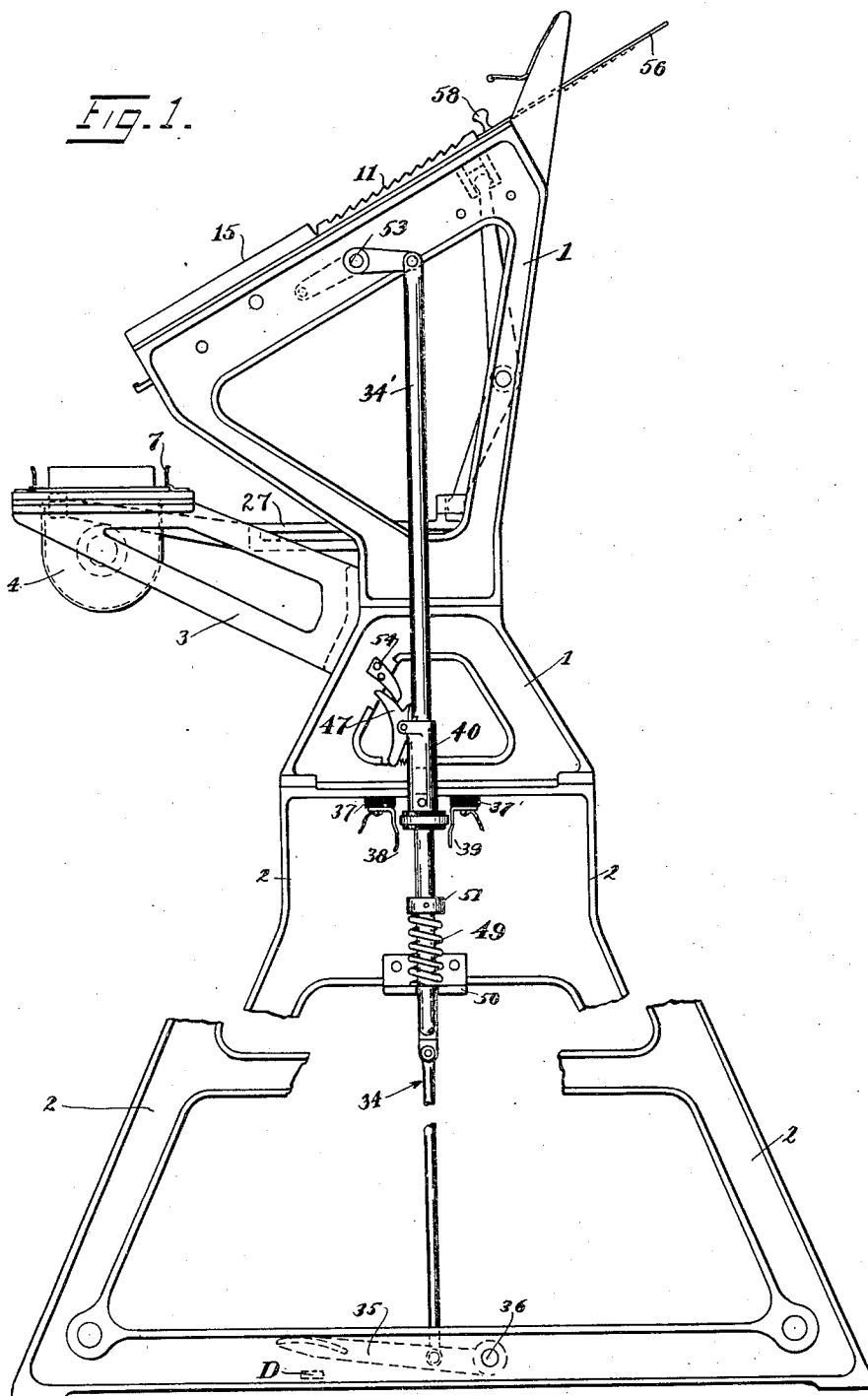


J. POWERS.
 STATISTICAL CARD VERIFYING MACHINE.
 APPLICATION FILED OCT. 31, 1914.

1,203,263.

Patented Oct. 31, 1916.

4 SHEETS—SHEET 1.



Witnesses:

Charles Horton
 H. D. Penner

Inventor:

James Powers,

By his Atty:

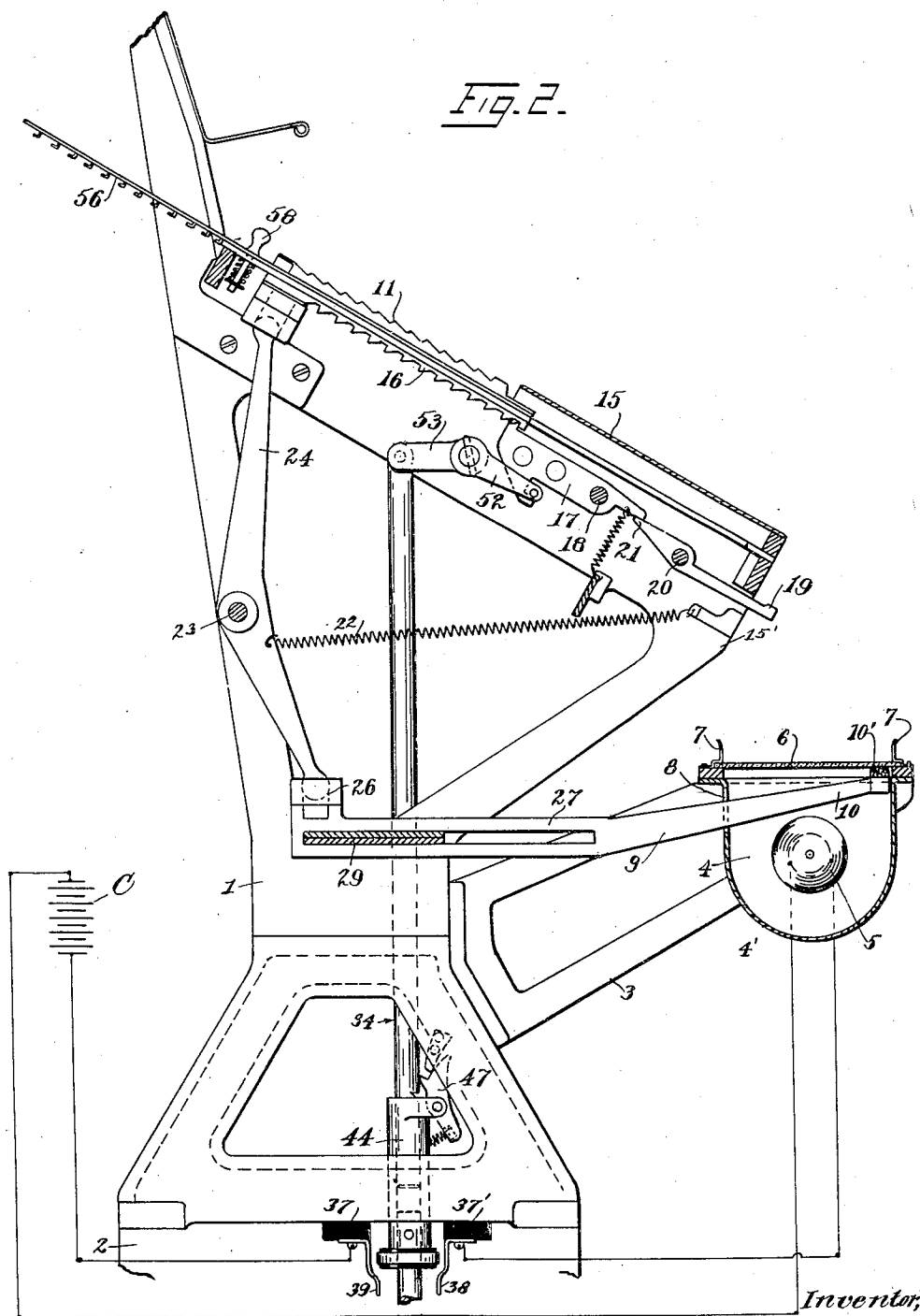
J. W. Richards

J. POWERS.
STATISTICAL CARD VERIFYING MACHINE.
APPLICATION FILED OCT. 31, 1914.

Patented Oct. 31, 1916.
4 SHEETS—SHEET 2.

1,203,263.

Fig. 2.



Witnesses:
Charles Horton
H. D. Penney

By his Atty,

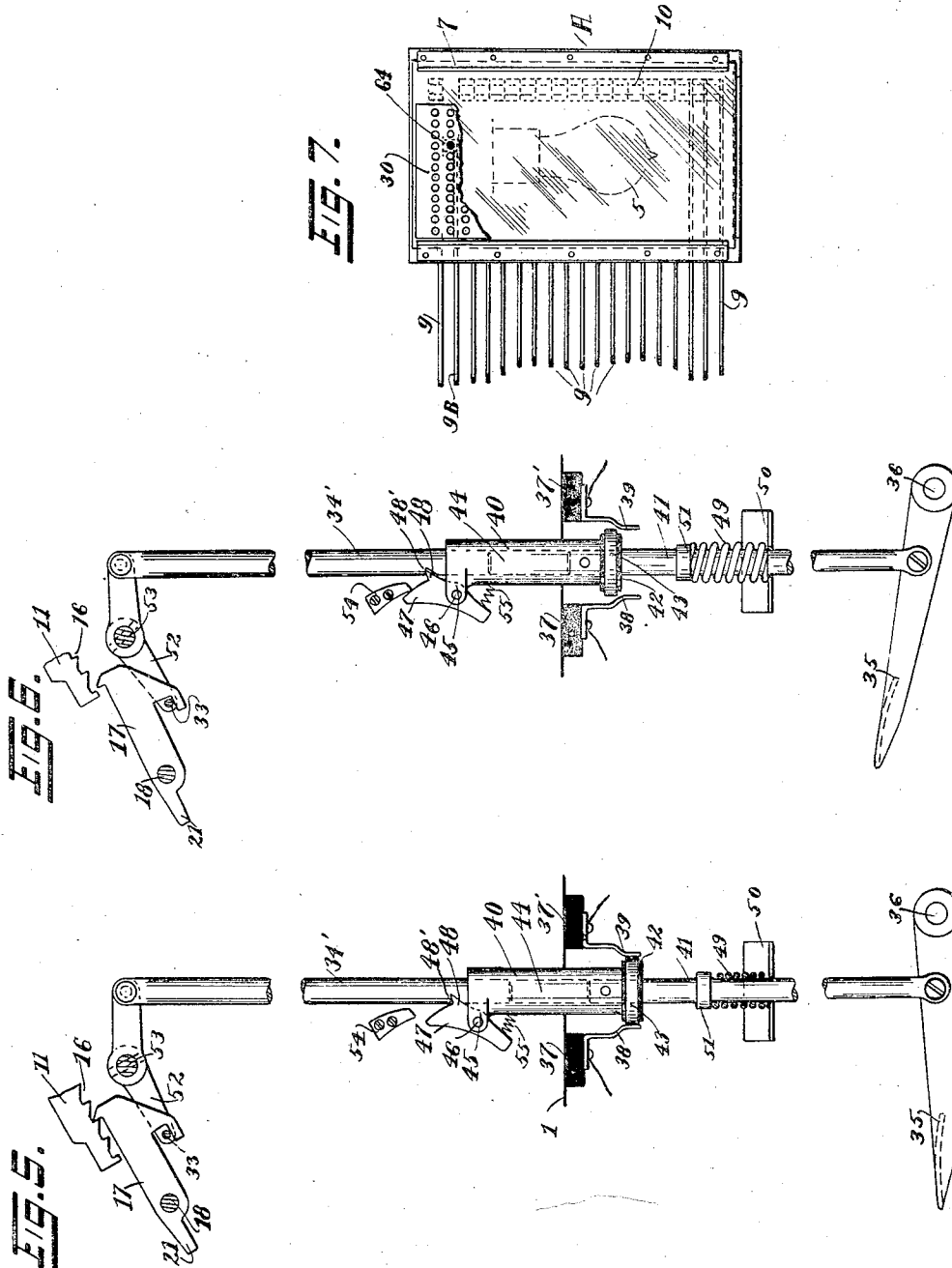
James Powers,
for H. Richards

Inventor,

J. POWERS.
 STATISTICAL CARD VERIFYING MACHINE.
 APPLICATION FILED OCT. 31, 1914.

1,203,263.

Patented Oct. 31, 1916.
 4 SHEETS—SHEET 4.



Witnesses:

Charles Horton
 H. D. Penner

Inventor:

James Powers,

By his Attorney,

W. H. Richard.

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.

STATISTICAL-CARD-VERIFYING MACHINE.

1,203,263.

Specification of Letters Patent.

Patented Oct. 31, 1916.

Application filed October 31, 1914. Serial No. 869,540.

To all whom it may concern:

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

My present invention relates to an improvement in means for verifying record bearing cards and the like and is more especially intended to be used in conjunction with perforated statistical record bearing cards of the well known type.

The main object of the invention is to provide means whereby record bearing cards may, with facility, be quickly verified, and whereby such verification can be affected at comparatively low cost.

One of the most important features of my device is that it effects a great economy in labor as well as a saving of cards as will appear from the following:

In the present system where perforated statistical cards are utilized for recording and affixing data, it is customary to perforate a record-card in a suitable class of machine, such, for instance, as is indicated in my issued United States Patent No. 992,246, the data for perforated cards being obtained from a printed or written schedule or other suitable record. In order to verify the perforations or data points on this card, a duplicate card is perforated from the same data by another operator on either the same or another perforating machine at a later period and one of the duplicate cards is then superimposed over the other and by examination in the light or by inspection of the surface of the card it can be determined whether both cards are perforated alike. If such is the case, the record-card is laid aside as being checked and the proof card is thereafter destroyed. However, if the cards do not check one another, or in other words, if all the perforations in both cards do not register alike, it is then evident that either the proof-card or the record-card has been wrongly perforated, and these cards are then laid aside for a final proving up by means of the primary record from which they were taken.

It is obvious that the foregoing is a rather cumbersome and expensive method, the great-

est expense however being that of making the proving cards which only serve the single service of checking the record-card and are then, as previously noted, destroyed.

In my present device I have done away with the use of a proving card and have substituted therefor a mechanical device in which the keyboard, as will be hereinafter disclosed, is similar to the keyboard portion of the perforating machine disclosed in my United States Patent No. 1,086,397.

In my present device I have a combination of mechanical and electrical means by which an operator can set the machine according to the data taken from the schedule or other data sheet, and after the machine has been set to register with the data required, the card to be verified is laid in the proving portion of the machine and can be immediately checked as to the correctness of its perforations, thus eliminating the proving card, saving the expense of perforating the same and doing away with the loss caused by its destruction. Furthermore in my present apparatus I have arranged a device which might be termed a keyboard gang lock which is so arranged on the machine as to permit, where a plurality of cards in a run are perforated alike, or are duplicate as to perforations, in certain sections, of leaving certain record points continuously covered or locked during the run of cards in that group, thereby checking continuously and automatically that section of the card usually known as the gang punch or fixed data portion, and relieving the operator of the necessity of setting this repetition matter by hand for each card in that run.

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

Figure 1 is a right hand side elevation of my device, the base frame portion being fragmentary. Fig. 2 is a left hand side elevation of my device. Fig. 3 is a side view of one of the key lever actions and gang punch lock connected therewith. Fig. 4 is a plan view of a portion of the key slides showing the gang punch locks arranged adjacent thereto. Figs. 5 and 6 are views showing the operation of the circuit closer and key

release mechanism in different operative positions. Fig. 7 is a plan view of the proving box.

In the embodiment illustrated, the apparatus is shown as comprising an upper frame member 1 which is suitably mounted upon a base frame 2. Preferably, but not of necessity there is attached to the upper frame 1, a pair of brackets 3 which are rigidly mounted in a suitable manner in order to support a card proving box generally noted by the numeral 4.

In Fig. 2 there is shown a sectional side elevation of my device showing the important details thereof, and in this view it will be noted that the proving box 4 is composed of a metal housing 4' into which is mounted in the customary manner a suitable source of light such as the well known incandescent lamp 5. At the upper portion of this proving box which is closed in at its sides and ends except at the upper end thereof, there is arranged a translucent or transparent plate 6 which may be of clear or ground glass, the same being held in operative position by means of a pair of card guides 7, 7. It will be noted that these card guides are so arranged as to overlap the glass at its edges so that if it is desired the glass may be slid from under the guides 7 illustrated in Fig. 2 and thereby be removed in order to get at the interior of the housing 4'. Furthermore, the interior of the housing 4' may be highly polished or have suitable beveled surface thereon for the purpose of intensifying and substantially concentrating the light from the lamp 5 in an upward direction through the sighting plate 6. At the inside near the upper edge of the housing 4' there is provided a slot 8 through which slot protrude a plurality of slidable key operated arms 9 which arms are inclined upwardly at their outer edges as at 10 and each carries on its upper outer face a piece of opaque flexible material such as a piece of black felt 10' which piece of felt is affixed to its arm in a suitable manner. One of these arms 9, is provided for each row of perforations customarily used on statistical cards. The number of rows is immaterial, but usually runs from 12 rows upward. The means for causing these arms 9 to oscillate to and fro across the bottom face of the sighting plate 6 may be ascertained by referring to Fig. 3 wherein the ratchet key slide 11 which has grooves 12, 12 in opposite sides thereof, as indicated in Fig. 4, is so mounted and held in position by means of strips 13 which are affixed to the upper and lower edges of the frames 14 and 15 respectively. There is one of these key slides 11 provided for each arm 9. The metal strips 13 act as means not only for guiding the key slides, but also form binding means for the frame top. In normal inoperative posi-

tion all of the key slides 11 are upward in the position "a" shown in Fig. 3 and when the finger is introduced in any one of the notches which are numbered respectively from 1 to 12 they are then drawn downwardly to the dotted position "b" until the finger strikes the upper edge of the cover plate 15'. On the lower surface of a key slide 11 is arranged a plurality of ratchet-like teeth 16 which correspond to the notches of the upper surface of the slide 11 and acting in conjunction with these teeth 16 is a latch or pawl 17 which is pivotally mounted at 18 and is so actuated that the teeth 16 may ride over such pawl 17 when the slide 11 is operated and when the slide is arrested, the pawl 17 will hold the slide in the arrested position. Should at any time any one of the slides be improperly set, the operator can return it back to its normal inoperative position by pressing on the free end of the individual release key 19 which is pivotally mounted at 20 and is in contact at its opposite end with the latch lever 17 at 21 so that a downward movement of the free end of this release lever 19 causes the latch to disengage the ratchet 16 thereby permitting the key slide to move back through the action of a lever 24 whose upper end 25 is connected to the key slide 11, such upper end being normally retained in its backward position by means of a tension spring 22 attached thereto below its pivotal point 23. The lower end of the lever 24 has a loose connection with the sight plate arm slide 27. It will be noted that the sight plate arm slide 27 has a rectangular opening 28 at its rear end which forms in conjunction with the bearing plate 29, a means to permit the oscillation to and fro of the said sight plate slide 27 so that each of the sight plate arms 9 is arranged to move to and fro across the underface of the sight plate 6 thereby causing the opaque felt pad portion 10' to assume a certain transverse position under the said sight plate 6 which is set through the operation of the key slide 11.

As most of the apparatus relating to the key slide and its companion connections down through the sight plate slide 27 are already described in my issued United States Patent No. 1,086,397, reference to this case may be had in order to ascertain more amplified details of the operation thereof.

By referring to Fig. 2, it will be noted that the return spring 22 is attached at one end to the lever 24 and at its opposite end to any convenient point on the frame 15' so that the normal action of this spring tends to keep the key slides back in normal inoperative position, thereby keeping the opaque felt members 10' in their normal inoperative positions in a single row as may be ascertained by referring to the plan view, Fig. 7. In this last noted view the portion A

represents the front edge of the proving box 4 before which the attendant will generally be located. It will be noted that on this proving box 4, there is indicated a fragmentary portion of a card 30, in which provisions will be made for nineteen rows of holes on a card having twelve record or data points in each row. It will also be noted that sight plate slide 9^B is indicated as being moved out of position and as covering a perforation on the fragmentary portion of the card in the second row so that, if this were the only perforation in the card, when the electric lamp 5 is turned on, this perforation would be blocked by the opaque facing 10 and therefore no light could show through the perforation. The reading, in the present instance, checks the hole 64 proving that the hole is perforated in the proper place and that it therefore corresponds with the setting of the arm. If however the hole indicated had, by mistake, not been perforated, and another hole been perforated instead, the position of the lever 9^B would cover the first mentioned hole, but inasmuch as the other hole was erroneously perforated, it is obvious that the opaque face 10 would not cover the improperly perforated hole and therefore the light would shine there-through. It is this particular feature in practice that makes for speed. If the light were to shine through all of the holes and only the improperly perforated holes were to be blocked, the operator must of necessity look over all the various rows in order to detect one blocked hole, whereas in the present arrangement, after a perforated card has been set on the proving box with the proving levers or slides in their proper proving positions the light from a single or plurality of improperly perforated holes would immediately attract attention, indicating that the card was wrong, while on the other hand a completely blocked or dark card would instantly prove without any other verification that the card was perfectly perforated.

After the card has been checked as to its perforations, it becomes necessary to permit the resetting of the machine for the proving of the next card and in order to do this, all of the key levers that have been set must be returned to their normal inoperative positions. By referring back to Figs. 2 and 3, it will be noted that ratchet key latch 17, has arranged at its lowermost portion a downwardly depending portion 31 which forms with the underside of the latch portion a gap 32 into which gap is located a universal retracting bar or rod 33, Figs. 5 and 6. It is obvious that owing to all of the latch levers 17 being alike and mounted on the same pivotal bar 18 that the universal retracting bar 33 Figs. 5 and 6 must pass through the space 32 on all of the latch le-

vers so that any movement of this bar 33 will retract all of them away from the key slides 11, thereby permitting the key slides 11 to be forced back into normal inoperative position by means of the tension spring 22, as previously described.

In order to economize in the use of current for operating the light and at the same time to operate the machine in sequence without the use of motors or like means for handling, I have provided, as indicated in Figs. 1 and 2, foot-operated linkage generally noted by 34 which is in connection with a treadle 35 pivotally attached at a suitable point to the lower part of the machine frame 2 at 36. The sequence of operation is about as follows: The key slides are all set according to the data to be proved, the light 5 at the same time being out and after all of the levers have been set to correspond to the quantity or kind of data on the card to be proved, the card is then laid upon the transparent proving plate 6 and the foot placed upon the pedal 35 and pressed downwardly. The normal inoperative position of this pedal is indicated in Figs. 1 and 2. The next step is to light the lamp 5 which is performed by the downward movement of the pedal, and the details of which are to be hereinafter described. By lighting of the lamp, if the card shows up dark, no light being reflected therethrough, an indication that the card is correct, then the foot is removed from the pedal and the pedal is permitted to move up into its normal inoperative position to await the next setting for proof while at the same time cutting the light out of circuit.

The means by which resetting of the machine and the turning on and off of the light is accomplished is as follows: In Figs. 1, 2, 5 and 6, there are arranged at a suitable point on the base of the frame 1 a pair of insulating blocks 37 and 37' and mounted upon these insulating blocks in any suitable manner are a pair of spring terminals 38 and 39 and as indicated in Fig. 2 the terminal 39 is in connection with one side of a source of current C, the other main of the source of current is connected to the lamp 5, the return wire from the lamp is connected to the other terminal 38 so that the interposition of any contact means between the two terminals 38 and 39 will close the circuit thereby causing the lamp to light. In the present instance, this circuit closing means comprises a sleeve 40 which is fixedly pinned to the pedal shaft 41 and carries on its lower end an insulating sleeve 42, said insulating sleeve again in its turn carrying on its outer surface a metallic or conductive ring 43 so that when the pedal 35 is depressed, the ring is brought downwardly with the action of the sleeve 40 thereby contacting with the terminals 38 and 39 and

closing the circuit, as previously described. The sleeve 40 has a bore 44 which bore loosely fits the telescopic rod 34' so that normally the sleeve 40 through the pedal 35 may be moved up and down without any movement of the said rod 34'. At one side of the sleeve 40, there is shown an arm 45 which pivotally holds at 46 a rod latch 47 which rod latch has a spur or latch portion 48 and which spur portion is adapted to slip into and engage a notch 48', Figs. 1, 2 and 6, formed in the said shaft or rod 34' so that when the treadle linkage 34 is in normal inoperative position, the said notch 48' may be in sight, the sleeve 40 thereby permitting the downward movement of the treadle actuated portion of the linkage without causing any movement of the rod 34' until the treadle has reached its lowermost position which is limited by a stop D shown dotted on the bottom portion of frame 2, Fig. 1. The pawl 47 then engages the notch 48' in the rod and the circuit having been closed by the ring contact 43, the lamp lighted, the card proved and the foot removed from the treadle, the rod 41 is thereupon forced upwardly by means of the spring 49 which is seated against a bracket 50 conveniently located on the frame 2 and against a shoulder 51 which is located upon the lower portion of the sleeve rod 41, thereby carrying with it the upper connecting rod 34' by reason of the pawl 47 having engaged in the notch 48' of said shaft and this upward thrust is communicated to the universal bar 33 by means of a crank 52 which is pivotally mounted at any convenient point on the upper keyboard, as for instance, at 53. As previously described, this downward motion of the universal retracting bar 33, pulls down all of the latch levers 17 and permits the resetting of the keyboard by the key slides 11.

When the connecting rod 34' has reached its uppermost position and all of the key slide latches 17 have been drawn back far enough to permit return of the key slides 11, it is then necessary that the latches be all returned to their normal contacting position with respect to the teeth 16 on the lower portion of the said key slides 11, and this means that the connecting rod 34' and the upper portion of the retracting linkage must be disconnected from the actuating treadle sleeve 40 and this is accomplished as follows: At any convenient point on the frame 1, (Fig. 1), there is arranged a cam finger 54 which is conveniently affixed to the frame and this finger is so located as to operate to contact with the cam portion 47' of the pawl 47 so that any continued further upward movement of the sleeve 40 upon which the pawl 47 is carried will cause the retraction or drawing back of such pawl thereby removing the finger 48 from the notch 48' and permitting latches 17 to move

upward and thereby contact with their respective key slides 11. In order to make the pawl 47 positive acting relevant to its engagement with the notch in the rod 34', I have arranged a spring 55 which tends to keep the same in contact with rod 34' at all times so that when it registers with the said notch, it automatically engages.

In order to permit gang setting of the key slides 11 whereby data which are common to a number of cards to be proved, need not be reset for each separate card, I have provided gang locking plates 56 each having a number of punched out fingers 57 corresponding to the number of notches 11^a on the key slides 11. At the front end of each locking plate 56, there is provided a handle member 58 which is fastened to the plate 56 and has a lower extension 59 provided with a fixed washer 60 at its lower end and a movable washer 61 at its upper end, between which washers there is retained a spring 62. The washer 61 is of greater diameter than the space between the bars 13, the lower end of the handle member 58 being disposed on the upper surface of the locking plate 56 and the washer 61 on the lower surfaces of adjacent bars 13, the spring 62 serving to clamp the bars 13 between the locking plate 56 and the washer 61. On the frame member 14 there is provided a transversely extending bar 63 of a thickness that is sufficiently small to permit the fingers 57 to engage around it. In the operation of these gang locking plates 56, the handle 58 is grasped and moved down to the notch in the keyboard corresponding to the number which is common to a number of cards to be proved, and thereby a corresponding finger 57 is engaged on the transversely extending bar 63, the handle member 58 released and the spring 62 permitted to clamp the locking plate in place. By this means, whenever the key slides are released to return to normal position, those key slides which have locking plates set in their path of movement are locked against being returned to normal position and are thus ready for the next card to be proved without an independent and separate setting of such common data.

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

I claim:

1. In a device of the character described for proving cards, a frame having a transparent plate for holding a perforated card, means for covering the perforations in said card, a lamp in said frame disposed under said transparent plate so that when lighted, its light will reflect through any uncovered perforations in said card and thereby indicate what perforations are incorrect, and

means for setting the covering means to reproduce a record corresponding to the record to be proved.

2. In a device of the character described for proving cards, a frame having a transparent plate for holding a perforated card, covering means for covering the perforations in said card while disposed on said transparent plate, a key mechanism for manipulating said covering means, a lamp in said frame disposed under said transparent plate so that when lighted, its light will reflect through any uncovered perforations in said card and thereby indicate what perforations are incorrect, and means for setting the covering means to reproduce a record corresponding to the record to be proved.

3. In a device of the character described for proving cards, a frame having a transparent plate for holding a perforated card, covering means for covering the perforations in said card while disposed on said transparent plate, means for setting the covering means to reproduce a record corresponding to the record to be proved, a key mechanism for manipulating said covering means, and a lamp in said frame disposed under said transparent plate so that when lighted, its light will reflect through any uncovered perforations in said card and thereby indicate what perforations are incorrect, and reciprocating means for lighting said lamp when moved in one direction and retracting said covering means when moved in the opposite direction.

4. In a device of the character described for proving cards, a frame having a transparent plate for holding a perforated card, covering means for covering the perforations in said card while disposed on said transparent plate, means for setting the covering means to reproduce a record corresponding to the record to be proved, a key mechanism for manipulating said covering means, and a lamp in said frame disposed under said transparent plate so that when lighted, its light will reflect through any uncovered perforations in said card and thereby indicate what perforations are incorrect, and reciprocating means for lighting said lamp when moved in one direction and releasing said covering means when moving in the opposite direction, a treadle, and a linkage connecting said key mechanism and said lamp with said treadle so that depression of said treadle will light said lamp and release of said treadle will retract said key mechanism to normal position.

5. In a device of the character described for proving cards, a frame having a transparent plate for holding a perforated card, covering means for covering the perforations in said card while disposed on said

transparent plate, a lamp in said frame disposed under said transparent plate so that when lighted, its light will reflect through any uncovered perforations in said card and thereby indicate what perforations are incorrect, and means for setting said covering means comprising a second frame, slide keys operably mounted in said second frame and adapted to be moved to reproduce a record corresponding to the record on the card to be proved, arms connected to each of said covering means, levers fulcrumed in said second frame and loosely connecting each of said slide keys with one of said arms so that the movement of said slide keys will move said arms and the thereto connected covering means correspondingly.

6. In a device of the character described for proving a card, a frame for holding the card to be proved, proving means operatively mounted in said frame, and means for setting said proving means to reproduce a record corresponding to the record to be proved, and means for indicating when the record reproduced does not correspond with the record indicated on said card.

7. In a device of the character described for proving a card, a frame for holding the card to be proved, proving means operatively mounted in said frame, means for setting said proving means comprising a second frame, slide keys operably mounted in said second frame and adapted to be moved to positions to reproduce a record corresponding to the record of the card to be proved, means connecting said proving means with said slide keys so that the movement of said slide keys will move said proving means correspondingly, and means for indicating when the record reproduced does not correspond with the record indicated on said card.

8. In a device of the character described for proving a card, a frame for holding the card to be proved, proving means operatively mounted in said frame comprising a plurality of members, one for each row of data on said card, and means for setting said members comprising a second frame, slide keys operably mounted in said second frame and adapted to be moved to positions to reproduce a record corresponding to the record on the card to be proved, means connecting each of said members with one of said slide keys so that the movement of said slide keys will be transmitted to said members correspondingly, and means for indicating when the record reproduced does not correspond with the record indicated on said card.

9. In a device of the character described for proving cards, a frame having a transparent plate for holding a perforated card, pieces of felt for covering the perforations in said card while disposed on said trans-

parent plate, a lamp in said frame disposed under said transparent plate so that when lighted, its light will reflect through any uncovered perforations in said card and thereby indicate what perforations are incorrect, and means for setting said pieces of felt comprising a second frame, slide keys operably mounted in said second frame and adapted to be moved to reproduce a record corresponding to the record on the card to be proved, arms connected to each of said pieces of felt, levers fulcrumed in said second frame and loosely connecting each of said slide keys with one of said arms so that the movement of said slide keys will move said arms and thereto connected pieces of felt correspondingly.

10. In a device of the character described for proving cards, a frame for holding the card to be proved, proving means operatively mounted in said frame comprising a plurality of arms, means for setting said arms comprising a second frame, slide keys operably mounted in said second frame to be moved to reproduce a record corresponding to the record of the card to be proved, levers fulcrumed to said second frame, one of the ends of each of said levers loosely connected to a key slide, and the other end of each of said levers loosely connected to an arm, so that the movement of said slide keys will move said arms correspondingly, means for normally maintaining said levers in retracted non-recording position, and means for indicating when the record reproduced does not correspond with the record indicated on said card.

11. In a device of the character described for proving cards, a frame for holding the card to be proved, proving means operatively mounted in said frame comprising a plurality of arms, means for securing said arms in record reproducing position, means for releasing said securing means, means for retracting said levers whenever released by said releasing means and for normally maintaining said levers in retracted position when not moved into record reproducing position, and means for indicating when the record reproduced does not correspond with the record indicated on said card.

12. In a device of the character described for proving perforated cards, proving means comprising a plurality of pads, arms connected to each of said pads, means for setting said arms and thereto connected pads comprising a frame, key slides operatively mounted in said frame to be moved into record reproducing positions, the key slides being operatively connected to said arms so that any movement of the key slides will be transmitted to said arms, means for locking each of said key slides into record reproducing position when so moved, and means for individually releasing each locking means

so that any one of said key slides singly may be changed if wrongly set.

13. In a device of the character described for proving perforated cards, proving means comprising a plurality of pads, arms connected to each of said pads, means for setting said arms and thereto connected pads comprising a frame, key slides operatively mounted in said frame to be moved into record reproducing positions, the key slides being operatively connected to said arms so that any movement of the key slides will be transmitted to said arms, means for locking each of said key slides into record reproducing position when so moved, and means for releasing all of said locking means simultaneously after a card has been proved.

14. In a device of the character described for proving perforated cards, proving means comprising a plurality of pads, arms connected to each of said pads, means for setting said arms and thereto connected pads and comprising a frame, key slides operatively mounted in said frame to be moved into record reproducing positions, levers fulcrumed in said frame and operatively connecting said key slides to said arms, and springs for maintaining said levers in retracted position in which they will also hold said key slides and arms in retracted position.

15. In a device of the character described for proving perforated cards, proving means comprising a plurality of pads, arms connected to each of said pads, means for setting said arms and thereto connected pads comprising a frame, key slides operatively mounted in said frame to be moved into record reproducing positions, levers fulcrumed in said frame operatively connecting each of said key slides with one of said arms, springs for normally maintaining said levers in retracted position in which position they will also hold said key slides and arms in retracted position, and means for locking said key slides in record reproducing position.

16. In a device of the character described for proving perforated cards, proving means comprising a plurality of pads, arms connected to each of said pads, means for setting said arms and thereto connected pads comprising a frame, key slides operatively mounted in said frame to be moved into record reproducing positions, each of said key slides being operatively connected with one of said arms so that any movement of the key slides will be transmitted to said arms individually, said key slides each having notches on its lower edge, latches pivotally mounted in said frame and engaging said notches to lock said key slides in record reproducing positions, springs for normally maintaining said latches in locking position, and releasing levers one connected to

each of said latches to release a latch from its key slide to permit resetting of such key slide.

17. In a device of the character described for proving perforated cards, proving means comprising a plurality of pads, arms connected to each of said pads, means for setting said arms and thereto connected pads comprising a frame, key slides operatively mounted in said frame to be moved into record reproducing positions, each of said key slides being operatively connected with one of said arms so that any movement of the key slides will be transmitted to said arms individually, said key slides each having notches on its lower edge, latches pivotally mounted in said frame and engaging said notches to lock said key slides in record reproducing positions, springs for normally maintaining said latches in locking position, downwardly depending portions on said latches forming gaps between them and the latches proper, a universal rod disposed in said gaps, a releasing lever fulcrumed in said frame and connected at one end to said universal rod, and a releasing rod connected to the other end of said releasing lever and adapted to be reciprocated to actuate said releasing lever, universal rod, and latches to release said key slides.

18. In a device of the character described for proving perforated cards, proving means comprising a plurality of pads, arms connected to each of said pads, means for setting said arms and thereto connected pads comprising a frame, key slides operatively mounted in said frame to be moved into record reproducing positions, each of said key slides being operatively connected with one of said arms so that any movement of the key slides will be transmitted to said arms individually, said key slides each having notches on its lower edge, latches pivotally mounted in said frame and engaging said notches to lock said key slides in record reproducing positions, springs for normally maintaining said latches in locking position, and releasing levers one connected to each of said latches to release a latch from its key slide to permit resetting of such key slide, downwardly depending portions on said latches forming gaps between them and the latches proper, a universal rod disposed in said gaps, a releasing lever fulcrumed in said frame and connected at one end to said universal rod, and a releasing rod connected to the other end of said releasing lever and adapted to be reciprocated to actuate said releasing lever, universal rod, and latches to release said key slides.

19. In a device of the character described for proving perforated cards, proving means comprising a plurality of pads, arms connected to each of said pads, means for setting said arms and thereto connected pads

comprising a frame, key slides operatively mounted in said frame to be moved into record reproducing positions, intermediate levers fulcrumed in said frame and operatively connecting each of said key slides with one of said arms, springs for maintaining said intermediate levers in retracted position in which they will also hold said key slides and arms in retracted position, said key slides each having notches on its lower edge, latches pivotally mounted in said frame and engaging said notches to lock said key slides in record reproducing positions, tension means for normally maintaining said latches in locking positions, and releasing levers one for each of said latches to release a latch from its key slide to permit its intermediate lever to retract said key slide into inoperative position.

20. In a device of the character described for proving perforated cards, proving means comprising a plurality of pads, arms connected to each of said pads, means for setting said arms and thereto connected pads comprising a frame, key slides operatively mounted in said frame to be moved into record reproducing positions, intermediate levers fulcrumed in said frame and operatively connecting each of said key slides with one of said arms, springs for maintaining said intermediate levers in retracted position in which they will also hold said key slides and arms in retracted position, said key slides each having notches on its lower edge, latches pivotally mounted in said frame and engaging said notches to lock said key slides in record reproducing positions, tension means for normally maintaining said latches in locking positions, downwardly depending portions on said latches forming gaps between them and the latches proper, a universal rod disposed in said gaps, a releasing lever fulcrumed in said frame and connected at one end to said universal rod, a releasing rod connected at one end to the other end of said releasing lever and adapted to be reciprocated to actuate said releasing lever, universal rod and latches to release said key slides and permit them to be retracted by said intermediate levers.

21. In a device of the character described for proving perforated cards, proving means comprising a plurality of pads, arms connected to each of said pads, means for setting said arms and thereto connected pads comprising a frame, key slides operatively mounted in said frame to be moved into record reproducing positions, each of said key slides being operatively connected with one of said arms so that any movement of the key slides will be transmitted to said arms individually, said key slides each having notches on its lower edge, latches pivotally mounted in said frame and engaging said notches to lock said key slides in record re-

producing positions, downwardly depending portions on said latches forming gaps between them and the latches proper, a universal rod disposed in said gaps, a releasing lever fulcrumed in said frame and connected at one end to said universal rod, a releasing rod connected at one end to the other end of said releasing lever and adapted to be reciprocated to actuate said releasing lever. universal rod and latches to release said key slides, and means for reciprocating said releasing rod.

22. In a device of the character described for proving perforated cards, proving means comprising a plurality of pads, arms connected to each of said pads, means for setting said arms and thereto connected pads comprising a frame, key slides operatively mounted in said frame to be moved into record reproducing positions, each of said key slides being operatively connected with one of said arms so that any movement of the key slides will be transmitted to said arms individually, said key slides each having notches on its lower edge, latches pivotally mounted in said frame and engaging said notches to lock said key slides in record reproducing positions, downwardly depending portions on said latches forming gaps between them and the latches proper, a universal rod disposed in said gaps, a releasing lever fulcrumed in said frame and connected at one end to said universal rod, a releasing rod connected at one end to the other end of said releasing lever and adapted to be reciprocated to actuate said releasing lever, universal rod and latches to release said key slides, and actuating means for reciprocating said releasing rod, said actuating means comprising a treadle rod having a sleeve receiving the other end of said releasing rod, a treadle connected to said treadle rod and adapted to withdraw said treadle rod from said releasing rod, there being a notch in the sleeve of said treadle rod normally disposed in the sleeve of said treadle rod, a pawl pivotally mounted on said treadle rod and adapted to engage in said notch when said treadle rod is withdrawn from said releasing rod so that upon release of said treadle, the treadle rod will move said releasing rod with it thereby actuating said universal rod.

23. In a device of the character described for proving perforated cards, proving means comprising a plurality of pads, arms connected to each of said pads, means for setting said arms and thereto connected pads comprising a frame, key slides operatively mounted in said frame to be moved into record reproducing positions, each of said key slides being operatively connected with one of said arms so that any movement of the key slides will be transmitted to said arms individually, said key slides each having notches on its lower edge, latches pivot-

ally mounted in said frame and engaging said notches to lock said key slides in record reproducing positions, downward depending portions on said latches forming gaps between them and the latches proper, a universal rod disposed in said gaps, a releasing lever fulcrumed in said frame and connected at one end to said universal rod, a releasing rod connected at one end to the other end of said releasing lever and adapted to be reciprocated to actuate said releasing lever, universal rod and latches to release said key slides, and actuating means for reciprocating said releasing rod, said actuating means comprising a treadle rod having a sleeve receiving the other end of said releasing rod, a treadle connected to said treadle rod and adapted to withdraw said treadle rod from said releasing rod, there being a notch in said releasing rod normally disposed in the sleeve of said treadle rod, a pawl pivotally mounted on said treadle rod and adapted to engage in said notch when said treadle rod is withdrawn from said releasing rod, and a spring for normally maintaining said treadle rod in inoperative position and return said treadle rod when said treadle is released, thereby also moving said releasing rod through the connection of said pawl and notch.

24. In a device of the character described for proving perforated cards, proving means comprising a plurality of pads, arms connected to each of said pads, means for setting said arms and thereto connected pads comprising a frame, key slides operatively mounted in said frame to be moved into record reproducing positions, each of said key slides being operatively connected with one of said arms so that any movement of the key slides will be transmitted to said arms individually, said key slides each having notches on its lower edge, latches pivotally mounted in said frame and engaging said notches to lock said key slides in record reproducing positions, downwardly depending portions on said latches forming gaps between them and the latches proper, a universal rod disposed in said gaps, a releasing lever fulcrumed in said frame and connected at one end to said universal rod, a releasing rod connected at one end to the other end of said releasing lever and adapted to be reciprocated to actuate said releasing lever, universal rod and latches to release said key slides, and actuating means for reciprocating said releasing rod, said actuating means comprising a treadle rod having a sleeve receiving the other end of said releasing rod, a treadle connected to said treadle rod and adapted to withdraw said treadle rod from said releasing rod, there being a notch in said releasing rod normally disposed in the sleeve of said treadle rod, a pawl pivotally mounted on said treadle

rod and adapted to engage in said notch when said treadle rod is withdrawn from said releasing rod, and a spring for normally maintaining said treadle rod in inoperative position and return said treadle rod when said treadle is released, thereby also moving said releasing rod through the connection of said pawl and notch, there being a cam surface on one of the edges of said pawl, and a cam disposed adjacent to said releasing rod and adapted to engage the cam surface of said pawl when the releasing rod is moved by said treadle rod, said cam disengaging said pawl from said notch and permitting said releasing rod to return into the sleeve of said treadle rod.

25. In a device of the character described for proving perforated cards, a frame having a transparent plate for holding a perforated card, means for covering the perforations in said card, a lamp in said frame disposed under said transparent plate so that when lighted its light will reflect through any uncovered perforations in said card and thereby indicate what perforations are incorrect, arms connected to each of said covering means for setting said arms and thereto connected covering means comprising a frame, key slides operatively mounted in said frame to be moved into record reproducing positions, each of said key slides being operatively connected with one of said arms so that any movement of the key slides will be transmitted to said arms individually, said key slides each having notches on its lower edge, latches pivotally mounted in said frame and engaging said notches to lock said key slides in record reproducing positions, downwardly depending portions on said latches forming gaps between them and the latches proper, a universal rod disposed in said gaps, a releasing lever fulcrumed in said frame and connected at one end to said universal rod, a releasing rod connected at one end to the other end of said releasing lever and adapted to be reciprocated to actuate said releasing lever, universal rod and latches to release said key slides, and actuating means for reciprocating said key slides, said actuating means comprising a treadle rod having a sleeve receiving the other end of said releasing rod, a treadle connected to said treadle rod and adapted to withdraw said treadle rod from said releasing rod, there being a notch in said releasing rod normally disposed in the sleeve of said treadle rod, a pawl pivotally mounted on said treadle rod and adapted to engage in said notch when said treadle rod is withdrawn from said releasing rod so that upon release of said treadle rod the treadle rod will move said releasing rod with it thereby actuating said universal rod, a source of power, a conductive sleeve on said treadle rod, electric terminals disposed adjacent to said treadle rod

and connecting said lamp with said source of power, the treadle rod when actuated by said treadle bringing said conductive sleeve into contact with said terminals and lighting said lamp.

26. In a device of the character described for proving cards, a frame having a transparent plate for holding a perforated card, covering means for covering the perforations in said card, and a lamp in said frame disposed under said transparent plate so that when lighted its light will reflect through any uncovered perforations in said card and thereby indicate what perforations are incorrect, arms connected to said covering means, and means for setting said arms and thereto connected covering means, said means comprising a frame, key slides operatively mounted in said frame to be moved into record reproducing positions, and operatively connected to said arms to move said arms to positions corresponding to the positions of said key slides, and means for lighting said lamp when said covering means are so positioned, said means comprising a treadle rod, a treadle connected to said treadle rod, a source of power, electric terminals disposed adjacent to said treadle rod and connecting said lamp with said source of power, said treadle rod when actuated by said treadle bringing said conductive sleeve into engagement with said electric terminals and thereby lighting said lamp.

27. In a device of the character described for proving cards, a frame having a transparent plate for holding a perforated card, covering means for covering the perforations in said card, and a lamp in said frame disposed under said transparent plate so that when lighted its light will reflect through any uncovered perforations in said card and thereby indicate what perforations are incorrect, arms connected to said covering means, and means for setting said arms and thereto connected covering means, said means comprising a frame, key slides operatively mounted in said frame to be moved into record reproducing positions, and operatively connected to said arms to move said arms to positions corresponding to the positions of said key slides, and means for lighting said lamp when said covering means are so positioned, said means comprising a treadle rod, a treadle connected to said treadle rod, a source of power, electric terminals disposed adjacent to said treadle rod and connecting said lamp with said source of power, said treadle rod when actuated by said treadle bringing said conductive sleeve into engagement with said electric terminals and thereby lighting said lamp, and means for normally maintaining said treadle rod in inoperative and disconnecting position.

28. In a device of the character described

for proving cards, a frame having a transparent plate for holding a perforating card, covering means for covering the perforations in said card, and a lamp in said frame disposed under said transparent plate so that when lighted its light will reflect through any uncovered perforations in said card and thereby indicate what perforations are incorrect, arms connected to said covering means, and means for setting said arms and thereto connected covering means, said means comprising a frame, key slides operatively mounted in said frame to be moved into record reproducing positions, and operatively connected to said arms to move said arms to positions corresponding to the positions of said key slides, and means for lighting said lamp when said covering means are so positioned, said means comprising a treadle rod, a treadle connected to said treadle rod, a source of power, electric terminals disposed adjacent to said treadle rod and connecting said lamp with said source of power, said treadle rod when actuated by said treadle bringing said conductive sleeve into engagement with said electric terminals and thereby lighting said lamp, and a spring for normally maintaining said treadle in inoperative position, in which position the conductive sleeve is out of engagement with said electric terminals.

29. In a device of the character described for proving cards, a frame for holding the card to be proved, proving means operatively mounted in said frame comprising a plurality of arms, means for setting said arms comprising a second frame, slide keys operably mounted in said second frame to be moved to reproduce a record corresponding to the record of the card to be proved, levers fulcrumed in said second frame, one of the ends of each of said levers loosely connected with a key slide, and the other end of each of said levers loosely connected to an arm, so that the movement of said slide keys will move said arms correspondingly, means for normally maintaining said levers in retracted non-recording position and for returning said levers to retracted position, and a gang locking plate for locking certain of said key slides in position, against movement of said retracting means for data that is common to a series of cards to be proved.

30. In a device of the character described for proving cards, a frame for holding the card to be proved, proving means operatively mounted in said frame comprising a plurality of arms, means for setting said arms comprising a second frame, slide keys operably mounted in said second frame to be moved to reproduce a record corresponding to the record of the card to be proved, levers fulcrumed in said second frame, one

of the ends of each of said levers loosely connected with a key slide, and the other end of each of said levers loosely connected to an arm, so that the movement of said slide keys will move said arms correspondingly, means for normally maintaining said levers in retracted non-recording position and for returning said levers to retracted position, a gang locking plate for locking certain of said key slides in position, against movement of said retracting means for data that is common to a series of cards to be proved, said frame having a transversely extending plate, said gang locking plates each having a plurality of fingers for engagement with said transversely extending plate.

31. In a device of the character described for proving cards, a frame for holding the card to be proved, proving means operatively mounted in said frame comprising a plurality of arms, means for setting said arms comprising a second frame, slide keys operably mounted in said second frame to be moved to reproduce a record corresponding to the record of the card to be proved, levers fulcrumed in said second frame, one of the ends of each of said levers loosely connected with a key slide, and the other end of each of said levers loosely connected to an arm, so that the movement of said slide keys will move said arms correspondingly, means for normally maintaining said levers in retracted non-recording position and for returning said levers to retracted position, a gang locking plate for locking certain of said key slides in position, against movement of said retracting means for data that is common to a series of cards to be proved, said frame having a transversely extending plate, said gang locking plates each having a plurality of fingers for engagement with said transversely extending plate, and means for locking said gang locking plate at various places along said frame.

32. In a device of the character described for proving perforated cards, means for supporting a card in proving position, means for covering the perforations in said card, and means for setting the covering means to reproduce a record corresponding to the record to be proved.

33. In a device of the character described for proving perforated cards, means for registering with the perforations in said card, and means for setting the registering means to reproduce a record corresponding to the record to be proved.

34. In a device of the character described for proving perforated cards, means for registering with the perforations in said card, means for setting the registering means to reproduce a record corresponding to the record to be proved, and means for indicating when the record reproduced does

not correspond with the record indicated on said card. ing when the record reproduced does not correspond with the record indicated on said card.

35. In a device of the character described for proving perforated cards, proving means, means for setting said proving means to reproduce a record corresponding to the record to be proved, and means for indicat-

JAMES POWERS.

Witnesses:

GUSTAV DREWS,
H. D. PENNEY.