S. L. GILFILLAN.

CARD SELECTING APPARATUS FOR CARD SYSTEMS.

APPLICATION FILED JUNE 4, 1917.

1,251,502.

Patented Jan. 1, 1918.

2 SHEETS—SHEET 1.

Fig. 1

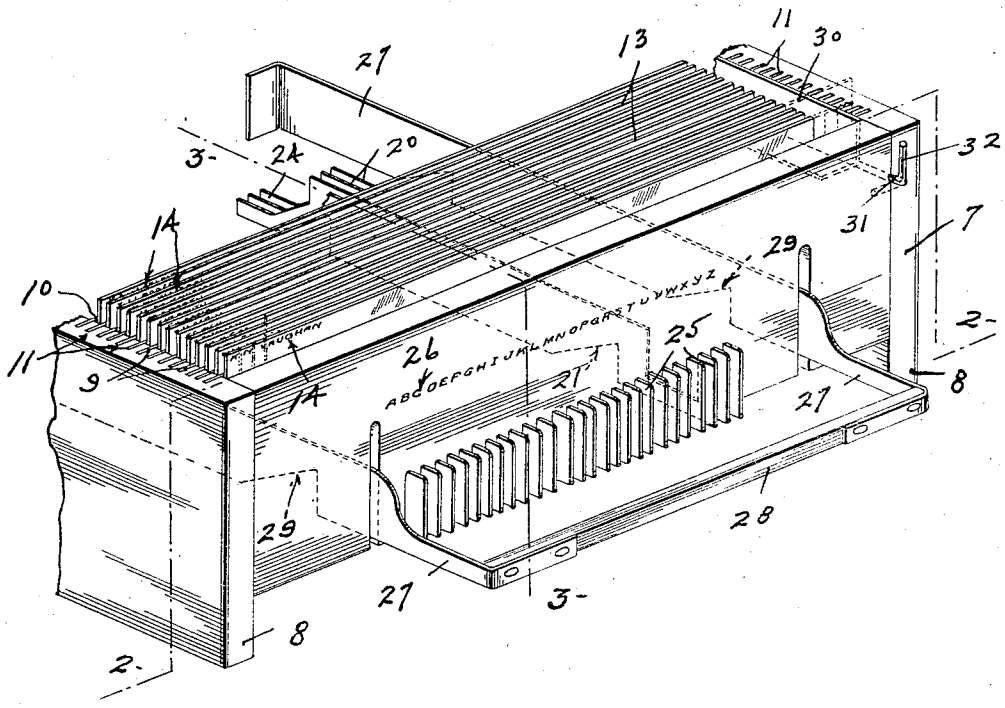
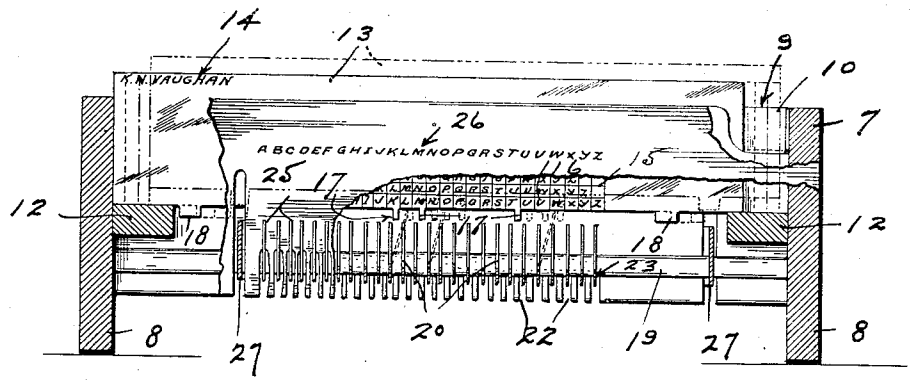


Fig. 2



Witnesses
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Fig. 3

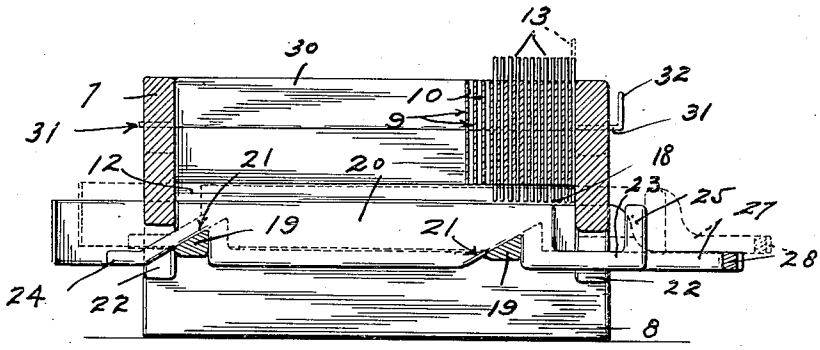


Fig. 4

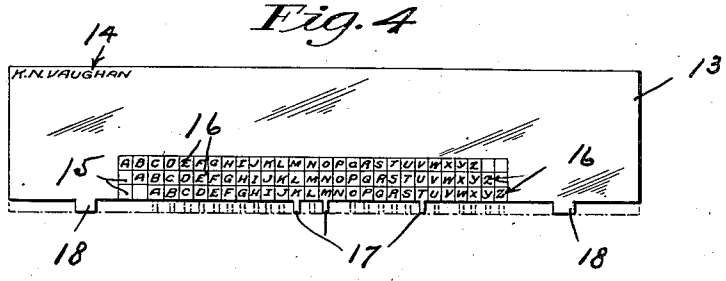


Fig. 5

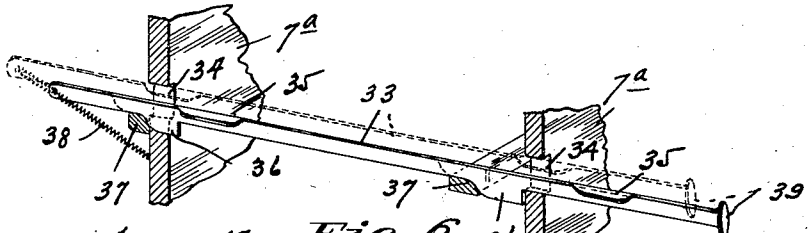
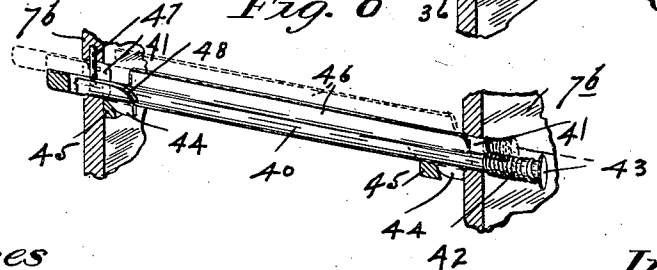


Fig. 6



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UNITED STATES PATENT OFFICE.

SHERMAN L. GILFILLAN, OF MINNEAPOLIS, MINNESOTA.

CARD-SELECTING APPARATUS FOR CARD SYSTEMS.

1,251,502. Specification of Letters Patent. Patented Jan. 1, 1918.

Application filed June 4, 1917. Serial No. 172,763.

To all whom it may concern:

Be it known that I, SHERMAN L. GILFILLAN, a citizen of the United States, residing at Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain new and useful Improvements in Card-Selecting Apparatus for Card Systems; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to card selecting apparatus for card systems; and, to this end, it consists of the novel devices and combinations of devices hereinafter described and defined in the claims.

In carrying out the invention, the cards are indiscriminately placed and each thereof has written, or otherwise marked thereon, a plurality of (preferably three) identifying characters, such, for instance, as two initials and the first letter of a person's Christian name. Each card is also provided with selective characteristics, which are represented by the identifying characters of the respective card. In connection with such cards, I provide an apparatus, by means of which, in coöperation with said selective characteristics, a predetermined card may be given progressive steps of movement, which correspond to its identifying characters, to carry the same out of alinement with the mass of cards. During the first step of movement of a predetermined card, all of the other cards having like "first" identifying characters will be advanced therewith. In the second step of movement of the predetermined card, all cards advanced therewith, and not having like "second" identifying characters, will be eliminated and only the cards having like "first" and "second" identifying characters will be advanced. During the third step of movement of the predetermined card, all cards advanced therewith and not having like "first," "second" and "third" identifying characters will be eliminated and only said predetermined card advanced, unless other of the cards have the same identifying characters.

In the accompanying drawings, which illustrate the invention, like characters indicate like parts throughout the several views.

Referring to the drawings,

Figure 1 is a perspective fragmentary view of the invention;

Fig. 2 is a view in section taken on the line 2—2 of Fig. 1, with some parts broken away and with some parts shown in different positions by means of broken lines;

Fig. 3 is a view in section taken on the line 3—3 of Fig. 1, with some parts shown in different positions by means of broken lines;

Fig. 4 is a face view of one of the cards; and

Figs. 5 and 6 are perspective views, with some parts shown in sections and some parts shown in different positions by means of broken lines and illustrating two modifications of the card selecting bars.

The numeral 7 indicates a rectangular box-like structure or card holder having an open top and bottom and the end members thereof are extended below its front and back members to afford supports 8. A multiplicity of vertical partition plates 9 divide the holder 7 into a multiplicity of long narrow card-holding compartments 10, which extend from end to end thereof. The partition plates 9 are secured in position by mounting the same in vertical slots 11, cut in the inner faces of the end members of the holder 7, and are supported on ledges 12 projecting from said end members.

A mass or pack of cards 13 are indiscriminately placed in the holder 7 and separately held in the compartments 10 thereof. These cards 13 rest, at their lower edges, on the ledges 12, are somewhat higher than the partitions 9, so as to project thereabove, and are shorter than the compartments 10 to permit endwise movement thereof. The cards 13 may contain various matters of information, such as used in any card index system. Each card 13 has printed on its upper left hand corner identifying characters 14, as shown, the initials and Christian name of a person to which said card relates. Marked on the lower portion of each card

13, are three horizontal rows of squares 15 and in the squares of each row, is printed the complete alphabet, indicated as an entirety by the numeral 16, and it is important to note that corresponding letters of the alphabets are progressively offset one letter or square toward the right. On the lower longitudinal edge of each card 13, are three depending fingers or shoulders 17. It will be noted that only one of these fingers 17 is located under a given vertical row of the letters 16 and that each thereof represents one of the identifying characters 14. Also formed on the lower longitudinal edge of each card 13, are two depending lugs 18, located equidistant from the ends thereof outward of the fingers 17.

The name on the first card in the holder 7 is "K. N. Vaughan" and the letters "K. N. V." represent the identifying characters of this card. The first identifying character "K" is represented in the lower alphabet 16. The second identifying character "N" is represented in the intermediate alphabet and the third identifying character "V" is represented in the upper alphabet. By reference to Fig. 4, it will be noted that the three fingers 17 are located under the letters "K. N. V." of the alphabets 16, reading from the bottom up and toward the left, and which fingers represent the respective identifying characters 14. In regard to the finger 17, it may be here stated that the same may be integral with the cards 13, or they may be separate and detachably or otherwise secured in position. When the fingers 17 are integral with the cards 13, said cards have an original height, as indicated by broken lines at the bottom thereof in Fig. 4, and said fingers are formed by cutting the cards. Or the cards may be formed with a finger under each vertical row of squares 15, and those not required, torn or otherwise removed from the card at the time the same is placed in the holder 7.

Located under the partition plates 9, are front and rear horizontal cam bars 19 having their ends secured in the end members of the holder 7. A multiplicity of card selecting bars 20 (as shown twenty-six) are supported on the cam bars 19 for endwise movement transversely of the cards 13 and lateral rocking movement longitudinally thereof. Each of these card selecting bars 20 has formed on its lower longitudinal edge a pair of cam notches 21 in which the coöperating cam bars 19 project. These coöperating cam bars 19 and cam notches 21 are arranged to support the card-selecting bars 20, when pushed inward in their lowermost positions, so that the fingers 17 will freely pass thereover when the cards 13 are moved endwise. Each card-selecting bar 20 is mounted in a pair of alined notches 22, formed in the lower longitudinal edges of the front and rear members of the holder 7. Those portions of the card-selecting bars 20, working in the front and rear notches 22, are reduced to form neck portions 23 and rear end portions 24, respectively. These neck and rear end portions of the bars 20 permit the same, when pulled out, to be rocked laterally in the notches 22. The outer ends of the card-selecting bars 20 terminate in finger pieces 25.

The twenty-six card-selecting bars 20 are identified by the letters of the alphabet and, as shown at 26, the same is printed on the face of the holder 7 with one letter thereof above each finger piece 25. In some instances, it might be desirable to form these letters directly on the finger pieces 25. It is important to note that when the cards 13 are in their extreme left hand position, there is one of the card-selecting bars 20 located under each letter of the lower alphabet 15, with sufficient clearance to be raised, just to the left of the respective fingers 17. (See Fig. 2). For instance, with respect to the first card 13 in the holder 7, the card-selecting bars 20, identified by the letters "K. N. V.", are located, the former directly under the letter "K" in the bottom alphabet marked on said card, the intermediate one point to the right of the letter "N" in the intermediate alphabet, and the latter two points to the right of the letter "V" in the upper alphabet. It will thus be seen that the first step of movement of the first card 13 to the right will bring the letter "N" in the intermediate alphabet directly over the correspondingly identified card-selecting bar 20, and the second step of movement of said card will bring the letter "V" in the upper alphabet directly over the correspondingly identified card-selecting bar. Hereinafter, the card-selecting bars 20, when referred to individually, will be identified by the letters of the alphabet which they represent.

As an example as to the operation of the apparatus in selecting a predetermined card from the mass of cards 13, let us say that "K. N. Vaughan's" card is wanted. The operation will be to pull out the card-selecting bar "K". This action will, of course, raise said bar as the same is moved over the cam bars 19. When the bar "K" is pulled out, the same is rocked laterally toward the right in engagement with the finger or fingers 17 under the lower "K" and thereby impart a step of movement toward the right to the "K. N. Vaughan" card and any other of the cards 13, having the letter "K" as their first identifying character. This bar "K" is then returned to its original position and like movement imparted to the bar "N". The lateral movement of the bar "N" will engage all of the fingers 17 located under the intermediate "N," on the cards that have been moved in the first operation, and im-

part to the respective cards a second step of movement toward the right. This movement of the bar "N" will eliminate all of the cards given the first step of movement and not having the letters "K. N." as their first two identifying characters. Next the bar "V" is operated, in like manner with the bars "K. N.", and its lateral movement will move the "K. N. Vaughan" card a third step to the right. All other cards which were given the second step of movement will be eliminated, unless some thereof should have like identifying characters, to wit: "K. N. V.". It will thus be seen that a predetermined card, irrespective of its position in the mass of cards 13, may be moved out of alinement therewith by manipulating the card-selecting bars 20.

To raise a predetermined card, after the same has been moved horizontally out of alinement with the mass of cards 13, so that the same may be grasped between the fingers and removed from the holder 7, or so that the name or other information, written along the upper edge thereof, may be easily read, there is provided a pair of lifting bars 27. These lifting bars 27 extend transversely under the cards 13, outward of the card-selecting bars 20, and their outer ends are rigidly connected by a hand-bar 28. In the lower longitudinal edge of each lifting bar 27, is formed a pair of cam notches 29, that are like the cam notches 21, into which the cam bars 19 project and support said lifting bars. Normally, the lifting bars 27 are pushed rearward in their lowermost position, so that the lugs 18 may move thereover. The third step of movement of the cards 13 to the right will bring the lugs 18 directly over the lifting bar 27. With one of the cards thus positioned, an outward pull on the hand-bar 28 will cause the lifting bar 27 to move over the cam bars 19, which will lift the same into engagement with the lugs 18. The lifting movement of the bars 27 is such as to raise a predetermined card into a position above the mass of cards 13, as indicated by broken lines in Fig. 2.

A card resetting blade 30 is mounted in the righthand end of the holder 7 and is provided at its ends with trunnions 31 journaled in said holder. The front trunnion 31 is bent laterally to form a finger pin 32. Normally the blade 30 stands upright out of the path of movement of the cards 13. By turning the finger piece 32 to the left, the blade 30 may be brought into engagement with any of the cards 13 out of place, and by a further downward movement of the blade, the said cards will be moved endwise into position.

Referring now to the modification shown in Fig. 5, the card selecting bars 33, only one of which is shown, are mounted for endwise sliding movement in alined apertures 34 in the front and rear members of a holder 7^a with freedom for raising, lowering, and lateral movements. Integral with the bar 33 is a pair of laterally projecting cams 35 which project toward the left, and a pair of depending cams 36 arranged to engage a pair of cam bars 37 secured to the holder 7^a. The foremost cam 36, when the bar 33 is pulled out, engages the inner wall of the front member of the holder 35 as a stop. A light coiled spring 38 is anchored to the inner end of the bar 33 and the rear member of the holder 7^a and yieldingly holds said bar projected, as shown, and below the fingers 17.

On the outer end of the bar 33 is a fingerpiece 40. By pushing the bar 33 inward against the tension of the spring 38, the same will first be raised by the cams 36 moving onto the cam bars 37, and then moved laterally by the cams 35 engaging the left-hand sides of the apertures 34. This lateral movement of the bar 33 will impart a step movement to the cards 13 toward the right. When the bar 33 is released, the spring 38 will return the same to normal position.

In the modification shown in Fig. 6, the cam bars 30, only one of which is shown, are round in cross section, and mounted in apertures 41 formed in the holder 7^b with freedom for endwise and rotary movements. A coiled spring 42 encircling the bar 40 is compressed between the front member of the holder 7^b and a headlike finger piece 43 on the outer end of said bar. Integral with the bar 40 is a pair of radially projecting cam lugs 44 arranged to engage cam bars 45, when the bar 40 is pressed inward, and raise the same. The cam bars 45 are secured to the holder 7^b. Also integral with the bar 40 is a radial projecting cam blade 46. Rotary movement is imparted to the bar 40 by a cam pin 47 secured to the rear member of the holder 7^b and a coöperating cam slot 48 formed in the inner end portion of said bar. Normally the cam blade 46 is below the fingers 17. By pressing the bar 40 inward, against the tension of the spring 42, the same is raised during its initial movement, by the cams 44 moving onto the cam bars 45. A further inward movement of the bar 40 will cause the pin 47 acting in the cam slot 48 to impart a rotary movement to the bar 40. This rotary movement of the bar 40 will carry its cam blade 46 into engagement with the finger 17 and impart a step of movement to the cards 13 toward the right. As soon as the bar 40 is released, the spring 42 will return the same to normal position.

By reference to Fig. 1, it will be noted that the lifting bars 27 work in long vertical notches in the front and rear members

of the holder 7, and are held therein against lateral movement, but with freedom for raising, lowering, and endwise movements. It will also be noted that the partition plates 9 are cut away at the righthand end of the holder 7 to afford working space for the card resetting blade 30.

What I claim is:—

1. The combination with information cards having selective characteristics, of a holder therefor, a plurality of selecting bars mounted in said holder and adapted, when operated, to coöperate with said characteristics and impart steps of endwise movement to said cards.

2. The combination with information cards having selective characteristics, of a holder therefor, a plurality of selecting bars mounted in said holder and adapted, when operated, to coöperate with said characteristics and impart steps of endwise movement to said cards, and means for lifting said cards at the limit of their endwise movement.

3. The combination with information cards having selective characteristics, of a holder therefor, a plurality of selecting bars mounted in said holder and adapted, when operated, to coöperate with said characteristics and impart steps of movement to the cards, said cards not having all of the characteristics of a predetermined card being progressively eliminated as the selecting bars representing the characteristics of said predetermined card are successively operated.

4. The combination with information cards having selective characteristics, of a holder therefor, a plurality of selecting bars mounted in said holder and adapted, when operated, to coöperate with said characteristics and impart steps of movement to the cards, said cards not having all of the characteristics of a predetermined card being progressively eliminated as the selecting bars representing the characteristics of said predetermined card are successively operated, and means independent of said selecting bars for imparting further movement to said predetermined card.

5. The combination with information cards having selective characteristics, of a holder therefor, a plurality of selecting bars mounted in said holder and adapted, when operated, to coöperate with said characteristics and impart steps of movement to the cards, said cards not having all of the characteristics of a predetermined card being progressively eliminated as the selecting bars representing the characteristics of said predetermined card are successively operated, means independent of said selecting bars for imparting further movement to said predetermined card, and means for returning all of the moved cards to their original positions.

6. The combination with information cards, each having a plurality of identifying characters and a plurality of shoulders representing said characters, of a holder for said cards, and a plurality of selecting bars mounted in said holder, each representing one of the identifying characters of the cards and adapted, when operated, to cooperate with said shoulders and impart steps of movement to the cards.

7. The combination with information cards, each having a plurality of identifying characters and a plurality of shoulders representing said characters, of a holder for said cards, and a plurality of selecting bars mounted in said holder, each representing one of the identifying characters of the cards and adapted, when operated, to cooperate with said shoulders and impart steps of endwise movement to the cards.

8. The combination with information cards, each having a plurality of identifying characters, a corresponding number of shoulders representing said characters and lifting lugs, of a holder for said cards, a plurality of selecting bars, each representing one of the identifying characters of the cards and adapted, when operated, to cooperate with said shoulders and impart steps of endwise movement to the cards, and lifting bars operative on said lugs to lift the cards at the limit of their endwise movement.

9. The combination with information cards having selective characteristics, of a holder therefor, and a plurality of selecting bars mounted in said holder for compound endwise and lateral movements and adapted, when operated, to coöperate with said characteristics and impart steps of movement to said cards.

10. The combination with information cards, each having a plurality of identifying characters and a corresponding number of shoulders on their lower edges representing said characters, of a holder for said cards, and a plurality of selecting bars mounted in said holder for compound endwise and lateral movements and extending transversely under said cards, each representing one of the identifying characters of the cards and adapted, when moved endwise, to be lifted into the path of movement of said shoulders and, when moved laterally, to impart a step of endwise movement to the cards.

11. The combination with information cards, each having a plurality of identifying characters and a corresponding number of shoulders on their lower edges representing said characters, of a holder for said cards, a plurality of selecting bars mounted

in said holder for compound endwise and lateral movements and extending transversely under said cards, each representing one of the identifying characters of the cards and adapted, when moved endwise, to be lifted into the path of movement of said shoulders and, when moved laterally, to impart a step of endwise movement to the cards, and a lifting bar extending transversely under the cards and coöperating therewith at the limit of their endwise movement to raise the same.

In testimony whereof I affix my signature in presence of two witnesses.

SHERMAN L. GILFILLAN.

Witnesses:
CLARA DEMAREST,
HARRY D. KILGORE.