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CARD SHUFFLER

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Fig. 1.

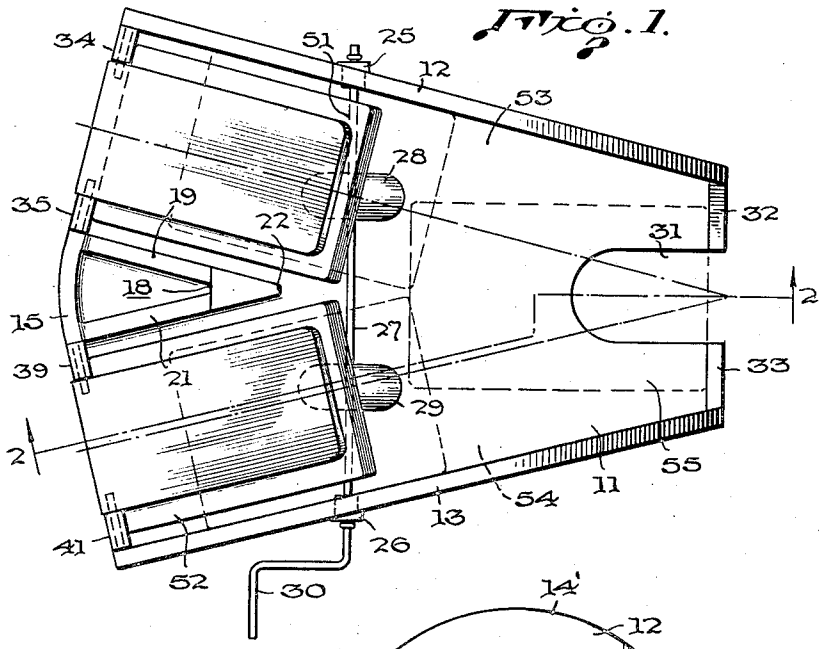


Fig. 2.

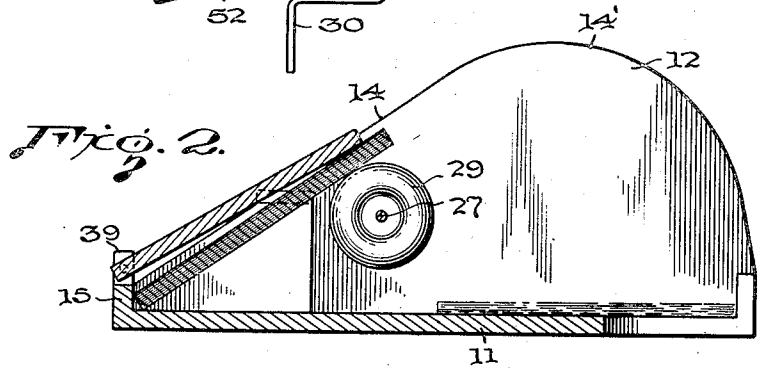
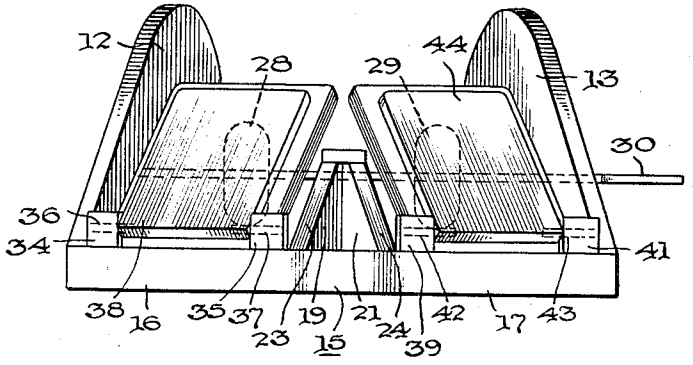


Fig. 3.



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CARD SHUFFLER

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5 Claims. (Cl. 273—149)

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This invention relates to a device for shuffling playing cards.

The major object of the invention is to provide a card shuffler which is compact, conveniently used and economical to manufacture. Another object of the invention is to provide a card shuffler of simplified construction which is easy to operate and free of trouble.

In the attainment of these objects, one feature of the invention resides in the arrangement of converging side walls forming the sides of card-containing compartments and guides to a card-receiving compartment. An important feature of the invention resides in the arrangement of spaced wheels on a shaft so cards rest upon the wheels at an angle inclined forwardly and upwardly. Pressure tabs overlie the wheels on the shaft and are pivoted below the shaft so the tabs are also inclined upwardly and forwardly.

Other objects and advantages of the invention will become apparent from the following specification taken in conjunction with the accompanying drawings wherein

Figure 1 is a top plan view of a card shuffler embodying the invention in its preferred form;

Fig. 2 is a vertical sectional view taken on the line 2—2 of Fig. 1; and

Fig. 3 is a rear elevational view of the card shuffler shown in Fig. 1.

As illustrated, the card shuffler has a horizontal base plate 11 of wedge shape formation so its side edges converge forwardly. Extending upwardly from these side edges are vertically disposed forwardly converging side walls 12 and 13. The side wall 12 has a top edge 14 inclined forwardly and upwardly to a rounded top portion 14' and then sharply downwardly and forwardly to the front end of the base plate 11. Side wall 13 is similarly shaped.

Extending across the rear of the base plate 11 between the side walls 12 and 13 is a lower rear wall 15 having a portion 16 adjacent the side wall 12 substantially normal to that side wall and a portion 17 adjacent the side wall 13 and substantially normal thereto. Extending forwardly from this rear wall 15 is a partition designated generally at 18 having one wall 19 parallel to the side wall 12 and another wall 21 parallel to the side wall 13. These two partition walls 19 and 21 converge forwardly together at 22. Top surfaces 23 and 24 of the side walls 19 and 21, respectively, are inclined upwardly and forwardly at about the same angle of inclination as the top surfaces of the side walls. Thus, the side walls and the partition walls form two more

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or less rectangularly shaped card-containing compartments closed at one end by the portions 16 and 17 of the rear wall 15.

Journaled in bearings 25 and 26 in the side walls 12 and 13, forwardly of the partition 18 is a shaft 27 provided on one end with a crank handle 30. Fixed on this shaft 27 are a pair of friction wheels 28 and 29 spaced on opposite sides of the partition 18 approximately midway between the partition walls and the side walls forming the respective card containing compartments. These friction wheels 28 and 29 may be of any suitable construction, preferably of rubber or having rubber tires.

At its forward end, base plate 11 is formed with a notch 31 extending rearwardly from the forward end of the base plate. A low abutment 32 extends across the forward edge of the base plate 11 from the notch 31 to the side wall 12 and a similar abutment 33 extends from the notch 31 to the side wall 13.

From an inspection of the drawings, it will be apparent that side walls 12 and 13 with parallel partition walls 19 and 21 are so arranged that center lines between the two sets of parallel walls converge together at a point near the forward end of the base plate 11 opposite the abutments 32 and 33.

Vertically disposed on the portion 16 of the rear wall 15 are a pair of projections or pivotal mountings 34 and 35. Pins 36 and 37 are mounted in these projections and have opposed tips extending inwardly toward each other. These pins 36 and 37 are positioned below the shaft 27. Pivoted on these pins is a pressure tab 38 disposed between side wall 12 and the partition wall 23. As the pins 36 and 37 are substantially normal to the side wall 12, the pressure tab 38 pivots about an axis normal to the side wall 12 and below the shaft 27. A similar pair of projections or pivotal mountings 39 and 41 are arranged on the portion 17 of the rear wall 15 and carry pins 42 and 43 on which the rear end of pressure tab 44 is pivoted. Pins 42 and 43 are also arranged below the shaft 27 and are substantially normal to the side wall 13 so the pressure tab 44 pivots about an axis below the shaft 27 and normal to the side wall 13. Pressure tabs 38 and 44, respectively, overlie the friction wheels 28 and 29 so they are inclined forwardly upwardly from the rear wall 15 to the friction wheels 28 and 29.

In operation, the cards to be shuffled are divided into approximately equal parts. One part is placed beneath the pressure tab 38, as indicated

at 51, with the rear ends of the cards resting upon the base plate 11 at the rear wall 15 and extending upwardly over the friction wheel 28. The other part 52 of the deck is placed beneath pressure tab 44 with its rear end on the base plate at the rear wall. The cards in this part of the deck extend upwardly over the friction wheel 29.

Then, by turning the crank 30, friction wheels 28 and 29 are rotated and move the bottom cards of the two parts 51 and 52 forwardly. As the cards are moved forwardly, they are guided by engaging converging side walls 12 and 13, as indicated by the cards shown in dotted lines at 53 and 54 (Fig. 1). In this fashion, the cards engaged by the wheels 28 and 29 are directed onto the front part of the base plate 11 where the cards engage abutments 32 and 33 and are deposited in the card-receiving compartment formed by the base plate 11, abutments 32 and 33 and the forward portions of side walls 12 and 13. Cards thus deposited assume a position such as that shown in dotted lines at 55.

As the friction wheels 28 and 29 remove only the bottom cards from the two parts, single cards from first one part and then the other are transferred to the card-receiving compartment so the cards from the two parts are alternately mixed together to form a single deck in the card-receiving compartment. When all the cards of both parts of the deck have been transferred to the card-receiving compartment, the shuffled deck may then be removed conveniently by inserting a finger into the notch 31 and lifting the deck out of the card shuffler.

Gravity acting on the pressure tabs 38 and 44 provides sufficient pressure to retain the cards in the parts 51 and 52 of the deck in proper position with the bottom card of each part engaging one of the friction wheels 28 and 29. As these tabs overlie the friction wheels 28 and 29, and are pivoted below the friction wheels on axes normal to the side walls 12 and 13, the pressure tabs act independently to retain the cards of the two parts in proper position. Thus, if the deck is not evenly divided, the pressure tabs apply pressure separately to the two parts of the deck and the card shuffler is effective to intersperse the cards as they are deposited in the card-receiving compartment.

In the preferred form of the invention, the base plate 11, side walls 12 and 13, rear wall 15, projections 34, 35, 42 and 43, partition walls 23 and 24, and abutments 32 and 33 are molded as an integral structure of plastic material. The pivot pins are inserted and the pressure tabs 38 and 44 are mounted thereon. The bearings 25 and 26 may be molded in the plastic side walls 12 and 13, respectively, and the shaft, with its friction wheels 28 and 29, mounted therein.

It will be apparent that this card shuffler is comparatively economical to manufacture and assemble. The small number of moving parts and the simplicity of their operation will provide a long period of trouble-free service.

What is claimed is:

1. A card shuffler comprising a horizontal base plate, a rear wall extending upwardly at the rear of said plate, side walls extending upwardly from said plate, a vertical partition between said side walls extending forwardly from the rear of said plate, a horizontal shaft journaled in said side walls above said base plate and forwardly of said partition, a pair of friction wheels on said shaft, one wheel on each side of said partition, a pressure tab between one side wall and said partition overlying one wheel, a pressure tab between the other side wall and said partition overlying the other wheel, and pivotal mountings on said rear wall for the rear ends of both tabs disposed below the axis of said shaft so cards beneath said tabs have their edges resting upon said base plate at the juncture of said rear wall and their bottom surfaces inclined forwardly and upwardly relative to said base plate and resting upon the respective wheels.

2. A card shuffler comprising a horizontal base plate, a rear wall extending upwardly at the rear of said plate, forwardly converging side walls on said plate, a shaft journaled in said side walls above said base plate, a pair of friction wheels spaced on said shaft, a pair of pressure tabs overlying said wheels, and pivotal mountings below said shaft supporting the rear ends of said tabs so that cards beneath said tabs have their edges resting upon said base plate at the juncture of said rear wall and their bottom surfaces inclined forwardly and upwardly relative to said base plate and resting upon the respective wheels.

3. A card shuffler comprising a horizontal base plate, a rear wall extending upwardly at the rear of said plate, forwardly converging side walls on said plate, a shaft journaled in said converging side walls above said plate, a pair of friction wheels spaced on said shaft, and a pair of pressure tabs overlying said wheels and independently pivoted at the rear ends on axes normal to the respective converging side walls so cards beneath said tabs have their edges resting upon said base plate at the juncture of said rear wall and their bottom surfaces inclined forwardly and upwardly relative to said plate and resting upon the respective wheels.

4. A card shuffler comprising a horizontal base plate, a rear wall extending upwardly at the rear of said plate, forwardly converging side walls on said plate, a partition between said side walls extending forwardly from the rear of said plate, said partition having walls parallel to said side walls converging together intermediate the ends of said plate, a shaft journaled in said converging side walls above said plate forwardly of said partition, a pair of friction wheels on said shaft, one wheel on each side of said partition, a pair of pressure tabs, one on each side of said partition, overlying said wheels, and pivotal mountings below said shaft supporting the rear ends of said tabs so cards beneath said tabs have their edges resting upon said base plate at the juncture of said rear wall and their bottom surfaces inclined forwardly and upwardly relative to said base plate and resting upon the respective wheels.

5. A card shuffler comprising a horizontal base plate, a rear wall extending upwardly at the rear of said plate, forwardly converging side walls extending upwardly from said plate, a partition between said side walls extending forwardly from the rear of said plate, said partition having walls parallel to the respective side walls and converging together intermediate the ends of said plate, a horizontal shaft journaled in said converging side walls above the said plate and forwardly of said partition, a pair of friction wheels on said shaft, one wheel being positioned on each side of said partition, a pressure tab between one side wall and the parallel partition wall overlying one wheel, a pressure tab between the other side wall and the parallel partition wall overlying the other wheel, and pivotal mountings supporting the rear ends of said tabs on axes below said

shaft and normal to the respective side walls so cards beneath said tabs have their edges resting upon said base plate at the juncture of said rear wall and their bottom surfaces inclined forwardly and upwardly relative to the base plate and resting upon the respective wheels.

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