Nov. 4, 1930. H. A. WEINLICH 1,780,610

TYPEWRITER PUNCH WITH COLUMN CUT-OUT

Filed July 1, 1927 2 Sheets-Sheet 1

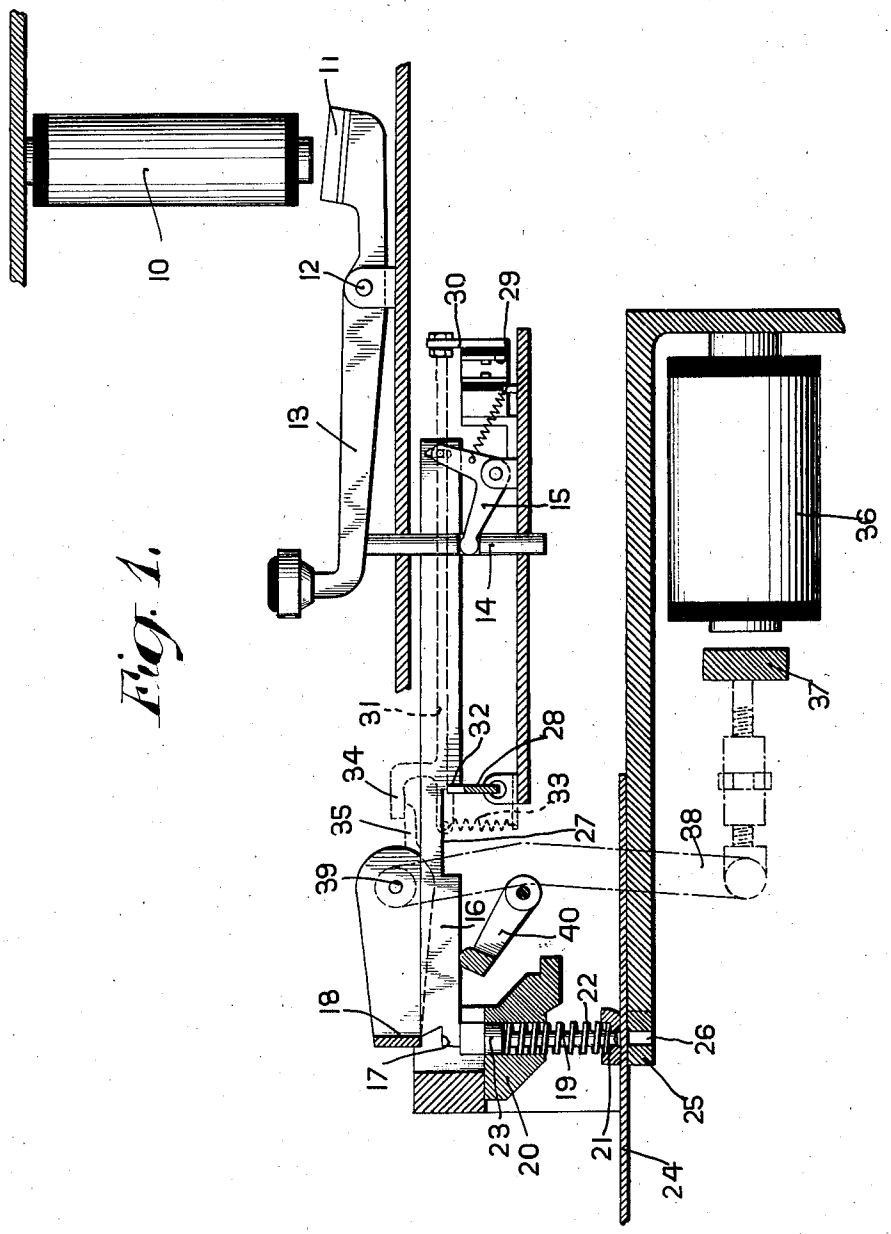


Fig. 1.

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Filed July 1, 1927 2 Sheets-Sheet 2

Fig. 2.

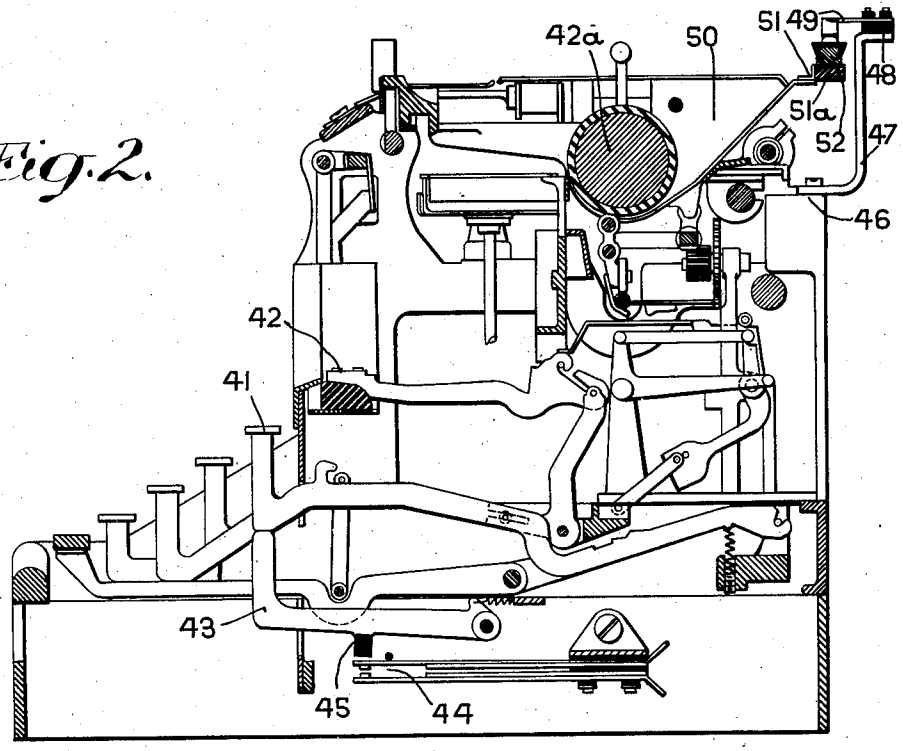
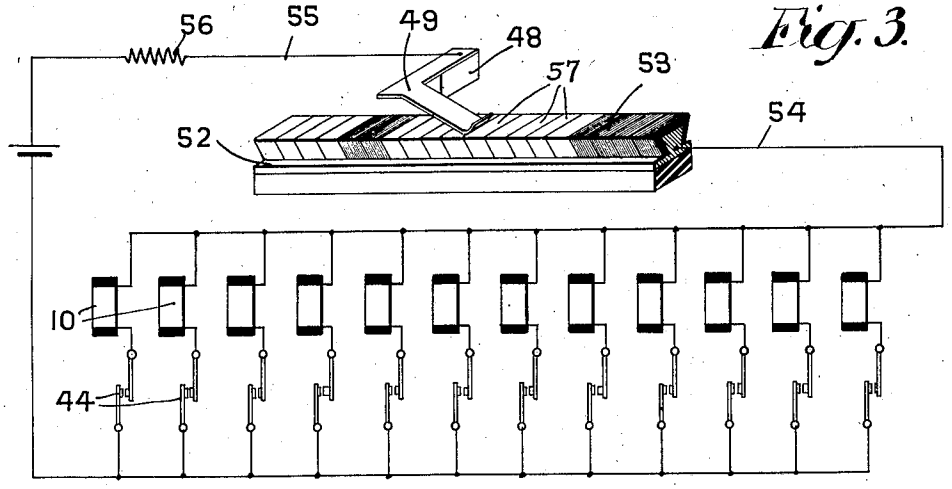


Fig. 3.



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UNITED STATES PATENT OFFICE

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TYPEWRITER PUNCH WITH COLUMN CUT-OUT

Application filed July 1, 1927, Serial No. 202,809, and in Germany November 11, 1926.

This invention relates to perforating machines and more particularly to a device for automatically perforating a record card in predetermined columns.

Statistical machines and the like, particularly punching machines have been combined with other machines, as for instance, typewriters, calculating machines, cash registers, etc. In the present instance I have shown a punching machine combined with a typewriting machine. The purpose of such a combination is to repeat the results effected by manual or other operation on one machine in the other machine. Thus, certain data may be typed on a record sheet and simultaneously perforated on a record card, the information perforated on the record card corresponding to data being typed on the record sheet.

In commercial practice it is often desired to print certain information on a record sheet and not perforate this information on a record card. As an example, a client's address, such as 50 Blank Street, is typed on the record sheet and if means were not provided for suppressing the operation of the punching mechanism the figures 50 would be perforated in the record card. This number on the card would have no significance.

The principal object of the present invention is to provide a practical and effective mechanism for so suppressing such data with minimum effort on the part of the machine operator.

Another object of my invention is to provide a printing and perforating machine wherein data may be perforated in connection with predetermined columns of the printed sheet during the printing operation and perforating is automatically suppressed in connection with other columns.

Another object of the invention is to provide for selectively predetermining suppression of perforating in any desired position in a machine of the above type.

Various other objects and advantages of my invention will be obvious from the following particular description of one form of mechanism embodying the invention or from an inspection of the accompanying drawing; and the invention also constitutes certain new and novel features of construction and combination of parts hereinafter set forth and claimed.

In the accompanying drawings I have shown for the purpose of illustration one form of mechanism embodying the invention in which

Fig. 1 is a detail view of a punch showing one of the selector magnets and associated parts including one of the punches, the parts being shown in section.

Fig. 2 is a side sectional view of a typewriter machine used in connection with my invention.

Fig. 3 is a wiring diagram showing the manner in which the perforating of a record card is controlled.

For an understanding of the invention certain parts of the perforating machine used in connection with my invention and its operation will now be described.

Referring to Fig. 1 each selector magnet 10 is provided wit' an armature 11 pivoted at 12. The armature 11 is provided with a forwardly extending lever 13 overlying vertically movable plungers 14 slidably mounted in the machine. Each plunger has one leg of a bell crank 15 slidably connected thereto, the opposite ends of said bell cranks being connected to separate controlling slides which will be hereinafter called interposers and are indicated at 16. These interposers are each provided with a notch 17 in the upper parts of their forward ends so as to permit a ready downward movement of the punch actuator 18 without encountering the interposer 16. When any one of the selector magnets has been energized the armature of said magnet will be attracted and the outer end of lever 13 will be depressed thus forcing down its respective plunger and operating the bell crank 15 to shift the corresponding interposer 16 so that the notch 17 is carried out of the path of the punch actuator 18 which, if then operated, will be brought directly into contact with the upper surface of the interposer and depress the same. Each of the interposers has its forward end arranged over a

punch 19 which is slidably mounted in a bridge piece 20.

Extending across the table of the punch and located beneath the bridge piece 20, but spaced therefrom, is a stripper plate 21 which forms an abutment for the lower end of the compression spring 22 which normally acts to elevate the punch 19. Each punch is provided with a shoulder 23 adjacent its upper end and against which the upper end of the spring 22 abuts. The card 24, as will be noted, passes between the stripper plate 21 and a die 25 fitted in the table of the punch. This die is provided with a plurality of openings 26 one for each punch which receive and pass the discs punched out of the card.

Each interposer is provided with a notch 27 on its under surface which are aligned when the interposers are in retracted position. These interposer notches are arranged to receive an interposer stop and a common switch operating bar 28. This switch bar is normally held in retracted position by a spring which is connected to the insulated finger 29 of a movable switch contact element 30 by a link 31. This link has its free forward end provided with a shoulder 32 which is engaged by the forward side of the bar 28 and the link is held down in a guiding notch of the bar by a spring 33. The free end of the link 31 is also provided with a hook 34 which is engaged over a laterally projecting finger 35. When the contacts 29 are closed a circuit is established to the punch actuating magnet 36. Connected to the armature 37 of the punch actuating magnet 36 is an arm 38 fixed on a shaft 39 on which is also fixed the actuating bar 18. When the magnet 36 is energized its armature 37 will actuate arm 38 rocking shaft 39 causing counter clockwise operation of bar 28 depressing the selected interposer 16 which in turn pushes the corresponding punch 19 through the card. Each time a punch is actuated a lever 40 is rocked downwardly. This lever controls the feeding of the card column by column through well known escaping mechanism. The punch mechanism thus briefly described forms, per se, no part of the present invention and is described in detail in the copending application of J. T. Schaaff, Serial No. 731,980, filed August 14, 1924.

Referring now to Fig. 2 a typewriter with provisions for controlling a perforating machine in accordance with the invention is illustrated. As the general construction of a typewriter is well known, it will be unnecessary for me to go into detail but it is to be understood that instead of utilizing the standard numeral key board, I may substitute therefor, a numeral key board ranging from 1 to 12, or in other words, a key for each of the usual punching positions on a record card. One of the numeral keys 41 is shown and through well known linkage is operatively connected to a printing element 42 carrying type corresponding to the key thereon. Pivotally mounted directly beneath the numeral key 41 is an actuating member 43 which when rocked in a downward direction by the numeral key 41 closes a set of contacts 44. It is to be noted that the actuating member 43 has fixed thereto at 45 an insulated block for closing the contacts 44 and that each numeral key 41 has an actuating member 43 and an associated set of contacts 44 cooperating therewith. Fixed to the frame of the typewriting machine at 46 is a bracket 47 having insulated therefrom at 48 a sliding contact 49. This contact engages the upper surface of a metallic rail or contact 52 fixed to the carriage 50 of the typewriter at 51, the rail being insulated from the carriage by a strip of insulation 51a. In the general operation of the machine, simultaneously with the printing of a numeral on the record sheet, the contacts corresponding to the numeral key depressed will be closed in the manner previously described, setting up a circuit to the selecting magnet 10 (Fig. 1) of the punching device, and through the metallic rail 52 and sliding contact 49 the punching magnet 36 will be energized causing a perforation to be made in the card. The circuit is as follows: from the positive side of the source, through contacts 44, now closed, magnet 10, wire 54, metallic rail 52, individually removable metallic contact clips 57 having a dovetailed connection to bar 52, sliding contact 49, wire 55, resistance 56 and back to the negative side of the line.

As previously stated it is often desired to print certain information on a record sheet and not perforate this information on the record card. In order to do this the operator will insert an insulated clip 53 upon the metallic rail 52 in a position corresponding to the carriage position in which perforating is not desired. The operation of the machine is the same as previously described, but the circuit to the punching magnet 36 is broken due to the sliding contact passing over the top of the insulated clip 53. In other words for each typewriter carriage position for which the record card is not to be perforated, an insulated clip 53 is inserted on the metallic rail 52.

While I have shown and described and pointed out the fundamental novel features of the invention as applied to a single modification it will be understood that various omissions and substitutions and changes in the form and details of the device illustrated and in its operation may be made by those skilled in the art without departing from the spirit of the invention. I intend to be limited therefore only as indicated by the scope of the following claims.

What is claimed is:

1. In combination, a typewriter with a movable carriage for selecting different printing positions, an electrically operated punch with selector circuits therefor controlled by the typewriter and a circuit controller common to said circuits having a stationary contact member and a conductor member movable with said carriage.

2. In combination, a typewriter with a movable carriage for selecting different printing positions, an electrically operated punch with selector circuits controlled by the typewriter and a circuit controller common to said circuits having a stationary contact member and a coacting contact member movable with said carriage and provided with insulating portions for suppressing operation of said control circuits in predetermined carriage positions.

3. In combination, a typewriter with a movable carriage for selecting different printing positions, an electrically operated punch with selector circuits therefor controlled by the typewriter, a circuit controller common to said circuits having a stationary contact member and a coacting contact member movable with said carriage and adjustable insulating members on said movable member for selectively suppressing operation of said control circuits in preselected carriage positions.

4. In combination, a typewriter with a movable carriage for selecting different printing positions, an electrically operated punch with selector circuits therefor controlled by the typewriter, a circuit controller common to said circuits having a stationary contact member and a coacting contact member movable with said carriage and removable insulating clips on said movable member for suppressing operation of said control circuits in preselected carriage positions.

In testimony whereof I hereto affix my signature.

HERMANN ADALBERT WEINLICH.