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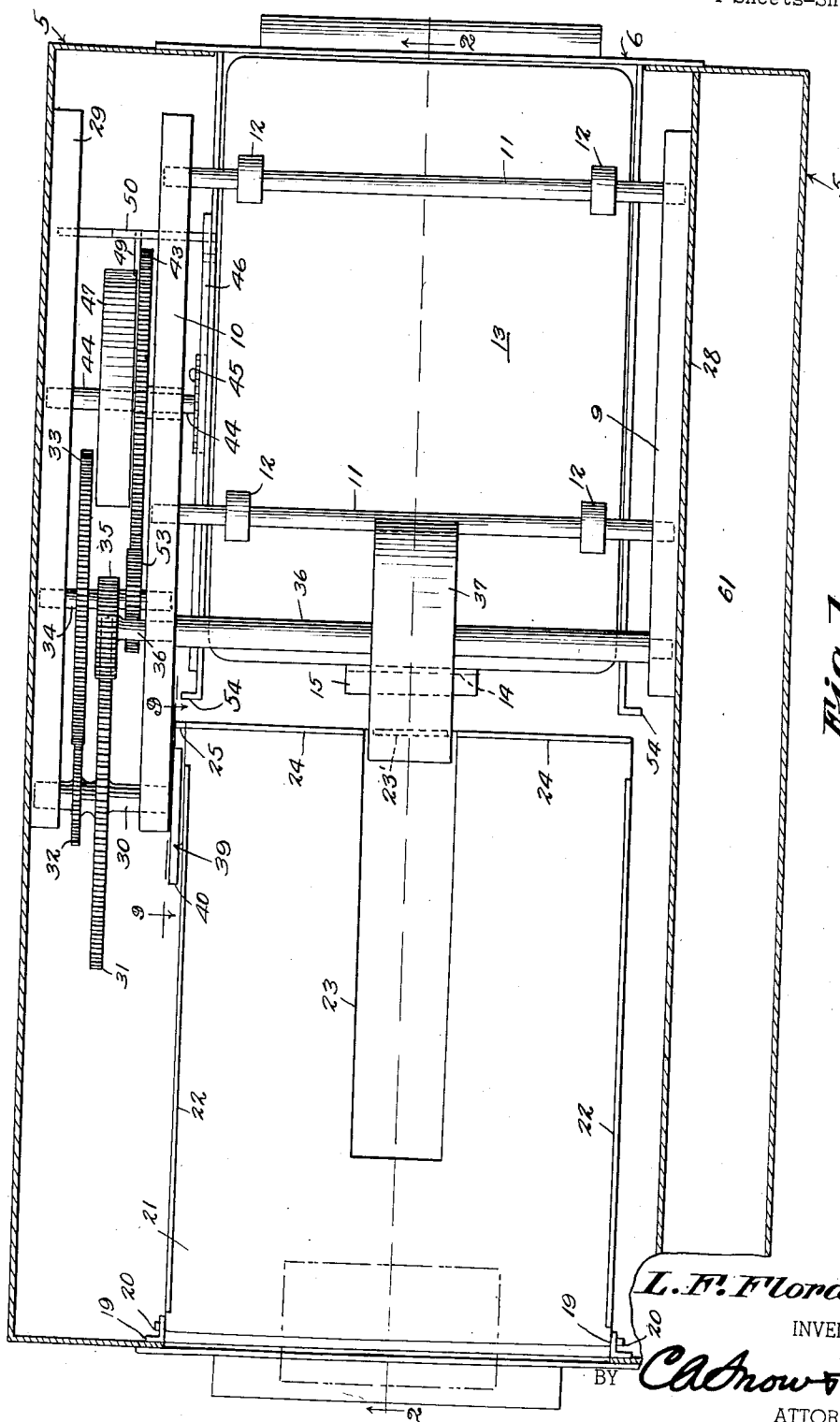
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2,581,247

AUTOMATIC PLAYING CARD DEALING APPARATUS

Filed Oct. 17, 1949

4 Sheets-Sheet 1



Jan. 1, 1952

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2,581,247

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Filed Oct. 17, 1949

4 Sheets-Sheet 2

Fig. 2.

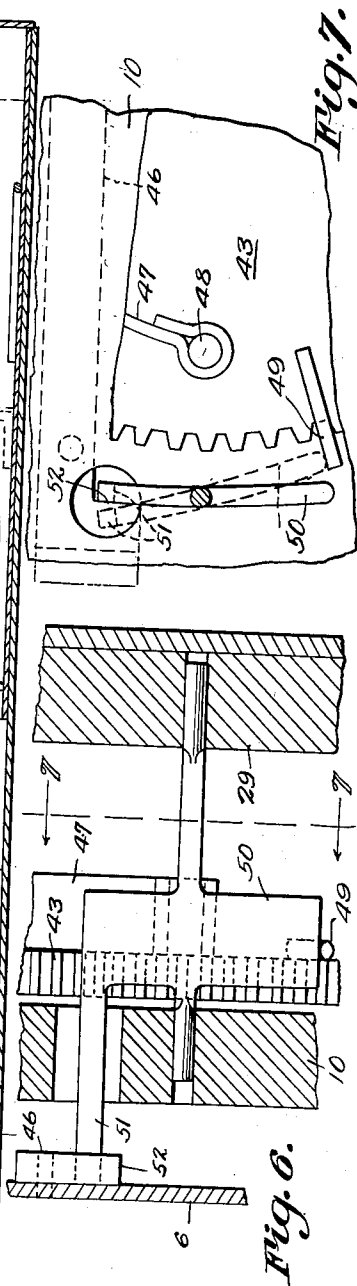
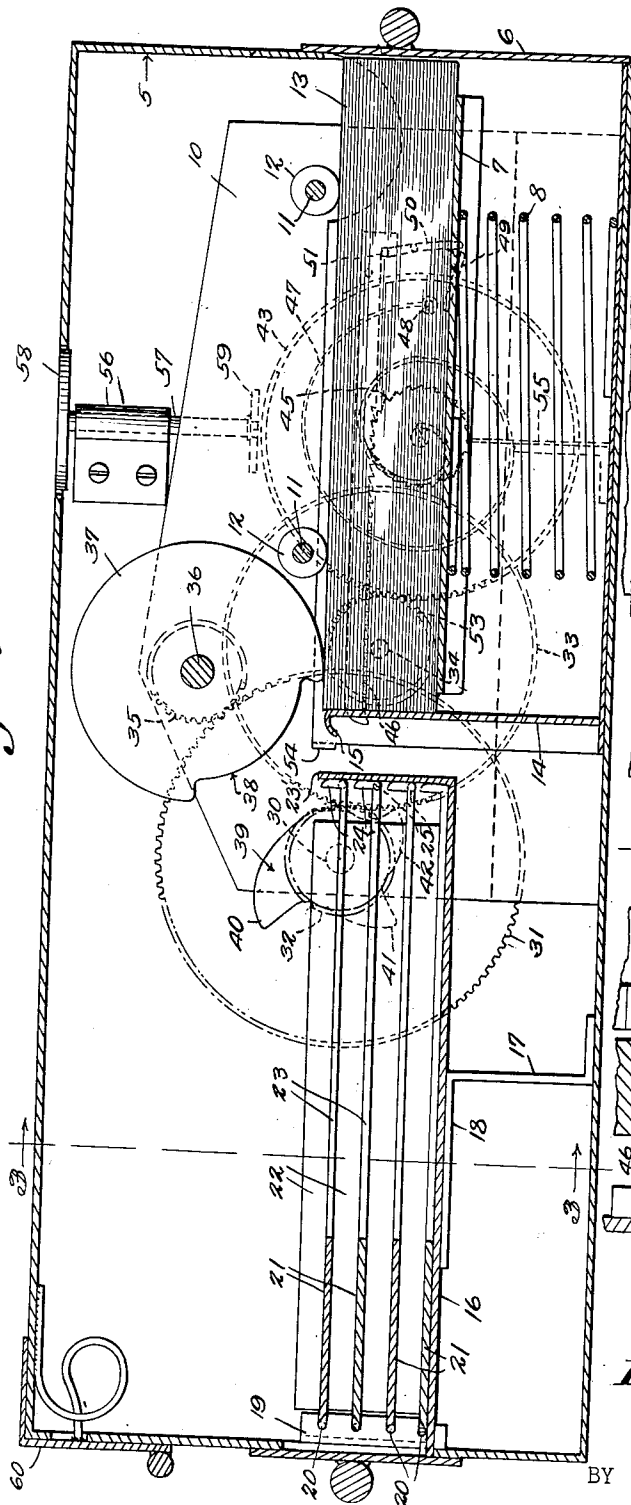


Fig. 7.

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Jan. 1, 1952

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2,581,247

AUTOMATIC PLAYING CARD DEALING APPARATUS

Filed Oct. 17, 1946

4 Sheets-Sheet 3

Fig. 3.

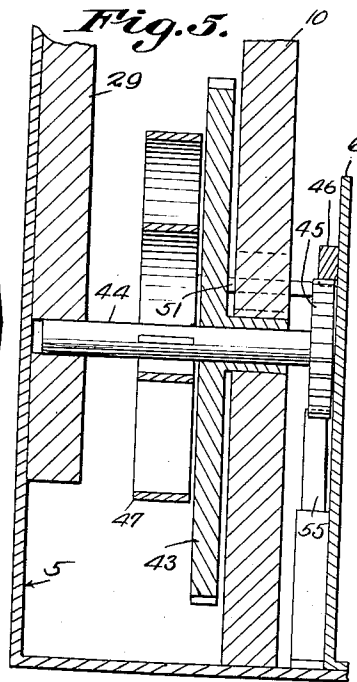
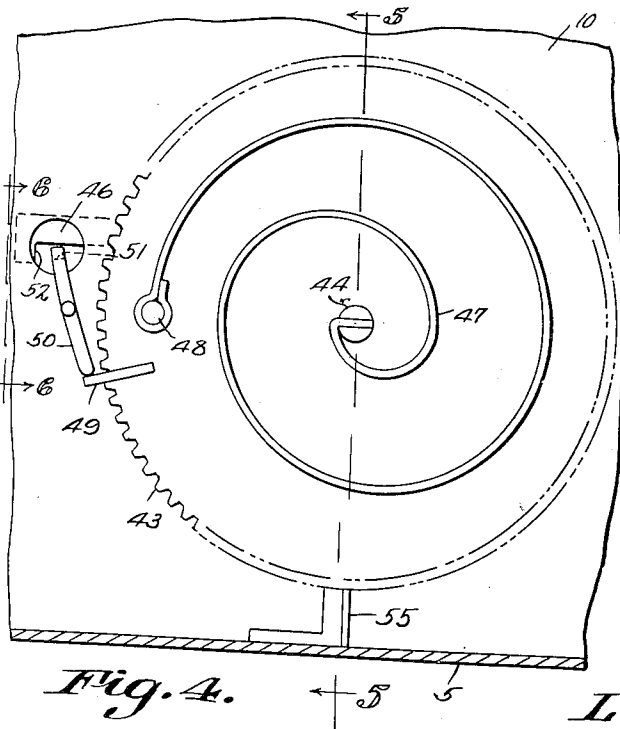
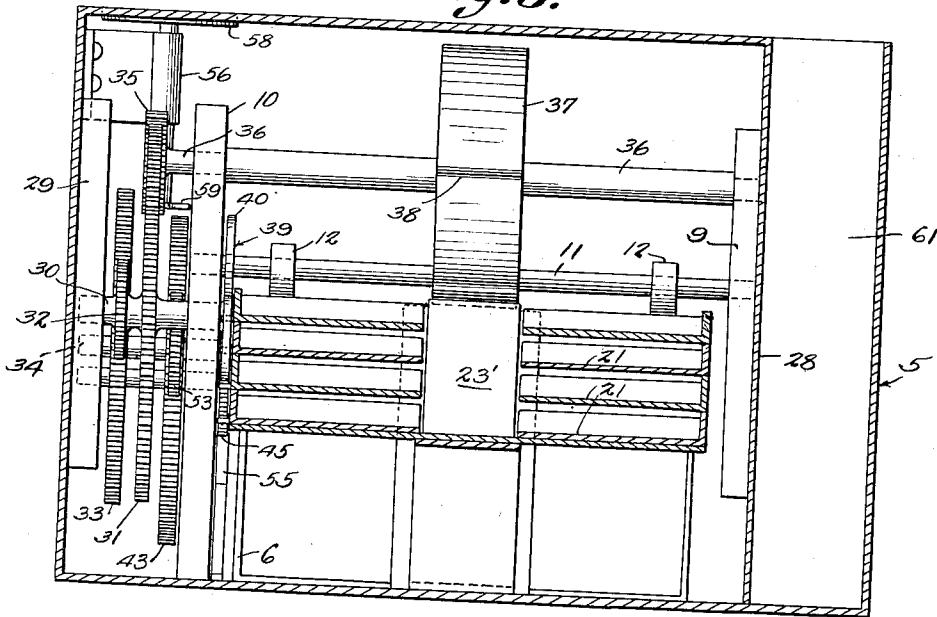


Fig. 4.

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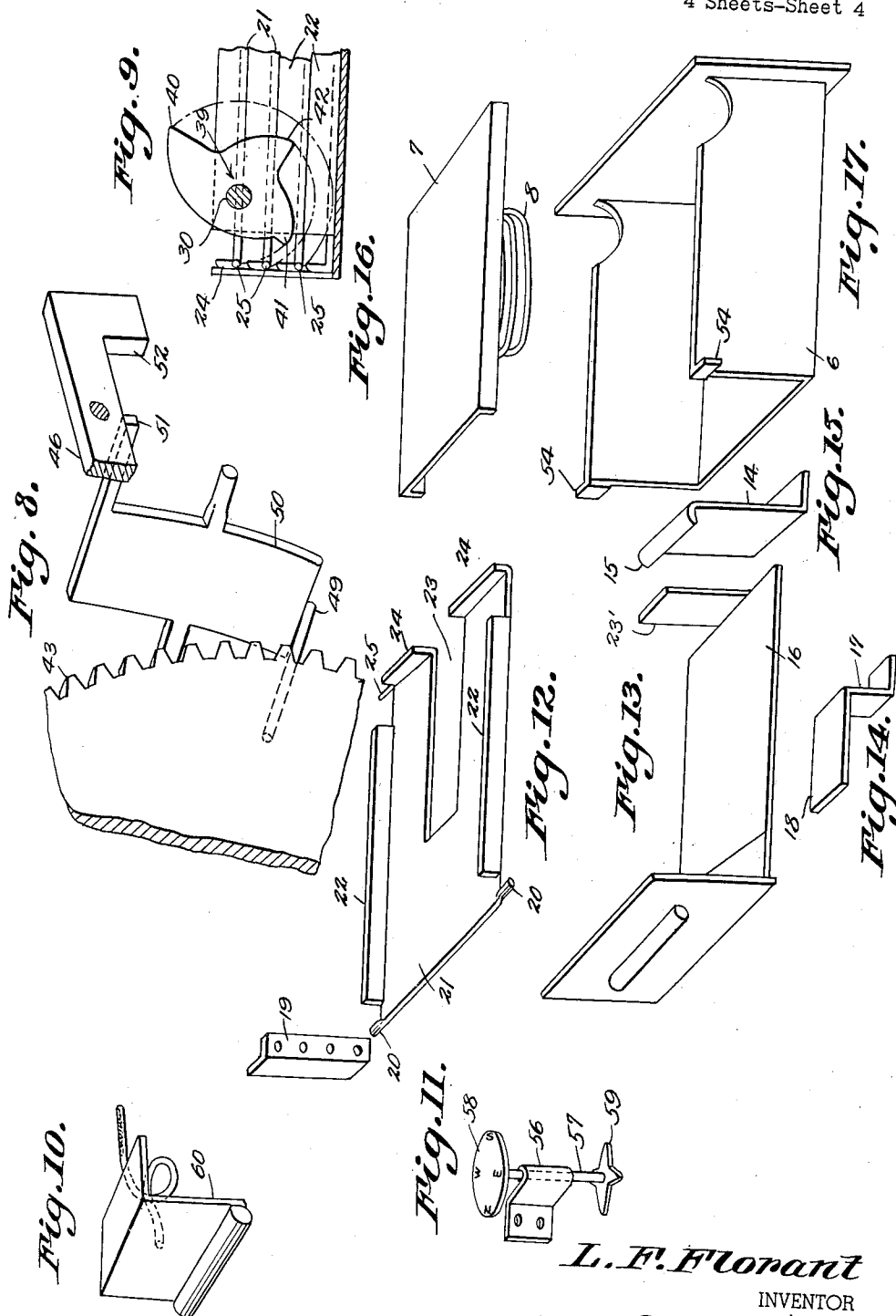
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AUTOMATIC PLAYING CARD DEALING APPARATUS

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4 Sheets-Sheet 4



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UNITED STATES PATENT OFFICE

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AUTOMATIC PLAYING CARD DEALING APPARATUS

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Application October 17, 1949, Serial No. 121,694

1 Claim. (Cl. 273-149)

1

This invention relates to an apparatus designed for use in dealing playing cards, the primary object of the invention being to provide an apparatus including means for separating the cards into playing hands, depositing the cards in separate and distinct piles within a drawer, from which the separate hands may be removed for playing.

An important object of the invention is to provide an apparatus of this character which will be automatic in its operation, in that a spring motor will be wound for operating the mechanism of the apparatus, when the pack of cards is positioned in the drawer of the apparatus, and the drawer inserted in the cabinet or case of the apparatus.

Another object of the invention is to provide a drawer with pivoted partitioning members so arranged and disposed that the partitioning members will be consecutively elevated to allow the cards to be deposited therebetween in groups of playing cards.

With the foregoing and other objects in view which will appear as the description proceeds, the invention consists of certain novel details of construction and combinations of parts hereinafter more fully described and pointed out in the claims, it being understood that changes may be made in the construction and arrangement of parts without departing from the spirit of the invention as claimed.

Referring to the drawings:

Figure 1 is a horizontal sectional view through the case or cabinet of an apparatus constructed in accordance with the invention.

Fig. 2 is a vertical sectional view through the case or cabinet.

Fig. 3 is a sectional view taken on line 3-3 of Fig. 2.

Fig. 4 is a sectional view illustrating the spring-actuated gear, in side elevation.

Fig. 5 is a sectional view shown on lines 5-5 of Fig. 4.

Fig. 6 is a sectional view taken on line 6-6 of Fig. 4.

Fig. 7 is a sectional view taken on line 7-7 of Fig. 6.

Fig. 8 is a fragmental perspective view on an enlarged scale, illustrating the ratchet control means for the main gear of the apparatus.

Fig. 9 is an enlarged detail view illustrating the cam which elevates the separating trays in which the cards are deposited.

Fig. 10 is a perspective view of a clip used in gripping the score pad and holding the pad on the cabinet or case.

Fig. 11 is a perspective view of the indicator indicating the deal.

Fig. 12 is a perspective view illustrating one

2

of the trays, in which the cards are dealt by the machine.

Fig. 13 is a perspective view of the drawer in which the trays are supported.

Fig. 14 is a view illustrating the bracket mounted in the bottom of the case or cabinet on which the drawer slides.

Fig. 15 is a view illustrating the plate and curved lip of the plate over which cards pass into the trays.

Fig. 16 is a perspective view of the feed plate on which cards are positioned in a pack for dealing.

Fig. 17 is a perspective view of the drawer in which the pack of cards is positioned.

Referring to the drawings in detail, the device comprises a casing indicated generally by the reference character 5, which casing is formed with an opening in one end, in which the drawer 6 is moved, the drawer 6 supporting the follower 7, which moves vertically therein, the follower 7 resting on the upper end of the spring 8 which has its lower end resting on the bottom of the drawer, the action of the spring being to normally urge the follower 7 upwardly within the drawer.

Mounted within the casing with its ends operating in bearings formed in the bars 9 and 10, are idle shafts 11 on which the rolls 12 are secured, which rolls operate within the open upper side of the drawer 6 and provide stops, limiting the upward movement of the cards 13 forming the pack of cards to be dealt by the apparatus. As shown by Fig. 2 of the drawings, the cards of the stack being dealt, rest directly on the follower 7, and since the follower is urged upwardly by the spring 8 it will be obvious that the uppermost card of the pack is urged against the rolls 12 limiting upward movement of the pack of cards.

At the inner end of the drawer is the plate 14 that has its upper edge 15 turned outwardly and downwardly, providing a surface over which the cards which are moved from the drawer 6 pass to the auxiliary tray supporting drawer 16.

This tray supporting drawer 16 moves into an opening of the casing disposed at the opposite end of the casing and slides on the bracket 17 secured within the bottom of the casing, the extension 18 of the bracket 17 providing a rest for the drawer.

At the forward end of the drawer 16, are vertical bearing plates 19 formed with spaced bearing openings in which the pintles 20 of the trays 21 are located, so that the trays 21 may swing upwardly in a manner to be hereinafter more fully described. These trays 21 are formed with upstanding flanges 22 disposed under the longitudinal side edges thereof, which flanges provide means for confining cards positioned on

the trays, to the trays, preventing lateral or twisting movement of the cards on the trays.

Each tray is formed with a slot 23 extending inwardly from the outer or free end thereof, the end of each tray adjacent to the slot being formed with flanges 24 extending upwardly therefrom, providing a stop at the free end of each tray. The slots 23 of the trays permit the upstanding end 23' of the drawer 16 to move into contact with the cards in the trays, removing the cards from the casing.

Extending laterally from the inner end of each tray, is a pin 25, and these trays when positioned within the tray-supporting drawer 16, rest one upon another in such a way that the pins 25 will be disposed in vertical spaced relation with respect to each other.

Within the casing 5, is the bearing plate 10 formed with bearings in which the various shafts on which the operating gearing of the device operates are journaled, shafts being also mounted in bearings formed in the bearing plate 9 secured to the vertical partition 28 spaced from one side wall of the casing 5.

At one side of the bearing plate 10 and secured to the inner surface of one side wall of the casing, is the bearing plate 29 formed with bearings to receive the shafts on which gearing at one side of the casing is mounted. The shaft 30 supports a large gear 31 and a small gear 32, the gear 32 meshing with the large gear 33 mounted on the shaft 34 to rotate therewith. The gear 35 is secured to one end of the shaft 36 that extends across the casing, the shaft supporting the card dealing disc 37 which is mounted intermediate the ends of the shaft 36 directly over the forward ends of the cards being dealt. This disc is formed with a cut-out portion 38. The disc may rotate and remove cards from the pack of cards being dealt, the cut-out portion 38 of the disc 37 allowing the disc 37 to rotate free of the cards, during each cycle of operation of the disc, for purposes to be hereinafter more fully described.

On the inner end of the shaft 30, is secured the cam member 39 which has cams 40, 41 and 42 of various lengths, so that the cam 41, during rotation of the cam member 39, will engage the pin 25 of the uppermost tray, elevating the tray above the adjacent lower tray, to permit cards to be thrown into the tray directly thereunder by the card dealing disc 37. It follows that as the cam member 39 continues to rotate, the cam 42 will engage the pin 25 of the adjacent lower tray 21, elevating this tray to permit cards to be deposited on the adjacent lower tray. Upon further rotation of the cam member the cam 40 will move under the pin 25 of the tray directly above the lowermost tray of the drawer, permitting cards to be dealt into the lowermost tray.

The power gear of the gearing, is indicated by the reference character 43, and is loosely mounted on the shaft 44, the shaft 44 being provided with the ratchet wheel 45, which is secured to the inner end of the shaft, the ratchet wheel 45 being disposed directly under the rack 46 which is secured to one side of the drawer 6, so that as the drawer 6 is moved into the casing, the teeth of the rack bar 46 will engage the teeth of the ratchet wheel rotating the ratchet wheel 45 and shaft 44. The reference character 47 indicates a spring which has one of its ends secured to the shaft 44, while the opposite end of the spring is secured to the outer surface of the power gear 43 at 48, with the result that as

the shaft 44 is rotated by the movement of the drawer 6 to its position within the casing, the coiled spring 47 will be placed under tension. Secured to the outer surface of the power gear 43, and extending beyond the periphery thereof, is the stop pin 49, which moves over the lower end of the pivoted plate 50, which is normally disposed in the path of travel of the pin 49, so that reverse movement of the gear due to the unwinding of the spring will be prevented until the drawer has been moved to the limit of its movement within the casing.

An extension 51 is formed on the upper end of the pivoted plate 50 and lies in the path of travel of the shoulder 52 formed on the outer end of the rack bar 46, with the result that when the drawer moves inwardly to its limit, the shoulder engaging the extension 51 will tilt the plate 50 from the dotted line position as shown by Fig. 7 of the drawings, to the full line position, releasing the gear 43 to the action of the spring 47, to operate the gearing of the apparatus.

The power gear 43 meshes with the gear 53, that in turn is secured to the shaft 34, rotating the shaft 34. It will, of course, be understood that the gearing is so constructed that the speed of rotation of the shaft 36 and card dealing disc 37, will be greatly reduced, to properly accomplish the purpose of the invention.

At the upper end of the side members of the drawer 6, are laterally extended fingers 54, which fingers provide stops for preventing removal of the drawer. Secured to the bottom of the casing and rising therefrom, is the spring pawl 55, which engages the teeth of the ratchet wheel to prevent counter-rotation of the ratchet wheel after it has been rotated by the movement of the drawer, to wind or tension the spring.

The reference character 56 indicates a bracket in which the shaft 57 operates, the shaft 57 carrying the indicator 58 at its upper end, while at the lower end of the shaft 58 is the star gear 59, which gear 59 is engaged by the pin 49 with each complete rotation of the gear 43, causing the indicator to move, indicating the number of times the power gear is rotated to deal packs of cards. In this way the attendant or operator may determine the number of times the complete pack of cards has been dealt. At one end of the casing, is the spring pressed clamp 60, under which a score pad may be clamped on the top of the casing.

The top of the casing is provided with a recess 61, which is of a size to contain packs of cards to be used in the machine.

In use, the drawer 6 is withdrawn from the casing a distance to permit a pack of cards such as indicated at 13, to be positioned therein. The drawer 6 is now forced inwardly, with the result that the rack bar 46 moves over the ratchet wheel 45 which rotates the shaft 44, winding the spring 47 to tension the spring sufficiently to rotate the power gear one complete revolution.

As the drawer is moved to the limit of its inward movement, the pivoted plate 50 is engaged by the shoulder 52 at the forward end of the rack bar 46, moving the pivoted plate 50 out of contact with the stop pin 49, releasing the power gear 43, to the action of the spring which rotates the gear in a clockwise direction. As the power gear rotates, movement is transmitted to the card dealing disc 37, which moves the uppermost card of the pack laterally onto the

5

uppermost tray 21. The cam 42 will now engage the pin 25, extending the uppermost tray elevating the tray to a position so that the card dealing disc 37 in picking up the adjacent lower card of the pack will move the card under the uppermost tray and deposit the card on the second tray of the drawer 16.

It will, of course, be understood that the cams of the cam member are so arranged with respect to each other that when a card is dealt to a tray, the tray is elevated by a cam, for a period of time to permit a card to be dealt to the tray directly thereunder, which operation is repeated until all of the cards have been dealt.

It might further be stated that the spring 47 is so arranged that the power gear will be rotated continuously until the entire number of cards of the pack are dealt, or transferred from the drawer 6 to the drawer 16. As the cards are dealt from the drawer 6, it is obvious that the follower 7 will act to urge the cards upwardly for contact by the card dealing disc 37.

In view of the foregoing detailed disclosure, it is believed that a further detailed description as to the operation of the card dealing apparatus is unnecessary.

Having thus described the invention, what is claimed is:

A playing card dealing apparatus comprising a casing, a drawer movable into the casing at one end of the casing in which a pack of cards

6

is held, a dealing disc operating above the cards in contact with the uppermost card of the pack, means for operating the disc, dealing the cards from the pack, a drawer operating in the opposite end of the casing, disposed adjacent to one end of the first mentioned drawer, a plurality of superimposed pivoted trays mounted in the second mentioned drawer, a tray elevating means comprising a pin extending laterally from one end of each tray, a rotating member having cams of various lengths, rotating adjacent to the trays, said cams engaging said pins elevating the trays successively separating the trays for predetermined periods of time for the reception of cards dealt from the pack by said dealing disc, dividing the cards into playing groups.

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