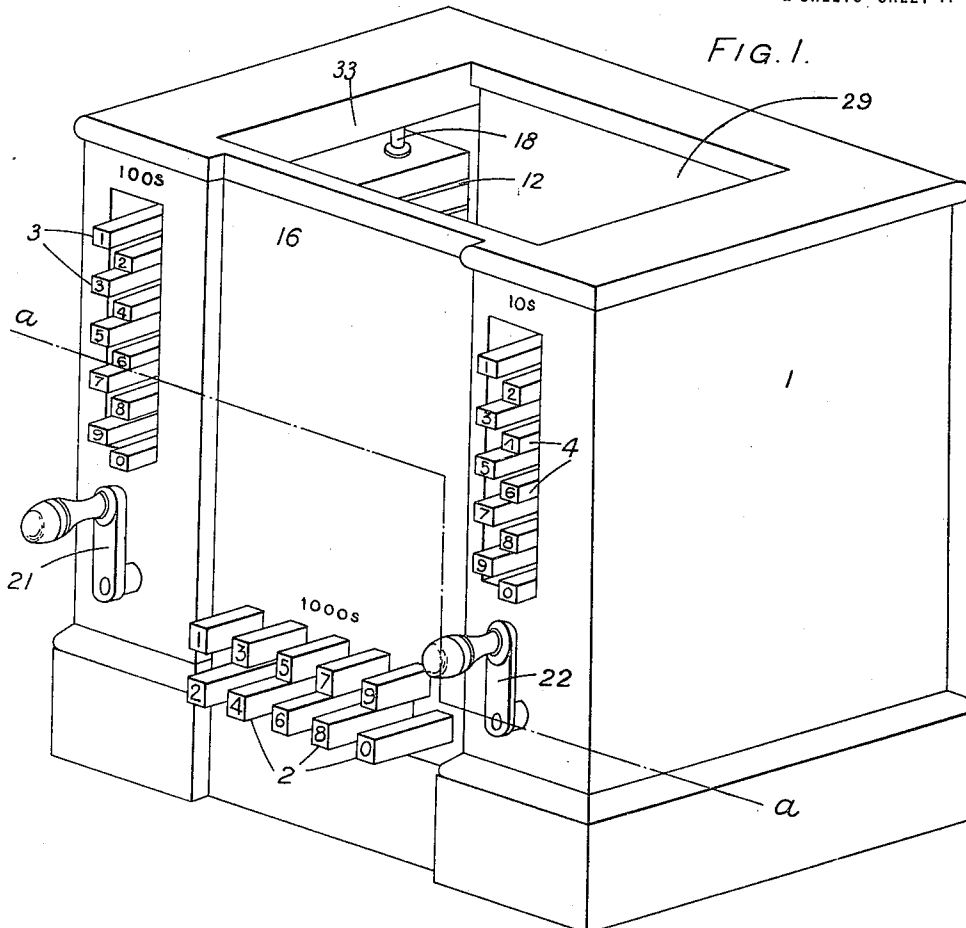
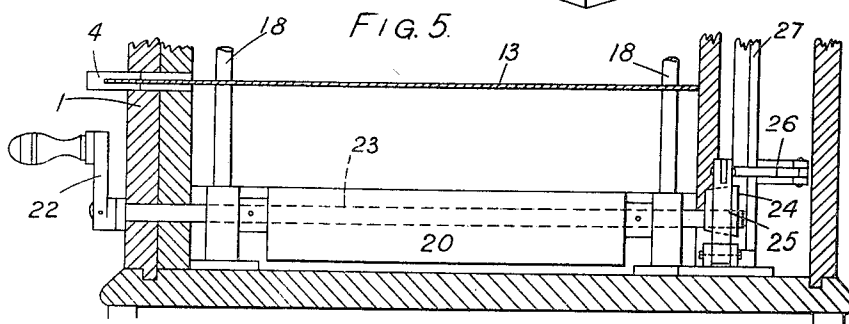
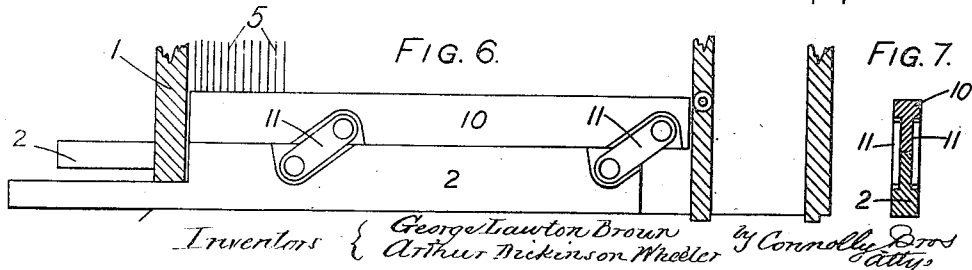


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APPLICATION FILED JUNE 10, 1918.

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2 SHEETS—SHEET 1.



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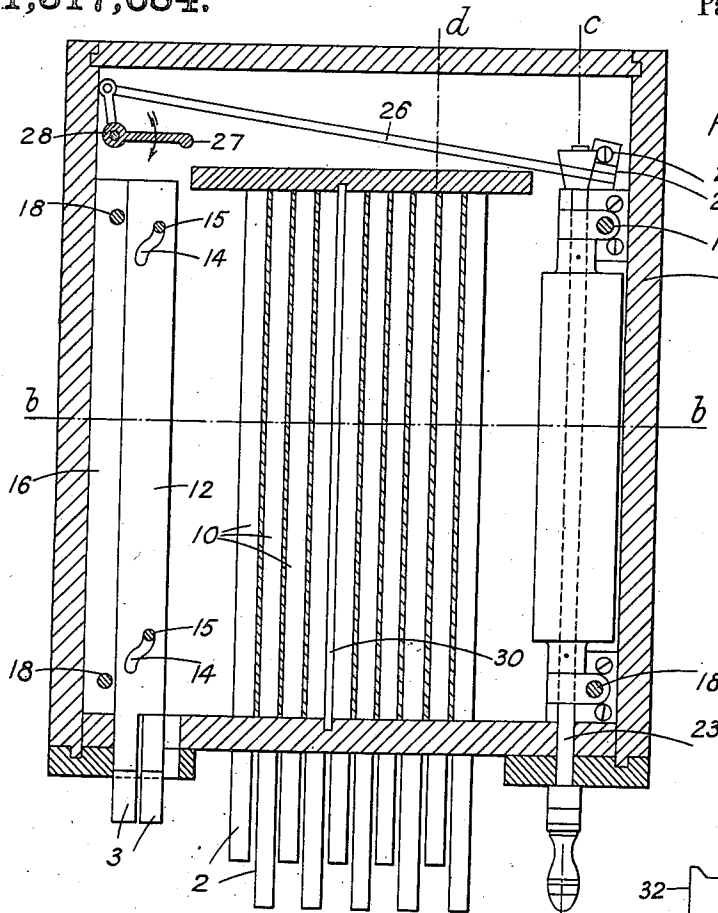


FIG. 2.

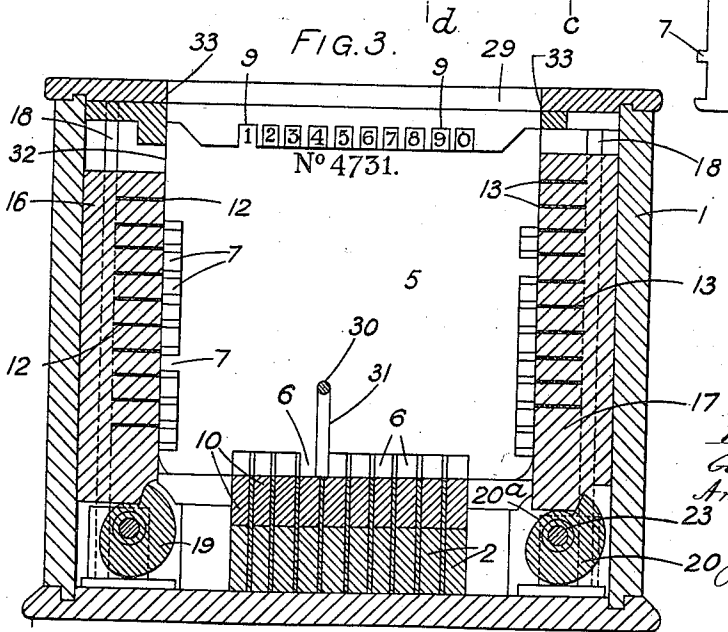


FIG. 3.

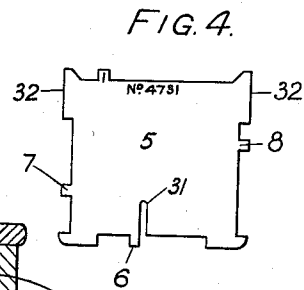


FIG. 4.

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# UNITED STATES PATENT OFFICE.

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## CARD-INDEX AND LIKE FILING APPLIANCE.

1,317,684.

Specification of Letters Patent.

Patented Oct. 7, 1919.

Application filed June 10, 1918. Serial No. 239,139.

*To all whom it may concern:*

Be it known that we, GEORGE LAWTON BROWN and ARTHUR DICKINSON WHEELER, subjects of the King of Great Britain, residing at Leicester, in the county of Leicester, England, have invented certain new and useful Improvements in or Relating to Card-Index and like Filing Appliances, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to card-index and like filing appliances and has for its object improvements therein whereby the use of such appliances is greatly facilitated as will be hereinafter described.

The invention comprises, in appliances of the kind referred to, means for mechanically selecting any individual card from the series irrespective of its position therein.

While the invention may be used where only a comparatively small number of cards or the like are required in the series, it is particularly suitable and of service in cases where a large number of index cards or the like are employed. For instance in an apparatus where the numbers of different cards run into hundreds or thousands the finding of any individual card required often takes considerable time especially if the cards are not kept in an understood order in the series, and even if they are so arranged there is always the possibility of a card being replaced in its wrong position in which event the next time such card is wanted the series must be gone through card by card until the particular one required is found.

In an apparatus or appliance equipped with mechanical selecting means according to this invention the cards or the like may be inserted in any order, it being quite immaterial as far as selection is concerned what positions in the series the cards occupy. This feature is one of advantage in a case where the series comprises a large number of cards as it enables the cards to be put back without taking time to find any particular place for same, and such irregular replacement is in no way prejudicial to

the reselection of such cards at any future time.

The invention consists of the combination in use with a series of cards or the like having tabs or projections in different positions thereon, of a holder for said cards or the like provided with corresponding operable devices for engaging or coöperating with said tabs or projections, individual cards being selected from the series by operating those devices which correspond with the tabs or projections on the card or cards required.

For instance, the cards may have, in different positions along one, two or more of their edges, tabs or projections to be engaged by members correspondingly positioned in the holder and operable by suitable means such as keys, stops or the like. The positions of the tabs on the certain card required being known, such card may be at once found and selected from the remainder of the series by manipulating the devices which agree with the tabs, and as it is a feature of the invention that the said members will engage the tabs of the card they concern no matter what position the card occupies in the series, the required card will be selected.

According to one convenient arrangement the cards have tabs on one side representing units, tabs on another side representing tens, and tabs on another side representing hundreds. Obviously the various tabs will occupy different positions on the different cards except where some of the figures, units, tens or hundreds are the same on different cards, it being understood that there is a definite position on the cards for each unit, ten and hundred. The holder has for each hundred a device to engage the corresponding tabs, and for each of the tens a device is also provided to engage the ten tabs. The cards may also have tabs representing thousands and these may be engaged by corresponding devices in the holder as will be hereinafter described.

In further describing the invention, reference will be made to the accompanying drawing wherein there is shown, by way of

example, a practical form of the invention consisting of an appliance adapted for dealing with any number of cards from one up to nine thousand nine hundred and ninety nine.

In the drawing referred to:—

Figure 1 is a perspective view of the holder of the appliance without any cards in position therein.

Fig. 2 is a sectional plan of same taken on the line *a-a* of Fig. 1.

Fig. 3 is a vertical section on the line *b-b* of Fig. 2, some of the cards being shown in position in this view.

Fig. 4 shows one of the cards *per se*.

Fig. 5 is a longitudinal section on the line *c-c* of Fig. 2.

Fig. 6 is a longitudinal section on the line *d-d* of Fig. 2.

Fig. 7 is a sectional detail view herein-after referred to.

Fig. 4 is drawn to a smaller scale than the other figures, and it should be observed that Figs. 1, 2, 5 and 6 as drawn are shorter from back to front than would actually be the case, as it will be obvious that the holder to contain such a large number of cards as previously referred to, will require to be much longer although it will be readily understood that the actual length of the holder from back to front will vary according to the number of cards it is to contain. Throughout the drawings like parts are designated by the same reference characters.

In the concrete example shown, provision is made as previously stated, for nine thousand nine hundred and ninety-nine cards in the series, from which by the mechanical devices provided it is possible to at once select any individual card no matter what the position of such card in the series may be.

The appliance comprises generally a holder 1 equipped with a series of devices 2 for selecting the thousands, a series of devices 3 for selecting the hundreds, and a series of devices 4 for selecting the tens, in association with which devices, other mechanical means are used as will be described.

In combination with the holder 1 there is employed a series of cards 5 (Figs. 3 and 4) each having, on its lower edge a tab 6 occupying a certain position corresponding to the thousands number of the card, on one of its side edges a tab 7 corresponding to the hundreds, on its other side edge a tab 8, corresponding to the tens, and on its upper edge a tab 9 corresponding to the units.

It will be understood that throughout the whole series of cards the tabs 6, 7, 8 and 9 occupy certain definite positions on each card corresponding to the number or marking of the card. For instance different units, tens, hundreds and thousands tabs will occupy different positions on different cards, but the tabs on different cards corresponding

to the same units, tens, hundreds and thousands will occupy the same or corresponding positions on the different cards. Thus on the different cards the tabs corresponding to the same thousands, hundreds, tens or units will be situated in alinement with each other.

As shown in Fig. 3, the various tabs on the different cards are positioned so that when the cards are arranged face to face in vertical disposition in the holder (as indicated in Fig. 6) they become situated side by side and separated from each other, *i. e.*, with a space between them. The selection is carried out by first manipulating one of the devices 2 which by engagement with the bottom tabs 6 raises all the cards having the same thousands number, after which by means of one of the devices 3 which engages the side tabs 7, all the cards among these previously selected having the same hundreds number are again raised. Then similarly by means of one of the devices 4 which engages the side tabs 8 all the cards among those previously selected having the same tens number are again raised, and it is then an easy matter to pick out by means of the units tab 9 on the upper edge the individual card required, seeing that there are only ten cards to select from.

It should be stated that normally the whole series of cards is level on the top and it is preferred that the selection of the cards should be performed by raising same in the manner described as thus the unit tabs 9 of the cards required are more definitely and clearly separated from those of the cards not wanted thereby facilitating from the ten cards raised, the visual selection of the particular unit required.

Thus it will be seen that by a series of selections or division and sub-division the desired card is easily found.

The devices for coöperating with the tabs for the purpose aforesaid may take any suitable and convenient form such as toggle links, cams, ramps or the like. According to the example shown in the drawing, the devices for engaging the bottom tabs 6 consists of lifter bars 10 (Figs. 3 and 6) raised to push up the tabs by means of connecting toggle links 11 (Figs. 6 and 7) when the sliding push bar 2 is pushed inward. The devices to engage the side tabs 7 and 8 consist of lifter bars or shelves 12 and 13 (Figs. 2 and 3) which are adapted for both endwise and lateral movement. When the actuating devices 3 and 4 of these shelves are pushed inward, the latter are caused by cam slots 14 therein which engage with stationary pins 15, to move into position underneath the tabs. The shelves 12, 13 and their actuating devices 3 and 4 are arranged in frames 16 and 17 respectively (Fig. 3) slidable up and down upon rods 18 in the holder 1, the

raising of said frames being effected by rotary cams 19 and 20 (Figs. 2, 3 and 4) the rotation of which is brought about by means of handles 21 and 22 respectively. The frames 16 and 17 may move down by gravity or under the influence of a spring.

In the example just described, the devices 10 effect the actual raising of the cards, while the side devices 12 and 13 require to be first moved into position to engage the cards and then actuated by the cams for raising them. For instance suppose from the full complement of cards in the series numbered 1 to 9,999, it is desired to find card number 4537, the selection is carried out as follows. The device 2 corresponding to 4000 is pushed inward the effect of which is that the corresponding lifter bar 10 is raised and lifts all those cards whose tabs 6 occupy the position immediately above said bar. Thus the first selection raises from the series cards numbered 4000 to 4999. The next action is to press inward that device of the series 3 which corresponds to the hundreds in the number required. This brings the corresponding shelf 12 into position immediately underneath those side tabs 7 on the previously raised cards which occupy the definite position corresponding to 500. Then by actuation of the handle 21 the frame 16 is raised thus by means of the shelf engaging the side tabs 7 raising cards numbered 4,500 to 4,599. Next, by means of the device of the series 4 which corresponds to the tens of the number required, the corresponding shelf 13 is brought into position underneath the side tabs 8 on those cards in the lot last raised having such tabs in the 30 position, so that upon rotation of the handle 22 the frame 17 when rising will lift up cards numbered 4,530 to 4,539. Thus there will be ten cards (numbered 4,530 to 4,539) raised above the remainder in the series and by means of the tabs 9 on the upper edge which occupy different positions and bear the units number of the respective cards, it is easy to select the particular card, viz., number 4,537 required and remove same.

It should be here stated, that it is necessary, after the shelf 13 has been brought into position under the tabs 8 of the batch of cards previously raised, to release the shelf 12 from the tabs 7 on the opposite side of the cards before the frame 17 is actuated to raise the cards again. For this purpose the spindle 23 of the cam 20 has upon it another cam 24 (Figs. 2 and 5) which, when the handle 22 is actuated operates a lever 25, connecting rod 26 and a member 27, the latter being mounted to turn on a vertical axis 28. This member 27 when moved in the direction of the arrow (Fig. 2) presses back to its original position in the frame 16 any shelf 12 which has been moved inward. To

allow this action to take place before the frame 17 commences to rise, the cam 20 has a concentric portion 20<sup>a</sup> (Fig. 3) which allows the cam 24 to act before the operative part of cam 20 comes under the frame. The holder 1, is of box-like form with an opening 29 in the top, Figs. 1 and 3, to receive the cards 5 in vertical disposition, the latter being kept in position while stationary and during the rising movement by suitable guides such as one or more horizontal rods 30 (Fig. 3) fixed in the holder and engaged by corresponding slots 31 (Figs. 3 and 4) in the cards. Conveniently the cards are guided at the bottom by the rod 30 while at the top their side edges 32 make contact with the sides 33 of the opening 29 which sides act as guides. To prevent the cards falling or getting askew or otherwise out of the place when the number used is less than the full complement, a follower may be inserted such as a spring pressed plate (not shown). Or other means may be adopted for the same purpose.

It may be an advantage to form the holder 1 so that the cards are situated normally below the top, but when selected they project above the top, this again facilitating the quick finding of a card by clearly showing the separation of such card from the remainder.

The invention is not to be limited to an appliance where numbered cards are used as by providing the cards with appropriately positioned tabs and the holder with corresponding tab engaging and operating devices, the appliance may be arranged for mechanically selecting individual cards required.

Instead of leaving the final selection of the unit to be performed visually, this selection may be carried out mechanically in a similar manner to the other selections, tabs suitably disposed on the cards and cooperating devices in the holder being provided for this purpose. For instance, when the numbers on the cards run into four figures as in the example illustrated in the drawing, obviously to carry out the whole of the selections mechanically will necessitate tabs and devices for each set of figures. This may be arranged for by providing a set of mechanical devices for the thousands, a set for the hundreds and a set for the tens, as already described, and in addition a set of tabs and corresponding cooperating devices for the units, said additional set being located on one side or the other of the cards and either above or below the hundreds or tens set. For the accommodation of this additional set of tabs and devices, the cards and the holder may be increased in height and the additional mechanical devices may be of similar form to the side devices already described and would be employed subse-

quently to said devices and operable independently thereof. Or in cases where the card numbers do not exceed three figures, the selection may be performed entirely mechanically by three sets of tabs and cooperating devices such as shown, the lower series of tabs 6 and members 10 selecting the hundreds figures, the devices 12 and the tabs 7 selecting the tens, and the devices 13 and tabs 8 selecting the units.

In the arrangements such as just described, it is possible to separate by wholly mechanical means any individual card, but from the foregoing description it will be clear that whether the final selection of the card is performed visually or mechanically, the complete operation of selecting and separating from the mass of cards the individual card required, is carried out while the cards remain in the holder, the division and subdivision being effected by appropriate members of the different sets of mechanical devices provided.

Where, as in the previously described example, the division and sub-division is effected by separately operable sets of devices, the latter are arranged so that one set cannot be used for effecting its selection until the previous set has been operated and such arrangement is obtained by disposing the tabs on the cards so that one set is brought into the plane of its corresponding engaging devices only when the cards have been raised to a certain position. For instance, the tabs 7 are so positioned in relation to the shelves 12 that they cannot be engaged and operated by the latter until the cards have been raised by one of the series of devices 2, and further the tabs 8 are positioned so that until the cards have been raised by one of the shelves 12, the said tabs cannot be engaged and operated by one of the shelves 13.

The tabs 6, 7, 8 and 9, may be cut out with the card so as to be integral therewith in which case they may, if desired, be reinforced by a metallic or other covering. Or the tabs may be attached to the card in which case they may be formed of metal or other material and clip upon the card or be riveted thereto or secured in some other suitable manner.

Suitable means (not shown) may be furnished to prevent the cards when raised from raising by frictional contact the adjacent cards, such means consisting of partitions, wires or springs which prevent facial contact or by pressure or friction prevent accidental lifting.

What we claim then is:

1. A card-index or like filing appliance comprising, a series of cards having tabs in different positions on the edges thereof, a holder of box-like form having an opening to receive the cards in vertical disposition

therein, operable devices in said holder for engaging with the tabs on the bottom edges of the cards to mechanically raise required cards in the series, devices adapted to be engaged with the tabs on the side edges of the cards, and means to operate said last-mentioned devices for the purpose of further raising some of the cards previously raised.

2. A card-index or like filing appliance comprising, a series of cards having tabs in different positions on the edges thereof, a holder of box-like form having an opening to receive the cards in vertical disposition therein, operable devices in said holder for engaging with the tabs on the bottom edges of the cards to mechanically raise required cards in the series, devices to be engaged with the tabs on the side edges of the cards and means to operate said last mentioned devices for the purpose of further raising some of the cards previously raised and indicia on the tabs on the upper edges of the cards whereby the final selection of the required cards may be made visually.

3. A card-index or like filing appliance comprising, a series of cards having tabs in different positions on the edges thereof, a holder of box-like form having an opening to receive the cards in vertical disposition therein, lifter bars for engaging the tabs on the bottom edges of the cards to selectively raise the latter, shelves movable into engagement with the tabs on the sides of the cards, and means to move said shelves bodily to further selectively raise the cards, substantially as described.

4. A card-index or like filing appliance comprising, a series of cards having tabs in different positions on the edges thereof, a holder of box-like form having an opening to receive the cards in vertical disposition therein, lifter bars for engaging the tabs on the bottom edges of the cards to selectively raise the latter, shelves movable into engagement with the tabs on one side of the cards, means to move said shelves bodily to further selectively raise some of the previously raised cards, shelves movable into engagement with the tabs on the opposite side of the cards and means to disconnect the first mentioned shelves from the cards and move the other shelves bodily to further selectively raise some of the previously raised cards, substantially as described.

5. A card-index or like filing appliance comprising, a series of cards having tabs in different positions on the edges thereof, a holder of box-like form having an opening to receive the cards in vertical disposition therein, lifter bars adapted to engage the tabs on the bottom edges of the cards and operable to selectively raise said cards, a movable frame, shelves in said frame adapted to be moved into engagement with the tabs on one side of the cards, and means

operable to move said frame whereby the cards engaged by the shelves are selectively raised, substantially as described.

5 6. A card-index or like filing appliance comprising, a series of cards having tabs in different positions on the edges thereof, a holder of box-like form having an opening to receive the cards in vertical disposition therein, lifter bars adapted to engage the  
10 tabs on the bottom edges of the cards and operable to selectively raise said cards, a movable frame on each side of the series of cards, shelves in said frames adapted to be moved into engagement with the tabs on the  
15 sides of the cards, and means operable to move said frames whereby the cards engaged

by the shelves are selectively raised, substantially as described.

7. A card provided with a tab on its bottom edge corresponding to its thousands 20 figure, a tab on one side edge corresponding to its hundreds number, a tab on the opposite side edge corresponding to its tens number, and a tab on its upper edge corresponding to its units number. 25

In testimony whereof we affix our signatures in presence of two witnesses.

GEORGE LAWTON BROWN.

ARTHUR DICKINSON WHEELER.

Witnesses:

E. N. LEWIS,

GEORGE LESTER.