March 3, 1936. N. S. WELK 2,032,730

APPARATUS FOR V-GROOVING CARDS

Filed Jan. 6, 1934 3 Sheets-Sheet 1

FIG. 1.

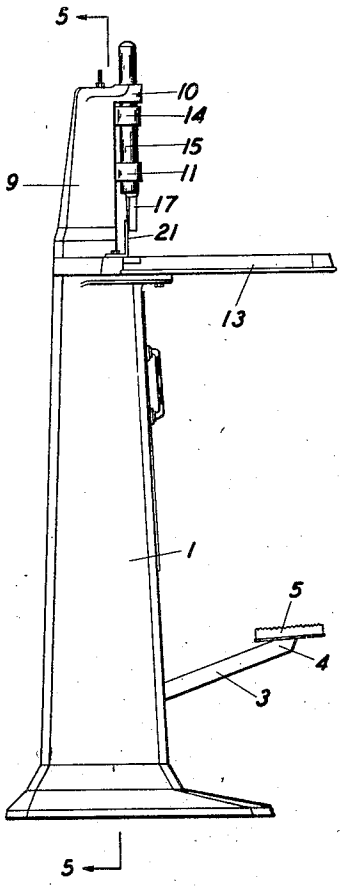


FIG. 2.

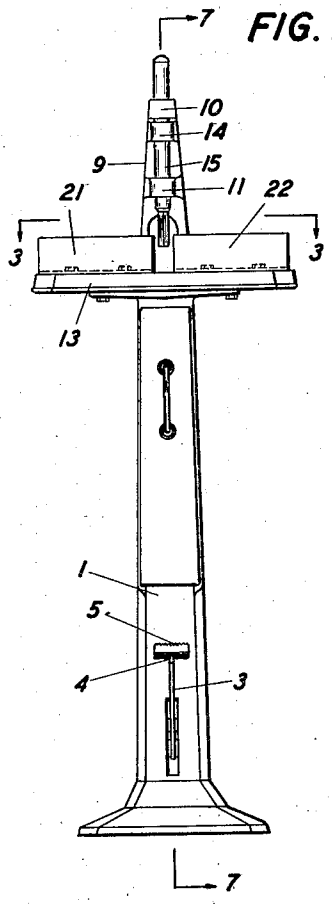
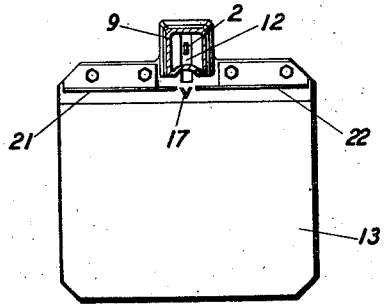


FIG. 3.



INVENTOR
Nelson S. Welk
BY Harvey Lea Dodson
ATTORNEY

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APPARATUS FOR V-GROOVING CARDS

Filed Jan. 6, 1934 3 Sheets-Sheet 2

FIG. 4

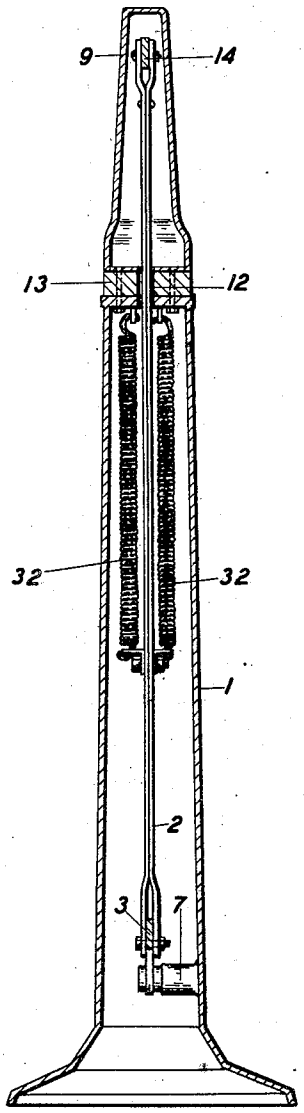


FIG. 5.

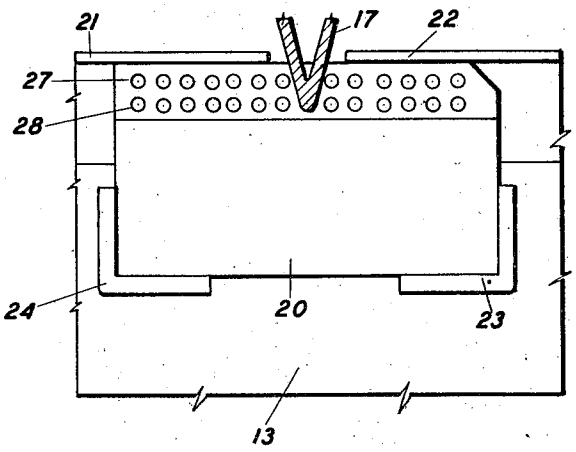
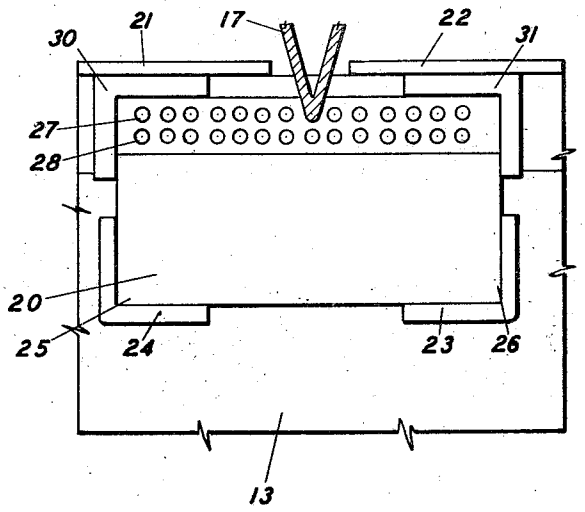


FIG. 6.



INVENTOR
Nelson S. Welk
BY
Harry Lea Dodson
ATTORNEY

March 3, 1936. N. S. WELK 2,032,730

APPARATUS FOR V-GROOVING CARDS

Filed Jan. 6, 1934 3 Sheets-Sheet 3

FIG. 7.

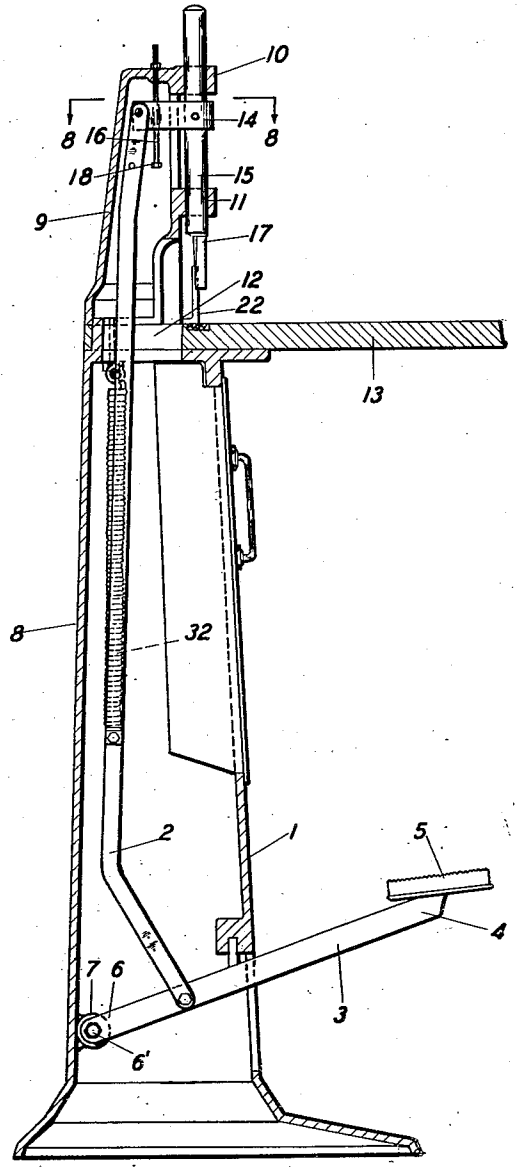


FIG. 8.

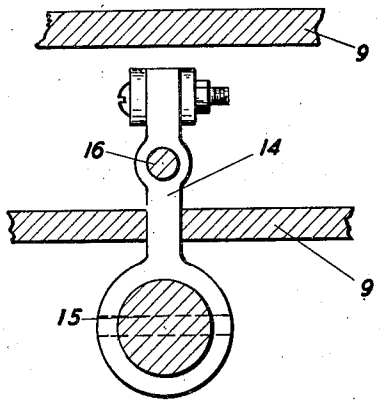


FIG. 9.

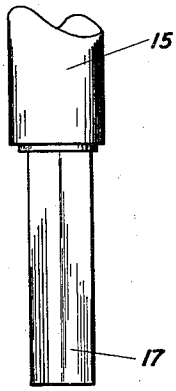


FIG. 10.



INVENTOR
Nelson S. Welk
BY
Harvey Lee Dodson
ATTORNEY

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UNITED STATES PATENT OFFICE

2,032,730

APPARATUS FOR V-GROOVING CARDS

Nelson S. Welk, Athens, Ohio, assignor to The McBee Company, Athens, Ohio, a corporation of Ohio

Application January 6, 1934, Serial No. 705,515

1 Claim. (Cl. 164—48)

My invention relates to that class of cards required for use in the system covered by United States patent to Perkins, No. 1,544,172. As described in that patent it is frequently necessary to cut or groove a V in the edge of all of the cards in a set or classification so that they will not be acted upon by the wire pointer or needle described in said Perkins patent, as it is used to separate desired cards. There are a great many cards in one classification and frequently a large number of V grooves to be cut in them. Now if this work has to be done by hand, it increases the expense of using the system to such an extent as to be almost prohibitive regardless of the great convenience of the Perkins system which has been found to be of great value commercially. This is especially true when a double row of aperatures arranged in vertical relationship. While if guides must be bolted in place to hold the cards for each operation, a great deal of time is lost in making up the machine.

My invention has for its object to provide apparatus by the use of which a large number of cards can be V grooved at one time very expeditiously and also to provide means to insure the cards being held in position for the groove cutter to cut out the desired classification aperture and to repeat the operation as frequently as needed without deviation from the desired designation. A further object is to provide unattached means whereby the operator by the use of said means may hold the cards in position for the grooving operation.

My means of accomplishing the foregoing objects may be more readily understood by having reference to the accompanying drawings which are hereunto annexed and made a part hereof, in which—

Fig. 1 is a side elevation of my improved grooving device;

Fig. 2 is a front view of the same;

Fig. 3 is a cross section taken on the line 3—3 in Fig. 2;

Fig. 4 is a section on the line 5—5 of Fig. 1;

Fig. 5 is a detail view of a part of the device showing the grooving device for grooving cards with double rows of perforations;

Fig. 6 is a similar detail view in plan of the table showing the angular evener members employed to hold the cards in position when there is only a single row of apertures;

Fig. 7 is a section taken on the line 7—7 in Fig. 2;

Fig. 8 is an enlarged section on the line 8—8 in Fig. 7;

Fig. 9 is a detail view of a portion of the plunger; and grooving device; and

Fig. 10 is a cross section of the grooves.

Similar reference numerals refer to similar parts throughout the entire description.

As shown in the drawings, the device comprises a vertical hollow standard 1 through which extends a rod 2, the lower end of which is pivotally secured to a lever 3, the outer end 4 of which has a foot pedal 5. As shown, the other end 6 of the lever 3 is carried by a pin or pivot 6' mounted in a lug 7 formed on the wall 8 of the standard 1. A head 9 is mounted at the top of the standard 1 and has arms 10 and 11 cast or formed thereon. The rod 2 passes through an aperture 12 in the table 13. At the upper end of this rod 2 I mount a member 14 to which is fixedly secured the plunger 15 which slides in openings found in the arms 10 and 11. The member 14 slides upon a vertical guide 16 which is secured to the arm 10. A groove cutter 17 which is V shaped in cross section as clearly seen in Fig. 10, is secured to the plunger 15. At the lower end of the guide 16 is formed an abutment 18. This abutment contacts the lower surface of the member 14 as it moves downwardly. Coil springs 32 are mounted inside of the standard 1 and serve to hold the groove cutter 17 in elevated position and which will return it to that position after it has been depressed to cut the V grooves in the edges of the stack of cards 20.

A suitable table 13 is secured to the top of the standard 1. This table 13 is provided with suittable stationary evener plates 21 and 22 which extend at right angles to the table at the back thereof. These plates 21 and 22 are spaced from each other so as to permit the groove cutter to be depressed as clearly seen in Figs. 3, 5, and 6. As shown in Figs. 5 and 6, I provide a pair of unattached angular evener members 23 and 24 which are adapted to rest loosely upon the table 13 and abut the outer corners 25 and 26 respectively of the stack of cards 20 when pressed into engagement therewith by the hands of the operator. As shown in Fig. 5, the cards are provided with a double row of apertures 27 and 28 which are being grooved while in those shown in Fig. 6 only the apertures in the single row 27 are shown as being grooved. The operation of the device is easily understood in connection with the foregoing description. When the aperture in the inner row are to be grooved as seen in Fig. 5 the stack of cards 20 is placed on the table and the angular evener members 23 and 24 are moved manually until they abut their re-

spective corners. The stack of cards 20 is then pushed inwardly on the table until the edge which is to be V grooved abuts the evener plates 21 and 22 and the perforations which are to be grooved out are in register with the groove cutter 17. By the provision of the loose angular evener members 21 and 22 which are manually operated it is possible for the operator to move all of the cards in the stack 20 to the exact position for the groove cutter 17 to groove the proper apertures. I am in this manner enabled not only to secure exact registration but to groove an entire class of cards at a single operation thus ensuring uniform accuracy throughout the entire class of cards. I also avoid the loss of time where the evener must be bolted in position as no time is lost in making or setting up the machine and its parts. Where only the apertures in the row 27 are to be notched or grooved I provide a second pair of angular evener members 30 and 31, which are of a thickness required to space the cards 20 from the evener boards the correct distance so that the point of the V groove 17 will only reach the apertures in row 27. In this way I adapt the device to both sets of cards. It may be found desirable in some cases to provide corresponding indices on the evener plates so that the operator may at a glance determine when the apertures in the cards are in the correct position to groove or notch out the desired aperture or apertures as the case may require.

Having described my invention what I regard as new and desire to secure by Letters Patent is:

In an apparatus to V groove the edge of a plurality of stacked apertured cards, a standard having a reciprocating plunger which carries a V-shaped groove cutter, a foot treadle to depress said plunger, spring means to return said plunger to normal position, a table, stationary vertical removable evener plates on said table abutting the inner corners of a stack of cards to be grooved, said plates being spaced longitudinally from each other and adapted to position transversely the cards relative to the cutter, said V-shaped cutter adapted to operate on said stacked apertured cards, with said evener plates in position, to form a shallow V-groove therein extending to the margin of the cards, said evener plates being removable to permit positioning of the cards relative to the cutter to form a deep groove as desired, and a pair of entirely unattached evener guides comprising vertical portions joined at right angles to each other adapted to about the outer corners of said cards by manual operation and to be held in place manually against the corners of said stack of cards while the groove is being cut in the edges of the cards.

NELSON S. WELK.