

(No Model.)

2 Sheets—Sheet 1.

A. A. LOW.
CARD CANCELING MACHINE.

No. 517,051.

Patented Mar. 27, 1894.

Fig. 1.

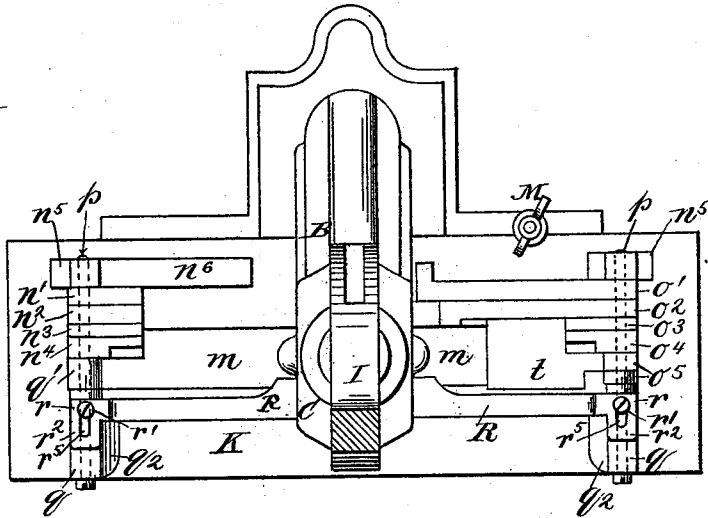
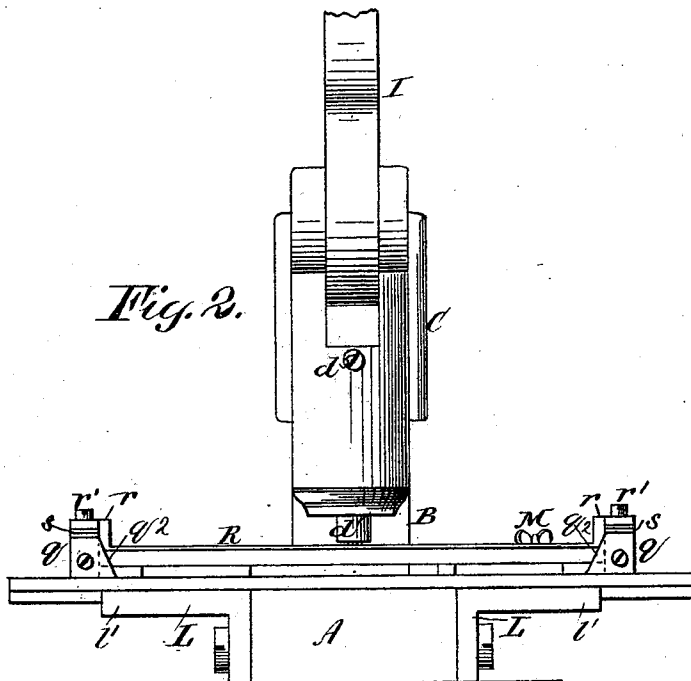


Fig. 2.



Witnesses:

R. W. Gardner

G. J. M. A. H.

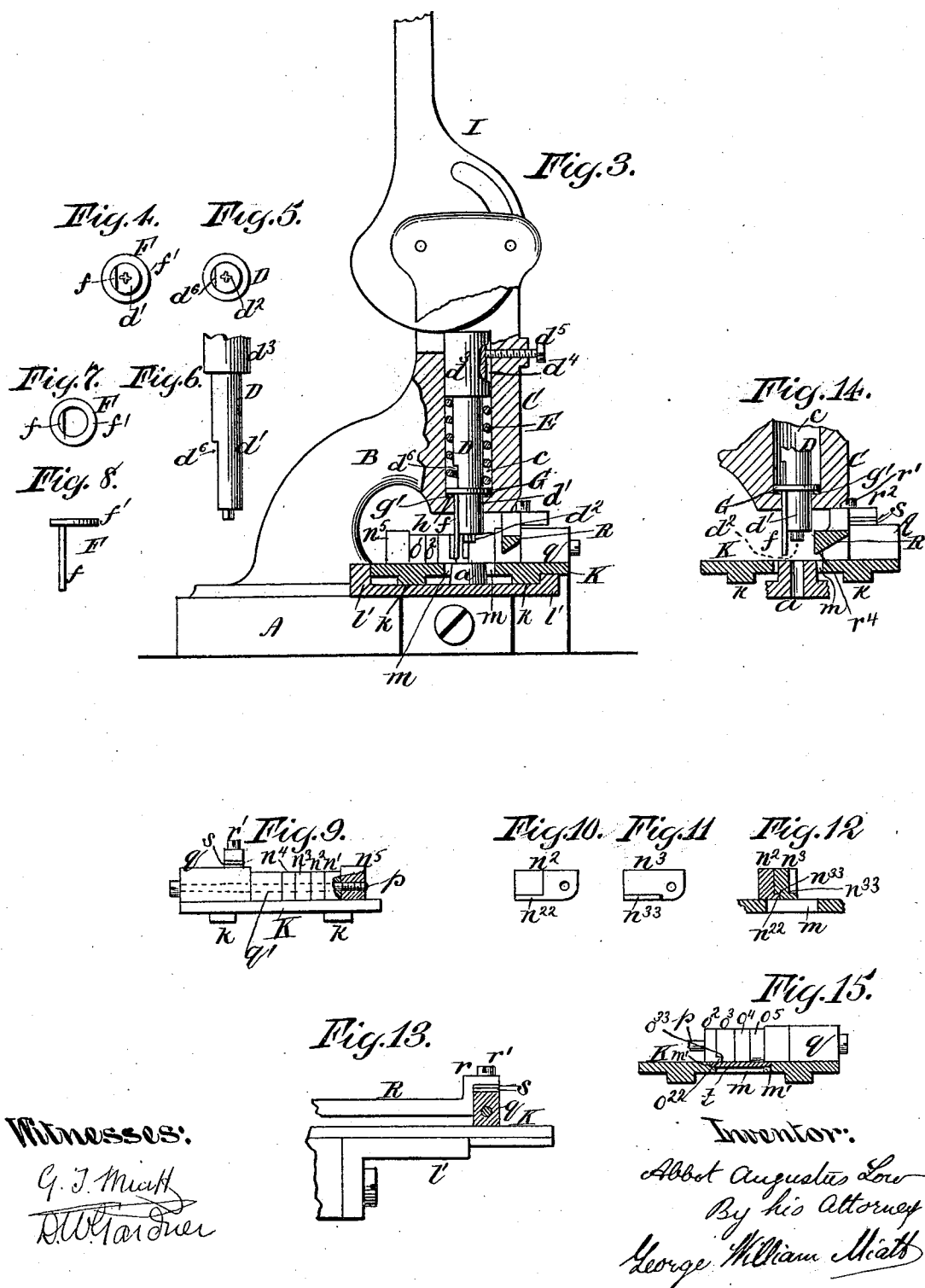
Inventor:

Abbot Augustus Low
By his Attorney
George William Smith

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Witnesses:

G. J. Munn
D. W. Gardner

Inventor:

Abbot Augustus Low
By his Attorney
George William Munn

UNITED STATES PATENT OFFICE.

ABBOT AUGUSTUS LOW, OF BROOKLYN, NEW YORK.

CARD-CANCELING MACHINE.

SPECIFICATION forming part of Letters Patent No. 517,051, dated March 27, 1894.

Application filed February 10, 1893. Serial No. 461,748. (No model.)

To all whom it may concern:

Be it known that I, ABBOT AUGUSTUS LOW, a citizen of the United States, residing in Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Card-Canceling Machines, of which the following is a description sufficient to enable others skilled in the art to which the invention appertains to make and use the same.

My invention relates to the punching or canceling of a series of cards or tickets which are sub-divided superficially by lines or marks which indicate where the cards are to be canceled or marked for a given time, place or date, or for any other prescribed purpose, as in the case of school attendance tickets, &c.

The object is to afford cheap, simple and effective means for quickly and conveniently canceling or punching any of a series of cards or tickets presented upon a given day, or at a given place; as provided for in my application Serial No. 454,830, filed December 12, 1892, the essential feature in which case consists in combining with a canceling device, an adjustable card rest or table formed with adjustable stops so that the rest or table may be set to receive the cards and present them to the punch or canceling device in a prescribed manner, without any special care on the part of the operator.

My present improvements relate to the special form of device set forth in my application above referred to, and I design to simplify the construction and operation of the device as a whole.

The special features of this invention relate more particularly to the form and arrangement of the stripper, the gages for regulating the position of the cards, and in the means for receiving and guiding the edge of the card when inserted in the device.

The gages consist of a series of swinging stops which may be turned out of the way individually or collectively when desired; a special feature in this connection consisting in supporting one gage upon another in such manner that one or more of them may be supported over the longitudinal slot in the receiving table.

A distinguishing feature of my present construction consists in the use of a parallel

horizontal guide bar situated above the upper surface of the receiving table; and in making the said guide rod adjustable with relation to the said table.

By my construction of stripper the card is stripped from the punch by a rigid shoulder immediately at the rear of the latter; and provision is also made for regulating the height of the stripper with relation to the thickness of the card to be operated upon.

In the accompanying drawings I illustrate the practical embodiment of my improvements as arranged for the marking or cancellation of any of a series of cards marked with marginal divisions which are used to represent certain times or acts, although I do not confine myself to any particular style of card or ticket neither do I confine myself to the identical construction of parts shown, since many variations may be made in both without departing from the spirit and intent of my invention. It is also understood that the perforating punch shown may be replaced by any other form of stamping, canceling or marking device with like effect, the perforating punch being herein shown and described as representing a means ordinarily employed for such purposes.

Figure 1, is a plan of my improved device the handle of the eccentric being shown as broken away. Fig. 2, is a front elevation of the same. Fig. 3, is a sectional elevation taken transversely through the movable table and supported, and showing certain parts broken away to illustrate the construction and arrangement of the stripper, &c. Fig. 4, is an end view of the punch and stripper; Fig. 5, an end view of the punch alone; Fig. 6, an elevation of the lower portion of the punch; Fig. 7, an end view of the stripper alone; Fig. 8, a side elevation of the stripper. Fig. 9, is an elevation of one end of the adjustable receiving table illustrating the method of supporting the swinging gages and the adjustment of the front guide bar. Fig. 10, is an elevation of the front side of one of the first gages; Fig. 11, a similar view of one of the second gages adapted to support the first over the longitudinal slot in the receiving table. Fig. 12, is a transverse section through the gages which overlap the longitudinal slot in the table. Fig. 13, is a sec-

tional detail taken at the rear of one end of the guide rail; Fig. 14, a sectional elevation of parts adjoining the punching mechanism, illustrating the use of the guide rail as a stripper. Fig. 15, shows the table in cross section, with a bridge piece turned into position thereon.

In the accompanying drawings it has not been deemed necessary to illustrate the cards to be operated upon since this is fully indicated in my application hereinbefore referred to.

A, is the supporting bed or frame, formed with the overhanging standard B, within the vertical portion C, of which the upper end of the punch D, is mounted. The punch D, may be of any ordinary construction and arrangement of parts or it may be replaced by a stamping or marking device as hereinbefore stated. As shown in the drawings it consists of a cylindrical plunger d' , carrying the perforator d^2 , in its lower end. The plunger D, has an enlarged head d^3 , formed with the vertical groove d^4 , in which the inner end of the screw d^5 , rests to prevent the turning of the plunger D, upon its longitudinal axis. The cylindrical recess c , formed in the upright C, is of slightly greater diameter than that of the head d^3 , so as to form an annular chamber around the plunger D, in which the compressed spring E, is coiled. The lower portion d' , of the plunger is cut away or formed with a recess or offset d^6 , as will be more clearly seen by reference to Figs. 4, 5 and 6. This is to accommodate the vertical portion of the stripper F, which acts as a downwardly projecting finger to hold down the card and strip it from the punch as the latter recedes. The vertical finger f , projects from a ring f' which is dropped into the recess c , before the introduction of the spring E, and the plunger D. If it is desired to raise the stripper finger f , to accommodate a greater thickness of cardboard, one or more washers G, g' , are dropped into the recess c , before the insertion of the stripper F. In either case the stripper ring, spring E, &c., are supported by the annular shoulder h , formed in the lower portion of the upright C.

It will be noticed that the stripper finger f , conforms to the cylindrical shape of the plunger D, resting in the space d^6 , formed for it. This will be seen by reference to Fig. 4, it is also to be noted that by this construction I am enabled to bring the stripper into intimate relation with the punch d^2 , that is as near to the latter as is practicable without interfering with its operation. Another feature is that while it affords a rigid positive means for stripping the card from the punch it occupies little or no space as it constitutes practically a continuation of the plunger d' , within the original sectional area of which its finger f , is situated. The plunger D, is depressed against the resistance of the coil spring E, by an eccentric lever I, of any ordinary or well known construction or by any other suitable means.

An anvil a , projects upward from the base A, its upper surface being upon the same horizontal plane as that of the surface of the table K, which is formed with the longitudinal slot m , for its accommodation. The anvil a , may be formed with the usual perforations to receive the punch and to allow the escape of the material punched from the card. The table K, rests between bearings l' projecting upward from the brackets L, which extend upon either side of the base A, the under side of the table K, is formed with longitudinal ribs k , k , to lessen the frictional contact with its supports. The table K, travels freely in either direction longitudinally excepting when held by a set screw M, by which it may be adjusted to the prescribed relation with the punch d^2 , so as to bring a certain portion of a card placed upon a table into proper position to be acted upon by the punch, as fully set forth in my prior application heretofore referred to.

In order to accurately gage or centralize succeeding cards of like character so that they shall all be punched alike I employ one or more series of swinging gages.

I employ a series of gages n' , n^2 , n^3 , n^4 upon the left hand side of the table K, the cards being naturally fed most conveniently by the right hand in that direction. These gages n' , n^2 , n^3 , n^4 may be successively swung backward as desired in order to allow the insertion of cards to a greater or less extent beyond the punch. They are pivotally suspended upon a fulcrum p , which consists of a rod formed with a screw thread upon its inner end as shown in Fig. 9, which male screw thread engages with a female screw thread formed in the bearing n^5 ,—the screw rod p , being inserted through the front bearing q , and having strung upon it between the bearings n^5 , and q , the series of gages n' , n^2 , n^3 , n^4 , together with a washer q' , of sufficient width to confine the gages together upon the rear side of the table. The rigid bearing n^5 , is extended along the table so as to form a permanent stationary guide n^6 , which limits the adjustment in that direction. These left hand gages may be relied upon if desired to control the position of the card with relation to the punch. I prefer however to use in conjunction therewith a somewhat similar series o' , o^2 , o^3 , o^4 , situated upon the right hand side of the table, and in like manner mounted upon a screw rod p , passing through and engaging with bearings q , n^5 . Of these gages o^2 , and o^3 , are duplicates of those directly opposite them on the left hand side, namely n^3 , n^4 , excepting that they are reversed in position and configuration. They are designed more especially to gage the position of a card when presented lengthwise upon the table. The other two gages on this side o' , extend farther toward the center of the machine and are designed to act as right hand supports when the card is presented endwise. It will be seen that thus in both cases the right hand

gages o' , o^2 , o^3 , o^4 , may be utilized to steady and support as well as to accurately form a line for the right hand corner of the card. The gages n^3 , n^4 , and o^3 , o^4 , are formed so as to project over the longitudinal slot m , in the table K, so as to stop the card in such position that it will be punched very close to its edge, since the punch occupies a position in substantially the center of the slot. This is accomplished as illustrated in a manner which will be more clearly understood by reference to Fig. 12, in which the edges of the longitudinal slot m , are shown in section, together with the adjoining ends of the said stops n^2 , n^3 , and o^2 , o^3 . It will be seen that the stops n^2 , o^2 , are formed with laterally projecting shoulders n^{22} , o^{22} , which rest in corresponding recesses n^{33} , o^{33} , formed in the stops n^3 , o^3 , and since the stops n^2 , o^2 , are partially supported by the upper surface of the table K, and project only a portion of the way over the edge of the slot m , it is obvious that the stops n^3 , o^3 , will in turn be supported by the stops n^2 , o^2 , although said stops n^3 , o^3 , are situated directly over the slot m . In this manner if desired one, two or more stops may be successively supported one above the other over the slot m .

By using washers q' , o^5 , of different thicknesses gages of various widths may be substituted for those upon the machine, thus adapting the latter to cards of various sizes; or the table K, being easily removable when the set screw M, is loosened may be withdrawn, and another one with a different series of gages substituted bodily.

Mounted between the stationary bearings q , is a beveled guide rail R, arranged to regulate and facilitate the introduction of the card. As will be seen by reference to Fig. 3, the under side of this rail is beveled downward from front to rear so as to guide the edge of the entering card downward toward the table and under the punching device. Upon each end of the rail R, a rectangular arm r is formed projecting over the bearings q , which latter have vertical sides at this point. The guide rod is held in position by set screws r' , passing through the arms r , and entering the bearings q . This rail R, may be adjusted vertically to compensate for variations in the thicknesses of cards to be used by any suitable or well known means. As shown in the drawings I accomplish this by simply inserting one or more washers s , s , between the arms r , and the tops of the bearings q . The adjustment of the guide rail horizontally is provided for by the slots r^5 , in the extensions r^2 , of the arms r . The bearings q , in front of the guide rail R, are beveled inward toward the center as will be plainly seen by reference to q^2 q^2 Fig. 2, in order to facilitate the introduction of the card under the guide rail R. The guide rail may be utilized as a stripper by extending it toward the punch as shown in Fig. 14, in which the lower edge r^4 , projects down sufficiently to

act in conjunction with the stripper finger f , in detaching the card from the punch. In such case the rail may be designated as a stripper guard.

In addition to the swinging gages, I employ one or more swinging bridges or floor extensions t , which I use to fill up and bridge over the longitudinal slot m , in the table K, when desirable, in order to support the card and prevent it striking against the edge, or entering the slot m . The edges of the slot m , are formed with grooves m' , m' , as shown in Fig. 15, to support the bridge t , with its upper surface flush with the floor of the table K.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a device for canceling cards &c., the combination of punching mechanism, a movable card receiving table, and a series of swinging gages upon the said table, for the purpose and substantially in the manner described.

2. In a device for canceling cards &c., the combination of punching mechanism, a sliding table formed with a longitudinal slot into which the anvil projects, and two or more pivotally supported swinging gages formed with interlocking shoulders for the purpose of supporting one or more of the gages above the said longitudinal slot substantially as described.

3. In a device for canceling cards &c., the combination of punching mechanism, a sliding table formed with a longitudinal slot into which the anvil of the punching mechanism projects, a series of swinging gages upon the said sliding table, and a longitudinal guide rail supported upon the said sliding table in front of the punching mechanism, substantially in the manner and for the purpose described.

4. In a device for canceling cards &c., the combination of punching mechanism, a sliding table formed with the longitudinal slot, a longitudinal guide rail supported upon said table in front of the punching mechanism and means for adjusting the said guide rail vertically for the purpose set forth.

5. In a device for canceling cards &c., the combination of a punching mechanism, a sliding table formed with a longitudinal slot, a series of swinging gages upon the right hand side of said table and a series of gages upon the left hand side of said table, the whole arranged and operating substantially in the manner and for the purpose described.

6. In a device for canceling cards &c., the combination with punching mechanism, sliding table formed with the longitudinal slot, the bearings n^5 , q , screw rod p , washer q' , and series of pivotally supported swinging gages, the whole arranged and operating substantially as described.

7. In punching mechanism substantially as described, the combination with the upright C, formed with the recess c , and with the plunger D, formed with the offset d^5 , of the strip-

per F, formed with the annular collar f' , and vertical finger f , substantially in the manner and for the purpose described.

5 8. In combination with punching mechanism and with a sliding table formed with a longitudinal slot, a pivotally supported swinging floor for closing or bridging over a portion of

said slot substantially in the manner and for the purpose described.

ABBOT AUGUSTUS LOW.

Witnesses:

GEORGE WILLIAM MIATT,
D. W. GARDNER.