a stop, an element cooperating with said stop to stop rotation of said holder when said stop reaches a predetermined angular position about said shaft axis thereby to determine the number of cards dealt in each of said dealt piles, said arm having an indicator and an index fixed with respect to said holder and cooperating with said indicator to show the number of cards dealt at each pile after an initial setting of said arm with respect to said index before the rotation of said holder is stopped.

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