J. POWERS.

RECORD CARD FEED.

APPLICATION FILED MAR. 13, 1915.

1,312,806.

Patented Aug. 12, 1919.

3 SHEETS—SHEET 1.

Fig. 8.

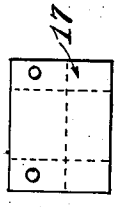


Fig. 10.

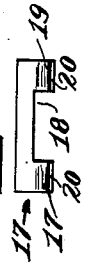


Fig. 12.



Fig. 11.

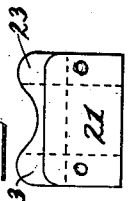


Fig. 9.

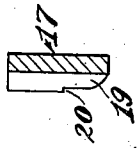


Fig. 13.

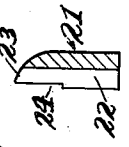
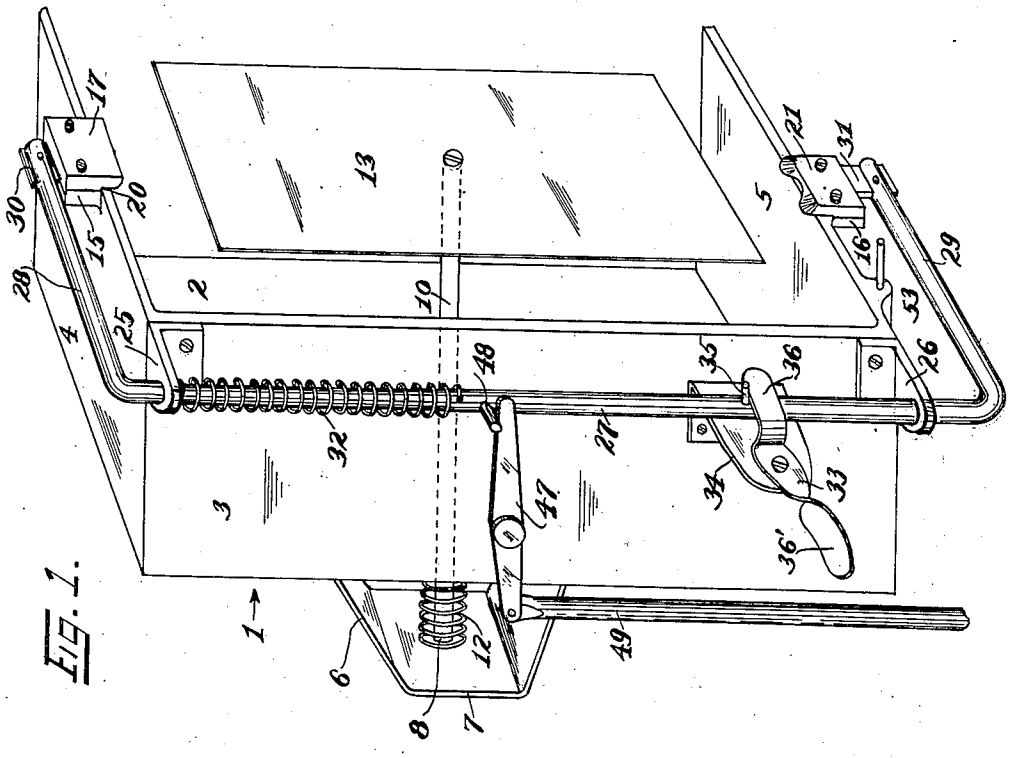


Fig. 1.



Witnesses:

Chas. E. Whiteman.

H. D. Penney

Inventor:

James Powers,

By his Atty, F. H. Richards.

J. POWERS.

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3 SHEETS—SHEET 2.

Fig. 5.

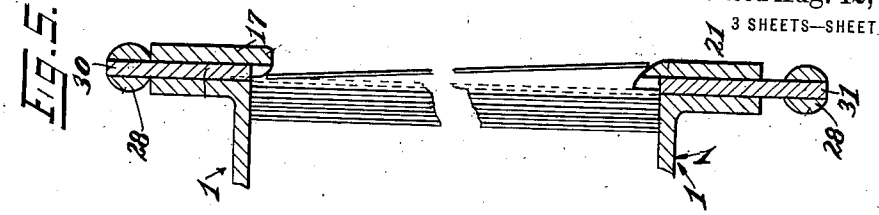


Fig. 4.

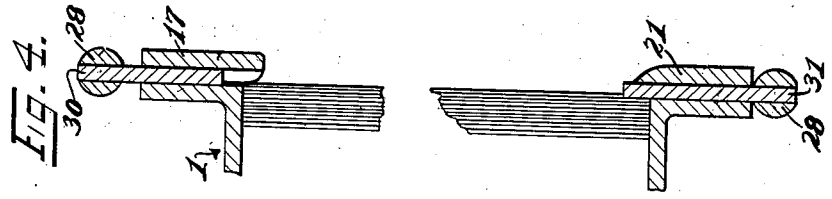


Fig. 6.

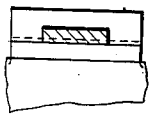


Fig. 3.

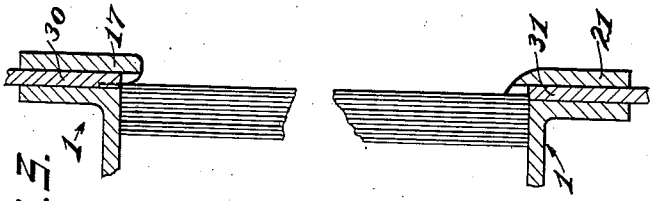


Fig. 7.

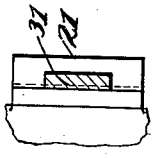
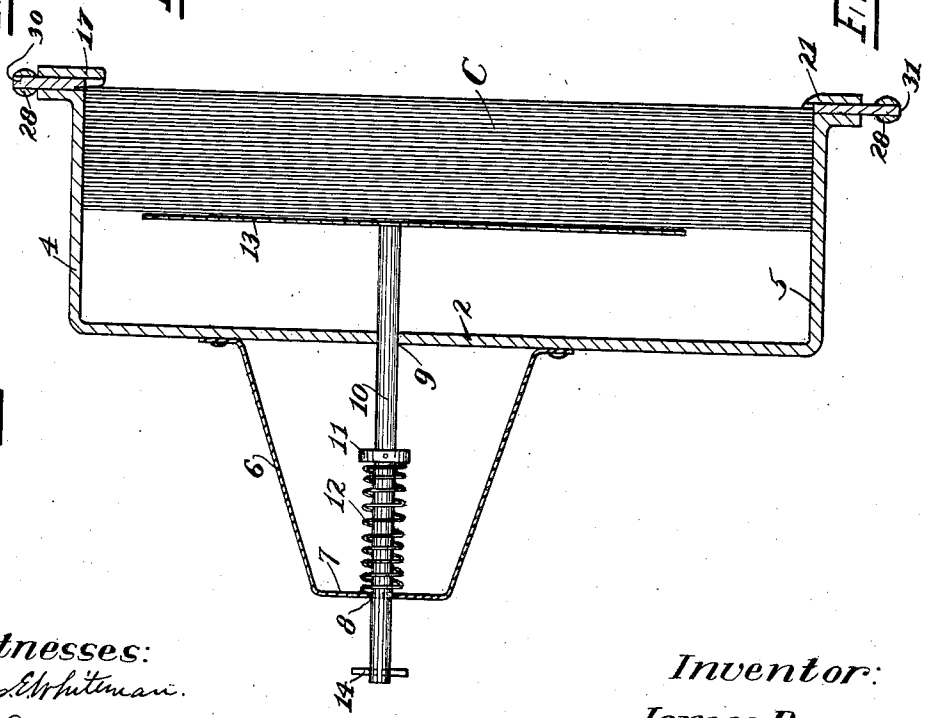


Fig. 2.



Witnesses:

Chas. E. Whittemore.

H. D. Penney

Inventor:

James Powers,

By his Atty:

Jno. H. Richards

J. POWERS.

RECORD CARD FEED.

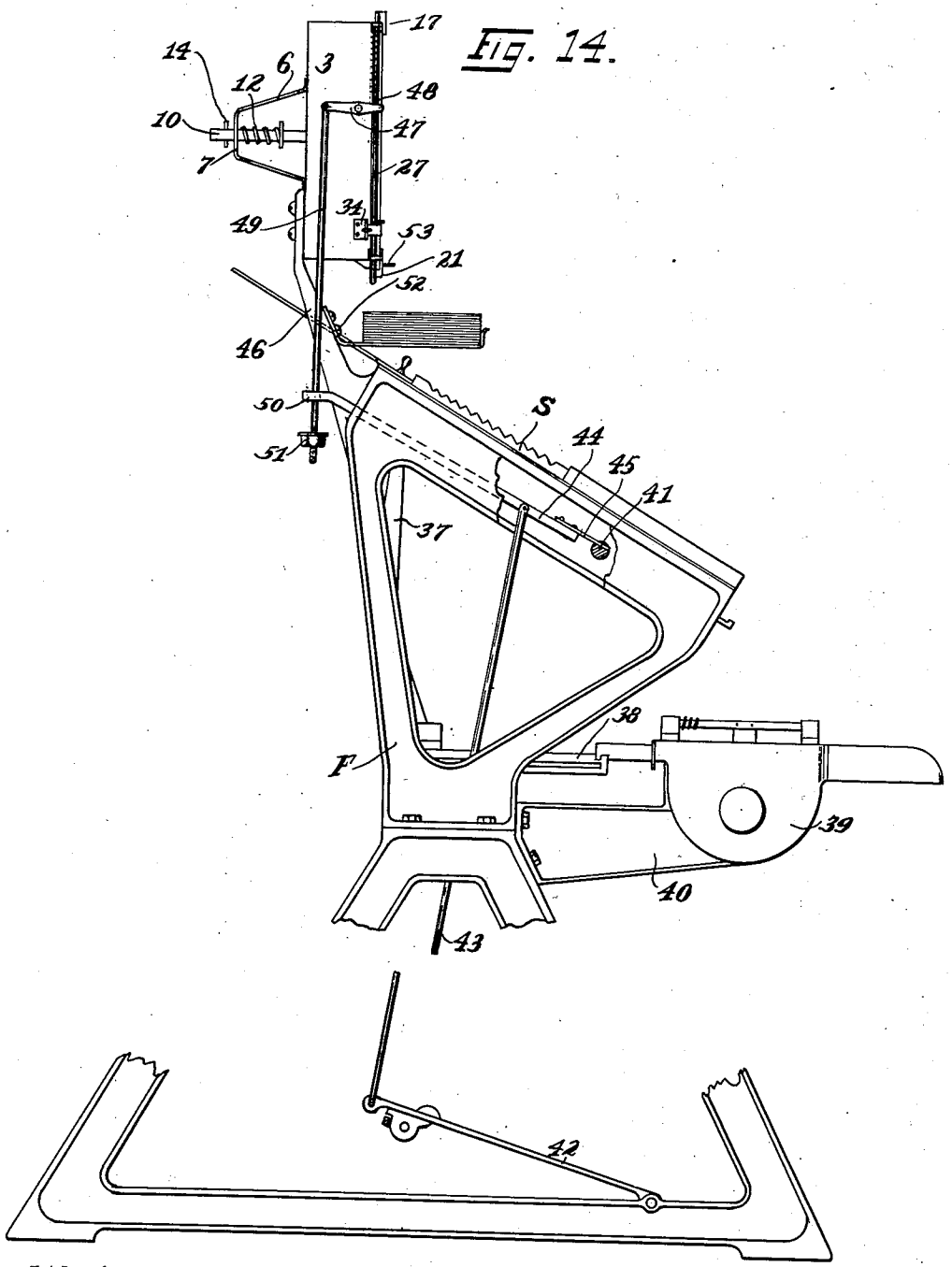
APPLICATION FILED MAR. 13, 1915.

1,312,806.

Patented Aug. 12, 1919.

3 SHEETS—SHEET 3.

Fig. 14.



Witnesses:
Chas. E. Whiteman
H. D. Penney

Inventor:
James Powers,
By his Atty: F. A. Richards

UNITED STATES PATENT OFFICE.

JAMES POWERS, OF NEW YORK, N. Y., ASSIGNOR TO POWERS ACCOUNTING MACHINE COMPANY, OF NEW YORK, N. Y., A CORPORATION OF DELAWARE.

RECORD-CARD FEED.

1,312,806. Specification of Letters Patent. Patented Aug. 12, 1919.

Application filed March 13, 1915. Serial No. 14,284.

To all whom it may concern:

Be it known that I, JAMES POWERS, a citizen of the United States, residing in New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Record-Card Feed, of which the following is a specification.

This invention relates to the general art of feeding cards and more particularly to an apparatus for successively feeding record cards from which data has been taken.

One of the main objects of the present invention is to provide a device for holding record cards in position to be read, and then discharging the record card which has been read, so that the next succeeding record card may be fed into proper position.

Another object of the invention is to provide such a card conveying apparatus whereby the cards will be discharged and tilted into proper position in an orderly pile.

A particular object of the invention is to provide an apparatus for use with card accounting machines by means of which apparatus a card may be maintained in reading position for taking the data for the card accounting machine and by means of which after having taken such data, the resetting of the accounting machine will simultaneously actuate the discharging apparatus so that the card from which data has been taken will be discharged to permit the next succeeding card to be read.

A particular use of the invention is to so combine it with a verifying machine that the resetting of the verifying machine will simultaneously discharge a card and expose the next card to view.

These and other features, capabilities and advantages of the invention will appear from the subjoined detailed description of one specific embodiment thereof illustrated in the accompanying drawings in which—

Figure 1 is a perspective view of a card discharging apparatus.

Fig. 2 is the transverse section of the same.

Figs. 3, 4 and 5 are fragmentary transverse sections showing three successive positions of a card being discharged.

Fig. 6 is a fragmentary top view of the upper guide block.

Fig. 7 is a fragmentary bottom view of the lower guide block.

Fig. 8 is a front elevation of the upper guide block, Fig. 9 is a transverse section of the same, and Fig. 10 is a bottom view of the same.

Fig. 11 is a front elevation of the lower guide block, Fig. 12 is a top plan view of the same, and Fig. 13 a transverse section of the same.

Fig. 14 is a side elevation partly broken away of a verifying machine equipped with the present improvement.

In the embodiment shown, there is provided a casing 1 (Fig. 1) having a rear wall 2, side wall 3, top wall 4 and bottom wall 5 which may be integral with one another as shown. On the rear side of the rear wall 2 there is secured a bracket 6 having a portion 7 parallel with such rear wall 2 and provided with an opening 8 preferably in the center thereof which opening is in alinement with an opening 9 formed in the rear wall 2 and also preferably in the center of such rear wall, in which alined openings a plunger 10 is located to reciprocate, said plunger having a collar 11 fixed thereon and disposed between the rear wall 2 and the portion 7 between which collar and the portion 7 there is strained a coil spring 12 coiled around said plunger 10 and normally maintaining such plunger in a forward position, thereby maintaining in forward position the plate 13 fixed to the front end of the plunger 10 which is disposed in front of the rear wall 2. The plate 13 is disposed in a plane substantially parallel to the rear wall 2. To limit the forward movement of the plunger 10, and also to lock the plunger in position, a pin 14 is secured to the rear end of the plunger extending rearwardly of the plate portion 7.

On the top of the top wall 4 at the middle thereof adjacent its front edge, there is formed a lug 15. Similarly and substantially in alinement with such lug 15 there is formed a lug 16 on the bottom of the bottom wall 5 at the middle thereof and adjacent to its front edge. To the lug 15, there is secured a picker guide block 17 (Figs. 8, 9 and 10) having a picker guideway 18 extending vertically therethrough and forming thereby two arms 19 which are in contact with the lug 15 and through which the securing means are preferably passed. At the rear of these arms as shown in Fig. 10, there are formed recesses 20 one in aline-

ment with the other and of substantially narrow width just sufficient to accommodate the edge of a card.

Extending from the recesses 20, downwardly and forwardly, the surfaces of the arms 19 are preferably rounded as shown in Fig. 9.

To the lug 16, there is secured a similar picker guide block 21 (Figs. 11, 12 and 13) provided with a guideway 22 also thereby forming arms 23 in the rear portion of which there are formed recesses 24 one in alinement with the other and of substantially narrow width to accommodate the edge of a card. The upper portion of the guide block 21 is rounded forwardly extending from its upper front edge in a forward direction as shown in Fig. 13 thereby forming a somewhat knife-shaped edge.

On the outside adjacent to the front upper edge of the side wall 3, there is formed a bearing bracket 25, and on the outside adjacent to the front lower edge of the side wall 3, there is formed a similar bracket 26, which have openings one in alinement with the other to receive the bar 27. The bar 27 is provided with an upper arm 28 and a lower arm 29 both extending substantially at right angles to the bar 27 and in alinement with one another, the free end of the upper arm 28 being provided with a picker 30 to travel in the guideway 18, and the free end of the lower arm 29 being provided with a picker 31 to travel in the guideway 22 of the guide block 21. Thus, it will be seen that any vertical movement of the bar 27 will simultaneously move the pickers 30 and 31. To normally maintain the bar 27 in lower position and also for returning the same to lower position when it has been moved into an upper position, there is provided a coil spring 32 secured at its lower end to the body of the bar 27 and being strained between such point and the bearing bracket 25.

For raising the bar 27 by hand, a lever 33 is provided, being fulcrumed to a supporting bracket 34 secured to the lower portion of the outer side of the side wall 3 adjacent to the path of movement of the bar 27 and having its working arm 36 extending across said bar 27 so as to engage the lower side of a pin 35 fixed to the bar 27 by which engagement, when the power arm 36′ of the lever 33 is depressed, the bar 27 will be raised and with it the pickers 30 and 31.

In the operation of this portion of the apparatus, a plurality of record cards C will be positioned between the plate 13 and the arms 19 and 23 of the guide blocks 17 and 21 respectively, (Fig. 2). In this position of the cards, the foremost card will be disposed in the path of movement of the pickers 30 and 31, that is in the recesses 20 and 24 of the guide blocks 17 and 21 respectively. Thus, when the power arm 36′ of the lever 33 is depressed, the raising of the arm 27 will raise such foremost card with the pickers 30 and 31. The distance so raised is predetermined so that the lower edge of the raised card will rise above the upper edge of the arms 23 of the guide block 21, (Fig. 4), and thereupon the force of the spring 12 tending to force the cards forward will push such foremost card above and beyond the arms 23 as shown in Fig. 5.

In the embodiment shown in Fig. 14, the feed card apparatus illustrated is particularly adapted for use with a card verifying machine which is there shown operatively connected with such card feed apparatus. The card verifying machine illustrated is of the type described in my patent application, Serial No. 869,540, filed October 31, 1914, and comprises a main frame F having in its upper portion a keyboard comprising a series of key slides 8 connected by levers 37 with verifying slides 38 which slides 38 are adapted to slide in the box 39 to coöperate with a card placed in such box, the box 39 being supported on an extension 40 secured to the front portion of the frame F.

After a card has been verified, the key slides S will be reset which is accomplished by rocking the key restoring shaft 41 by means of the treadle 42 which is pivoted at one end to the bottom of the frame F and connected at its other end by the link 43 with a bar 44 fixed to the lever 45 of the shaft 41.

At the upper end of the keyboard portion of the main frame F, there is provided a bracket 46 extending upwardly, to the upper portion of which the casing 1 of the card feed apparatus is fixed, such bracket 46 being secured to the rear wall 2 of such casing. In the present instance, for reciprocating the bar 27, simultaneously with the actuation of the shaft 41 when restoring key slides S, a lever 47 is fulcrumed to the side wall 3 of the casing 1, having one of its arms extending across the bar 27 and under the pin 48 fixed to said bar 27, the other end of the lever 47 being pivotally connected to the upper end of the rod 49. The rod 49 at its lower portion passes through an opening formed in the rear extension 50 of the bar 44, the lower end of such rod 49 being provided with a thumb-nut 51 against which the extension 50 strikes when the bar 44 is depressed due to the depression of the treadle 42, and thereby actuates the lever 47 to raise the bar 27 in the same manner as does the lever 33 already described.

For receiving the cards as they are discharged from the casing 1, there is provided a bracket or receptacle 52 extending under and forwardly of the casing 1, said bracket

52 being secured in any suitable manner to the bracket 46.

In order that the cards when being discharged will tumble over into proper position, there is provided a pin 53 extending forwardly from the lower wall 5 of the casing 1, such pin being in the present instance disposed a little to one side of the side wall 3. Thus, when a card C is discharged, that portion of it which is disposed above the pin 53 will strike the same upon being released and rock over the same into proper position, in the present instance, swinging both edgewise and also flatwise so that the card received on said bracket 52 will have its lower edge extending perpendicular to the planes of the cards held in said casing 1.

The position of said pin is determined according to the direction into which the card is to be tilted.

It is obvious that various changes and modifications may be made to the details of construction without departing from the general spirit of the invention.

I claim:

1. In a device of the character described, the combination of a casing open at the front and one side and adapted to hold cards therein; abutment members disposed at opposite edges of the open front of said casing; a plate adapted to press against said cards and having its edges disposed remote from the walls of said casing to facilitate the insertion and removal of cards; yieldable means for pressing said plate against the cards and the cards against the abutments; and means for releasing the cards from the abutments one at a time.

2. In a device of the character described, the combination of a casing adapted to hold cards therein and having an open front; abutment members at said open front provided with abutment faces, and with guideways just to the rear of said faces; means for yieldably pressing cards against said abutment faces; a picker slidably disposed in each of said guideways; and means for reciprocating said pickers in synchronism.

3. In a device of the character described, the combination of a casing adapted to hold cards therein and having an open front; abutment members at said open front provided with abutment faces, and with guideways just to the rear of said faces; means for yieldably pressing cards against said abutment faces; a picker slidably disposed in each of said guideways; means for reciprocating said pickers in synchronism; bearing-brackets disposed one above the other at the side of said casing; a picker-operating bar vertically slidable in said bracket-bearings and provided with horizontal arms carrying said pickers; and means for reciprocating said bar.

4. In a device for the character described, the combination of a casing having an open front; abutment members disposed at opposite edges of said open front; a bracket on the outer face of the rear wall of said casing; a plunger rod passed through said rear wall and said bracket; a shoulder carried on said rod between said rear wall and said bracket; a spring compressed between said shoulder and said bracket; and a plate carried on the inner end of said rod.

5. In a device of the character described, the combination of a casing having an open front; means for discharging cards one at a time forwardly from said open front; and a horizontally disposed basket open at the top and ends to facilitate the insertion and removal of cards, and disposed lower than, and forward of the open front of the casing.

6. In a device of the character described, the combination of a casing having an open front; means for discharging cards one at a time forwardly from said open front; a horizontally disposed basket open at the top and disposed lower than, and forward of the open front of the casing; and a tilting means disposed at the lower part of said open front for causing both an edgewise and flatwise swinging of the card in its fall from the casing to the basket.

7. In a device of the character described, the combination of a casing having an open front; means for discharging cards one at a time forwardly from said open front; a horizontally disposed basket open at the top and disposed lower than, and forward of the open front of the casing; and a tilting pin disposed at the lower edge of said open front for causing both on edgewise and a flatwise swinging of the card in its fall from the basket.

8. In a device of the character described, the combination of a casing having an open front and adapted to contain cards therein disposed in vertical planes; means for discharging cards one at a time forwardly from said open front; a horizontally disposed basket open at the top and disposed lower than, and forward of said open front; and a tilting pin fixed at one end of the lower edge of said open front and disposed perpendicularly to said vertical planes for causing both an edgewise and a flatwise swinging out of the card in its fall from the casing to the basket.

9. In a device of the character described, the combination of a casing open at the front and side and adapted to hold cards therein substantially in vertical planes; abutment members at said open front and having abutment faces engaging the upper and lower edges of the cards respectively, and provided with vertically disposed guideways, just to the rear of said abutment faces; a bracket on the outer face of the rear wall of the casing and having its cen-

tral portion spaced from said rear wall; a plunger rod passed through said rear wall and said central portion, a collar on said plunger rod between said rear wall and central portion; a spring disposed on said rod and compressed between said collar and said central part; a plate on said rod and adapted to press upon said cards; bearing brackets disposed one above the other on the side wall of said casing; a picker operating bar vertically slidable in said bearing brackets and provided with horizontal arms; a picker carried on each arm and slidable in said guideways respectively; means for reciprocating said bar; a horizontally disposed basket open at the top and ends, and disposed lower than, and forward of the open front of the casing; and a tilting pin fixed at one end of the lower edge of said open front and disposed perpendicularly to said vertical planes for causing both an edgewise and a flatwise swinging of the card in its fall from the casing to the basket.

10. A device of the character described having a casing adapted to contain cards, a discharging member comprising a vertically reciprocating picker, a guide block at the front of said casing, an abutting member on said guide block, said guide block being provided with a guideway to permit the passage of said picker, there also being on either side of said guideway a recess to accommodate the thickness of a card, advancing means for normally maintaining said cards in an advanced position so that one card is exposed and disposed in said recesses which card is in the path of movement of said picker, and means for actuating said picker to raise said exposed card above said abutting member in which position the advancing means will force said exposed card beyond said abutting member and advance the remaining cards so that the next succeeding card will be advanced into exposed position..

11. A device of the character described having a casing adapted to contain cards, a discharging member comprising two vertically reciprocating pickers spaced apart to accommodate a card between them, abutting members at the lower and upper ends of said casing, advancing means for normally maintaining said card in an advanced position against said abutting members so that one card will be exposed and disposed between said pickers, arms on which said pickers are secured, a bar connecting said two arms, and means for raising said bar so that both arms will be raised simultaneously and thereby the exposed card raised above said lower abutting member in which position the advancing means will force said exposed card beyond said lower abutting member to permit the same to drop down and advance the remaining cards so that the next succeeding card will be advanced into exposed position.

12. A device of the character described having a casing adapted to contain cards, a discharging member comprising two vertically reciprocating pickers spaced apart to accommodate a card between them, abutting members at the lower and upper ends of said casing, advancing means for normally maintaining said cards in an advanced position against said abutting members so that one card will be exposed and disposed between said pickers, arms on which said pickers are secured, a bar connecting said two arms, and means for raising said bar, said means comprising a pin on said bar, a lever fulcrumed to said casing, one arm of which extends across and under said pin so that the depression of the other arm of said lever will raise said bar and therewith said pickers.

13. A device of the character described having a casing adapted to contain cards, a discharging member comprising two vertically reciprocating pickers spaced apart to accommodate a card between them, abutting members at the lower and upper ends of said casing, advancing means for normally maintaining said cards in an advanced position against said abutting members so that one card will be exposed and disposed between said pickers, arms on which said pickers are secured, a bar connecting said two arms, and means for raising said bar, said means comprising a pin on said bar, a lever fulcrumed to said casing, one arm of which extends across and under said pin, a treadle, a lever and link connection connecting the other arm of said lever with said treadle so that the depression of said treadle will actuate said pickers.

14. A device of the character described having a casing adapted to contain cards, a discharging member for discharging one card at a time, and a tilting means for receiving the card discharged and tilting it into proper position on a pile, said tilting means comprising a pin disposed at the lower end of said casing against which the card discharged strikes and tilts over the same into proper position.

15. A device of the character described having a casing adapted to contain cards, a discharging member for discharging one card at a time, and a tilting means for receiving the card discharged and tilting it into proper position on a pile, said tilting means comprising a pin disposed at the lower end of said casing against which the card discharged strikes, the position of said pin being determined according to the direction into which the card is to be tilted.

16. A device of the character described having a casing adapted to contain cards, a discharging member for discharging one

card at a time, and a tilting means for receiving the card discharged and tilting it into proper position on a pile, said tilting means comprising a pin disposed at the lower end of said casing and to one side thereof against which the card discharged strikes and tilts over so that its lower end will be substantially perpendicular to the plane of the cards in the casing.

17. A device of the character described having a casing adapted to contain cards, a discharging member for discharging one card at a time, a receptacle in front of and below the lower end of said casing, and a fixed tilting means for receiving the card discharged and tilting it into proper position on a pile in said receptacle.

JAMES POWERS.

Witnesses:
GUSTAV DREWS,
H. D. PENNEY,