Aug. 7, 1934. A. G. BOHLING 1,969,117

CARD DEALER

Filed Jan. 22, 1934 2 Sheets-Sheet 1

Fig. 1

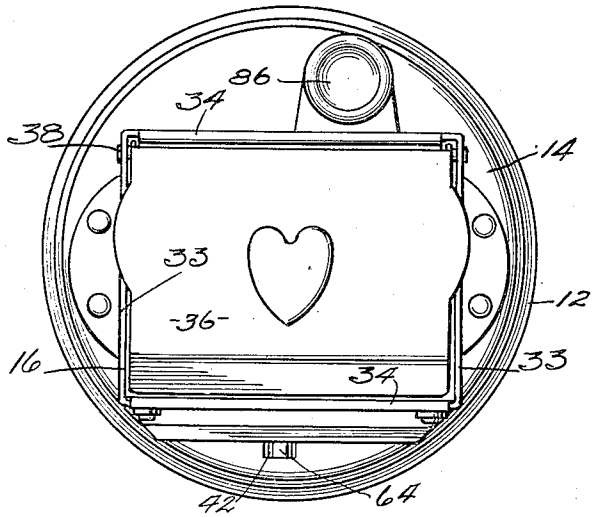


Fig. 2

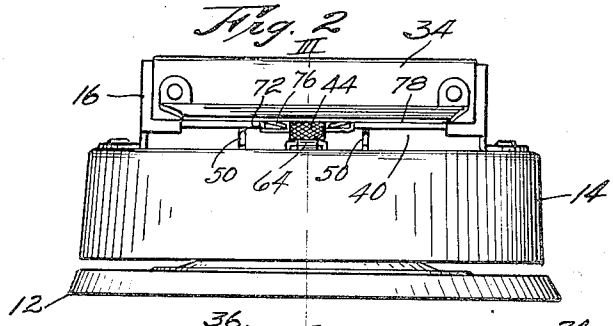


Fig. 3

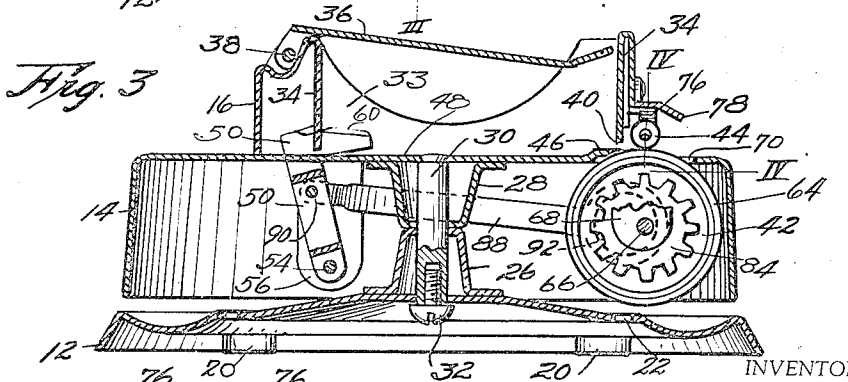
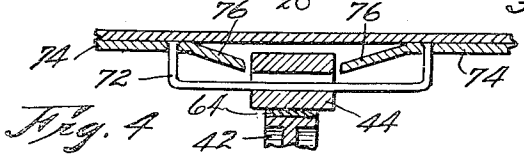


Fig. 4



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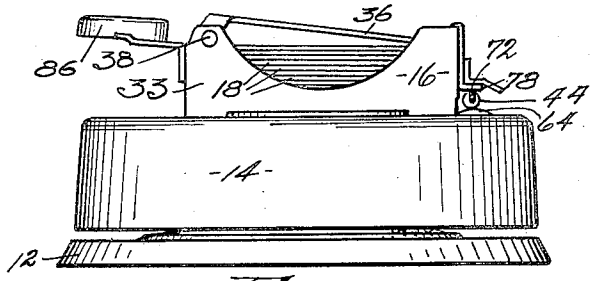


Fig. 5

Fig. 6

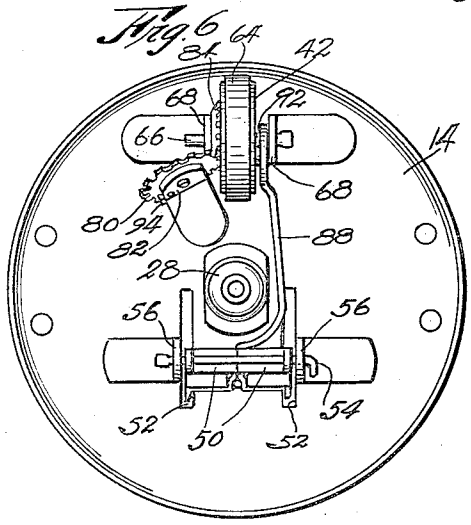
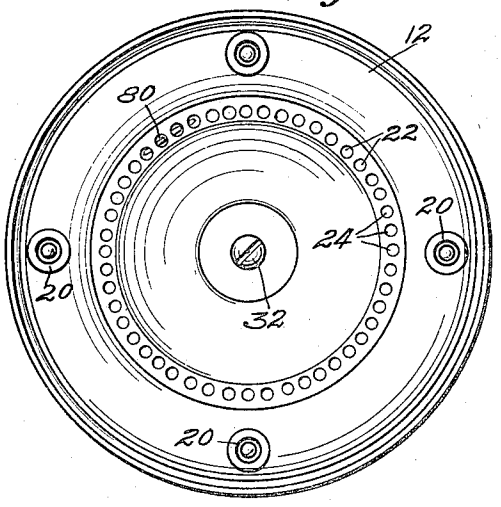


Fig. 7



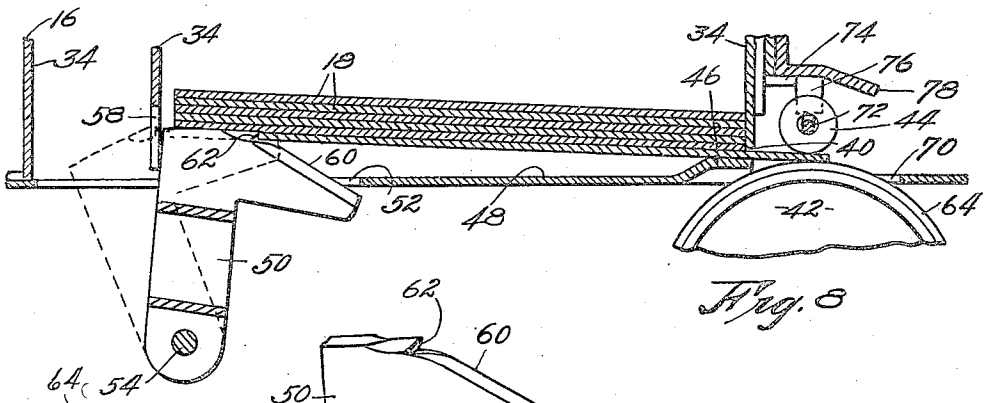


Fig. 8

Fig. 9

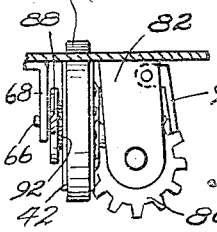


Fig. 10

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UNITED STATES PATENT OFFICE

1,969,117

CARD DEALER

Arthur G. Bohling, Kansas City, Mo., assignor to Federal Distributing Company, a corporation of Missouri

Application January 22, 1934, Serial No. 707,684

11 Claims. (Cl. 273—149)

This invention relates to card dealing or distributing machines of the general type that may be used in dealing cards such as playing cards, and the broad general object of the invention is to provide such a machine that will not only be inexpensive to manufacture, easy to manipulate, and pleasing to the eye, but will embody means for ejecting cards from a deck both singly and at predetermined intervals whereby when the machine is positioned centrally of a card table four hands of cards may be quickly dealt by any one of the players.

In addition to the above objects, the invention contemplates a card dealing machine having extremely novel and unique feeding and ejecting parts which not only serve to properly support the deck of cards in the machine, but eject them one at a time from the bottom of the stack of cards without danger of the machine becoming clogged or ejecting more than one card at a time.

Another object of the invention is the provision in a card dealing machine of means for ejecting cards that is not only positive in action, but comprises relatively few parts, all of which are operated without the necessity of exerting an undue amount of force.

A yet further object of the invention, and one more specific in character, is to provide unusually formed feeding members for card dealing machines of the character hereinafter described, which feeding members are provided with card-engaging faces of appreciably reduced area, each of which has a shoulder formed therein which engages one edge of the card, whereby to positively move the same through the exit opening of the machine where it may be grasped by further discharge mechanism that is operated simultaneously with the feeding members.

With these general objects in mind, the specific nature of the parts making up the card dealer and their combination which produces an effective machine in commercial form will be described by reference to the accompanying drawings, wherein:

Figure 1 is a top plan view of a card dealer made in accordance with this invention.

Fig. 2 is a front edge elevation of the same.

Fig. 3 is a vertical, central cross section through the machine, taken on line III—III of Fig. 2.

Fig. 4 is an enlarged, fragmentary, detailed view taken on line IV—IV of Fig. 3.

Fig. 5 is a side elevation of the card dealer.

Fig. 6 is an inverted plan view of the turntable entirely removed from its base.

Fig. 7 is an inverted plan view of the card dealer.

Fig. 8 is an enlarged, fragmentary, detailed, sectional view through the upper portion of the turntable and lower portion of the magazine, illustrating the relation between feeding members and discharge wheel.

Fig. 9 is an enlarged, fragmentary, detailed, perspective view of one of the feeding members, and,

Fig. 10 is a fragmentary, detailed, sectional view showing relation of pinion, discharge wheel and gravity-actuated dog.

In constructing a card dealer such as shown in the accompanying drawings, it will be an advantage to form the same of metal, the parts of which are practically all produced through punch-press operations, to the end that economy of manufacture might be enjoyed.

In producing the machine, it should be borne in mind that the same comprises three main parts, i. e., base 12, turntable 14, and a magazine 16 to hold the cards 18. Base 12 is provided with feet 20 that should be of some material which affords a grip during the operation of the machine. An annular rack 22 is formed on base 12 through the medium of a plurality of holes 24 arranged in an annular circumscribing path, as clearly shown in Fig. 7. A boss 26 is spot-welded or otherwise secured to the upper face of base 12 and it is upon the end of this boss 26 that turntable 14 rests, as indicated in Fig. 3. A similar boss 28 is secured to the under side of turntable 14 to co-operate with boss 26 in maintaining base and turntable 12 and 14 respectively properly spaced and in a relation which permits easily rotating turntable 14 for the purpose hereinafter specified. Pin 30 secured to turntable 14 passes through both bosses 28 and 26 respectively and terminates slightly below the under face of base 12 where a screw 32 is employed to maintain base and turntable 12 and 14 assembled. Both base and turntable 12 and 14 respectively are circular and pin 30 is positioned at the axis of the two members. This pin 30 is likewise concentric with the series of holes 24 which form annular rack 22.

Magazine 16 is positioned upon turntable 14 and this magazine comprises end walls 33, double side walls 34 and a cover 36. Cover 36 is hinged as at 38 so that it may be lifted when cards 18 are inserted into magazine 16 and an opening 40 through side 34 of magazine 16 allows the cards to be moved from the magazine as the machine is operated. This opening 40 is restricted in width to substantially the thickness of a card 18 at a point adjacent the hereinafter described discharge wheel 42 and its co-acting roller 44.

At this point of restriction and adjacent wheel 42, there is created an elevated face 46, the plane of which is substantially horizontal and lies tangentially to the uppermost point on the outer periphery of wheel 42. It is upon this elevated face 46 that one edge of the stack of cards rests and since the top of turntable 14 forms the floor 48 of magazine 16, it must be construed that this elevated face 46 is formed by the floor of magazine 16. Turntable 14 has a depending annular skirt to co-operate with the upper wall of the turntable and base 12 to form a housing for the working parts of the machine. Perhaps the most important members of these working parts are the feeding members 50, of which there are two projecting upwardly into magazine 16 through narrow openings 52 formed through floor 48 of said magazine.

These feeding members are pivotally supported by pintle 54 which is carried by bearings 56 secured to the under side of turntable 14, and a slot 58 formed in wall 34 of magazine 16 allows free oscillatory movement on the part of these members 50. As indicated in Fig. 6, members 50 are secured together intermediate their upper and lower ends.

The portion of feeding members 50 which engage cards 18 should be carefully made because it is upon the formation of these members that the successful operation of the machine is predicated. Fig. 9 plainly shows the manner in which the upper card-engaging face of members 50 is inclined and reduced to a knife-edge 60 so that friction on the cards will be reduced to a minimum. A shoulder 62 is formed in the virtually knife-edge face of these members 50, which shoulder should be a depth substantially the thickness of a card 18.

The upper edge of these members 50 should be sharpened practically their entire length, both forwardly and rearwardly of shoulders 62, and when a stack of cards 18 is in magazine 16, one edge thereof will rest upon the two or more members 50, while the other edge will rest upon the aforementioned elevated face 46. It is through the oscillation of members 50 that the cards 18 are fed to discharge wheel 42 which continues the ejecting operation.

Discharge wheel 42 is preferably equipped with a tire or band 64 made up of rubber or some similar substance that will not wear smooth, and at the same time will tend to grip the surface of the card being ejected. This wheel 42 is pivotally mounted upon an axle 66 journalled in bearings 68 which depend from the under side of the upper wall of turntable 14. A cutaway portion 70 allows wheel 42 to project from within turntable 14 to a point where it will be engaged by roller 44, through the medium of which each of the cards 18 is held in engagement with the outer annular periphery of wheel 42 that is covered by tire 64. As illustrated in Fig. 4, roller 44 is pivotally mounted upon U-shaped spring 72, having its ends secured to an outturned portion 74 of wall 34 of magazine 16 and downward tension to hold together roller 44 and wheel 42 is thereby provided. Ears 76 create guides for roller 44 which preclude its moving along spring 72 and out of engagement with wheel 42. A still further projected lip 78 extends over roller 44 to insure that roller, wheel, and ejected card will not be touched during the operation of the machine.

To drive the parts of this machine, rack 22 is engaged by pinion 80, which is rotatably mounted upon depending ear 82 within turntable 14. This pinion 80 is in mesh with a gear 84 that is secured directly to discharging wheel 42. Thus when finger socket 86 is engaged and turntable 14 is rotated about pin 30, rack and pinion 22 and 80 respectively will rotate discharge wheel 42.

A connecting arm 88 operably joins feeding members 50 and wheel 42. One end of arm 88 is pivotally connected as at 90 to the two feeding members 50, while the other end of arm 88 is connected to wheel 42 through an excentric joint 92. Thus as wheel 42 is rotated, feeding members 50 will be oscillated about pintle 54 through the medium of arm 88. Simultaneous action, therefore, on the part of both feeding members 50 and discharging wheel 42 will be set up as turntable 14 is rotated upon base 12. A gravity-actuated dog 94 is hung upon ear 82 and has its lower end free and in engagement with pinion 80 as illustrated in Fig. 10, all to the end that the entire machine cannot be moved in a direction reverse to the proper direction.

As turntable 14 is rotated, feeding members 50 will oscillate about pintle 54 and when shoulder 62 is moved back to the position shown in dotted lines of Fig. 8, the lowermost card 18 of the stack will rest upon edge 60 and as the feeding member 50 moves toward discharge wheel 42, shoulder 62 will engage the edge of said lowermost card 18 and force it through opening 40 where it may be grasped between wheel 42 and roller 44. From this point on the card is ejected through the action of wheel 42 and roller 44 and feeding members 50 are being returned for engagement with the next succeeding card.

It is notable that the cards 18 are supported by appreciably small areas. One edge is carried by elevated face 46, while the other edge rests upon the practically knife-edge faces of members 50. It is through the employment of such structure that the card dealer produces satisfactory results.

Possibility of feeding more than one card is reduced to a minimum, if not entirely avoided and the cards need not be positively planar in order that successful feeding take place. Members 50 are in spaced-apart relation and wheel 42 is intermediate the two members 50 at a point directly opposite.

It is obvious that cost of manufacturing a card dealer of the charatcer shown and described is exceptionally small and that after the same is in use, there is little or no likelihood of the parts becoming maladjusted to the extent that the machine will not successfully function.

Such details as serrating roller 44 and forming the central portion of base 12 higher than the annular edge thereof are contemplated and while the preferred embodiment of the invention has been set forth, it is understood that applicant is limited only by the scope of the appended claims.

Having thus described the invention, what is claimed as new and desired to be secured by Letters Patent is:

1. A card dealer of the character described comprising a base; a turntable mounted on the base; a card magazine on the turntable; and means for ejecting cards singly and at intervals from said magazine comprising a plurality of spaced-apart feeding members, each having a card-engaging face reduced to substantially a knife-edge, a shoulder formed on said edge, and means for oscillating the said feeding members as the turntable is rotated on the base.

2. A card dealer of the character described

comprising a base; a turntable mounted on the base; a card magazine on the turntable; and means for ejecting the cards singly and at intervals from said magazine comprising a pair of spaced-apart feeding members each having a card-engaging face reduced to substantially a knife-edge, a shoulder formed on said edge for engaging one edge of a card, a discharge wheel in opposed relation to said feeding members and intermediate the same, and means for simultaneously oscillating said feeding members and rotating the discharge wheel as the turntable is rotated on the base.

3. A card dealer of the character described comprising a base; a turntable mounted on the base; a card magazine on the turntable; and means for ejecting the cards singly and at intervals from said magazine comprising a plurality of spaced-apart feeding members, a discharge wheel in opposed relation to said feeding members, and means for simultaneously oscillating said feeding members and rotating the discharge wheel as the turntable is rotated on the base, the floor of the said magazine having an elevated face of relatively small area adjacent the discharge wheel, the cards being supported at their one edge by said elevated face and at their opposite edge by said feeding members.

4. A card dealer of the character described comprising a base; a turntable mounted on the base; a card magazine on the turntable; and means for ejecting the cards singly and at intervals from said magazine comprising a pair of spaced-apart feeding members each having a card-engaging face reduced to substantially a knife-edge, a shoulder formed on said edge for engaging one edge of a card, a discharge wheel in opposed relation to said feeding members and intermediate the same, and means for simultaneously oscillating said feeding members and rotating the discharge wheel as the turntable is rotated on the base, said magazine having an elevated face on the floor thereof adjacent said discharge wheel to support one edge of the cards while the opposite edge thereof is supported by said feeding members.

5. A card dealer of the character described comprising a base; a turntable mounted on the base; a card magazine on the turntable; and means for ejecting the card singly and at intervals from said magazine comprising a plurality of spaced-apart feeding members, a discharge wheel in opposed relation to said feeding members, and means for simultaneously oscillating said feeding members and rotating the discharge wheel as the turntable is rotated on the base. the floor of the said magazine having an elevated face of relatively small area adjacent the discharge wheel, the cards being supported at their one edge by said elevated face and at their opposite edge by said feeding members, said elevated face being on a plane substantially tangent to the outer annular periphery of the said discharge wheel.

6. A card dealer of the character described comprising a base; a turntable mounted on the base; a card magazine on the turntable; and means for ejecting the cards singly and at intervals from said magazine comprising a plurality of spaced-apart feeding members each having a sharp, inclined engaging edge, a shoulder formed on said edge, a discharge wheel in opposed relation to said feeding members, and means for simultaneously oscillating the feeding members and rotating the discharge wheel as the turntable is rotated on the base, said feeding members being disposed beneath the cards in the magazine at one edge thereof whereby to elevate that edge above the floor of the magazine, said shoulder being adapted to engage the edge of the lowermost card as the feeding members are traveling in the direction toward the discharge wheel.

7. A card dealer of the character described comprising a base; a turntable mounted on the base; a card magazine on the turntable; and means for ejecting the cards singly and at intervals from said magazine comprising a plurality of spaced-apart feeding members each having a sharp, inclined engaging edge, a shoulder formed on said edge, a discharge wheel in opposed relation to said feeding members, a roller associated with said wheel to maintain a card against the annular face of the wheel, an elevated face formed on the floor of the magazine adjacent said wheel and between the wheel and feeding members having its face in a plane tangent to the discharge wheel, and means for simultaneously oscillating said feeding members and rotating the discharge wheel as the turntable is rotated on the base, said shoulder being adapted to engage the edge of the lowermost card in the magazine to force the same between said discharge wheel and roller.

8. A card dealer of the character described comprising a base; a turntable mounted on the base; a card magazine on the turntable; and means for ejecting the cards singly and at intervals from said magazine, comprising a plurality of feeding members projecting into the said magazine to support and engage one edge of the cards, a discharge wheel and a co-acting roller at the opposite edge of the cards, an elevated face formed by the floor of the magazine adjacent said discharge wheel, a discharge opening formed in the wall of said magazine between said elevated face and uppermost portion of the discharge wheel through which but a single card may pass as said feeding members urge all of said cards toward the said wheel, and means to simultaneously oscillate said feeding members and rotate the said discharge wheel.

9. A card dealer of the character described comprising a base; a turntable mounted on the base; a card magazine on the turntable; and means for ejecting the cards singly and at intervals from said magazine, comprising a plurality of feeding members projecting into said magazine to support and engage one edge of the cards, a discharge wheel and a co-acting roller at the opposite edge of the cards, and means to simultaneously oscillate said feeding members and rotate the said discharge wheel comprising an annular rack formed on the said base, a pinion rotatably mounted on the turntable for engagement with said rack, a gear on the discharge wheel in mesh with said pinion, and means operably joining said feeding members and gear to oscillate the former as the latter is rotated during the rotation of the turntable on the said base.

10. A card dealer of the character described comprising a base; a turntable mounted on the base; a card magazine on the turntable; and means for ejecting the cards singly and at intervals from said magazine, comprising a plurality of feeding members projecting into said magazine to support and engage one edge of the cards, a discharge wheel and a co-acting roller at the opposite edge of the cards, and means to simultaneously oscillate said feeding members

and rotate the said discharge wheel comprising an annular rack formed on the said base, a pinion rotatably mounted on the turntable for engagement with said rack, a gear on the discharge wheel in mesh with said pinion, a connecting arm interconnecting said feeding members and discharge wheel, and a concentric joint between connecting arm and said wheel whereby to oscillate said feeding members as said wheel is rotated during the rotation of the turntable on the said base.

11. In a card dealer of the kind described, oscillating feeding members for ejecting the lowermost card from a stack into the grip of means for continuing the discharge of the card, comprising a sharpened edge formed on the upper longitudinal face of each of said members and a shoulder formed on said edge having a depth substantially as great as the thickness of the cards in the stack.

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