July 19, 1966 R. ERICKSON ETAL 3,261,649

CARD HOLDER AND DIALER

Filed July 17, 1964 2 Sheets-Sheet 1

FIG. 1

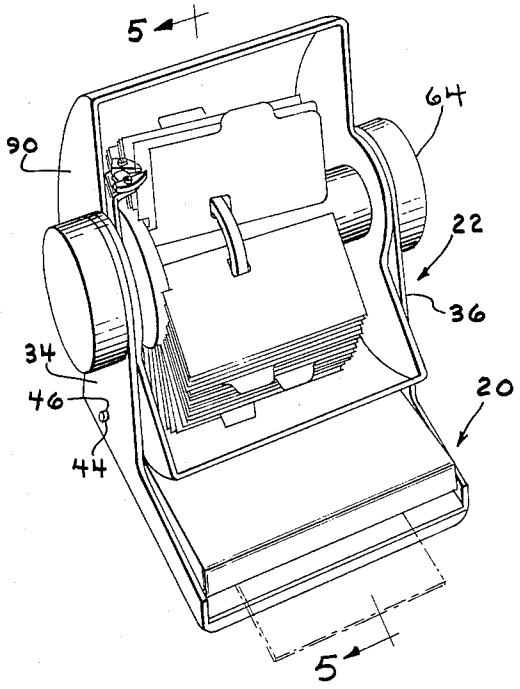


FIG. 2

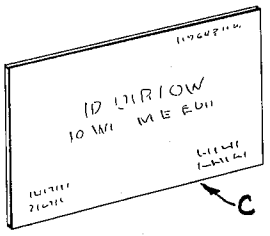


FIG. 3

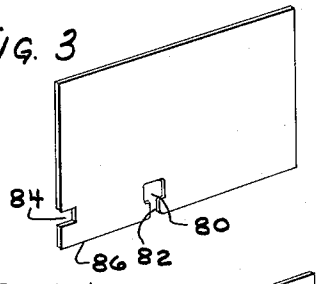


FIG. 4

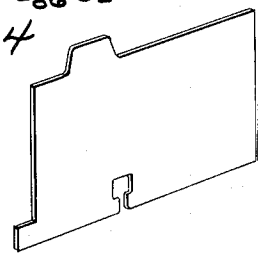


FIG. 5

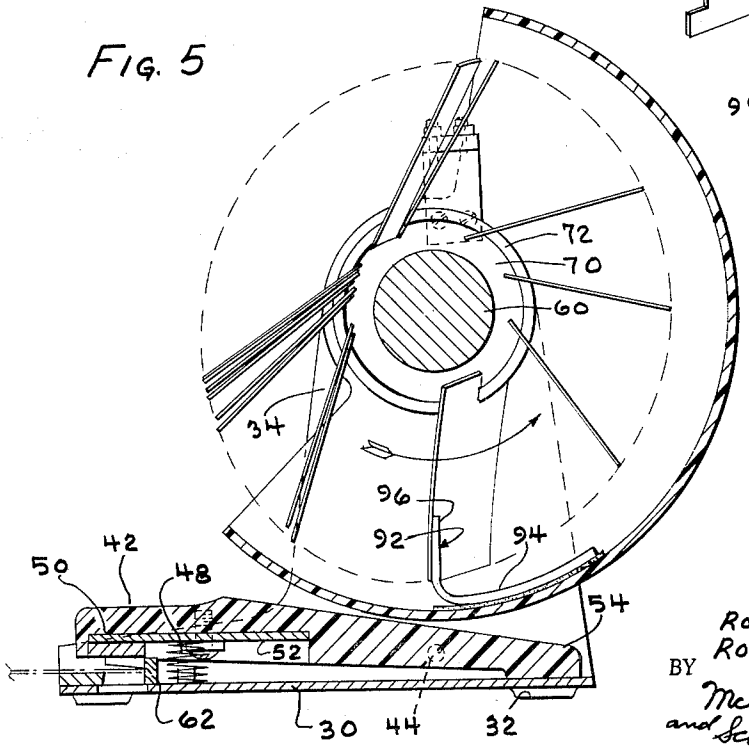
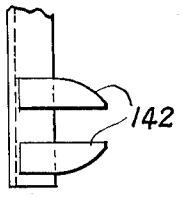


FIG. 12



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Filed July 17, 1964 2 Sheets-Sheet 2

FIG. 6

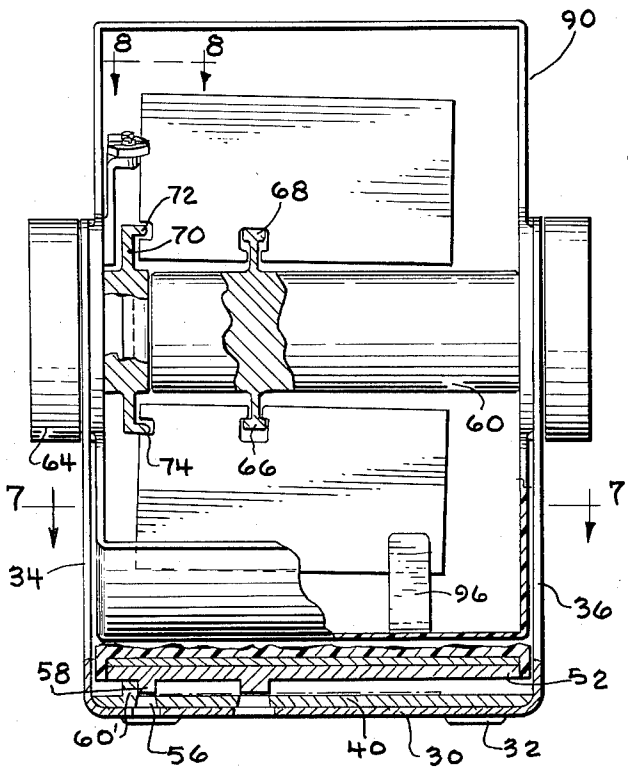


FIG. 8

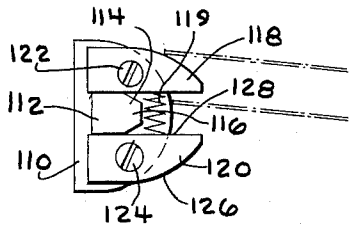


FIG. 9

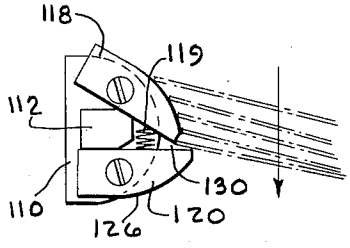


FIG. 7

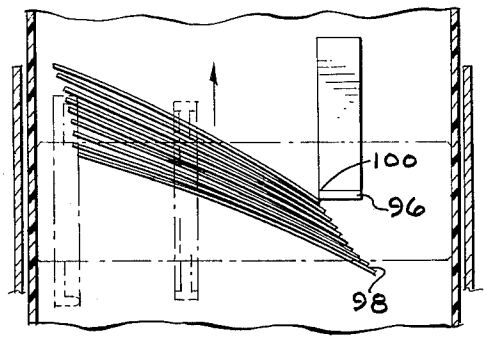
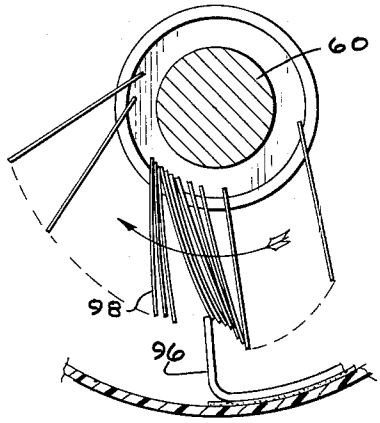


FIG. 10



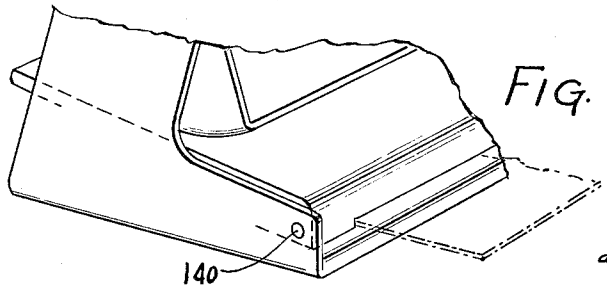


FIG. 11

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3,261,649

CARD HOLDER AND DIALER

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Filed July 17, 1964, Ser. No. 383,361
5 Claims. (Cl. 312—189)

This invention relates to a card holder and sorter and it relates more particularly to the combination of a holder for dialing a plurality of cards for separation and selection of one or more and a punch for preparation of the cards to be mounted in the holder whereby a regular calling card can be dialed, and to a process for using same.

A number of card holders and separators are available on the market for use by busy executive office help and the like but these are subject to a number of deficiencies in that the holder is adapted only for use with cards prefabricated or punched for use with same. The cards cling one to another or they travel in groups whereby separation for selection of an individual card often times becomes frustrating; and the device requires the reproduction of information to be carried on a card to provide the information that is adapted to be made available by the device.

The additional time and effort required for the latter usually leads to the personal calling card to be set aside until a later date with the result that the information is often lost and not reproduced on a card adapted to be used with the device. As a result, such information is not available later when it might be needed.

It would, of course, be desirable and it is an object of this invention to provide a device of the type described which is adapted to receive calling cards and the like information as it is first made available; which is adapted to process calling cards for use in the device in the same manner as any card originally supplied for use with the device; which operates properly to align the cards, independent of dimension or size, for orientation with respect to a constant reference point thereby to adapt the device for functioning with cards independent of their dimensions or size; which operates to deal the cards individually from a reference point for separation of the cards to enable easy and quick selection of one or more thereof; which operates to shuffle the cards properly to align the cards with a constant reference point to maintain a desirable separation thereof, and which enables a large number of cards to be replaceably mounted in the device for easy and quick introduction of cards or for easy and simple removal of cards for purposes of maintaining the file up to date.

Another object of this invention is to produce a new and improved card holder in which a multiplicity of calling cards and other information cards can be mounted and dialed for rapid exposure of individual cards for selection and it is a related object to provide a punch mechanism in combination with the card holder wherein cards can be punched for use in the holder and whereby certain data and information, such as a code, may also be incorporated into the card for use of the card in automatic telephone dialing, addressing, automatic read-out of punched information, and the like.

These and other objects and advantages of this invention will hereinafter appear and, for purposes of illustration, but not of limitation, an embodiment of the invention is shown in the accompanying drawings, in which:

FIG. 1 is a perspective elevational view of the card holder and dialing device embodying the features of this invention;

FIG. 2 is a perspective view of a calling card which may be processed for use in the device of FIG. 1;

FIG. 3 is a perspective elevational view of the card punched in a manner for use with the holder device;

FIG. 4 is a perspective elevational view of a card punched with another pattern for use with the holder device of FIG. 1;

FIG. 5 is a sectional elevational view taken substantially along the line 5—5 of FIG. 1;

FIG. 6 is a sectional elevational view taken crosswise through the center of the device shown in FIG. 1;

FIG. 7 is a sectional elevational view taken along the line 7—7 of FIG. 6 showing the arrangement of elements when the wheel is rotated in one direction;

FIG. 8 is a top plan view taken along the line 8—8 of FIG. 6;

FIG. 9 is a top plan view similar to that of FIG. 8 but showing the arrangement of elements in reaction to the displacement of cards across the flipper of FIG. 8;

FIG. 10 is a sectional view taken crosswise of the portion shown in FIG. 7 but with the wheel rotated in the opposite direction;

FIG. 11 is a schematic view in perspective of a modification in the punch card arrangement; and

FIG. 12 is a perspective view showing a further modification in the flipper arrangement.

The card device of this invention embodies the combination of a punch assembly 20 adapted to provide a desired coding on the card and adapted to provide the desired slotted arrangement for adaptation of a conventional calling card C to be received in the holder for use alone or alongside pre-punched cards with proper alignment between the cards for orientation along a predetermined reference point and it includes a holder 22 wherein the punched cards are mounted with means for dialing the cards to enable individual selections thereof.

The assembly comprises a housing having a base plate 30 with spaced feet 32 for resting flat upon a supporting surface with sidewalls 34 and 36 extending upwardly from the base in laterally spaced apart relation to define a card holding section in between.

The die section 20 includes a die plate 40 fixed to the bottom wall 30 on the forward end portion thereof with the die plate 40 dimensioned to have a width corresponding to the width of the bottom wall so as to be received in fitting relationship between the portions of the side walls 34 and 36 which extend upwardly for a short distance from the bottom wall to cover the opening between the die plate and the punched plate 42 dimensioned to have a width corresponding to that of the die plate.

The punched plate which overlies the die plate is mounted for rocking movement in the direction toward and away from the die plate on pivot pins 44 which extend through crosswise aligned openings 46 in the rearward portions of the side walls 34 and 36 and into engagement with a rearward end portion of the punch plate. The punch plate is resiliently urged towards its raised position in spaced relation with the die plate by spring members 48 located therebetween. The punch plate is shaped to provide a rectangularly shaped recess portion 50 in the forward end portion to receive a punch die 52 and means are provided to limit the movement of the punch plate and die to raised positions. Such means, in the illustrated modification, comprises a depending portion 54 beyond the pivot 44 which comes into engagement with the bottom wall when the plate is in raised position. When in raised position, the die plate is spaced

from the bottom plate to enable a card C to be inserted therebetween.

The die plate is provided with a design pattern of die cuts **56** and the punch plate is provided with a corresponding pattern of punches **58** for cooperating with the die plate to punch out portions of the card inserted therebetween when the die plate is depressed manually or otherwise to displace the punches into the die openings.

The die plate is provided with lateral stops **60'** and endwise stops **62** properly to orient the punched out section with reference to the left edge and by the edge of the card when the card is inserted with the bottom edge foremost.

The card holder **22** comprises a cylindrical member **60** dimensioned to have a length greater than the spaced relationship between the walls **34** and **36** with the walls having crosswise aligned openings **62** of a diameter corresponding to the diameter of the cylindrical member to enable the end portions of the latter to extend therethrough rotatably to mount the cylindrical member thereon. Cylindrical heads **64** are fixed onto the portions of the cylindrical members extending beyond the wall for use as a dial to rotate the cylindrical members relative the housing.

The cylindrical member **60**, intermediate its ends, is provided with an annular flange **66** with portions or arms **68** extending laterally from the outer periphery thereof to provide a guide flange of T shape. While only one such guide member is sufficient, more than one in laterally spaced apart relation can be used for greater stabilization of the mounted cards, if desired. Instead of a T member the portion on the end may be a bulbous portion which will have the same effect as the T and it will be understood that the term T and T slot as hereinafter employed will be meant to include such bulbous member and correspondingly shaped slot.

Spaced inwardly from the left end thereof and adjacent the side wall **36** of the housing, another annular flange **70** extends outwardly radially from the cylindrical member with a portion **72** extending inwardly from the outward end thereof to define an annular collar **74** concentric with the cylindrical member but spaced outwardly a short distance from the periphery thereof. Since the T guide **68** and the collar **74** form a part of the cylindrical member or are otherwise fixed thereto, the described elements will rotate together relative to the housing responsive to turning movement of the dial **64** in one direction or the other. It will be understood that instead of mounting the cylindrical member **60** with portions extending through the housing walls for support of the dials, other means such as a shaft connected to the cylindrical member and to the dial may be employed rotatably to mount the members onto the side walls of the housing.

The die and the punch are formed so that when a card is inserted into the space between the die plate and the punch plate to position the leading edge of the card against the backward stop and to position the left edge of the card against the left hand stop, slots will be punched in the card to provide a T slot **80** in the leading edge of the card at a position spaced from the left edge by an amount corresponding to the spaced relationship between the T guide **68** and the base of the collar **74** on the cylindrical members with the T slot **80** being of larger cross-section than the T guide **68** but with the stem **82** of the T slot **80** being of a width less than the cross arm **68** of the T member so that the card will hang on the T member when the T member is displaced into the slot. A second slot **84** is formed to extend inwardly from the left edge of the card spaced from the leading edge **86** by an amount corresponding to the spaced relationship between the collar **74** and the periphery of the cylindrical member **60** and with the slot **84** dimensioned to have a length and width slightly

greater than the collar **74** to receive the collar therein when the card is mounted on the cylinder with the T guide **68** in the T slot **880**. Thus when the cards are mounted with the T guide **68** in the T slot **80** and with the collar **74** in the edge slot **84**, the card is retarded by the T guide **68** from lateral movement to withdraw the collar from the slot. Similarly, both the T guide **68** and the collar **74** operate to prevent endwise radial displacement of the card from off its supports. As a result, the card is supported radially and laterally from displacement from the cylindrical member while being free to shift peripherally about the member or to rock about the member with the cylindrical member more or less as the pivot point. Thus the plurality of cards are retained in relative positions on the cylindrical member for rotation with the member as it is turned.

A curvilinear, substantially cylindrical housing **90** is provided having a radius greater than the radius of the cylindrical member plus the height of the cards mounted thereon and the cylindrical housing is fixed to the walls partially to enclose the space in which the cards are rotated with the rotor. The semi-cylindrical housing section is mounted more or less concentrically about the axis of the rotor.

An important concept of this invention resides in the construction of a card holder to include a flipper **92** positioned to flip the cards in a manner properly to position the cards on the rotor and effectively to separate the cards for dealing the cards singly instead of in bundles. For this purpose, a spring arm **94** is secured to the inner wall along the bottom side of the housing with a spring finger **96** turned upwardly in the direction towards the rotor with the end of the finger positioned to engage the lower edge portions of the cards adjacent the side opposite the collar.

As the rotor **60** is turned in the counter-clockwise direction, as indicated by the arrow in FIG. 7, the lower outer corner portions of the cards are brought into engagement with the spring finger **96** whereby the cards are bent slightly until the outer edge **98** clears the inner vertical edge **100** of the finger to flip the cards one at a time as they pass by. The flip finger **96** thus operates not only to effect separation by flipping the cards but the finger operates effectively to displace the cards laterally in the direction towards the collar **74** uniformly to align the left side edges of the cards during displacement by the rotor, as indicated by the pictorial representation in FIG. 5 of the drawings.

In such instances where some of the cards are wider than others, the spring finger will remain effective to bring about a lateral displacement of the cards to align the left hand edges but, instead of being flipped as they pass beyond the inner edge of the finger, the cards may be flexed rearwardly and upwardly until the lower edge of the cards, at the right hand side, clears the upper edge of the finger **96** and is thereby flipped for separation and displacement.

In response to turning of the rotor in the clockwise direction, the bottom spring finger **96** will again operate to align the left hand edges of the cards while flipping the cards in dealing the cards for use, as illustrated in FIG. 10.

Means are also provided for resiliently retaining the cards in an upright position and for feeding the cards separately from upright position as the rotor continues to be turned in the clockwise or in the counter-clockwise direction.

As illustrated in FIGS. 8 and 9, the retainer and separator comprise a horizontally disposed plate **110** fixed to the side wall of the housing adjacent the left hand edges of the cards. The platform is positioned in substantially vertical alignment with the axis of the rotor **60** and arranged to extend inwardly from a position spaced from the axis by a distance less than the sum of the radius

of the rotor plus the height of the card but greater than the sum of the radius of the rotor and one-half the height of the card so as to be aligned with the upper left hand corner portion of the aligned edges of the cards.

The platform is provided on its upper surface with a guide block **112** fixed to the central portion of the platform **110** and having a pair of cam edges **114** extending inwardly from about the mid-portion to the outer edge of the guide block to define a trapezoidal end section **116**. A pair of pawls **118** and **120** are mounted on the upper surface of the platform on opposite sides of the block **112** for rocking movement about pivot pins **122** and **124** respectively lengthwise aligned with about the base of the trapezoidal section **116** to enable rocking movement of the spaced pawls in a horizonal plane about their respective pivots. The pawls are formed with outer edges **126** of curvilinear shape and with straight inner edges **128** and they are dimensioned to extend from the pivot to a point beyond the platform and to bring the curvilinear end portions into the path of the aligned left hand edges of the cards. While not essential, the functions of the pawls can be improved by the arrangement to include a spring or other resilient member **119** therebetween continuously to urge the pawls toward their straight position.

In operation, the straight inner edges **128** of the pawls are positioned to enable the angled sections **114** of the trapezoidal block **112** to effect a stop when the pawls are in their displaced position. The straight side edges **128** operate also to engage the side walls in the rearward portion of the block **112** to function as a stop in their normal or straight position. In the preferred arrangement, the angle on the block and the length of the pawls are calculated slightly to space the end of one pawl from the inner end of the other when one or the other is in displaced position while the other is in normal position.

Thus, as the edges of the cards are displaced by the rotor in the counter-clockwise direction, as shown in FIG. 9, the engagement between the edges of the cards and the pawl **118** causes the pawl first engaged to be rocked to displaced position while the other remains stopped in normal position. The spring members **119**, when present, will tend to give the effect of a thumb riffling action. Thus the edges of the oncoming cards are flexed as they pass over the curvilinear cam edge **126** of the first pawl **118** and are flexed into the space **130** between the pawls as the end of the first pawl is cleared by the card. Thus the card becomes entrapped between the pawls for support in the upright position while the cards in advance have passed beyond the second pawl **120** to fall from in front of the entrapped card fully to expose the card for reading.

As the rotor is continued to be rotated, the left hand edge of the card proceeds to engage the straight edge **128** of the second pawl **120** to again flex the card and flip the card as the edge clears the end of the second pawl. It will be apparent that such flipping action will operate to effect separation of the cards whereby one or the other of the cards can be more easily selected for reading or for removal. It will be understood that the angularity and the dimensional characteristics of the spaced pivoted pawls **118** and **120**, in operated and normal positions, may be such as to eliminate the space **130** in between when one is in operated and the other is in normal position. In such event, only an effective separation by flipping is achieved.

It will be apparent that the same results will be achieved in response to turning of the rotor in the opposite direction, only in such event the functions of the pawls will be reversed in that the one **120** will be rocked upon engagement to operated position while the other **118** will be returned to normal position.

By way of modification, as illustrated in FIG. 11, more leverage is gained in the card punching operation when, instead of pivotally mounting the punch plate for

rocking movement about a pivot at the rearward end, the punch plate is pivoted at **140** for rocking movement about a forward end portion adjacent the punch members. The forward end portion remains spaced by an amount sufficient to permit insertion of a card between the plate members and actuation of the punch is effected by depression of the rearward portion of the punch plate thereby to provide greater leverage in the punching operation. This calls for less pressure on the punch plate to effect rocking movement of the punch plate about its pivot to effect the desired formation of the punched pattern on the inserted card.

By way of a still further modification, as illustrated in FIG. 12, it has been found sufficient to achieve the desired riffling action when only one pawl **142** is mounted to extend axially from a portion spaced vertically from the drum into the path of the adjacent lateral edges of the cards rotated with the drum. In the modification illustrated in FIG. 12, the pawl is rigidly secured to its support and is positioned to extend forwardly from the support at about the level to engage the upper end portions of the lateral edges of the cards, as previously defined. As illustrated in the drawings, use can be made of a pair of spaced apart pawls of the described rigid construction to provide for the desired riffling action and to provide support of the cards in a readable upright position when disposed therebetween.

It will be understood that changes may be made in the details of construction, arrangement, operation and materials of which the device is formed without departing from the spirit of the invention, especially as defined in the following claims.

We claim:

1. A card holder comprising a housing having a base portion and vertical side walls extending upwardly from the base portion in spaced apart relation by an amount greater than the crosswise dimension of the cards, a spindle mounted for rotational movement between the side walls and spacer vertically from the base by a distance greater than the height of the cards, means releasably mounting the cards on the spindle for rotational movement with the spindle, a segment of a cylindrically-shaped housing mounted between the side walls and dimensioned to have a radius greater than the radius of the spindle plus the height of the cards and a width greater than the width of the cards, a flipper member in the form of an elongate spring finger secured to the bottom portion of the inner peripheral surface of the housing and extending upwardly therefrom into the path of the outer edges of the cards mounted on the spindle and adjacent a lateral edge thereof whereby when the spindle is rotated with the cards, the flipper member engages the edge portions of the cards to cause bending movement of the cards in the crosswise direction as well as in the lengthwise direction as the cards are rotated to clear the flipper element.

2. A card holder comprising a housing having a base portion and side walls extending upwardly from the base portion in spaced apart relation greater than the crosswise dimension of the cards, a spindle mounted for rotational movement between the side wall members and spaced vertically from the base portion by an amount greater than the height of the cards, means releasably mounting the cards on the spindle for rotational movement with the spindle and for movement about the periphery of the spindle, a card support and separating member spaced vertically about the axis of the spindle by an amount corresponding to the radius of the spindle plus one-half the length of the cards to the radius of the spindle plus the length of the cards and along one edge of the cards, with an end portion extending axially into the path of the cards to engage the edge portions of the cards adjacent their outer lateral edges to effect separation of the cards as they pass by and in which the card holder and separating means comprises a pair of

laterally spaced apart pawl members positioned to engage the lateral edges of the cards on the spindle and separately to receive a card therebetween during rotation of the spindle to support the separated card in vertical position.

3. A card holder as claimed in claim 2 in which the pawl members are mounted for pivotal movement about a vertical axis.

4. A card holder as claimed in claim 3 which includes a positioning block between the pawl members to limit rocking movement of the pawl members between outwardly extending position and engaged position with the end portion inclined toward the direction of the other pawl member.

5. A card holder as claimed in claim 4 which includes resilient means constantly urging the pawl members towards their normal outwardly extending position.

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