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ANIMATION DEVICE

Original Filed Feb. 5, 1962

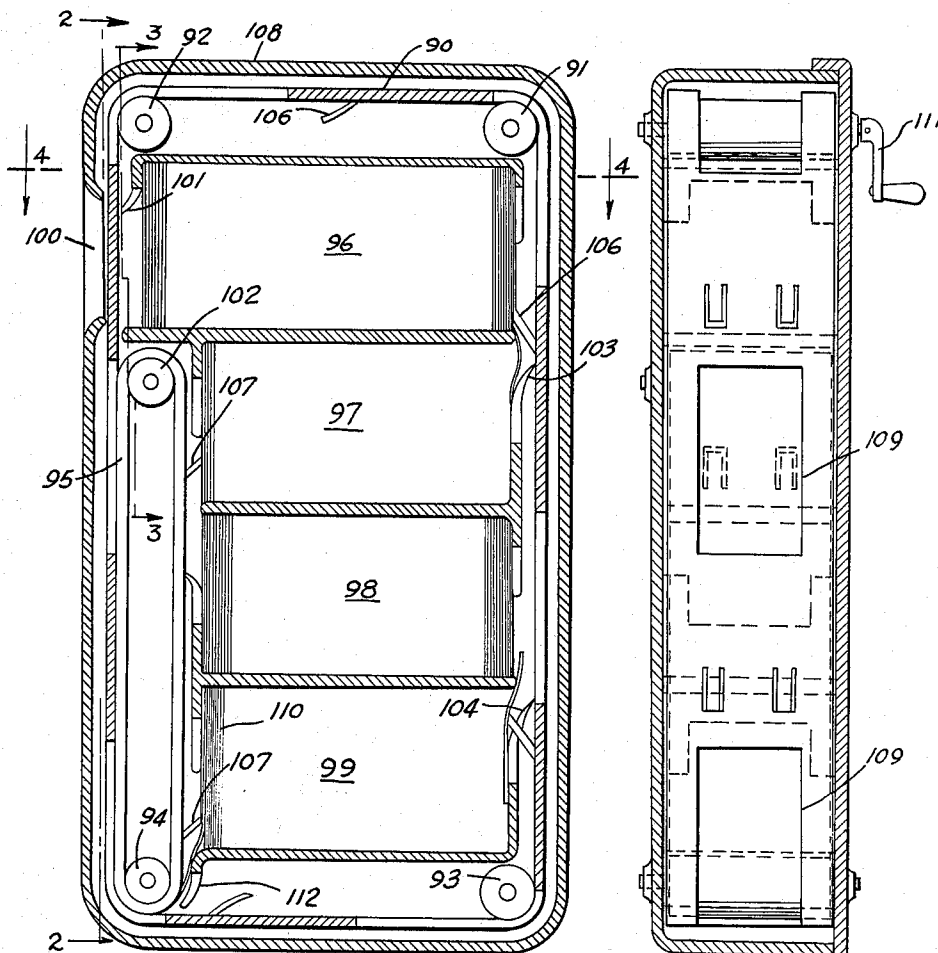


FIG. 1

FIG. 2

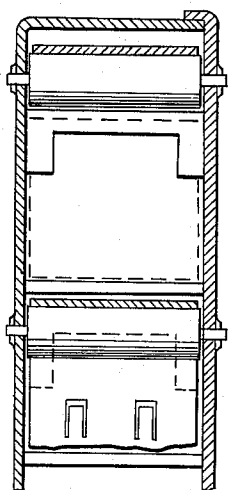


FIG. 3

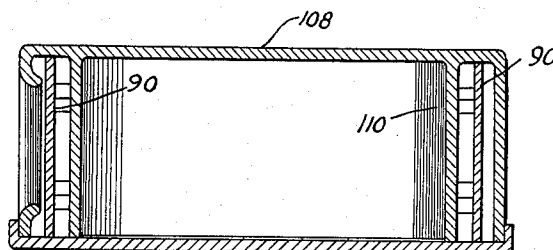


FIG. 4

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3,216,139

ANIMATION DEVICE

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Patent No. 3,144,726. Divided and this application
June 9, 1964, Ser. No. 382,680

1 Claim. (Cl. 40—78)

(Granted under Title 35, U.S. Code (1952), sec. 266)

The invention described herein may be manufactured and used by or for the Government for governmental purposes without the payment of any royalty thereon.

The present invention relates to a mechanism for producing an illusion of motion from a succession or series of picture-bearing cards, film or the like, by manipulation thereof in such a manner that successive cards or film of a series thereof may be removed from one portion of a stack or supply thereof and deposited at another position within such stack or supply in a manner so that, after viewing, each card will come to assume its original serial position as the stack or supply thereof becomes exhausted by such manipulative operations. These operations can be carried out at such speed that there appears to the eye of a viewer an illusion of continuous or uninterrupted motion between the pictures or images on successive cards or at a slower speed enabling reading or close viewing of individual cards. Viewing of the individual cards successively is accomplished as each is held stationary momentarily at one point in the above cycle.

Accordingly, an object of the present invention is to provide a mechanism of the above-indicated character which is useful as a training aid in connection with military training but which is also adaptable to a wide diversity of applications.

A second object of this invention is to provide for an inexpensive viewer of opaque film frames, which is manually operated, and compact and simple in construction and operation, which is readily adapted to motor driven operation and a multitude of uses involving the manipulation of various types of intelligence bearing or intelligence receptive sheets.

The structural features of an embodiment of the invention are illustrated in the accompanying drawings, in which:

FIG. 1 is a central vertical sectional view of the invention, in which there is shown a plurality of horizontally disposed card holding magazines;

FIG. 2 is a central vertical sectional view taken on the line 2—2 of the casing of the modification of FIG. 1, with the remaining elements of the construction being shown in elevation;

FIG. 3 is a detail fragmentary sectional view of upper portions of FIG. 1 taken on the line 3—3 of FIG. 1, parts of the structure being shown in elevation and;

FIG. 4 is a horizontal sectional view taken on the line 4—4 of FIG. 1.

It will be understood that the term "cards" as used throughout the present description is intended to include in addition to flexible opaque image bearing cards, transparent and translucent image bearing photographic film which is to be manipulated in like manner to opaque cards in the construction illustrated in the accompanying drawings.

FIGS. 1, 2, 3, and 4 show an embodiment of this invention which contains a magazine having a plurality of chambers each containing opaque motion picture cards. This embodiment has two endless belts 95 and 90, the former turning on rollers 102 and 94 and the latter on wheels 92, 91, 93, and inner belt 95, respectively. Outer belt 90 has a plurality of viewing slots 109 equally spaced along its length. These slots are of such a size as to allow the passage of light through the belt and the picture

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when the picture is held superimposed thereon. Belt 90 is equipped on its inner surface with a plurality of tabs 106 so disposed as to engage and set in motion the picture cards 110 as they are exposed at one end of a magazine chamber. Belt 95 is likewise equipped with tabs 107 which function in the same way. In operating this embodiment, chambers 96 through 99 of the magazine are filled with the opaque motion picture cards. As crank 111 is turned, belt 90 is set in motion, this in turn, causing belt 95 also to be set in motion. Outermost cards 110 start the viewing cycle when they are pushed successively by tabs 107 out of magazine chamber 99 and are bent around flange 112 of the magazine and at the same time are inserted between belts 95 and 90. The cards 110 are then carried upward until they engage flange 101 of the magazine which forces the upper edge of the card to enter the magazine and to be deposited therein. It is at this point when the picture cards 110 approach and enter the upper chamber 96 of the magazine that they are viewed momentarily through viewing aperture 100. As one card is being moved from chamber 99 and placed in chamber 96, another card is being removed from chamber 96, by tab 106 and caused by flange 103 to enter chamber 97. Also, concurrently, a card is being removed from the opposite end of chamber 97 by one of tabs 107 and deposited in the same manner on the same side of the magazine, in chamber 98. A card is also removed from the opposite side of chamber 98 and placed in chamber 99. It is seen therefore, that during one operating cycle there are four cards in motion. Each card is replenishing the supply in a magazine which has been depleted by one card on the opposite side thereof. When this cycle is completed, another cycle commences and so on in rapid succession.

It will be noted that card conveyor means in the form of oscillating plates and rotary plates lend themselves equally well to the devices as do the endless belts described and should be obvious equivalents.

I claim:

A device for viewing in succession a series of indicia bearing cards comprising a card-holding magazine for stacks of indicia bearing cards having a series of card-holding chambers disposed in such a way that the exit portal of one chamber is adjacent to the entry portal of the next chamber, each of said chambers having a card exit portal and a card entry portal; individual successive card withdrawal means, cooperating with each of said exit portals and card conveyor means for moving cards in succession from the exit portal of one of said chambers in said series to the entry portal of another of said chambers in said series and for moving cards in succession from the exit portal of the last chamber in said series to the entry portal of the first chamber in said series, said withdrawal and conveyor means including a roller suspended outer endless belt turning substantially about said magazine and having a plurality of card contact tabs on its inner surface and a series of card shaped windows along its length, and a roller suspended inner endless belt with card contact tabs disposed along its outer surface, said inner belt being located between and in contact with said outer belt and one portal side of said magazine, whereby the outermost card at the exit portal of each magazine chamber is withdrawn and passed consecutively to the next entry portal and the outermost card of the last magazine chamber is withdrawn and passed between said belts to the entry portal of the first magazine chamber in the series; a case enclosing said belts, said rollers and said magazine and mounting said rollers; and a viewing aperture in said case so disposed as to allow a view of successive cards.

No references cited.

EUGENE R. CAPOZIO, *Primary Examiner*.
JEROME SCHNALL, *Examiner*.