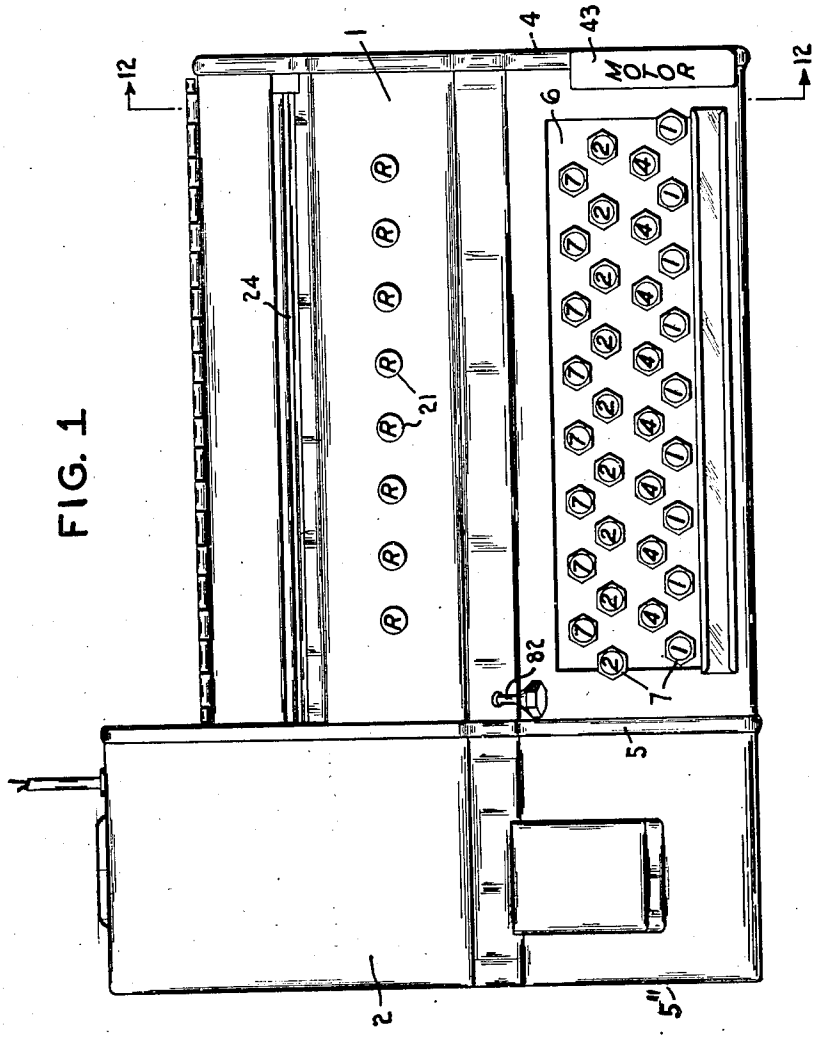
March 31, 1936. N. S. WELK 2,035,777

KEY PUNCH

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FIG. 1



INVENTOR
Nelson S. Welk
BY Harvey, Lea & Dodson
ATTORNEY

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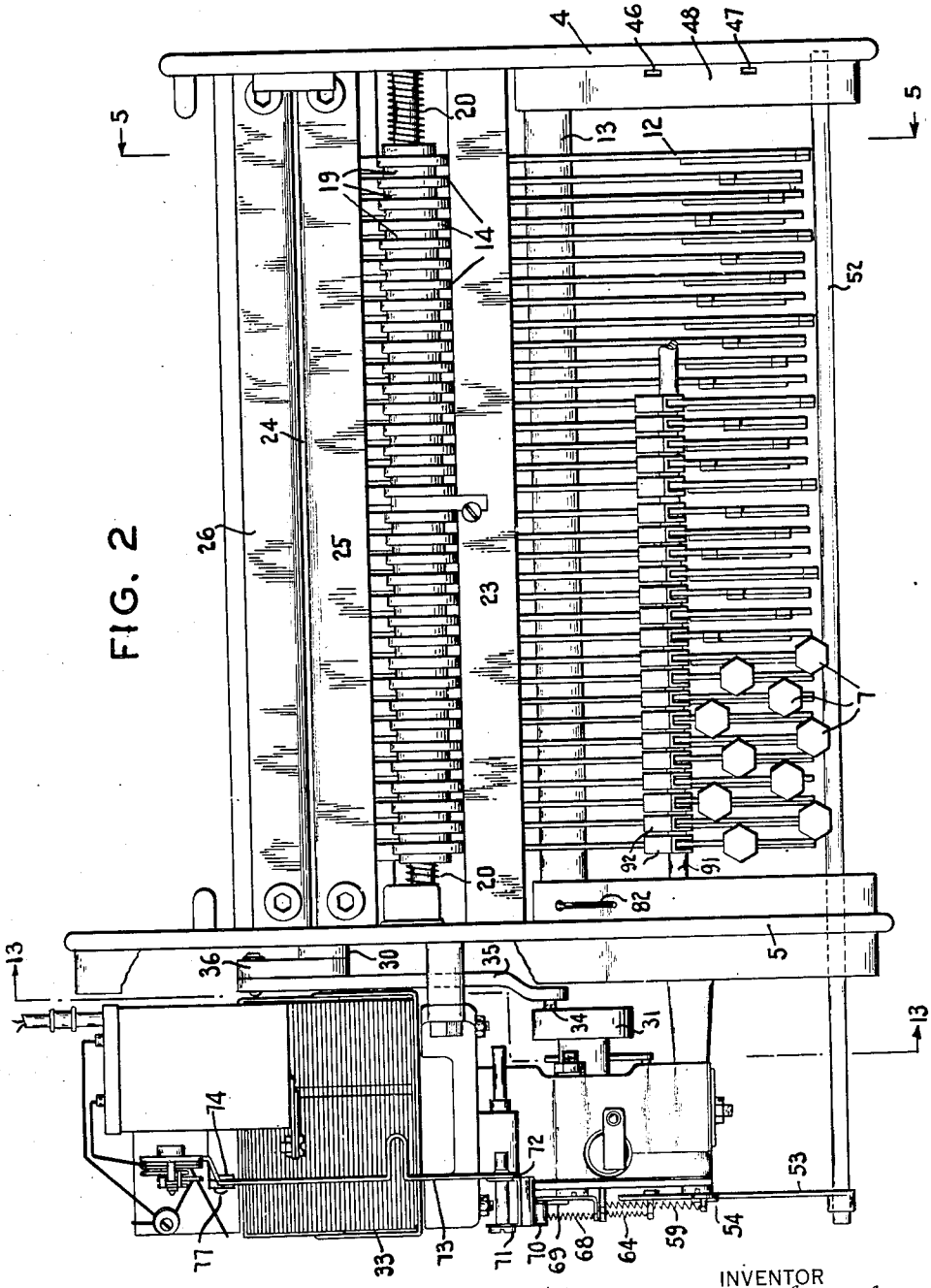


FIG. 2

INVENTOR
Nelson S. Welk
BY
Harvey Lea Dodson
ATTORNEY

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FIG. 3

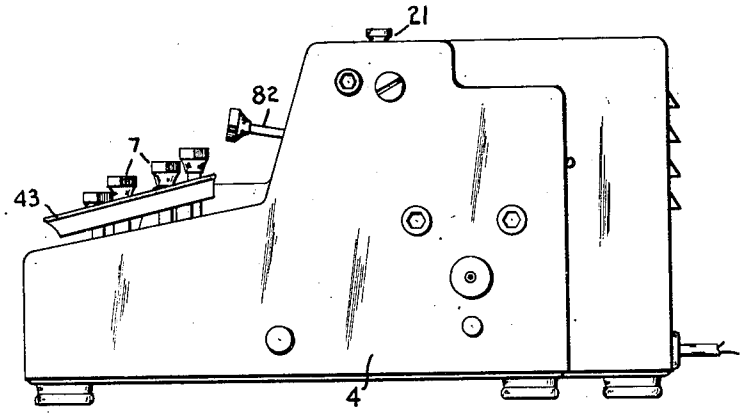
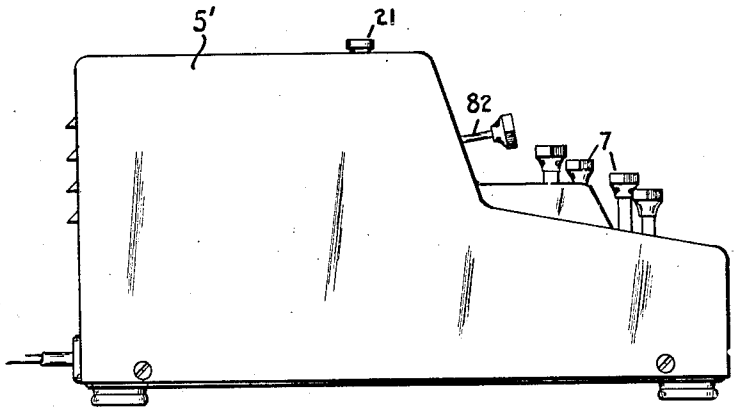


FIG. 4



INVENTOR
Nelson S. Welk
BY
Harry Lea Dodson
ATTORNEY

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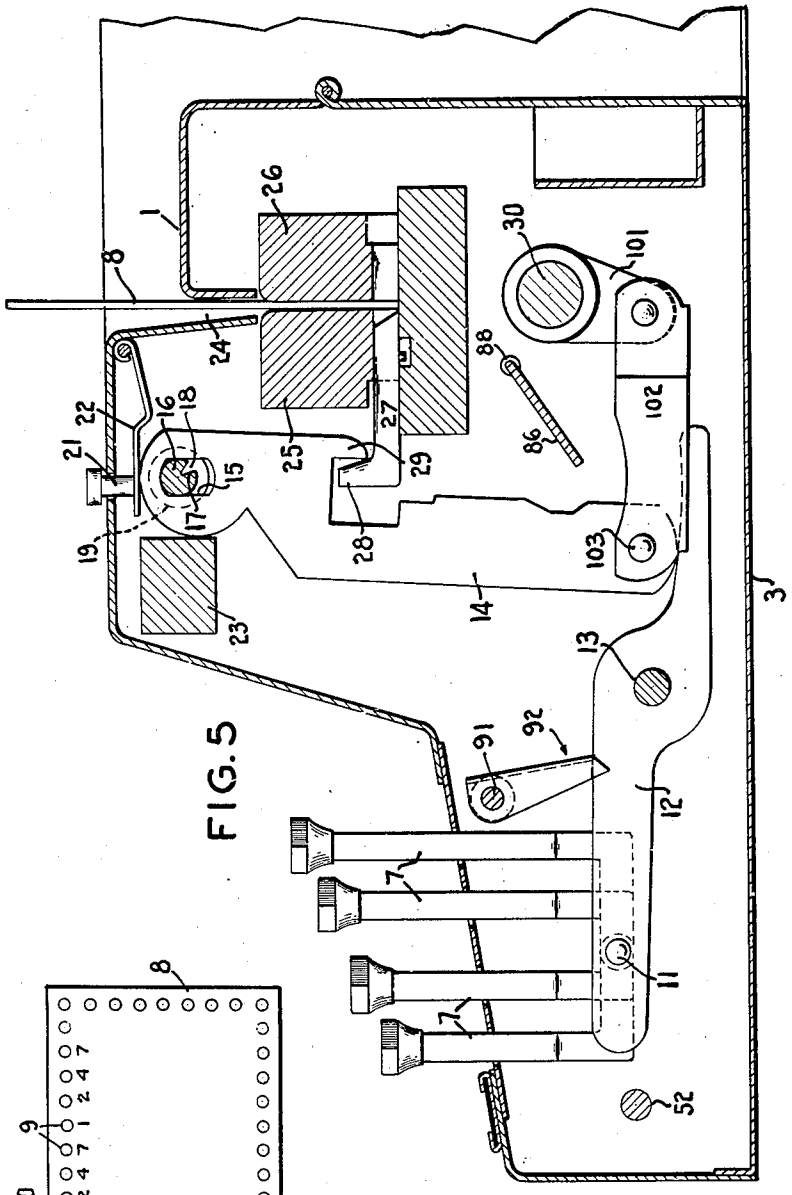


FIG. 5

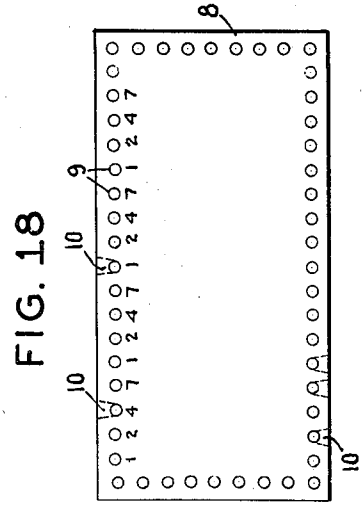


FIG. 18

INVENTOR
Nelson S. Welk
BY
Harry Lee Dodson
ATTORNEY

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FIG. 6

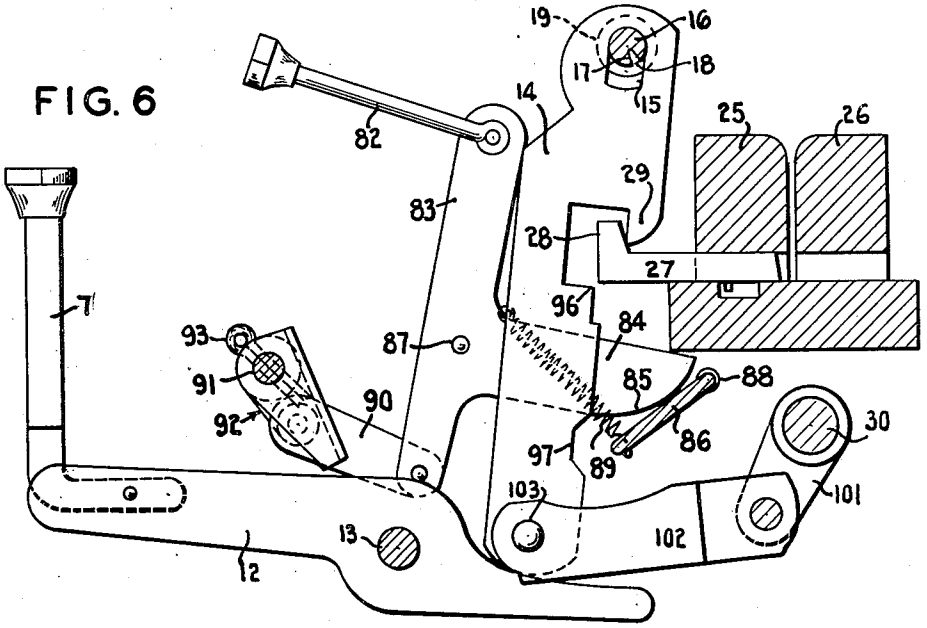
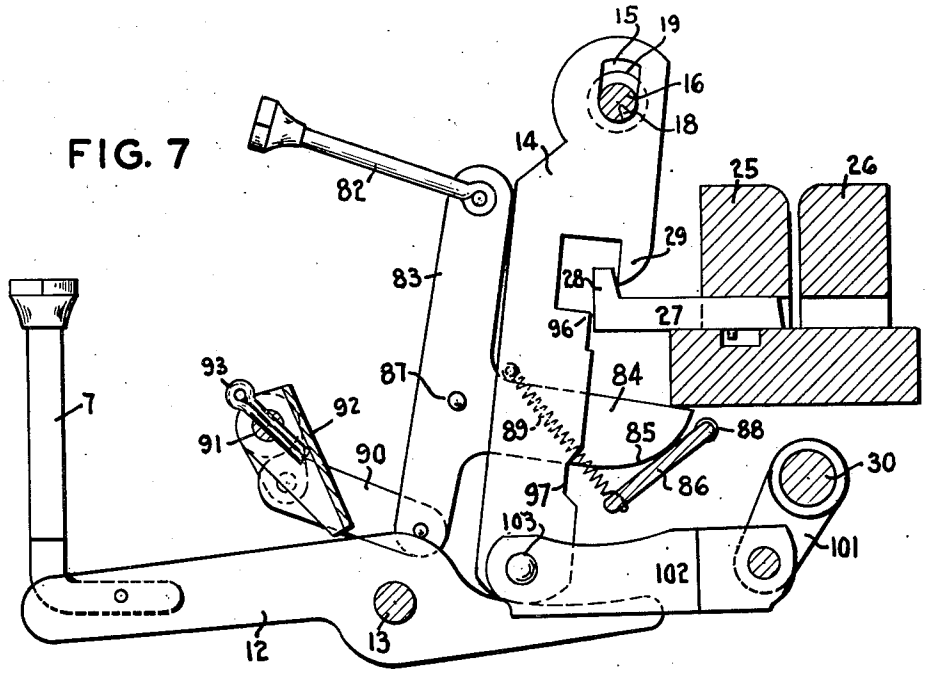


FIG. 7



INVENTOR
Nelson S. Welk
BY
Harvey Lee Dodson
ATTORNEY

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FIG. 8

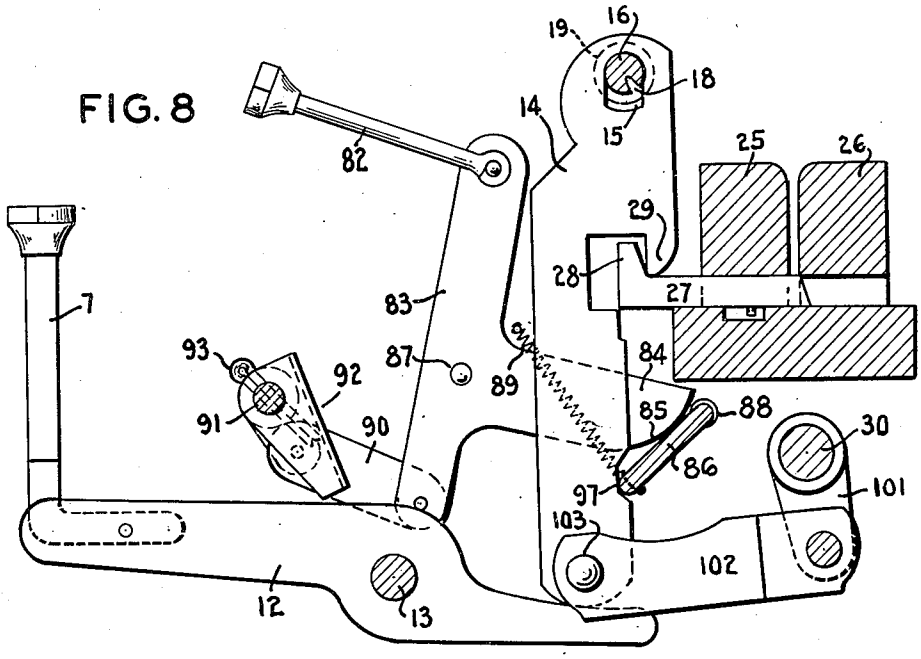
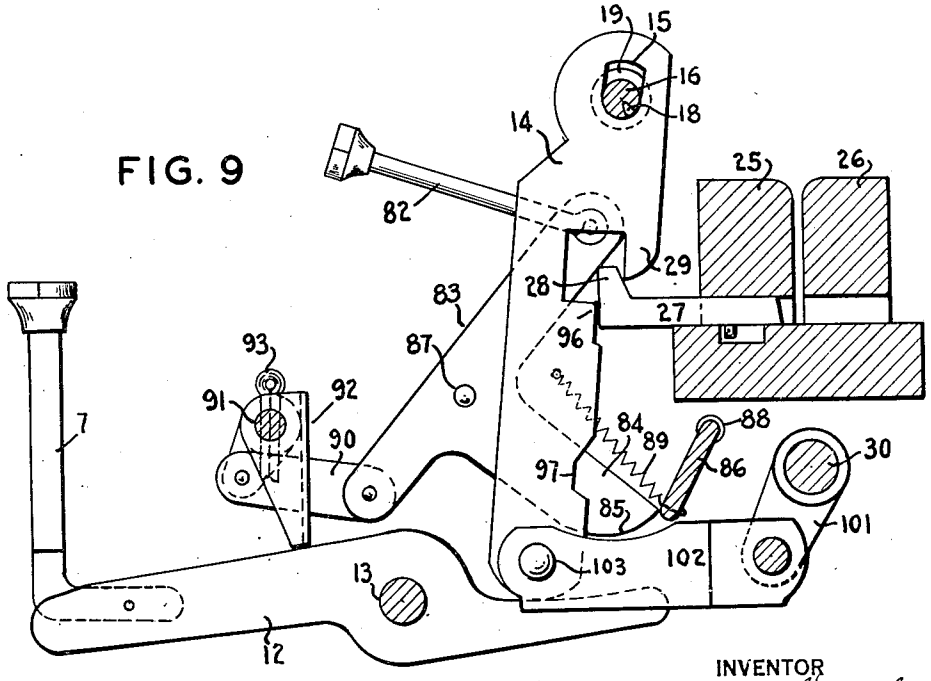


FIG. 9



INVENTOR
Nelson S. Welk
BY
Harvey, Lea & Dodson
ATTORNEY

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FIG. 10

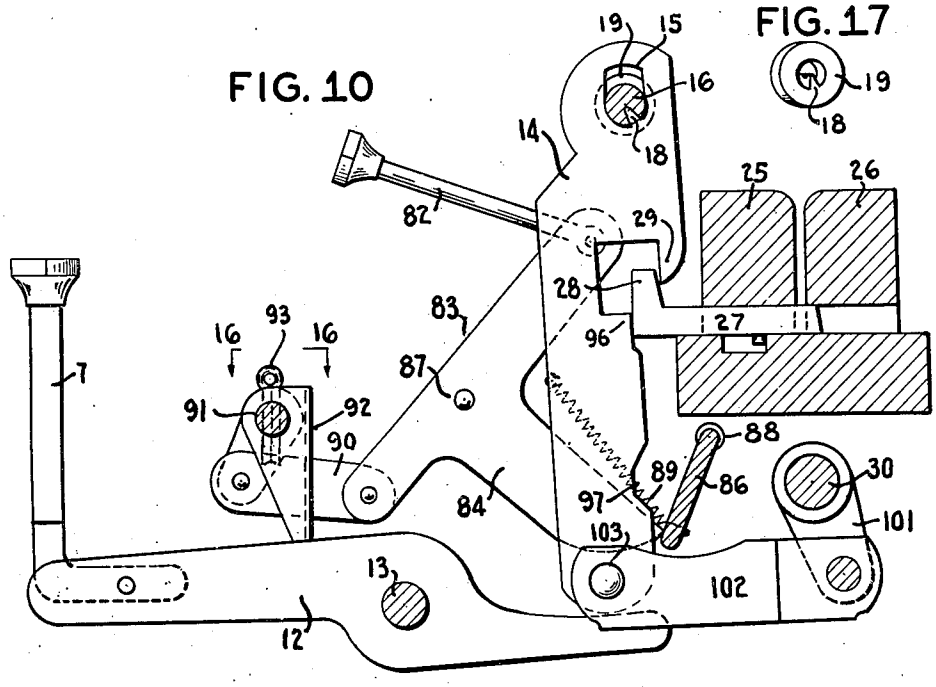


FIG. 17

FIG. 11

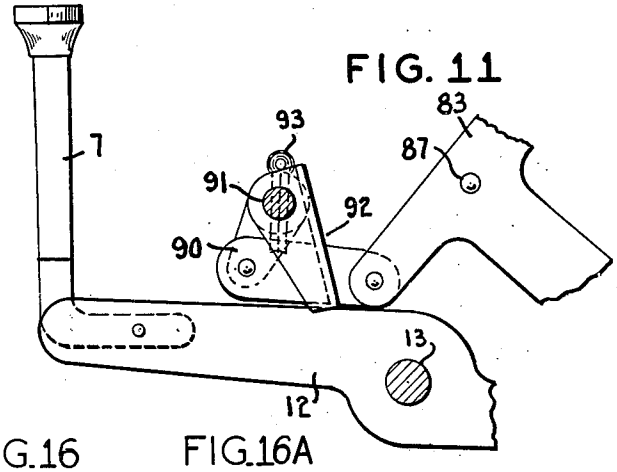


FIG. 16

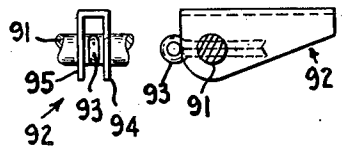


FIG. 16A

INVENTOR
Nelson S. Welk
BY
Harvey Lea Dodson
ATTORNEY

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KEY PUNCH

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FIG. 12

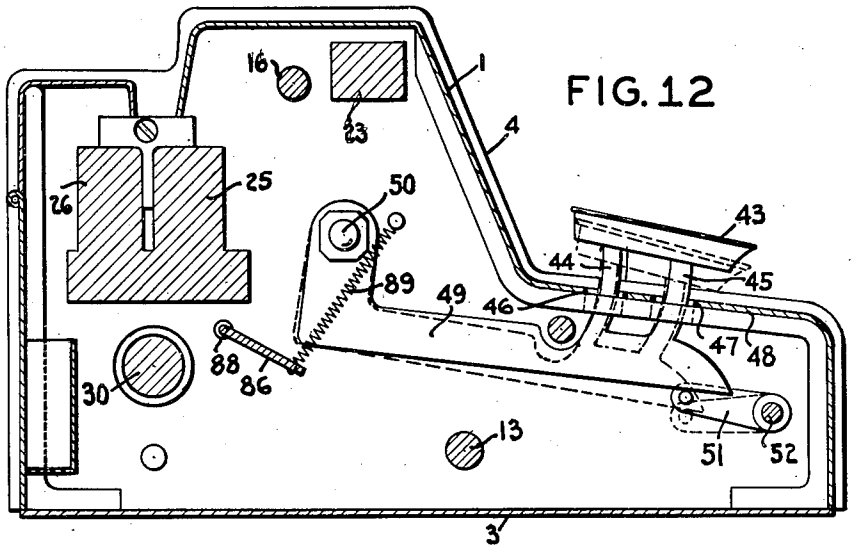
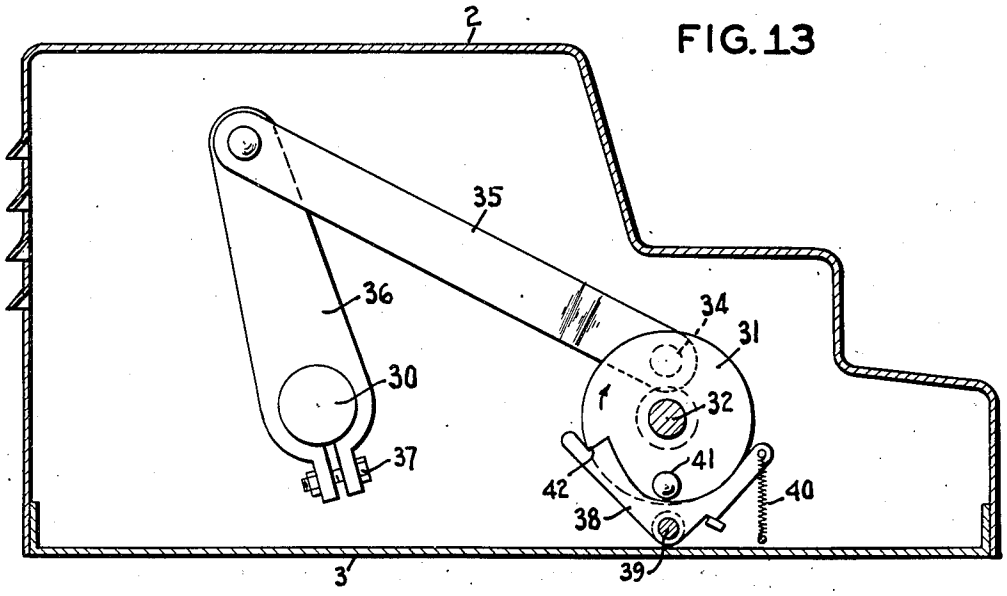


FIG. 13



INVENTOR
Nelson S. Welk
BY
Harvey Lee Dodson
ATTORNEY

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KEY PUNCH

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FIG. 14

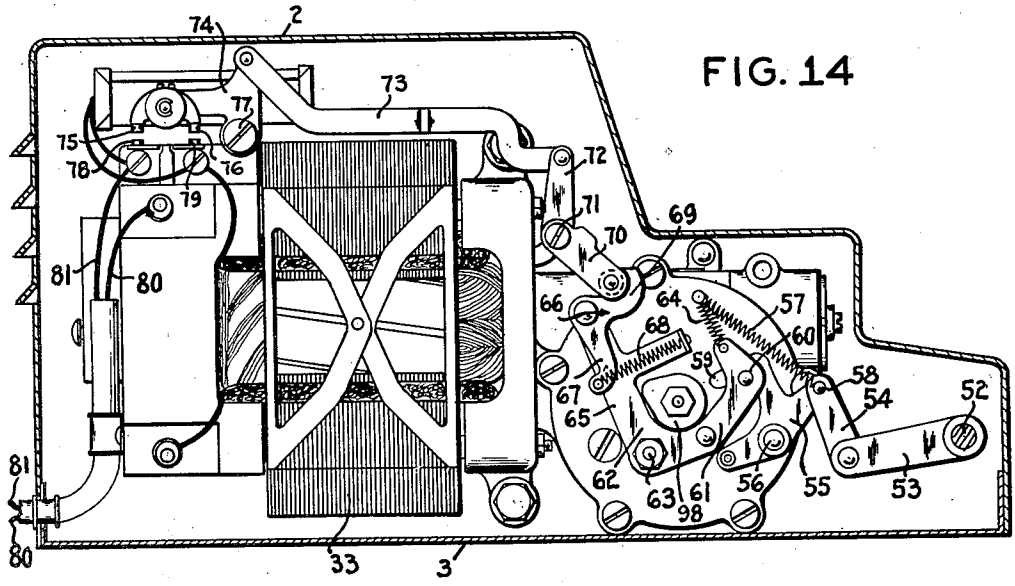
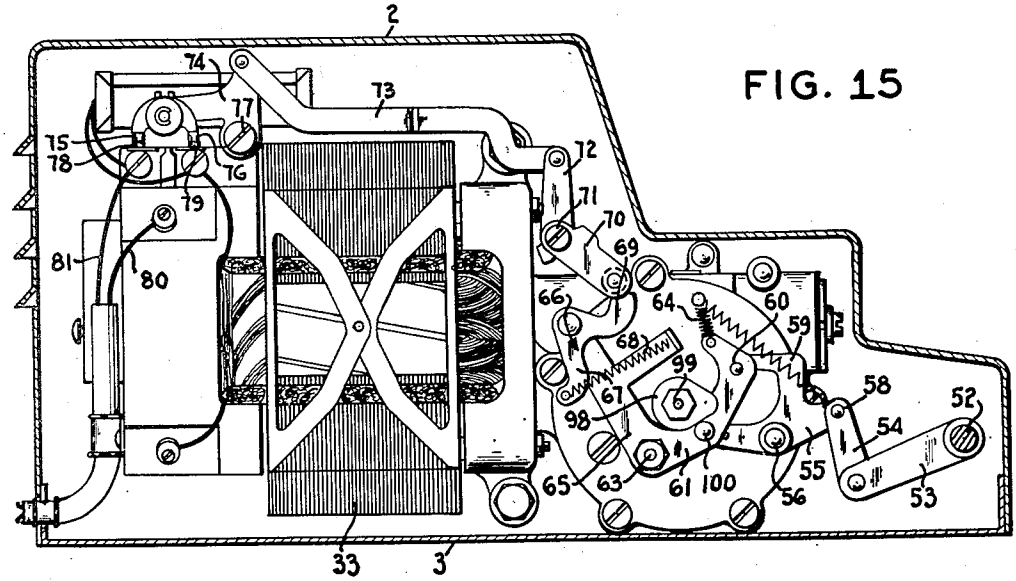


FIG. 15



INVENTOR
Nelson S. Welk
BY
Harvey Lea Dodson
ATTORNEY

Patented Mar. 31, 1936 2,035,777

UNITED STATES PATENT OFFICE

2,035,777

KEY PUNCH

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

Application February 6, 1935, Serial No. 5,182

20 Claims. (Cl. 164—112)

My invention relates to that class of devices which are described in United States Patent No. 1,981,932. That patent describes mechanism designed to punch notches in cards which are described in Perkins Patent No. 1,544,172.

It has been found in practice that if the cards are made of very stiff material or a number of notches are to be simultaneously punched, considerable manual exertion is required by the operator of the device.

The principal object of my invention is to provide electrical driven means to actuate the punches so that regardless of the number of notches to be cut or the thickness of the card, the machine will operate quickly and without effort on the part of the operator other than the depression of the motor bar or key.

A further object of the invention is to provide an improved construction for the repeat mechanism.

A further object of my invention is to simplify the construction of the device.

A further object of my invention is to provide automatic means to lock the keys when they are in their depressed position, thus preventing the vibration from interfering with the continuous 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 are a part of this specification, in which—

Fig. 1 is a top or plan view of the complete machine;

Fig. 2 is a similar view with the top of the casing removed and part of the enclosing wall of the containing case with the electrically actuated mechanism being broken away to show the construction.

Fig. 3 is an end view from the right hand end of the machine as shown in Fig. 1;

Fig. 4 is an end view of the opposite end of the machine as shown in Fig. 1;

Fig. 5 is a vertical sectional view on the line 5—5 in Fig. 2 with certain elements left out for clarity;

Fig. 6 is a fragmentary detailed view partly in section showing the parts in their normal position;

Fig. 7 is a similar view showing one of the keys depressed, the repeat key remaining in the normal position;

Fig. 8 is a similar view with the keys normal, the punch with its adjacent parts in position prior to returning to normal position;

Fig. 9 is a similar view showing the repeat key depressed before the punch operating handle (not shown) is lowered;

Fig. 10 is a similar view showing the repeat key depressed after the punch operating handle is lowered;

Fig. 11 is a fragmentary detailed view of the key locking mechanism with the locking key down;

Fig. 12 is a vertical sectional view on the line 12—12 of Fig. 1;

Fig. 13 is a vertical sectional view on the line 13—13 in Fig. 2 showing operating handle;

Fig. 14 is a detailed view partly in section showing the electrically operated mechanism in normal position;

Fig. 15 is a similar view showing the position of the same parts when actuated;

Fig. 16 is an enlarged detailed view of the locking key;

Fig. 16*a* is a side view of the same;

Fig. 17 is an enlarged detailed view of the washer to space the rocker arms; and

Fig. 18 is front face view of a card.

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

As shown in the drawings, the mechanism is suitably enclosed in a casing consisting of a top or cover portion which is formed in three parts, one of which, indicated by reference numeral 1, encloses the key actuating mechanism; another which is indicated by numeral 2 encloses the electric actuating mechanism. A bottom wall 3 is provided, and end walls 4 and 5, for that part of the cover casing 1, which encloses the key actuated punching mechanism. An end wall 5'' is provided at the end of the cover casing 2 which encloses the electrical actuating mechanism.

The cover portion 1 of the casing is provided with a key board 6 in which are mounted a number of keys 7 which are provided with suitable indicia corresponding to indicia placed on the card 8 to indicate perforations 9 formed therein, as fully described in the said Perkins Patent No. 1,544,172. As described in the said patent, this card may be provided with one or more series of perforations 9 provided with different designations and different series will vary according to the codifications required by the particular business in which the card is to be used.

Spaces 10 are to be cut or notched out by the operation of the punch as hereinafter described in order that the card may be used as described in the said patent. Each of the keys 7, is riveted

at 11, to one of a series of key stem levers 12. These levers are arranged to rock upon a shaft 13 which extends from end to end of the casing and which is suitably secured to the end walls 4 and 5. The inner portion of each of the key stem levers 12 is in register with a rocker arm 14 which is a key punch actuator.

Each one of the rocker arms 14 is provided with a slot 15 adjacent its upper end through which passes a rocker arm shaft 16 upon which the rocker arm 14 swings.

The rocker arms 14 are spaced on the shaft by washers 19 which are mounted intermediate the rocker arms 14. A tongue 18 is formed on the washer and extends into the central opening of the washer. The tongues 18 extend into a V groove 17 formed in the rocker arm shaft 16. These washers 19 serve to hold the rocker arms in spaced relation so that they will register with the key stem levers 12. At each end of the shaft 16 I provide coil springs 20 which cause sufficient frictional engagement to prevent the rocker arms from dropping from the elevated position to which they are raised by the depression of the keys 7, these washers give a large frictional surface for the spring pressure.

Error keys 21 are suitably mounted in the top of the cover casing so that if an error is made, on the part of the operator, as to any group, by depressing key 21 for that group, the keys 7 will be restored to their original position. A hinged lever 22 is provided to support these keys 21 which rest normally on top of rocker arm 14.

A guide 23, for the rocker arms 14, extends longitudinally of the casing and abuts the forward portions of the rocker arms 14 so as to guide the upper end of said rocker arms in their vertical movement.

A slot 24 is formed in the cover portion 1 of the casing for the reception of the cards 8 which are dropped in between the punch guide 25 and the die 26. A plurality of punches 27 are slidably mounted in the guide 25. These punches are provided with upwardly extending lugs 28 each of which is adapted to be engaged by a downwardly depending hook or lug 29 formed on the inner face of the rocker arm 14. A crank shaft 30, which is provided with a plurality of crank arms 101, is suitably mounted in the casing and extends longitudinally thereof. Each one of the arms 101 is pivotally secured to a link 102, the forward end of which is connected by means of a pin or pivot 103 to the lower end of one of the rocker arms 14.

Obviously the oscillation of crank shaft 30 will swing the rocker arms 14 backwards and forwards upon the shaft 16. This shaft 30 is oscillated by means of the mechanism more clearly seen in Figs. 2 and 13 in which is shown a crank disc 31 which is mounted upon a shaft 32 which is suitably rotated by means of a train of gears (not shown) driven by the motor 33. A crank disc 31 is provided with a crank pin 34 which carries a connecting rod 35 pivotally secured to an oscillating lever 36 which is fixedly attached to the crank shaft 30. As shown in Fig. 13 this is accomplished by splitting the end of the lever 36 and providing a bolt and nut 37 for the purpose of securely fastening the lever upon the shaft, though obviously any suitable means may be employed as desired. A brake for the crank disk 31, to prevent the over running of the disk 31, is provided by means of a brake shoe 38 which rocks upon a pin 39. The brake shoe 38 has two arms, one of which is engaged by a coil spring 40 which exerts a tension to move the other arm of the brake shoe 38 in an upward direction causing it to bear against a pin 41 suitably mounted in the crank disk 31. A notch which forms a shoulder 42 on the brake shoe 38 is provided to prevent the complete rotation of the crank disk in the wrong direction. Pin 41 will contact the shoulder 42 and prevent further movement in a counter-clockwise direction.

The means for closing the contacts to cause the electrical motor to rotate the crank disk 31 consists of a motor bar or key 43 which is suitably mounted at one end of the cover casing 1. This key is provided with two arms 44 and 45 which extend through slots 46 and 47 formed in a flange 48 which projects inwardly from the end wall 4. These arms 44 and 45 extend outwardly from a bar 49 which is mounted upon a shaft 50. The forward end of the bar 49 engages an arm 51 secured to a shaft 52. A link 53 is mounted adjacent the other end of the shaft 52 and is connected to an arm 54 which is pivotally secured to a bell crank lever 55. This bell crank lever 55 is mounted upon a pin or pivot 56 which may be suitably secured in the wall of the gear casing. A coil spring 57 is provided to hold the arm 54 normally in the position shown in Fig. 14, it being secured to the pin 58 which attaches the arm 54 to the bell crank lever 55. This bell crank lever has a hook 59 which is adapted to engage an inwardly extending pin 60 carried by one arm 61 of an oscillating lever 62 which is swingingly mounted upon a pin 63. A coil spring 64 is provided to hold this lever 62 normally in the position shown in Fig. 14.

The other arm 65 of the oscillating lever 62 carries a small bell crank lever 66, one arm 67 of which has a coil spring 68 secured to it which operates to hold the bell crank 66 normally in the position shown in Fig. 14. The other arm 69 of the bell crank lever 66 engages a roller shown in dotted lines on a link 70 which is mounted upon a pivot 71. This link is formed integral with an arm 72, the end of which is attached to a connecting link 73.

The contact closing device 74 which carries contacts 75 and 76 is pivoted at 77 so that movement of the connecting link 73 will bring the contact points 75 and 76 in contact with contact points 78 and 79 which are connected to suitable electrical conductors 80 and 81 which lead to a source of electric current supply (not shown). When the motor has rotated the disk sufficiently to bring about the notching of the cards and retraction of the punches, obviously the current must be automatically cut off. I accomplish this by mounting a cam 98 on a shaft 99 carried by a gear (not shown) in the gear casing. This cam 98 is arranged to contact an outwardly extending pin 100 mounted upon the oscillating lever 61 so that its high point will swing said lever 61 on its pivot into a position where the hook 59 will engage the pin 60 which will hold the lever 61 in place until the motor bar or key 43 is again depressed.

It is frequently desirable in devices of this character to punch a large number of cards with the same number of notches and it is desirable that this can be done without restoring the keys to their original position. In order to do this it is necessary to have a repeat mechanism which will insure this result.

My means to enable the punching operation to be repeated is as follows:

The repeat key 82 clearly seen in the sectional

views of the drawings is designed to positively retain the rocker arms 14 in their elevated position thus permitting the notching of any desired number of cards without the necessity of depressing the keys 7 following each operation. This mechanism, which is clearly shown in Figs. 6, 7, 8, 9 and 10, comprises a repeat key link 83, which is provided with an extension 84 which terminates in a cam surface 85, and a flopper 86 which cooperates with a notch 97 formed in the rear edge of each rocker arm 14. This cam surface is convex so as to slide upon the upper surface of the flopper 86. The flopper 86 swings upon extensions 88 formed at each end thereof. These extensions are mounted in the end walls of the casing.

The repeat key link 83 is mounted on a pivot 87 which is permanently attached to the frame. When the repeat key is depressed, the extension cam 84 will move the flopper 86 away from contact with the notch 97 in the rocker arm 14. A coil spring 89 which normally holds it in such engagement, will, due to the pressure of the cam 85, expand to permit the disengagement of the flopper 86 and the notch so that the rocker arm 30 will be free to swing on the shaft 16 as many times as desired.

Practice has shown that when the repeat key is depressed the continuous vibration resulting from the operation of the parts may, despite the friction retaining means 20, cause the rocker arms 14 to be jarred to their lower position. In order to prevent this, I provide a key lock which consists of the following mechanism.

Attached to the lower terminal of repeat key link 83 is a connecting link 90, the movement of which operates to rock a locking dog shaft 91. The operation of repeat key 82 by means of repeat key link 90, rocks the locking dog shaft 91, because the repeat key link 90 is a unit with shaft 91 and moves in unison therewith. Swingingly supported on shaft 91, are a plurality of locking dogs 92, one for each key. This dog is constructed as clearly seen in Fig. 16 of a piece of sheet metal folded upon itself forming wings 94 and 95 which are provided with apertures through which passes the locking dog shaft 91. This permits the wings 94 and 95 to straddle the key stem lever 12. A cotter pin 93 is permanently inserted in the shaft 91 intermediate the wings of each locking dog. The end of the cotter pin 93 engages the inner surface of the key locking dog 92 and supports it, thus preventing its lower end from contacting the key stem lever 12, when the repeat key stem 82 is not depressed, as clearly seen in Figs. 6, 7 and 8.

The operation of the device is as follows:

Having first determined the particular location of the notches to be cut in the card 8, it is placed in an inverted position between punch guide 25 and the die 26 shown in Fig. 6 with the key 7 in the upper position. Oscillation of lever 36 will rock the crank shaft 30 in a counter clockwise direction, and by means of the connecting link 102 will cause the rocker arm 14 mounted on shaft 16 to swing rearwardly clearing punch 27 at the point indicated as 96.

As shown in Fig. 7, key 7 has been depressed. This has rocked key stem lever 12 on the shaft 13 thus elevating the other end of the key stem lever 12 and in turn elevating the rocker arm 14 which may be in register therewith. Part of the movement of the crank shaft 30, together with the rearward motion of rocker arm 14 will push the punch 27 in the same direction because of the engagement of the shoulder 96 with the end of the punch 27. This movement will then cause the punch to notch the card or cards inserted between punch guide 25 and die 26.

During this operation the tension of the coil springs 20 will produce sufficient friction, as before described, to retain the rocker arms 14 in elevated position. A continued rearward motion of the link 102 will cause the rocker arm 14 to assume a position where a notch 97, formed on the rear edge of the rocker arm 14 will be engaged by the flopper 86 which swings rearwardly on its centers 88 causing the rocker arm 14 to resume its extreme lower position as shown in Fig. 8.

When the downwardly depending lug 29 engages the punch 27, it withdraws it from the die to its normal position as shown in Fig. 6 and rocker arm 14 withdraws from contact with flopper 86 which is limited in motion by contact with the repeat key link 83. As shown in Fig. 9 oscillation of the repeat key link 83 causes the extension cam 84 to contact with flopper 86 due to the depression of the repeat key 82. This moves it out of engagement with the notch 97 in the rocker arm 14 and prevents the rocker arm from being pushed down each time that the card is notched. When the repeat key 82 is depressed, it swings the cotter pins 93 into an approximately vertical position as clearly seen in Figs 9, 10 and 11 and this allows the locking dogs 92 to lower by gravity. Obviously all those which are located above a depressed key stem lever 12 will assume a vertical position thus locking the key stem levers down and positively retaining the rocker arms 14 in elevated position. It will be apparent that those dogs 92 which rest upon the key stem levers 12, the keys of which are not depressed will remain supported in an elevated position while all of the cotter pins assume the vertical position clearly seen in Fig. 11. When the repeat key is pulled out into normal position, it operates to swing the shaft 91 and in turn the cotter pin 93 causing them to move the dogs 92 to the elevated position shown in Fig. 8.

Assuming that the desired keys 7 have been depressed and that the cards 8 have been placed in position, by the operator pressing upon the motor bar key 43, shaft 52 will, through medium of arm 51, be rotated. This will shift the position of link 53 and arm 54 carrying with it the bell crank lever 55. This movement will bring about the disengagement of the hook 59 with the inwardly extending pin 60. Upon this taking place, the coil spring will swing the oscillating lever 61 on its pivot which will cause the arm 69 to shift the position of the member 70 on its pivot 71. This will in turn move the arm 72 rearwardly and cause the connecting link 73 to rock the contact member 74 on its pivot 77 and bring about the engagement of contact points 75 and 76 with contact points 78 and 79. The moment that this is done the motor will revolve the disk 31 and this through the medium of the connecting rod 35, will bring about the oscillation of the lever arm 36 and consequently rock the crank shaft 30 swinging the rocker arms backwards and forwards upon shaft 16 and moving the punches in and out, thus notching the desired cards.

If the operation is to be repeated the repeat key is depressed and the motor can then be continued in its rotation as long as it is desired to punch additional cards.

When the rotation of the motor has completed the cycle of operations the cams 98 mounted upon

the end of a gear shaft (not shown) will contact the outwardly extending pin 100 which is mounted upon the oscillating lever 61. Obviously this will swing the oscillating lever upon its pivot 63 and this with the assistance of the coil springs will restore the parts to their normal position as shown in Fig. 14, the circuit being broken by the separating of the contact points 75 and 76 from contact points 78 and 79 and further operation of the punching mechanism will cease until the motor bar or key is again depressed.

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

1. In a device of the character described, having means for punching a card bearing certain indicia, a casing therefor, a card receiving slot, a die below said slot with a corresponding slot in register therewith, a plurality of punches slidably mounted in said die, a shaft secured to the end walls of the casing; a plurality of punch actuating rocker arms, one for each punch mounted upon said shaft to permit pivotal and longitudinal movement of each rocker arm, there being a notch in the rear edge of each of said rocker arms, means which engage said notches to hold said arms normally in depressed position, means to move said holding means out of engagement with said notch, mechanism to swing the rocker arms on the shaft, electrically actuated means to operate said swinging means, and means operated from the exterior of the casing to close electrical contacts to convey current to said electrical actuating means.

2. In a device of the character described, having means for punching a card bearing certain indicia, a casing therefor, a card receiving slot, a die below said slot with a corresponding slot in register therewith, a plurality of punches slidably mounted in said die, a shaft secured to the end walls of the casing, a plurality of punch actuating rocker arms, and for each punch mounted upon said shaft to permit pivotal and longitudinal movement of each rocker arm, there being a notch in the rear edge of each of said rocker arms, means which engage said notches to hold said arms normally in depressed position, means to move said holding means out of engagement with said notch, mechanism to swing the rocker arms on the shaft, electrically actuated means to operate said swinging means, means operated from the exterior of the casing to close electrical contacts to convey current to said electrical actuating means, and means automatically operated by said swinging mechanism to open said contacts.

3. In a device of the character described, having means for punching a card bearing certain indicia, a casing therefor, a card receiving slot, a die below said slot with a corresponding slot in register therewith, a plurality of punches slidably mounted in said die, a shaft secured to the end walls of the casing, a plurality of punch actuating rocker arms, and for each punch mounted upon said shaft to permit pivotal and longitudinal movement of each rocker arm, there being a notch in the rear edge of each of said rocker arms, means which engage said notches to hold said arms normally in depressed position, means to move said holding means out of engagement with said notch, oscillating mechanism to swing the rocker arms on the shaft, electrically actuated means to operate said swinging means, means operated from the exterior of the casing to close electrical contacts to convey current to said electrical actuating means.

4. In a device of the character described, having means for punching a card bearing certain indicia, a casing therefor, a card receiving slot, a die below said slot with a corresponding slot in register therewith, a plurality of punches slidably mounted in said die, a shaft secured to the end walls of the casing, a plurality of punch actuating rocker arms, and for each punch mounted upon said shaft to permit pivotal and longitudinal movement of each rocker arm, there being a notch in the rear edge of each of said rocker arms, means which engage said notches to hold said arms normally in depressed position, means to move said holding means out of engagement with said notch, oscillating mechanism to swing the rocker arms on the shaft, electrically actuated means to operate said swinging means, means operated from the exterior of the casing to close electrical contacts to convey current to said electrical actuating means, and a brake for said oscillating means.

5. In a device of the character described, a plurality of rocker arms, a shaft on which they swing, punches actuated by the swinging of said rocker arms, a plurality of selective keys to designate certain predetermined punches to be actuated by certain of said rocker arms, electrically actuated means to swing said arms, and means to permit a repeat operation, means actuated by the repeat mechanism to hold certain of said keys in a depressed position.

6. In a device of the character described, a plurality of rocker arms, a shaft on which they swing, punches actuated by the swinging of said rocker arms, electrically actuated means to swing said arms, means to permit a repeat operation and a plurality of error keys to restore depressed keys at the option of the operator.

7. In a device of the character described, a plurality of rocker arms, a shaft on which they swing, punches actuated by the swinging of said arms, a plurality of selective keys to designate certain predetermined punches to be actuated by certain of said rocker arms, electrically actuated means to swing said arms, means to control the speed of the electrical actuated means, and means to permit a repeat operation, means actuated by the repeat mechanism to hold certain of said keys in a depressed position.

8. In a device of the character described, a plurality of rocker arms, a shaft on which they swing, punches actuated by the swinging of said arms, selective means to move certain designated rocker arms into position to actuate certain of said punches, means to prevent the repeat operation from jarring said arms out of operative position, electrically actuated means to swing said arms, means to prevent the rocker arms from dropping down, means to permit a repeat operation, means to control the speed of the electrically actuated means, means to prevent said electrically actuated means moving in a reversed direction, and means to lock the selective means in position.

9. In a device of the character described, a plurality of rocker arms, a shaft on which they swing, punches actuated by the swinging of said arms, a plurality of selective keys to designate certain predetermined punches to be actuated by certain of said rocker arms electrically actuated means to swing said arms, means to prevent the rocker arms from dropping down, means to permit a repeat operation, means actuated by the

repeat mechanism to hold certain of said keys in a depressed position, and means to control the speed of the electrical actuated means.

10. In a device of the character described, a plurality of rocker arms, a shaft on which they swing, punches actuated by the swinging of said rocker arms, electrically actuated means to swing said arms, means to permit a repeat operation, said means comprising a shaft, a plurality of locking dogs swingingly mounted thereon, a plurality of pins one for each dog, fixedly mounted in said shaft, said pins normally holding said dogs out of locking position.

11. In a device of the character described, having means for punching a card bearing certain indicia, a casing therefor, a card receiving slot, a die below said slot with a corresponding slot in register therewith, a plurality of punches slidably mounted in said die, a shaft secured to the end walls of the casing; a plurality of punch actuating rocker arms, one for each punch mounted upon said shaft to permit pivotal and longitudinal movement of each rocker arm, there being a notch in the rear edge of each of said rocker arms, means which engage said notches to hold said arms normally in depressed position, selective means to move certain designated rocker arms into position to actuate certain of said punches, means to move said holding means out of engagement with said notch, mechanism to swing the rocker arms on the shaft, electrically actuated means to operate said swinging means, and means operated from the exterior of the casing to close electrical contacts to convey current to said electrical actuating means.

12. In a device of the character described, having means for punching a card bearing certain indicia, a casing therefor, a card receiving slot, a die below said slot with a corresponding slot in register therewith, a plurality of punches slidably mounted in said die, a shaft secured to the end walls of the casing; a plurality of punch actuating rocker arms, one for each punch mounted upon said shaft to permit pivotal and longitudinal movement of each rocker arm, there being a notch in the rear edge of each of said rocker arms, means which engage said notches to hold said arms normally in depressed position, selective means to move certain designated rocker arms into position to actuate certain of said punches, means to prevent the repeat operation from jarring said arms out of operative position, means to move said holding means out of engagement with said notch, mechanism to swing the rocker arms on the shaft, electrically actuated means to operate said swinging means and means operated from the exterior of the casing to close electrical contacts to convey current to said electrical actuating means.

13. In a device af the character described, having means for punching a card bearing certain indicia, a casing therefor, a card receiving slot, a die below said slot with a corresponding slot in register therewith, a plurality of punches slidably mounted in said die, a shaft secured to the end walls of the casing; a plurality of punch actuating rocker arms, one for each punch mounted upon said shaft to permit pivotal and longitudinal movement of each rocker arm, mechanism to swing the rocker arms on the shaft, electrically actuated means to operate said swinging means, and means operated from the exterior of the casing to close electrical contacts to convey current to said electrically actuating means.

14. In a device of the character described, a plurality of rocker arms, a shaft on which they swing, punches actuated by the swinging of said rocker arms, a plurality of selective keys to designate certain predetermined punches to be actuated by certain of said rocker arms, electrically actuated means to swing said arms, means to prevent the rocker arms from dropping down, means to permit a repeat operation means actuated by the repeat mechanism to hold certain of said keys in a depressed position, means to prevent said electrically actuated means moving in a reversed direction, and means to lock the selective means in position.

15. In a device of the character described, a plurality of rocker arms, a shaft on which they swing, punches actuated by the swinging of said rocker arms, electrically actuated means to swing said arms, selective means to move certain designated rocker arms into position to actuate certain of said punches, said electrically actuated means comprising a motor, a motor bar, a shaft actuated by the movement of said motor bar, a bell crank lever, a link connected thereto operated by the movement of said shaft, a hook on one arm of said bell crank lever, an oscillating lever, a pin thereon engaged by said hook, spring means to hold said hook normally in engagement with said pin, electrical contacts, means actuated by the movement of said oscillating lever to close and open said contacts.

16. In a device of the character described, a plurality of rocker arms, a shaft on which they swing, punches actuated by the swinging of said rocker arms, electrically actuated means to swing said arms, selective means to move certain designated rocker arms into position to actuate certain of said punches, said electrically actuated means comprising a motor, a motor bar, a shaft actuated by the movement of said motor bar, a bell crank lever, a link connected thereto operated by the movement of said shaft, a hook on one arm of said bell crank lever, an oscillating lever, a pin thereon engaged by said hook, spring means to hold said hook normally in engagement with said pin, electrical contacts, means actuated by the movement of said oscillating lever to close and open said contacts, a rotatable cam, means to cause the rotation of said cam to shift the position of said oscillating lever and open said contacts.

17. In a device of the character described, having means for punching a card bearing certain indicia, a casing therefor, a card receiving slot, a die below said slot with a corresponding slot in register therewith, a plurality of punches slidably mounted in said die, a shaft, a plurality of punch actuating rocker arms, one for each punch mounted upon said shaft to permit pivotal and longitudinal movement of each rocker arm, mechanism to swing the rocker arms on the shaft, electrically actuated means to operate said swinging means, and means operated from the exterior of the casing to close electrical contacts to convey current to said electrical actuating means.

18. In a device of the character described, having means for punching a card bearing certain indicia, a casing therefor, a card receiving slot, a die below said slot with a corresponding slot in register therewith, a plurality of punches slidably mounted in said die, a shaft, a plurality of punch actuating rocker arms, one for each punch mounted upon said shaft to permit pivotal and longitudinal movement of each rocker arm, selective means to move certain designated rocker arms into position to actuate certain of said

punches, mechanism to swing the rocker arms on the shaft, electrical actuated means to operate said swinging means, and means operated from the exterior of the casing to close electrical contacts to convey current to said electrical actuating means.

19. In a device of the character described, having means for punching a card bearing certain indicia, a casing therefor, a card receiving slot, a die below said slot with a corresponding slot in register therewith, a plurality of punches slidably mounted in said die, a shaft, a plurality of punch actuating rocker arms, one for each punch mounted upon said shaft to permit pivotal and longitudinal movement of each rocker arm, means which hold said rocker arms normally in depressed position, selective means to move certain designated rocker arms into position to actuate certain of said punches, mechanism to swing the rocker arms, on the shaft, electrically actuated means to operate said swinging means, and means operated from the exterior of the casing to close electrical contacts to convey current to said electrically actuating means.

20. In a device of the character described, having means for punching a card bearing certain indicia, a casing therefor, a card receiving slot, a die below said slot with a corresponding slot in register therewith, a plurality of punches slidably mounted in said die, a shaft, a plurality of punch actuating rocker arms, one for each punch mounted upon said shaft to permit pivotal and longitudinal movement of each rocker arm, a plurality of selective keys to designate certain predetermined punches to be actuated by certain of said rocker arms, a repeat key link, a flopper actuated by the swinging of the key link for holding said rocker arms normally in depressed position, selective means to move certain designated rocker arms into position to actuate certain of said punches, mechanism to swing the rocker arms on the shaft, electrically actuated means to operate said swinging means, and means operated from the exterior of the casing to close electrical contacts to convey current to said electrically actuating means.

NELSON S. WELK.