Oct. 15, 1963 E. T. OSBORN 3,107,096

CARD SHUFFLING DEVICE

Filed Oct. 10, 1960

Fig. 1

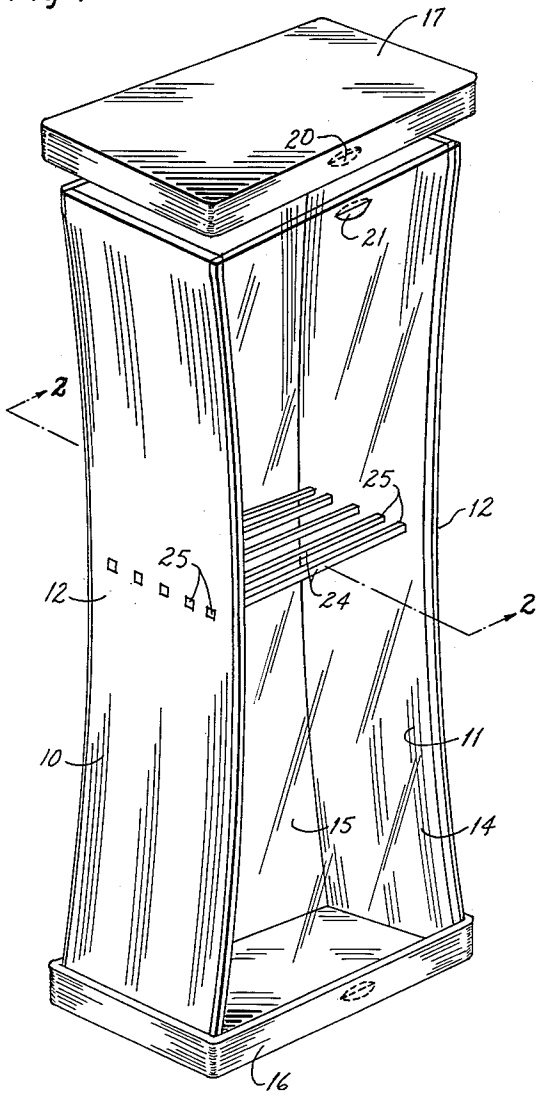
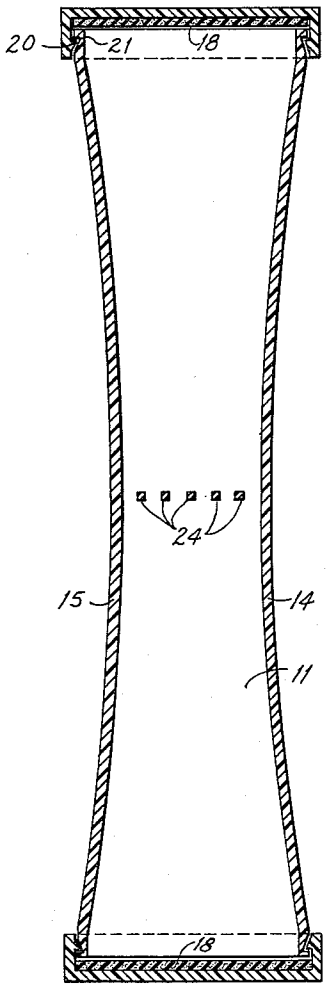


Fig. 2



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CARD SHUFFLING DEVICE

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1 Claim. (Cl. 273—149)

This application is a continuation-in-part of my application Serial No. 806,400, filed April 14, 1959, and now abandoned.

This invention relates to a card shuffling device and is particularly concerned with a simple device for shuffling cards which may be manually operated by a mere reciprocation and/or inversion of the device to provide for the separation and rearrangement of cards. While the device is admirably adapted for the shuffling of playing cards, it will be understood that the invention is in no way limited to this particular use and that the structure herein presented by way of illustration, is widely adapted to the intermingling and rearranging of various types of cards, whereby an indiscriminate order of arrangement may be readily achieved without resorting to power mechanisms or intricate structural arrangements.

Since card games of chance and skill have been common throughout many generations and since such games usually include the necessity of rearranging or shuffling the cards to provide indiscriminate order thereof, many devices have been conceived for the mechanical shuffling or rearrangement of the cards. Many such devices have received commercial recognition. However, for the most part, such devices are complicated and involve power mechanism, rendering them both limited in useful life and unsuited for economic manufacture. On the other hand, more simplified structures adapted for mere manual operation have not been found effective in rearranging the cards with such degree of promiscuous arrangement as required or the structures involve such multiplicity of parts and intricacy of design as to render them economically undesirable. The present invention seeks to provide maximum simplicity of structure and arrangement so as to insure economic manufacture while providing an arrangement insuring multiplicity of separation for each movement of the device and thus, to insure a maximum rearrangement of cards with a minimum of manual manipulation. In general terms, the present invention may be defined as consisting of a chamber or receptacle of diminishing central cross section. Thus, a design which may be defined as substantially hourglass in configuration, although preferably of rectangular cross section. At the central restricted portion of the chamber, transverse separating bars or barriers, preferably rectangular in cross section, are provided. Either or both ends of the chamber are provided with detachable closures so that a deck of playing cards or other cards to be indiscriminately mixed may be placed in one end and the cover frictionally secured in position. An inversion of the receptacle after the disposition of the cards therein, or a vigorous reciprocation of the chamber causes the cards to pass from one end of the compartment to the other, being funneled to and interrupted in such movement by the transverse barriers. Such barriers obstruct the passage of certain cards while others pass freely. Vibration of the container subsequently permits the detained cards to thereafter pass the barriers and to reassemble themselves with the cards which freely pass therethrough so as to provide for a rearrangement and promiscuous disposition of the cards in the pack.

From the foregoing, it will be seen that a primary object of the present invention is to provide a novel, simple and improved card shuffling device so constructed and arranged as to meet the demands of highly economic manufacture. Another object of the invention is to provide a novel and simple device for manually agitating cards in

such a manner as to rearrange such cards with maximum card displacement with minimum physical effort. Numerous other objects, features and advantages of the present invention will be apparent from a consideration of the following specification taken in conjunction with the accompanying drawing in which:

FIGURE 1 is a perspective view of one preferred embodiment of the present invention with one cover detached, and

FIGURE 2 is a vertical sectional view of that form of the invention illustrated in FIGURE 1.

In that preferred form of the present invention here shown by way of illustration, a generally rectangular chamber is formed by the provision of inwardly curved or tapering side walls 10 and 11. While these side walls 10 and 11 are here shown as curved inwardly to a central area 12 where they mostly approach each other, it will be understood that the invention is not limited nor confined to this curved characteristic. The walls may readily be straight walls tapered to the area 12 if desired. The sides 10 and 11 are joined to front and rear faces 14 and 15 respectively, which also incline inwardly toward the area 12, forming a central restriction at this area. Similar to the formation of the walls 10 and 11, the front and rear walls are here shown as curved inwardly toward the area 12 and similarly, these walls may be formed of straight sections meeting angularly at the area 12, if so desired.

While the present invention is not limited to materials by which the chamber may be formed, it has been found economic in manufacture to form the rear wall 14 together with the side walls 10 and 11 of opaque plastic material molded as a single integral part. Preferably, the front wall 15 is transparent as here shown, and is permanently attached by plastic welding with the front edges of the side walls 10 and 11.

The construction here illustrated as preferable, provides an open-ended elongately rectangular chamber. In the present form of the invention, both ends of the chamber are adapted to be closed by friction fitting, rectangular, readily removable end covers 16 and 17. Preferably, the ends 16 and 17 are lined with a cushion material as indicated at 18 which may be in the form of a rectangular piece of sponge rubber or the like, so as to allay undue noise which may be caused by the striking of the end edges of the cards against the cover members. In the preferred form of the invention, the cover members are molded of plastic material of the nature of that from which the chamber is formed. To insure against accidental displacement of the end members, their inner side lips 19 are formed with internally projecting detents 20 that are received within companion recesses 21.

Detention of spaced cards in a deck passing through the restricted portion 12 of the receptacle is provided by transverse bars 24, preferably of rectangular cross section. The bars 24 may be of plastic material and economy of manufacture may be achieved by mounting their ends 25 through the sides 10 and 11 as indicated. It will be noted that the receptacle is of greater width than depth. The width, when the device is designed for playing cards, is slightly in excess of the width of the cards at the restricted area 12. The depth of the receptacle at the area 12 is, in such case, slightly in excess of the thickness of the total pack of cards to be shuffled. The height of the container is in excess of double the length of the card pack, each end section beyond the area 12 being capable of receiving the entire pack. Hence, as the receptacle is vigorously reciprocated or inverted, the cards from one end will be funneled to the restricted area.

It will be readily seen that in such operation of the device, most of the cards will pass freely through the restricted area to the opposite end of the receptacle. However, intermediate cards or groups of cards will be de-

tained with their end edge or edges abutting the flat sides of one of the five bars **24**. Such detention permits the cards passed to reassemble in new arrangement after passing the area **12**. Thereafter, agitation of the receptacle may dislodge the detained cards to rejoin the others in a new stack relation, or subsequent inversion may return most of the freely passed and newly arranged cards to again pass the area **12** to absorb the detained cards in their midst.

Thus, it is believed that the operation of the device will be obvious and that the construction will be well understood. It will, of course, be understood that in the practice of the invention, numerous changes, modifications and the full use of equivalents may be resorted to without departure from the spirit or scope of the appended claim.

What I claim is:

A plastic card shuffling device, including a card containing chamber of right angular cross section throughout its length, defined by right angularly related side walls of uniform thickness throughout their length to provide unobstructed inner smooth side walls for the chamber, at least one of said walls being transparent, each of said walls being curved inwardly toward its mid-section with respect to its longitudinal axis to define a central restricted rectangular throat for said chamber, cards in said chamber, the length of which are not more than one-half the length of the chamber, a transverse series of not less than three parallel square bars across said restricted throat to intercept certain cards of a pack of cards as the remainder of the pack is funneled by gravity from one end of the chamber to the other, and an internally padded friction type cover engaging the ends of said wall to define the ends of said chamber, said cover being retained against accidental displacement by detents, while outer faces of the ends of the walls define recesses to removably receive said detents.

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