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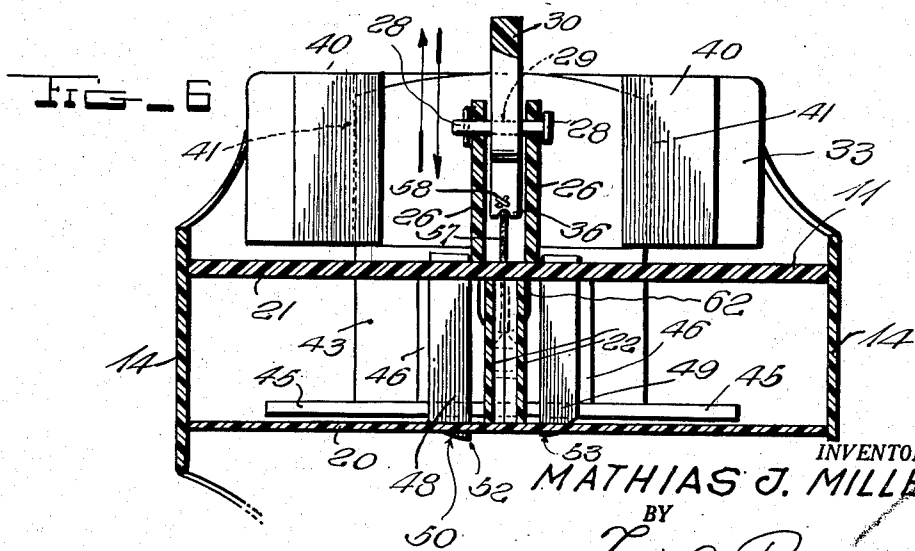
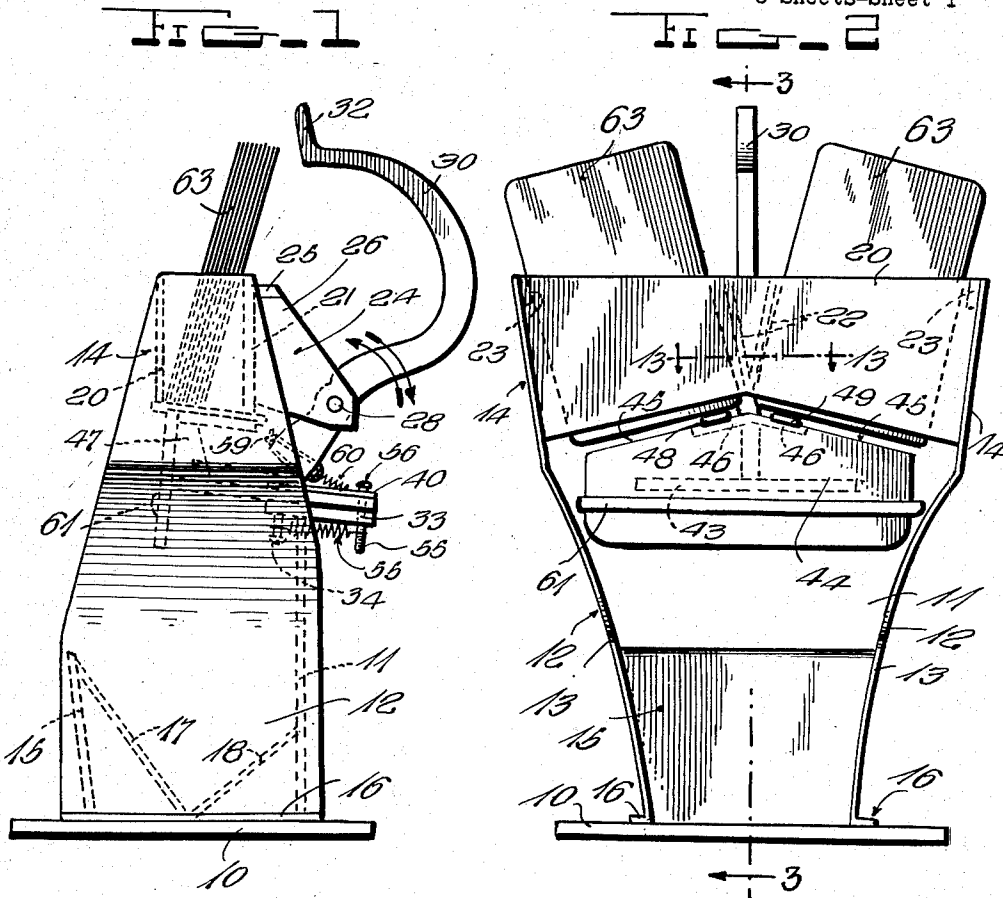
M. J. MILLER

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CARD SHUFFLING MACHINE

Filed Feb. 14, 1951

3 Sheets-Sheet 1



INVENTOR.  
**MATHIAS J. MILLER**  
BY  
*Letitia A. Russell*  
ATTORNEY



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M. J. MILLER

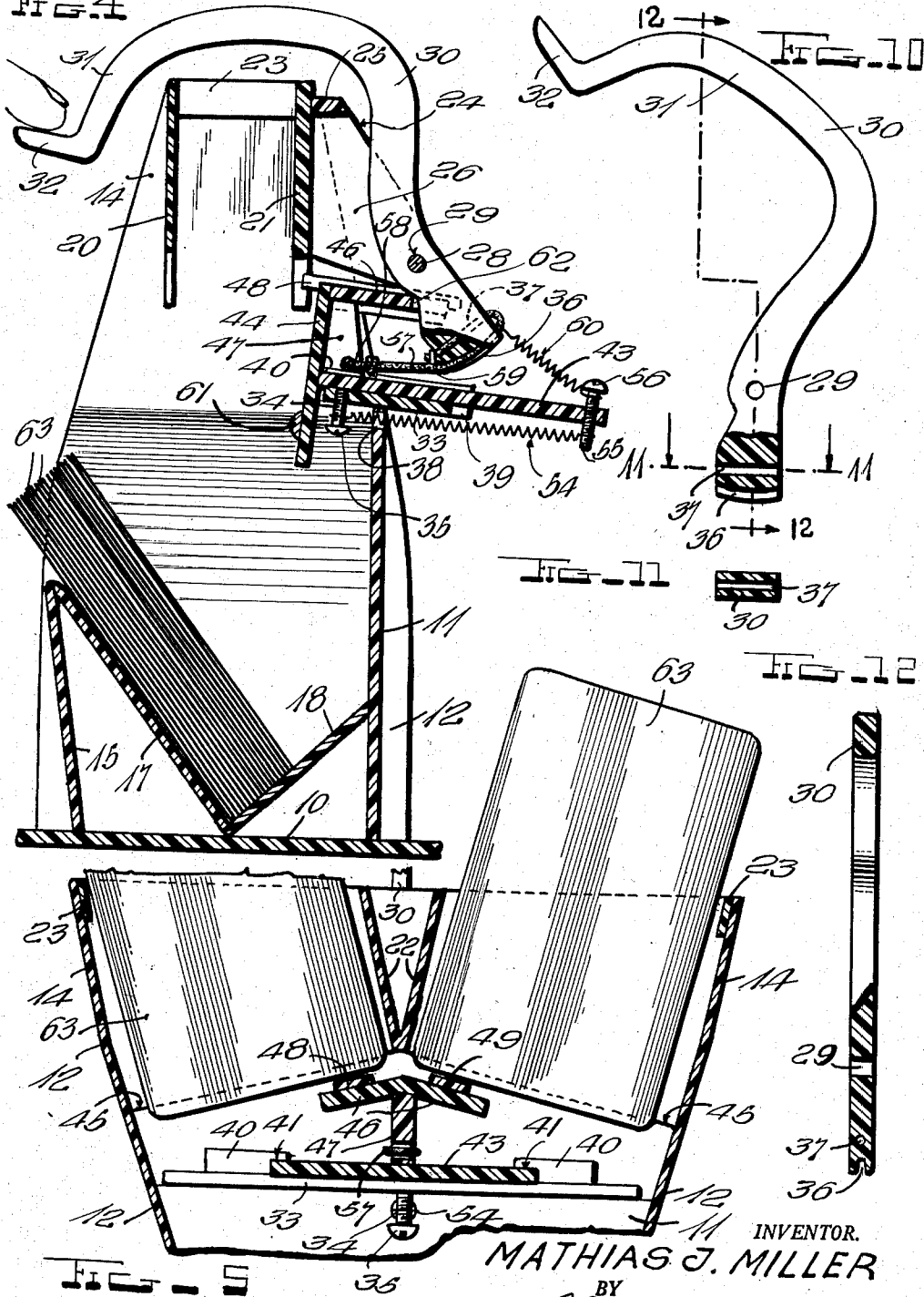
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FIG. 4



INVENTOR.  
MATHIAS J. MILLER

BY  
*Felix A. Russell*  
ATTORNEY

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## CARD SHUFFLING MACHINE

Mathias J. Miller, Evansville, Ind.

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1 Claim. (Cl. 273-149)

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The present invention relates to a card shuffling machine and it consists in the combinations, constructions and arrangements of parts herein described and claimed.

Generally there is provided a card shuffling machine having a base on which is mounted an enclosed framework the upper end of which is a pair of pockets in which may be placed portions of a deck of cards and beneath which is a lever operated mechanism designed to release the cards in the pair of pockets to a trough which lies therebelow. The apparatus is so designed that the cards from the pair of pockets are dropped in a random manner to thoroughly intermix and thereafter automatically accumulate into a single pack or deck in the trough and access is provided for the easy manual removal of the thus mixed deck from the trough. Various novel features are incorporated in the apparatus.

It is accordingly an object of the invention to provide an apparatus of the character set forth which is simple in construction, relatively inexpensive to manufacture and yet effective and efficient in use.

A further object of the invention is the provision, in an apparatus of the character set forth, of novel means for intermixing playing cards and the like.

A further object of the invention is the provision of a novel card-releasing mechanism forming a part of the invention.

Another object of the invention is the provision, in an apparatus of the character set forth, of novel support means for cards in pockets forming a part of the invention.

A further object of the invention is the provision, in an apparatus of the character set forth, of a novel actuating mechanism for a card release mechanism forming a part of the invention.

Other and further objects of the invention will become apparent from a reading of the following specification taken in conjunction with the drawings, in which:

Figure 1 is a side elevational view of an embodiment of the invention,

Figure 2 is a front elevational view thereof,

Figure 3 is an enlarged sectional view, partly broken away, taken substantially along line 3-3 of Figure 2 and showing the apparatus loaded with cards ready to be shuffled,

Figure 4 is a fragmentary sectional view similar to Figure 3 but showing the apparatus immediately after the cards have been shuffled,

Figure 5 is a fragmentary vertical sectional view

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taken substantially along line 5-5 of Figure 3,

Figure 6 is a horizontal sectional view taken substantially along line 6-6 of Figure 3,

Figure 7 is a fragmentary perspective view of the upper end of the apparatus with certain parts removed and illustrating particularly a pair of card-holding pockets forming a part of the invention,

Figure 8 is a perspective view illustrating a movable card support forming a part of the invention,

Figure 9 is a fragmentary perspective view of a supporting platform forming a part of the invention,

Figure 10 is an elevational view, partly broken away, illustrating the details of construction of an operating lever forming a part of the invention,

Figure 11 is a sectional view taken along line 11-11 of Figure 10,

Figure 12 is a sectional view taken substantially along line 12-12 of Figure 10, and

Figures 13 to 15, inclusive, are fragmentary views taken substantially along line 13-13 of Figure 2 and illustrating the operation of the apparatus.

Referring more particularly to the drawings, there is shown therein a card shuffling machine comprising an oblong base member 10 adjacent the rear of which is affixed a vertically extending rear wall 11 to the side edges of which and to the base is attached a pair of side members 12 which are inwardly curved in their lower portions, as indicated at 13, and outwardly flared, as indicated at 14, at their upper portions. A foreshortened forward wall 15 is affixed to the base 10 and to the forward portions of the side members 12 and preferably and as shown extends upwardly and outwardly from the base 10. The side members 12 are preferably and as shown provided with outwardly extending feet 16 to provide a more substantial contact with the base 10.

A card-receiving trough is provided in the lower end of the apparatus and consists of a front wall 17 which extends downwardly and rearwardly from the upper edge of the wall 15 to a point intermediate the walls 11 and 15 and a rear wall 18 which extends from the lower edge of the wall 17 upwardly and rearwardly to contact the rear wall 11 to which it is affixed. The walls 17 and 18 are likewise affixed to the side members 12 and to the base 10 to provide greater rigidity in the apparatus.

A pair of card-receiving pockets 19 is defined in the upper portion of the apparatus by the por-

tions 14 of the side members 12, a vertically extending front plate 20 and a vertically extending rear plate 21 which is in spaced parallel relation to the plate 20. Centrally disposed between the plates 20 and 21 is a V-shaped divider 22. Affixed adjacent the upper edges of the portions 14 and on the inner sides thereof in each case is a guide block 23 each of which is also affixed to the inner sides of the members 20 and 21.

Centrally affixed to the plate 21 is a bracket generally designated at 24 and comprising a top plate 25 and a pair of outwardly and rearwardly extending parallel arms 26 which are attached to the underside of the plate 25 and also to the member 21. The arms 26 are each provided at their lower rearward ends with a transverse opening 27 which openings 27 are in lateral alignment.

A pin 28 extends through the openings 27 and through an opening 29 formed adjacent the inner end of a lever 30 which is upwardly and outwardly curved, as indicated at 31, to encompass the upper end of the apparatus when turned in a counterclockwise direction to its foremost position, as indicated in Figure 4, for example, and which terminates in a finger piece 32.

A supporting table 33, best illustrated in Figure 9 of the drawings, extends transversely across the upper end of the rear wall 11 to which it is affixed centrally and the table 33 extends in a plane downwardly and rearwardly with respect to the plane of the base 10 which is in a horizontal plane. A dependent pin 34 is centrally affixed to the underside of the table 33 adjacent the forward end thereof and is provided with a head 35 at its lower end.

The inner end of the lever 30 is provided with a forwardly and rearwardly extending groove 36 and inwardly of said groove there is provided a transverse opening 37 and the rear wall 11 is centrally provided in its upper edge with an opening 38.

A notch 39 is centrally provided in the rear end of the table 33 and a guide block is affixed adjacent each end of the table 33, as indicated at 40. Each of the guide blocks 40 is provided with a trackway 41 at its inner end.

A card-mixing mechanism is generally indicated at 42 and is best illustrated in Figure 8 of the drawings. It consists of a flattened plate 43 which is slidably mounted atop the table 33 and having its side edges encompassed in the trackways 41. Affixed to the forward edge of the plate 43 and perpendicular thereto is a forward wall 44 having an inverted V-shaped upper edge, as indicated at 45. An inverted V-shaped bracket 46 is affixed to the rear face of the plate 43 with its upper faces flush with the upper edges 45 and a supporting arm 47 is affixed to the rear face of the wall 44 and to the upper face of the plate 43 to brace the bracket 46. A finger 48 is mounted upon one leg of the bracket 46 and a finger 49 is mounted upon the other leg of the bracket 46. The forward ends of the fingers 48 and 49 are forwardly and inwardly curved, as indicated at 50 and 51, respectively, and terminate in points 52 and 53, respectively.

A compression spring 54 extends through the opening 38 and is connected to the pin 34 at its forward end and to a pin 55 at its rearward end. The pin 55 is carried by and extends through the plate 43 and terminates at its upper end in a head 56. A band 57 of elastic material is connected at its forward end to the arm 47, as indicated at 58, and extends rearwardly through the

groove 36 and thence upwardly and forwardly through the passageway 37 and terminates in a knot 59. A relatively small compression spring 60 interconnects the pin 55 and that portion of the band 57 extending between the groove 36 and the opening 37. A transversely extending guide rod 61 is affixed to the forward face of the wall 44 adjacent the lower end thereof. The bracket 46 has centrally disposed in its rear end a forwardly extending notch 62.

In operation, it will be apparent that a deck of cards may be roughly divided into two more or less equal portions and each portion inserted, as indicated at 63 in Figure 2, for example, into the card-receiving pockets 19 whereupon they will come to rest at their lower ends upon the fingers 48 and 49 and upon their outer sides upon the guide blocks 23. The cards 63 may lean as a group either forwardly or rearwardly at this time, that is to say, when the device is in the condition shown, for example, in Figure 3 of the drawings. As the lever 30 is then brought forwardly by means of the finger piece 32 or in a counterclockwise direction upon the pin 28 as viewed in Figure 3, the lower edges of the cards will first travel rearwardly with the fingers 48 and 49 as the lever 30, through its pull upon the band 57 moves the mechanism 42 rearwardly or to the right as viewed in Figure 3. As the mechanism 42 continues to move rearwardly those individual cards which are at the front of the group in each one of the pockets 19 will be released by gravity by the pointed ends 52 and 53 passing thereunder to a position where they no longer support the cards. Since the finger 48 extends a slightly greater distance forwardly than the finger 49, it will be apparent that the cards supported thereby will be held within the pocket 19 thereabove for a slightly longer period than the cards supported by the finger 49 and that therefore the cards in the two groups of cards in the pockets 19 will be dropped in a more or less random manner until all of the same have dropped downwardly through the bottoms of the pockets 19 whereupon they will be received in the card-receiving trough and, since the wall 17 is longer than the wall 18 and furthermore since the wall 18 is too short to accommodate a full card and the wall 44 protrudes downwardly to a distance to prevent a card from leaning rearwardly, the entire deck now thoroughly mixed will lie upon the wall 17 and extend slightly over the top edge thereof where the same may be removed from the apparatus by the fingers of the user. The process above described may be repeated several times, if desired, so that the cards may be more thoroughly mixed. When the lever 30 is released from the position shown, for example, in Figure 4 of the drawings, the tension spring 54 will act to return the mechanism 42 to its former position, as shown in Figure 3 and the flexible band 57 will act to return the lever 30 to its upwardly extended position shown in Figure 3 where it is ready for the next operation. It will be noted that the side members 12 converge gradually toward the lower end thereof thus causing the cards dropping from each of the pockets 19 to be forced together so that a single pack of thoroughly mixed cards may be removed from the trough 17-18 as shown, for example, in Figure 4 of the drawings.

Figures 13, 14 and 15 show progressively the manner in which the cards are released from the pockets 19 by means of the fingers 48 and 49.

While but one form of the invention has been shown and described herein, it will be readily ap-

parent to those skilled in the art that many minor modifications may be made without departing from the spirit of the invention or the scope of the appended claim.

What is claimed is:

An apparatus of the character described comprising a body having downwardly converging sides, a pair of vertical transversely extending walls interconnecting the upper portions of the sides in spaced parallel relation to each other, a V-shaped divider centrally disposed between said walls, whereby to form with said sides and walls a pair of downwardly converging bottomless pockets, a transversely extending shelf mounted in said body rearwardly and below said pockets, an inverted V-shaped bracket rearwardly slidable on said shelf from a position beneath said pockets, said bracket including a pair of flat legs each underlying an inner portion of one of said pockets, a trough extending transversely between

the lower portions of said sides, and a pair of fingers each mounted upon one leg of said bracket and extending a different distance forwardly therefrom, said fingers each underlying an inner portion of one of said pockets and each having its free end forwardly and inwardly curved, whereby cards released from said pockets by said fingers are guided by said sides to said trough.

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